



General Purpose Relays

General Purpose Relays



Tyco Electronics - Schrack has a reputation for sound technical experience and provides engineering and sales support in local markets which in turn leads to total customer satisfaction.

World-wide we build lasting relationships with our customers through the innovative combination of:

- high quality products
- individual application support and
- complete service.

As a specialist and innovator for relays we offer technically superior and environmentally friendly solutions for reliable electrical switching.

Our extensive knowledge of markets and technology ensure that our products and systems provide optimal solutions for our customers and their applications.

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PCB Power Relays

Miniature PCB Relay PE / PE bistable

- 1 pole 5 A
- 1 CO or 1 NO contact
- Sensitive coil 200 mW
- 4 kV coil-contact
- Low height 10.0 mm
- Mono- or bistable



Miniature PCB Relay REL

- 1 pole 5 A
- 1 NO contact
- Low height 12.0 mm



Miniature PCB Relay RE

- 1 pole 6 A
- 1 NO contact
- Sensitive coil 200 mW
- 4 kV coil-contact
- Optimized height 10.6 mm
- PCB area 200 mm²
- Wash tight



Contacts

Configuration	1 CO or 1 NO	1 NO	1 NO
Rated current	5 A	5 A	6 A
Rated voltage	250 VAC	250 VAC	250 VAC
Breaking capacity	1250 VA	1250 VA	1500 VA

Coil

Nominal voltage	3...48 VDC	5...48 VDC	5...48 VDC
Nominal coil power	200 mW	360 mW	200 mW
Other coil versions	bistable	-	-

Insulation

Dielectric strength coil-contact	4000 V _{rms}	3000 V _{rms}	4000 V _{rms}
Clearance / creepage coil-cont.	3.2 / 4 mm	4 / 4 mm	4 / 4 mm

General data

Ambient temperature max.	monost. +85°C bistab. 70 °C	+70°C	+70°C
Standard versions	flux proof, wash tight	flux proof	wash tight
Terminals	PCB	PCB	PCB
Dimensions l x w x h	20 x 10 x 10 mm	20.7 x 10.7 x 12 mm	20 x 10 x 10.6 mm
RoHS (Directive 2002/95/EC)	compliant	compliant	compliant
Materials according IEC 60335-1	compliant	compliant	compliant
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Accessories	-	-	-

PCB Power Relays (Continued)

**Miniature PCB Relay
PCH**

- 1 pole 5 A
- 1NO or 1C/O contact
- Sensitive coil 200 mW available
- 4 kV coil-contact
- Miniature size



1CO or 1 NO
5 A
250 VAC
1250 VA
3...48 VDC
200 mW, 400 mW
-
4000 V _{rms}
4.5/9 mm
+85°C
flux proof
PCB
19.8 x 9.9 x 15.2 mm
compliant
compliant versions
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-

**Miniature PCB Relay
OJ / OJE**

- 1 pole 8 A
- 1 NO contact
- Sensitive coil 200 mW
- 4 kV coil-contact
- Miniature size



1 NO
8 A
240 VAC
2000 VA
3...24 VDC
200 mW
-
4000 V _{rms}
6/8 mm
+85°C
flux proof
PCB
18.2 x 10.2 x 14.7 mm
compliant
compliant versions
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-

**Slimline PCB Relay
PCN**

- 1 pole 3 A
- 1 NO contact
- Only 5 mm wide
- Load range 1 mA up to 3 A
- Sensitive coil 120 mW
- Allows high function- / packing density



1 NO
3 A / 5 A
250 VAC
750 VA
5...24 VDC
120 mW
-
3000 V _{rms}
3.5/3.5 mm
+70°C
wash tight
PCB
20 x 5 x 12.5 mm
compliant
-
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-

**Slimline PCB Relay
SNR**

- 1 pole 6 A
- 1 CO or 1 NO
- Only 5 mm wide
- Sensitive coil 170 mW
- 4 kV coil-contact
- 6/8 mm creepage / clearance
- Reinforced insulation
- Strong coil pins for DIN-rail sockets



1 CO or 1 NO
6 A
250 VAC
1500 VA
5...60 VDC
170 mW
-
4000 V _{rms}
6/8 mm
+85°C
wash tight
PCB
28 x 5 x 15 mm
compliant
-
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PCB Power Relays (Continued)

**Miniature PCB Relay
PCJ**

- 1 pole 5 A
- 1 NO contact
- Dielectric strength coil-contact 4 kV
- Slim outline, width 7 mm



**Miniature Power
PCB Relay RY II**

- 1 pole 8 A
- 1 CO, 1 NO or 1 NC contact
- 5 kV / 8 mm coil-contact
- Reinforced insulation
- Low height 12.3 mm
- Pinnings: 3.2 and 5 mm
- Sockets with PCB-type or screw-type terminals
- Reflow solderable version



**Miniature Power
PCB Relay MSR**

- 1 pole 8 / 10 A
- 1 CO or 1 NO contact
- High inrush currents (TV4 = 65 A) with AgSnO₂ contacts
- 4 kV / 8 mm coil-contact
- Reinforced insulation
- Ambient temperature up to 85°C at 8 A



Contacts

Configuration
Rated current
Rated voltage
Breaking capacity

1 NO
5 A
250 VAC
1250 VA

1 CO or 1 NO or 1 NC
8 A
250 VAC
2000 VA

1 CO or 1 NO
8 / 10 A
250 VAC
2000 VA

Coil

Nominal voltage
Nominal coil power
Other coil versions

3...24 VDC
200 mW
-

5...60 VDC
220 mW
-

3...60 VDC
220 mW
-

Insulation

Dielectric strength coil-contact
Clearance / creepage coil-cont.

4000 V _{rms}
8 / 8 mm

5000 V _{rms}
8 / 8 mm

4000 V _{rms}
8 / 8 mm

General data

Ambient temperature max.
Standard versions
Terminals
Dimensions l x w x h

+90°C (105°C)
flux proof, wash tight
PCB
20.4 x 7 x 15 mm

+70 / +85°C
flux proof, wash tight
PCB
28.5 x 10.1 x 12.3 mm

+85 °C
flux proof, wash tight
PCB
28.6 x 10 x 15 mm

RoHS (Directive 2002/95/EC)
Materials according IEC 60335-1

compliant
compliant versions

compliant
compliant

compliant
compliant

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PCB Power Relays (Continued)

**Power PCB Relay
RZ**

- 1 pole 12 / 16 A
- 1 CO or 1 NO contact
- Sensitive DC-coil 400 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C / 105°C



1 CO or 1 NO
12 A 16 A
250 VAC
3000 VA 4000 VA

5...48 VDC
400 mW
-

5000 V _{rms}
10 / 10 mm

+85°C
flux proof, wash tight
PCB
29 x 12.7 x 15.7 mm

compliant
compliant

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-

**Power PCB Relay
RT1**

- 1 pole 12 / 16 A
- 1 CO or 1 NO contact
- DC- or AC-coil
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C (DC-coil)



1 CO or 1 NO
12 A 16 A
250 VAC
3000 VA 4000 VA

5...110 VDC
400 mW
24...230 VAC
0.75 VA
-

5000 V _{rms}
10 / 10 mm

DC: +85 °C AC: +70 °C
flux proof, wash tight
PCB
29 x 12.7 x 15.7 mm

compliant
compliant versions

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**Power PCB Relay
RT1 reflow**

- 1 pole 12 / 16 A
- 1 CO or 1 NO contact
- DC- or AC-coil
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- For Through-Hole-Reflow soldering (THR)



1 CO
12 A 16 A
250 VAC
3000 VA 4000 VA

5...110 VDC
400 mW
24...230 VAC
0.75 VA
-

5000 V _{rms}
10 / 10 mm

DC: +85 °C AC: +70 °C
flux proof
PCB
29 x 12.7 x 15.7 mm

compliant
compliant

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-

**Power PCB Relay
RT1 bistable**

- Polarized bistable version with 1 or 2 coils
- 1 pole 16 A
- 1 CO contact
- 5 kV / 10 mm coil-contact
- Reinforced insulation



1 CO
16 A
250 VAC
4000 VA

5...24 VDC
400 / 600 mW
-

5000 V _{rms}
10 / 10 mm

+85 °C
flux proof
PCB
29 x 12.7 x 15.7 mm

compliant
-

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Product title (Continued)

**Power PCB Relay
RT1 sensitive**

- Highly sensitive version, coil 250 mW
- 1 pole 10 A
- 1 CO or 1 NO contact
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C



**Power PCB Relay
RT1 bifurcated**

- 1 pole 12 / 16 A
- 1 CO or 1 NO contact
- DC-coil, 200 or 400 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C



**Power PCB Relay
RT1 Inrush**

- For inrush peak currents up to 80 A
- 1 pole 16 A
- 1 CO or 1 NO contact
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C



Contacts

Configuration
Rated current
Rated voltage
Breaking capacity

1 CO or 1 NO
10 A
250 VAC
2500 VA

1 CO or 1 NO, bifurcated cont.
12 A 16 A
250 VAC
3000 VA 4000 VA

1 CO or 1 NO
16 A
250 VAC
4000 VA

Coil

Nominal voltage
Nominal coil power
Other coil versions

5...60 VDC
250 mW
-

5...60 VDC 5...110 VDC
200 mW 400 mW
-

5...110 VDC
400 mW
bistable

Insulation

Dielectric strength coil-contact
Clearance / creepage coil-cont.

5000 V _{rms}
10 / 10 mm

5000 V _{rms}
10 / 10 mm

5000 V _{rms}
10 / 10 mm

General data

Ambient temperature max.
Standard versions
Terminals
Dimensions l x w x h

+85°C
flux proof, wash tight
PCB
29 x 12.7 x 15.7 mm

+85°C
wash tight flux proof
PCB
29 x 12.7 x 16.0 mm

+85°C
flux proof
PCB
29 x 12.7 x 15.7 mm

RoHS (Directive 2002/95/EC)
Materials according IEC 60335-1

compliant
-

compliant
-

compliant
-

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PCB Power Relays (Continued)

**Power PCB Relay
RT1 Inrush Power**

- For inrush peak currents up to 165 A
- 1 pole 16 A
- 1 NO, W pre-make contact optional
- mono- or bistable coil
- Reinforced insulation
- Test tab optional



1 NO, W pre-make version
16 A
250 VAC
4000 VA
5...110 VDC
400 mW
bistable
4000 V _{rms}
10 / 10 mm
+70°C, +85°C
flux proof
PCB
29 x 12.7 x 15.7 mm
compliant
-
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**Power PCB Relay
RTH 105°C 16 A**

- High-temperature version
- 1 pole 16 A
- 1 CO or 1 NO contact
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Ambient temperature 105°C



1 CO or 1 NO
16 A
250 VAC
4000 VA
5...60 VDC
400 mW
-
5000 V _{rms}
10 / 10 mm
+105°C
flux proof
PCB
29 x 12.7 x 15.7 mm
compliant
compliant versions
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**Power PCB Relay
RX 1**

- 1 pole 12 / 16 A
- 1 CO or 1 NO contact
- DC- or AC-coil
- Reinforced insulation
- Transparent cover optional



1 CO or 1 NO
12 A 16 A
250 VAC
3000 VA 4000 VA
5...110 VDC 24...230 VAC
520 mW 0.75 VA
-
4000 V _{rms}
8 / 8 mm
DC: +85°C AC: +70°C
flux proof
PCB
29 x 12.7 x 15.7 mm
compliant
-
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**Special Load
PCB Relay RP 3 SL**

- For inrush peak currents up to 120 A
- 1 pole 16 A
- 1 NO contact
- Mono- or bistable version
- 4 kV / 8 mm coil-contact



1 NO
16 A
250 VAC
4000 VA
5...110 VDC
520 mW
bistable
4000 V _{rms}
8 / 8 mm
+70°C
flux proof, wash tight
PCB
29 x 12.6 x 25.5 mm
compliant
-
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PCB Power Relays (Continued)

Power Relay RF

- Quick connect terminals on load side
- 1 pole 16 A
- 1 NO or 1 NC contact
- Switching capacity 4000 VA
- Coil power 400 mW
- Reinforced insulation
- WG version in accordance with IEC 60335-1



**Power Relay
410 63 125°C**

- 1 pole 16 A
- 1 NO or 1 NC
- Insulation to VDE 0631 and VDE 0700
- Ambient temperature up to 125°C
- Quick connect terminals



**Power Relay
410 83 3 mm**

- Contact gap > 3 mm
- 1 pole 16 A
- 1 NO contact
- Insulation to VDE 0631 and VDE 0700
- Quick connect terminals



Contacts

Configuration
Rated current
Rated voltage
Breaking capacity

1 NO or 1 NC
16 A
250 VAC
4000 VA

1 NO or 1 NC
16 A
250 VAC
4000 VA

1 NO, 3 mm
16 A
250 VAC
4000 VA

Coil

Nominal voltage
Nominal coil power
Other coil versions

5...60 VDC
400 mW
-

6...60 VDC
360 mW
-

6...60 VDC
360 mW
-

Insulation

Dielectric strength coil-contact
Clearance / creepage coil-cont.

4000 V _{rms}
8 / 8 mm

4000 V _{rms}
8 / 8 mm

4000 V _{rms}
8 / 8 mm

General data

Ambient temperature max.
Standard versions
Terminals
Dimensions l x w x h

+105°C
flux proof, wash tight
PCB
29 x 12.7 x 15.7 mm

+125°C
flux proof
PCB
29 x 12.5 x 28.5 mm

+85°C
flux proof
PCB
29 x 12.5 x 28.5 mm

RoHS (Directive 2002/95/EC)
Materials according IEC 60335-1

compliant
compliant versions

compliant
compliant versions

compliant
compliant versions

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PCB Power Relays (Continued)

**Power PCB Relay
PCFN Solar**

- 1 pole 26 A
- 1 NO contact
- 200 mW hold power
- Ambient temperature up to 75 °C, 85°C at 22 A



1 NO
26 A
277 VAC
7200 VA
12 VDC
1.5 W
-
4000 V _{rms}
6.1 / 6.1 mm
+75°C (85°C at 22 A)
flux proof
PCB
30.4 x 16 x 26.5 mm
compliant
-
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-

**Power PCB Relay
RT2**

- 2 pole 8 A
- 2 CO or 2 NO contacts
- DC or AC-coil
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation



2 CO or 2 NO
8 A
250 VAC
2000 VA
5...110 VDC 24...230 VAC
400 mW 0.75 VA
-
5000 V _{rms}
10 / 10 mm
DC: +85°C AC: +70°C
flux proof, wash tight
PCB
29 x 12.7 x 15.7 mm
compliant
compliant versions
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**Power PCB Relay
RT2 reflow**

- 2 pole 8 A
- 2 CO or 2 NO contacts
- DC or AC-coil
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- For Through-Hole-Reflow soldering (THR)



2 CO or 2 NO
8 A
250 VAC
2000 VA
5...110 VDC 24...230 VAC
400 mW 0.75 VA
-
5000 V _{rms}
10 / 10 mm
DC: +85°C AC: +70°C
flux proof
PCB
29 x 12.7 x 15.7 mm
compliant
compliant
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**Power PCB Relay
RT2 bistable**

- Polarized bistable version with 1 or 2 coils
- 2 pole 8 A
- 2 CO contacts
- 5 kV / 10 mm coil-contact
- Reinforced insulation



2 CO
8 A
250 VAC
2000 VA
5...24 VDC
400 / 600 mW
-
5000 V _{rms}
10 / 10 mm
+85°C
flux proof
PCB
29 x 12.7 x 15.7 mm
compliant
-
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PCB Power Relays (Continued)

**Power PCB Relay
RX 2**

- 2 pole 8 A
- 2 CO contacts
- DC- or AC coil
- Reinforced insulation
- Transparent cover optional



**Power PCB Relay
U / UB**

- 1 pole 7 A
- 1 CO or 1 NO or 1 NC contact
- DC- and bistable version
- Versions with 230 mW or 180 mW operate power



**Low Profile PCB
Relay PCD**

- 1 pole 10 A
- 1 NO contact
- Low coil power 200 mW
- Height 10.2 mm
- Wash tight



Contacts

Configuration
Rated current
Rated voltage
Breaking capacity

2 CO
8 A
250 VAC
2000 VA

1 CO or 1 NO or 1 NC
7 A
250 VAC
1750 VA

1 NO
10 A
240 VAC
2500 VA

Coil

Nominal voltage
Nominal coil power
Other coil versions

5...110 VDC	24...230 VAC
520 mW	0.75 VA
-	-

6...48 VDC	
450 mW	330 mW
sensitive, bistable	

3...48 VDC
200 mW
-

Insulation

Dielectric strength coil-contact
Clearance / creepage coil-cont.

4000 V _{rms}
8 / 8 mm

2000 V _{rms}	4000 V _{rms}
2.5 mm	3.5 mm

2500 V _{rms}
4 mm

General data

Ambient temperature max.
Standard versions
Terminals
Dimensions l x w x h

+70°C
flux proof
PCB
29 x 12.7 x 15.7 mm

+70°C
wash tight
PCB
21.2 x 16.2 x 14.9 mm

+70°C
flux proof, wash tight
PCB
23 x 15.9 x 10.2 mm

RoHS (Directive 2002/95/EC)
Materials according IEC 60335-1

compliant
-

compliant
-

compliant
-

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Accessories

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-

PCB Power Relays (Continued)

**Miniature Power
PCB Relay PB**

- 1 pole 10 A
- 1 CO or 1 NO contact
- Environmentally-friendly cadmium-free contacts
- Ambient temperature up to 85°C
- Class F coil system standard



1 CO or 1 NO
10 A
250 VAC
2500 VA
5...48 VDC
360 mW, 500 mW
-
2500 V _{rms}
3 / 4 mm
+85°C
flux proof
PCB
15 x 15 x 20 mm
compliant
compliant
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-

**Miniature Power
PCB Relay PBH 105°C**

- For ambient temperatures up to 105°C
- 1 pole 6 A
- 1 CO or 1 NO contact
- Environmentally-friendly cadmium-free contacts
- Class F coil system standard



1 CO or 1 NO
6 A
250 VAC
1500 VA
5...36 VDC
360 mW
-
2500 V _{rms}
3 / 4 mm
+105°C
flux proof
PCB
15 x 15 x 20 mm
compliant
compliant
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-

**Miniature Power
Relay T7S**

- 1 pole 10 A
- 1 CO or 1 NO contact
- Coil version 360 mW
- Ambient temperature up to 85°C



1 CO or 1 NO
10 A
250 VAC
2500 VA
3...36 VDC
360 mW
-
1500 V _{rms}
2.5 / 2.5 mm mm
+85°C
wash tight, flux proof
PCB
19.2 x 15.5 x 15.3 mm
compliant
compliant versions
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**Miniature Power
Relay T7N / T7N-WG**

- 1 pole 10 A
- 1 CO or 1 NO contact
- Coil version 360 mW
- Ambient temperature up to 85°C



1 CO or 1 NO
10 A
250 VAC
2500 VA
3...48 VDC
360 mW
-
2500 V _{rms}
2 / 3 mm, 2.5 / 3.5 mm
+85°C
wash tight, flux proof
PCB
22.5 x 16.5 x 16.9 mm
compliant
compliant versions
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PCB & Power Relays (Continued)

**Miniature Power Relay
LN / LNH**

- 1 pole 10 / 16 A
- 1 CO or 1 NO contact
- High performance 10 A and high capacity 16 A version
- Ambient temperature up to 85°C, version for HOT applications, ambient temperature up to 105°C
- Plastic materials according to IEC 60335-1



Contacts

Configuration
Rated current
Rated voltage
Breaking capacity

1 CO or 1 NO
10 A 16 A
250 VAC
2500 VA 4000 VA

Coil

Nominal voltage
Nominal coil power
Other coil versions

5...48 VDC
400 mW
-

Insulation

Dielectric strength coil-contact
Clearance / creepage coil-cont.

2000 V _{rms}
2.5 / 2.5 mm

General data

Ambient temperature max.
Standard versions
Terminals
Dimensions l x w x h

+85°C / +105°C
flux proof
PCB
20.2 x 16.5 x 20.2 mm

RoHS (Directive 2002/95/EC)
Materials according IEC 60335-1

compliant
compliant

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Accessories

-

Power Relay T9A

- 1 pole 30 A
- 1 NO or 1 CO contact
- High breaking capacity
- PCB- and quick connect terminals and chassis mount version
- UL-class F as standard
- Ambient temperature 85°C



1 CO	1 NO
20(NO) / 10(NC) A	30 A
250 VAC	
5000 VA	7500 VA

5...48 VDC
1 W
-

2500 V _{rms}
3.1 / 6.3 mm

+85°C
dust protected, wash tight
PCB, quick connect
32.3 x 27.4 x 20.4 mm

compliant
-

page 127

-

Power Relay T9C

- 1 pole 20 A
- 1 NO or 1 CO contact
- High breaking capacity
- AC coil
- Flange mount



1 CO or 1 NO
20(NO) / 10(NC) A
250 VAC
5000 VA

12...240 VAC
1.2 / 1.6 VA
-

2500 V _{rms}
3.1 / 6.3 mm

+70°C
dust protected
quick connect
32.3 x 27.4 x 22.9 mm

compliant
-

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-

PCB & Power Relays (Continued)

Power Relay T92

- 2 pole 30 A
- 2 CO or 2 NO contacts
- DC- or AC-coil
- Switching capacity 7500 VA
- 4 kV / 8 mm coil-contact
- Insulation to VDE 0631 and VDE 0700
- PCB-, quick connect or screw terminals, print or chassis mount



2 CO or 2 NO	
30(NO) / 3(NC) A	
400 VAC	
7500 VA	
5...110 VDC	
24...240 VAC	
1.7 W	4.0 VA
-	
4000 V _{rms}	
8 / 9.5 mm	
DC: +85 °C	
AC: +65 °C	
dust-proof, wash tight	
PCB, quick connect, screw	
52.3 x 34.6 x 30.8 mm	
compliant	
-	
page 133	
-	

**Power Relay
430 3 mm**

- 1 pole 16 A
- 1 NO contact
- Safety mains insulation
- Contact gap > 3 mm
- DC- or AC coil
- 4 kV / 8 mm coil-contact
- PCB mounting or quick connect terminals



1 NO	
16 A	
250 VAC	
4000 VA	
6...110 VDC	
6...240 VAC	
1 W	1.8 VA
-	
4000 V _{rms}	
8 / 8 mm	
+70°C	
dust protected	
PCB, quick connect	
35.5 x 16.4 x 28.5 mm	
compliant	
compliant versions	
page 136	
-	

**Power Relay
430**

- 1 pole 16 A or 2 pole 10 A
- 1 or 2 NO, CO or NC contacts
- 4 kV / 8 mm coil-contact
- DC- or AC coil
- PCB mounting or quick connect terminals
- Mounting brackets or snap mounting



1 NO,CO,NC	2 NO,CO,NC
16 A	10 A
250 VAC	
4000 VA	2500 VA
6...110 VDC	
6...240 VAC	
1 W	1.8 VA
-	
4000 V _{rms}	
8 / 8 mm	
+70°C	
dust protected	
PCB, quick connect	
35.5 x 16.4 x 30.5 mm	
compliant	
compliant versions	
page 139	
-	

**Rast 5 Power relay
419 11 (EA/..)**

- 2 pole 16 A
- 2 NO contacts
- Safety mains insulation
- Quick connect terminals 6.3 x 0.8 mm
- Contact gap > 3 mm
- 4 kV / 8 mm coil-contact
- Snap-on or screw mounting



2 NO	
16 A	
250 VAC	
4000 VA	
6...60 VDC	
24...400 VAC	
0.72 W	2.2 VA
-	
4000 V _{rms}	
8 / 8 mm	
+85°C	
dust protected	
quick connect, Rast 5	
47.6 x 25 x 47.3 mm	
compliant	
compliant versions	
page 142	
-	

Safety Relays

Safety Relay SR2M

- Relay with forcibly guided contacts according to EN 50205
- 2 pole 6 A
- 1 NO + 1 NC or 2 CO contacts
- 6 kV surge resistance between poles



Safety Relay SR4 D/M

- Relay with forcibly guided contacts according to EN 50205
- 4 pole 8 A
- 2 NO + 2 NC or 3 NO + 1 NC contacts
- Small size



Safety Relay SR6 D/M

- Relay with forcibly guided contacts according to EN 50205
- 4 pole 8 A
- 2 NO + 2 NC or 3 NO + 1 NC contacts
- High insulation distances for safe separation of electrical circuits



Contacts

Configuration	1 NO + 1 NC or 2 CO
Rated current	6 A
Rated voltage	250 VAC
Breaking capacity	1500 VA

Coil

Nominal voltage	5...110 VDC
Nominal coil power	700 mW
Other coil versions	-

Insulation

Clearance / creepage coil-contact	8 / 8 mm
Clearance / creepage adjac. cont.	5.5 / 5.5 mm

General data

Ambient temperature max.	+70°C
Standard versions	wash tight
Terminals	PCB
Dimensions l x w x h	29 x 12.6 x 25.5 mm

RoHS (Directive 2002/95/EC)	compliant
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Databook	page 145
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Accessories	-
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Configuration	2NO+2NC or 3NO+1NC
Rated current	8 A
Rated voltage	250 VAC
Breaking capacity	2000 VA

Nominal voltage	5...110 VDC
Nominal coil power	800 mW
Other coil versions	-

Clearance / creepage coil-contact	10 / 10 mm
Clearance / creepage adjac. cont.	3 / 3.5 mm

Ambient temperature max.	+70°C
Standard versions	wash tight
Terminals	PCB
Dimensions l x w x h	40 x 13 x 16 mm

RoHS (Directive 2002/95/EC)	compliant
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Accessories	-
-------------	---

Configuration	2NO+2NC or 3NO+1NC
Rated current	8 A
Rated voltage	250 VAC
Breaking capacity	2000 VA

Nominal voltage	5...110 VDC
Nominal coil power	1200 mW
Other coil versions	-

Clearance / creepage coil-contact	5.5 / 5.5 mm
Clearance / creepage adjac. cont.	5.5 / 5.5 mm or 15 / 15 mm

Ambient temperature max.	+70°C
Standard versions	wash tight
Terminals	PCB
Dimensions l x w x h	55 x 16.5 x 16 mm

RoHS (Directive 2002/95/EC)	compliant
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Databook	page 151
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Accessories	-
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Safety Relays

Safety Relay SR6

- Relay with forcibly guided contacts according to EN 50205
- 6 pole 8 A
- 4 NO + 2 NC, 3 NO + 3 NC, 5 NO + 1 NC contacts
- Small size



Safety Relay SR2Z

- SR2M on printed circuit board
- 2 pole 6 A
- 2 CO contacts
- Screwless clamp connectors
- Module width 20 mm



Safety Relay SR6Z

- SR6 on printed circuit board
- 6 pole 8 A
- 4 NO + 2 NC, 3 NO + 3 NC or 5 NO + 1 NC contacts
- AC / DC input
- Screwless clamp connectors
- Module width 46 mm



4NO+2NC, 3NO+3NC, 5NO+1NC
8 A
250 VAC
2000 VA

5...110 VDC
800 / 1200 mW
-

5.5 / 5.5 mm
5.5 / 5.5 mm

+70°C
wash tight
PCB
55 x 16.5 x 16 mm

compliant

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-

2 CO
6 A
250 VAC
1500 VA

24 VDC
700 mW
-

8 / 8 mm
3 / 3 mm

+50°C
-
screwless clamp connectors
87 x 20 mm

compliant

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-

4NO+2NC, 3NO+3NC, 5NO+1NC
8 A
250 VAC
2000 VA

12...115 VDC / VAC, 230 VAC
1200 mW
-

5.5 / 5.5 mm
3 / 3 mm

+50°C
-
screwless clamp connectors
87 x 46 mm

compliant

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-

Industrial Relays

Slimline Interface Relay SNR

- 1 pole 6 A
- 1 CO contact
- Sensitive coil 170 mW
- 4 kV coil-contact
- 6 / 8 mm clearance / creepage
- Reinforced insulation, protection class II
- Safe separation to VDE0106
- Module width 6.2 mm



Interface Power Relay RT

- 1 pole 12 / 16 A, 2 pole 8 A
- 1 CO contact or 2 CO contacts
- DC- or AC coil
- Sensitive coil 400 mW
- Reinforced insulation, protection class II
- Safe separation to VDE0106
- 5 kV / 10 mm coil-contact



Interface Plug-in Relay XT

- 1 pole 16 A, 2 pole 8 A
- 1 CO or 2 CO contacts
- Sensitive DC- or AC coil
- Reinforced insulation, protection class II
- 4 kV / 8 mm coil-contact
- Manual test tab, optionally lockable
- Version with mechanical and electrical indicator



Contacts

Configuration
Rated current
Rated voltage
Breaking capacity

1 CO
6 A
240 VAC
1500 VA

1 CO	2 CO
12 / 16 A	8 A
240 VAC	
3000 / 4000 VA	2000 VA

1 CO	2 CO
16 A	8 A
240 VAC	
4000 VA	2000 VA

Coil

Nominal voltage
Nominal coil power
Other coil versions

5...60 VDC
170 mW
-

5...110 VDC	24...230VAC
400 mW	0.75 VA
see Power Relay RT	

6...110 VDC	24...230VAC
400 mW	0.75 VA
Interface Plug-in XT	

Insulation

Dielectric strength coil-contact
Clearance / creepage coil-cont.

4000 V _{rms}
6 / 8 mm

5000 V _{rms}
10 / 10 mm

5000 V _{rms}
8 / 8 mm

General data

Ambient temperature max.
Standard versions
Terminals
Dimensions l x w x h

+85°C
wash tight
plug-in
28 x 5 x 15 mm

+70°C
flux proof
plug-in
29 x 12.7 x 15.7 mm

+70°C
flux proof
plug-in
29 x 13.7 x 25.6 mm

RoHS (Directive 2002/95/EC)

compliant

compliant

compliant

Databook

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Accessories

page 195

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Industrial Relays (Continued)

Miniature Relay PT

- 2 / 3 / 4 pole 12 / 10 / 6 A
- 2, 3 or 4 CO contacts
- DC- or AC-coil
- Sensitive coil
- Low height 29 mm
- Mechanical indicator
- Manual test tab, optionally lockable, LED and protection diode



2 CO	3 CO	4 CO
12 A	10 A	6 A
240 VAC		
3000 VA	2500 VA	1500 VA

6...220 VDC	6...230 VAC
0.75 W	1.0 VA
-	

2500 V _{rms}		
4 / 4mm	4 / 4mm	4 / 4mm

+70°C
flux proof
plug-in, PCB
28 x 22.5 x 29 mm

compliant

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**Miniature Power relay
PTF**

- 2 pole 10 / 15 A
- 2 CO contacts
- DC- or AC-coil
- Plug-in version, PCB or chassis mount version



2 CO
10 / 15 A
240 / 120 VAC
2500 VA

6...220 VDC	6...230 VAC
0.75 W	1.0 VA
-	

2500 V _{rms}	
3.1 / 3.1 mm	

+70°C
flux proof
plug-in, PCB, quick connect
28 x 22.5 x 29 mm

compliant

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-

**Multimode Relay
MT**

- 2 / 3 pole 10 A
- 2 CO or 3 CO contacts
- DC- or AC-coil
- Cadmium-free contacts
- Mechanical indicator as standard and electrical indicator
- Front operated test system



2 CO or 3 CO
10 A
240 VAC
2500 VA

6...220VDC	6...230 VAC
1.2 W	2.3 VA
-	

2500 V _{rms}	
2.8 / 4 mm	

DC: +60°C	AC: +50°C
dust-proof	
plug-in	
35.5 x 35.5 x 57 mm	

compliant

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Industrial Relays (Continued)

**Power Relay
RM 2/3/7**

- 2 / 3 pole 10 / 16 A
- 2 CO or 3 CO contacts
- DC- or AC-coil
- Switching capacity up to 6000 VA
- Mechanical indicator
- Push-to-test button
- Plug-in version, PCB terminals, chassis- or DIN-rail mount



2 CO 16 A	3 CO 10 A	3 CO 16 A
400 VAC	3800 VA	6000 VA
6000 VA	3800 VA	6000 VA

6...220 VDC	6...400 VAC
1.2...1.6 W	2.3...2.8 VA

2500 V _{rms}
4 / 4.9 mm

DC: +60 / 70°C	AC: +50 / 55°C
dust-proof	
plug-in, PCB, quick connect	
38.5 x 35.5 x 48.5 mm	

compliant

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**Power Relay
RM 5/6 3 mm**

- 2 / 3 pole 10 / 16 A
- 2 NO or 3 NO contacts
- DC- or AC-coil
- 3 mm contact gap
- Push-to-test button
- Plug-in version, PCB terminals, chassis- or DIN-rail mount



2 NO 16 A	3 NO 10 A
400 VAC	230 VAC
6000 VA	3800 VA

6...220 VDC	6...400 VAC
1.6 W	2.8 VA

2500 V _{rms}
4 / 14.9 mm

DC: +60°C	AC: +50°C
dust-proof	
plug-in, PCB, quick connect	
38.5 x 35.5 x 48.5 mm	

compliant

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**Power Relay
RM 8**

- 2 pole 25 A
- 2 CO contacts
- DC- or AC-coil
- Mechanical indicator
- Push-to-test button
- Chassis- or DIN-rail mount



2 CO 25 A
400 VAC
6000 VA

6...220 VDC	6...400 VAC
1.2 W	2.8 VA

2500 V _{rms}
4 / 14.9 mm

DC: +65°C	AC: +40°C
dust-proof	
quick connect	
38.5 x 35.5 x 48.5 mm	

compliant

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-

**Power Relay
RMC/RMD**

- 1 pole 30 A
- 1 NO or 1 NO + 1 NC contact
- DC- or AC-coil
- Switching capacity up to 7200 VA
- Push-to-test button
- Chassis mount



1 NO + 1 NC 30 A	1 NO
400 VAC	
7500 VA	

6...220 VDC	6...400 VAC
1.2 W	2.8 VA

2500 V _{rms}
4 / 14.9 mm

DC: +60°C	AC: +40°C
dust-proof	
quick connect	
38.5 x 35.5 x 48.5 mm	

compliant

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-

Accessories and Relay Packages

Accessories

Slim Interface Relay SNR page 195



Accessories

Miniature PCB Relay RY page 197



Accessories

Industrial Power Relay RT page 198
Industrial Power Relay XT page 204



Accessories

Miniature Relay PT page 208



Accessories

Multimode Relay MT page 215



Accessories

Power Relay RM page 219



Relay Package SNR page 222



Relay Package RT page 224
Relay Package XT page 227



Relay Package PT page 230



Relay Range

The ordering code structure does allow a large number of possible variations, but not all possible variations are defined as standard types (ordering codes) and thus not included in the product range.

Special versions to customer specifications can be supplied. Please contact your local sales organisation.

Technical data in this catalog are guidelines for appropriate use under standard conditions. For additional information please contact our technical support.

Data subject to change without prior notice.

Relay Range

Terminals	Coil	Relay type	Page	Contacts	Switching current [A]
PCB	DC			CO contacts	
Plug-in	AC			NO contacts	
Solder/Quick conn.	Bistable				
					0 5 10 15 20 25 30 [A]
		PCN	38	1	
		PE	24,26	1	
		PCH	33	1	
		SNR	40	1	
		U/UB	107	1	
1)		RYII	45	1	
		MSR	49	1	
		RT sensitive	65	1	
		PB/PBH	112,115	1	
		T7S, T7N	118,121	1	
		LN/LNH	124	1	
		RZ	52	1	
1)		RT1	55,59,62	1	
		RT bifurcated	67	1	
		RX1	79	1	
		XT	167	1	
		RZ	52	1	
1)		RT1	55,59,62	1	
		RT Inrush	70	1	
		RTH 105°C	77	1	
		RX1	79	1	
		LN	124	1	
		430	139	1	
		T9A, T9C	127,130	1	
		REL	29	1	
		PCJ	43	1	
		RE	31	1	
		OJ/OJE	36	1	
		PCD	110	1	
		RT InrushPower	73	1	
		RP3SL	83	1	
		RF	86	1	
		41063	89	1	
		41083	91	1	
		430 3mm	136	1	
		PCFN Solar	93	1	
		RM C	191	1	
		T9A	127	1	
		RM D	191	1	
		RX2	104	2	
		XT	167	2	
1)		RT2	95,98,101	2	
		PTF	174	2	
		MT	177	2	
		RM 3	180	2	
		430	139	2	
		PT	170	2	
		RM 2	180	2	
		RM 7	180	2	
		RM 8	188	2	
		T92	133	2	
		419 EA	142	2	
		RM 5	184	2	
		PT	170	3	
		MT	177	3	
		RM 6	184	3	
		PT	170	4	
		SR2M	145	2)	
		SR4 D/M	148	2)	
		SR6 D/M	151	2)	
		SR6	154	2)	
		SR2Z	158	2)	
3)		SR6Z	160	2)	

1) through hole reflow capable versions, 2) special configuration, 3) screwless clamp connectors

Miniature PCB Relay PE

- 1 pole 5 A, 1 CO or 1 NO contact
- Cadmium-free contacts
- Sensitive coil 200 mW
- Ambient temperature 85°C
- Low height 10.0 mm
- Plastic materials according to IEC60335-1 (domestic appliances)

Applications

Industrial electronics, white goods, measurement and control



F0169-C

Approvals

VDE REG.-Nr. 6656, **CE** us E214025 (for version with 1 NO in process)
Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1 NO contact
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	5 A
Maximum breaking capacity AC	1250 VA
Contact material	AgNi90/10 / AgSnO ₂
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / release time	typ. 8 / 8 ms
Bounce time NO / NC contact	typ. 4 / 6 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
PE013	CO	5 A, 250 VAC, cosφ=1	85°C	30x10 ³
PE014	CO	5 A, 250 VAC, cosφ=1	85°C	100x10 ³
PE014	NO	5 A, 30 VDC, 0 ms	85°C	100x10 ³
PE034	NO	6 A, 250 VAC, cosφ=1	70°C	50x10 ³
UL 508				
PE013	CO	5 A, 240 VAC, resistive	85°C	30x10 ³
PE014	NO	5 A, 240 VAC, resistive	85°C	100x10 ³
PE014	NO	5 A, 30 VDC, resistive	85°C	100x10 ³
PE034	NO	6 A, 250 VAC, resistive	70°C	100x10 ³

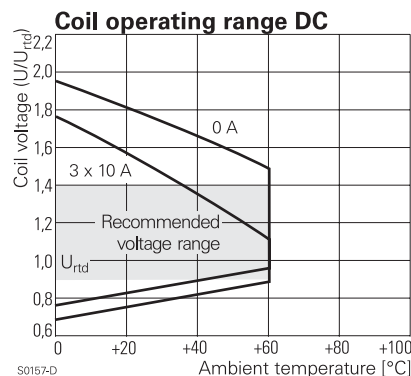
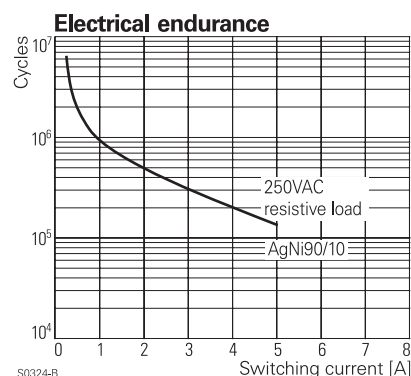
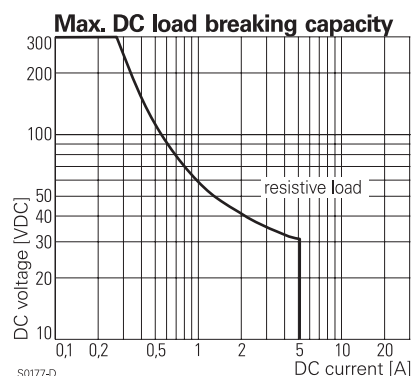
Coil data

Rated coil voltage range DC coil	5...48 VDC
Operative range to IEC 61810	2

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
003	3	2.25	0.3	45±10%	200
005	5	3.8	0.5	125±10%	200
006	6	4.5	0.6	172±10%	209
009	9	6.75	0.9	405±10%	200
012	12	9.0	1.2	685±10%	210
024	24	18.0	2.4	2725±10%	211
048	48	36.0	4.8	10970±10%	210

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Miniature PCB Relay PE (Continued)

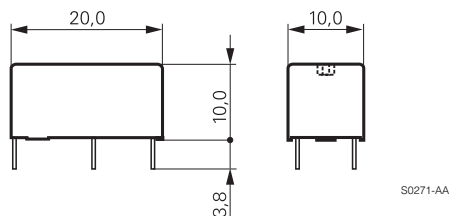
Insulation

Insulation resistance coil-contact circuit	> 10 ⁴ MOhms
open contact circuit	> 10 ⁴ MOhms
Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 3,2 / 4 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

Other data

Mechanical endurance	15x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0352
Resistance to heat and fire	according EN60335, par.30
Environment	
Ambient temperature range	-40...85°C
Vibration resistance (function) NO / NC contact	> 15/5 g
Shock resistance (destruction)	> 100 g
Category of protection	RTII - flux proof
	(RTIII - wash tight on request)
Processing	
Resistance to soldering heat flux-proof version	270°C / 10 s
Relay weight	5 g
Packaging unit	25/500 pcs

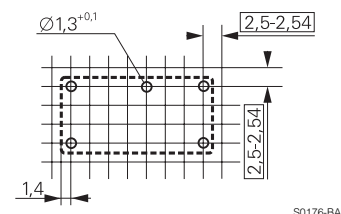
Dimensions



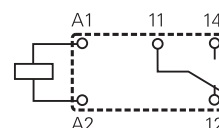
PCB layout / terminal assignment

Bottom view on solder pins

CO version

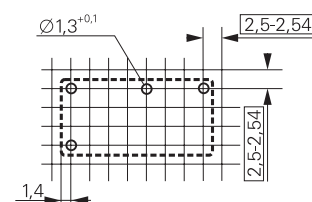


S0176-BA

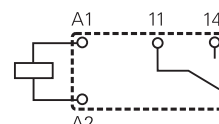


S0176-BB

NO version



S0176-BC



S0176-BD

Product key

Typical product key

PE 0 1 4 012

Type

PE Miniature PCB Relay PE

Version

0 flux proof

Contact configuration

1 1 CO contact (1 form C)

3 1 NO contact (1 form A)

Contact material

4 AgNi 90/10

3 AgSnO₂

Coil

Coil code: please refer to coil versions table

Product key	Version	Contacts	Contact material	Coil	Part number
PE014005	flux proof	1 CO contact	AgNi 90/10	5 VDC	1393219-3
PE014006				6 VDC	1393219-4
PE014012				12 VDC	1393219-6
PE014024				24 VDC	1-1393219-0
PE014048				48 VDC	1-1393219-3
PE034005		1 NO contact		5 VDC	4-1415535-6
PE034006				6 VDC	4-1415535-7
PE034012				12 VDC	4-1415535-9
PE034024				24 VDC	5-1415535-1
PE034048				48 VDC	5-1415535-2

Miniature PCB Relay PE bistable

- 1pole 5 A, polarized bistable version
- 1 CO or 1 NO contact
- Sensitive version with 200 mW coil
- Ambient temperature 70°C
- Low height 10.0 mm
- Plastic materials according to IEC60335-1 (domestic appliances)

Applications

Room thermostats, electricity meters, domotic devices,
white goods, battery powered controls



F0221-B

Approvals

VDE REG.-Nr. 6656*, c **RU** us E214025

Technical data of approved types on request

*VDE only for AgNi90/10 available

Contact data

Contact configuration	1 CO or 1 NO contact
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	5 A
Maximum breaking capacity AC	1250 VA
Contact material	AgNi90/10 / AgSnO ₂
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / reset time	typ 8 / 8 ms
Bounce time NO / NC contact	typ 4 / 7 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
PE014	CO	5 A, 250 VAC, cosφ=1,	85°C	100x10 ³
PE014	NO	5 A, 30 VDC, 0 ms,	85°C	100x10 ³
UL 508				
PE013	CO	5 A, 240 VAC, resistive,	85°C	30x10 ³
PE033	NO	5 A, 240 VAC, resistive,	85°C	50x10 ³
PE014	CO/NO/NC	5 A, 240 VAC, resistive,	85°C	100x10 ³

Coil data

Rated coil voltage range	2,2...48 VDC
Operative range to IEC 61810	2
Reset voltage maximum, % of rated coil voltage	120% at -40°C
Minimum energization duration	20 ms
Information on reduced pulse duration with higher energization voltages on demand	
Maximum energization duration	1 min at <10% duty factor

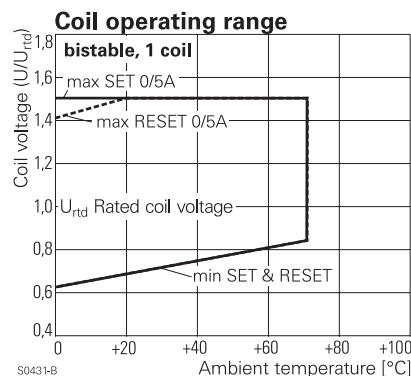
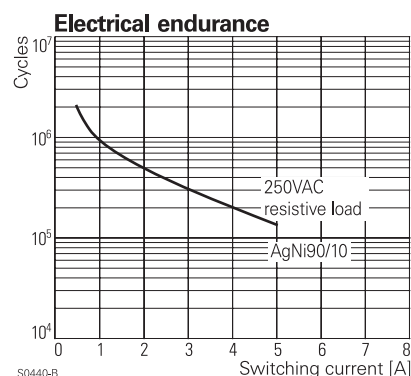
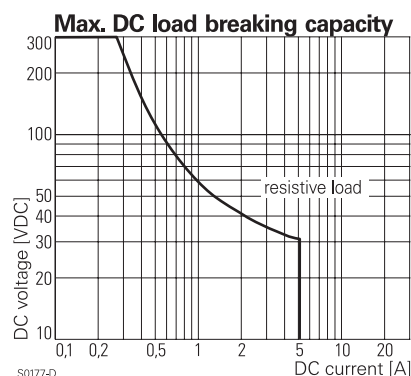
Coil versions, bistable, 1 coil

Coil code*)		Rated voltage VDC	Operate voltage VDC	Reset voltage VDC	Coil resistance Ohm	Rated coil power mW
F02	H02	2.2	1.65	1.65	22±10%	220
F03	H03	3	2.25	2.25	41±10%	220
F05	H05	5	3.75	3.75	125±10%	200
F06	H06	6	4.5	4.5	180±10%	200
F12	H12	12	9.0	9.0	650±10%	222
F24	H24	24	18.0	18.0	2750±10%	209

All figures are given for coil without preenergization, at ambient temperature +23°C

*) Coil codes F. and H..have opposite polarity; refer to coil operation table

Other coil voltages on request



Miniature PCB Relay PE bistable (Continued)

Coils - operation

Version	F..		H..	
Coil terminals	A1	A2	A1	A2
Operate	+	-	-	+
Reset	-	+	+	-
Contact position not defined at delivery				

Insulation

Insulation resistance coil-contact circuit		> 10 ⁴ MOhms
open contact circuit		> 10 ⁴ MOhms
Dielectric strength coil-contact circuit		4000 V _{rms}
open contact circuit		1000 V _{rms}
Clearance / creepage coil-contact circuit		≥ 3,2 / 4 mm
Material group of insulation parts		IIIa
Tracking index of relay base		PTI 250
Insulation to IEC 61810-1		
Type of insulation coil-contact circuit		basic
open contact circuit		micro disconnection
Rated insulation voltage		250 V
Pollution degree		3 2
Rated voltage system		240 V 230 / 400 V
Overvoltage category		III

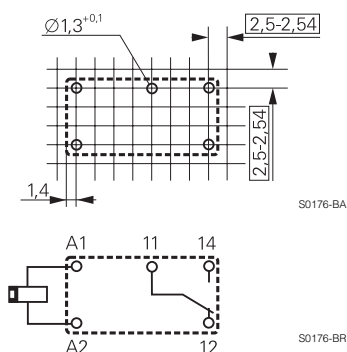
Other data

Mechanical endurance		5x10 ⁶ cycles
Material		
RoHS - Directive 2002/95/EC	compliant as per product date code 0352	
Resistance to heat and fire	according EN60335, par.30	
Environment		
Ambient temperature range	-40...85°C, 70°C at 100% duty factor	
Shock resistance (destruction)	> 100 g	
Category of protection	RTII - flux proof	
	(RTIII - wash tight on request)	
Processing		
Resistance to soldering heat flux-proof version	270°C / 10 s	
Relay weight	5 g	
Packaging unit	25/500 pcs	

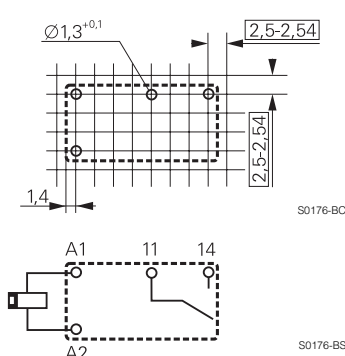
PCB layout / terminal assignment

Bottom view on solder pins

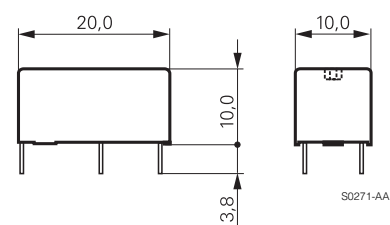
CO version



NO version



Dimensions



Miniature PCB Relay PE bistable (Continued)

Product key	Typical product key	PE	0	1	4	F12
Type	PE Miniature PCB Relay PE bistable					
Version	0 flux proof					
Contact configuration	1 1 CO contact (1 form C) 3 1 NO contact (1 form A)					
Contact material	4 AgNi 90/10 3 AgSnO ₂					
Coil	Coil code: please refer to coil versions table					

Product key	Version	Contacts	Contact material	Coil	Coil	Part number
PE014F02	flux proof	1 CO contact	AgNi 90/10	bistable	2.2 VDC	9-1415389-1
PE014F03				1-coil	3 VDC	1415390-1
PE014F05				polarity F	5 VDC	1-1415390-1
PE014F06				200 mW	6 VDC	2-1415390-1
PE014F12					12 VDC	3-1415390-1
PE014F24					24 VDC	5-1415390-1
PE014H02				bistable	2.2 VDC	7-1415390-1
PE014H03				1-coil	3 VDC	8-1415390-1
PE014H05				polarity H	5 VDC	9-1415390-1
PE014H06				200 mW	6 VDC	1415391-1
PE014H12					12 VDC	1-1415391-1
PE014H24					24 VDC	2-1415391-1

Minature PCB Relay REL

- 1 pole 5 A, 1 NO contact
- Low height 12.0 mm
- Especially suited for applications white goods, consumer electronics, etc.
- Plastic materials according to IEC60335-1 (domestic appliances)

Applications

PLC's, timers, temperature control, I/O cards, white goods



F0275-B

Approvals

VDE REG.-Nr. 6127, **CUL** us E214025
Technical data of approved types on request

Contact data

Contact configuration	1 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	5 A
Limiting making capacity, max 4 s, duty factor 10%	15 A
Contact material	AgNi90/10, AgCdO
Rated frequency of operation with / without load	6/1200 min ⁻¹
Operate- / release time	max. 10 / 5 ms
Bounce time NO / NC contact	max. 4 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
REL30	NO	5 A, 250 VAC, cosφ=1,	85°C	100x10 ³
REL30	NO	3 A, 400 VAC, cosφ=1,	85°C	400x10 ³
REL34	NO	5 A, 250 VAC, cosφ=1,	85°C	100x10 ³
REL34	NO	3 A, 400 VAC, cosφ=1,	85°C	400x10 ³
UL 508				
REL30	NO	5 A, 250 VAC, general purpose,	85°C	100x10 ³
REL30	NO	1/4 hp, 240 VAC, Motor	85°C	30x10 ³
REL30	NO	B300 pilot duty	40°C	6x10 ³
REL34	NO	5 A, 250 VAC, resistive,	85°C	100x10 ³

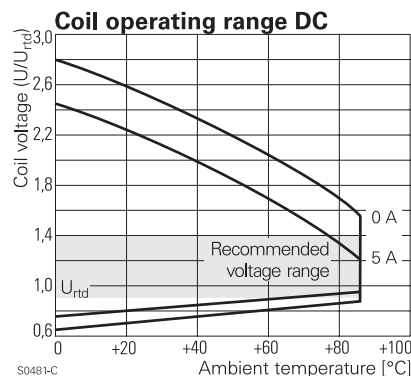
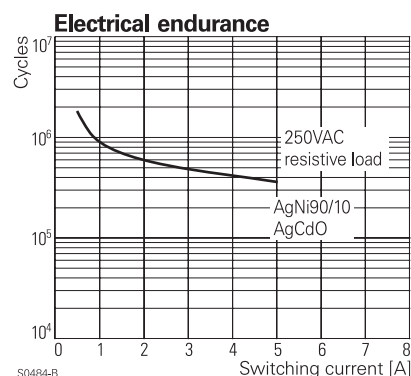
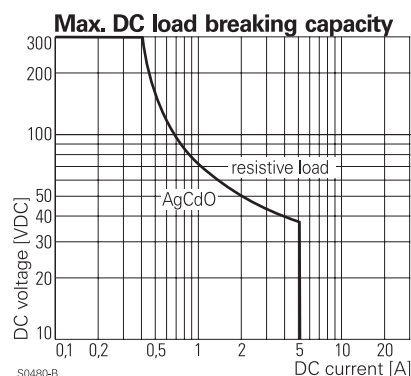
Coil data

Rated coil voltage range DC coil	5 ... 48 VDC
Operative range to IEC 61810	2
Coil insulation system according UL1446	F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.75	0.5	70±10%	357
006	6	4.5	0.6	100±10%	360
012	12	9	1.2	400±10%	360
024	24	18	2.4	1600±10%	360
036	36	27	3.6	3600±15%	360
048	48	36	4.8	6400±15%	360

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



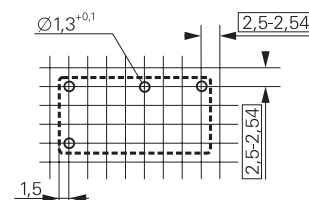
Minature PCB Relay REL (Continued)

Insulation

Insulation resistance coil-contact circuit	> 10 ⁴ MOhms
open contact circuit	> 10 ⁴ MOhms
Dielectric strength coil-contact circuit	3000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4 / 4 mm
Material group of insulation parts	IIIa
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

PCB layout / terminal assignment

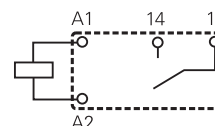
Bottom view on solder pins



S0176-BL

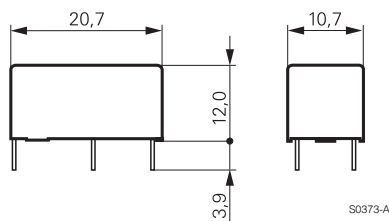
Other data

Mechanical endurance	> 10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0352
Resistance to heat and fire	according EN60335, par.30
Environment	
Ambient temperature range	-40...+85°C
Shock resistance (destruction)	100 g
Category of protection	RT II - flux proof
Processing	
Resistance to soldering heat flux-proof version	270°C / 10 s
Relay weight	5 g
Packaging unit	25 pcs



S0176-BJ

Dimensions



S0373-A

Product key

Typical product key

REL 3 4 024

Type

REL Miniature PCB Relay REL

Contact configuration

3 1 NO contact (1 form A)

Contact material

4 AgNi90/10

0 AgCdO

Coil

Coil code: please refer to coil versions table

Product key	Version	Contacts	Contact material	Coil	Part number
REL34006	flux proof	1 NO contact	AgNi90/10	6 VDC	3-1415535-5
REL34012				12 VDC	3-1415535-6
REL34024				24 VDC	3-1415535-7
REL34048				48 VDC	3-1415535-8
REL30006			AgCdO	6 VDC	1393218-2
REL30012				12 VDC	4-1393217-6
REL30024				24 VDC	4-1393217-7
REL30048				48 VDC	1393218-3

Miniature PCB Relay RE

- 1 pole 6 A, 1NO contact
- Sensitive coil 200 mW
- 4 kV coil-contact
- Optimized height 10.6 mm
- PCB area 200 mm²
- Wash tight
- Plastic materials according to IEC60335-1 (domestic appliances)

Applications

PLC's, timers, temperature control, I/O cards, white goods



F0141-B

Approvals

VDE REG.-Nr. 5063, cULus E214025
Technical data of approved types on request

Contact data

Contact configuration	1 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	6 A
Maximum breaking capacity AC	1500 VA
Limiting making capacity, max 4 s, duty factor 10%	15 A
Contact material	AgCdO AgNi0.15 and AgNi90/10
Rated frequency of operation with / without load	6/1200 min ⁻¹
Operate- / release time	max. 10 / 5 ms
Bounce time NO / NC contact	max. 4 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RE030	NO	6 A, 250 VAC, cosφ=1,	70°C	100x10 ³
RE034	NO	6 A, 250 VAC, cosφ=1,	70°C	100x10 ³
UL 508				
RE030	NO	1/4 hp, 240 VAC, motor	40°C	30x10 ³
RE030	NO	B300 pilot duty	40°C	6x10 ³
RE034	NO	6 A, 250 VAC, general purpose,	70°C	100x10 ³
RE034	NO	B300 pilot duty	40°C	6x10 ³

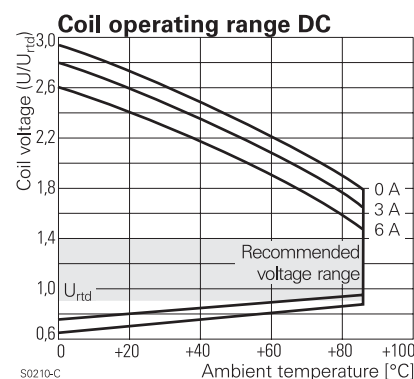
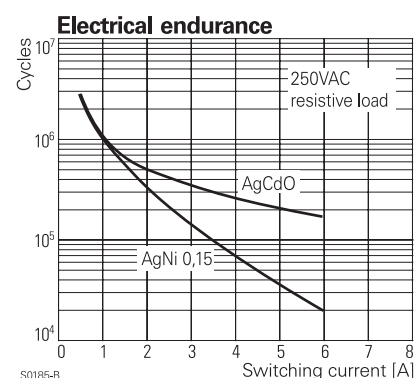
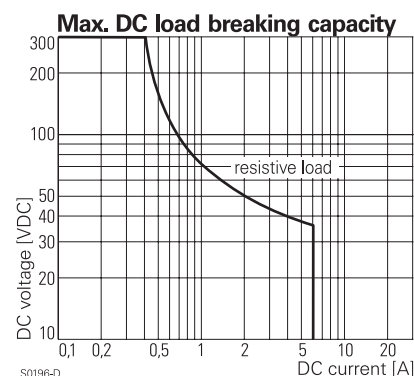
Coil data

Rated coil voltage range DC coil	5 ... 48 VDC
Operative range to IEC 61810	2
Coil insulation system according UL1446	F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	125±10%	200
006	6	4.2	0.6	180±10%	200
012	12	8.4	1.2	720±10%	200
024	24	16.8	2.4	2880±15%	200
048	48	33.6	4.8	11520±15%	200

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Miniature PCB Relay RE (Continued)

Insulation

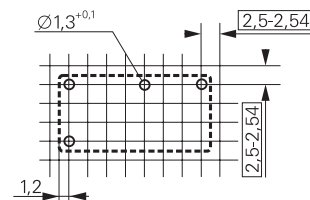
Insulation resistance coil-contact circuit	> 10 ⁴ MOhms
open contact circuit	> 10 ⁴ MOhms
Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4/4 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

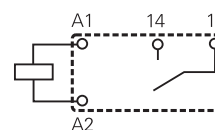
Mechanical endurance	>30x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0352
Resistance to heat and fire	according EN60335, par.30
Environment	
Ambient temperature range	-40 ... +70°C
	-40 ... +85°C at 4 A
Category of protection	RTIII - wash-tight
Processing	
Resistance to soldering heat wash-tight version	260°C / 5 s
Relay weight	5 g
Packaging unit	25 pcs

PCB layout / terminal assignment

Bottom view on solder pins

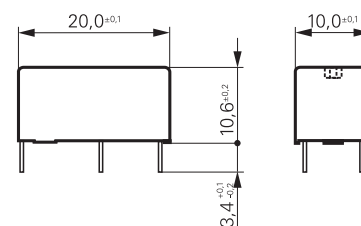


S0176-BH



S0176-BJ

Dimensions



S0271-AH

Product key

Typical product key

RE 0 3 2 012

Type

RE Miniature PCB Relay RE

Version

0 wash tight

Contact configuration

3 1 NO contact (1 form A)

Contact material

1 AgNi 0.15
4 AgNi 90/10
2 AgNi 0.15 gold plated
0 AgCdO

Coil

Coil code: please refer to coil versions table

Product key	Version	Contacts	Contact material	Coil	Part number
RE030005	wash tight	1 NO contact	AgCdO	5 VDC	1393217-1
RE030006				6 VDC	1393217-2
RE030012				12 VDC	1393217-4
RE030024				24 VDC	1393217-8
RE030048				48 VDC	1-1393217-1
RE032005			AgNi 0,15 gold plated	5 VDC	1-1393217-9
RE032006				6 VDC	2-1393217-0
RE032012				12 VDC	2-1393217-2
RE032024				24 VDC	2-1393217-4
RE032048				48 VDC	2-1393217-5
RE034005			AgNi 90/10	5 VDC	2-1416010-3
RE034006				6 VDC	2-1416010-4
RE034012				12 VDC	2-1416010-6
RE034024				24 VDC	2-1416010-7
RE034048				48 VDC	2-1416010-8

Miniature Power PCB Relay PCH

- 1pole 5 A, 1CO or 1NO contact
- Sensitive 200 mW coil available
- Version PCH-WG with tracking resistance PTI 250 on relay base and cover
- WG version: Product in accordance to IEC60335-1

Applications

Domestic appliances, heating control, building control, measurement & control



F_PCH_B

Approvals

PCH / PCH-WG:  119568  E82292
Technical data of approved types on request

Contact data	PCH	PCH-WG
Contact configuration	1 CO or 1 NO	
Contact set	single contact	
Type of interruption	micro-disconn.	
Rated voltage / max. switching voltage AC	250 / 400 VAC	
Rated current	5 A	
Limiting continuous current	5 A, UL: 10 A	
Maximum breaking capacity AC	1250 VA	
Contact material	AgSnO	
Rated frequency of operation with / without load	6/600 min ⁻¹	
Operate- / release time	max. 10/5 ms	
Bounce time NO contact	max. 10 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
PCH-...2M-WG NO		5 A, 250 VAC, cosφ=1	85°C	100x10 ³
PCH-...D2-WG NO of CO		5 A, 250 VAC, cosφ=1	85°C	100x10 ³
PCH-...D2M NO		5 A, 250 VAC, cosφ=1	70°C	100x10 ³
PCH-...L2M NO		5 A, 250 VAC, cosφ=1	70°C	30x10 ³
PCH-...D2 CO		5 A/3 A, 250 VAC, cosφ=1	40°C	30x10 ³
UL 508				
PCH	NO	5 A, 250 VAC, general use	85°C	100x10 ³

Coil data	standard	sensitiv
Rated coil voltage range DC coil	5...48 VDC	5...24 VDC
Operative range to IEC 61810	1	
Coil insulation system according UL1446	class F	

Coil versions, DC-coil - standard

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
05	5	3.75	0.5	62.5±10%	400
06	6	4.5	0.6	80±10%	400
09	9	6.3	0.9	202.5±10%	400
12	12	8.4	1.2	360±10%	400
24	24	16.8	2.4	1440±10%	400
48	48	33.6	4.8	5760±10%	400

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Miniature Power PCB Relay PCH (Continued)

Coil versions, DC-coil - sensitive

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
05	5	3.75	0.5	125 ± 10%	200
06	6	4.5	0.6	180 ± 10%	200
09	9	6.75	0.9	400 ± 10%	200
12	12	9.0	1.2	720 ± 10%	200
24	24	18.0	2.4	2800 ± 10%	200

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Insulation

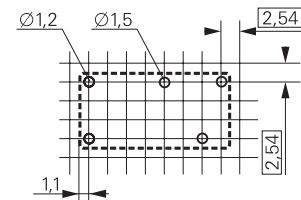
Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	
NO:	5.5 / 9 mm
CO:	4.5 / 9 mm
Material group of insulation parts	IIla
Tracking index of relay base, standard version	PTI 175
WG-version	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

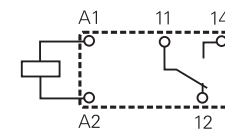
Mechanical endurance, standard version	1.5x10 ⁶ cycles
WG version	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0424
Resistance to heat and fire, WG-version	according EN60335, par.30
Environment	
Ambient temperature range	
all WG-versions:	-40...85°C
Standard NO:	-30...70°C
Standard CO:	-30...40°C
Vibration resistance (function) NO / NC contact	>14 / 8 g, 30...400 Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof RTIII - wash tight
Processing	
Mounting	PCB
Resistance to soldering heat flux-proof version	270°C / 10 s
wash-tight version	260°C / 5 s
Relay weight	7 g
Packaging unit	25/1000 pcs

PCB layout / terminal assignment

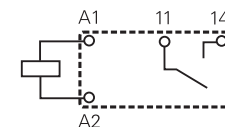
Bottom view on solder pins



S0550-AA

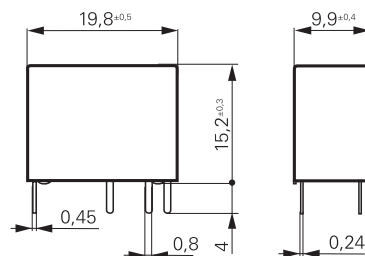


S0550-AB



S0550-AC

Dimensions



S0551-B

Miniature Power PCB Relay PCH (Continued)

Product key			Typical product key		PCH	-1	12	D	2	
Type	PCH	Miniature PCB Relay RE								
Version	1	1 pole								
Coil	05	5 VDC		12	12 VDC					
	06	6 VDC		24	24 VDC					
	09	9 VDC		48	48 VDC					
	Coil power		D	standard 400 mW		L	sensitive 200 mW (for NO contact only)			
Contact material		2	AgSnO ₂							
Contact configuration		Blank	1 CO contact (1 form C)		M	1 NO contact (1 form A)				
Enclosure		Blank	flux proof		H	wash tight				
Version	Blank	standard version		WG	Product in accordance with IEC 60335-1 (domestic appliances)					
Other types on request										

Other types on request

Product Key	Version	Contact material	Contacts	Coil	Part number
PCH-105D2M	flux proof	AgSnO ₂	1 NO contact	5 VDC	1461350-2
PCH-106D2M	standard			6 VDC	1461350-3
PCH-109D2M				9 VDC	1461350-4
PCH-112D2M				12 VDC	1461350-5
PCH-124D2M				24 VDC	1461350-6
PCH-148D2M				48 VDC	1461350-7
PCH-105D2			1 CO contact	5 VDC	9-1440003-7
PCH-106D2				6 VDC	9-1440003-8
PCH-109D2				9 VDC	9-1440003-9
PCH-112D2				12 VDC	1440004-0
PCH-124D2				24 VDC	1440004-1
PCH-148D2				48 VDC	1461410-2
PCH-105L2M	flux proof		1 NO contact	5 VDC	1461352-2
PCH-106L2M	sensitive			6 VDC	1461352-3
PCH-109L2M				9 VDC	1461352-4
PCH-112L2M				12 VDC	1461352-5
PCH-124L2M				24 VDC	1461352-6
PCH-105D2M-WG	flux proof			5 VDC	1721767-2
PCH-106D2M-WG	standard			6 VDC	1721767-3
PCH-109D2M-WG	materials according			9 VDC	1721767-4
PCH-112D2M-WG	IEC 60335-1			12 VDC	1721767-5
PCH-124D2M-WG				24 VDC	1721767-6
PCH-148D2M-WG				48 VDC	1721767-7
PCH-105D2-WG			1 CO contact	5 VDC	1721766-2
PCH-106D2-WG				6 VDC	1721766-3
PCH-109D2-WG				9 VDC	1721766-4
PCH-112D2-WG				12 VDC	1721766-5
PCH-124D2-WG				24 VDC	1721766-6
PCH-148D2-WG				48 VDC	1721766-7
PCH-105L2M-WG	flux proof		1 NO contact	5 VDC	1721768-2
PCH-106L2M-WG	sensitive			6 VDC	1721768-3
PCH-109L2M-WG	materials according			9 VDC	1721768-4
PCH-112L2M-WG	IEC 60335-1			12 VDC	1721768-5
PCH-124L2M-WG				24 VDC	1721768-6

Miniature PCB Relay OJ / OJE

- 1 pole 8 A, 1NO contact
- Sensitive coil, 200 mW
- 3 kV or 4 kV dielectric strength between coil and contacts
- Miniature size
- RoHS compliant (Directive 2002 / 95 / EC)
as per product date code 0424
- WG Version in accordance to IEC60335-1



F0277-C

Approvals

VDE REG.-Nr. 6835, **CE** us E82292
Technical data of approved types on request

Contact data	LMH	LMH2
Contact configuration	1 NO	
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	250 VAC	
Rated current	8 A	
Limiting continuous current	8 A	
Maximum breaking capacity AC	2000 VA	
Contact material	AgCdO	AgSnO ₂
Rated frequency of operation with / without load	10 / 600 min ⁻¹	
Operate- / release time	max. 7 / 4 ms	
Bounce time NO / NC contact	max. 5 / 3 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
OJ(E)-SS(SH)-1..LM	NO	3 A, 250 VAC, cosφ=1	55°C	100x10 ³
OJ(E)-SS(SH)-1..LMH	NO	6.3 A, 250 VAC, cosφ=1	85°C	20x10 ³
OJ-SS-1..LMH2	NO	8 A, 250 VAC, cosφ=1	70°C	30x10 ³
OJ-SS-1..LMH2	NO	5 A, 250 VAC, cosφ=1	85°C	100x10 ³
OJ-SS-1..LMH2	NO	6.3A, 250 VAC, cosφ=1	85°C	50x10 ³
UL 508				
OJ(E)-SS(SH)-1..LM	NO	3 A, 250 VAC, resistive	23°C	100x10 ³
OJ(E)-SS(SH)-1..LM	NO	3 A, 30 VDC, resistive	23°C	100x10 ³
OJ-SS-1..LMH2	NO	8 A, 250 VAC, resistive	85°C	10x10 ³

Coil data

Rated coil voltage range DC coil	3 ... 48 VDC
Operative range to IEC 61810	2
Coil insulation system according UL1446, WG-version	class F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
03	3	2.25	0.15	45±10%	200
05	5	3.75	0.25	125±10%	200
06	6	4.5	0.3	180±10%	200
09	9	6.75	0.45	400±10%	203
12	12	9	0.6	720±10%	200
24	24	18	1.2	2800±10%	206

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Miniature PCB Relay OJ / OJE (Continued)

Insulation

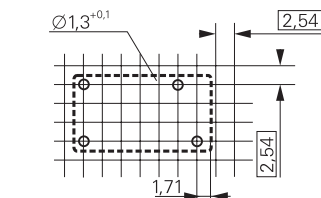
Dielectric strength coil-contact circuit	OJ	4000 V _{rms}
	OJE	3000 V _{rms}
open contact circuit		1000 V _{rms}
Clearance / creepage coil-contact circuit		≥ 6/8 mm
Material group of insulation parts		IIIa
Tracking index of relay base		PTI 250
Insulation to IEC 61810-1		
Type of insulation coil-contact circuit		basic
open contact circuit		micro disconnection
Rated insulation voltage		250 V
Pollution degree		3
Rated voltage system		230 / 400 V
Overvoltage category		III

Other data

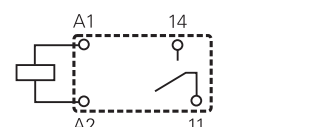
Mechanical endurance	5x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0424
Resistance to heat and fire, WG version	according EN60335, par.30
Environment	
Ambient temperature range	-30 ... +85°C
Category of protection	RTII - flux proof
Processing	
Resistance to soldering heat flux-proof version	270° / 10 s
Relay weight	9 g
Packaging unit	500 pcs

PCB layout / terminal assignment

Bottom view on solder pins

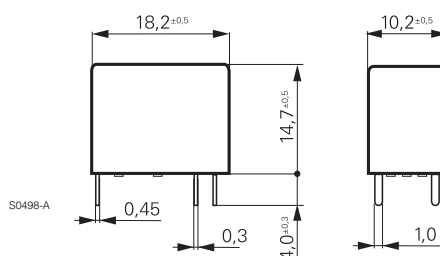


S0497-AA



S0497-AB

Dimensions



S0498-A

Product key

Typical product key

OJ

-SS

-1

06

L

M

H

2

Type

OJ Miniature PCB Relay OJ/OJE

Dielectric strength

E 3 kV

Blank 4 kV

Category of protection

SS flux proof

SH washtight

Number of poles

1 1 pole

Coil

Coil code: please refer to coil versions table

Coil version

L sensitive 200 mW

Contact configuration

M 1 NO contact (1 form A)

Contact rating

H 8 A

Contact material

2 AgSnO₂

Blank AgCdO

Version

Blank Standard version

WG Product in accordance with IEC 60335-1 (domestic appliances)

Product key	Version	Contacts	Contact material	Coil	Part number
OJ-SS-103LMH2	flux proof	1 NO contact	AgSnO ₂	3 VDC	1721181-1
OJ-SS-105LMH2				5 VDC	1721181-2
OJ-SS-106LMH2				6 VDC	1721181-3
OJ-SS-109LMH2				9 VDC	1721181-4
OJ-SS-112LMH2				12 VDC	1721181-5
OJ-SS-124LMH2				24 VDC	1721181-6
OJ-SS-105-LMH2-WG	flux proof	1 NO contact	AgSnO ₂	5 VDC	1721874-2
OJ-SS-106-LMH2-WG	materials according			6 VDC	1721874-3
OJ-SS-109-LMH2-WG	IEC 60335-1			9 VDC	1721874-4
OJ-SS-112-LMH2-WG				12 VDC	1721874-5
OJ-SS-124-LMH2-WG				24 VDC	1721874-6

Slimline PCB Relay PCN

- 1 pole 3 A, 1 NO contact
- Only 5 mm wide
- 3 A switching current; 5 A version available
- Load range 1 mA up to 3 A
- Sensitive coil 120 mW
- Allows high function- / packing density
- Cadmium-free contacts
- Z type with reinforced insulation



F0258-B

Applications

Centralized and decentralized heating control, extremely narrow interface elements, interface technology, timers, PLC's, I/O modules, I/O-ports

Approvals

VDE REG.-Nr. 6166; **CE** us E82292
Technical data of approved types on request

Contact data

Contact configuration	1NO
Contact set	bifurcated contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250/277 VAC
Rated current	3 A
Limiting continuous current	3 A
Maximum breaking capacity AC	750 VA
Limiting making capacity, max 4 s, duty factor 10%	5 A
Contact material	AgNi90/10
Minimum contact load	5V / 1mA
Rated frequency of operation with / without load	10 / 600 min ⁻¹
Operate- / release time	max. 8/3 ms
Bounce time NO / NC contact	max. 2/2 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
PCN-1..D3MHZ	NO	3 A, 250 VAC, cosφ=1	70°C	100x10 ³
PCN-1..D3MHZ-001	NO	5 A, 250 VAC, cosφ=1	85°C	30x10 ³
UL 508				
PCN-1..D3MHZ	NO	3 A, 250 VAC, resistive	25°C	100x10 ³
PCN-1..D3MHZ	NO	Pilot duty, B300	25°C	6x10 ³
PCN-1..D3MHZ	NO	Pilot duty, R300	25°C	6x10 ³
PCN-1..D3MHZ	NO	9 A LRA, 1,5A FLA, 240 VAC	45°C	30x10 ³

Coil data

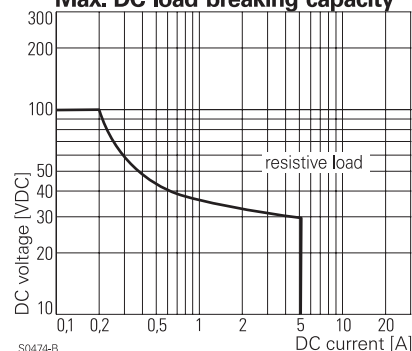
Rated coil voltage range DC coil	5...24 VDC
Operative range to IEC 61810	1

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	208 ± 10%	120
006	6	4.2	0.6	300 ± 10%	120
009	9	6.3	0.9	675 ± 10%	120
012	12	8.4	1.2	1200 ± 10%	120
024	24	16.8	2.4	4800 ± 10%	120

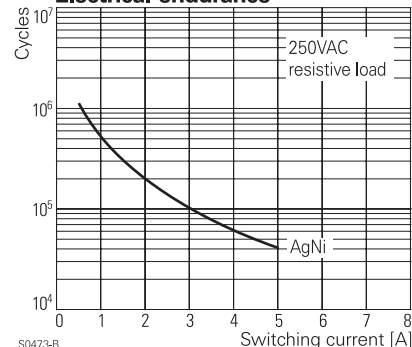
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Max. DC load breaking capacity



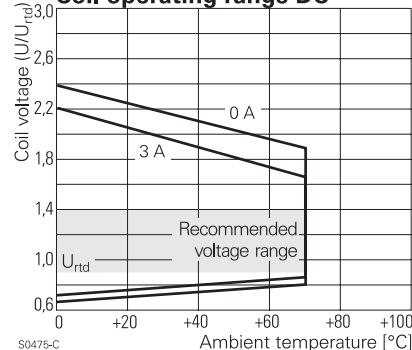
S0474-B

Electrical endurance



S0473-B

Coil operating range DC



S0475-C

Slimline PCB Relay PCN (Continued)

Insulation

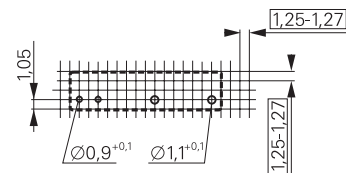
Dielectric strength coil-contact circuit	3000 V _{rms}
open contact circuit	750 V _{rms}
Clearance / creepage coil-contact circuit	≥ 3,5 / 3,5 mm
Material group of insulation parts	I
Tracking index of relay base	PTI 600
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	320 V
Pollution degree	2
Rated voltage system	277 V
Overvoltage category as basic insulation	III
Overvoltage category as reinforced insulation	II

Other data

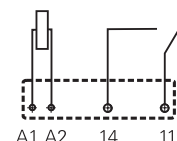
Mechanical endurance	20x10 ⁶ cycles
Material	RoHS - Directive 2002/95/EC compliant as per product date code 0424
Environment	
Ambient temperature range	-30...+70 °C
Vibration resistance (function) NO / NC contact	10 g
Shock resistance (function) NO / NC contact	10 g
Shock resistance (destruction)	100 g
Category of protection	RTIII - wash tight
Processing	
Mounting	pcb
Mounting position	any
Minimum mounting distance	≥ 0 mm
Resistance to soldering heat wash tight version	260°C / 5 s
Relay weight	3 g
Packaging unit	25 / 2000 pcs

PCB layout / terminal assignment

Bottom view on solder pins

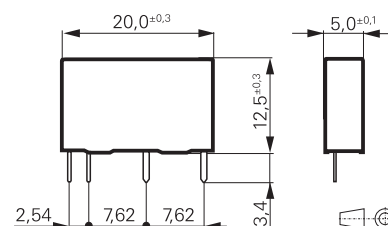


S0471-AA



S0471-AB

Dimensions



S0472-B

Product key

Typical product key

PCN **-1** **06** **D** **3** **M** **H** **Z**

Type

PCN Slim PCB Relay PCN

Number of contacts

1 1 pole

Coil

Coil code: please refer to coil versions table

Coil version

D standard 120 mW

Contact material

3 AgNi

Contact configuration

M 1 NO contact (1 form A)

Version

H wash tight

Insulation

Z tracking resistance of relay base PTI 600

Version

Blank 3 A version

001

5 A version

Other types on request

Product key	Contacts	Coil	Coil	Contacts	Version	Part number
PCN-105D3MHZ	1-pole	5 VDC	standard	1 NO contact	wash tight	3-1461491-0
PCN-106D3MHZ		6 VDC	120 mW	AgNi	high insulation	3-1461491-1
PCN-112D3MHZ		12 VDC				3-1461491-3
PCN-124D3MHZ		24 VDC				3-1461491-6

Slimline PCB Relay SNR

- 1 pole 6 A, 1 CO or 1 NO contact
- Only 5 mm wide
- Sensitive coil 170 mW
- 4 kV coil-contact, 6 / 8 mm clearance/creepage, NO version with 8 / 8 mm clearance/creepage on request
- Reinforced insulation (protection class II)
- Strong coil pins for DIN-rail socket
- Allows high function- / packing density
- Cadmium-free contacts, AgNi 90/10 for AC-loads

Applications: centralized and decentralized heating control, extremely narrow interface elements, interface technology, timers, PLC's, I/O modules, I/O-ports



F0140-D

Approvals

 REG.-Nr. 6666,  E214024
Technical data of approved types on request

Contact data

Contact configuration	1CO or 1NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	6 A
Maximum breaking capacity AC	1500 VA
Limiting making capacity, max 4 s, duty factor 10%	10 A
Contact material	AgSnO ₂ AgSnO ₂ AgNi90/10 gold plated
Minimum contact load	100mA, 12V 50mW 100mA, 12V
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / release time	max 12 / 5 ms
Bounce time NO / NC contact	max 3 / 8 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
V23092-****-A301, -A801	CO	6 A, 250 VAC, cosφ=1	85°C	5x10 ³
UL 508				
V23092-****-A301, -A801	NO / NC	6 A, 250 VAC, general purpose	85°C	6x10 ³
V23092-****-A301, -A801	NO / NC	B300	85°C	6x10 ³
V23092-****-A301, -A801	NO / NC	R300	85°C	6x10 ³
EN60730-1				
V23092-****-A302	NO	3 A (1.5 A), 250 VAC,	85°C	100x10 ³
V23092-****-A302, -A802	NO	5 A (1.5 A), 250 VAC,	85°C	10x10 ³

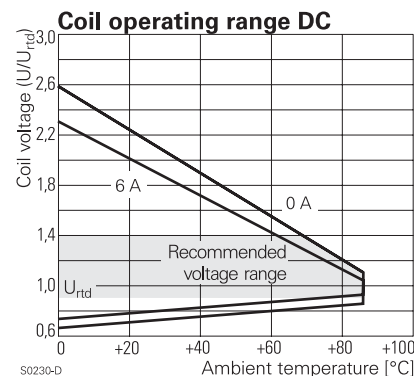
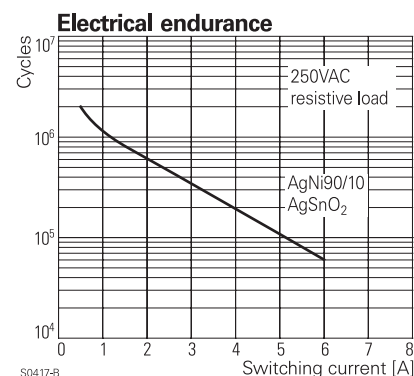
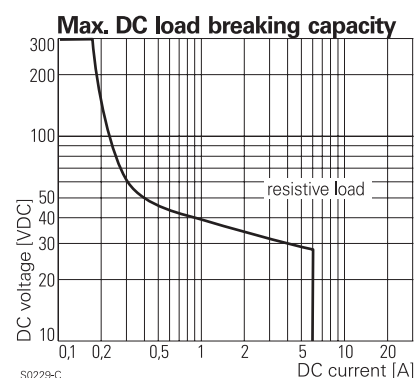
Coil data

Rated coil voltage range DC coil	5...60 VDC
Operative range to IEC 61810	2

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.25	147 ± 10%	170
012	12	8.4	0.6	848 ± 10%	170
024	24	16.8	1.2	3390 ± 10%	170
048	48	33.6	2.4	10600 ± 15%	217
060	60	42.0	3.0	20500 ± 15%	176

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Slimline PCB Relay SNR (Continued)

Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 6 / 8 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

Other data

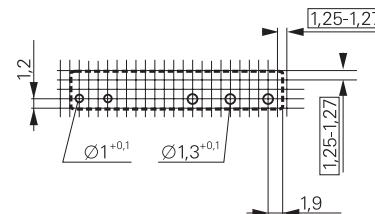
Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0404
Environment	
Ambient temperature range	-40...+85°C
Vibration resistance (function) NO / NC contact	10 / 5 g
Shock resistance (function) NO / NC contact	10 / 5 g
Shock resistance (destruction)	30 g
Category of protection	RTIII - wash tight
Processing	
Mounting	pcb
Mounting position	any
Minimum mounting distance	≥ 0 mm
Resistance to soldering heat	260°C / 5 s
Relay weight	6 g
Packaging unit	20 / 1000 pcs

Accessories

For details see datasheet	Accessories SNR
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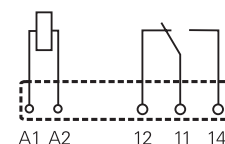
PCB layout / terminal assignment

Bottom view on solder pins



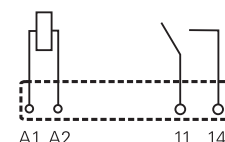
S0258-AA

1 CO contact



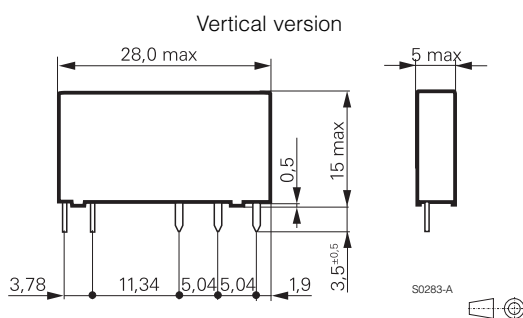
S0258-AB

1 NO contact



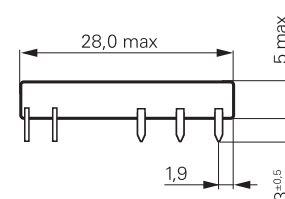
S0258-AC

Dimensions



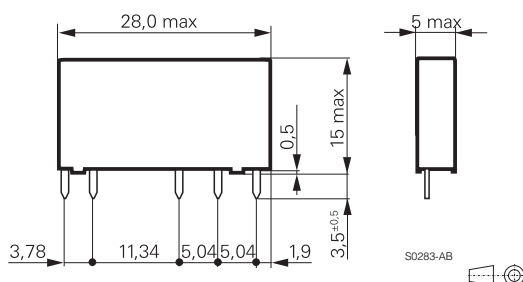
S0283-A

Flat pack version



S0284-A

Version for DIN-rail socket



S0283-AB

Slimline PCB Relay SNR (Continued)

Product key	Typical product key	V23092	-A	1	005	-A	3	01
Type	V23092 Slimline PCB relay SNR							
Version	A PCB, vertical version B PCB, flat pack version S Plug-in, vertical version							
Version	1 wash tight							
Coil	Coil code: please refer to coil versions table							
Contact system	A standard							
Contact material	2 AgSnO ₂ , gold plated 3 AgSnO ₂ 8 AgNi 90/10							
Contact configuration	01 1 CO contact (1 form C) 02 1 NO contact (1 form A)							

NO version with 8/8 mm clearance and creepage and other types on request

Product key	Version	Contacts	Contact material	Coil	Part number
V23092-A1005-A201	PCB	1 CO contact	AgSnO ₂ , gold pl.	5 VDC	1393236-1
V23092-A1005-A202	vertical version	1 NO contact			8-1415067-1
V23092-A1005-A301	wash tight	1 CO contact	AgSnO ₂		1393236-2
V23092-A1005-A302		1 NO contact			9-1415067-1
V23092-A1005-A801		1 CO contact	AgNi 90/10		1-1415068-1
V23092-A1005-A802		1 NO contact			1415068-1
V23092-A1012-A201		1 CO contact	AgSnO ₂ , gold pl.	12 VDC	1393236-4
V23092-A1012-A202		1 NO contact			1393236-5
V23092-A1012-A301		1 CO contact	AgSnO ₂		1393236-7
V23092-A1012-A302		1 NO contact			1393236-8
V23092-A1012-A801		1 CO contact	AgNi 90/10		1-1393236-3
V23092-A1012-A802		1 NO contact			2-1415068-1
V23092-A1024-A201		1 CO contact	AgSnO ₂ , gold pl.	24 VDC	2-1393236-1
V23092-A1024-A202		1 NO contact			2-1393236-2
V23092-A1024-A301		1 CO contact	AgSnO ₂		2-1393236-4
V23092-A1024-A302		1 NO contact			2-1393236-5
V23092-A1024-A801		1 CO contact	AgNi 90/10		3-1393236-0
V23092-A1024-A802		1 NO contact			5-1415063-1
V23092-A1048-A201		1 CO contact	AgSnO ₂ , gold pl.	48 VDC	3-1393236-5
V23092-A1048-A202		1 NO contact			3-1393236-6
V23092-A1048-A301		1 CO contact	AgSnO ₂		3-1393236-7
V23092-A1048-A302		1 NO contact			3-1393236-8
V23092-A1048-A801		1 CO contact	AgNi 90/10		3-1393236-9
V23092-A1048-A802		1 NO contact			3-1415068-1
V23092-S1005-A201	plug-in	1 CO contact	AgSnO ₂ , gold plated	5 VDC	1956024-9
V23092-S1005-A301	vertical version		AgSnO ₂		1-1956024-0
V23092-S1012-A201	wash tight		AgSnO ₂ , gold plated	12 VDC	1956024-1
V23092-S1012-A301			AgSnO ₂		1956024-2
V23092-S1024-A201			AgSnO ₂ , gold plated	24 VDC	1956024-3
V23092-S1024-A301			AgSnO ₂		1956024-4
V23092-S1048-A201			AgSnO ₂ , gold plated	48 VDC	1956024-5
V23092-S1048-A301			AgSnO ₂		1956024-6
V23092-S1060-A201			AgSnO ₂ , gold plated	60 VDC	1956024-7
V23092-S1060-A301			AgSnO ₂		1956024-8

Miniature PCB Relay PCJ

- 1 pole 3 / 5 A, 1 NO contact
- Sensitive coil 200 mW
- 8 mm creepage / clearance
- Version for 105°C
- WG version: Product in accordance to IEC60335-1

Applications

Domestic appliances



F0276-C

Approvals

VDE REG.-Nr. 122301 ÜG  E58304
Technical data of approved types on request

Contact data

Contact configuration	1 NO	
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	250 / 400 VAC	
Rated current	3 A	5 A (WG version)
Limiting continuous current	5 A	5 A
Maximum breaking capacity AC	750 VA	1250 VA
Contact material	AgNi	
Rated frequency of operation with / without load	30 / 300 min ⁻¹	
Operate- / release time	max 10 / 4 ms	
Bounce time NO	max 5 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
PCJ-1..D3M	NO	5 A, 250 VAC, cosφ=1	85°C	100x10 ³
PCJ-1..D3M	NO	2 A, 250 VAC, cosφ=0.6	85°C	100x10 ³
PCJ-1..D3M	NO	3 A, 250 VAC, cosφ=1	105°C	100x10 ³
UL 508				
PCJ-1..D3M	NO	5 A, 250 VAC, general use	85°C	6x10 ³
PCJ-1..D3M	NO	3 A, 250 VAC, cosφ=1	85°C	100x10 ³
PCJ-1..D3M	NO	3 A, 250 VAC, cosφ=1	105°C	100x10 ³

Coil data

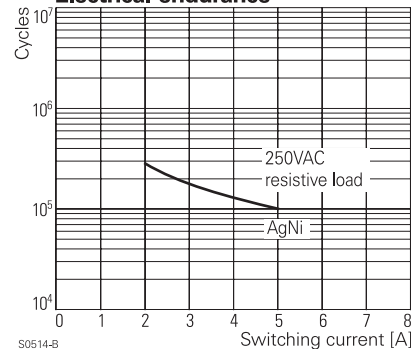
Rated voltage range DC coil	3...24 VDC	
Operative range to IEC 61810	2	
Coil insulation system according UL1446	A	F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
03	3	2.25	0.15	45±10%	200
05	5	3.75	0.25	125±10%	200
06	6	4.5	0.3	180±10%	200
09	9	6.75	0.45	405±10%	200
12	12	9	0.6	720±10%	200
24	24	18	1.2	2880±10%	200

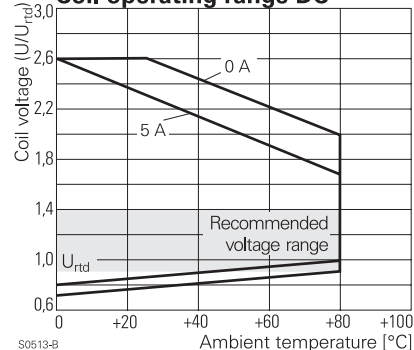
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Electrical endurance



S0514-B

Coil operating range DC



S0513-B

Miniature PCB Relay PCJ (Continued)

Insulation

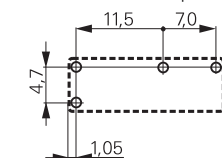
Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	750 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm
Material group of insulation parts	≥ IIIa
Tracking index of relay base, standard version	PTI 175
WG-version	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

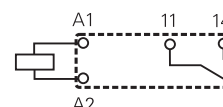
Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0424
Resistance to heat and fire, WG-version	according EN60335, par.30
Environment	
Ambient temperature range	-40...+90°C (105°C)
Vibration resistance (function) NO / NC contact	> 10 g
Shock resistance (function) NO / NC contact	> 10 g
Shock resistance (destruction)	> 100 g
Category of protection	RTII - flux proof / RTIII - wash tight
Processing	
Resistance to soldering heat flux-proof version	270°C / 10 s
wash-tight version	260°C / 5 s
Relay weight	4 g
Packaging unit	100 pcs

PCB layout / terminal assignment

Bottom view on solder pins

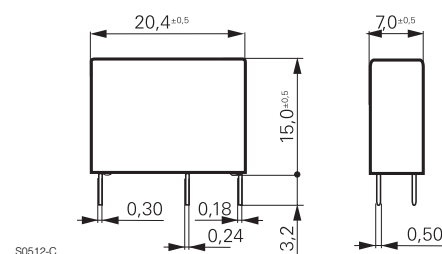


S=511-AA



S0511-AB

Dimensions



Product key

Typical product key

PCJ -1 12 D 3 M -WG

Type

PCJ Miniature PCB Relay PCJ

Version

1 single contact

Coil

Coil code: please refer to coil versions table

Coil power

D standard 200 mW

Contact material

3 AgNi

Contact configuration

M 1 NO contact (1 form A)

Enclosure

Blank flux proof
H wash tight

Version

Blank standard version, 3 A, class A

WG Product in accordance with IEC 60335-1 (domestic appliances), 5 A version only, flux proof, class F

Other types on request

Product key	Version	Contacts	Contact material	Coil	Part number
PCJ-105D3M	flux proof	1 NO contact	AgNi	5 VDC	1721081-2
PCJ-109D3M		3 A	Class A	9 VDC	1721081-4
PCJ-112D3M				12 VDC	1721081-5
PCJ-124D3M				24 VDC	1721081-7
PCJ-105D3MH	wash tight			5 VDC	1721081-9
PCJ-109D3MH				9 VDC	1-1721081-1
PCJ-112D3MH				12 VDC	1-1721081-2
PCJ-124D3MH				24 VDC	1-1721081-4
PCJ-105D3M-WG	flux proof	1 NO contact	AgNi	5 VDC	1721547-2
PCJ-109D3M-WG		5 A	Class F	9 VDC	1721547-4
PCJ-112D3M-WG			WG version	12 VDC	1721547-5
PCJ-124D3M-WG				24 VDC	1721547-7

Miniature Power PCB RY II & RY II reflow solderable

- 1 pole 8 A, 1 CO or 1 NO or 1 NC contact
- Low component height 12.3 mm
- 5 kV / 8 mm coil-contact
- Reinforced insulation (protection class II)
- Pinnings: 3.2 and 5 mm
- Reflow-solderable version
- Sockets with PCB-type terminals
- Especially suitable for resistive and inductive loads on NO and NC contacts
- Plastic materials according to IEC60335-1 (domestic appliances, not in reflow-solderable version)



F0142-E

Applications: heating control, interface technology, domestic appliances, timers, temperature control

Approvals

REG.-Nr. 5358, E214025
Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1NO or 1NC
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	8 A
Maximum breaking capacity AC	2000 VA
Contact material	AgNi0.15, AgSnO ₂
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / release time	max. 9 / 5 ms
Bounce time NO / NC contact	max. 6 / 10 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RY531	NO	8 A, 250 VAC	70°C	100x10 ³
RY211	NO	8 A, 250 VAC	70°C	75x10 ³
RY211	NC	8 A, 250 VAC	70°C	50x10 ³
UL 508				
RY211	NO / NC	10 A, 250 VAC, general purpose	70°C	30x10 ³
RY211	NO	1/2 hp, 240 VAC	85°C	30x10 ³
RY211	NO / NC	B300	70°C	6x10 ³
EN60730-1				
RY211	NO / NC	6(4)A, 250 VAC	85°C	100x10 ³
RY211	NO	8(4)A, 250 VAC	75°C	100x10 ³

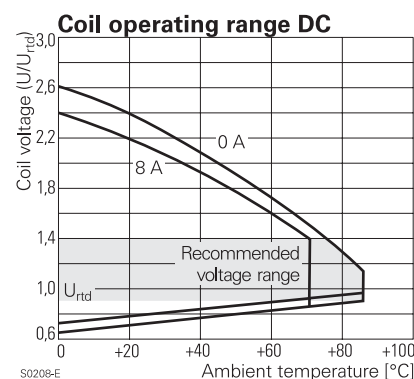
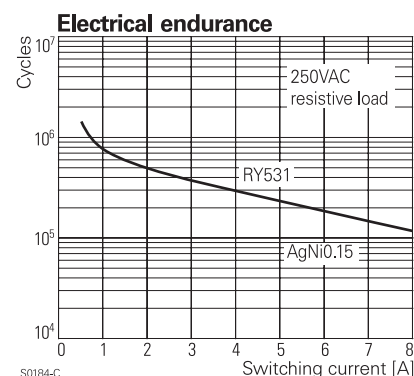
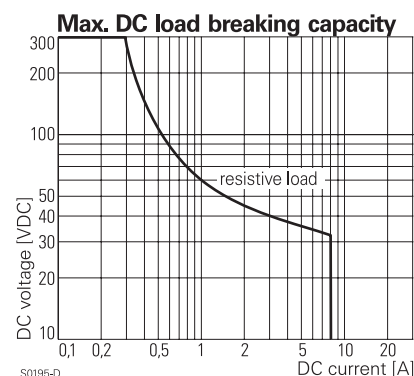
Coil data

Rated coil voltage range DC coil	5...60 VDC
Operative range to IEC 61810	2

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3,5	0,5	112±10%	223
006	6	4,2	0,6	162±10%	222
009	9	6,3	0,9	320±10%	253
012	12	8,4	1,2	627±10%	230
024	24	16,8	2,4	2350±10%	245
048	48	33,6	4,8	9391±10%	245
060	60	42,0	6,0	14000±10%	257

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Miniature Power PCB RY II & RY II reflow solderable (Continued)

Insulation	CO contact	NO contact
Dielectric strength coil-contact circuit		5000 V _{eff}
open contact circuit		1000 V _{eff}
Clearance / creepage coil-contact circuit		≥ 8 / 8 mm
Material group of insulation parts		IIIa
Tracking index of relay base		PTI250, PTI 175*
Insulation to IEC 61810-1		
Type of insulation coil-contact circuit		reinforced
open contact circuit		micro disconnection
Rated insulation voltage	250 V	250 V
Pollution degree	3	2
Rated voltage system	230 V	230 / 400 V
V		230 / 400
Overvoltage category	III	III

Other data

Mechanical endurance	30x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0403
Resistance to heat and fire	according EN60335, par.30**
Environment	
Ambient temperature range	-40...+70°C
Ambient temperature max.	85°C at 6A
Vibration resistance (function) NO / NC contact	20 / 5 g
Shock resistance (function) NO / NC contact	20 / 5 g
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof, RTIII - wash tight**
Processing	
Mounting	pcb
Mounting position	any
Minimum mounting distance	≥ 0 mm
Soldering heat resistance flux proof version	270°C / 10 s
wash tight version	260°C / 5 s
Relay weight	8 g
Packaging unit, standard version	20 / 500 pcs
reflow version	1120 pcs

Accessoires

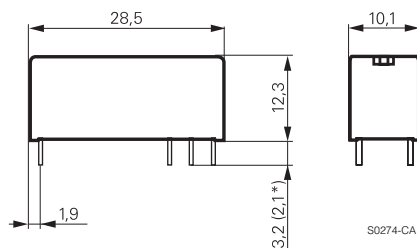
For technical details see datasheet Accessoires RYII

* reflow-solderable version

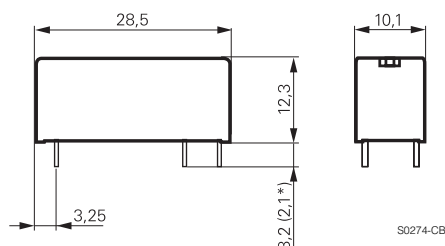
** not as reflow-solderable version

Dimensions

Pinning 3.2 mm



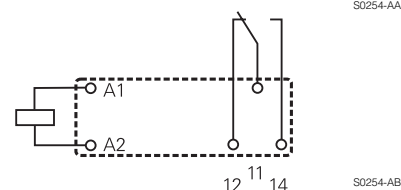
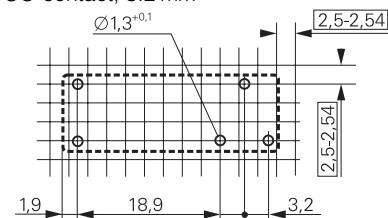
Pinning 5 mm



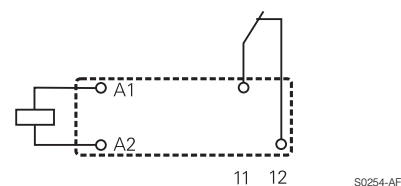
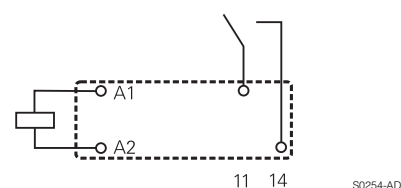
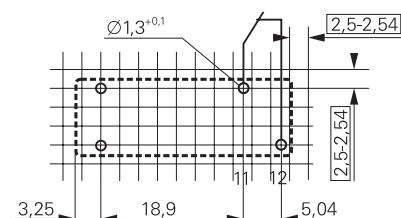
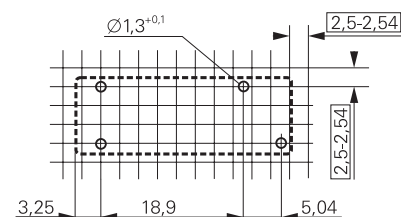
PCB layout / terminal assignment

Bottom view on solder pins

1 CO contact, 3.2 mm

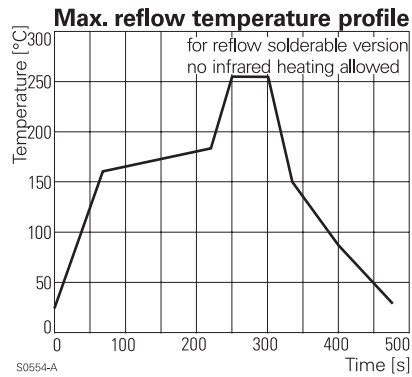


1 NO, 1 NC contact 5 mm



Miniature Power PCB RY II & RY II reflow solderable (Continued)

Soldering profile for reflow-solderable version



Product key

Typical product key

RY 6 1 1 012

Type

RY Miniature Power PCB Relay RY II & RY II reflow-solderable

Version

2 pinning 3.2 mm, flux proof
5 pinning 5 mm, flux proof

6 pinning 3.2 mm, wash tight **)
A pinning 5 mm, wash tight **)

Contact configuration

1 1 CO contact (1 form C), pinning 3.2 mm
3 1 NO contact (1 form A), pinning 5 mm

Contact material

1 AgNi 0.15
3 AgSnO₂
2 AgNi 0.15 gold plated

Coil

Coil code: please refer to coil versions table

Version

Blank standard version
R reflow-solderable

**)) not as reflow-solderable version
Other types on request

Miniature Power PCB RY II & RY II reflow solderable (Continued)

Product key	Version	Contacts	Contact material	Coil	Part number		
RY211005	pinning 3.2 mm flux proof	1 CO contact	AgNi 0.15	5 VDC	4-1393224-2		
RY211012				12 VDC	4-1393224-6		
RY211024				24 VDC	4-1393224-9		
RY211048				48 VDC	5-1393224-1		
RY212005			AgNi 0.15 gold plated	5 VDC	5-1393224-2		
RY212012				12 VDC	5-1393224-5		
RY212024				24 VDC	5-1393224-8		
RY212048				48 VDC	5-1393224-9		
RY213005			AgSnO ₂	5 VDC	6-1393224-0		
RY213012				12 VDC	6-1393224-1		
RY213024				24 VDC	6-1393224-2		
RY213048				48 VDC	6-1393224-3		
RY531005	pinning 5 mm flux proof	1 NO contact	AgNi 0.15	5 VDC	7-1393224-6		
RY531012				12 VDC	7-1393224-9		
RY531024				24 VDC	8-1393224-2		
RY531048				48 VDC	8-1393224-3		
RY532012			AgNi 0.15 gold plated	12 VDC	8-1393224-4		
RY532024				24 VDC	8-1393224-5		
RY533012				12 VDC	8-1393224-8		
RY533024				24 VDC	8-1393224-9		
RY533048			AgSnO ₂	48 VDC	9-1393224-0		
RY611005				1 CO contact	AgNi 0.15	5 VDC	1-1393225-7
RY611012						12 VDC	1-1393225-9
RY611024						24 VDC	2-1393225-1
RY611048	48 VDC	2-1393225-2					
RY612005	AgNi 0.15 gold plated	5 VDC	2-1393225-3				
RY612012		12 VDC	2-1393225-6				
RY612024		24 VDC	2-1393225-9				
RY612048		48 VDC	3-1393225-0				
RY613005	AgSnO ₂	5 VDC	5-1419136-2				
RY613012		12 VDC	3-1393225-1				
RY613024		24 VDC	3-1393225-3				
RY613048		48 VDC	3-1393225-4				
RYA31005	pinning 5 mm wash tight	1 NO contact	AgNi 0.15	5 VDC	1393224-7		
RYA31012				12 VDC	1393224-9		
RYA31024				24 VDC	1-1393224-2		
RYA31048				48 VDC	1-1393224-3		
RYA32005			AgNi 0.15 gold plated	5 VDC	1-1393224-4		
RYA32012				12 VDC	1-1393224-6		
RYA32024				24 VDC	1-1393224-8		
RYA33005				AgSnO ₂	5 VDC	1-1393224-9	
RYA33024			24 VDC		2-1393224-1		

Miniature Power PCB Relay MSR

- 1 pole 8 / 10 A, 1CO or 1NO contact
- High inrush currents with AgSnO contacts (TV4 = 65 A)
- 4 kV/8 mm coil-contact
- Reinforced insulation (protection class II)
- Ambient temperature up to 85°C at 8 A
- Plastic materials according to IEC60335-1 (domestic appliances)

Applications

HVAC, interface technology, power supplies, TV- / Monitor control, computer- / communication technology, domestic appliances, Hi-Fi products, timers



F0143-E

Approvals

VDE REG.-Nr. 3919, **CE** us E214024
Technical data of approved types on request

Contact data

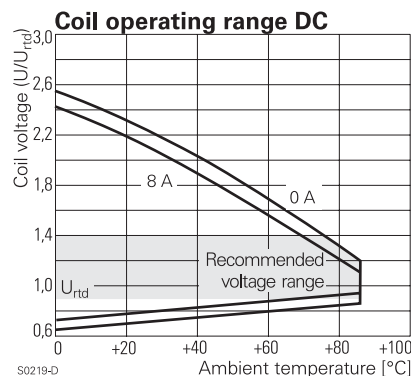
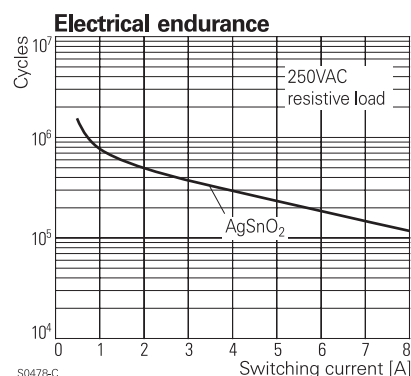
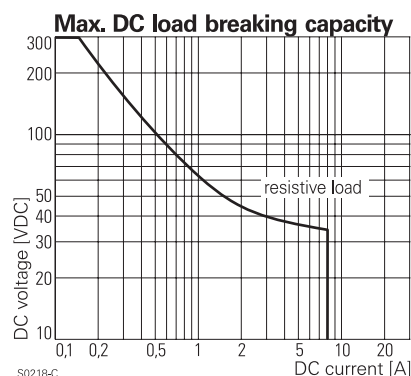
Contact configuration	1CO or 1NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	versions A,B: 8 A versions C,D: 10 A
Maximum breaking capacity AC	2000 VA
Limiting making capacity, max 20 ms max 4 s, duty factor 10%	A302: 65 A 15 A
Contact material	AgSnO ₂ , AgNi90/10
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / release time	max 10 / 5 ms
Bounce time NO / NC contact	max 3 / 10 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
V23061-A1***-A302	NO	8 A, 250 VAC, cosφ=1	85°C	100x10 ³
V23061-C2***-A802	NO	10 A, 250 VAC, cosφ=1	85°C	100x10 ³
V23061-C2***-A802	NO	5 A, 250 VAC, cosφ=1	105°C	100x10 ³
UL 508				
V23061-A1***-A302	NO	TV4, Tungsten, 120 VAC	40°C	25x10 ³
V23061-A1***-A302	NO	Pilot duty, A300	40°C	6x10 ³
V23061-C2***-A802	NO	10 A, 240 VAC, general purpose	40°C	30x10 ³
EN60730-1				
V23061-A1***-A302	NO	2(2)A, 250 VAC	85°C	100x10 ³
V23061-C2***-A802	NO	4(4)A, 250 VAC	85°C	100x10 ³

Coil data

Rated coil voltage range DC coil	3...60 VDC
Operative range to IEC 61810	2
Coil insulation system according UL1446	Class A, Class F



Miniature Power PCB Relay MSR (Continued)

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
001	3	2.1	0.3	40 ± 10%	225
002	5	3.4	0.5	118 ± 10%	212
003	6	4.1	0.6	165 ± 10%	218
004	9	6.1	0.9	364 ± 10%	223
005	12	8.2	1.2	652 ± 10%	221
007	24	16.3	2.4	2270 ± 10%	254
009	48	32.6	4.8	8790 ± 10%	262
010	60	40.8	6.0	15265 ± 15%	236

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Insulation	CO contact	NO contact
Dielectric strength coil-contact circuit		4000 V _{rms}
open contact circuit		1000 V _{rms}
Clearance / creepage coil-contact circuit		≥ 8 / 8 mm
Material group of insulation parts	IIIa	IIIa
Insulation to IEC 61810-1		
Type of insulation coil-contact circuit	reinforced	reinforced
open contact circuit	micro disconn.	micro disconn.
Rated insulation voltage	250 V	250 V
Pollution degree	3	2
Rated voltage system	240 V	230 / 400 V
Overvoltage category	III	III

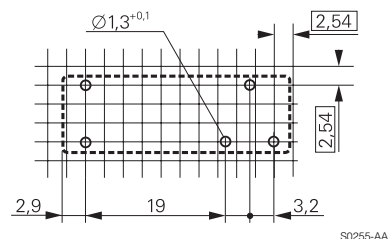
Other data

Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0404
Resistance to heat and fire	according EN60335-1, par.30
Environment	
Ambient temperature range	-40...+85°C
Vibration resistance (function) NO / NC contact	10 / 4 g
Shock resistance (function) NO / NC contact	20 / 5 g
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof; RTIII - wash tight
Processing	
Mounting	pcb
Mounting position	any
Minimum mounting distance	≥ 0 mm
Resistance to soldering heat flux-proof version	270°C / 10 s
wash-tight version	260°C / 5s
Relay weight	11 g
Packaging unit	20 / 1000 pcs

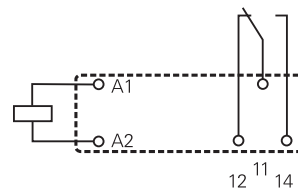
PCB layout / terminal assignment

Bottom view on solder pins

1 CO contact, 3.2 mm

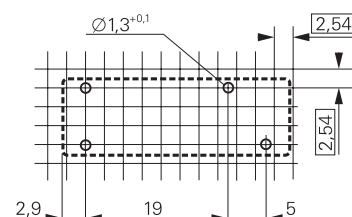


S0255-AA

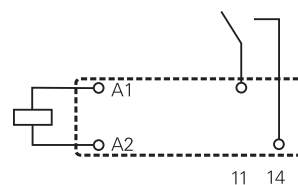


S0255-AB

1 NO contact, 5 mm



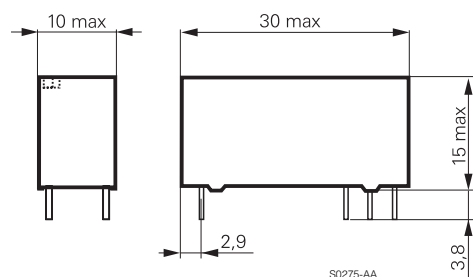
S0255-AH



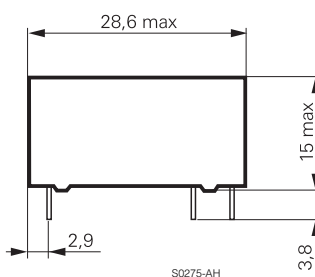
S0255-AI

Dimensions

1 CO contact, 3.2 mm



1 NO contact, 5 mm



Miniature Power PCB Relay MSR (Continued)

Product key	Typical product key	V23061	-A	1	007	-A	3	02
Type	V23061 Miniature Power PCB Relay MSR							
Version	A 1 NO contact (1 form A), UL-class A B 1 CO contact (1 form C), UL-class A C 1 NO contact (1 form A), UL-class F D 1 CO contact (1 form C), UL-class F							
Version	1 wash tight 2 flux proof							
Coil	Coil code: please refer to coil versions table							
Contact system	A standard							
Contact material	3 AgSnO ₂ 8 AgNi 90/10							
Contact configuration	01 1 CO contact (1 form C) 02 1 NO contact (1 form A)							

Other types on request

Product key	Version	Contacts	Contact material	Coil	Part number
V23061-A1002-A302	wash tight	1 NO contact	AgSnO ₂	5 VDC	1393222-4
V23061-A1003-A302				6 VDC	1393222-9
V23061-A1005-A302				12 VDC	2-1393222-0
V23061-A1007-A302				24 VDC	3-1393222-9
V23061-B1002-A301		1 CO contact		5 VDC	7-1393222-2
V23061-B1005-A301				12 VDC	9-1393222-1
V23061-B1007-A301				24 VDC	1-1393223-7
V23061-B1009-A301				48 VDC	3-1393223-7
V23061-C2001-A802	flux proof	1 NO contact	AgNi90/10	3 VDC	5-1416200-3
V23061-C2002-A802				5 VDC	5-1416200-4
V23061-C2003-A802				6 VDC	5-1416200-5
V23061-C2004-A802				9 VDC	5-1416200-6
V23061-C2005-A802				12 VDC	5-1416200-7
V23061-C2007-A802				24 VDC	5-1416200-8
V23061-C2009-A802				48 VDC	6-1416200-0
V23061-C2010-A802				60 VDC	6-1416200-1
V23061-D2001-A801		1 CO contact		3 VDC	6-1416200-2
V23061-D2002-A801				5 VDC	6-1416200-3
V23061-D2003-A801				6 VDC	6-1416200-4
V23061-D2004-A801				9 VDC	6-1416200-5
V23061-D2005-A801				12 VDC	6-1416200-6
V23061-D2007-A801				24 VDC	6-1416200-7
V23061-D2009-A801				48 VDC	6-1416200-9
V23061-D2010-A801				60 VDC	7-1416200-0

Power PCB Relay RZ

- 1 pole 12 / 16 A, 1 CO or 1 NO contact
- DC-coil 400 mW
- 5 kV / 10 mm coil-contact, reinforced insulation
- Ambient temperature 85°C, HOT version for 105°C
- Product in accordance to IEC60335-1

Applications

Household appliances, boiler control, timers, garage door control, POS automation



F0305-A

Approvals

VDE REG.-Nr. C693, **RU** US E214025
Technical data of approved types on request

Contact data

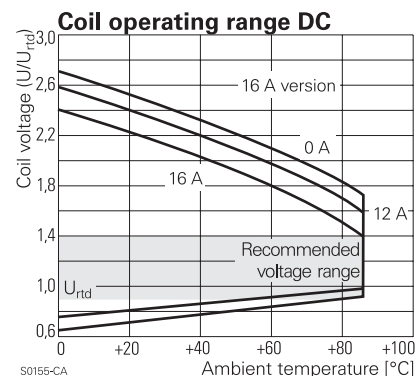
Contact configuration	1 CO or 1 NO contact	
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	250 / 400 VAC	
Rated current	12 A	16 A
Maximum breaking capacity AC	3000 VA	4000 VA
Contact material	AgNi 90/10	
Rated frequency of operation with / without load	6 / 1200 min ⁻¹	
Operate- / release time DC coil	max 8 / 6 ms	
Bounce time NO / NC contact	max 4 / 6 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RZ03-1.4-D...	NO	16 A, 250 VAC	85°C	30x10 ³
RZ03-1C4-D...	CO	16 A, 250 VAC	85°C	10x10 ³
RZ03-1.4-D...	NO	16 A, 250 VAC	70°C	50x10 ³
RZ01-1.4-D...	NO	12 A, 250 VAC	85°C	50x10 ³
RZ01-1C4-D...	CO	12 A, 250 VAC	85°C	30x10 ³
RZ01-1.4-D...	NO	12 A, 250 VAC	70°C	100x10 ³
RZH3-1.4-D...	NO	10 A, 250 VAC	105°C	100x10 ³
RZH3-1C4-D...	CO	16 A, 250 VAC	105°C	10x10 ³
UL 508				
RZ03-1.4-D...	NO	B300	85°C	6x10 ³
RZ03-1.4-D...	NO	R300	85°C	6x10 ³
RZ03-1.4-D...	NO	1/2 hp, 125 VAC	85°C	6x10 ³
RZ03-1.4-D...	NO	1 hp, 277 VAC	85°C	6x10 ³

Coil data

Rated coil voltage range	5...48 VDC
Operative range to IEC 61810 standard / HOT-version	2 / 90...110% U _{RTD}
Coil insulation system according UL1446	class F



Power PCB Relay RZ (Continued)

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
D005	5	3.5	0.5	$60 \pm 10\%$	420
D006	6	4.2	0.6	$90 \pm 10\%$	400
D009	9	6.3	0.9	$200 \pm 10\%$	400
D012	12	8.4	1.2	$360 \pm 10\%$	400
D024	24	16.8	2.4	$1440 \pm 10\%$	400
D048	48	33.6	4.8	$5730 \pm 10\%$	400

All figures are given for coil without preenergization, at ambient temperature +23°C
Continuous thermal load > 10 A at 105°C requires reduction of coil power to 64% of rated power after 100 ms.

Other coil voltages on request

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	$\geq 10 / 10$ mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to EN61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree 12 A version	3
16 A version	3
Rated voltage system	240 V
Overvoltage category	III

Other data

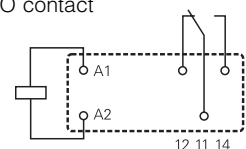
Mechanical endurance	> 10×10^6 cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Resistance to heat and fire	according EN60335-1, par.30
Environment	
Ambient temperature range Standard version	-40...+85°C
HOT version	-40...+105°C
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof, RTIII - wash tight
Processing	
Mounting	pcb
Mounting distance Standard version	≥ 0 mm
HOT version	≥ 2 mm
Resistance to soldering heat flux proof version	270°C / 10 s
Relay weight	10 g
Packaging unit	20 / 500 pcs

PCB layout / terminal assignment

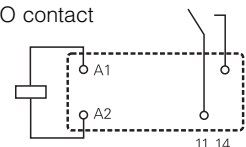
Bottom view on solder pins

12 A, pinning 3.5 mm

1 CO contact

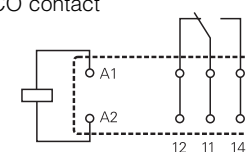


1 NO contact

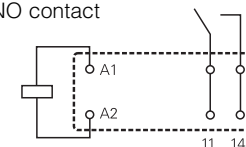


16 A, pinning 5 mm

1 CO contact



1 NO contact

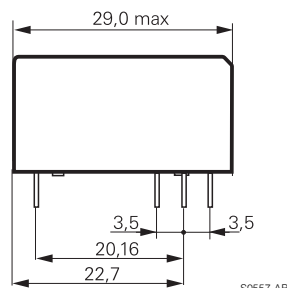


Recommended pcb hole for manual mounting: $\varnothing 1,3$

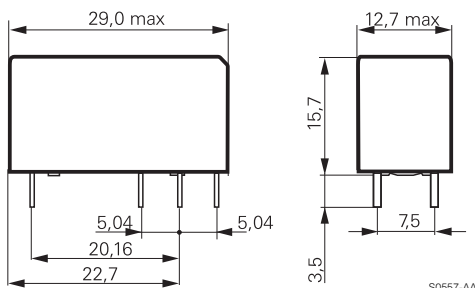
For automated mounting please ask for detailed drawing.

Dimensions

12 A, pinning 3.5 mm



16 A, pinning 5 mm



Power PCB Relay RZ (Continued)

Product key	Typical product key	RZ	0	3	-1C	4	-D012
Type	RZ Power PCB Relay RZ						
Version	0 standard version H HOT-version						
Version	1 3.5 mm pinning, 12 A 3 5 mm double pinning, 16 A						
Contact configuration	1A 1 form A (NO contact) 1C 1 form C (CO contact)						
Contact material	4 AgNi 90/10						
Coil version	Coil code: please refer to coil versions table						
Sealing level	blank standard (RT II - flux proof) W wash tight (RT III - wash tight)						

Product key	Version	Contacts	Contact material	Coil	Part number
RZ01-1A4-D005	12A	1 NO (form A)	AgNi 90/10	5 VDC	1415899-1
RZ01-1A4-D006	pinning 3.5 mm			6 VDC	1415899-2
RZ01-1A4-D009	flux proof			9 VDC	1415899-3
RZ01-1A4-D012				12 VDC	1415899-4
RZ01-1A4-D024				24 VDC	1415899-5
RZ01-1A4-D048				48 VDC	1415899-6
RZ01-1C4-D005		1CO (form C)		5 VDC	1415899-7
RZ01-1C4-D006				6 VDC	1415899-8
RZ01-1C4-D009				9 VDC	1415899-9
RZ01-1C4-D012				12 VDC	1-1415899-0
RZ01-1C4-D024				24 VDC	1-1415899-1
RZ01-1C4-D048				48 VDC	1-1415899-2
RZ03-1A4-D005	16A	1 NO (form A)		5 VDC	1-1415899-3
RZ03-1A4-D006	pinning 5 mm			6 VDC	1-1415899-4
RZ03-1A4-D009	flux proof			9 VDC	1-1415899-5
RZ03-1A4-D012				12 VDC	1-1415899-6
RZ03-1A4-D024				24 VDC	1-1415899-7
RZ03-1A4-D048				48 VDC	1-1415899-8
RZ03-1C4-D005		1CO (form C)		5 VDC	1-1415899-9
RZ03-1C4-D006				6 VDC	2-1415899-0
RZ03-1C4-D009				9 VDC	2-1415899-1
RZ03-1C4-D012				12 VDC	2-1415899-2
RZ03-1C4-D024				24 VDC	2-1415899-3
RZ03-1C4-D048				48 VDC	2-1415899-4
RZH3-1C4-D012	16A, 105°C			12 VDC	2-1415899-5
RZH3-1C4-D024	pinning 5 mm			24 VDC	2-1415899-6
RZH3-1A4-D009	flux proof	1 NO (form A)		9 VDC	2-1415899-7
RZH3-1A4-D012				12 VDC	2-1415899-8
RZH3-1A4-D024				24 VDC	2-1415899-9

Power PCB Relay RT1

- 1 pole 12 / 16 A, 1 CO or 1 NO contact
- DC- or AC-coil
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact, reinforced insulation
- Ambient temperature 85°C (DC-coil)
- WG version: Product in accordance to IEC60335-1



F0144-C

Applications

Boiler control, timers, garage door control, POS automation, interface modules

Approvals

VDE REG.-Nr. 6106, **c** **RU** **us** E214025, **SP** **us** 14385, **REAB** C0786
Technical data of approved types on request

Contact data

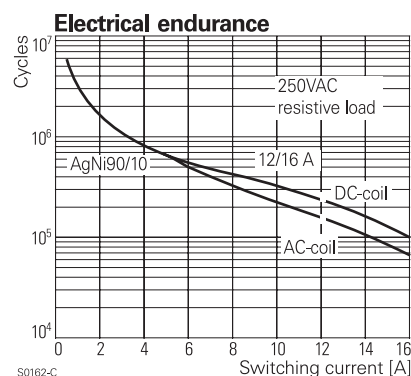
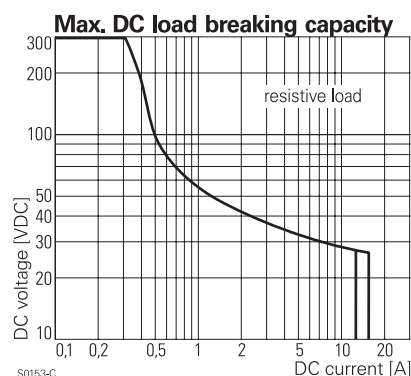
Contact configuration	1 CO or 1 NO contact	
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	250 / 400 VAC	
Rated current	12 A	16 A
Limiting continuous current	12 A	16 A, UL: 20 A
Maximum breaking capacity AC	3000 VA	4000 VA
Limiting making capacity, max 4 s, df 10%	25 A	30 A
Contact material	AgNi 90/10, AgNi 90/10 gold plated	
Rated frequency of operation with / without load	DC coil: 6 / 1200 min ⁻¹ AC coil: 6 / 600 min ⁻¹	
Operate- / release time DC coil	max 8 / 6 ms	
Bounce time DC coil, NO / NC contact	max 4 / 6 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RT314 DC-coil	NO	16 A, 250 VAC, cosφ=1	85°C	30x10 ³
RT314 DC-coil	CO	16 A, 250 VAC, cosφ=1	85°C	10x10 ³
RT314 DC-coil	NO	10 A, 400 VAC, cosφ=1	85°C	150x10 ³
RT114 DC-coil	NO	12 A, 250 VAC, cosφ=1	85°C	50x10 ³
RT114 AC-coil	NO	12 A, 250 VAC, cosφ=1	70°C	100x10 ³
UL 508				
RT314	NO / NC	20 A, 250 VAC, general purpose	85°C	6x10 ³
RT334	NO	16 A, 250 VAC, general purpose	85°C	50x10 ³
RT314	NO	1 hp, 240 VAC	40°C	1x10 ³
EN60947-5-1				
RT314 DC-coil	NO / NC	2 A, 24 VDC DC13		6.050
EN60730-1				
RT314 DC-coil	NO	12(2) A, 250 VAC	85°C	100x10 ³

Coil data

Rated coil voltage range DC coil	5...110 VDC
AC coil	24...230 VAC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F



Power PCB Relay RT1 (Continued)

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	62±10%	403
006	6	4.2	0.6	90±10%	400
009	9	6.3	0.9	200±10%	400
012	12	8.4	1.2	360±10%	400
024	24	16.8	2.4	1440±10%	400
048	48	33.6	4.8	5520±10%	417
060	60	42.0	6.0	8570±12%	420
110	110	77.0	11.0	28800±12%	420

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coil versions, AC-coil 50Hz

Coil code	Rated voltage VAC	Operate voltage 50 Hz VAC	Release voltage 50 Hz VAC	Coil resistance Ohm	Rated coil power 50 Hz VA
524	24	18.0	3.6	350±10%	0.76
615	115	86.3	17.3	8100±15%	0.76
620	120	90.0	18.0	8800±15%	0.75
700	200	150.0	30.0	24350±15%	0.76
730	230	172.5	34.5	32500±15%	0.74

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree 12 A version	3
16 A version	3
Rated voltage system	240 V
Overvoltage category	III

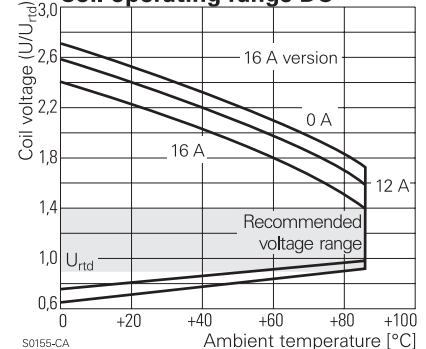
Other data

Mechanical endurance DC coil	> 30 x 10 ⁶ cycles
AC coil	> 10 x 10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0413
Resistance to heat and fire, WG version	according EN60335-1, par.30
Environment	
Ambient temperature range DC coil	-40...+85°C
AC coil	-40...+70°C
Vibration resistance (function), NO / NC cont.	20 / 5 g, 30 ... 500 Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof, RTIII - wash tight
Processing	
Mounting	pcb or on socket
Mounting position	any
Mounting distance DC / AC coils	≥ 0 / ≥ 2.5 mm
Resistance to soldering heat flux-proof version	270°C / 10 s
wash-tight version	260°C / 5 s
Relay weight	14 g
Packaging unit	20 / 500 pcs

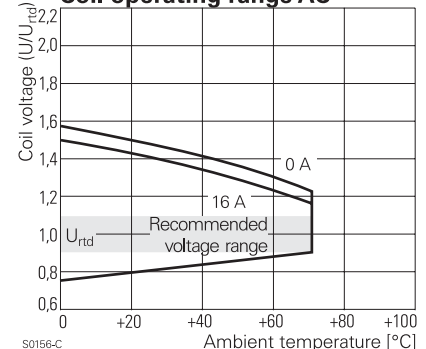
Accessories

For details see datasheet	Accessories Power Relay RT
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Coil operating range DC

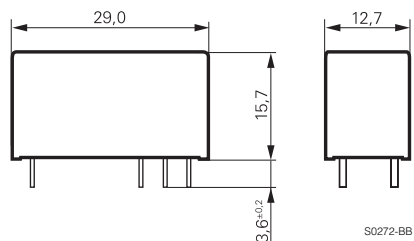


Coil operating range AC



Power PCB Relay RT1 (Continued)

Dimensions

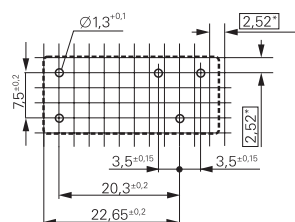


PCB layout / terminal assignment

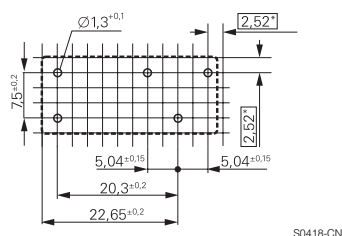
Bottom view on solder pins

*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

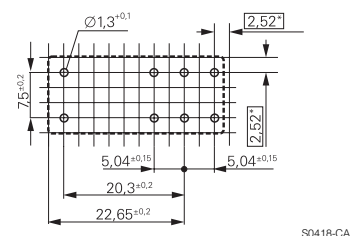
12 A, pinning 3.5 mm



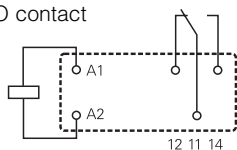
12 A, pinning 5 mm



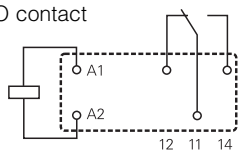
16 A, pinning 5 mm



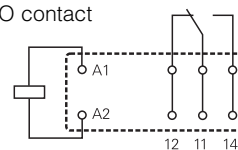
1 CO contact



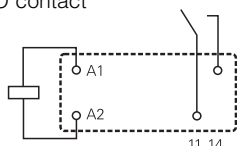
1 CO contact



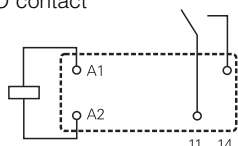
1 CO contact



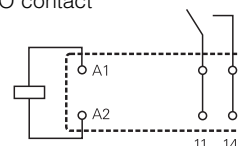
1 NO contact



1 NO contact



1 NO contact



Product key

Typical product key

RT 3 1 4 024

Type

RT Power PCB Relay RT1

Version

- 1** 12 A, pinning 3.5 mm, flux proof
- 2** 12 A, pinning 5 mm, flux proof *)
- 3** 16 A, pinning 5 mm, flux proof

- B** 12 A, pinning 3.5 mm, wash tight
- D** 16 A, pinning 5 mm, wash tight

Contact configuration

- 1** 1 CO contact (1 form C)

- 3** 1 NO contact (1 form A)

Contact material

- 4** AgNi 90/10

- 5** AgNi 90/10 gold plated (for type RT31.)

Coil

Coil code: please refer to coil versions table

Version

- Blank** Standard version
- WG** Product in accordance with IEC 60335-1 (domestic appliances)

Preferred types in bold print

*) Wash tight version on request

Power PCB Relay RT1 (Continued)

Product key	Version	Contacts	Cont. material	Coil	Coil	Part number
RT114005	12 A	1 CO contact	AgNi 90/10	DC-coil	5 VDC	1393239-7
RT114006	pinning 3.5 mm				6 VDC	1393239-8
RT114012	flux proof				12 VDC	1419108-1
RT114024					24 VDC	1-1393239-3
RT114048					48 VDC	1-1393239-4
RT114110					110 VDC	1-1393239-6
RT114524				AC-coil	24 VAC	1-1393239-7
RT114615					115 VAC	1-1393239-8
RT114730					230 VAC	1-1393239-9
RT134012		1 NO contact		DC-coil	12 VDC	2-1393239-6
RT134024					24 VDC	3-1393239-0
RT214012	12 A, pinning 5mm	1 CO contact			12 VDC	5-1393239-4
RT214024	flux proof				24 VDC	5-1393239-5
RT314005	16 A				5 VDC	9-1393239-1
RT314006	pinning 5 mm				6 VDC	9-1393239-3
RT314012	flux proof				12 VDC	9-1393239-5
RT314024					24 VDC	9-1393239-8
RT314048					48 VDC	1393240-1
RT314060					60 VDC	1393240-2
RT314110					110 VDC	1393240-3
RT314524				AC-coil	24 VAC	1393240-4
RT314615					115 VAC	1393240-6
RT314730					230 VAC	1393240-7
RT315012			AgNi 90/10	DC-coil	12 VDC	1-1393240-1
RT315024			gold plated		24 VDC	1-1393240-4
RT315730				AC-coil	230 VAC	1-1419108-1
RT334012		1 NO contact	AgNi 90/10	DC-coil	12 VDC	4-1393240-5
RT334024					24 VDC	4-1393240-8
RT334048					48 VDC	5-1393240-0
RTB14005	12 A	1 CO contact			5 VDC	1-1393238-2
RTB14012	pinning 3.5 mm				12 VDC	1-1393238-5
RTB14024	wash tight				24 VDC	1-1393238-9
RTB14048					48 VDC	2-1393238-1
RTD14005	16 A				5 VDC	5-1393238-9
RTD14006	pinning 5 mm				6 VDC	6-1393238-0
RTD14012	wash tight				12 VDC	6-1393238-2
RTD14015					15 VDC	6-1393238-4
RTD14024					24 VDC	6-1393238-8
RTD14048					48 VDC	6-1393238-9
RTD34005		1 NO contact			5 VDC	8-1393238-3
RTD34012					12 VDC	3-1419108-5
RTD34024					24 VDC	3-1419108-8

Power PCB Relay RT1 reflow solderable

- 1 pole 12 / 16 A, 1 CO or 1 NO contact
- DC- or AC-coil
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact, reinforced insulation
- Ambient temperature 85°C (DC-coil)
- For THR (Through-Hole Reflow) soldering process
- Product in accordance to IEC60335-1

Applications

Boiler control, timers, garage door control, POS automation, interface modules



F0306-A

Approvals

 (in process),  E214025
Technical data of approved types on request

Contact data

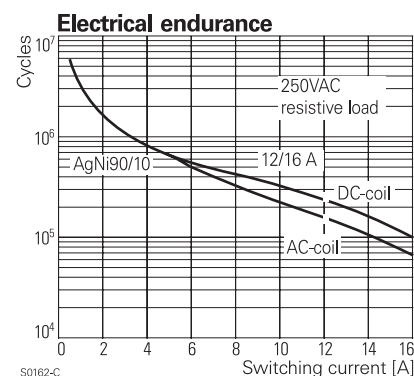
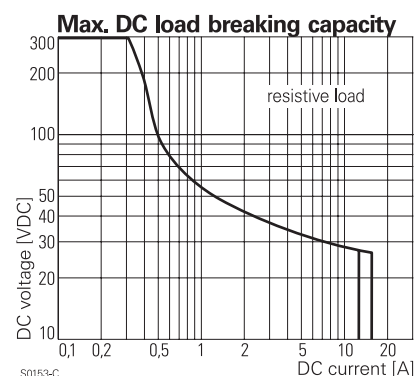
Contact configuration	1 CO or 1 NO contact	
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	250 / 400 VAC	
Rated current	12 A	16 A
Limiting continuous current	12 A	16 A, UL: 20 A
Maximum breaking capacity AC	3000 VA	4000 VA
Limiting making capacity, max 4 s, df 10%	25 A	30 A
Contact material	AgNi 90/10, AgNi 90/10 gold plated	
Rated frequency of operation with / without load	DC coil: 6 / 1200 min ⁻¹ AC coil: 6 / 600 min ⁻¹	
Operate- / release time DC coil	max 8 / 6 ms	
Bounce time DC coil, NO / NC contact	max 4 / 6 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
UL 508				
RT314	NO / NC	20 A, 250 VAC, general purpose	85°C	6x10 ³
RT334	NO	16 A, 250 VAC, general purpose	85°C	50x10 ³
RT114	NO	12 A, 250 VAC, general purpose	85°C	50x10 ³
RT314	NO	A300	40°C	6x10 ³
RT314	NC	B300	40°C	6x10 ³
RT314	NO	1 hp, 240 VAC	40°C	1x10 ³

Coil data

Rated coil voltage range DC coil	5...110 VDC
AC coil	24...230 VAC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F



Power PCB Relay RT1 reflow solderable (Continued)

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	62 ± 10%	403
006	6	4.2	0.6	90 ± 10%	400
009	9	6.3	0.9	200 ± 10%	400
012	12	8.4	1.2	360 ± 10%	400
024	24	16.8	2.4	1440 ± 10%	400
048	48	33.6	4.8	5520 ± 10%	417
060	60	42.0	6.0	8570 ± 12%	420
110	110	77.0	11.0	28800 ± 12%	420

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coil versions, AC-coil 50Hz

Coil code	Rated voltage VAC	Operate voltage 50 Hz VAC	Release voltage 50 Hz VAC	Coil resistance Ohm	Rated coil power 50 Hz VA
524	24	18.0	3.6	350 ± 10%	0.76
615	115	86.3	17.3	8100 ± 15%	0.76
620	120	90.0	18.0	8800 ± 15%	0.75
700	200	150.0	30.0	24350 ± 15%	0.76
730	230	172.5	34.5	32500 ± 15%	0.74

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 175 V
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree 12 A version	3
16 A version	3
Rated voltage system	240 V
Overvoltage category	III

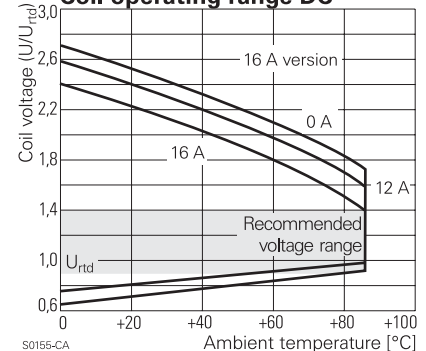
Other data

Mechanical endurance DC coil	> 30 x 10 ⁶ cycles
AC coil	> 5 x 10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Resistance to heat and fire	according EN60335-1, par.30
Environment	
Ambient temperature range DC coil	-40...+85°C
AC coil	-40...+70°C
Vibration resistance (function), NO / NC cont.	20 / 5 g, 30 ... 500 Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof
Processing	
Mounting	pcb
Mounting distance DC / AC coils	≥ 0 / ≥ 2.5 mm
Wave soldering soldering heat resistance	270°C / 10 s
Reflow soldering	
soldering process	forced gas convection ¹⁾ or vapour phase ²⁾
temperature profile	according EN61760
Relay weight	14 g
Packaging unit	20 / 500 pcs

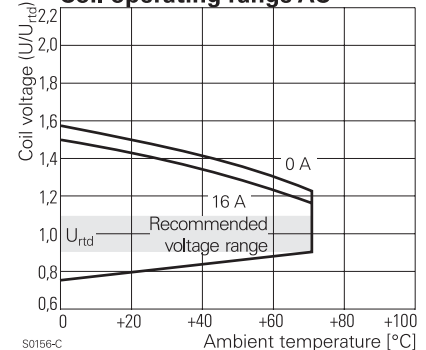
¹⁾ infrared heating not allowed

²⁾ recommended fluid LS / 230

Coil operating range DC



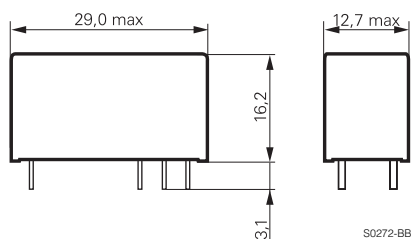
Coil operating range AC



Power PCB Relay RT1 reflow solderable (Continued)

Dimensions

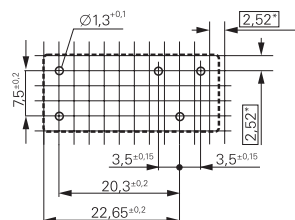
For automated mounting please ask for detailed drawing.



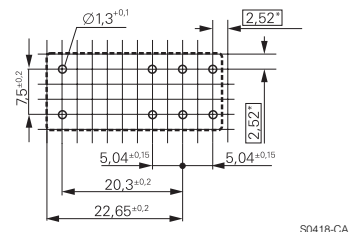
PCB layout / terminal assignment

Bottom view on solder pins

12 A, pinning 3.5 mm

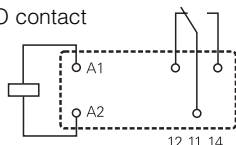


16 A, pinning 5 mm

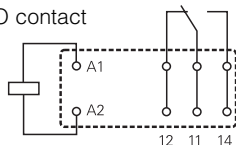


*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

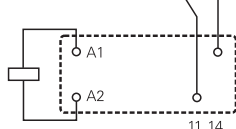
1 CO contact



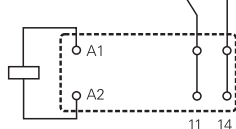
1 CO contact



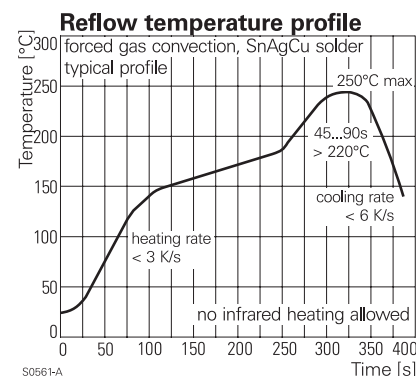
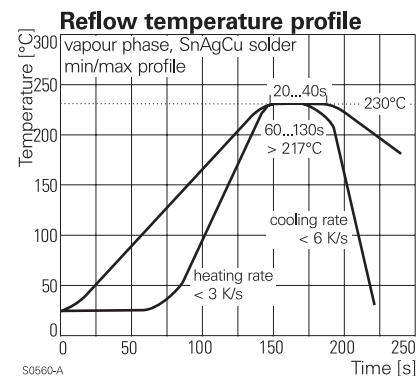
1 NO contact



1 NO contact



Process conditions for Reflow soldering
according to EN61760-1



Product key

Typical product key

RT 3 1 4 024 R

Type

RT Power PCB Relay RT1 reflow solderable

Version

- 1** 12 A, pinning 3.5 mm, flux proof
- 3** 16 A, pinning 5 mm, flux proof

Contact configuration

- 1** 1 CO contact (1 form C)
- 3** 1 NO contact (1 form A)

Contact material

- 4** AgNi 90/10
- 5** AgNi 90/10 gold plated (for type RT31.)

Coil

Coil code: please refer to coil versions table

Version

- R** Reflow solderable

Power PCB Relay RT1 bistable

- 1 pole 16 A, 1 CO contact
- Polarized bistable version with 1 or 2 coils
- 5 kV / 10 mm coil-contact
- Reinforced insulation

Applications

Battery powered equipment or applications with "memory function"



F0176-C

Approvals

VDE REG.-Nr. 6106, **CE** us E214025, **SP** 14385
Technical data of approved types on request

Contact data

Contact configuration	1 CO contact
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	16 A
Limiting continuous current	16 A, UL: 20 A
Maximum breaking capacity AC	4000 VA
Limiting making capacity, max 4 s, duty factor 10%	30 A
Contact material	AgNi 90/10
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / reset time	max 10 / 10 ms
Bounce time NO / NC contact	max 3 / 6 ms

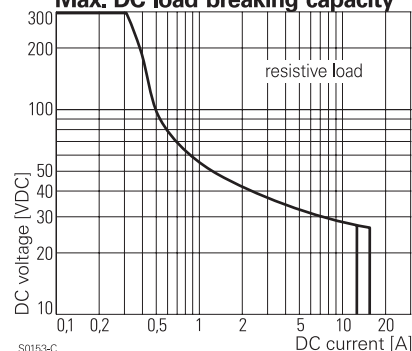
Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RT314	NO	16 A, 250 VAC, cosφ=1	85°C	30x10 ³
RT314	CO	16 A, 250 VAC, cosφ=1	85°C	10x10 ³
UL 508				
RT314	NO / NC	20 A, 250 VAC, general purpose	85°C	6x10 ³
RT334	NO	16 A, 250 VAC, general purpose	85°C	50x10 ³
RT314	NO	1 hp, 240 VAC	40°C	1x10 ³

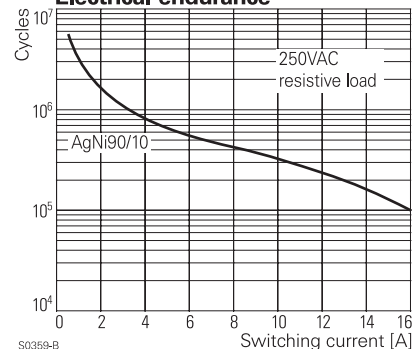
Coil data

	1 coil	2 coils
Rated coil voltage range	5...24 VDC	
Operative range to IEC 61810	2	
Limiting voltage, % of rated coil voltage	120%	150%
Minimum energization duration	30 ms	
Maximum energization duration	1 min at < 10% DF	
Coil insulation system according UL1446	class F	

Max. DC load breaking capacity



Electrical endurance



Power PCB Relay RT1 bistable (Continued)

Coil versions, bistable coil

Coil code	Rated voltage VDC	Operate voltage VDC	Reset voltage VDC	Coil resistance Ω	Rated coil power mW
bistable, 1 coil					
A05	5	3.5	2.8	$62 \pm 10\%$	403
A06	6	4.2	3.3	$90 \pm 10\%$	400
A12	12	8.4	6.6	$360 \pm 10\%$	400
A24	24	16.8	13.2	$1440 \pm 10\%$	400
bistable, 2 coils					
F05	5	3.5	2.8	$42 \pm 10\%$	595
F06	6	4.2	3.3	$55 \pm 10\%$	655
F12	12	8.4	6.6	$240 \pm 10\%$	600
F24	24	16.8	13.2	$886 \pm 10\%$	650

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coils operation

Version	1 coil		2 coils		
Coil terminals	A1	A2	A1	A3	A2
Pull-in	+	-		+	-
Reset	-	+	-	+	
Contact position not defined at delivery					

Insulation

Insulation		
Dielectric strength coil-contact circuit	5000 V _{rms}	
open contact circuit	1000 V _{rms}	
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm	
Material group of insulation parts	IIIa	
Tracking index of relay base	PTI 250 V	
Insulation to IEC 61810-1		
Type of insulation coil-contact circuit	reinforced	
open contact circuit	micro disconnection	
Rated insulation voltage	250 V	
Pollution degree	3	2
Rated voltage system	240 V	230 / 400 V
Overvoltage category	III	

Other data

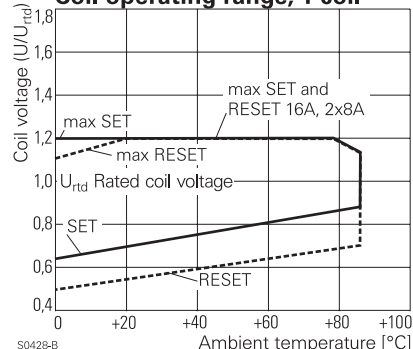
Mechanical endurance	> 5 x 10 ⁶ cycles	
Material	RoHS - Directive 2002/95/EC compliant as per product date code 0413	
Environment		
Ambient temperature range 1 coil	-10...+85°C	
2 coils	-40...+85°C	
Vibration / shock resistance (function) opening NC cont.	3 / 5 g	
opening closed NO contact	6 / 15 g	
Shock resistance (destruction)	100 g	
Category of protection	RTII - flux proof	
Processing		
Mounting	pcb or on socket*)	
Mounting distance	≥ 0 mm	
Resistance to soldering heat flux-proof version	270 °C / 10 s	
Relay weight	14 g	
Packaging unit 1 coil	20 / 500 pcs	
2 coils	100 pcs	

^{*)} socket available for 1 coil version only, see Accessories

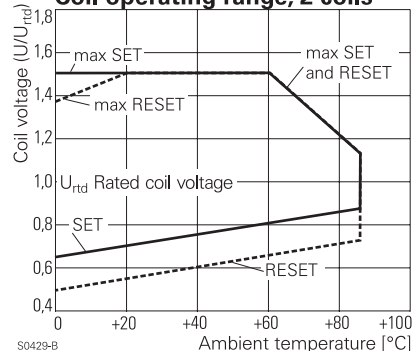
Accessories

For 1 coil version, details see datasheet	Accessories Power Relay RT
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Coil operating range, 1 coil

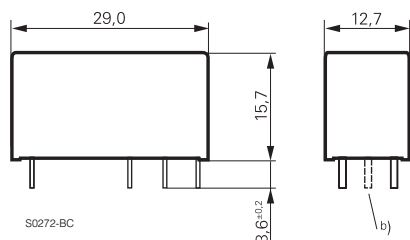


Coil operating range, 2 coils



Power PCB Relay RT1 bistable (Continued)

Dimensions



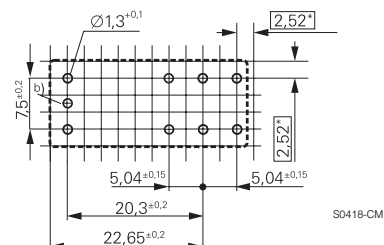
a) Indicated contact position during or after coil energization with reset voltage.

b) for 2 coil version only

PCB layout / terminal assignment

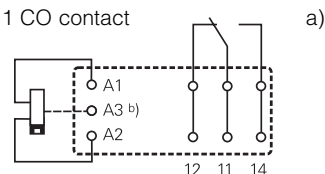
Bottom view on solder pins

16 A, pinning 5 mm



*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

1 CO contact



Product key

Typical product key

RT 3 1 4 F24

Type

RT Power PCB Relay RT1 bistable

Version

3 16 A, pinning 5 mm, flux proof

Contact configuration

1 1 CO contact (1 form C)

Contact material

4 AgNi 90/10

Coil

Coil code: please refer to coil versions table, preferred types in bold print

Product key	Version	Contacts	Cont. material	Coil	Coil	Part number
RT314A12	16 A	1 CO contact	AgNi 90/10	bistable	12 VDC	8-1393239-0
RT314A24	pinning 5 mm			1-coil	24 VDC	8-1393239-1
RT314F12	flux proof			bistable	12 VDC	8-1393239-7
RT314F24				2-coils	24 VDC	8-1393239-8

Power PCB Relay RT1 sensitive

- 1 pole 10 A, 1 CO or 1 NO contact
- Highly sensitive version, coil power 250 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C

Applications

Domestic appliances, heating control



F0145-C

Approvals

VDE REG.-Nr. 6106, cULus E214025, cSP® 14385
Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	10 A
Maximum breaking capacity AC	2500 VA
Limiting making capacity, max 4 s, duty factor 10%	15 A
Contact material	AgNi 90/10
Rated frequency of operation with / without load	50 / 1200 min ⁻¹
Operate- / release time	max 10 / 8 ms
Bounce time NO / NC contact	max 4 / 9 ms

Contact ratings

Type	Contact Load	Ambient temp. [°C]	Cycles
IEC 61810			
RT174	NO / NC 10 A, 250 VAC, cosφ=1	85°C	100x10 ³
UL 508			
RT174	CO 10 A, 250 VAC, general purpose	85°C	6x10 ³
RT174	NO / NC 10 A, 250 VAC, general purpose	40°C	30x10 ³
RT174	NO / NC B300	40°C	6x10 ³
RT174	NO R150	40°C	6x10 ³
RT174	NC 1/2 hp, 240 VAC	40°C	1x10 ³
RT174	NO 3/4 hp, 240 VAC	40°C	1x10 ³
EN60730-1			
RT174	NO 6(4) A, 250 VAC	85°C	100x10 ³

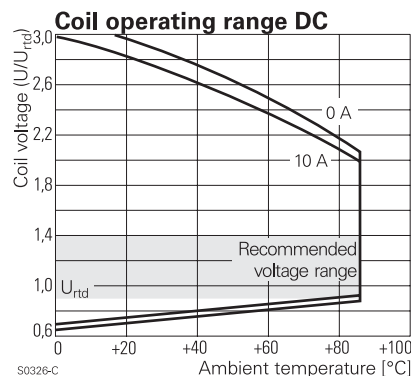
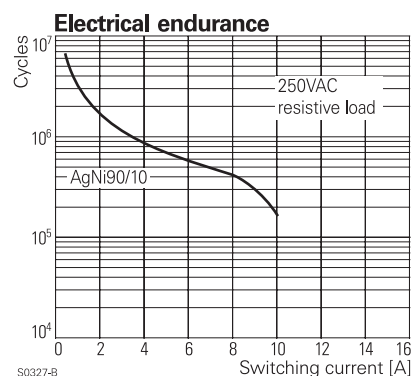
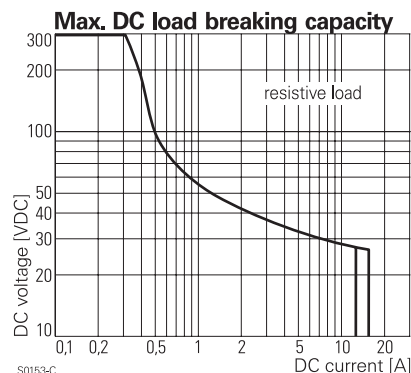
Coil data

Rated coil voltage range DC coil	5...60 VDC
Operative range to IEC 61810	2
Coil Coil insulation system according to UL1446	class F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
005	5	3.7	0.5	100±10%	250
006	6	4.5	0.6	144±10%	250
012	12	9.0	1.2	576±10%	250
024	24	18.0	2.4	2304±10%	250
048	48	36.0	4.8	9216±10%	250
060	60	45.0	6.0	12857±12%	280

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Power PCB Relay RT1 sensitive (Continued)

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	> 10 / 10 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

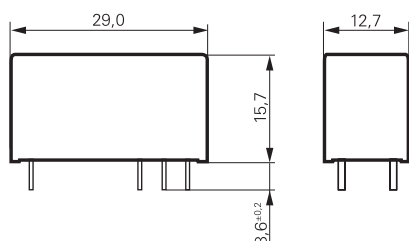
Other data

Mechanical endurance	> 30 x 10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0413
Environment	
Ambient temperature range	-40...+85°C
Vibration resistance (function) NO / NC contact	20 / 5 g, 30 ... 500 Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof, RTIII - wash tight
Processing	
Mounting	pcb or on socket
Mounting distance	≥ 0 mm
Resistance to soldering heat flux-proof version	270°C / 10 s
wash-tight version	260°C / 5 s
Relay weight	14 g
Packaging unit	20 / 500 pcs

Accessories

For details see datasheet	Accessories Power Relay RT
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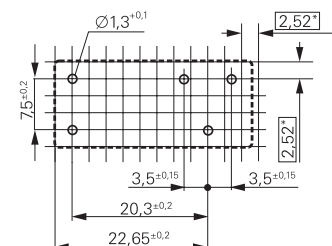
Dimensions



S0272-BB

PCB layout / terminal assignment
Bottom view on solder pins

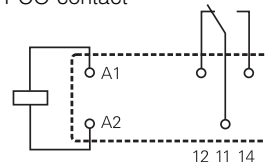
10 A, pinning 3.5 mm



S0418-CB

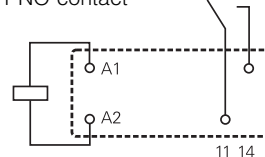
*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

1 CO contact



S0163-BG

1 NO contact



S0163-BH

Product key

Typical product key

RT 1 7 4 012

Type

RT Power PCB Relay RT1 sensitive

Version

1 10 A, pinning 3.5 mm, flux proof **B** 10 A, pinning 3.5 mm, wash tight

Contact configuration

7 1 CO contact (1 form C) **8** 1 NO contact (1 form A)

Contact material

4 AgNi 90/10

Coil

Coil code: please refer to coil versions table

Preferred types in bold print

Product key	Version	Contacts	Contact material	Coil	Part number
RT174005	10 A	1 CO contact	AgNi 90/10	5 VDC	3-1393239-6
RT174006	pinning 3.5 mm			6 VDC	3-1393239-7
RT174012	flux proof			12 VDC	3-1393239-8
RT174024				24 VDC	3-1393239-9
RTB74012	10 A, 3.5mm			12 VDC	4-1393238-4
RTB74024	wash tight			24 VDC	4-1393238-6

Power PCB Relay RT1 bifurcated

- 1 pole 12 / 16 A, 1 CO or 1 NO contact
- Sensitive DC-coil, 200 or 400 mW
- 5 kV / 10 mm coil-contact, reinforced insulation
- Ambient temperature 85°C

Applications

Switching from dry circuit up to 16 A, including arc-less switching, with extra high reliability



F0144-C

Approvals

VDE REG.-Nr. 6106, **CE** us E214025, **SP** 14385
Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1 NO contact	
Contact set	bifurcated contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	250 / 400 VAC	
Rated current	12 A ¹⁾	16 A
Maximum breaking capacity AC	3000 VA	4000 VA
Limiting making capacity, max 4 s, df 10%	16 A	
Contact material	AgNi 90/10 gold plated	AgNi 90/10
Rated frequency of operation with / without load	6 / 600 min ⁻¹	
Operate- / release time	max 10 / 5 ms	
Bounce time, NO contact	max 4 / 9 ms	

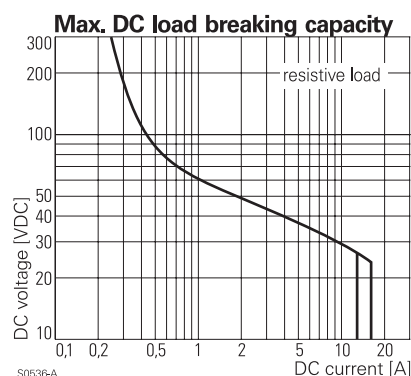
¹⁾ recommended for switching load range ≤ 5 A

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RT31C	NO	16 A, 250 VAC, cosφ=1	85°C	50x10 ³
RTB7D	CO	12 A, 250 VAC, cosφ=1	85°C	1x10 ³
RTB7D	CO	5 A, 250 VAC, cosφ=1	85°C	100x10 ³
UL 508				
RT31D	NO	16 A, 250 VAC, general purpose	85°C	50x10 ³
RT31D	CO	16 A, 250 VAC, general purpose	40°C	6x10 ³
RTB7D	CO	12 A, 250 VAC, general purpose	40°C	6x10 ³
RTB7D	NO	5 A, 250 VAC, general purpose	85°C	100x10 ³

Coil data

	12 A version	16 A version
Rated coil voltage range	5...60 VDC	5...110 VDC
Operative range to IEC 61810	2	
Coil insulation system according UL1446	class F	



Power PCB Relay RT1 bifurcated (Continued)

Coil versions, 16 A version

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	62 ± 10%	403
006	6	4.2	0.6	90 ± 10%	400
012	12	8.4	1.2	360 ± 10%	400
024	24	16.8	2.4	1440 ± 10%	400
048	48	33.6	4.8	5520 ± 10%	417
060	60	42.0	6.0	8570 ± 12%	420
110	110	77.0	11.0	28800 ± 12%	420

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coil versions, 12 A version

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	125 ± 10%	200
006	6	4.2	0.6	190 ± 10%	190
012	12	8.4	1.2	690 ± 10%	210
024	24	16.8	2.4	2980 ± 10%	190
048	48	33.6	4.8	10470 ± 10%	220
060	60	42.0	6.0	16980 ± 10%	210

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Insulation

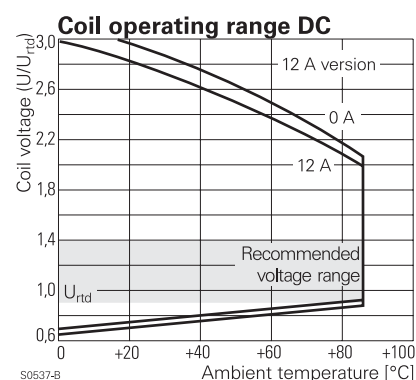
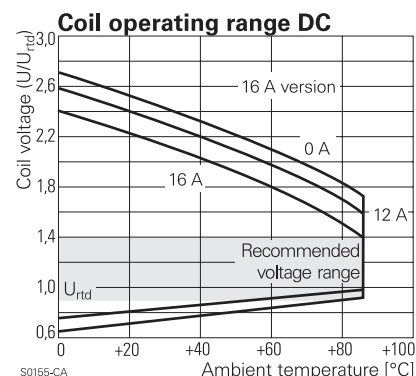
Dielectric strength coil-contact circuit		5000 V _{rms}
open contact circuit		1000 V _{rms}
Clearance / creepage coil-contact circuit		≥ 10 / 10 mm
Material group of insulation parts		IIIa
Tracking index of relay base		PTI 250 V
Insulation to IEC 61810-1		
Type of insulation coil-contact circuit	reinforced	
open contact circuit	micro disconnection	
Rated insulation voltage	250 V	
Pollution degree 12 A version	3	3
16 A version	3	2
Rated voltage system	240 V	230 / 400 V
Overvoltage category	III	

Other data

Mechanical endurance	12 A version	> 30 x 10 ⁶ cycles
	16 A version	> 10 x 10 ⁶ cycles
Material		
RoHS - Directive 2002/95/EC		
compliant		
Environment		
Ambient temperature range		
-40...+85°C		
Vibration resistance (function), NO / NC contact		
12 A version		
15 / 3 g, 30 ... 500 Hz		
16 A version		
15 / 4 g, 30 ... 500 Hz		
Shock resistance (destruction)		
100 g		
Category of protection 12 A version		
RTIII - wash tight		
16 A version		
RTII - flux proof		
Processing		
Mounting distance		
≥ 5 mm		
Resistance to soldering heat flux-proof version		
270°C / 10 s		
wash-tight version		
260°C / 5 s		
Relay weight		
14 g		
Packaging unit		
20 / 500 pcs		

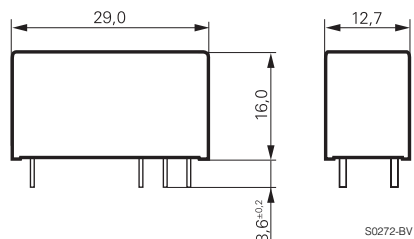
Accessories

For details see datasheet	Accessories Power Relay RT
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Power PCB Relay RT1 bifurcated (Continued)

Dimensions

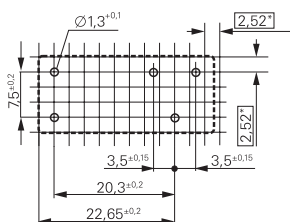


PCB layout / terminal assignment

Bottom view on solder pins

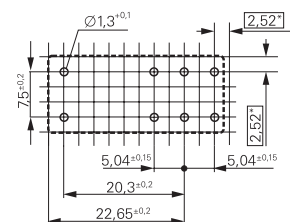
*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

12 A, pinning 3.5 mm

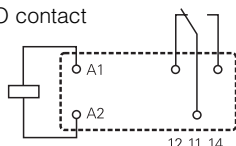


S0418-CB

16 A, pinning 5 mm

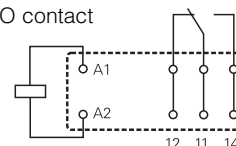


1 CO contact



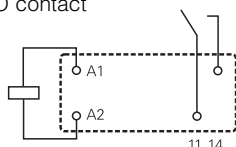
S0163-BG

1 CO contact



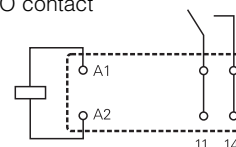
S0418-CA

1 NO contact



S0163-BH

1 NO contact



S0163-BE

S0163-BF

Product key

Typical product key

RT B 7 D 012

Type

RT Power PCB Relay RT1 bifurcated

Version

3 16 A, pinning 5 mm, flux proof

B 12 A, pinning 3.5 mm, wash tight

Configuration

1 1 CO contact (1 form C), 16 A, 400 mW coil

7 1 CO contact (1 form C), 12 A, 200 mW coil

3 1 NO contact (1 form A), 16 A, 400 mW coil

8 1 NO contact (1 form A), 12 A, 200 mW coil

Contact material

C AgNi 90/10, 16 A version

D AgNi 90/10 gold plated, 12 A version

Coil

Coil code: please refer to coil versions table

Product key	Version	Contacts	Cont. material	Coil	Coil	Part number
RT31C012	16 A, pinning 5mm	1 CO	AgNi 90/10	DC coil	12 VDC	1415900-2
RT31C024	flux proof	bifurcated contact			24 VDC	1415900-7
RTB7D012	12 A, 3.5mm		AgNi 90/10		12 VDC	1415900-5
RTB7D024	wash tight		gold plated		24 VDC	1415900-6

Power PCB Relay RT1 Inrush

- 1 pole 16 A, 1 CO or 1 NO contact
- For inrush peak currents up to 80 A
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C

Applications

Domestic appliances, heating control, lighting control



F0177-C

Approvals

VDE REG.-Nr. 6106, **C** **UL** **us** E214025, **SP** **us** 14385
Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	16 A
Limiting continuous current	16 A, UL: 20 A (K-version only)
Maximum breaking capacity AC	4000 VA
Limiting making capacity, max 4 s, duty factor 10%	30 A
max 20 ms (incandescent lamps), RT33L version	80 A
Contact material	AgNi 90/10, AgSnO ₂
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / release time DC coil	max 9 / 6 ms
Operate- / reset time bistable	max 10 / 10 ms
Bounce time NO / NC contact	max 3 / 6 ms

Contact ratings

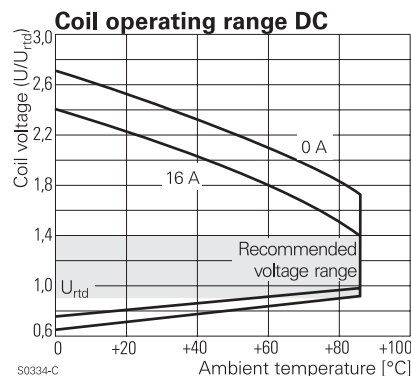
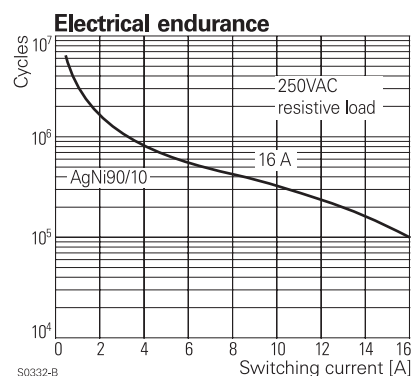
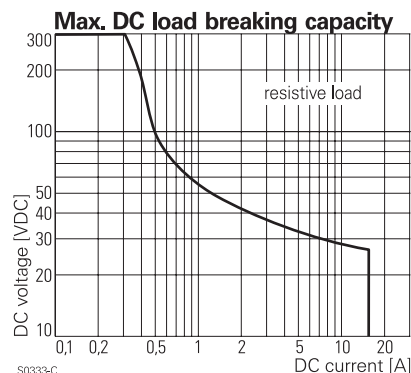
Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RT33L	NO	16 A, 250 VAC, cosφ=1	85°C	50x10 ³
RT33K	NO	16 A, 250 VAC, cosφ=1	85°C	30x10 ³
UL 508				
RT33K	NO	20 A, 277 VAC, general purpose	40°C	10x10 ³
RT33L	NO	16 A, 277 VAC, resistive	85°C	50x10 ³
RT33L	NO	1000 W Tungsten, 120 VAC, 60 Hz	40°C	6x10 ³
RT33L	NO	1000 W Discharge lamps (standard ballast), 120 VAC, 60 Hz	40°C	6x10 ³

Coil data, DC-coil

Rated coil voltage range	5...110 VDC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
005	5	3.5	0.5	62±10%	403
006	6	4.2	0.6	90±10%	400
012	12	8.4	1.2	360±10%	400
024	24	16.8	2.4	1440±10%	400
048	48	33.6	4.8	5520±10%	417
060	60	42.0	6.0	8570±12%	420



Power PCB Relay RT1 Inrush (Continued)

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coil data, bistable coils	1 coil	2 coils
Rated coil voltage range	5...24 VDC	
Operative range to IEC 61810	2	
Limiting voltage, % of rated coil voltage	120%	150%
Minimum energization duration	30 ms	
Maximum energization duration	1 min at < 10% DF	
Coil insulation system according UL1446	class F	

Coil versions, bistable coil

Coil code	Rated voltage VDC	Operate voltage VDC	Reset voltage VDC	Coil resistance Ω	Rated coil power mW
bistable, 1 coil					
A05	5	3.5	2.8	62 ± 10%	403
A06	6	4.2	3.3	90 ± 10%	400
A12	12	8.4	6.6	360 ± 10%	400
A24	24	16.8	13.2	1440 ± 10%	400
bistable, 2 coils					
F05	5	3.5	2.8	42 ± 10%	595
F06	6	4.2	3.3	55 ± 10%	655
F12	12	8.4	6.6	240 ± 10%	600
F24	24	16.8	13.2	886 ± 10%	650

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coils - operation

Version	1 coil		2 coils		
Coil terminals	A1	A2	A1	A3	A2
Pull-in	+	-	+	+	-
Reset	-	+	-	+	-

Contact position not defined at delivery

Insulation

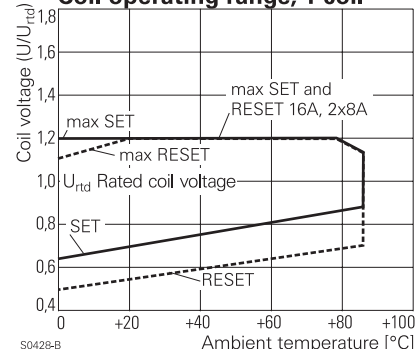
Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

Other data

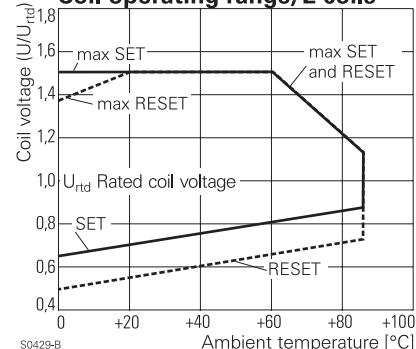
Mechanical endurance monostable	> 30 x 10 ⁶ cycles
bistable	> 5 x 10 ⁶ cycles
Material	RoHS - Directive 2002/95/EC compliant as per product date code 0413
Environment	
Ambient temperature range DC coil	-40...+85°C
bistable 1 coil	-10...+85°C
bistable 2 coils	-40...+85°C
Vibration resistance DC coil (function) NO / NC cont.20 / 5 g, 30 ... 500 Hz	
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof
Processing	
Mounting	pcb or on socket*)
Mounting distance	≥ 0 mm
Resistance to soldering heat flux-proof version	270 °C / 10 s
Relay weight	14 g
Packaging unit DC coil, bistable 1 coil	20 / 500 pcs
bistable 2 coils	100 pcs

*) socket available for 1 coil version only, see Accessories

Coil operating range, 1 coil



Coil operating range, 2 coils



Power PCB Relay RT1 Inrush (Continued)

Accessories

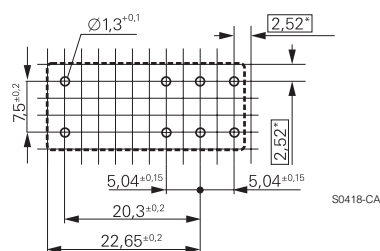
For details see datasheet

Accessories Power Relay RT

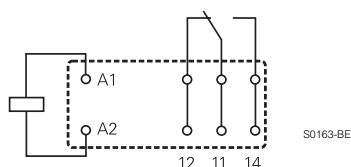
PCB layout / terminal assignment

Bottom view on solder pins

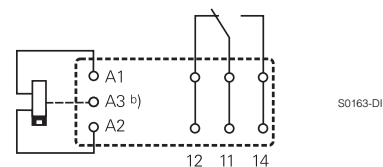
16 A, 1 CO contact, pinning 5 mm



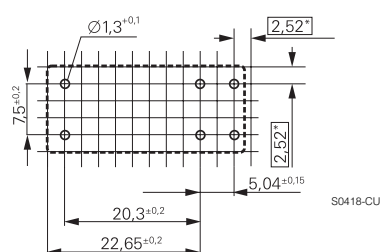
monostable version



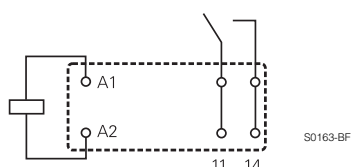
bistable version a)



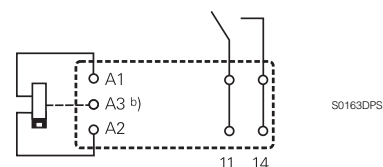
16 A, 1 NO contact, pinning 5 mm



monostable version



bistable version a)

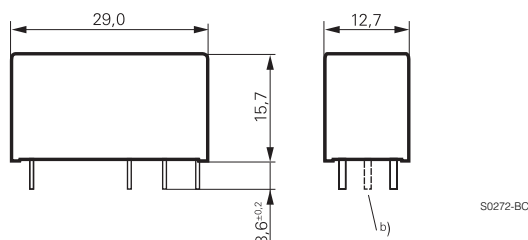


*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

a) Indicated contact position during or after coil energization with reset voltage.

b) for 2 coil version only

Dimensions



Product key

Typical product key

RT 3 3 L 012

Type

RT Power PCB Relay RT1 Inrush

Version

3 16 A, pinning 5 mm, flux proof

Contact configuration

1 1 CO contact (1 form C) **3** 1 NO contact (1 form A)

Contact material

K AgNi 90/10 **L** AgSnO₂

Coil

Coil code: please refer to coil versions table, preferred types in bold print

Product key	Version	Contacts	Contact material	Coil	Part number
RT33K012	16 A	1 NO contact	AgNi 90/10	12 VDC	2-1393240-3
RT33K024	pinning 5 mm			24 VDC	2-1393240-4
RT33K048				48 VDC	2-1393240-5
RT33L012			AgSnO ₂	12 VDC	3-1393240-3
RT33L024				24 VDC	3-1393240-5
RT33L048				48 VDC	3-1393240-6

Power PCB Relay RT1 Inrush Power

- 1 pole 16 A, 1 NO contact (W pre-make contact + AgSnO₂)
- 10 A / 250 VAC making and breaking capacity acc. to IEC 60669-1
- 165 A / 20 ms inrush peak current
- Mono- or bistable coil
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Test tab (manual operator) optional

Applications

Lighting systems, movement sensors, filament and incandescent lamp loads, motors



F0272-B

Approvals

VDE REG.-Nr. 6106, cULus E214025, cULus 14385
Technical data of approved types on request

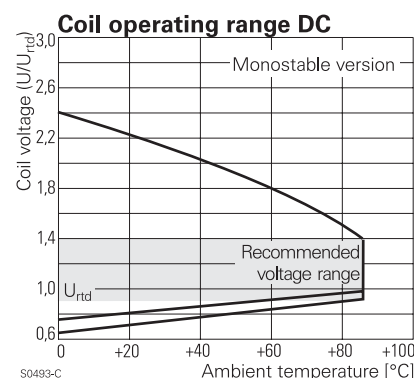
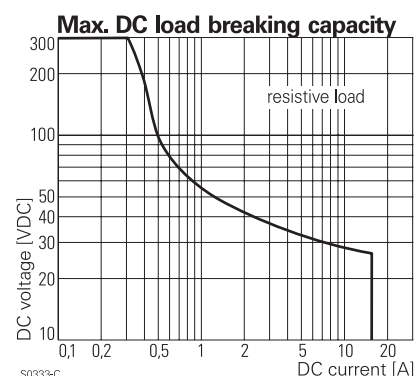
Contact data	RT.3T	RTS3L
Contact configuration	1 NO	
Contact set	pre-make contact	single contact
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	250 / 400 VAC	
Rated current	16 A	
Limiting continuous current	16 A, UL: 20 A (RTS3L)	
Maximum breaking capacity AC	4000 VA	
Limiting making capacity		
max 20 ms (incandescent lamps)	165 A	120 A
max 200 µs (fluorescent lamps)	800 A	-
Contact material	W (pre-make cont.)+AgSnO ₂	AgSnO ₂
Rated frequency of operation with / without load	6 / 60 min ⁻¹	
Operate- / release time DC coil	max 10 / 5 ms	
Operate- / reset time bistable	max 10 / 10 ms	
Bounce time NO contact	max 4 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RTS3L	NO	20 A, 250 VAC, cosφ=1	70°C	20x10 ³
RTS3L	monostable			
NO		16 A, 250 VAC, cosφ=1	85°C	100x10 ³
RTS3T	NO	16 A, 250 VAC, cosφ=1	85°C	5x10 ³
UL 508				
RTS3L	NO	20 A, 250 VAC, general purpose	70°C	20x10 ³
RTS3L	NO	16 A, 250 VAC, resistive	85°C	50x10 ³
RTS3L	NO	TV8, 240 VAC	40°C	25x10 ³
RTS3L	NO	1.5 hp, 240 VAC	70°C	30x10 ³
RTS3T	NO	1200 W Tungsten, 120 VAC / 277 VAC, 60 Hz	50°C	6x10 ³
RTS3T	NO	620 W Discharge lamps (standard ballast), 120 VAC / 277VAC, 60 Hz	50°C	6x10 ³

Coil data

Coil data, monostable coil	
Rated coil voltage range	5...110 VDC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F



Power PCB Relay RT1 Inrush Power (Continued)

Coil versions, monostable DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
005	5	3.5	0.5	$62 \pm 10\%$	403
006	6	4.2	0.6	$90 \pm 10\%$	400
012	12	8.4	1.2	$360 \pm 10\%$	400
024	24	16.8	2.4	$1440 \pm 10\%$	400
048	48	33.6	4.8	$5520 \pm 10\%$	417
060	60	42.0	6.0	$8570 \pm 12\%$	420
110	110	77.0	11.0	$28800 \pm 12\%$	420

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coil data, bistable coils

	1 coil	2 coils
Rated coil voltage range	3...24 VDC	
Operative range to IEC 61810	2	
Limiting voltage, % of rated coil voltage	120%	150%
Minimum energization duration	30 ms	
Maximum energization duration	1 min at < 10% DF	
Coil insulation system according UL1446	class F	

Coil versions, bistable 1 coil

Coil code	Rated voltage VDC	Operate voltage VDC	Reset voltage VDC	Coil resistance Ω	Rated coil power mW
A03	3	2.1	1.7	$21 \pm 10\%$	429
A12	12	8.4	6.6	$360 \pm 10\%$	400
A24	24	16.8	13.2	$1440 \pm 10\%$	400

Coil versions, bistable 2 coils

Coil code	Rated voltage VDC	Operate voltage VDC	Reset voltage VDC	Coil resistance Ω	Rated coil power mW
F03	3	2.1	1.7	$15 \pm 10\%$	600
F12	12	8.4	6.6	$240 \pm 10\%$	600
F24	24	16.8	13.2	$886 \pm 10\%$	650

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coils - operation

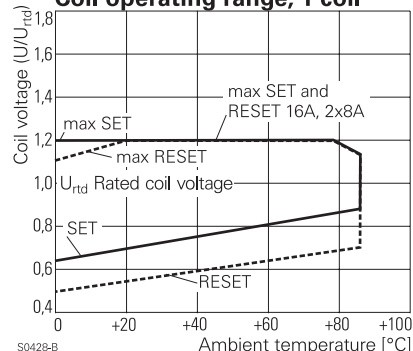
Version	1 coil		2 coils		
Coil terminals	A1	A2	A1	A3	A2
Pull-in	+	-		+	-
Reset	-	+	-	+	

Contact position not defined at delivery

Insulation

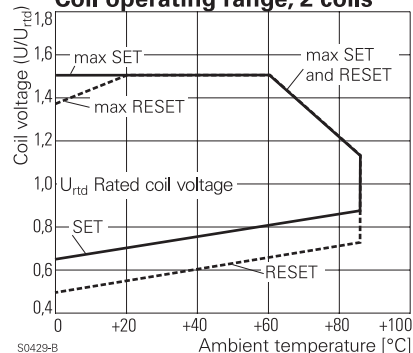
Dielectric strength coil-contact circuit	5000 V _{rms}	
open contact circuit	1250 V _{rms}	
Clearance / creepage coil-contact circuit	$\geq 10 / 10$ mm	
Material group of insulation parts	IIIa	
Tracking index of relay base	PTI 250 V	
Insulation to IEC 61810-1		
Type of insulation coil-contact circuit	reinforced	
open contact circuit	micro disconnection	
Rated insulation voltage	250 V	
Pollution degree	3	2
Rated voltage system	240 V	230 / 400 V
Overtvoltage category	III	

Coil operating range, 1 coil



S0428-B

Coil operating range, 2 coils

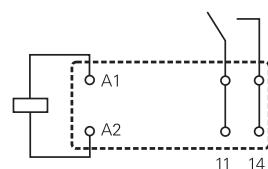


S0429-B

Terminal assignment

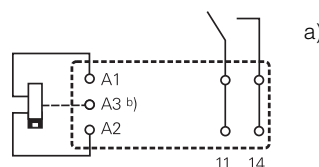
Bottom view on solder pins

monostable version



S0163-BF

bistable version



S0163DPS

a) Indicated contact position during or after coil energization with reset voltage.

b) for 2 coil version only

Power PCB Relay RT1 Inrush Power (Continued)

Other data	RT.3T	RTS3L
Mechanical endurance DC	> 5x10 ⁶ cycles	> 10x10 ⁶ cycles
bistable	> 3x10 ⁶ cycles	> 5x10 ⁶ cycles
tab manually operated	> 10 ³ cycles	-
Material	compliant	
RoHS - Directive 2002/95/EC		
Environment		
Ambient temperature range monostable	-40...+70°C	-40...+85°C
bistable: 1 coil	-10...+70°C	-10...+85°C
bistable: 2 coils	-40...+70°C	-40...+85°C
Vibration resistance (function) monostable	10 g	20 g
Shock resistance (destruction)	100 g	
Category of protection	RTII - flux proof	
Processing		
Mounting	pcb or on socket ^{*)}	
Mounting distance	≥ 0 mm	
Resistance to soldering heat	270 °C / 10 s	
Relay weight with / without test tab	16 / 14 g	- / 14 g
Packaging unit with / without test tab	100 / 500 pcs	- / 500 pcs

^{*)} RTT3T or bistable 2 coil version, pcb mounting only; see Accessories

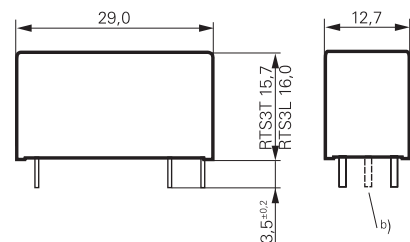
Accessories RTS3.

For details see datasheet

Accessories Power Relay RT

Dimensions / PCB layout

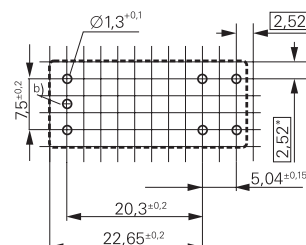
version without test tab



S0272-BW

S0272-BC

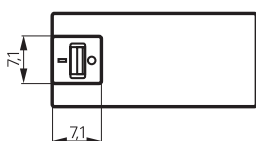
16 A, pinning 5 mm



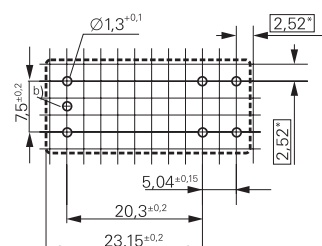
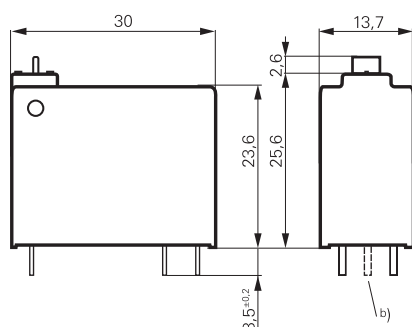
S0418-CV

b) for 2 coil version only

version with test tab



S0491-B



S0492-CU

^{*)} With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

Power PCB Relay RT1 Inrush Power (Continued)

Product key	Typical product key					RT	S	3	T	A12
Type	RT Power PCB Relay RT1 Inrush Power									
Version	S without test tab T with test tab (manual operator) for contact material 'T' and bistable coil only									
Contact configuration	3 1 NO contact (1 form A)									
Contact material	L AgSnO ₂ T Tungsten (W) pre-make + AgSnO ₂									
Coil	Coil code: please refer to coil versions table									

Product key	Version	Contacts	Cont. material	Coil	Coil	Part number
RTS3L005	without	1 NO contact	AgSnO ₂	monostable	5 VDC	1-1415898-8
RTS3L012	test tab			coil	12 VDC	1-1415898-9
RTS3L018					18 VDC	2-1415898-0
RTS3L024					24 VDC	1-1415898-4
RTS3L048					48 VDC	2-1415898-1
RTS3L060					60 VDC	2-1415898-2
RTS3LA12				bistable	12 VDC	2-1415898-3
RTS3LA24				1-coil	24 VDC	2-1415898-4
RTS3LF12				bistable	12 VDC	2-1415898-5
RTS3LF24				2-coils	24 VDC	2-1415898-6
RTS3T012			W pre-make +	monostable	12 VDC	1415898-0
RTS3T024			AgSnO ₂	coil	24 VDC	1415898-1
RTS3TA12				bistable	12 VDC	1415898-2
RTS3TA24				1-coil	24 VDC	1415898-3
RTS3TF03				bistable	3 VDC	1415898-4
RTS3TF12				2-coils	12 VDC	1415898-5
RTS3TF24					24 VDC	1415898-6
RTT3TA12	with			bistable	12 VDC	1415898-7
RTT3TA24	test tab			1-coil	24 VDC	1415898-8
RTT3TF12				bistable	12 VDC	1415898-9
RTT3TF24				2-coils	24 VDC	1-1415898-0

Power PCB Relay RTH 105°C 16A

- 1 pole 16 A, 1 CO or 1 NO contact
- Ambient temperature 105°C
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- WG version: Product in accordance to IEC60335-1

Applications

Oven control, cooking plate control



F0220-D

Approvals

VDE REG.-Nr. 6106, cULus E214025, SP 14385
Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	16 A ¹⁾
Limiting continuous current NO/NC contact	16 / 25 A
Maximum breaking capacity AC	4000 VA
Limiting making capacity, max 4 s, duty factor 10%	30 A
Contact material	AgNi 90/10
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / release time	max 8 / 6 ms
Bounce time NO / NC contact	max 4 / 6 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RTH14	NO	10 A, 250 VAC, cosφ=1	105°C	150x10 ³
RTH14	CO	16 A, 250 VAC, cosφ=1	105°C	10x10 ³
RTH14	NC	26 A, 250 VAC, cosφ=1	85°C	500
RTH34	NO	10 A, 400 VAC, cosφ=1	105°C	150x10 ³
RTHH4	NO	10 A, 250 VAC, cosφ=1	105°C	250x10 ³
UL 508				
RTH14	NO / NC	16 A, 250 VAC, resistive	105°C	30x10 ³
RTH34	NO	20 A, 250 VAC, general purpose	105°C	6x10 ³

Coil data

Rated coil voltage range DC coil	5...60 VDC
Operative voltage range, % of rated coil voltage	90 - 110 %
Coil insulation system according UL1446	class F

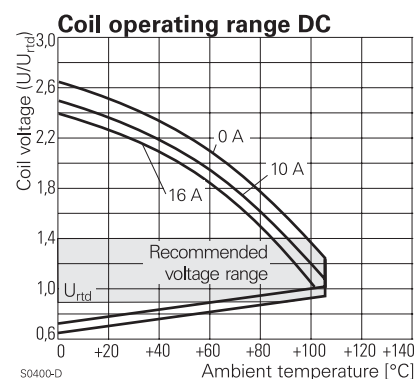
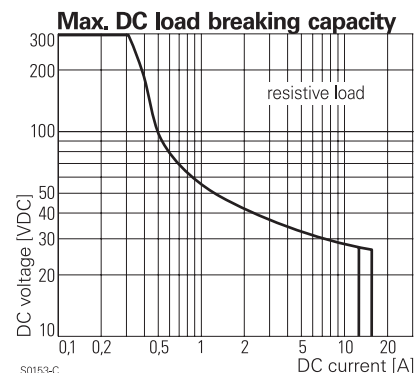
Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
009	9	6.3	0.9	203±10%	399 ¹⁾
012	12	8.4	1.2	360±10%	400 ¹⁾
024	24	16.8	2.4	1440±10%	400 ¹⁾

All figures are given for coil without preenergization, at ambient temperature +23°C

Other coil voltages on request

¹⁾ Continuous thermal load > 10 A at 105°C requires reduction of coil power to 64% of rated power after 100 ms



Power PCB Relay RTH 105°C 16A (Continued)

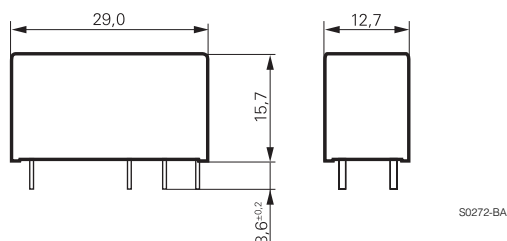
Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

Other data

Mechanical endurance	> 30 x 10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0413
Resistance to heat and fire, WG version	according EN60335, par30.
Environment	
Ambient temperature range	-40...+105°C
Vibration resistance (function) NO / NC contact	20 / 5 g, 30 ... 150 Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof
Processing	
Mounting	pcb
Mounting distance	≥ 0 mm
Resistance to soldering heat flux-proof version	270 °C / 10 s
Relay weight	14 g
Packaging unit	20 / 500 pcs

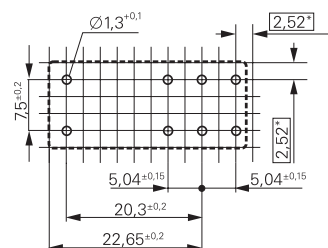
Dimensions



S0272-BA

PCB layout / terminal assignment
Bottom view on solder pins

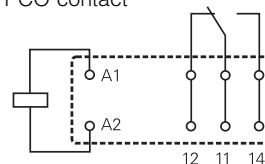
16 A, pinning 5 mm



S0418-CA

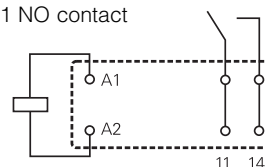
*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

1 CO contact



S0163-BE

1 NO contact



S0163-BF

Product key

Typical product key

RT H 3 4 012 WG

Type

RT Power PCB Relay RTH 105°C 16A

Version

H 16 A, pinning 5 mm, 105°C

Contact configuration

1 1 CO contact (1 form C)

3 1 NO contact (1 form A)

H 1 NO contact "High Performance" (1 form A)

Contact material

4 AgNi 90/10

Coil

Coil code: please refer to coil versions table

Version

Blank Standard version

WG Product in accordance with IEC 60335-1 (domestic appliances)

Product key	Version	Contacts	Contact material	Coil	Part number
RTH14012	16 A, 105°C	1 CO contact	AgNi 90/10	12 VDC	8-1415006-1
RTH34012	pinning 5mm	1 NO contact			9-1415006-1
RTHH4012	flux proof	1 NO high perform.			8-1415047-1
RTH14012WG	16 A, 105°C	1 CO contact			1-1415538-1
RTH34012WG	pinning 5mm	1 NO contact			1-1415536-9
RTH14024WG	flux proof	1 CO contact		24 VDC	9-1415535-4
RTH34024WG	IEC 60335-1	1 NO contact			2-1415536-0

Power PCB Relay RX1

- 1 pole 12 or 16 A, 1 CO or 1 NO
- DC- or AC-coil
- Reinforced insulation
- Transparent cover optional

Applications

Domestic appliances, heating control, emergency lighting, automatic doors



S0271-A

Approvals

VDE REG.-Nr. A651, cULus E214025
Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1 NO	
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	250 / 400 VAC	
Rated current	12 A	16 A
Maximum breaking capacity AC	3000 VA	4000 VA
Limiting making capacity, max 4 s, duty factor 10%	25 A	
Contact material	AgNi 90/10	
Rated frequency of operation with / without load	6 / 600 min ⁻¹	
Operate- / release time DC coil	max 8 / 6 ms	
Bounce time DC coil, NO / NC contact	max 4 / 6 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RX114 DC coil	CO	12 A, 250 VAC, cosφ=1	85°C	30x10 ³
RX134 DC coil	NO	12 A, 250 VAC, cosφ=1	85°C	100x10 ³
RX114 AC coil	CO	12 A, 250 VAC, cosφ=1	70°C	30x10 ³
RX134 AC coil	NO	12 A, 250 VAC, cosφ=1	70°C	100x10 ³
RX334	NO	16 A, 250 VAC, cosφ=1	70°C	50x10 ³
UL 508				
RX114	NO / NC	12 A, 250 VAC, general purpose	85°C	30x10 ³
RX314	NC	16 A, 250 VAC, resistive	85°C	25x10 ³

Coil data

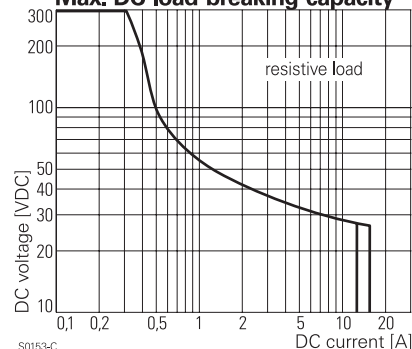
Rated coil voltage range DC coil	5...110 VDC
AC coil	24...230 VAC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F

Coil versions, DC-coil

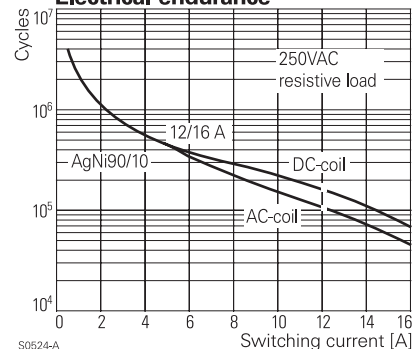
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	50±10%	500
006	6	4.2	0.6	68±10%	529
012	12	8.4	1.2	274±10%	526
024	24	16.8	2.4	1095±10%	526
048	48	33.6	4.8	4380±10%	526
060	60	42.0	6.0	6845±10%	526
110	110	77.0	11.0	23010±10%	526

All figures are given for coil without preenergization, at ambient temperature +23°C

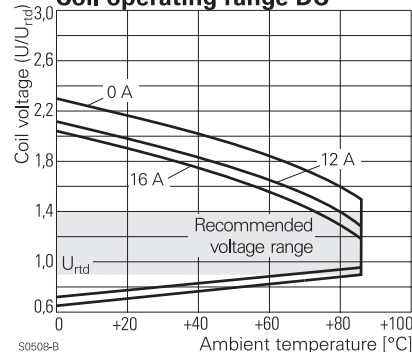
Max. DC load breaking capacity



Electrical endurance



Coil operating range DC



Power PCB Relay RX1 (Continued)

Coil versions, AC-coil 50Hz

Coil code	Rated voltage	Operate voltage 50 Hz	Release voltage 50 Hz	Coil resistance	Rated coil power 50 Hz
	VAC	VAC	VAC	Ohm	VA
524	24	18.0	3.6	350±10%	0.76
615	115	86.3	17.3	8100±15%	0.76
730	230	172.5	34.5	32500±15%	0.74

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree 12 A version	3
16 A version	3
Rated voltage system	240 V
Overvoltage category	III

Other data

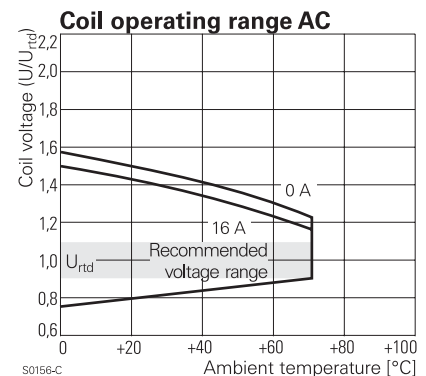
Mechanical endurance DC coil	> 5 x 10 ⁶ cycles
AC coil	> 1 x 10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0413
Environment	
Ambient temperature range DC coil	-40...+85°C ¹⁾
AC coil	-40...+70°C
Vibration resistance (function) NO / NC contact	20 / 4 g, 10 ... 150 Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof
Processing	
Mounting standard version (white cover)	pcb or on socket
transparent version	pcb
Mounting distance	≥ 2,5 mm ²⁾
Resistance to soldering heat flux-proof version	270 °C / 10 s
Relay weight	14 g
Packaging unit	500 pcs

¹⁾ Version with transparent cover: -40...+70°C

²⁾ Version with transparent cover: 5 mm

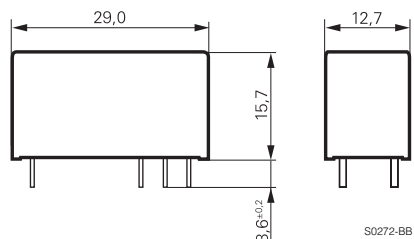
Accessories

For standard version (white cover), details see datasheet accessories RT



Power PCB Relay RX1 (Continued)

Dimensions

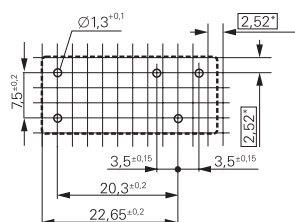


PCB layout / terminal assignment

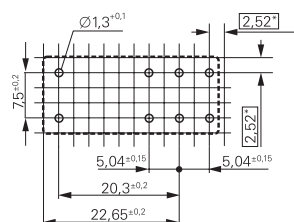
Bottom view on solder pins

*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

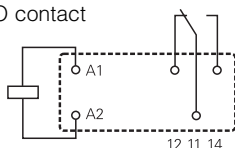
12 A, pinning 3.5 mm



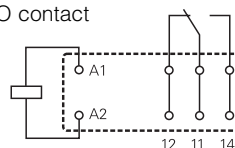
16 A, pinning 5 mm



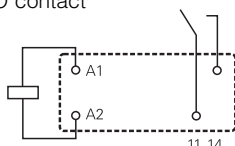
1 CO contact



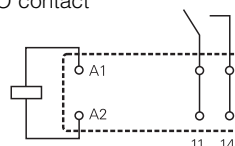
1 CO contact



1 NO contact



1 NO contact



Product key

Typical product key

RX 3 1 4 024

Type

RX Power PCB Relay RX1

Version

- 1** 12 A, pinning 3.5 mm, flux proof
- 3** 16 A, pinning 5 mm, flux proof

Contact configuration

- 1** 1 CO contact (1 form C)
- 3** 1 NO contact (1 form A)

Contact material

- 4** AgNi 90/10

Coil

Coil code: please refer to coil versions table

Cover

- Blank** standard cover (white)
- C** transparent cover (clear)

Power PCB Relay RX1 (Continued)

Product key	Version	Contacts	Cont. material	Coil	Cover	Part number
RX114012	12 A	1 CO contact	AgNi 90/10	12 VDC	white	6-1415502-1
RX114012C	pinning 3.5mm				transparent	1-1415503-1
RX114024	flux proof			24 VDC	white	7-1415502-1
RX114024C					transparent	2-1415503-1
RX114730				230 VAC	white	8-1415502-1
RX114730C					transparent	5-1415503-1
RX134012		1 NO contact		12 VDC	white	9-1415502-1
RX134024				24 VDC		1415503-1
RX314012	16 A	1 CO contact		12 VDC		1-1415502-1
RX314012C	pinning 5mm				transparent	3-1415503-1
RX314024	flux proof			24 VDC	white	2-1415502-1
RX314024C					transparent	4-1415503-1
RX314730				230 VAC	white	3-1415502-1
RX314730C					transparent	6-1415503-1
RX334012		1 NO contact		12 VDC	white	4-1415502-1
RX334024				24 VDC		5-1415502-1

Special Load PCB Relay RP 3 SL

- 1 pole 16 A, 1 NO contact
- For high inrush currents up to 120 A
- Mono- or bistable
- 4 kV / 8 mm coil-contact

Applications

Lighting control, timers, motor control, building automation



F0147-B

Approvals

VDE REG.-Nr. 3736 (DC versions only), **CE** **UL** **US** E214024
Technical data of approved types on request

Contact data

Contact configuration	1 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current relay version RP3 / RP7	16 A / 12 A
Limiting continuous current	16 A
Maximum breaking capacity AC, relay version RP3 / RP7	4000 VA / 3000 VA
Limiting making capacity, max 4 s, duty factor 10%	25 A
peak value, max 20 ms	120 A
Contact material	AgSnO ₂
Rated frequency of operation with / without load	16 / 1200 min ⁻¹
Operate- / release time monostable DC coil	max 14 / 12 ms
Operate- / reset time bistable DC coils	max 30 / 25 ms
Bounce time NO / NC monostable DC coil	max 5 / 7 ms
Bounce time NO / NC bistable DC coil	max 5 / 15 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RP3SL NO	16 A, 250 VAC, cosφ=1		70°C	50x10 ³
RP3SL NO	12 A, 250 VAC, cosφ=1		70°C	100x10 ³
UL 508				
RP3SL NO	12 A, 250 VAC, general purpose		40°C	6x10 ³
RP3SL NO	10 A, 35 VDC, general purpose		40°C	30x10 ³
RP3SL NO	1/2 hp, 240 VAC		70°C	1x10 ³

Coil data

Coil data, monostable coil

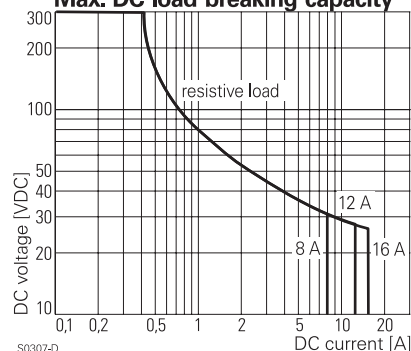
Rated coil voltage range	5...110 VDC
Operative range to IEC 61810 RTII / RTIII	2 / 1

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
012	12	9.0	1.2	270±10%	533
024	24	18.0	2.4	1100±15%	524
048	48	36.0	4.8	4400±15%	524
060	60	45.0	6.0	6540±15%	550

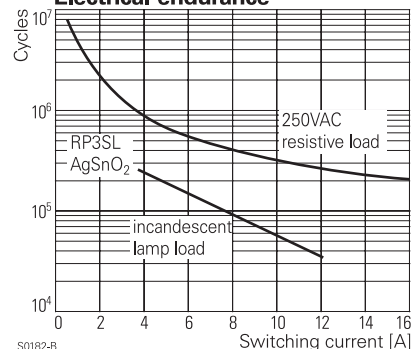
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Max. DC load breaking capacity



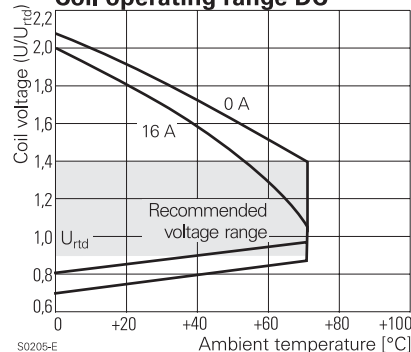
S0307-D

Electrical endurance



S0182-B

Coil operating range DC



S0205-E

Special Load PCB Relay RP 3 SL (Continued)

Coil data, bistable coils

	1 coil	2 coils
Rated coil voltage range	5...24 VDC	
Operative range to IEC 61810	1	
Reset voltage minimum / maximum, % of U_{rd}	70% / 110%	75% / 120%
Minimum energization duration	20 ms	
Maximum energization duration	1 min at < 50% DF	

Coil versions, bistable coil

Coil code	Rated voltage VDC	Operate voltage VDC	Reset voltage VDC	Reset R1 Ω / W	Coil resistance Ω	Rated coil power mW
bistable, 1 coil						
A05	5	3.7	3.6	39/0.5	21 $\pm$ 10%	1190
A12	12	9.0	8.7	220/0.5	115 $\pm$ 10%	1252
A24	24	18.0	16.7	820/0.5	460 $\pm$ 10%	1252
bistable, 2 coils						
F12	12	9.0	9.0		105 $\pm$ 15%	1371
F24	24	18.0	18.0		460 $\pm$ 15%	1252

All figures are given for coil without preenergization, at ambient temperature +23°C, duty factor 20%. Other coil voltages on request

Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	2000 V _{rms}
Clearance / creepage coil-contact circuit	$\geq 8 / 8$ mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

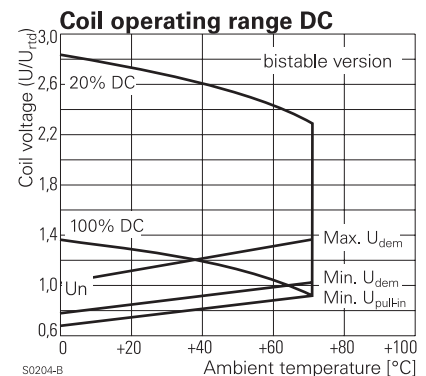
Other data

Mechanical endurance DC-coil	> 20x10 ⁶ cycles
bistable coil	> 1x 10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0404
Environment	
Ambient temperature range RTII - flux proof	-40...+70°C
RTIII - wash tight	-40...+35°C
Vibration resistance (function), opening of closed cont.	20 g
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof, RTIII - wash tight
Processing	
Mounting	pcb or on socket ^{*)}
Mounting distance 12A / 16A	$\geq 0 / \geq 3$ mm
Resistance to soldering heat flux proof version	270 °C / 10 s
wash tight version	260 °C / 5 s
Relay weight	18 g
Packaging unit monostable, bistable 1 coil	20 / 500 pcs
bistable 2 coils	100 pcs

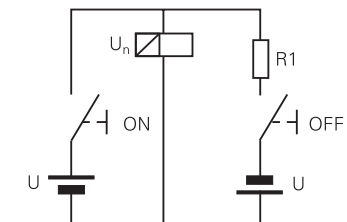
^{*)} no socket available for bistable 2 coil version, see Accessories

Accessories

For monostable and bistable 1 coil version, details see PCB accessories RT

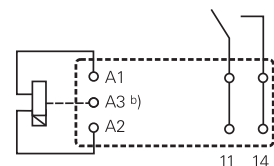
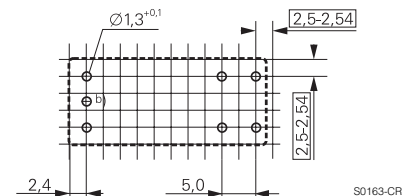


Circuit scheme for bistable 1 coil



PCB layout / terminal assignment

Bottom view on solder pins



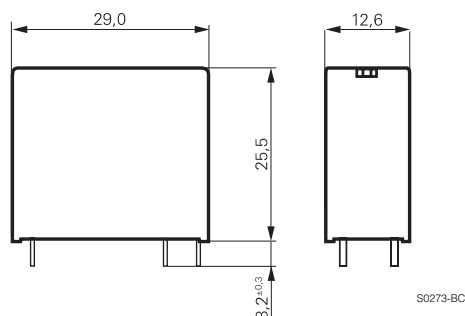
Bistable versions:
Indicated contact position during or after coil energization with reset voltage.

2-coil versions:
Operate A2, A3
Reset A1, A3

b) for 2 coil version only

Special Load PCB Relay RP 3 SL (Continued)

Dimensions



Product key

Typical product key

RP 3 SL 012

Type

RP Special Load PCB Relay RP 3 SL

Version

3 flux proof

7 wash tight

Contact configuration / contact material

SL 1 NO contact (1 form A), AgSnO₂

Coil

Coil code: please refer to coil versions table

Preferred types in bold print

Product key	Version	Contacts	Coil	Coil	Part number
RP3SL005	16 A	1 NO contact	DC-coil	5 VDC	1393230-7
RP3SL012	flux proof	AgSnO ₂		12 VDC	1393230-9
RP3SL024				24 VDC	1-1393230-1
RP3SLA12			bistable	12 VDC	1393230-3
RP3SLA24			1-coil	24 VDC	1393230-4
RP3SLF12			bistable	12 VDC	1393230-5
RP3SLF24			2-coils	24 VDC	1393230-6
RP7SL012	12 A		DC-coil	12 VDC	6-1393231-5
RP7SL024	wash tight			24 VDC	6-1393231-6

Power Relay RF

- 1 pole 16 A, 1 NO or 1 NC contact
- Switching capacity 4000 VA
- Coil power 400 mW
- Reinforced insulation (EN 61810, 60335, 60730)
- Ambient temperature up to 105°C
- Quick connect terminals for load side
- WG version: Materials in accordance to IEC 60335-1

Applications

Oven control, electric heating, power supplies, air conditioning, microwares, hobs



F0273-BI

Approvals

VDE REG.-Nr. A652, cULus E214025
Technical data of approved types on request

Contact data

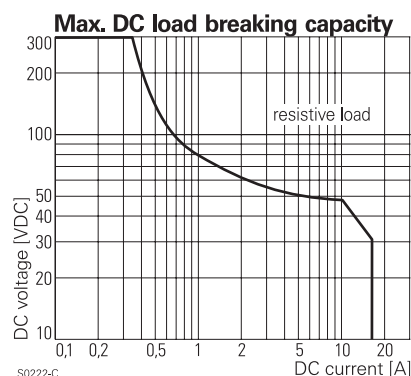
Contact configuration	1NO or 1NC
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	16 A
Maximum breaking capacity AC	4000 VA
Limiting making capacity, max 4 s, duty factor 10%	25 A
Contact material	AgNi90/10
Minimum contact load	12VAC / 500mA
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / release time	max. 11 / 7 ms
Bounce time NO / NC contact	max. 4 / 4 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RF334; RFH34	NO	16 A, 250 VAC, cosφ=1	85°C	100x10 ³
RF334; RFH34	NO	11 A, 250 VAC, cosφ=1	85°C	250x10 ³
RF334; RFH34	NO	20 A, 250 VAC, cosφ=1	85°C	25x10 ³
RF334; RFH34	NO	25 A, 250 VAC, cosφ=1	70°C	15x10 ³
RF354; RFH54	NC	16 A, 250 VAC, cosφ=1	85°C	100x10 ³
RF354; RFH54	NC	20 A, 250 VAC, cosφ=1	85°C	50x10 ³
RF354; RFH54	NC	25 A, 250 VAC, cosφ=1	70°C	20x10 ³
RFH34	NO	16 A, 250 VAC, cosφ=1	105°C	100x10 ³
RFH34	NO	11 A, 250 VAC, cosφ=1	105°C	250x10 ³
RFH34	NO	18.5 A, 250 VAC, cosφ=1	105°C	20x10 ³
RFH34	NO	10 A, 400 VAC, cosφ=1	105°C	150x10 ³

Coil data

Rated coil voltage DC coil	5...60 VDC
Operative range to IEC 61810	2
Coil insulation system according UL1446	Class F



Power Relay RF (Continued)

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	62 ± 10%	403
006	6	4.2	0.6	90 ± 10%	400
009	9	6.3	0.9	203 ± 10%	399
012	12	8.4	1.2	360 ± 10%	400
024	24	16.8	2.4	1440 ± 10%	400
048	48	33.6	4.8	5520 ± 10%	417
060	60	42.0	6.0	8570 ± 10%	420

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

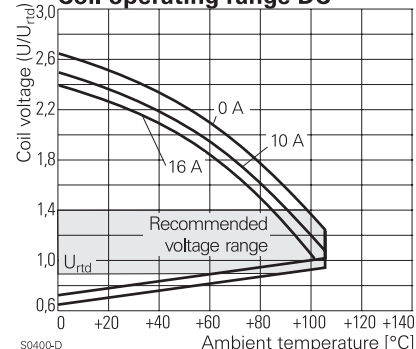
Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm
Material group of insulation parts	≥ IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

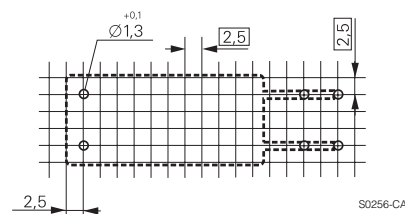
Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Resistance to heat and fire, WG version	according EN60335-1, par.30
Environment	
Ambient temperature range	-40...+105°C
Vibration resistance (function) NO / NC cont. (55...500Hz)	20 / 5 ms
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof; RTIII - wash tight
Processing	
Mounting	pcb
Resistance to soldering heat flux-proof version	270°C / 10 s
wash-tight version	260°C / 5 s
Relay weight	20 g
Packaging unit	150 / 300 pcs

Coil operating range DC

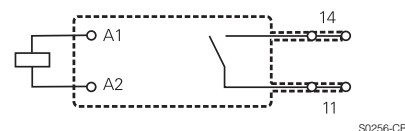


PCB layout / terminal assignment

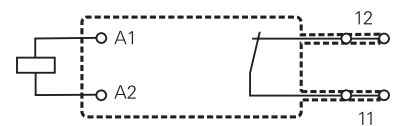
Bottom view on solder pins



1 NO contact

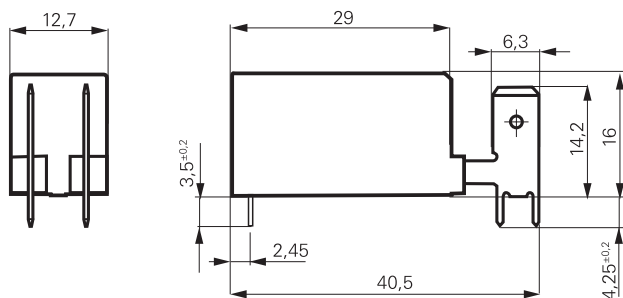


1 NC contact



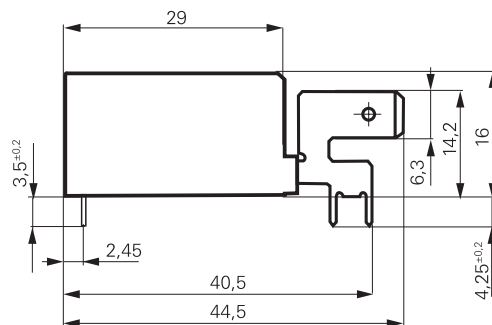
Dimensions

Quick connect terminals vertical



S0282-CI

Quick connect terminals horizontal



S0282-CJ

Power Relay RF (Continued)

Product key		Typical product key	RF	3	3	4	012	WG
Type	RF Power Relay RF							
Version	3 16 A, 85°C		H 16 A, 105°C					
Contact configuration	3 1 NO contact (1 form A), quick connect term. vertical							
	5 1 NC contact (1 form B), quick connect term. vertical							
	D 1 NO contact (1 form A), quick connect term. horizontal							
	F 1 NC contact (1 form B), quick connect term. horizontal							
Contact material	4 AgNi 90/10							
Coil	Coil code: please refer to coil versions table							
Version	Blank Standard version							
	WG Product in accordance with IEC 60335-1 (domestic appliances)							
Wash tight version on request								

Wash tight version on request

Product key	Version	Configuration	Cont. material	Coil	Part number
RF334006	16 A	1 NO contact	AgNi 90/10	6 VDC	5-1415513-1
RF334009	85°C	quick connect term.		9 VDC	7-1415513-1
RF334012		vertical		12 VDC	8-1415513-1
RF334024				24 VDC	9-1415513-1
RF354006		1 NC contact		6 VDC	2-1415514-1
RF354009		quick connect term.		9 VDC	3-1415514-1
RF354012		vertical		12 VDC	4-1415514-1
RF354024				24 VDC	5-1415514-1
RFH34006	16 A	1 NO contact		6 VDC	8-1415510-1
RFH34009	105°C	quick connect term.		9 VDC	9-1415510-1
RFH34012		vertical		12 VDC	6-1415510-1
RFH34024				24 VDC	1415511-1
RFH54006		1 NC contact		6 VDC	4-1415511-1
RFH54009		quick connect term.		9 VDC	5-1415511-1
RFH54012		vertical		12 VDC	6-1415511-1
RFH54024				24 VDC	7-1415511-1
RF334006WG	16 A	1 NO contact		6 VDC	5-1415517-1
RF334009WG	85°C	quick connect term.		9 VDC	6-1415517-1
RF334012WG	materials according	vertical		12 VDC	7-1415517-1
RF334024WG	IEC 60335-1			24 VDC	8-1415517-1
RF354006WG		1 NC contact		6 VDC	2-1415518-1
RF354012WG		quick connect term.		9 VDC	4-1415518-1
RF354024WG		vertical		12 VDC	5-1415518-1
RF354048WG				24 VDC	6-1415518-1
RFH34006WG	16 A	1 NO contact		6 VDC	3-1415520-1
RFH34009WG	105°C	quick connect term.		9 VDC	4-1415520-1
RFH34012WG	materials according	vertical		12 VDC	5-1415520-1
RFH34024WG	IEC 60335-1			24 VDC	6-1415520-1
RFH54006WG		1 NC contact		6 VDC	1415521-1
RFH54009WG		quick connect term.		9 VDC	1-1415521-1
RFH54012WG		vertical		12 VDC	2-1415521-1
RFH54024WG				24 VDC	3-1415521-1

Power Relay 410 63 125°C

- 1 pole 16 A, 1 NO or 1 NC contact
- Switching capacity 4000 VA
- Coil power 360 mW
- 4 kV / 8 mm coil-contact, insulation to VDE 0631 and 0700
- Ambient temperature up to 125°C
- Quick connect terminals for load side
- WG version: Materials in accordance to IEC 60335-1

Applications

White goods appliances, oven control, electric heating, power supplies, air conditioning, motors, magnetic valves



F0248-BA

Approvals

VDE REG.-Nr. 3725, cULus E214025
Technical data of approved types on request

Contact data

Contact configuration	1NO or 1NC
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	16 A
Limiting making capacity, max 4 s, duty factor 10%	25 A
Contact material	AgCdO, AgNi
Rated frequency of operation with / without load	10 / 600 min ⁻¹

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
410 63 ... 001	NO	16 A, 250 VAC, cosφ=1	125°C	50x10 ³
410 63 ... 001	NO	12 A, 250 VAC, cosφ=1	125°C	200x10 ³
410 63 ... 001	NO	16 A, 250 VAC, cosφ=1	105°C	100x10 ³
410 63 ... 002	NC	16 A, 250 VAC, cosφ=1	125°C	50x10 ³
410 63 ... 005	NO	16 A, 250 VAC, cosφ=1	125°C	50x10 ³
410 63 ... 005	NO	12 A, 250 VAC, cosφ=1	125°C	200x10 ³
410 63 ... 005	NO	16 A, 250 VAC, cosφ=1	105°C	100x10 ³
410 63 ... 006	NC	16 A, 250 VAC, cosφ=1	125°C	50x10 ³

Coil data

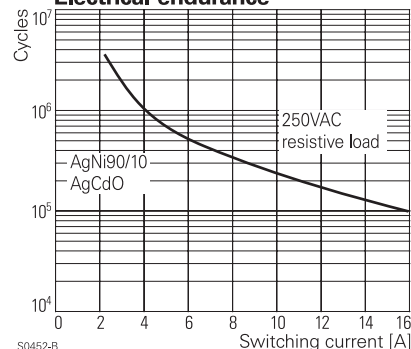
Rated coil voltage DC coil	6...60 VDC
Operative range to IEC 61810	1
Coil insulation system according UL1446	Class F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
054	6	3.6	0.45	100±10%	360
053	9	5.5	0.68	230±10%	352
050	12	7.3	0.9	400±10%	360
046	24	14.6	1.8	1600±10%	360
043	48	29.2	3.6	6400±10%	360
042	60	36.5	4.5	10000±10%	360

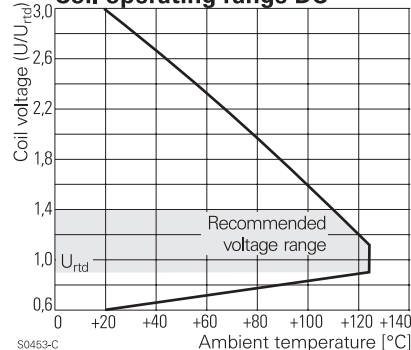
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Electrical endurance



S0452-B

Coil operating range DC



S0453-C

Power Relay 410 83 3 mm

- 1 pole 16 A, 1 NO bridging contact
- Contact gap > 3 mm
- Switching capacity 4000 VA
- Coil power 360 mW
- 4 kV / 8 mm coil-contact, insulation to VDE 0631 and 0700
- Ambient temperature up to 85°C
- Quick connect terminals for load side
- Materials in accordance to IEC 60335-1



F0248-BB

Applications

Washing machines, tumble dryers, absolute safe power supply disconnection in other domestic applications

Approvals

VDE REG.-Nr. 6198, **UL** E214025
Technical data of approved types on request

Contact data

Contact configuration	1NO
Contact set	single contact, bridging contact
Type of interruption	full disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	16 A
Maximum breaking capacity AC	4000 VA
Limiting making capacity, max 4 s, duty factor 10%	20 A
Contact material	AgNi
Contact gap	>3 mm
Rated frequency of operation with / without load	10 / 600 min ⁻¹

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
410 83	NO	16 A, 250 VAC, cosφ=1	85°C	30x10 ³
410 83	NO	10 A, 250 VAC, cosφ=1	105°C	100x10 ³
410 83	NO	10 A, 400 VAC, cosφ=1	105°C	100x10 ³

Coil data

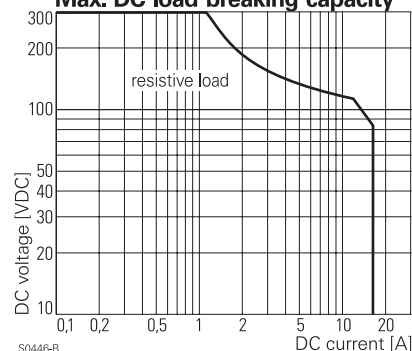
Rated coil voltage range DC coil	6...60 VDC
Operative range to IEC 61810	1
Coil insulation system according UL1446	Class F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
054	6	3.9	0.45	100±10%	360
050	12	7.9	0.9	400±10%	360
046	24	15.8	1.8	1600±10%	360
043	48	31.6	3.6	6400±10%	360
042	60	39.5	4.5	10000±10%	360

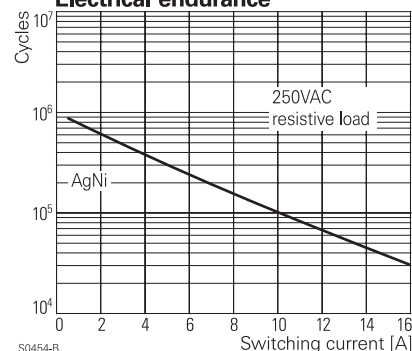
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Max. DC load breaking capacity



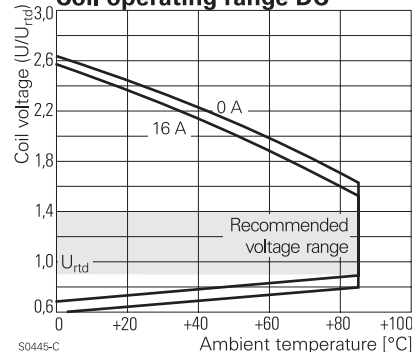
S0446-B

Electrical endurance



S0454-B

Coil operating range DC



S0445-C

Power Relay 410 83 3 mm (Continued)

Insulation

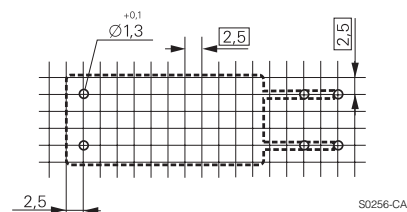
Insulation	
Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	2000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm
Material group of insulation parts	≥ IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	full disconnection ≥ 3 mm
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

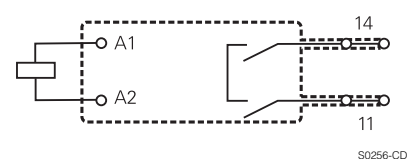
Other data	
Mechanical endurance	1x10 ⁶ cycles
Material	RoHS - Directive 2002/95/EC compliant as per product date code 0349 Resistance to heat and fire, WG version according EN60335, par.30
Environment	Ambient temperature range -20...+85°C Vibration resistance (function) NO (10...500Hz) 10 ms Shock resistance (destruction) 100 g Category of protection RTII - flux proof
Processing	Mounting pcb Resistance to soldering heat 270°C / 10 s Relay weight 24 g Packaging unit 1050 pcs

PCB layout / terminal assignment

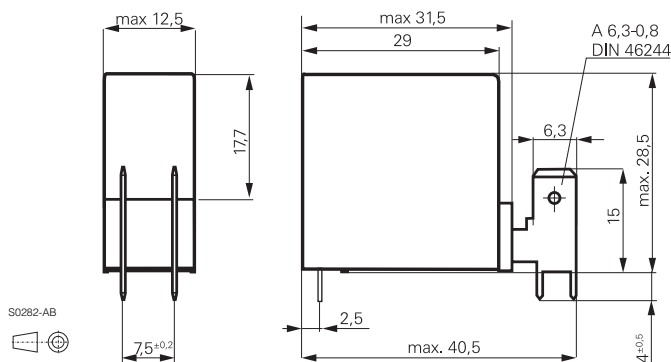
Bottom view on solder pins



1 NO bridging contact



Dimensions



Product key

Typical product key

041083

050

001

WG

Type

41083 Power Relay 410 83 3 mm

Coil

Coil code: please refer to coil versions table, preferred types in bold print

Version

001 1 NO contact (1 form A)

Version

WG Product in accordance with IEC 60335-1 (domestic appliances)

Other types on request

Product key	Version	Cont. material	Cont.configuration	Coil	Part number
0410 83 050 001 WG	standard	AgNi	1 NO contact	12 Vdc	8-1415536-7
0410 83 046 001 WG	PCB/quick connect			24 Vdc	8-1415536-6

Power PCB Relay PCFN Solar

- 1 pole, 26 A, 1 NO Contact
- Contact gap > 1.5 mm
- 200 mW hold power
- Ambient temperature up to 75°C, 85°C at 22 A

Applications

Photovoltaic inverter



F_PCEN_B

Approvals

REG.-Nr. A951, us E58304
Technical data of approved types on request

Contact data

Contact configuration	1 NO
Contact set	single contact
Contact gap	> 1.5 mm
Rated voltage	277 VAC
Rated current	26 A
Maximum breaking capacity AC	7200 VA
Contact material	AgSnO ₂
Rated frequency of operation with / without load	6 / 300 min ⁻¹
Operate- / release time	max 20 / 10 ms
Bounce time	max 3 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
PCFN-1..H2MG	NO	26 A, 277 VAC, cosφ=1	75°C	30x10 ³
PCFN-1..H2MG	NO	22 A, 250 VAC, cosφ=1	85°C	30x10 ³
PCFN-1..H2MG	NO	14 A, 250 VAC, cosφ=1	85°C	100x10 ³
UL 508				
PCFN-1..H2MG	NO	26 A, 277 VAC, resistive	75°C	30x10 ³
PCFN-1..H2MG	NO	22 A, 277 VAC, resistive	85°C	30x10 ³

Coil data

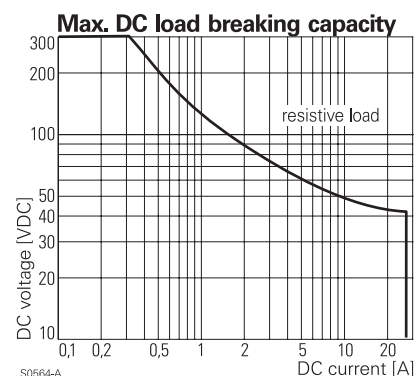
Rated coil voltage	12 VDC
Coil insulation system according UL 1446	class F

Coil version, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power W
12	12	7.8	1.2	96±10%	1.5 ¹⁾

All figures are given for coil without preenergization, at ambient temperature +23°C
Hold voltage ≥ 4.4 V at ambient temperature ≤ 85°C

¹⁾ Ambient temperature > 23°C requires reduction of coil voltage to 4.4...< 6 V after 100ms



Power PCB Relay PCFN Solar (Continued)

Insulation

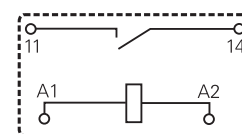
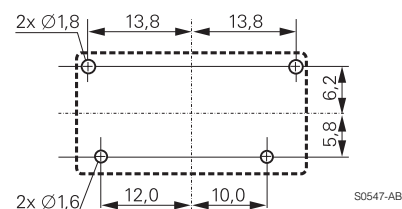
Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	2500 V _{rms}
Clearance / creepage coil-contact circuit	6.1 / 6.1 mm
Material group of insulation parts	III
Tracking index of relay base	PTI 175
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	full disconnection 1.5 mm
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

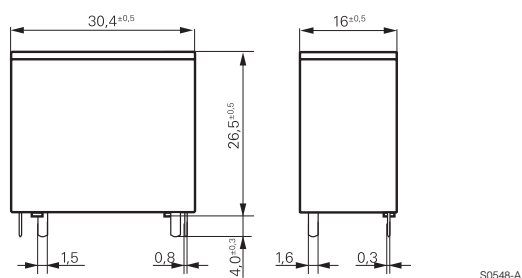
Mechanical endurance	1x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Environment	
Ambient temperature range ¹⁾	-25...+75°C -25...+85°C at 22 A
Vibration resistance (function)	10 g
Shock resistance (function)	10 g
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof
Processing	
Mounting	pcb
Mounting position	any
Mounting distance	≥ 10 mm
Resistance to soldering heat	260°C / 5 s
Relay weight	28 g
Packaging unit	20 / 500

¹⁾ Ambient temperature > 23°C requires reduction of coil voltage to 4.4...< 6 V after 100 ms

PCB layout / terminal assignment
Bottom view on solder pins



Dimensions



Product key	Version	Contact configuration	Contact material	Coil	Part number
PCFN-112H2MG	PCB, flux tight	1 NO contact	AgSnO ₂	12 VDC	1721929-1

Power PCB Relay RT2

- 2 pole 8 A, 2 CO or 2 NO contacts
- DC- or AC-coil
- Sensitive coil 400 mW
- Reinforced insulation
- WG version: Product in accordance to IEC60335-1



F0149-C

Applications

Domestic appliances, heating control, emergency lighting, modems

Approvals

VDE REG.-Nr. 6106, **UL** E214025, **CS** 14385, **BEAB** C0786
Technical data of approved types on request

Contact data

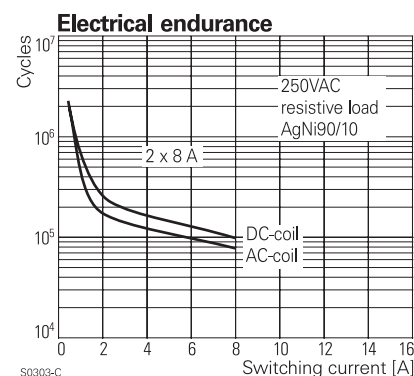
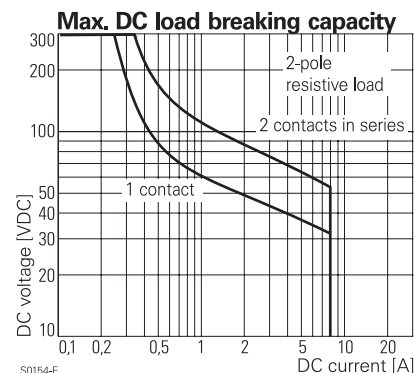
Contact configuration	2 CO or 2 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	8 A, UL: 10 A
Limiting continuous current	8 A, UL: 10 A
Maximum breaking capacity AC	2000 VA
Limiting making capacity, max 4 s, duty factor 10%	15 A
Contact material	AgNi 90/10, AgNi 90/10 gold plated, AgSnO ₂
Rated frequency of operation DC coil with / without load	6 / 1200 min-1
AC coil with / without load	6 / 600 min-1
Operate- / release time DC coil	max 8 / 6 ms
Bounce time DC coil NO / NC contact	max 4 / 10 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RT424 DC coil	CO	8 A, 250 VAC, cosφ=1	85°C	10x10 ³
RT444 AC coil	NO	8 A, 250 VAC, cosφ=1	70°C	50x10 ³
RT424 AC coil	CO	8 A, 250 VAC, cosφ=1	70°C	30x10 ³
UL 508				
RT424 DC coil	NO / NC	10 A, 250 VAC, general purpose	85°C	20x10 ³
RT424 DC coil	NO / NC	1/2 hp, 240 VAC	85°C	1x10 ³
RT424 DC coil	NO / NC	Pilot duty, B300, R300	85°C	6x10 ³
EN60947-5-1				
RTE24 DC coil	NO / NC	AC15, 250 VAC, 3A		6.050
RTE24 DC coil	NO / NC	DC13, 24 VDC, 2A		6.050
RTE24 DC coil	NO / NC	DC13, 250V DC, 0.2A		6.050
EN60730-1				
RT424 DC coil	NO / NC	6(2) A, 250 VAC	85°C	100x10 ³

Coil data

Rated coil voltage range DC coil	5...110 VDC
AC coil	24...230 VAC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F



Power PCB Relay RT2 (Continued)

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
005	5	3.5	0.5	$62 \pm 10\%$	403
006	6	4.2	0.6	$90 \pm 10\%$	400
012	12	8.4	1.2	$360 \pm 10\%$	400
024	24	16.8	2.4	$1440 \pm 10\%$	400
048	48	33.6	4.8	$5520 \pm 10\%$	417
060	60	42.0	6.0	$8570 \pm 12\%$	420
110	110	77.0	11.0	$28800 \pm 12\%$	420

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coil versions, AC-coil 50Hz

Coil code	Rated voltage VAC	Operate voltage 50 Hz VAC	Release voltage 50 Hz VAC	Coil resistance Ω	Rated coil power 50 Hz VA
524	24	18.0	3.6	$350 \pm 10\%$	0.76
615	115	86.3	17.3	$8100 \pm 15\%$	0.76
620	120	90.0	18.0	$8800 \pm 15\%$	0.75
700	200	150.0	30.0	$24350 \pm 15\%$	0.76
730	230	172.5	34.5	$32500 \pm 15\%$	0.74

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	$\geq 10 / 10$ mm
adjacent contact circuits	$\geq 3 / 4$ mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

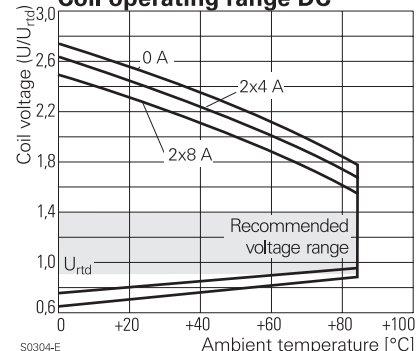
Other data

Mechanical endurance DC coil	$> 30 \times 10^6$ cycles
AC coil	$> 5 \times 10^6$ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0413
Resistance to heat and fire, WG version	according EN60335, par30.
Environment	
Ambient temperature range	-40...+85°C
max. ambient temperature AC coil	70°C
max. ambient temperature AgSnO contacts	70°C
Vibration resistance (function) NO / NC contact	20 / 5 g, 30 ... 300 Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof, RTIII - wash tight
Processing	
Mounting	pcb or on socket
Mounting distance DC / AC coil	$\geq 0 / \geq 2.5$ mm
Resistance to soldering heat flux-proof version	270°C / 10 s
wash-tight version	260°C / 5 s
Relay weight	13 g
Packaging unit	20 / 500 pcs

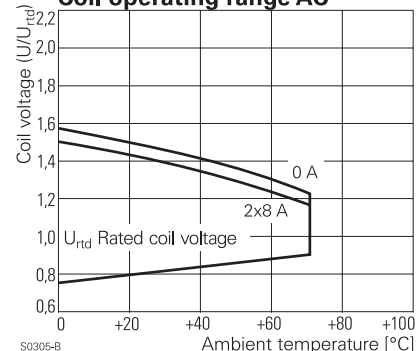
Accessories

For details see datasheet	accessories RT
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Coil operating range DC

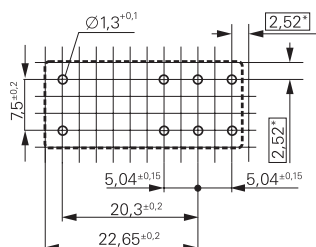


Coil operating range AC



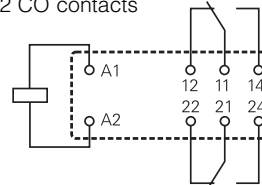
PCB layout / terminal assignment

Bottom view on solder pins



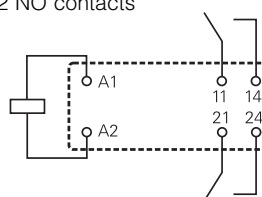
*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

2 CO contacts



S0163-BJ

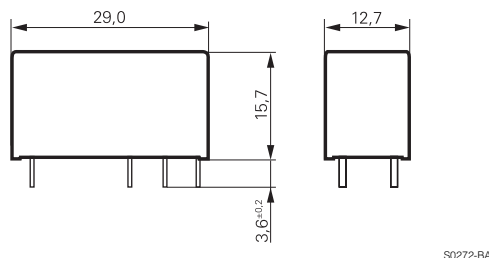
2 NO contacts



S0163-BK

Power PCB Relay RT2 (Continued)

Dimensions



Product key

Typical product key

RT 4 2 4 024

Type

RT Power PCB Relay RT2

Version

- 4** 8 A, pinning 5 mm, flux proof
E 8 A, pinning 5 mm, wash tight

Contact configuration

- 2** 2 CO contacts (2 form C) **4** 2 NO contacts (2 form A)

Contact material

- 3** AgSnO₂
4 AgNi 90/10 **5** AgNi 90/10 gold plated

Coil

Coil code: please refer to coil versions table

Version

- Blank** Standard version
WG Product in accordance with IEC 60335-1 (domestic appliances)

Preferred types in bold print

Product key	Version	Contacts	Cont. material	Coil	Coil	Part number
RT423012	8 A	2 CO contacts	AgSnO	DC-coil	12 VDC	4-1419136-3
RT423024	pinning 5 mm				24 VDC	4-1393243-2
RT424005	flux proof		AgNi 90/10		5 VDC	5-1393243-9
RT424006					6 VDC	6-1393243-1
RT424012					12 VDC	6-1393243-3
RT424024					24 VDC	6-1393243-8
RT424048					48 VDC	7-1393243-0
RT424060					60 VDC	7-1393243-3
RT424110					110 VDC	7-1393243-5
RT424524				AC-coil	24 VAC	7-1393243-6
RT424615					115 VAC	7-1393243-8
RT424730					230 VAC	7-1393243-9
RT425005			AgNi 90/10 gold plated	DC-coil	5 VDC	8-1393243-0
RT425012					12 VDC	8-1393243-2
RT425024					24 VDC	8-1393243-5
RT425524				AC-coil	24 VAC	9-1393243-1
RT425615					115 VAC	9-1393243-2
RT425730					230 VAC	9-1393243-3
RT444012		2 NO contacts	AgNi 90/10	DC-coil	12 VDC	9-1393243-7
RT444024					24 VDC	9-1393243-9
RTE24005	8 A	2 CO contacts			5 VDC	1393243-1
RTE24006	pinning 5 mm				6 VDC	1393243-2
RTE24012	wash tight				12 VDC	1393243-4
RTE24024					24 VDC	1-1393243-0
RTE24048					48 VDC	1-1393243-1
RTE24060					60 VDC	1-1393243-3
RTE24110					110 VDC	1-1393243-4
RTE24524				AC-coil	24 VAC	1-1393243-5
RTE24615					115 VAC	1-1393243-7
RTE24730					230 VAC	1-1393243-8
RTE25005			AgNi 90/10 gold plated	DC-coil	5 VDC	1-1393243-9
RTE25012					12 VDC	2-1393243-0
RTE25024					24 VDC	2-1393243-1

Power PCB Relay RT2 reflow solderable

- 2 pole 8 A, 2 CO or 2 NO contacts
- DC- or AC-coil
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact, reinforced insulation
- For THR (Through-Hole Reflow) soldering process
- Product in accordance to IEC60335-1



F0306-A

Applications

Domestic appliances, heating control, emergency lighting, modems

Approvals

 **us** in process
Technical data of approved types on request

Contact data

Contact configuration	2 CO or 2 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	8 A, UL: 10 A
Limiting continuous current	8 A, UL: 10 A
Maximum breaking capacity AC	2000 VA
Limiting making capacity, max 4 s, duty factor 10%	15 A
Contact material	AgNi 90/10, AgNi 90/10 gold plated, AgSnO ₂
Rated frequency of operation DC coil with / without load	6 / 1200 min-1
AC coil with / without load	6 / 600 min-1
Operate- / release time DC coil	max 8 / 6 ms
Bounce time DC coil NO / NC contact	max 4 / 10 ms

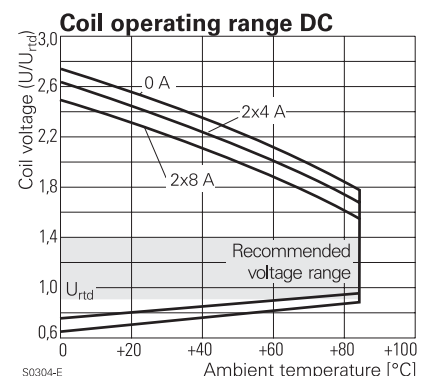
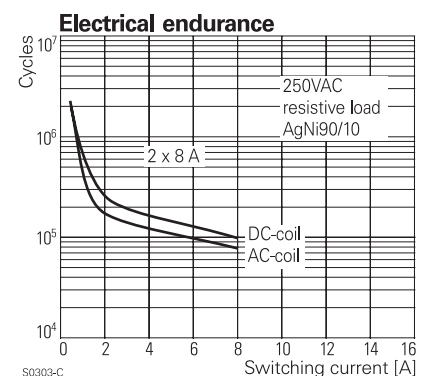
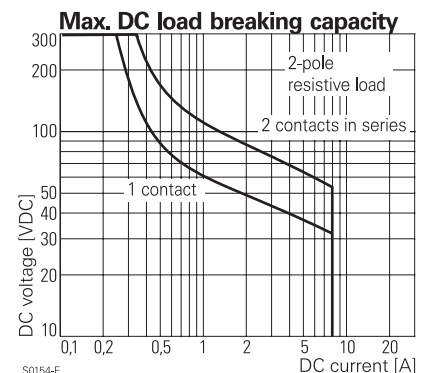
Coil data

Rated coil voltage range DC coil	5...110 VDC
AC coil	24...230 VAC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
005	5	3.5	0.5	62 $\pm$ 10%	403
006	6	4.2	0.6	90 $\pm$ 10%	400
012	12	8.4	1.2	360 $\pm$ 10%	400
024	24	16.8	2.4	1440 $\pm$ 10%	400
048	48	33.6	4.8	5520 $\pm$ 10%	417
060	60	42.0	6.0	8570 $\pm$ 12%	420
110	110	77.0	11.0	28800 $\pm$ 12%	420

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Power PCB Relay RT2 reflow solderable (Continued)

Coil versions, AC-coil 50Hz

Coil code	Rated voltage	Operate voltage 50 Hz	Release voltage 50 Hz	Coil resistance	Rated coil power 50 Hz
	VAC	VAC	VAC	Ω	VA
524	24	18.0	3.6	$350 \pm 10\%$	0.76
615	115	86.3	17.3	$8100 \pm 15\%$	0.76
620	120	90.0	18.0	$8800 \pm 15\%$	0.75
700	200	150.0	30.0	$24350 \pm 15\%$	0.76
730	230	172.5	34.5	$32500 \pm 15\%$	0.74

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	$\geq 10 / 10$ mm
adjacent contact circuits	$\geq 3 / 4$ mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 175 V
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

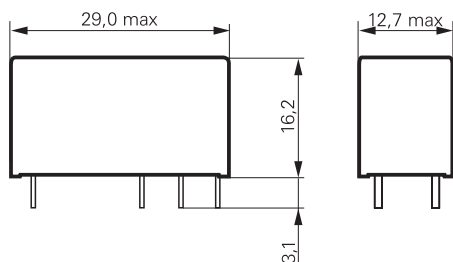
Other data

Mechanical endurance DC coil	$> 10 \times 10^6$ cycles
AC coil	$> 2 \times 10^6$ cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Resistance to heat and fire	according EN60335-1, par.30
Environment	
Ambient temperature range	-40...+85°C
max. ambient temperature AC coil	70°C
max. ambient temperature AgSnO cont.	70°C
Vibration resistance (function) NO / NC contact	20 / 5 g, 30 ... 300 Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof
Processing	
Mounting	pcb
Mounting distance DC / AC coils	$\geq 0 / \geq 2.5$ mm
Wave soldering, soldering heat resistance	270°C / 10 s
Reflow soldering	
soldering process	forced gas convection ¹⁾ or vapour phase ²⁾
temperature profile	according EN61760
Relay weight	13 g
Packaging unit	20 / 500 pcs

¹⁾ infrared heating not allowed

²⁾ recommended fluid LS / 230

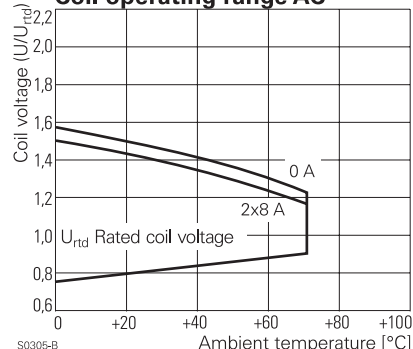
Dimensions



For automated mounting please ask for detailed drawing.

S0272-BA

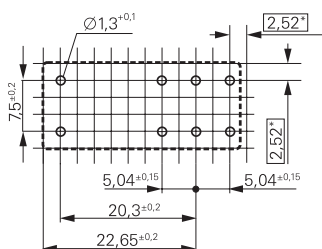
Coil operating range AC



S0305-B

PCB layout / terminal assignment

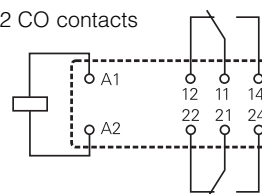
Bottom view on solder pins



S0418-CA

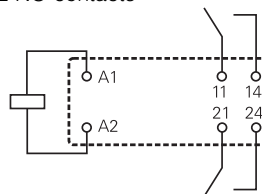
*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

2 CO contacts



S0163-BJ

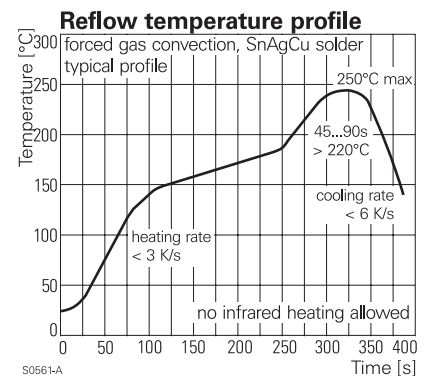
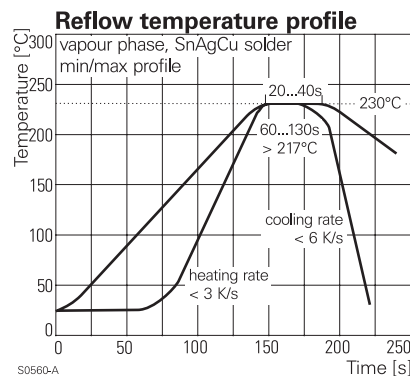
2 NO contacts



S0163-BK

Power PCB Relay RT2 reflow solderable (Continued)

Process conditions for Reflow soldering
according to EN61760-1



Product key

Typical product key

RT	4	2	4	012	R
Type					
RT Power PCB Relay RT2 reflow solderable					
Version					
4 8 A, pinning 5 mm, flux proof					
Contact configuration					
2 2 CO contacts (2 form C) 4 2 NO contacts (2 form A)					
Contact material					
3 AgSnO ₂ 5 AgNi 90/10 gold plated					
Coil					
Coil code: please refer to coil versions table					
Version					
R Reflow solderable					

Preferred types in bold print

Power PCB Relay RT2 bistable

- 2 pole 8 A, 2 CO contacts
- Polarized bistable version with 1 or 2 coils
- 5 kV / 10 mm coil-contact
- Reinforced insulation

Applications

Battery powered equipment or applications with "memory function" (e.g. mains failure)



F0219-C

Approvals

VDE REG.-Nr. 6106, **UL** E214025, **SP** 14385
Technical data of approved types on request

Contact data

Contact configuration	2 CO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	8 A, UL: 10 A
Limiting continuous current	8 A, UL: 10 A
Maximum breaking capacity AC	2000 VA
Limiting making capacity, max 4 s, duty factor 10%	15 A
Contact material	AgNi 90/10
Rated frequency of operation with / without load	15 / 1200 min ⁻¹
Operate- / release time	max 10 / 5 ms
Bounce time NO / NC contact	max 4 / 9 ms

Contact ratings

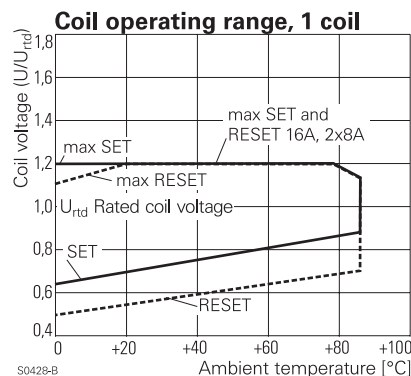
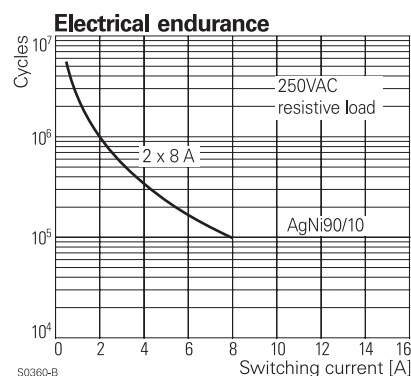
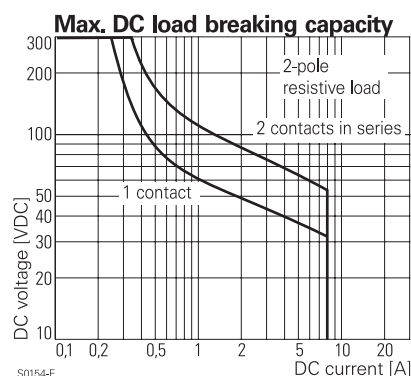
Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RT444	NO	8 A, 250 VAC, cosφ=1	85°C	100x10 ³
RT424	CO	8 A, 250 VAC, cosφ=1	85°C	30x10 ³
UL 508				
RT424 DC coil	NO / NC	10 A, 250 VAC, general purpose	85°C	20x10 ³
RT424 DC coil	NO / NC	1/2 hp, 240 VAC	85°C	1x10 ³
RT424 DC coil	NO / NC	Pilot duty, B300, R300	85°C	6x10 ³

Coil data

	1 coil	2 coils
Rated coil voltage range	5...24 VDC	
Operative range to IEC 61810	2	
Limiting voltage, % of rated coil voltage	120%	150%
Minimum energization duration	30 ms	
Maximum energization duration	1 min at < 10% DF	
Coil insulation system according UL1446	class F	

Coil versions, bistable coil

Coil code	Rated voltage VDC	Operate voltage VDC	Reset voltage VDC	Coil resistance Ω	Rated coil power mW
bistable, 1 coil					
A05	5	3.5	2.8	62±10%	403
A06	6	4.2	3.3	90±10%	400
A12	12	8.4	6.6	360±10%	400
A24	24	16.8	13.2	1440±10%	400



Power PCB Relay RT2 bistable (Continued)

bistable, 2 coils

F05	5	3.5	2.8	42±10%	595
F06	6	4.2	3.3	55±10%	655
F12	12	8.4	6.6	240±10%	600
F24	24	16.8	13.2	886±10%	650

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coils operation

Version	1 coil		2 coils		
Coil terminals	A1	A2	A1	A3	A2
Pull-in	+	-	+	+	-
Reset	-	+	-	+	-

Contact position not defined at delivery

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}	
open contact circuit	1000 V _{rms}	
adjacent contact circuits	2500 V _{rms}	
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm	
adjacent contact circuits	≥ 3 / 4 mm	
Material group of insulation parts	IIIa	
Tracking index of relay base	PTI 250 V	
Insulation to IEC 61810-1		
Type of insulation coil-contact circuit	reinforced	
open contact circuit	micro disconnection	
adjacent contact circuits	basic	
Rated insulation voltage	250 V	
Pollution degree	3	2
Rated voltage system	240 V	230 / 400 V
Overvoltage category	III	

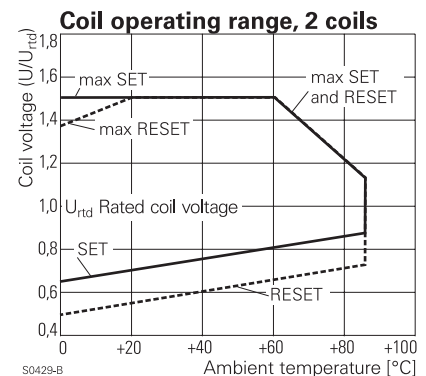
Other data

Mechanical endurance	> 2 x 10 ⁶ cycles	
Material		
RoHS - Directive 2002/95/EC	compliant as per product date code 0413	
Environment		
Ambient temperature range	-40...+85°C	
Vibration / shock resistance (function) opening NC cont.	3 / 5 g	
opening closed NO contact	6 / 15 g	
Shock resistance (destruction)	100 g	
Category of protection	RTII - flux-proof	
Processing		
Mounting	pcb or on socket ^{*)}	
Mounting distance	≥ 0 mm	
Resistance to soldering heat	270°C / 10 s	
Relay weight	13 g	
Packaging unit DC coil, bistable 1 coil	20 / 500 pcs	
bistable 2 coils	100 pcs	

^{*)} socket available for 1 coil version only, see Accessories

Accessories

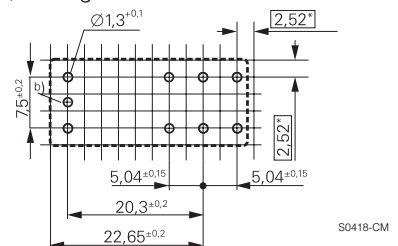
For 1-coil version, details see datasheet	accessories RT
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PCB layout / terminal assignment

Bottom view on solder pins

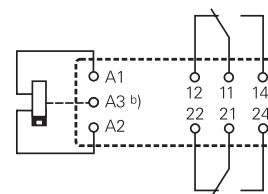
8 A, Pinning 5 mm



^{*)} With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

2 CO contacts

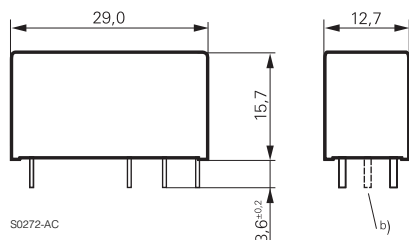
a)



S0163-DL

Power PCB Relay RT2 bistable (Continued)

Dimensions



a) Indicated contact position while or after coil energization with reset voltage.

b) for 2 coil version only

Product key

Typical product key

RT

4

2

4

F24

Type

RT Power PCB Relay RT2 bistable

Version

4 8 A, pinning 5 mm, flux proof

Contact configuration

2 2 CO contacts (2 form C)

Contact material

4 AgNi 90/10

Coil

Coil code: please refer to coil versions table, preferred types in bold print

Product key	Version	Contacts	Cont. material	Coil	Coil	Part number
RT424A12	8 A	2 CO contacts	AgNi 90/10	bistable	12 VDC	4-1393243-6
RT424A24	pinning 5 mm			1 coil	24 VDC	4-1393243-7
RT424F12	flux tight			bistable	12 VDC	5-1393243-4
RT424F24				2 coils	24 VDC	5-1393243-6

Power PCB Relay RX2

- 2-pole 8 A, 2 CO contacts
- DC- or AC-coil
- Reinforced insulation
- Height 15.7 mm
- Transparent cover optional

Applications

Domestic appliances, heating control, emergency lighting, automatic doors



S0271-A

Approvals

VDE REG.-Nr. A651, cULus E214025
Technical data of approved types on request

Contact data

Contact configuration	2 CO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	8 A
Maximum breaking capacity AC	2000 VA
Limiting making capacity, max 4 s, duty factor 10%	15 A
Contact material	AgNi 90/10
Rated frequency of operation with / without load	6 / 600 min ⁻¹
Operate- / release time DC coil	max 8 / 6 ms
Bounce time DC coil, NO / NC contact	max 4 / 10 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RX424	CO	8 A, 250 VAC, cosφ=1	70°C	40x10 ³
RX424	NC	8 A, 250 VAC, cosφ=1	70°C	60x10 ³
UL 508				
RX424	NO / NC	8 A, 250 VAC, general purpose	70°C	40x10 ³

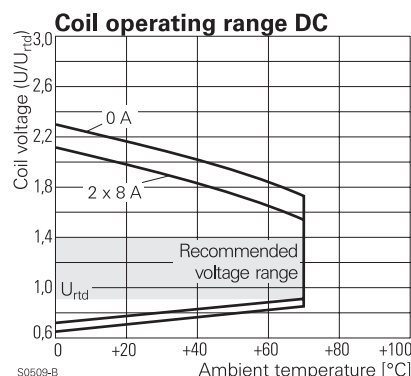
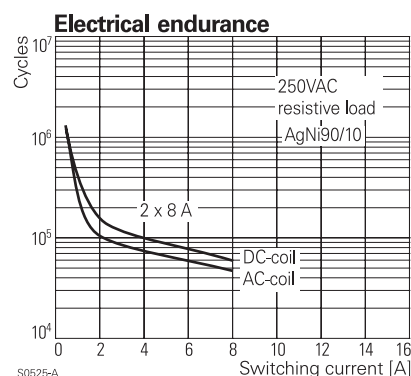
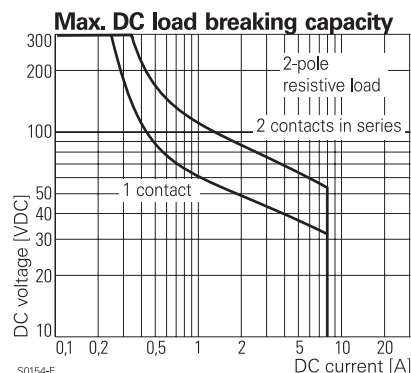
Coil data

Rated coil voltage range DC coil	5...110 VDC
AC coil	24...230 VAC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	50 ± 10%	500
006	6	4.2	0.6	68 ± 10%	529
012	12	8.4	1.2	274 ± 10%	526
024	24	16.8	2.4	1095 ± 10%	526
048	48	33.6	4.8	4380 ± 10%	526
060	60	42.0	6.0	6845 ± 10%	526
110	110	77.0	11.0	23010 ± 10%	526

All figures are given for coil without preenergization, at ambient temperature +23°C



Power PCB Relay RX2 (Continued)

Coil versions, AC-coil 50Hz

Coil code	Rated voltage	Operate voltage 50 Hz	Release voltage 50 Hz	Coil resistance	Rated coil power 50 Hz
	VAC	VAC	VAC	Ohm	VA
524	24	18.0	3.6	350±10%	0.76
615	115	86.3	17.3	8100±15%	0.76
730	230	172.5	34.5	32500±15%	0.74

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm
adjacent contact circuits	≥ 3 / 4 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

Other data

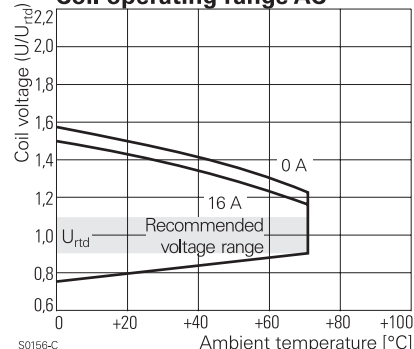
Mechanical endurance DC coil	> 5 × 10 ⁶ cycles
AC coil	> 1 × 10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0413
Environment	
Ambient temperature range	-40...+70°C
Vibration resistance (function) NO / NC contact	20 / 4 g, 10 ... 150 Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof
Processing	
Mounting standard version (white cover)	pcb or on socket
transparent version	pcb
Mounting distance	≥ 2,5 mm ¹⁾
Resistance to soldering heat flux-proof version	270°C / 10 s
Relay weight	14 g
Packaging unit	500 pcs

¹⁾ Version with transparent cover: 5 mm

Accessories

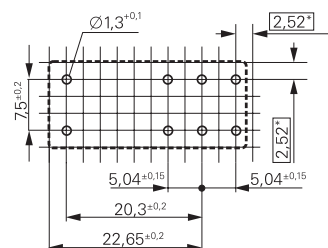
For standard version (white cover), details see accessories RT

Coil operating range AC



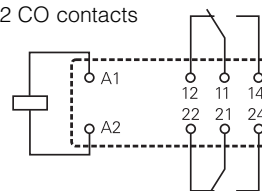
PCB layout / terminal assignment

Bottom view on solder pins



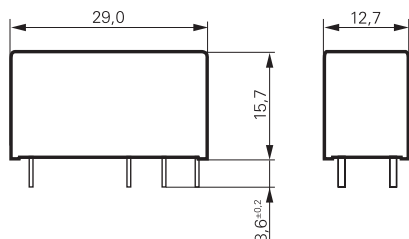
*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

2 CO contacts



S0163-BJ

Dimensions



S0272-BA

Power PCB Relay RX2 (Continued)

Product key	Typical product key	RX	4	2	4	012
Type	RX Power PCB Relay RX2					
Version	4 8 A, pinning 5 mm, flux proof					
Contact configuration	2 2 CO contacts (2 form C)					
Contact material	4 AgNi 90/10					
Coil	Coil code: please refer to coil versions table					
Cover	Blank standard cover (white) C transparent cover (clear)					

Product key	Version	Contacts	Cont. material	Coil	Cover	Part number
RX424012	8 A	2 CO contacts		12 VDC		2-1415504-1
RX424012C	pinning 5mm			12 VDC	transparent	5-1415504-1
RX424024	flux proof			24 VDC	white	3-1415504-1
RX424024C				24 VDC	transparent	6-1415504-1
RX424524				24 VAC	white	5-1415532-1
RX424730				230 VAC		4-1415504-1
RX424730C				230 VAC	transparent	7-1415504-1

Power PCB Relay U/UB

- 1 pole 7 A, mono or bistable
- 1 CO or 1 NO or 1 NC contact
- Bistable and DC-version
- Wash tight version
- Version for 10 A on request

Applications

Heating control, installation, battery powered equipment



F0153-C

Approvals

UL E194065

Technical data of approved types on request

Contact data

Contact configuration	1 CO, 1 NO or 1 NC
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 V
Rated current	standard and bistable: 7 A sensitive: 5 A
Maximum breaking capacity AC	standard and bistable: 1750 VA sensitive: 1250 VA
Limiting making capacity, max 4 s, duty factor 10%	12 A
Contact material	AgNi 90/10
Rated frequency of operation with / without load	10/300 min ⁻¹
Operate- / reset time	5/3 ms
Operate- / release time	standard: typ. 5/3 ms sensitive: typ. 7/3 ms
Bounce time NO / NC contact	typ. 2/10 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
UL 508				
all	CO/NO/NC	7 A, 250 VAC, general purpose,	40°C	6.000

Coil data

	monostable	sensitive
Rated coil voltage range DC coil	6 ... 48 VDC	
Operative range to IEC 61810	2	

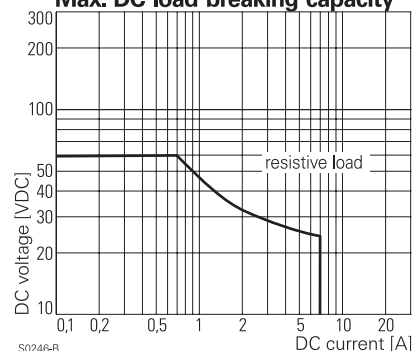
Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
standard coil					
003	6	4.2	0.6	80 ± 10%	450
005	12	8.4	1.2	320 ± 10%	450
007	24	16.8	2.4	1280 ± 10%	450
008	48	33.6	4.8	3800 ± 10%	606
sensitive coil					
103	6	4.4	0.6	110 ± 10%	327
105	12	8.8	1.2	440 ± 10%	327
107	24	17.5	2.4	1780 ± 10%	324
108	48	35.0	4.8	4000 ± 10%	576

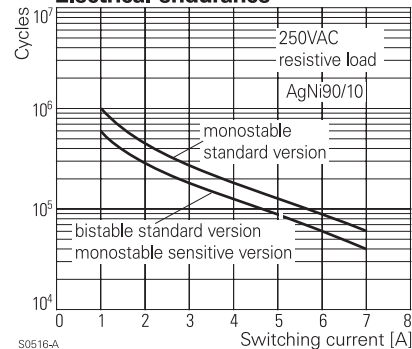
All figures are given for coil without preenergization, at ambient temperature +23°C

Other coil voltages on request

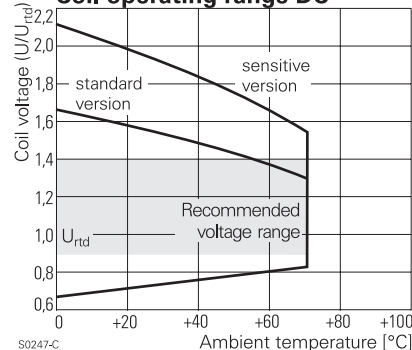
Max. DC load breaking capacity



Electrical endurance



Coil operating range DC



Power PCB Relay U/UB (Continued)

Coil data

Stable	Unstable
Rated coil voltage range	6 ... 48 VDC
Rated operate power	900...1300 mW / 20 ms
Reset voltage min., % of rated coil voltage	25%
Reset voltage max., % of rated coil voltage	45%

Coil versions, bistable

Coil code	Rated voltage VDC	Operate voltage VDC	Reset voltage VDC	Coil resistance Ohm	Rated coil power mW
003	6	4.7	1.5	33±10%	1091
005	12	9.4	3.0	119±10%	1210
007	24	18.7	6.0	475±10%	1213
008	48	37.4	12.0	1750±10%	1317

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Insulation

Dielectric strength coil-contact circuit	2000 V _{rms} version V23148-*0*** 4000 V _{rms} version V23148-*1***
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 2.5 / 2.5 mm version V23148-*0*** ≥ 3.5 / 3.5 mm version V23148-*1***
Material group of insulation parts	≥ IIIa
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	II

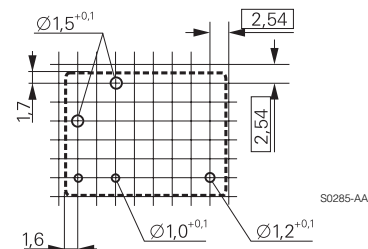
Other data

Mechanical endurance	20x10 ⁶ cycles
Material	RoHS - Directive 2002/95/EC compliant as per produc date code 0402
Environment	
Ambient temperature range	-25...+70°C
Vibration resistance (function) NO / NC contact	10 / 10 g
Shock resistance (function) NO / NC contact	10 / 10 g
Category of protection	RT III - wash tight
Processing	
Resistance to soldering heat wash-tight version	260°C / 5 s
Relay weight	9.5 g
Packaging unit	25 pcs

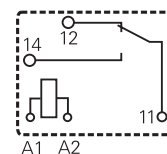
PCB layout / terminal assignment

Bottom view on solder pins

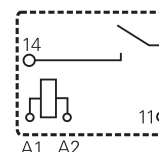
Monostable and bistable 1 coil



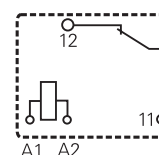
CO contact



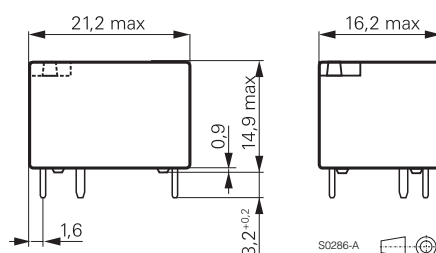
NO contact



NC contact



Dimensions



Power PCB Relay U/UB (Continued)

Product key	Typical product key	V23148	-A	0	007	-A	1	01
Type	V23148 Power PCB Relay U/UB							
Version	A monostable (Miniature power relay U) B bistable (Miniature power relay UB, remanence version)							
Dielectric strength coil-contact	0 2 kV _{rms} 1 4 kV _{rms}							
Version	0 monostable standard 0 bistable standard 1 sensitive							
Coil	03 6 VDC 07 24 VDC 05 12 VDC 08 48 VDC							
Contact configuration	A 1 CO contact (1 form C) C 1 NC contact (1 form B) B 1 NO contact (1 form A)							
Contact material	101 AgNi10							

Other types on request

Product key	Version	Dielectric	Version	Configuration	Coil	Part number
V23148-A0003-A101	monostable relay 'U' AgNi10	2000 V _{rms} contact-coil	standard	1 CO contact	6 VDC	1393203-4
V23148-A0003-B101				1 NO contact		1393203-5
V23148-A0005-A101				1 CO contact	12 VDC	1393203-8
V23148-A0005-B101				1 NO contact		1393203-9
V23148-A0007-A101				1 CO contact	24 VDC	1-1393203-1
V23148-A0007-B101				1 NO contact		1-1393203-2
V23148-A0008-A101				1 CO contact	48 VDC	1-1393203-4
V23148-A0105-A101					12 VDC	2-1393203-1
V23148-A0107-A101			sensitive		24 VDC	2-1393203-4
V23148-A1005-A101					12 VDC	2-1393203-7
V23148-A1007-A101					24 VDC	2-1393203-8
V23148-A1105-A101					12 VDC	2-1393203-9
V23148-A1107-A101		4000 V _{rms} contact-coil	standard		24 VDC	3-1393203-1
V23148-B0003-A101					6 VDC	1393204-4
V23148-B0005-A101					12 VDC	1393204-7
V23148-B0007-A101					24 VDC	1-1393204-0
V23148-B0008-A101	bistable relay 'UB' AgNi10	2000 V _{rms} contact-coil	standard		48 VDC	1-1393204-3

Low Profile PCB Relay PCD

- 1 pole 10 A
- 1 NO contact
- Low coil power 200 mW
- Height 10.2 mm
- Wash tight

Applications

Domestic appliances, coffee machines, irons, office equipment



F0154-D

Approvals

UL **us** E82292

Technical data of approved types on request

Contact data

Contact configuration	1 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	10 A
Limiting continuous current	10 A
Maximum breaking capacity AC	2500 VA
Contact material	AgSnO ₂ , AgCdO
Rated frequency of operation with / without load	10 / 300 min ⁻¹
Operate- / release time	max 8 / 2 ms
Bounce time NO / NC contact	max 3 / 2 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
UL 508				
PCD-1...D2M(H)	NO	10 A, 250 VAC, resistive	85°C	50x10 ³
PCD-1...D2M(H)	NO	15 A, 125 VAC, resistive	23°C	100x10 ³

Coil data

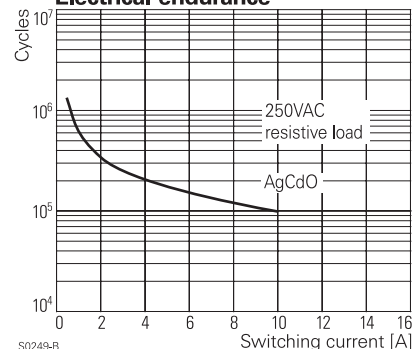
Rated coil voltage range DC coil	3 ... 48 VDC
Operative range to IEC 61810	2

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
006	6	4.5	0.3	180 ± 10%	200
012	12	9.0	0.6	720 ± 10%	200
024	24	18.0	1.2	2880 ± 10%	200

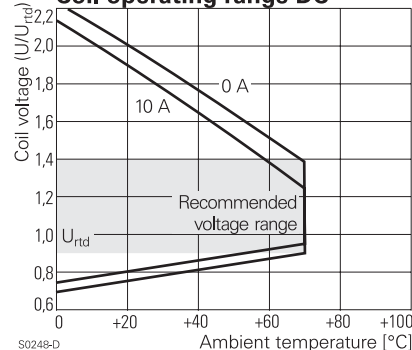
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Electrical endurance



S0249-B

Coil operating range DC



S0249-D

Low Profile PCB Relay PCD (Continued)

Insulation

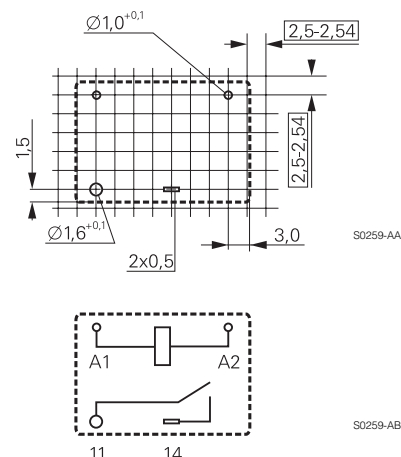
Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	750 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4/4 mm
Material group of insulation parts	≥ IIIa
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

Other data

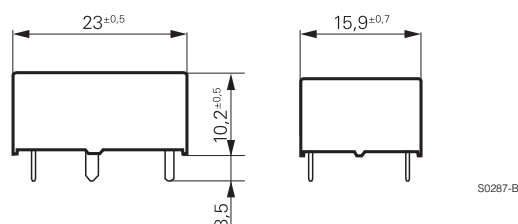
Mechanical endurance	>10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant per as par product date code "DT" (refers to June 2004),
Environment	
Ambient temperature range	-30 ... +70°C
Shock resistance (function) NO / NC contact	10 ms
Shock resistance (destruction)	100 g
Category of protection	RT II - flux proof, RT III - wash tight
Processing	
Resistance to soldering heat flux-proof version	270°C / 10 s
wash-tight version	260°C / 5 s
Relay weight	9 g
Packaging unit	1000 pcs

PCB layout / terminal assignment

Bottom view on solder pins



Dimensions



Product key

Typical product key

PCD	-1	24	-D	2	M
Type					
PCD Low Profile PCB Relay PCD					
Number of contacts					
1 1 NO contact					
Coil					
5 5 VDC					
12 12 VDC					
6 6 VDC					
24 24 VDC					
Coil version					
D standard 200 mW					
Contact material					
1 AgCdO					
2 AgSnO ₂					
Contact configuration					
M 1 NO contact (1 form A)					
Version					
- flux proof					
H wash tight					

Other types on request

Product key	Version	Cont. material	Cont.configuration	Coil	Part number
PCD-105-D2M	standard 200mW	AgSnO ₂	1 NO contact	5 VDC	1721105-1
PCD-112-D2M	flux proof			12 VDC	1721105-4
PCD-124-D2M				24 VDC	1721105-5
PCD-148-D2M				48 VDC	1721105-6
PCD-105-D2MH	standard 200mW			5 VDC	1721105-7
PCD-112-D2MH	wash tight			12 VDC	1-1721105-0
PCD-124-D2MH				24 VDC	1-1721105-1
PCD-148-D2MH				48 VDC	1-1721105-2

Miniature Power PCB Relay PB

- 1pole 10 A, 1 CO or 1 NO contact
- Environmentally-friendly cadmium-free contacts
- Class F coil system standard
- Compact and simple design gives high process security
- Product in accordance to IEC60335-1

Applications

White goods, small home appliances, heating temperature controllers



F0224-C

Approvals

VDE REG.-Nr. 121560, c **UL** us E214025
Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1 NO contact
Contact set	single contact
Type of interruption	micro-disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	10 A
Maximum breaking capacity AC	2500 VA
Limiting making capacity, max 4 s, duty factor 10%	15 A
Contact material	AgNi 90/10, AgSnO ₂
Rated frequency of operation with / without load	6/600 min ⁻¹
Operate- / release time	max 10 / 20 ms
Bounce time NO / NC contact	max 10 / 15 ms

Contact ratings

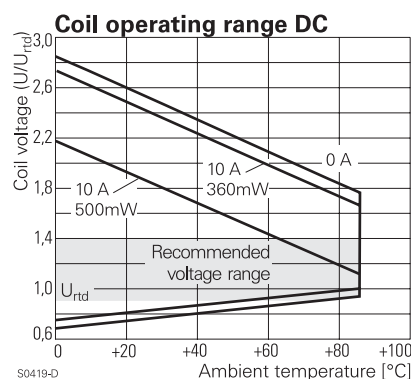
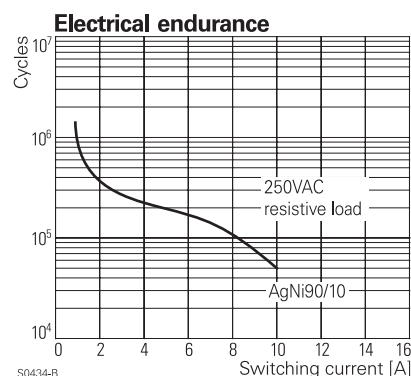
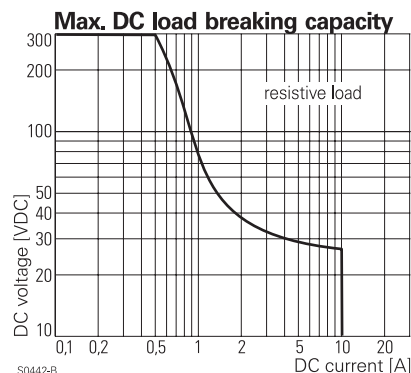
Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
PB114; PB113	NO/NC	10 A/3 A, 250 VAC, cosφ=1	85°C	30x10 ³
PB114	NO of CO	10 A, 250 VAC, cosφ=1	85°C	30x10 ³
PB134; PB133	NO	10 A, 250 VAC, cosφ=1	85°C	20x10 ³
PB134	NO	6.5 A, 440 VAC, cosφ=1	85°C	50x10 ³
PB634	NO	10 A, 250 VAC, cosφ=1	85°C	100x10 ³
UL 508				
PB1x4	NO	10 A, 250 VAC, cosφ=1	85°C	20x10 ³
PB634	NO	10 A, 250 VAC, general purpose	85°C	100x10 ³

Coil data

	PB1..	PB5.., PB6..
Rated coil voltage range DC coil	5...48 VDC	5...24 VDC
Operative range to IEC 61810	2	

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
Coil versions, DC-coil, 360mW					
005	5	3.75	0.5	70±10%	357
006	6	4.5	0.6	100±10%	360
009	9	6.75	0.9	225±10%	360
012	12	9.0	1.2	400±10%	360
018	18	13.5	1.8	900±10%	360
022	22	16.5	2.2	1344±10%	360
024	24	18.0	2.4	1600±10%	360
048	48	36	4.8	6400±10%	360



Miniature Power PCB Relay PB (Continued)

Coil versions, DC-coil, 500mW

005	5	3.75	0.5	48±10%	521
006	6	4.5	0.6	69±10%	522
012	12	9	1.2	274±10%	526
024	24	18	2.4	1097±10%	525

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Insulation

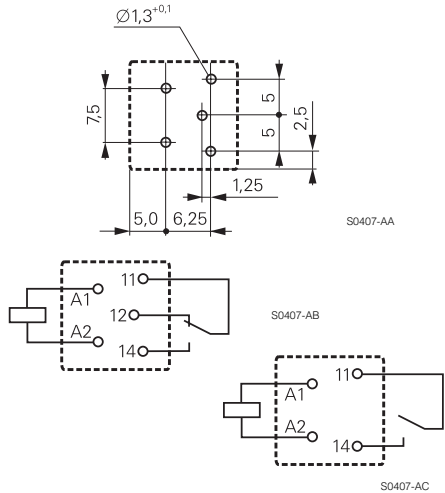
Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	CO version ≥ 3/4 mm
NO version	≥ 4/5 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

Other data

	PB1.., PB6..	PB5..
Mechanical endurance	5x10 ⁶ cycles	
Material	RoHS - Directive 2002/95/EC compliant as per product date code 0346	
	Resistance to heat and fire, version PB1, PB5 according EN60335, par.30	
Environment		
Ambient temperature range	-40...85°C	
Vibration resistance (function) NO / NC cont.	>10 / 4g	>10/6g
	30...400Hz	30...400Hz
Shock resistance (destruction)	100 g	
Category of protection	RTII - flux proof	
Processing		
Mounting	pcb	
Resistance to soldering heat	270°C / 10s	
Relay weight	5.4 g	
Packaging unit	35/1050 pcs	

PCB layout¹⁾ / terminal assignment

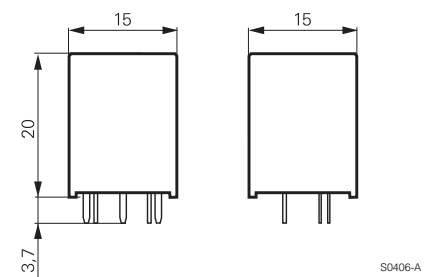
Bottom view on solder pins



1) Layout note:

No openings (e.g. holes, slots, cutouts, unused pins, open through connections, etc.) allowed under the relay base. The relay base must be fully covered by the pcb, recommended minimum distance between the relay and the edge of the printed circuit board is 5 mm. For more information, please contact our application support.

Dimensions



Miniature Power PCB Relay PB (Continued)

Product key

Typical product key

PB 1 1 4 012
Type
PB Miniature Power PCB Relay PB

Version
1 standard version **6** high performance version (NO version only)
5 500 mW version

Contact configuration
1 1 CO contact (1 form C) **3** 1 NO contact (1 form A)

Contact material
3 AgSnO₂ **4** AgNi 90/10

Coil

Coil code: please refer to coil versions table

Other types on request

Product key	Version	Contacts	Contact material	Coil	Part number
PB114005	standard class F	1 CO contact	AgNi 90/10	5 VDC	6-1415029-1
PB114006				6 VDC	7-1415029-1
PB114012				12 VDC	8-1415029-1
PB114024				24 VDC	9-1415029-1
PB134005		1 NO contact		5 VDC	1415030-1
PB134006				6 VDC	1-1415030-1
PB134012				12 VDC	2-1415030-1
PB134024				24 VDC	3-1415030-1
PB514012	500 mW version	1 CO contact		12 VDC	2-1415538-5
PB514024				24 VDC	5-1415535-6
PB634005	high performance version	1 NO contact		5 VDC	3-1415541-8
PB634006				6 VDC	3-1415541-9
PB634012				12 VDC	4-1415541-1
PB634024				24 VDC	4-1415541-2

Miniature Power PCB Relay PBH 105°C

- 1pole 6 A, 1 CO or 1 NO contact
- Environmentally-friendly cadmium-free contacts
- Class F coil system standard
- For ambient temperatures up to 105°C
- Product in accordance to IEC60335-1

Applications

White goods, domestic appliances



F0224CB

Approvals

VDE REG.-Nr. 121560, c **UL** us E214025
Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1 NO contact
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	6 A
Limiting continuous current	6.5 A
Maximum breaking capacity AC	1500 VA
Limiting making capacity, max 4 s, duty factor 10%	10 A
Contact material	AgNi 90/10
Rated frequency of operation with / without load	6/600 min ⁻¹
Operate- / release time	max 10 / 20 ms
Bounce time NO / NC contact	max 10 / 15 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
PBH14	CO	6.5 A, 250 VAC, cosφ=1	105°C	10x10 ³
PBH34	NO	6.5 A, 250 VAC, cosφ=1	105°C	100x10 ³
PBH14	NO of CO	6.5 A, 250 VAC, cosφ=1	105°C	100x10 ³
PBH34	NO	2 A, 250 VAC, cosφ=0.55	105°C	250x10 ³
PBH14	NO of CO	2 A, 250 VAC, cosφ=0.55	105°C	250x10 ³
PBH34	NO	6.5 A, 440 VAC, cosφ=1	105°C	50x10 ³
UL 508				
PBHx4	NO	6 A, 415 VAC, cosφ=1	105°C	50x10 ³

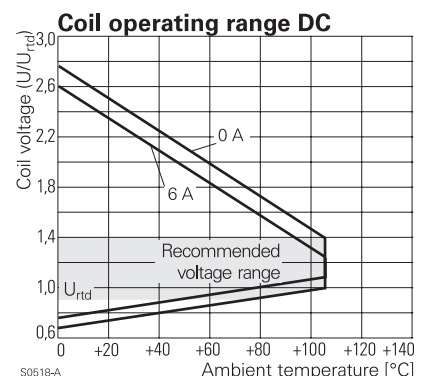
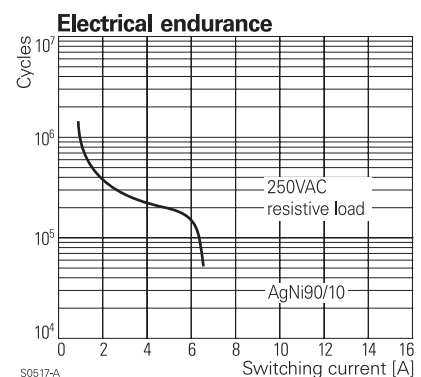
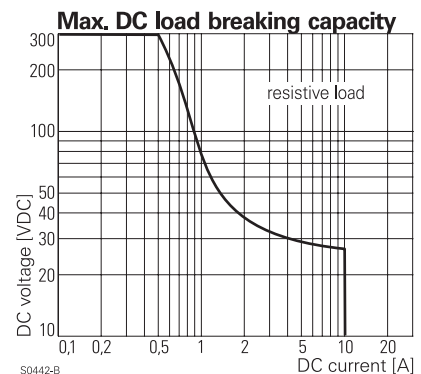
Coil data

Rated coil voltage range DC coil	5...36 VDC
Operative voltage range, % of rated coil voltage	90...100%

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.75	0.5	70±10%	357
006	6	4.5	0.6	100±10%	360
009	9	6.75	0.9	225±10%	360
012	12	9.0	1.2	400±10%	360
018	18	13.5	1.8	900±10%	360
022	22	16.5	2.2	1344±10%	360
024	24	18.0	2.4	1600±10%	360
048	48	36	4.8	6400±10%	360

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Miniature Power PCB Relay PBH 105°C (Continued)

Insulation

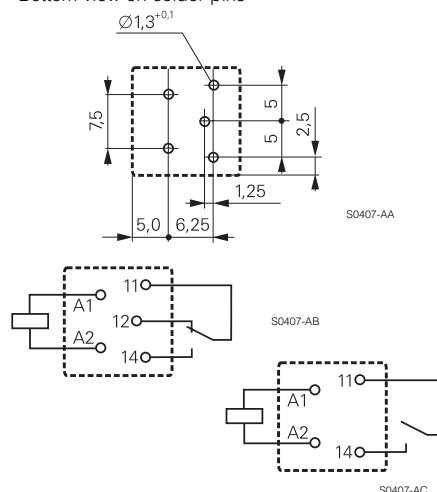
Dielectric strength coil-contact circuit			2500 V _{rms}
open contact circuit			1000 V _{rms}
Clearance / creepage coil-contact circuit	CO version	≥ 3/4 mm	
	NO version	≥ 4/5 mm	
Material group of insulation parts			IIla
Tracking index of relay base			PTI 250
Insulation to IEC 61810-1			
Type of insulation coil-contact circuit	basic		
open contact circuit	micro disconnection		
Rated insulation voltage	250 V		
Pollution degree	3	2	
Rated voltage system	240 V	230 / 400 V	
Overvoltage category	III		

Other data

Mechanical endurance	2x10 ⁶ cycles
Material	RoHS - Directive 2002/95/EC Resistance to heat and fire
Environment	compliant as per product date code 0346 according EN60335, par.30
Ambient temperature range	-20...105°C
Vibration resistance (function) NO / NC contact	>10 / 4g, 30...400Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof
Processing	
Mounting	pcb
Resistance to soldering heat	270°C / 10 s
Relay weight	5.4 g
Packaging unit	35/1050 pcs

PCB layout / terminal assignment

Bottom view on solder pins

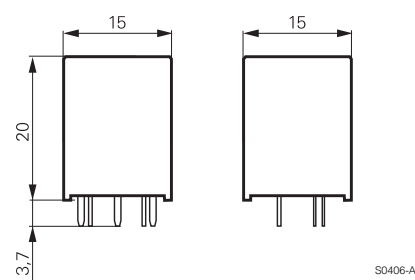


1) **Layout note:**

No openings (e.g. holes, slots, cutouts, unused pins, open through connexions, etc.) allowed under the relay base. The relay base must be fully covered by the pcb, recommended minimum distance between the relay and the edge of the printed circuit board is 5 mm.

For more information, please contact our application support.

Dimensions



Miniature Power PCB Relay PBH 105°C (Continued)

Product key

Typical product key

PB H 1 4 012
Type
PB Miniature Power PCB Relay PB 105°C

Version
H High temperature version

Contact configuration
1 1 CO contact (1 form C) **3** 1 NO contact (1 form A)

Contact material
4 AgNi 90/10

Coil

Coil code: please refer to coil versions table

Other types on request

Product key	Version	Contacts	Contact material	Coil	Part number
PBH14005	high	1 CO contact	AgNi 90/10	5 VDC	9-1415356-1
PBH14006	temperature			6 VDC	8-1415356-1
PBH14009	version			9 VDC	7-1415356-1
PBH14012				12 VDC	6-1415356-1
PBH14018				18 VDC	6-1415357-1
PBH14022				22 VDC	7-1415357-1
PBH14024				24 VDC	6-1415355-1
PBH14036				36 VDC	9-1415355-1
PBH34005		1 NO contact		5 VDC	5-1415356-1
PBH34006				6 VDC	4-1415356-1
PBH34009				9 VDC	3-1415356-1
PBH34012				12 VDC	2-1415356-1
PBH34018				18 VDC	8-1415357-1
PBH34022				22 VDC	9-1415357-1
PBH34024				24 VDC	1-1415356-1
PBH34036				36 VDC	1415356-1

Miniature Power PCB Relay T7S

- 1pole 10 / 6 A, 1CO or 1NO contact
- Sensitive 360 mW coil
- Version T7S-WG with tracking resistance PTI 325 on relay base and cover
- WG version: Product in accordance to IEC60335-1

Applications

Domestic appliances, heating control, building control, measurement&control



F_T7S_B

Approvals

T7S / T7S-WG:  B265  US E82292
Technical data of approved types on request

Contact data	T7S**E	T7S**H
Contact configuration	1 CO or 1 NO	
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	240 / 400 VAC	
Rated current	10 A	6 A
Maximum breaking capacity AC	2500 VA	
Contact material	AgNi 90/10 / AgZnO	
Rated frequency of operation with / without load	10/300 min ⁻¹	
Operate- / release time	max. 7 / 3 ms	
Bounce time NO / NC contact	max. 3 / 2 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
T7SV5E	NO of CO	10 A, 250 VAC, cosφ=1	85°C	50x10 ³
T7SV5E4	NO of CO	10.5 A, 250 VAC, cosφ=1	70°C	100x10 ³
T7SV1E	NO	10 A, 250 VAC, cosφ=1	85°C	50x10 ³
T7SV1E4	NO	10.5 A, 250 VAC, cosφ=1	70°C	100x10 ³
T7SV5H	NO of CO	6 A, 250 VAC, cosφ=1	105°C	100x10 ³
T7SV1H	NO	6 A, 250 VAC, cosφ=1	105°C	100x10 ³
UL 508				
T7SV...E	NO	10 A, 250 VAC, resistive	85°C	50x10 ³
T7SV...H	NO	6 A, 250 VAC, resistive	105°C	100x10 ³

Coil data

Rated voltage range DC coil	5...36 VDC
Coil power DC coil	typ. 360 mW
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
05	5	3.5	0.5	70±10%	357
06	6	4.2	0.6	100±10%	360
09	9	6.3	0.9	225±10%	360
12	12	8.4	1.2	400±10%	360
18*	18	12.6	1.8	900±10%	360
24	24	16.8	2.4	1600±10%	360
36	36	25.2	3.6	3600±10%	360

All figures are given for coil without preenergization, at ambient temperature +23°C

Other coil voltages on request

* versions with 18V coils are not registered at VDE

Miniature Power PCB Relay T7S (Continued)

Insulation

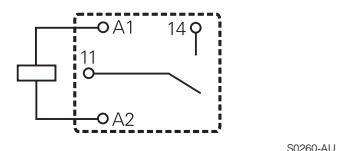
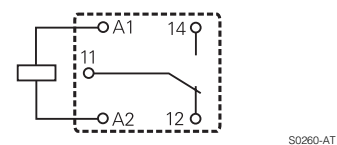
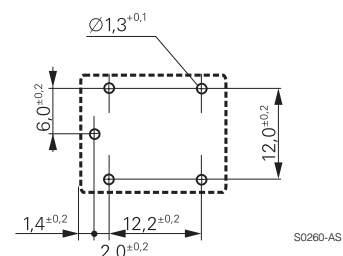
Dielectric strength coil-contact circuit	1500 V _{rms}
open contact circuit	750 V _{rms}
Clearance / creepage coil-contact circuit	≥ 2.5 / 2.5 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 325
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	240 V
Overvoltage category	II

Other data

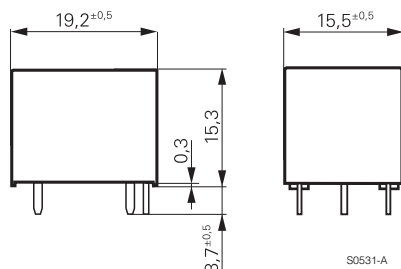
	T7**E	T7S**H
Mechanical endurance	10x10 ⁶ cycles	
Material	RoHS - Directive 2002/95/EC compliant as per product date code 0424	
	Resistance to heat and fire, WG version according EN60335, par.30	
Environment	Ambient temperature range -40...85°C -40...105°C	
	Vibration resistance (function) NO / NC contact >14 / 8 g, 30...400 Hz	
	Shock resistance (destruction) 100 g	
	Category of protection RTII - flux proof	
	RTIII - wash tight	
Processing	Mounting PCB	
	Resistance to soldering heat flux-proof version 270°C / 10 s	
	wash-tight version 260°C / 5 s	
	Relay weight 11 g	
	Packaging unit 1400 / 1400 pcs	

PCB layout / terminal assignment

Bottom view on solder pins



Dimensions



Product key

Typical product key

T7S V 1 E 6 -06

Type

T7S Miniature Power PCB Relay T7S

Version

S wash tight

V flux proof

Contact configuration

1 1 NO contact (1 form A)

5 1 CO contact (1 form C)

Coil version

H DC coil 360 mW, 105°C

E DC coil 360 mW, 85°C

Contact material

4 AgNi 90/10

6 AgZnO

Coil

Coil code: please refer to coil versions table

Version

Blank T7S standard version

WG product in accordance with IEC 60335-1

Other types on request

Miniature Power PCB Relay T7S (Continued)

Product key	Version	Cont. material	Cont.configuration	Coil	Part number
T7SV1E6-05	flux proof	AgZnO	1 NO contact	5 VDC	1721382-1
T7SV1E6-06				6 VDC	1721382-2
T7SV1E6-09				9 VDC	1721382-3
T7SV1E6-12				12 VDC	1721382-4
T7SV1E6-24				24 VDC	1721382-5
T7SV5E6-05			1 CO contact	5 VDC	1721381-1
T7SV5E6-06				6 VDC	1721381-2
T7SV5E6-09				9 VDC	1721381-3
T7SV5E6-12				12 VDC	1721381-4
T7SV5E6-24				24 VDC	1721381-5
T7SV1E6-05-WG	flux proof according IEC 60335-1		1 NO contact	5 VDC	2-1721382-5
T7SV1E6-06-WG				6 VDC	2-1721382-6
T7SV1E6-09-WG				9 VDC	2-1721382-7
T7SV1E6-12-WG				12 VDC	2-1721382-8
T7SV1E6-24-WG				24 VDC	2-1721382-9
T7SV5E6-05-WG			1 CO contact	5 VDC	2-1721381-5
T7SV5E6-06-WG				6 VDC	2-1721381-6
T7SV5E6-09-WG				9 VDC	2-1721381-7
T7SV5E6-12-WG				12 VDC	2-1721381-8
T7SV5E6-24-WG				24 VDC	2-1721381-9
T7SS1E6-05	wash tight		1 NO contact	5 VDC	1721382-7
T7SS1E6-06				6 VDC	1721382-8
T7SS1E6-09				9 VDC	1721382-9
T7SS1E6-12				12 VDC	1-1721382-0
T7SS1E6-24				24 VDC	1-1721382-1
T7SS5E6-05			1 CO contact	5 VDC	1721381-7
T7SS5E6-06				6 VDC	1721381-8
T7SS5E6-09				9 VDC	1721381-9
T7SS5E6-12				12 VDC	1-1721381-0
T7SS5E6-24				24 VDC	1-1721381-1
T7SS1E6-05-WG	wash tight according IEC 60335-1		1 NO contact	5 VDC	3-1721382-1
T7SS1E6-06-WG				6 VDC	3-1721382-2
T7SS1E6-09-WG				9 VDC	3-1721382-3
T7SS1E6-12-WG				12 VDC	3-1721382-4
T7SS1E6-24-WG				24 VDC	3-1721382-5
T7SS5E6-05-WG			1 CO contact	5 VDC	3-1721381-1
T7SS5E6-06-WG				6 VDC	3-1721381-2
T7SS5E6-09-WG				9 VDC	3-1721381-3
T7SS5E6-12-WG				12 VDC	3-1721381-4
T7SS5E6-24-WG				24 VDC	3-1721381-5
T7SV1E4-05	flux proof	AgNi 90/10	1 NO contact	5 VDC	1721735-1
T7SV1E4-06				6 VDC	1721735-2
T7SV1E4-09				9 VDC	1721735-3
T7SV1E4-12				12 VDC	1721735-4
T7SV1E4-24				24 VDC	1721735-5
T7SV5E4-05			1 CO contact	5 VDC	1721734-1
T7SV5E4-06				6 VDC	1721734-2
T7SV5E4-09				9 VDC	1721734-3
T7SV5E4-12				12 VDC	1721734-4
T7SV5E4-24				24 VDC	1721734-5
T7SV1E4-05-WG	flux proof according IEC 60335-1		1 NO contact	5 VDC	2-1721735-5
T7SV1E4-06-WG				6 VDC	2-1721735-6
T7SV1E4-09-WG				9 VDC	2-1721735-7
T7SV1E4-12-WG				12 VDC	2-1721735-8
T7SV1E4-24-WG				24 VDC	2-1721735-9
T7SV5E4-05-WG			1 CO contact	5 VDC	2-1721734-5
T7SV5E4-06-WG				6 VDC	2-1721734-6
T7SV5E4-09-WG				9 VDC	2-1721734-7
T7SV5E4-12-WG				12 VDC	2-1721734-8
T7SV5E4-24-WG				24 VDC	2-1721734-9

Miniature Power PCB Relay T7N / T7N-WG

- 1pole 10 A, 1CO or 1NO contact
- Version T7N-WG with tracking resistance CTI 325
- WG version: Product in accordance to IEC60335-1

Applications

Domestic appliances, heating control, building control, measurement&control



F0189-D

Approvals

T7N: VDE REG.-Nr. 6175, cULus E214025;

T7N-WG: VDE REG.-Nr. 119012, cULus E214025

Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	10 A
Maximum breaking capacity AC	2500 VA
Limiting making capacity, max 4 s, duty factor 10%	35 A
Contact material	AgSnO ₂ / AgCdO
Rated frequency of operation with / without load	30 / 300 min ⁻¹
Operate- / release time	max. 9 / 5 ms
Bounce time NO contact	max. 3 ms

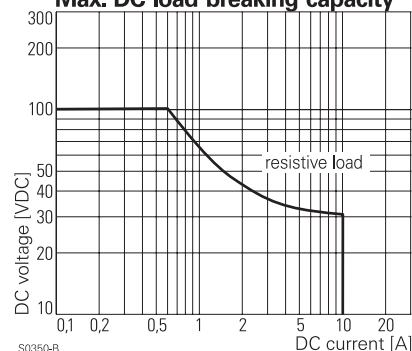
Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
T7NV1D4-...-WG(-A)	NO	10 A, 250 VAC, cosφ=1	85°C	100x10 ³
T7NV5D4-...-WG(-A)	NO of CO	10 A, 250 VAC, cosφ=1	85°C	100x10 ³
T7NV5D4-...-WG(-A)	NC of CO	6 A, 250 VAC, cosφ=1	85°C	50x10 ³
T7NS5D4-...	CO	10 A/5 A, 250 VAC, cosφ=1	85°C	6x10 ³
UL 508				
T7N...D4-...-WG(-A)	NO	10 A, 250 VAC, resistive	85°C	100x10 ³
T7N...D4-...-WG(-A)	NO	1/4 hp, 120 VAC, Motor	40°C	100x10 ³
T7N...D4-...	NO	10 A, 250 VAC, resistive	85°C	30x10 ³

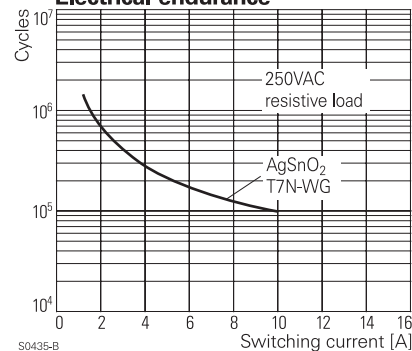
Coil data

Rated coil voltage range DC coil	5...48 VDC
Operative range to IEC 61810	2
Non-release voltage, % of rated coil voltage	50%
Coil insulation system according UL1446	class F

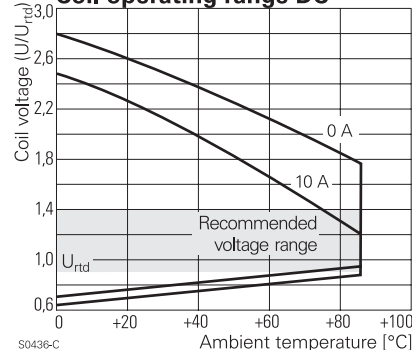
Max. DC load breaking capacity



Electrical endurance



Coil operating range DC



Miniature Power PCB Relay T7N / T7N-WG (Continued)

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
05	5	3.5	0.5	70±10%	357
06	6	4.2	0.6	100±10%	360
09	9	6.3	0.9	225±10%	360
12	12	8.4	1.2	400±10%	360
18 ¹⁾	18	13.5	1.8	900±10%	360
24	24	16.8	2.4	1600±10%	360
36	36	25.2	3.6	3600±10%	360
48	48	33.6	4.8	6400±10%	360

All figures are given for coil without preenergization, at ambient temperature +23°C

Other coil voltages on request

¹⁾ UL approval only

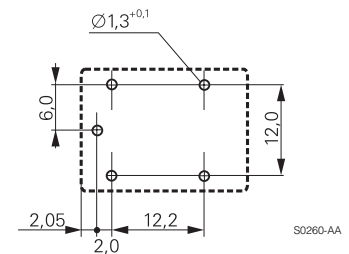
Insulation	T7N	T7N-WG
Dielectric strength coil-contact circuit	2500 V _{rms}	
open contact circuit	1000 V _{rms}	
Clearance / creepage coil-contact circuit	≥ 2/3 mm	≥ 2,5 / 3,5 mm
Material group of insulation parts	IIIa	
Tracking index of relay base	PTI 175	PTI 325
Insulation to IEC 618101		
Type of insulation coil-contact circuit	basic	
open contact circuit	micro disconnection	
Rated insulation voltage	250 V	
Pollution degree	2	
Rated voltage system	240 V	
Overvoltage category	II	

Other data

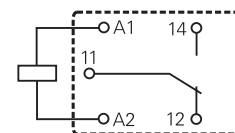
Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0424
Resistance to heat and fire, WG version	according EN60335, par.30
Environment	
Ambient temperature range	-40...85°C
Vibration resistance (function) NO / NC cont.	>14 / 8 g, 30...400 Hz
Shock resistance (destruction)	100 g
Category of protection, T7N	RTIII - wash tight, (RTII - flux proof)
T7N-WG	RTII - flux proof, RTIII - wash tight
Processing	
Mounting	PCB
Resistance to soldering heat	
flux-proof version	270°C / 10 s
wash-tight version	260°C / 5 s
Relay weight	11 g
Packaging unit	25/1000 pcs

PCB layout / terminal assignment

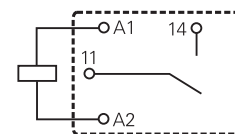
Bottom view on solder pins



S0260-AA

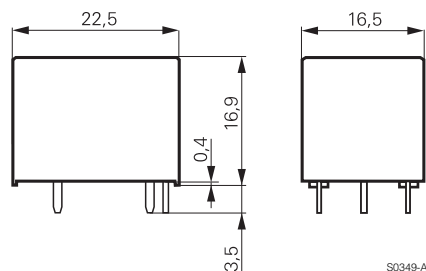


S0260-AB



S0260-AC

Dimensions



S0349-A

Miniature Power PCB Relay T7N / T7N-WG (Continued)

Product key	Typical product key						T7N	V	1	D	4	-06	-WG
Type	T7N Miniature Power PCB Relay T7N												
Version	S wash tight V flux proof												
Contact configuration	1 1 NO contact (1 form A) 5 1 CO contact (1 form C)												
Coil version	H DC coil 450 mW D DC coil 360 mW												
Contact material	1 AgCdO 4 AgSnO ₂												
Coil	Coil code: please refer to coil versions table												
Version	Blank T7N standard version, CTI 225 WG CTI 325 version, product in accordance with IEC 60335-1 WG-A CTI 325 for relay base only												

Other types on request

Product key	Version	Cont. material	Cont.configuration	Coil	Part number
T7NS1D4-05	wash tight CTI 225	AgSnO ₂	1 NO contact	5 VDC	6-1440006-9
T7NS1D4-06				6 VDC	7-1440006-0
T7NS1D4-09				9 VDC	7-1440006-1
T7NS1D4-12				12 VDC	7-1440006-2
T7NS1D4-24				24 VDC	7-1440006-4
T7NS1D4-36				36 VDC	7-1440006-5
T7NS1D4-48				48 VDC	7-1440006-6
T7NS5D4-05			1 CO contact	5 VDC	5-1440005-2
T7NS5D4-06				6 VDC	6-1440006-1
T7NS5D4-09				9 VDC	6-1440006-2
T7NS5D4-12				12 VDC	6-1440006-3
T7NS5D4-24				24 VDC	6-1440006-5
T7NS5D4-36				36 VDC	6-1440006-6
T7NS5D4-48				48 VDC	6-1440006-7
T7NV1D4-05-WG	flux proof CTI 325 according IEC 60335-1		1 NO contact	5 VDC	1721133-8
T7NV1D4-06-WG				6 VDC	1721133-9
T7NV1D4-09-WG				9 VDC	1-1721133-0
T7NV1D4-12-WG				12 VDC	1-1721133-1
T7NV1D4-24-WG				24 VDC	1-1721133-2
T7NV1D4-36-WG				36 VDC	1-1721133-3
T7NV1D4-48-WG				48 VDC	1-1721133-4
T7NV5D4-05-WG			1 CO contact	5 VDC	1649305-8
T7NV5D4-06-WG				6 VDC	1649305-9
T7NV5D4-09-WG				9 VDC	1-1649305-0
T7NV5D4-12-WG				12 VDC	1-1649305-1
T7NV5D4-24-WG				24 VDC	1-1649305-2
T7NV5D4-36-WG				36 VDC	1-1649305-3
T7NV5D4-48-WG				48 VDC	1-1649305-4
T7NV1D4-05-WG-A	flux proof relay base CTI 325		1 NO contact	5 VDC	2-1649280-0
T7NV1D4-06-WG-A				6 VDC	2-1649280-1
T7NV1D4-09-WG-A				9 VDC	2-1649280-2
T7NV1D4-12-WG-A				12 VDC	2-1649280-3
T7NV1D4-24-WG-A				24 VDC	2-1649280-4
T7NV1D4-36-WG-A				36 VDC	2-1649280-5
T7NV1D4-48-WG-A				48 VDC	2-1649280-6
T7NV5D4-05-WG-A			1 CO contact	5 VDC	1-1649324-0
T7NV5D4-06-WG-A				6 VDC	1-1649324-1
T7NV5D4-09-WG-A				9 VDC	1-1649324-2
T7NV5D4-12-WG-A				12 VDC	1-1649324-3
T7NV5D4-24-WG-A				24 VDC	1-1649324-4
T7NV5D4-36-WG-A				36 VDC	1-1649324-5
T7NV5D4-48-WG-A				48 VDC	1-1649324-6

Miniature Power Relay LN / LNH

- 1 pole 10 A / 16 A, 1 CO or 1 NO contact
- High performance 10 A version (LN1)
- 16 A High capacity version available (LN3)
- Version for HOT-applications (LNH)
- Flux proof
- Plastic materials according to IEC60335-1 (domestic appliances)



F0278-B

Applications

Domestic appliances

Approvals

VDE REG.-Nr. 40004596, **CE** **UL** **us** E214025
Technical data of approved types on request

Contact data	LN1	LN3	LNH
Contact configuration	1 CO or 1 NO		
Contact set	single contact		
Type of interruption	micro disconnection		
Rated voltage / max. switching voltage AC	250 / 400 VAC		
Rated current	10 A	16 A ¹⁾	10 A
Maximum breaking capacity AC	2500 VA	4000 VA	2500 VA
Limiting making capacity, max 4 s, df 10%	35 A		
Contact material	AgSnO ₂	AgSnO ₂ (AgCdO)	AgSnO ₂
Rated frequency of operation with / without load	30/300 min ⁻¹		
Operate- / release time DC coil	max 12 / 6 ms		
Bounce time DC coil, NO / NC contact	max 3 / 20 ms		

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
LN133	NO	10 A, 250 VAC, cosφ=1	85°C	250x10 ³
LN333	NO	16 A, 250 VAC, cosφ=1	85°C	50x10 ³
LNH33	NO	10 A, 250 VAC, cosφ=1	105°C	200x10 ³
LNH33	NO	8 A, 250 VAC, cosφ=1	105°C	250x10 ³
UL 508				
LN1	NO	10 A, 250 VAC, general purpose	85°C	200x10 ³
LN3	NO	16 A, 250 VAC, general purpose	85°C	50x10 ³
LNH	NO	10 A, 250 VAC, resistive	85°C	200x10 ³
¹⁾ For 16 A at 85°C: coil power reduction to 50% necessary For 16 A with 100% coil power: max. ambient temperature 75°C For 100% coil power at 85°C: max. contact current 15 A				

Coil data	LN1	LN3	LNH
Rated coil voltage range DC coil	5...48 VDC	5...48 VDC	5...48 VDC
Operative range to IEC 61810	2	2	
Operative voltage range, % of rated coil voltage	90 - 110%		
Coil insulation system according UL1446	class F	class F	class F

Miniature Power Relay LN / LNH (Continued)

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	62 ± 10%	400
006	6	4.2	0.6	90 ± 10%	400
009	9	6.3	0.9	202 ± 10%	401
012	12	8.4	1.2	360 ± 10%	400
024	24	16.8	2.4	1440 ± 10%	400
036	36	25.2	3.6	3240 ± 10%	400
048	48	33.6	4.8	5760 ± 10%	400

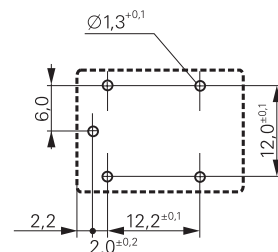
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Insulation	LN1	LN3	LNH
Dielectric strength coil-contact circuit		2000 V _{rms}	
open contact circuit		1000 V _{rms}	
Clearance / creepage coil-contact circuit		≥ 2.5/2.5 mm	
Material group of insulation parts		IIIa	
Tracking index of relay base		PTI 325	
Insulation to IEC 61810-1			
Type of insulation coil-contact circuit		basic	
open contact circuit		micro disconnection	
Rated insulation voltage		250 V	
Pollution degree		2	
Rated voltage system		240 V	
Overvoltage category		II	

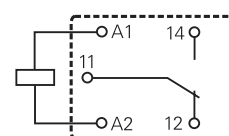
Other data	LN1	LN3	LNH
Mechanical endurance		10x10 ⁶ cycles	
Material			
RoHS - Directive 2002/95/EC		compliant per product date code 0424	
Resistance to heat and fire		according EN60335, par.30	
Environment			
Ambient temperature range	-40...85°C	-40...75 (85)°C	-40...105°C
Vibration resistance (function), NO / NC contact	>14 / 8 g, 30...400 Hz		
Shock resistance (destruction)	100 g		
Category of protection		RTII - flux proof	
Processing			
Mounting		PCB	
Resistance to soldering heat flux proof		270°C / 10 s	
Relay weight		12 g	
Packaging unit		25 / 1000 pcs	

PCB layout / terminal assignment

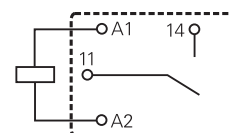
Bottom view on solder pins



S0260-AN

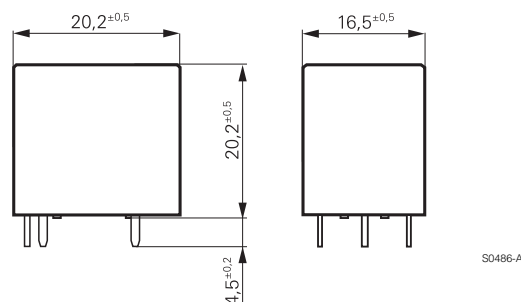


S0260-AB



S0260-AC

Dimensions



Miniature Power Relay LN / LNH (Continued)

Product key		Typical product key		LN	1	3	3	012
Type		LN Miniature Power Relay LN / LNH						
Version								
1 10 A, 85°C		3 16 A, 85°C						
H 10 A, 105°C								
Contact configuration								
1 1 CO contact (1 form C)		3 1 NO contact (1 form A)						
Contact material								
0 AgCdO		3 AgSnO ₂						
Coil								
005 5 VDC		012 12 VDC						
006 6 VDC		024 24 VDC						
009 9 VDC		036 36 VDC						

Product key	Version	Cont. material	Cont. configuration	Coil	Part number
LN133005	LN1	AgSnO ₂	1 NO contact	5 VDC	1-1721249-4
LN133006	10 A			6 VDC	1721249-1
LN133009	85°C			9 VDC	1721249-2
LN133012				12 VDC	1721249-3
LN133024				24 VDC	1721249-4
LN133036				36 VDC	1721249-5
LN133048				48 VDC	1721249-6
LN113006			1 CO contact	6 VDC	1721249-7
LN113009				9 VDC	1721249-8
LN113012				12 VDC	1721249-9
LN113024				24 VDC	1-1721249-0
LN113036				36 VDC	1-1721249-2
LN113048				48 VDC	1-1721249-3
LNH33005	LNH		1 NO contact	5 VDC	1721253-1
LNH33006	10 A			6 VDC	1721253-2
LNH33009	105°C			9 VDC	1721253-3
LNH33012				12 VDC	1721253-4
LNH33024				24 VDC	1721253-5
LNH33036				36 VDC	1721253-6
LNH33048				48 VDC	1721253-7
LNH13005			1 CO contact	5 VDC	1721253-8
LNH13006				6 VDC	1721253-9
LNH13009				9 VDC	1-1721253-0
LNH13012				12 VDC	1-1721253-1
LNH13024				24 VDC	1-1721253-2
LNH13036				36 VDC	1-1721253-3
LNH13048				48 VDC	1-1721253-4
LN333005	LN3		1 NO contact	5 VDC	1721743-6
LN333006	16 A			6 VDC	1721743-1
LN333009	85°C			9 VDC	1721743-4
LN333012				12 VDC	1721743-2
LN333024				24 VDC	1721743-3
LN313005			1 CO contact	5 VDC	1721548-5
LN313006				6 VDC	1721548-1
LN313009				9 VDC	1721548-2
LN313012				12 VDC	1721548-3
LN313024				24 VDC	1721548-4

Power Relay T9A

- 1 pole 30 A, 1 NO or 1 CO contact
- High breaking capacity 7200 VA
- PCB- and PCB/quick connect terminals
- Chassis mount version with quick connect terminals
- UL-class F as standard
- Ambient temperature 85°C

Applications

HVAC, power supplies, domestic appliances, measurement & control



F0156-B



F0179-B

Approvals

UL E22575, **CS** LR15734

Technical data of approved types on request

Contact data

Contact configuration	1 NO contact	1 CO contact
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	240 / 400 VAC	
Rated current NO / NC contact	30 A	20 / 10 A
Contact material	AgCdO, AgSnOInO	
Minimum contact load	≥ 1 A, 5VDC / 12 VAC	
Operate- / release time including bounce time	max. 15 / 15ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
UL 508				
T9A AgCdO	NO	30 A, 240 VAC, general purpose	85°C	100x10 ³
T9A AgCdO	NO	15 A 240 VAC, resistive	105°C	100x10 ³
T9A AgCdO	CO	10 A 240 VAC, general purpose	80°C	100x10 ³
T9A AgCdO	CO	30 A / 20 A 240 VAC, resistive	80°C	6x10 ³
T9A AgCdO	CO	20 A / 10 A 28 VDC, resistive	85°C	100x10 ³
T9A AgSnOInO	NO	30 A, 240 VAC, general purpose	85°C	100x10 ³

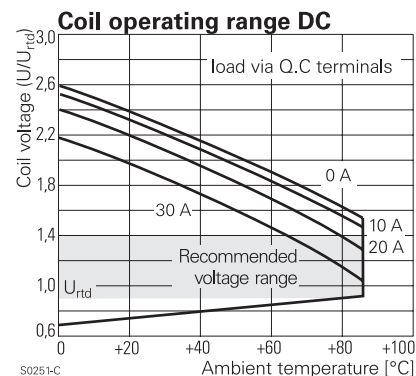
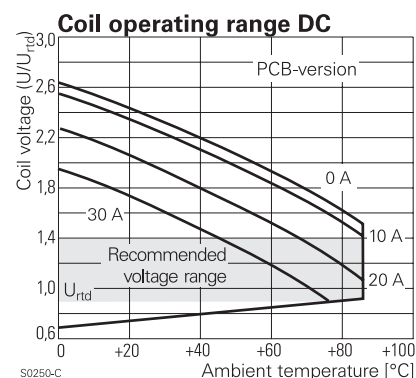
Coil data

Rated coil voltage range DC coil	5...48 VDC
For AC coil version please refer to T9C datasheet	

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
6	6	4.5	0.6	36 ± 10%	1000
12	12	9.0	1.2	144 ± 10%	1000
24	24	18.0	2.4	576 ± 10%	1000
48	48	36.0	4.8	2304 ± 10%	1000

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Power Relay T9A (Continued)

Insulation

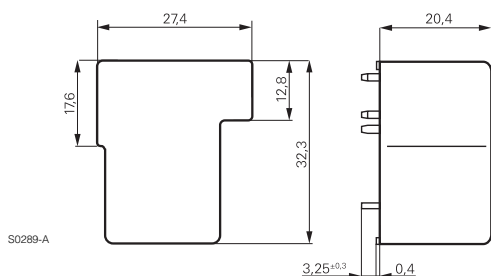
Insulation resistance coil-contact circuit	$> 10^9 \text{ Ohms}$
Dielectric strength coil-contact circuit	$2500 \text{ V}_{\text{rms}}$
open contact circuit	$1500 \text{ V}_{\text{rms}}$
Clearance / creepage coil-contact circuit	$\geq 2.5 / 4 \text{ mm}; \geq 3.1 / 6.3 \text{ mm (UL508)}$
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	$230 / 400 \text{ V}$
Overvoltage category	II

Other data

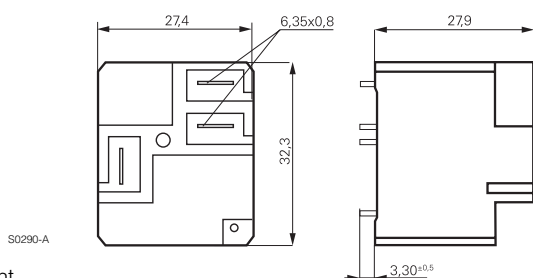
Other data	
Mechanical endurance	typ. 10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant per product date code 0509
Environment	
Ambient temperature range (see 'Coil operating range')	-55...+85°C
Vibration resistance (function) NO / NC contact	1.65 mm, 10...55 Hz
Shock resistance (function) NO / NC contact	10 g for 11 ms
Shock resistance (destruction)	100 g
Category of protection	RT III - wash tight ('Enclosure S') RT I - dust protected ('Enclosure P')
Processing	
Relay weight	26 / 33 g
Packaging unit	250 pcs

Dimensions

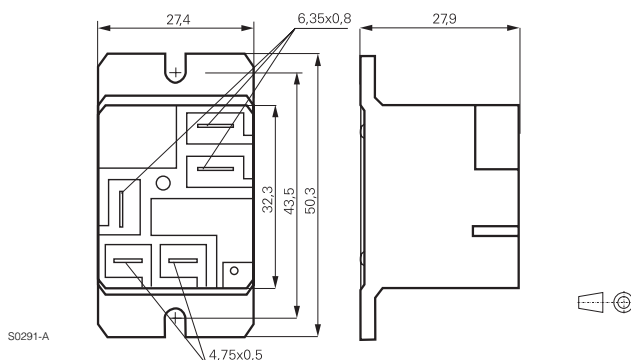
PCB version



PCB-/quick connect version



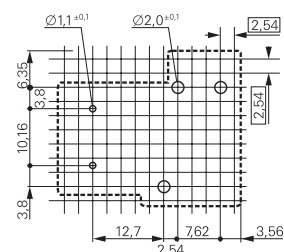
Flange mount



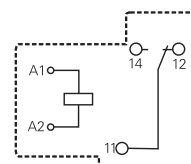
PCB layout / terminal assignment

Bottom view on solder pins

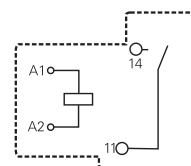
PCB version



S0261-AA

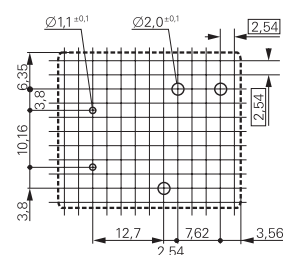


S0261-AR

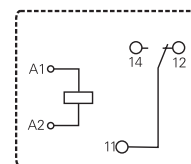


S0261-AC

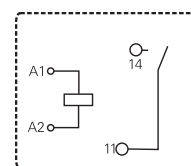
PCB-/quick connect version



S0261-AH



S0261-AI



S0261-A.I

Power Relay T9A (Continued)

Product key	Typical product key		T9A	S	1	D	2	2	-24
Type	T9A Power relay T9A								
Enclosure	P dust protected (flange mount) S wash tight (PCB- or PCB-/quick connect version)								
Contact configuration	1 1 NO contact (1 form A) 5 1 CO contact (1 form C)								
Coil version	D DC coil 1 W								
Mounting	1 PCB-version 2 PCB-terminals for coil and contacts, quick connect terminals for contacts 5 Flange mount, 4.75 mm quick connect term. for coil, 6.35 mm quick connect term. for contacts								
Contact material	2 AgCdO 4 AgSnOInO								
Coil	Coil code: please refer to coil versions table								

Other types on request

Product key	Enclosure	Mounting	Cont. material	Cont.configuration	Coil	Part number
T9AS1D12-9	wash tight	pcb terminals	AgCdO	1 NO contact	9 VDC	2-1393210-2
T9AS1D12-12					12 VDC	1-1393210-3
T9AS1D12-24					24 VDC	1-1393210-8
T9AS1D12-48					48 VDC	1-1393210-9
T9AS1D22-12		pcb + quick conn.			12 VDC	1-1419104-7
T9AS5D12-24		pcb terminals		1 CO contact	24 VDC	3-1393210-7
T9AS5D22-12		pcb + quick conn.			12 VDC	3-1419104-3
T9AS5D22-24					24 VDC	3-1419104-6

Power Relay T9C AC coil

- 1 pole 20 A, 1 NO contact
- 1.6 VA coil (cULus recognized)
- 1.2 VA coil (VDE approved)
- 2.5 kV coil - contact
- Flange mount

Applications

HVAC, power supplies, domestic appliances, measurement & control



F_T9C-B

Approvals

VDE REG.-Nr. A876, cULus E58304
Technical data of approved types on request

Contact data

Contact configuration	1 CO contact / 1 NO contact
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 VAC / 250 VAC
Rated current NO / NC contact	20 A / 10 A (UL 508)
Maximum breaking capacity AC	5000 VA
Contact material	AgSnInO
Minimum contact load	> 1A, 5VDC / 12 VAC
Rated frequency of operation with / without load	6 / 300 min ⁻¹
Operate- / release time including bounce time	max. 15 / 15 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
UL 508				
T9C	NO	30 A, 250 VAC, resistive	80°C	30x10 ³
T9C	NO	15 A 240 VAC, general purpose	70°C	100x10 ³
T9C	CO	20 A / 10 A 250 VAC, general purpose	85°C	6x10 ³
IEC 61810				
T9C, E coil	NO	15 A, 277 VAC, cosφ=1	85°C	100x10 ³

Coil data

Rated coil voltage range AC coil	12...240 VAC
----------------------------------	--------------

Coil versions, 1.2 VA AC-coil

Coil code	Rated voltage VAC	Operate voltage VAC	Release voltage VAC	Coil resistance Ω	Rated coil power VA
12	12	9.6	3.6	52±10%	1.2
24	24	19.2	7.2	198±10%	1.2
48	48	38.4	14.4	824±10%	1.2
120	110	88.0	33.0	3728±10%	1.2
240	220	176.0	66.0	14810±10%	1.2

Coil versions, 1.6 VA AC-coil

Coil code	Rated voltage VAC	Operate voltage VAC	Release voltage VAC	Coil resistance Ω	Rated coil power VA
12	12	9.6	3.6	36±10%	1.6
24	24	19.2	7.2	144±10%	1.6
48	48	38.4	14.4	576±10%	1.6
120	110	88.0	33.0	3025±10%	1.6
240	220	176.0	66.0	12000±10%	1.6

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Power Relay T9C AC coil (Continued)

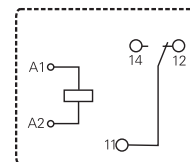
Insulation

Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	1500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 2.5 / 4 mm; ≥ 3.1 / 6.3 mm (UL508)
Tracking index of relay base	175
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	277 V
Overvoltage category	II

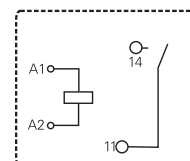
Other data

Mechanical endurance	typ. 5x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Environment	
Ambient temperature range	-40...+70°C
Vibration resistance (function) NO / NC contact	1.5 mm, 10...55 Hz
Shock resistance (function) NO / NC contact	10 g for 11 ms
Shock resistance (destruction)	100 g for 6 ms
Category of protection	RT I - dust protected
Processing	
Relay weight	33 g
Packaging unit	250 pcs

Terminal assignment

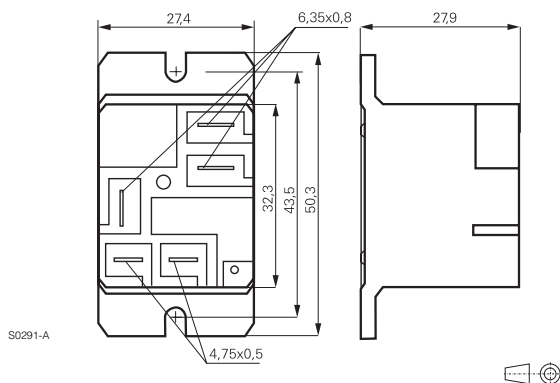


S0261-AI



S0261-AJ

Dimensions



S0291-A

Power Relay T9C AC coil (Continued)

Product key	Typical product key	T9C	P	1	A	5	4	-24
Type	T9C Power relay T9C AC coil							
Enclosure	P dust protected (flange mount)							
Contact configuration	1 1 NO contact (1 form A), VDE and UL approved 5 1 CO contact (1 form C), UL approved							
Coil version	A AC coil 1.6 VA E AC coil 1.2 VA (VDE approved)							
Mounting	5 Flange mount, 4.75 mm quick connect term. for coil, 6.35 mm quick connect term. for contacts							
Contact material	4 AgSnInO							
Coil	Coil code: please refer to coil versions table							

Other types on request

Product key	Version	Cont. material	Cont.configuration	Coil	Part number
T9CP1A54-12	flange mount	AgSnInO	1 NO contact	12 VAC	1649341-7
T9CP1A54-24	quick connect term.			24 VAC	1649341-8
T9CP1A54-48				48 VAC	1649341-9
T9CP1A54-120				120 VAC	1-1649341-0
T9CP1A54-240				240 VAC	1649341-2
T9CP5A54-12			1 CO contact	12 VAC	1-1649341-6
T9CP5A54-24				24 VAC	1-1649341-7
T9CP5A54-48				48 VAC	1-1649341-8
T9CP5A54-120				120 VAC	1-1649341-9
T9CP5A54-240				240 VAC	2-1649341-0

Power Relay T92

- 2 pole 30 A, 2 CO or 2 NO contacts
- High switching capacity up 30 A / 400 VAC
- DC- or AC coil
- 4 kV / 8 mm coil-contact
- Insulation to VDE 0631 and VDE 0700
- PCB- or quick connect terminals or chassis mount
- Adapter for DIN-rail mounting



F0167-B

Applications

Power supplies, heating & ventilation, control equipment

Approvals

VDE REG.-Nr. 5386, E22575, LR15734
Technical data of approved types on request

Contact data

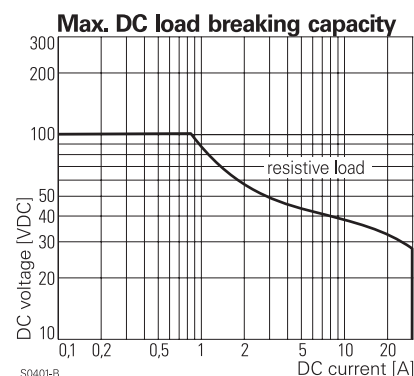
Contact configuration	2 NO contacts	2 CO contacts
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	400 / 600 VAC	
Rated current		
NO contact (PCB / flange mount)	30 / 20 A	30 / 20 A
NC contact		3 A
Maximum breaking capacity AC, NO / NC contact	12 kVA	12 / 1.2 kVA
Contact material	AgCdO	
Minimum contact load	500mA, 12V	
Rated frequency of operation with / without load	7 min ⁻¹ / 300 min ⁻¹	
Operate- / release time (including bounce)	15 / 10 ms	

Contact ratings

Type	ContactLoad	Ambient temp. [°C]	Cycles
UL 508			
T92 AgCdO, DC coil	CO 30 A / 3 A 277 VAC, resistive		250x10 ³
T92 AgCdO, AC coil	CO 30 A / 3 A 277 VAC, resistive		100x10 ³
T92 AgCdO	CO 30 A / 3 A 277 VAC, general purpose		100x10 ³
T92 AgCdO	CO 20 A / 3 A 28 VDC, resistive		100x10 ³
IEC 61810			
T92 AgCdO, PCB, DC coil	CO 30 A / 3 A, 400 VAC, cosφ=1	85°C	30x10 ³
T92 AgCdO, PCB, AC coil	CO 30 A / 3 A, 400 VAC, cosφ=1	65°C	30x10 ³
T92 AgCdO, flange, DC coil	CO 20 A / 3 A, 400 VAC, cosφ=1	85°C	30x10 ³
T92 AgCdO, flange, AC coil	CO 20 A / 3 A, 400 VAC, cosφ=1	65°C	30x10 ³
T92 AgCdO, PCB, DC coil	NO 30 A 400 VAC, cosφ=1	85°C	100x10 ³
T92 AgCdO, PCB, AC coil	NO 30 A 400 VAC, cosφ=1	65°C	100x10 ³
T92 AgCdO, flange, DC coil	NO 20 A 400 VAC, cosφ=1	85°C	100x10 ³
T92 AgCdO, flange, AC coil	NO 20 A 400 VAC, cosφ=1	65°C	100x10 ³

Coil data

Rated coil voltage range DC coil	5...110 VDC
AC coil	24...240 VAC
Operative range to IEC 61810	1



Power Relay T92 (Continued)

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
12	12	9.0	1.2	86 ± 10%	1674
24	24	18.0	2.4	350 ± 10%	1646
48	48	36.0	4.8	1390 ± 10%	1658
110	110	83.0	11.0	7255 ± 10%	1668

All figures are given for coil without preenergization, at ambient temperature +23°C

Other coil voltages on request

Coil versions, AC-coil 50 / 60 Hz

Coil code	Rated voltage VAC	Frequ. Hz	Operate voltage VAC	Release voltage VAC	DC-coil resistance Ohm	Rated coil power VA
24	24	60	19.2	2.4	44 ± 10%	4
120	110 / 120	50 / 60	96.0	12.0	950 ± 10%	4
240	220 / 240	50 / 60	192.0	24.0	3800 ± 10%	4

All figures are given for coil without preenergization, at ambient temperature +23°C

Other coil voltages on request

Insulation

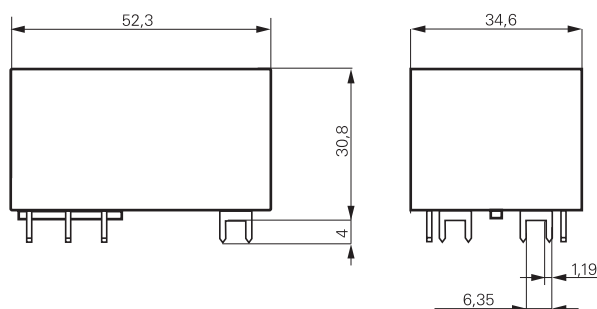
Insulation resistance coil-contact circuit	< 10 ⁹ Ohms
Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	2000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 5.5 / 8 mm
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	250 V
Overvoltage category	III

Other data

Mechanical endurance	> 5x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant per product date code 0509
Environment	
Ambient temperature range DC-coil	-40...+85°C
AC-coil	-40...+65°C
Vibration resistance (function) NO / NC contact	1.65 mm, 10...55 Hz
Shock resistance (function) NO / NC contact	10 g, 11 ms half sine
Shock resistance (destruction)	100 g, 11 ms half sine
Category of protection	RT I (dust protected) RT III (wash tight)
Processing	
Relay weight	86 g
Packaging unit	30 pcs

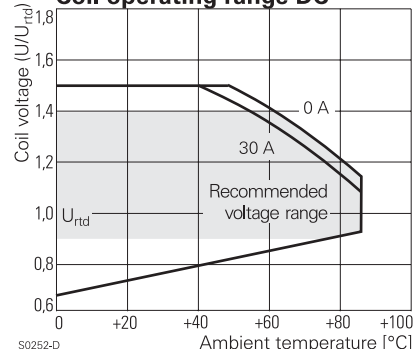
Dimensions

PCB version

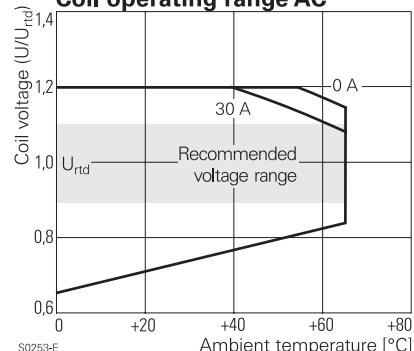


S0292-A

Coil operating range DC



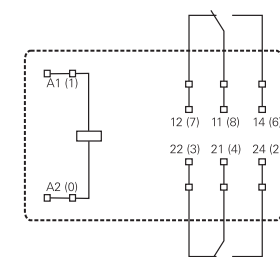
Coil operating range AC



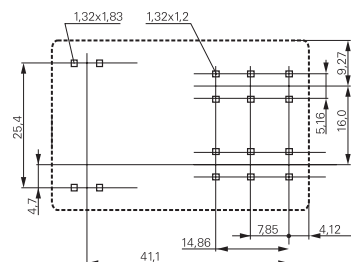
PCB layout / terminal assignment

Bottom view on solder pins

PCB version



S0262-AA



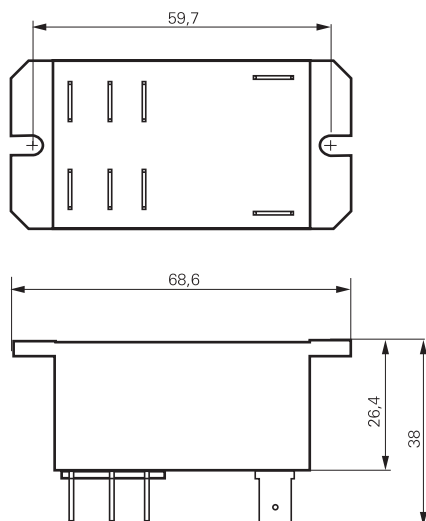
S0262-AI

Only necessary terminals are present on 2 NO models.

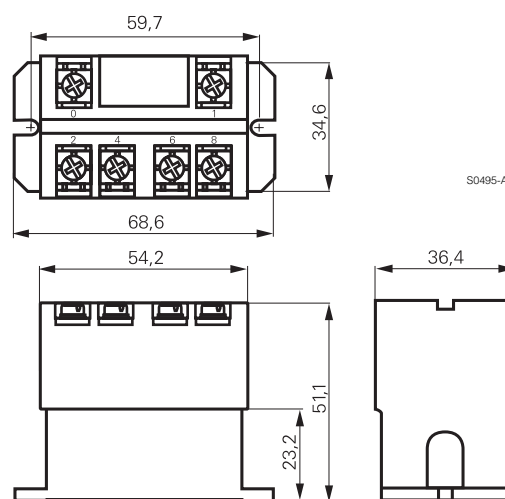
Power Relay T92 (Continued)

Dimensions

Flange mount



M4 screw terminals



Only necessary terminals are present on 2 NO models.

Product key

Typical product key

T92

P

7

A

2

2

-24

Type

T92 Power relay T92

Enclosure

P dust protected

S wash tight (PCB version only)

Contact configuration

7 2 NO contacts (2 form A)

11 2 CO contacts (2 form C)

Coil version

A AC-coil 50/60 Hz

D DC-coil

Mounting

1 PCB-version

2 Flange mount, 6.35 mm quick connect terminals for contacts and coil

5 M4 screw terminals (requires enclosure P and contact configuration 7, UL/CSA approved only)

Contact material

2 AgCdO

Coil

Coil code: please refer to coil versions table

Other types on request

Product key	Version	Mounting	Cont.configuration	Coil	Coil	Part number
T92P11A22-24	dust-proof	flange mount	2 CO contacts	AC-coil	24 VAC	4-1393211-3
T92P11A22-240					240 VAC	4-1393211-4
T92P7A22-120			2 NO contacts		120 VAC	5-1393211-7
T92P7A22-240					240 VAC	6-1393211-2
T92P7D12-12		pcb-version		DC-coil	12 VDC	6-1393211-5
T92P7D22-12		flange mount				6-1393211-9
T92P7D22-24					24 VDC	7-1393211-1
T92S11A12-240	wash tight	pcb-version	2 CO contacts	AC-coil	240 VAC	8-1393211-2
T92S11A22-240		flange mount				8-1393211-7
T92S11D12-24		pcb-version		DC-coil	24 VDC	9-1393211-0
T92S7A12-240			2 NO contacts	AC-coil	240 VAC	9-1393211-9
T92S7A22-240		flange mount				1393212-5
T92S7D12-24		pcb-version		DC-coil	24 VDC	1-1393212-0
T92S7D22-24		flange mount				1-1393212-7

Power Relay 430 3 mm

- 1 pole 16 A, 1 NO contact
- Safety mains isolation
- Contact gap > 3 mm
- DC- and AC-coil
- 4 kV / 8 mm coil-contact, reinforced insulation (VDE 0700)
- PCB mounting or quick connect terminals
- Mounting brackets or snap mounting
- Version with arc blow magnet for high DC-loads
- Product in accordance to IEC60335-1



F0256-B

Applications

Domestic appliances, industrial appliances, industrial controls

Approvals

VDE REG.-Nr. C820, cULus E214024
Technical data of approved types on request

Contact data

Contact configuration	1NO
Contact set	bifurcated contact
Type of interruption	full disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	16 A
Maximum breaking capacity AC	4000 VA
Limiting making capacity, max 4 s, duty factor 10%	25 A
Contact material	AgCu3, AgCdO
Contact gap	> 3 mm
Rated frequency of operation with / without load	15 / 300 min ⁻¹

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
0430 .4 .. 0	NO	16 A, 250 VAC, cosφ=1	70°C	50x10 ³
0430 .4 .. 1	NO	16 A, 250 VAC, cosφ=1	70°C	50x10 ³

Coil data

Rated coil voltage range DC coil	6...110 VDC
AC coil	6...240 VAC
Operative range to IEC 61810	2

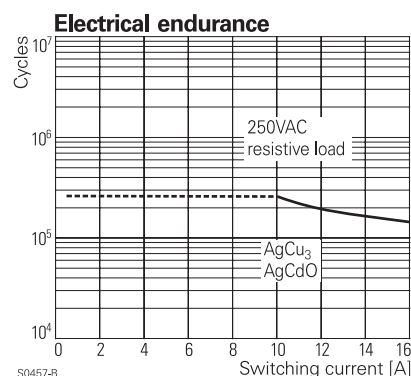
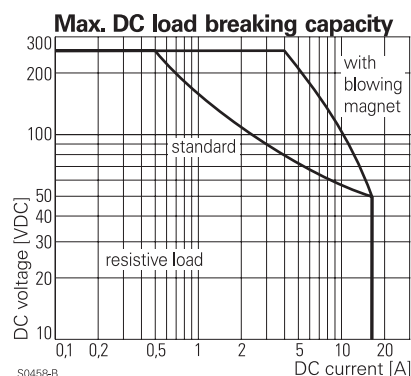
Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
09	12	7.8	0.6	145±10%	993
10	24	15.6	1.2	580±10%	993
11	48	31.2	2.4	2200±10%	1047
13	110	71.5	5.5	13000±10%	931

Coil versions, AC-coil 50Hz

Coil code	Rated voltage VAC	Operate voltage VAC	Release voltage VAC	Coil resistance Ohm	Rated coil power VA
23	24	18	3.6	145±10%	1.8
25	60	45	9.0	950±10%	1.8
26	110	83	16.0	3100±10%	1.8
27	230	175	35.0	11400±10%	1.8
28	240	185	36.0	13000±10%	1.8

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Power Relay 430 3 mm (Continued)

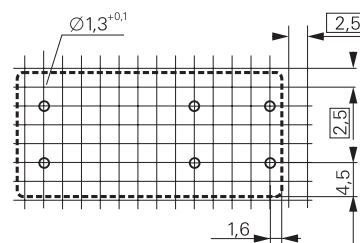
Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	2000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	full disconnection 3 mm
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

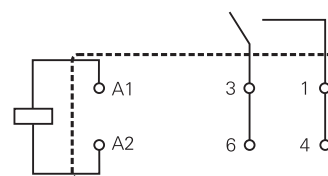
Other data

Mechanical endurance	> 2.5x10 ⁵ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0349
Environment	
Ambient temperature range	-20...+70°C
Shock resistance (destruction)	100 g
Category of protection	RT I - dust protected
Processing	
Mounting	pcb, mounting brackets, snap mounting, DIN rail
Resistance to soldering heat	270°C / 10 s
Relay weight	32 g
Packaging unit	50 pcs

PCB layout / terminal assignment
Bottom view on solder pins



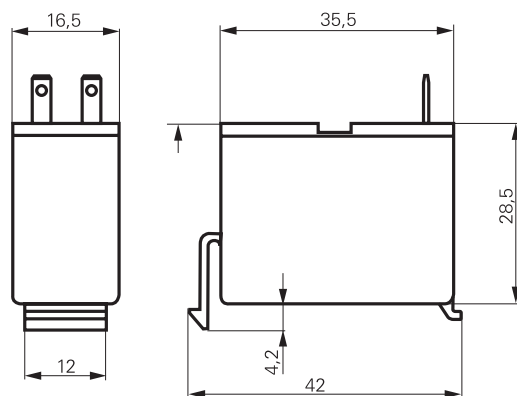
S0448-AE



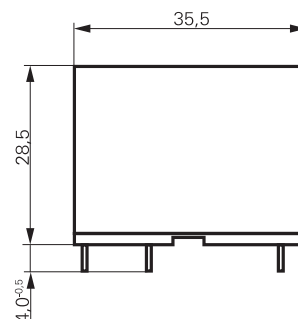
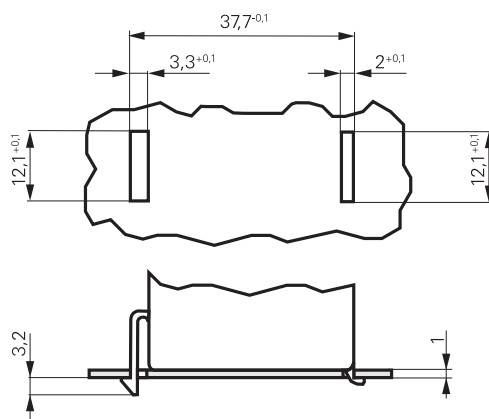
S0448-AF

Dimensions

Snap mounting



S0449-CH



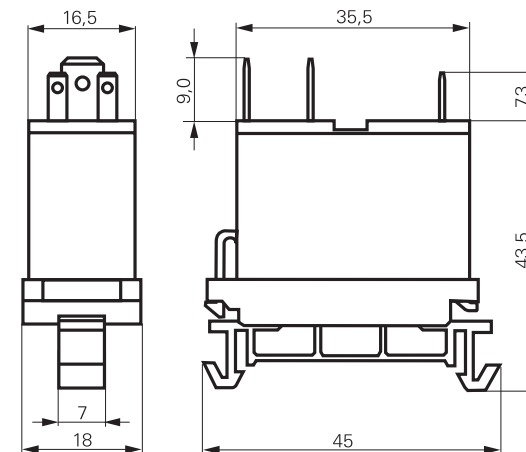
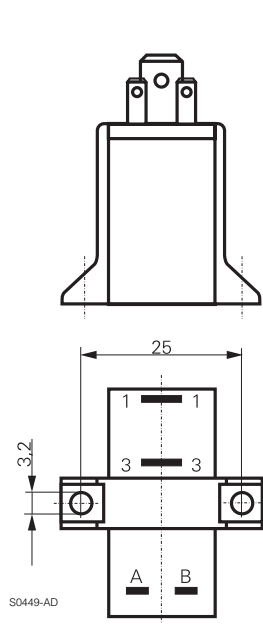
S0449-CB

Power Relay 430 3 mm (Continued)

Dimensions

Mounting brackets

DIN-rail mount



S0449-CK

Product key

Typical product key

0430 2 5 09 1 100

Type

0430 Power relay 430 3 mm

Mounting

0 PCB version **2** snap mounting
1 mounting brackets **5** DIN-rail mounting

Contact design

4 arc blowing magnet
5 standard

Coil

Coil code: please refer to coil versions table

Contact material

0 AgCu 3 **1** AgCdO

Version

100 standard

Other types on request

Product key	Version	Cont-material	Cont.configuration	Coil	Coil	Part number
0430 25 0911 00	snap mounting	AgCdO	1 NO contact	DC-coil	12 VDC	1-1415404-1
0430 25 1011 00	1.0mm plate				24 VDC	1-1415404-3
0430 25 2811 00				AC-coil	240 VAC	1-1415404-6

Power Relay 430

- 1 pole 16 A or 2 pole 10 A in NO, CO and NC versions
- DC- and AC-coil
- 4 kV / 8 mm coil-contact
- PCB mounting or quick connect terminals
- Mounting brackets or snap mounting
- Product in accordance to IEC60335-1

Applications

Motors, electro valves



F0257-B

Approvals

VDE REG.-Nr. C820, cULus E214025
Technical data of approved types on request

Contact data	1-pole	2-pole
Contact configuration	1CO, 1NO, 1NC	2CO, 2NO, 2NC
Contact set	single contact	single contact
Type of interruption	micro disconnection	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC	
Rated current	16 A	10 A
Maximum breaking capacity AC	4000 VA	2500 VA
Limiting making capacity, max 4 s, duty factor 10%	25 A	15 A
Contact material	AgCu ₃ , AgCdO	AgCu ₃ , AgCdO
Rated frequency of operation with / without load	15 / 600 min ⁻¹	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
0430 .6 .. 03	CO	16 A, 250 VAC, cosφ=1	70°C	50x10 ³
0430 .6 .. 13 & 11	NO	10 A, 250 VAC, cosφ=1	105°C	50x10 ³
0430 .7 .. 04 & 14	2 NO	10 A, 250 VAC, cosφ=1	70°C	50x10 ³
0430 .7 .. 06 & 16	2 CO	10 A, 250 VAC, cosφ=1	70°C	50x10 ³
0430 .7 .. 04	2 NO	6 A, 250 VAC, cosφ=1	105°C	50x10 ³
0430 .7 .. 06	2 CO	6 A, 250 VAC, cosφ=1	105°C	50x10 ³

Coil data

Rated coil voltage range DC coil	6...110 VDC
AC coil	6...240 VAC
Operative range to IEC 61810	2

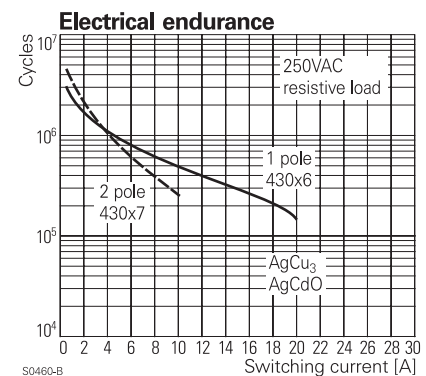
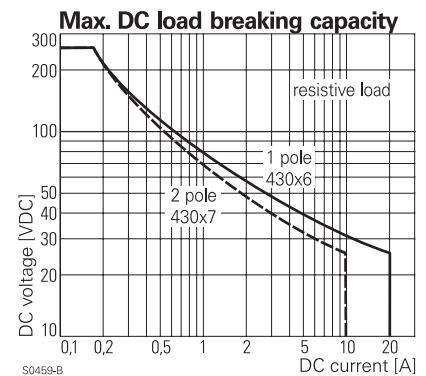
Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
09	12	7.8	0.6	145±10%	993
10	24	15.6	1.2	580±10%	993
11	48	31.2	2.4	2200±10%	1047
13	110	71.5	5.5	13000±10%	931

Coil versions, AC-coil 50Hz

Coil code	Rated voltage VAC	Operate voltage VAC	Release voltage VAC	Coil resistance Ohm	Rated coil power VA
03	24	18.0	3.6	200±10%	1.8
05	60	45.0	9.0	1250±10%	1.8
06	110	83.0	16.0	4500±10%	1.8
07	230	170.0	35.0	17500±10%	1.8

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Power Relay 430 (Continued)

Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm
adjacent contact circuits	≥ 3 / 4 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

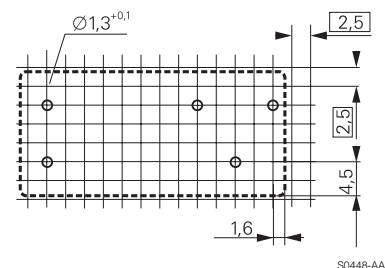
Other data

Mechanical endurance	> 2.5x10 ⁵ cycles
Material	RoHS - Directive 2002/95/EC compliant as per product date code 0349
Environment	
Ambient temperature range	-20...+70°C
Category of protection	RTI - dust protected
Processing	
Mounting	pcb, mounting brackets, snap mounting, DIN rail
Resistance to soldering heat	270°C / 10 s
Relay weight	32 g
Packaging unit	50 pcs

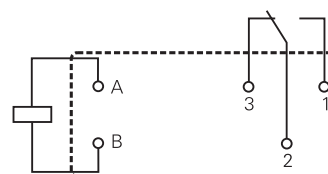
PCB layout / terminal assignment

Bottom view on solder pins

PCB version, 1 CO contact

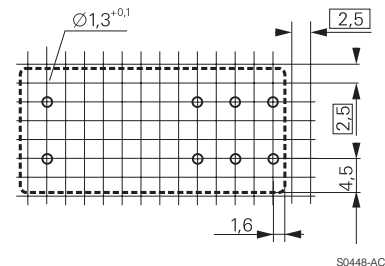


S0448-AA

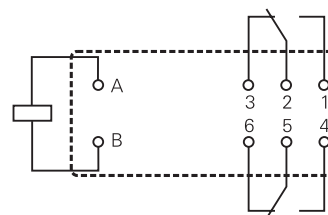


S0448-AB

PCB version, 2 CO contacts



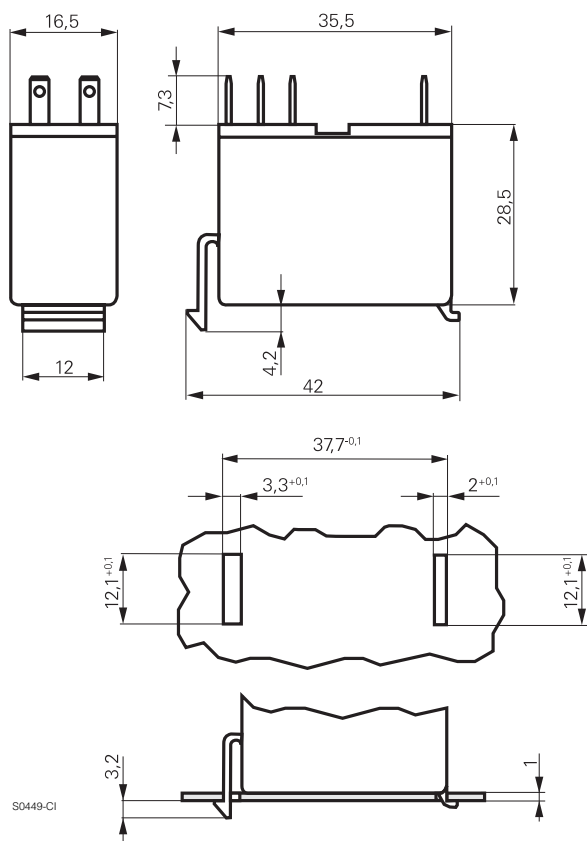
S0448-AC



S0448-AD

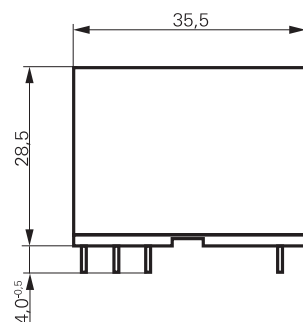
Dimensions

Snap mounting



S0449-CI

Dimensions



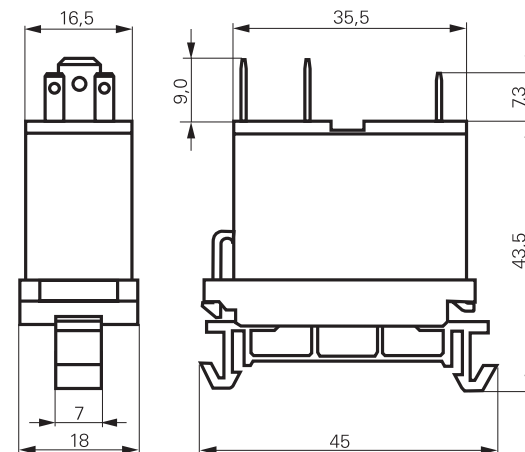
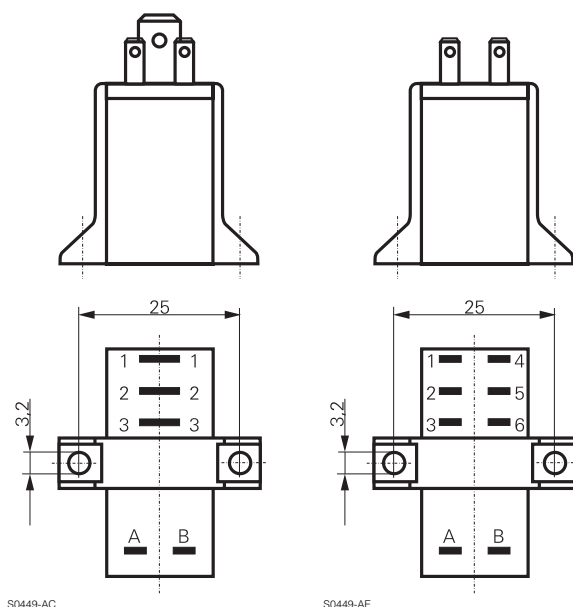
S0449-CA

Power Relay 430 (Continued)

Dimensions

Mounting brackets

DIN-rail mount



Product key

Typical product key

0430 1 6 09 1 1 100

Type

0430

Power relay 430

Mounting

0 PCB version

1 mounting brackets

2 snap mounting

5 DIN-rail mounting

Version

6 1 pole

7 2 pole

Coil

Coil code: please refer to coil versions table

Contact material

0 AgCu 3

1 AgCdO

Contact configuration

1 1 NO contact (1 form A)

2 1 NC contact (1 form B)

3 1 CO contact (1 form C)

4 2 NO contacts (2 form A)

5 2 NC contacts (2 form B)

6 2 CO contacts (2 form C)

Version

100 standard

Other types on request

Product key	Version	Cont. material	Cont.configuration	Coil	Coil	Part number
0430 16 0911 00	mounting brackets	AgCdO	1 NO contact	DC-coil	12 VDC	8-1415430-1
0430 16 1011 00			1 NO contact		24 VDC	8-1415430-3
0430 16 1013 00			1 CO contact		12 VDC	8-1415430-5
0430 17 0916 00			2 CO contacts		12 VDC	1415404-1
0430 17 1016 00	snap mounting 1.0 mm plate		1 CO contact	AC-coil	24 VDC	1415404-4
0430 26 0713 00			1 CO contact		220 VAC	2-1415404-3
0430 27 0716 00			2 CO contacts			2-1415404-8

Rast 5 Power Relay 419 11 (EA/..)

- 2 pole 16 A
- Safety mains insulation
- Quick connect terminals 6.3 x 0.8 mm
- Contact gap > 3 mm
- 4 kV / 8 mm coil-contact
- Snap or screw mounting
- Product in accordance to IEC60335-1

Applications

Industrial and domestic appliances, heating controls,
absolute safe power supply disconnection



F0255-C1

Approvals

VDE REG.-Nr. 5064 ÜG, c **UL** us E214024
Technical data of approved types on request

Contact data

Contact configuration	2 NO
Contact set	bifurcated contacts
Type of interruption	full disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	16 A
Limiting making capacity, max 4 s, duty factor 10%	25 A
Contact material	AgCu3
Contact gap	> 3 mm
Rated frequency of operation with / without load	15 / 600 min ⁻¹

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
0419 .. 03	2 NO	16 A, 250 VAC, cosφ=1	85°C	250x10 ³
0419 .. 04	2 NO	12 A, 250 VAC, cosφ=1	85°C	250x10 ³
0419 .. 03	2 NO	20 A, 250 VAC, cosφ=1	85°C	6x10 ³
0419 .. 12 & 13	2 NO	16 A, 250 VAC, cosφ=1	85°C	250x10 ³
0419 .. 12 & 13	2 NO	12 A, 400 VAC, cosφ=1	85°C	250x10 ³
0419 .. 12 & 13	2 NO	20 A, 250 VAC, cosφ=1	85°C	6x10 ³

Coil data

Rated coil voltage range DC coil	6...60 VDC
AC coil	24...400 VAC
Operative range to IEC 61810 DC coil / AC coil	1 / 2

Coil versions, DC-coil

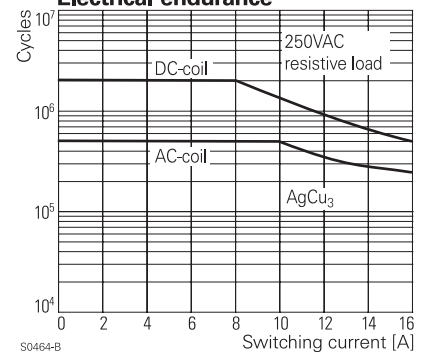
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
10	6	3.5	0.4	50±10%	720
11	10	6.0	0.7	150±10%	667
12	12	7.5	0.9	200±10%	720
13	24	15.0	1.8	800±10%	720

Coil versions, AC-coil

Coil code	Rated voltage VAC	Operate voltage VAC	Release voltage VAC	Coil resistance Ohm	Rated coil power VA
01	200.50 / 60 Hz	160.0	15.0	4050±10%	2.2
03	220..240.50 / 60 Hz	187.0	16.0	4500±10%	2.2
04	100..120.50 / 60 Hz	80.0	7.0	850±10%	2.2

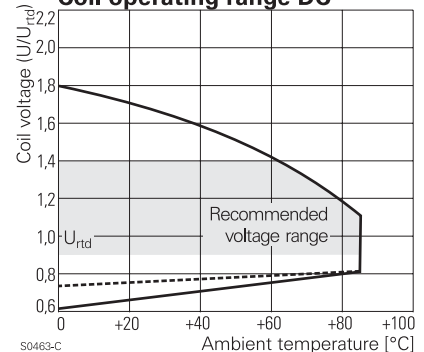
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Electrical endurance



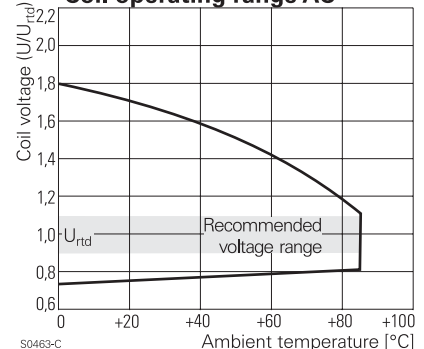
S0464-B

Coil operating range DC



S0463-C

Coil operating range AC



S0463-C

Rast 5 Power Relay 419 11 (EA/..) (Continued)

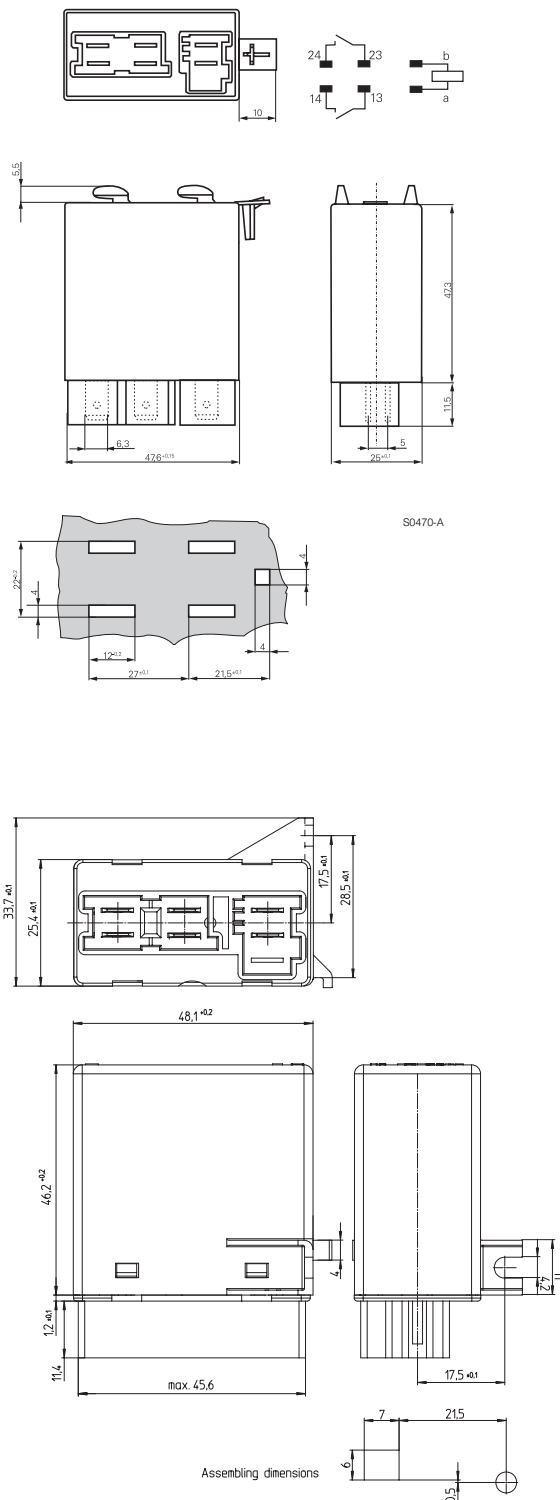
Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	2000 V _{rms}
adjacent contact circuits	4000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 6 / 8 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	full disconnection 3 mm
adjacent contact circuits	reinforced
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

Mechanical endurance DC-coil	2x10 ⁶ cycles
AC-coil	0,5x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0349
Environment	
Ambient temperature range	-20...+85°C
Vibration resistance (function) NO (5...500Hz)	2 g
Shock resistance (destruction)	80 g
Category of protection	RTI - dust protected
Processing	
Mounting	snap or screw mounting
Relay weight	92 g
Packaging unit	50 pcs

Dimensions



Rast 5 Power Relay 419 11 (EA/..) (Continued)

Product key	Typical product key	0419	1	1	03	0	1	00
Type								
0419	Rast 5 Power Relay 419 11 (EA/..)							
Mounting								
1	Snap mounting, 1.0 mm panel							
2	Snap mounting, 1.5 mm panel							
3	Screw mounting							
Version								
1	2 coil connectors							
2	3 coil connectors							
Coil	Coil code: please refer to coil versions table							
Contact material								
0	AgCu 3							
Contact connectors								
1	Silver plated							
Version								
00	Standard							

Other types on request

Product key	Version	Cont-material	Cont.configuration	Coil	Coil	Part number
0419 11 0301 00	Snap Mounting	AgCu3	2 NO	AC-coil	230 VAC	3-1415419-5
0419 11 1201 00	1.0 mm plate		contacts	DC-coil	12 VDC	4-1415419-0
0419 11 1301 00					24 VDC	4-1415419-2
0419 31 0301 00	Screw Mounting			AC-coil	230 VAC	4-1415419-9
0419 31 1301 00				DC-coil	24 VDC	5-1415419-5

Safety Relay SR2M

- 2 pole safety relay with either 1NO+1NC or 2CO contacts
- Forcibly guided contacts according to EN 50205
- Rated current 6 A
- 6 kV surge resistance between poles

Applications

Emergency shut-off, machine control, elevator and escalator control, light barrier control



F0188-D

Approvals

VDE REG.-Nr. 116064, **CE** us E214024, 968/EZ 111.03/05
Technical data of approved types on request

Contact data

Contact configuration	1 NO contact and 1 NC contact or 2 CO contacts ¹⁾
Contact set	single contact, forcibly guided 1 NC + 1NO: type A according to EN 50205 2 CO: type B according to EN 50205
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	6 A
Maximum breaking capacity AC	1500 VA
Contact material	AgNi
Minimum contact load	10 mA / 5 V
Contact resistance	≤ 100 mOhm / 1 A / 24 VDC ≤ 20 Ohm / 10 mA / 5 VDC

Rated frequency of operation with / without load 6 min⁻¹ / 300 min⁻¹
¹⁾ According EN50205 only 1NO / 1NC (11-14 and 22-21 or 12-11 and 21-24) shall be used as forcibly guided contacts.

Contact ratings

Type	Contact	Load*)	Ambient temp. [°C]	Cycles
UL 508				
V23047-A1...-A501	1 NO	B300 pilot duty	40°C	6x10 ³
V23047-A1...-A501	1 NO	R300 pilot duty	40°C	6x10 ³
V23047-A1...-A511	1 NO	B300 pilot duty	40°C	6x10 ³
V23047-A1...-A511	1 NO	R300 pilot duty	40°C	6x10 ³

*) load on one pole

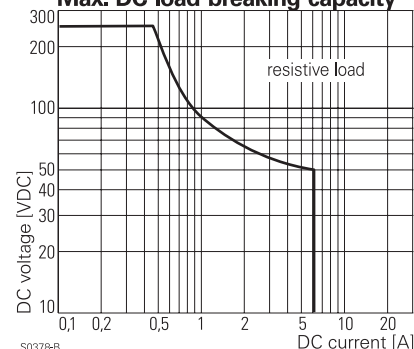
Coil data

Rated coil voltage range DC coil	5...110 VDC
Operative range to IEC 61810	2

Coil versions, DC-coil

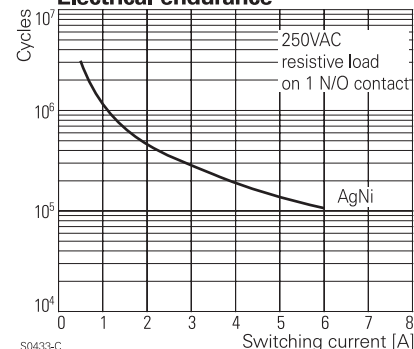
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.8	0.5	35,7±10%	700
006	6	4.5	0.6	51±10%	706
009	9	6.8	0.9	116±10%	698
012	12	9.0	1.2	206±10%	699
015	15	11.3	1.5	321±10%	700
018	18	13.5	1.8	483±10%	671
021	21	15.8	2.1	630±10%	700
024	24	18.0	2.4	823±10%	700
036	36	27.0	3.6	1851±10%	700

Max. DC load breaking capacity



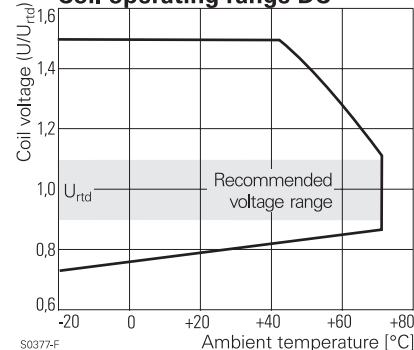
S0378-B

Electrical endurance



S0433-C

Coil operating range DC



S0377-F

Safety Relay SR2M (Continued)

Coil versions, DC-coil (continued)

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
040	40	30.0	4.0	2286 ± 10%	700
048	48	36.0	4.8	3291 ± 12%	700
060	60	45.0	6.0	5142 ± 12%	700
080	80	64.0	8.5	9143 ± 12%	700
110	110	82.5	11.0	17285 ± 12%	700

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	3000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm
adjacent contact circuits	≥ 5.5 / 5.5 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
Insulation to EN 50178	
Type of insulation coil-contact circuit	reinforced
adjacent contact circuits	reinforced

Other data

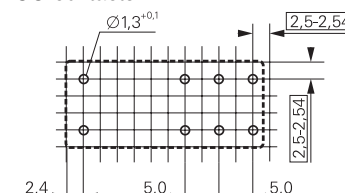
Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0407
Environment	
Ambient temperature range	-25...+70 °C
Vibration resistance (function) NO / NC contact	> 10 / 2.5 g, 15...200 Hz
Shock resistance (function) NO / NC contact	> 10 / 5 g, 11 ms half sine
Category of protection	RT III ²⁾
Processing	
Resistance to soldering heat	260°C / 5 s
Relay weight	20 g
Packaging unit	20 pcs

²⁾ please contact technical support for washing parameters

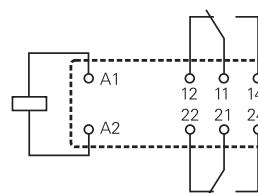
PCB layout / terminal assignment

Bottom view on solder pins

2 CO contacts

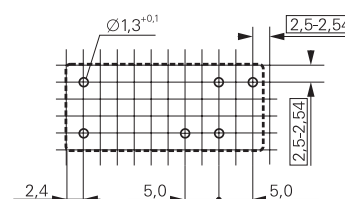


S0163-CO

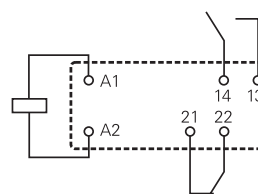


S0163-BJ

1 NO and 1 NC contacts

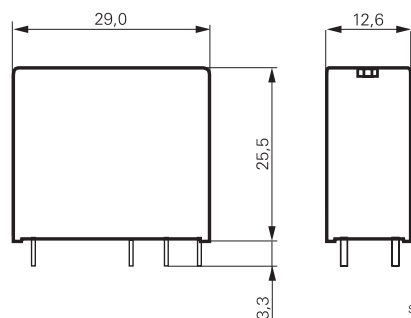


S0163-CU



S0163-CV

Dimensions



S0273-BB

Safety Relay SR2M (Continued)

Product key	Typical product key	V23047	-A1	012	-A	5	11
Type	V23047 Safety Relay SR2M						
Version	A1 standard						
Coil	Coil code = rated coil voltage (e.g. 024=24 VDC)						
Contact set	A single contact						
Contact material	5 AgNi						
Contact configuration	01 2 CO contacts (2 form C) 11 1 NO and 1 NC contact (1 form A + 1 form B)						

Other types on request

Product key	Version	Contact material	Configuration	Coil	Part number
V23047-A1005-A501	standard	AgNi	2 CO contacts	5 VDC	1393258-2
V23047-A1005-A511	wash tight		1 NO + 1 NC		7-1415006-1
V23047-A1006-A501			2 CO contacts	6 VDC	3-1415011-1
V23047-A1006-A511			1 NO + 1 NC		6-1415011-1
V23047-A1009-A501			2 CO contacts	9 VDC	1393258-3
V23047-A1009-A511			1 NO + 1 NC		7-1415011-1
V23047-A1012-A501			2 CO contacts	12 VDC	1393258-4
V23047-A1012-A511			1 NO + 1 NC		1393258-5
V23047-A1018-A501			2 CO contacts	18 VDC	1393258-8
V23047-A1018-A511			1 NO + 1 NC		1393258-9
V23047-A1021-A501			2 CO contacts	21 VDC	1-1393258-1
V23047-A1021-A511			1 NO + 1 NC		1-1393258-2
V23047-A1024-A501			2 CO contacts	24 VDC	1-1393258-5
V23047-A1024-A511			1 NO + 1 NC		1-1393258-7
V23047-A1036-A501			2 CO contacts	36 VDC	2-1393258-0
V23047-A1036-A511			1 NO + 1 NC		8-1415011-1
V23047-A1040-A501			2 CO contacts	40 VDC	2-1393258-1
V23047-A1040-A511			1 NO + 1 NC		2-1393258-2
V23047-A1048-A501			2 CO contacts	48 VDC	3-1415006-1
V23047-A1048-A511			1 NO + 1 NC		9-1415011-1
V23047-A1060-A511				60 VDC	2-1393258-3
V23047-A1110-A511				110 VDC	2-1415012-1

Safety Relay SR4 D/M

- 4 pole safety relay with either
2 NO+2 NC or 3 NO+1 NC contacts
- Forcibly guided contacts according to EN 50205
- Rated current 8 A
- Compact design & space efficient

Applications

Emergency shut-off, machine control, elevator and escalator control, light barrier control



F0244-C

Approvals

VDE REG.-Nr. 40005334, **CE** us E214024, 968/EL 230.03/07
Technical data of approved types on request

Contact data

Contact configuration	3 NO contacts and 1 NC contact or 2 NO contacts and 2 NC contacts
Contact set	single contact, forcibly guided type A according to EN 50205
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	8 A
Maximum breaking capacity AC	2000 VA
Contact material	AgSnO ₂
Minimum contact load	10 mA / 5 V
Contact resistance	≤ 100 mOhm / 1 A / 24 VDC ≤ 20 Ohm / 10 mA / 5 VDC
Rated frequency of operation with / without load	6 min ⁻¹ / 150 min ⁻¹

Contact ratings

Type	Contact Load*)	Ambient temp. [°C]	Cycles
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EN60947-5-1

SR4D/M	1 NO	IEC 947-5-1 (AC15) utilization category 250 VAC / 3 A	23°C	6,050
SR4D/M	1 NO	IEC 947-5-1 (DC13) utilization category 24 VDC / 3 A	23°C	6,050

*) load on one pole

Coil data

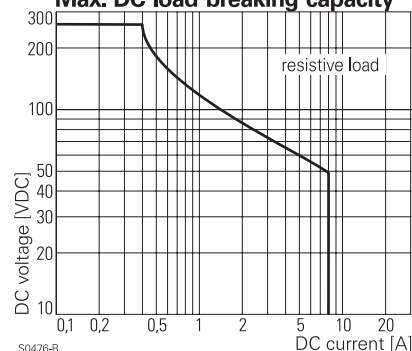
Rated coil voltage range DC coil	5...110 VDC
Operative range to IEC 61810	2

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.8	0.5	31 ± 10%	806
006	6	4.5	0.6	45 ± 10%	800
009	9	6.8	0.9	101 ± 10%	802
012	12	9.0	1.2	180 ± 10%	800
015	15	11.3	1.5	281 ± 10%	801
018	18	13.5	1.8	405 ± 10%	800
021	21	15.8	2.1	551 ± 10%	800
024	24	18.0	2.4	720 ± 10%	800
036	36	27.0	3.6	1620 ± 10%	800
040	40	30.0	4.0	2000 ± 10%	800
048	48	36.0	4.8	2880 ± 10%	800
060	60	45.0	6.0	4500 ± 10%	800
085	85	63.8	8.5	9031 ± 10%	800
110	110	82.5	11.0	15125 ± 10%	800

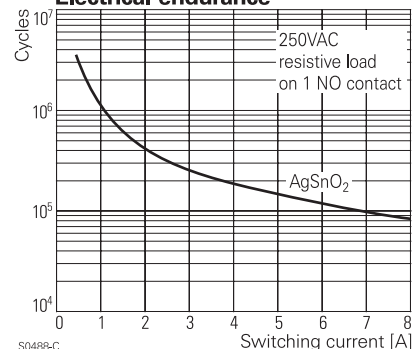
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Max. DC load breaking capacity



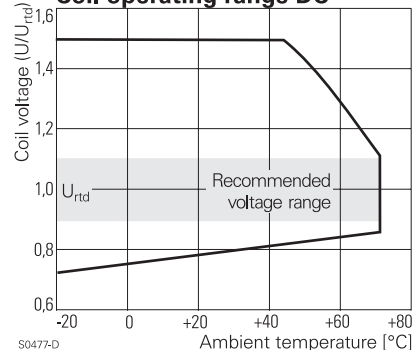
S0476-B

Electrical endurance



S0488-C

Coil operating range DC



S0477-D

Safety Relay SR4 D/M (Continued)

Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm
adjacent contact circuits	≥ 3 / 3.5 mm
adjacent contact circuits (UL840)	≥ 1.3 / 3.5 mm
	≥ 5.5 / 5.5 mm (in longitudinal direction)
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
Insulation to EN 50178	
Type of insulation coil-contact circuit	reinforced
adjacent contact circuits	basic
	reinforced (in longitudinal direction)

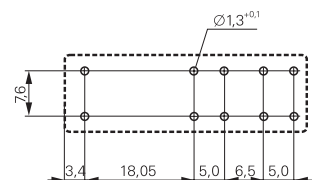
Other data

Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0407
Environment	
Ambient temperature range	-25...+70°C
Vibration resistance (function) NO / NC contact	> 10 / 2 g, 10...200 Hz
Shock resistance (function) NO / NC contact	> 10 / 2 g, 11 ms half sine
Category of protection	RT III ¹⁾
Processing	
Resistance to soldering heat	260°C / 5 s
Relay weight	16 g
Packaging unit	10 pcs

¹⁾ please contact technical support for washing parameters

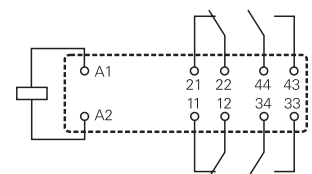
PCB layout / terminal assignment

Bottom view on solder pins



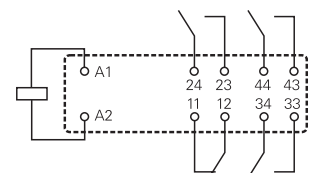
S0413-BC

2 NO and 2 NC contacts



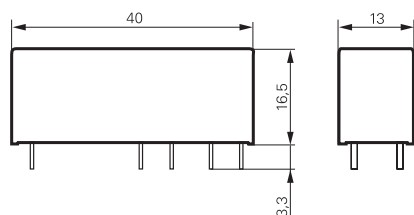
S0413-BB

3 NO and 1 NC contacts



S0413-BA

Dimensions



S0412-BH

Product key

Typical product key

SR4 D 4 012

Type

SR4 Safety Relay SR4 D/M

Contact configuration

D 2 NO + 2 NC contacts (2 form A + 2 form B)

M 3 NO + 1 NC contacts (3 form A + 1 form B)

Contact material

4 AgSnO₂

Coil

Coil code = rated coil voltage (e.g. 024=24 VDC)

Other types on request

Safety Relay SR4 D/M (Continued)

Product key	Type	Contact configuration	Contact material	Coil	Part number
SR4D4005	4 pole safety relay	2 NO + 2 NC contacts	AgSnO ₂	5 VDC	7-1415054-1
SR4D4006				6 VDC	8-1415054-1
SR4D4009				9 VDC	9-1415054-1
SR4D4012				12 VDC	1415055-1
SR4D4018				18 VDC	1-1415055-1
SR4D4021				21 VDC	2-1415055-1
SR4D4024				24 VDC	3-1415055-1
SR4D4036				36 VDC	4-1415055-1
SR4D4040				40 VDC	5-1415055-1
SR4D4048				48 VDC	6-1415055-1
SR4D4060				60 VDC	7-1415055-1
SR4D4085				85 VDC	8-1415055-1
SR4D4110				110 VDC	9-1415055-1
SR4M4005		3 NO + 1 NC contacts		5 VDC	5-1415053-1
SR4M4006				6 VDC	6-1415053-1
SR4M4009				9 VDC	7-1415053-1
SR4M4012				12 VDC	8-1415053-1
SR4M4018				18 VDC	9-1415053-1
SR4M4021				21 VDC	1415054-1
SR4M4024				24 VDC	4-1415053-1
SR4M4036				36 VDC	1-1415054-1
SR4M4040				40 VDC	2-1415054-1
SR4M4048				48 VDC	3-1415054-1
SR4M4060				60 VDC	4-1415054-1
SR4M4085				85 VDC	5-1415054-1
SR4M4110				110 VDC	6-1415054-1

Safety Relay SR6 D/M

- 4 pole safety relay with either
2 NO+2 NC or 3 NO+1 NC contacts
- Forcibly guided contacts according to EN 50205
- Rated current 8 A
- High insulation distances for safe separation of electrical circuits

Applications

Emergency shut-off, press control, machine control, elevator and escalator control, safety modules



F0206-ED

Approvals

VDE REG.-Nr. 128935, c **RU** us E214024, 968/EL 350.03/06
Technical data of approved types on request

Contact data

Contact configuration	3 NO contacts and 1 NC contact or 2 NO contacts and 2 NC contacts
Contact set	single contact, forcibly guided type A according to EN 50205
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	8 A
Maximum breaking capacity AC	2000 VA
Contact material	AgSnO ₂
Minimum contact load	10 mA / 5 V
Contact resistance	≤ 100 mOhm / 1 A / 24 VDC ≤ 20 Ohm / 10 mA / 5 VDC
Rated frequency of operation with / without load	6 min ⁻¹ / 150 min ⁻¹

Contact ratings

Type	Contact	Load*)	Ambient temp. [°C]	Cycles
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EN60947-5-1

SR6	1 NO	IEC 947-5-1 (AC15) utilization category 250 VAC / 5 A	23°C	6,050
SR6	1 NO	IEC 947-5-1 (DC13) utilization category 24 VDC / 6 A	23°C	6,050

*) load on one pole

Coil data

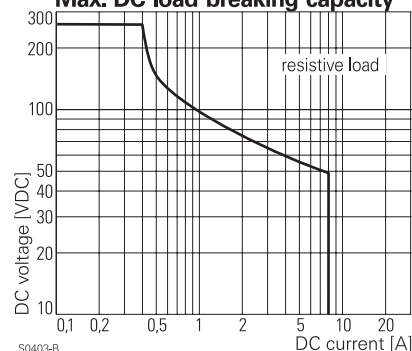
Rated coil voltage range DC coil	5...110 VDC
Operative range to IEC 61810	2

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release / Reset voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.8	0.5	21 ± 10%	1190
006	6	4.5	0.6	30 ± 10%	1200
009	9	6.8	0.9	68 ± 10%	1191
012	12	9.0	1.2	120 ± 10%	1200
018	18	13.5	1.8	270 ± 10%	1200
021	21	15.8	2.1	368 ± 10%	1198
024	24	18.0	2.4	480 ± 10%	1200
036	36	27.0	3.6	1080 ± 10%	1200
040	40	30.0	4.0	1333 ± 10%	1200
048	48	36.0	4.8	1920 ± 10%	1200
060	60	45.0	6.0	3000 ± 12%	1200
110	110	82.5	11.0	10080 ± 12%	1200

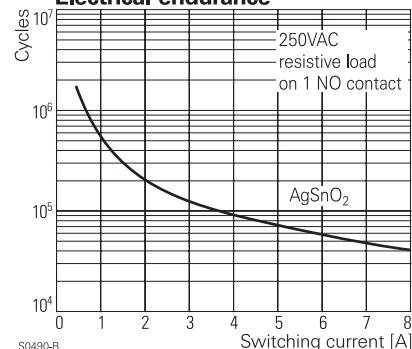
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Max. DC load breaking capacity



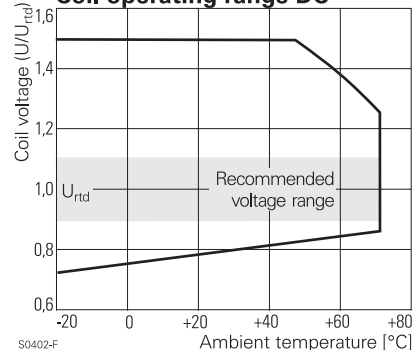
S0403-B

Electrical endurance



S0490-B

Coil operating range DC



S0402-F

Safety Relay SR6 D/M (Continued)

Insulation

Dielectric strength coil-contact circuit	3000 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	3000 / 4000 V _{rms} (in longitudinal direction)
Clearance / creepage coil-contact circuit	≥ 5.5 / 5.5 mm
adjacent contact circuits	≥ 5.5 / 5.5 mm
	≥ 15 / 15 mm (in longitudinal direction)
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
adjacent contact circuits	reinforced (in longitudinal dir)
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
Insulation to EN 50178	
Type of insulation coil-contact circuit	reinforced
adjacent contact circuits	reinforced

Other data

Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0407
Environment	
Ambient temperature range	-25...+70°C
Vibration resistance (function) NO / NC contact	> 8 / 2.5 g, 10...200 Hz
Shock resistance (function) NO / NC contact	> 10 / 2.5 g, 16 ms half sine
Category of protection	RT III ¹⁾
Processing	
Resistance to soldering heat	260°C / 5 s
Relay weight	30 g
Packaging unit	10 pcs

¹⁾ please contact technical support for washing parameters

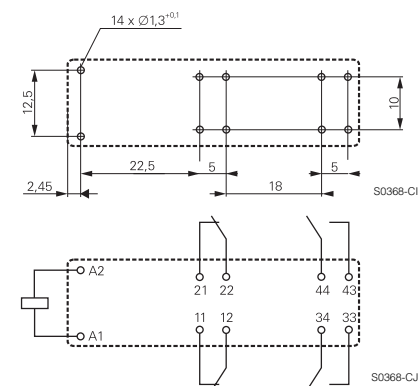
Accessories

PCB socket and hold down clip	contact technical support
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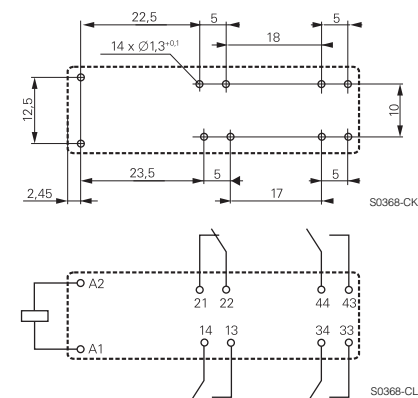
PCB layout / terminal assignment

Bottom view on solder pins

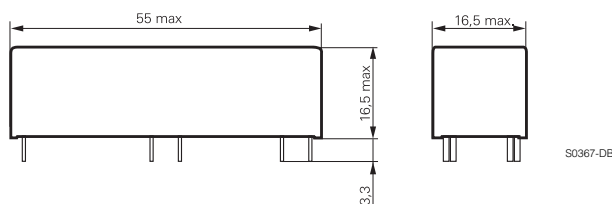
2 NO+2 NC versions



3 NO + 1 NC version



Dimensions



Safety Relay SR6 D/M (Continued)
Product key

Typical product key

SR6
D
4
012
Type
SR6 Safety Relay SR6 D/M

Contact configuration
D 2 NO + 2 NC contacts (2 form A + 2 form B)

M 3 NO + 1 NC contacts (3 form A + 1 form B)

Contact material
4 AgSnO₂
Coil

Coil code = rated coil voltage (e.g. 024=24 VDC)

Other types on request

Product key	Type	Contact configuration	Contact material	Coil	Part number
SR6D4012	4-pole safety relay	2 NO + 2 NC contacts	AgSnO ₂	12 VDC	1415078-1
SR6D4018				18 VDC	7-1415354-1
SR6D4021				21 VDC	8-1415353-1
SR6D4024				24 VDC	6-1415027-1
SR6D4040				40 VDC	9-1415366-1
SR6D4110				110 VDC	1415062-1
SR6M4006		3 NO + 1 NC contacts		6 VDC	6-1415053-1
SR6M4012				12 VDC	7-1415353-1
SR6M4018				18 VDC	1415354-1
SR6M4021				21 VDC	6-1415353-1
SR6M4024				24 VDC	3-1415353-1
SR6M4110				110 VDC	1-1415354-1

Safety Relay SR6

- 6 pole safety relay with either
4 NO+2 NC or 3 NO+3 NC or 5 NO+1 NC contacts
- Forcibly guided contacts according to EN50205
- Rated current 8 A
- Coil power 800 mW or 1200 mW

Applications

Emergency shut-off, press control, machine control, elevator and escalator control, safety modules



F0206-EA

Approvals (in preparation)

VDE REG.-Nr. 128935, c RU us E214024, 968/EL 350.03/06
Technical data of approved types on request

Contact data

Contact configuration	3 NO contacts and 3 NC contacts 4 NO contacts and 2 NC contacts 5 NO contacts and 1 NC contact
Contact set	single contact, forcibly guided type A according to EN 50205
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	250 / 400 VAC
Rated current	8 A
Maximum breaking capacity AC	2000 VA
Contact material	800 mW version: AgSnO ₂ + 0,2 µm Au 1200 mW version: AgSnO ₂
Minimum contact load	10 mA / 5 V
Contact resistance	≤ 100 mOhm / 1 A / 24 VDC ≤ 20 Ohm / 10 mA / 5 VDC
Rated frequency of operation with / without load	6 min ⁻¹ / 150 min ⁻¹

Contact ratings

Type	Contact	Load*)	Ambient temp. [°C]	Cycles
EN60947-5-1				
SR6	1 NO	IEC 947-5-1 (AC15) utilization category 250 VAC / 5 A	23°C	6,050
SR6	1 NO	IEC 947-5-1 (DC13) utilization category 24 VDC / 6 A	23°C	6,050

*) load on one pole

Coil data

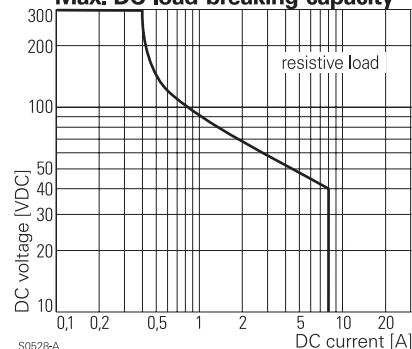
Rated coil voltage range DC coil	5...110 VDC
Operative range	2

Coil versions, 800 mW, DC-coil

Coil code	Nominal voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
Order code block 4					
K05	5	3.8	0.5	31±10%	806
K06	6	4.5	0.6	45±10%	800
K09	9	6.8	0.9	101±10%	802
K12	12	9.0	1.2	180±10%	800
K18	18	13.5	1.8	405±10%	800
K21	21	15.8	2.1	551±10%	800
K24	24	18.0	2.4	720±10%	800
K36	36	27.0	3.6	1620±10%	800
K40	40	30.0	4.0	2000±10%	800
K48	48	36.0	4.8	2880±10%	800
K60	60	45.0	6.0	4500±10%	800
K85	85	63.8	8.5	9031±10%	800
L10	110	82.5	11.0	15130±10%	800

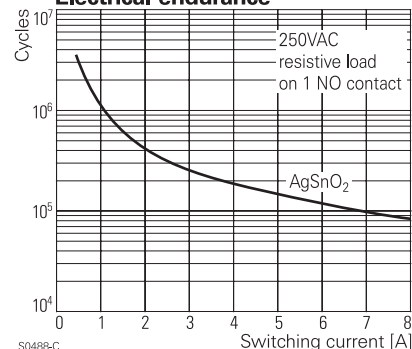
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Max. DC load breaking capacity



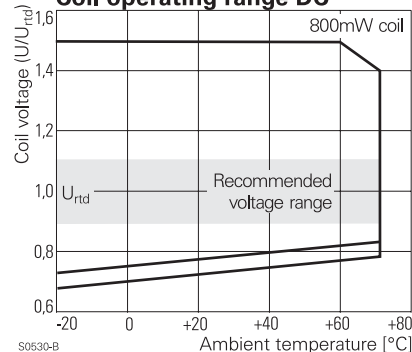
S0528-A

Electrical endurance



S0488-C

Coil operating range DC



S0530-B

Safety Relay SR6 (Continued)

Coil versions, 1200 mW, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release/Reset voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.8	0.5	21 ± 10%	1190
006	6	4.5	0.6	30 ± 10%	1200
009	9	6.8	0.9	68 ± 10%	1191
012	12	9.0	1.2	120 ± 10%	1200
018	18	13.5	1.8	270 ± 10%	1200
021	21	15.8	2.1	368 ± 10%	1198
024	24	18.0	2.4	480 ± 10%	1200
036	36	27.0	3.6	1080 ± 10%	1200
040	40	30.0	4.0	1333 ± 10%	1200
048	48	36.0	4.8	1920 ± 10%	1200
060	60	45.0	6.0	3000 ± 12%	1200
085	85	64.0	8.5	6021 ± 12%	1200
110	110	82.5	11.0	10080 ± 12%	1200

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	3000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 5.5 / 5.5 mm
adjacent contact circuits	≥ 5.5 / 5.5 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
Insulation to EN 50178	
Type of insulation coil-contact circuit	reinforced
adjacent contact circuits	reinforced

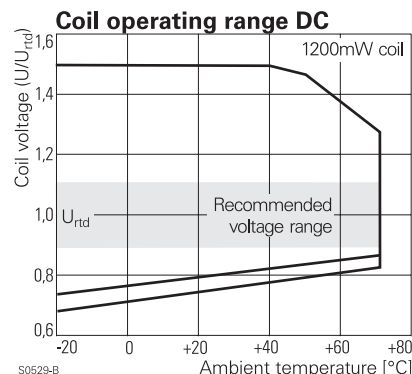
Other data

Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0407
Environment	
Ambient temperature range	-25...+70°C
Vibration resistance (function) NO / NC contact > 8 / 2.5 g, 10....200 Hz	
Shock resistance (function) NO / NC contact > 10 / 2.5 g, 16 ms half sine	
Category of protection	RT III ¹⁾
Processing	
Resistance to soldering heat	260°C / 5 s
Relay weight	30 g
Packaging unit	10 pcs

¹⁾ please contact technical support for washing parameters

Accessories

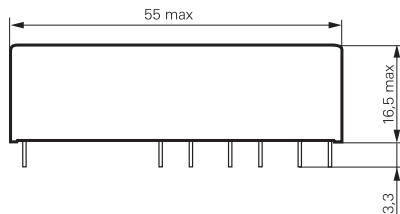
PCB socket and hold down clip	contact technical support
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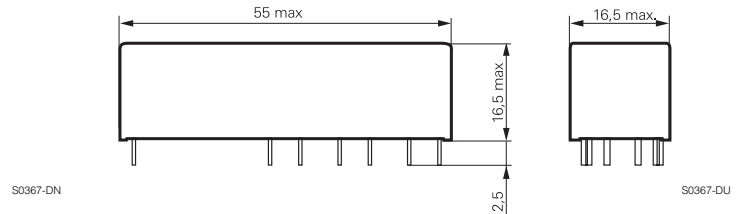
Safety Relay SR6 (Continued)

Dimensions

SR6 A/B/C



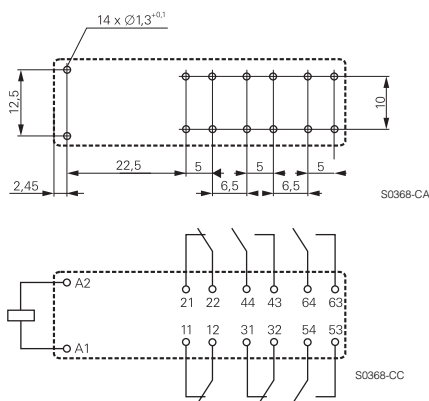
SR6 V



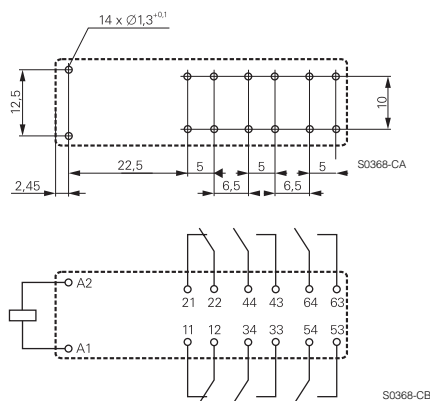
PCB layout / terminal assignment

Bottom view

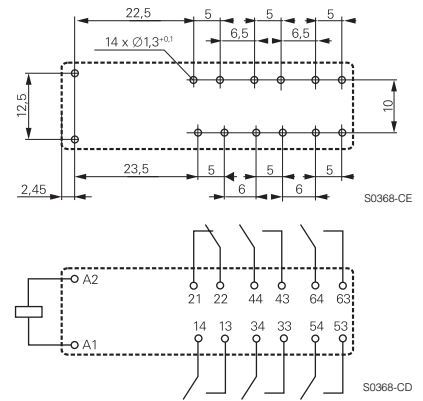
3 NO+3 NC versions
SR6 A



4 NO+2 NC versions
SR6 B

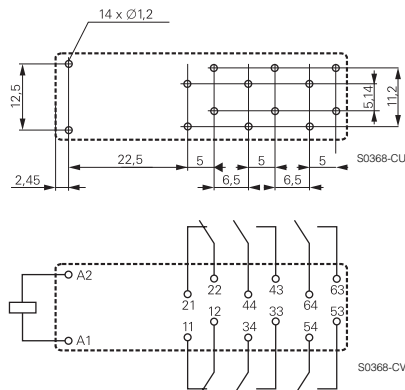


5 NO+1 NC versions
SR6 C



4 NO+2 NC versions
SR6 V

The design of the SR6 V allows clearance/creepage of 5.5 mm on the pcb.



Safety Relay SR6 (Continued)

Product key

Typical product key

SR6 A 4 012
Type
SR6 Safety Relay SR6

Contact configuration

- A** 3 NO + 3 NC contacts (3 form A + 3 form B)
- B** 4 NO + 2 NC contacts (4 form A + 2 form B)
- C** 5 NO + 1 NC contacts (5 form A + 1 form B)
- V** 4 NO + 2 NC contacts (4 form A + 2 form B)

Contact material

- 4** AgSnO₂, for 1200 mW version only
- 6** AgSnO₂ + 0.2 µm Au, for 800 mW version only

Coil

Coil code = rated coil voltage (e.g. 024=24 VDC)

Available types please see Part Number table

800 mW version

Product key	Type	Contact material	Contact configuration	Coil	Part number
SR6A6K12	6-pole	AgSnO ₂	3 NO + 3 NC	12 VDC	6-1415537-1
SR6B6K12	safety relay	+ 0.2 µm Au	4 NO + 2 NC		7-1415537-6
SR6B6K15	800 mW coil			15 VDC	7-1415537-7
SR6A6K18			3 NO + 3 NC	18 VDC	6-1415537-3
SR6B6K18			4 NO + 2 NC		7-1415537-8
SR6B6K21				21 VDC	7-1415537-9
SR6A6K24			3 NO + 3 NC	24 VDC	6-1415537-5
SR6B6K24			4 NO + 2 NC		8-1415537-0
SR6C6K24			5 NO + 1 NC		9-1415537-4
SR6V6K18			4 NO + 2 NC	18 VDC	7-1415541-9

1200 mW version

Product key	Prior product key	Contact configuration	Contact material	Coil	Part number
SR6A4005	V23050-A1005-A533	AgSnO ₂	3 NO + 3 NC	5 VDC	8-1415017-1
SR6B4005	V23050-A1005-A542		4 NO + 2 NC		1393260-1
SR6B4006	V23050-A1006-A542		4 NO + 2 NC	6 VDC	1393260-1
SR6A4012	V23050-A1012-A533		3 NO + 3 NC	12 VDC	1-1415015-1
SR6B4012	V23050-A1012-A542		4 NO + 2 NC		1393260-4
SR6C4012	V23050-A1012-A551		5 NO + 1 NC		1-1415017-1
SR6B4018	V23050-A1018-A542		4 NO + 2 NC	18 VDC	1393260-5
SR6A4021	V23050-A1021-A533		3 NO + 3 NC	21 VDC	3-1415018-1
SR6B4021	V23050-A1021-A542		4 NO + 2 NC		1393260-6
SR6A4024	V23050-A1024-A533		3 NO + 3 NC	24 VDC	1415015-1
SR6B4024	V23050-A1024-A542		4 NO + 2 NC		1393260-7
SR6C4024	V23050-A1024-A551		5 NO + 1 NC		1415017-1
SR6B4040	V23050-A1040-A542		4 NO + 2 NC	40 VDC	1393260-9
SR6A4048	V23050-A1048-A533		3 NO + 3 NC	48 VDC	6-1415018-1
SR6B4048	V23050-A1048-A542		4 NO + 2 NC		1-1393260-0
SR6C4048	V23050-A1048-A551		5 NO + 1 NC		2-1415019-1
SR6A4060	V23050-A1060-A533		3 NO + 3 NC	60 VDC	7-1415018-1
SR6B4060	V23050-A1060-A542		4 NO + 2 NC		1-1393260-1
SR6C4060	V23050-A1060-A551		5 NO + 1 NC		3-1415019-1
SR6B4085	V23050-A1085-A542		4 NO + 2 NC	85 VDC	1-1393260-2
SR6A4110	V23050-A1110-A533		3 NO + 3 NC	110 VDC	9-1415018-1
SR6B4110	V23050-A1110-A542		4 NO + 2 NC		1-1393260-3
SR6C4110	V23050-A1110-A551		5 NO + 1 NC		5-1415019-1

Safety Relay on DIN-rail SR2 Z

- 2 pole 6 A
- SR2M on printed circuit board
- Screwless clamp connectors

Applications

Elevator control, machine control



F-SR2Z-A

Contact data

Contact set	single contact, forcibly guided type A ¹ according to EN50205
Rated voltage / max. switching voltage AC	250 VAC / 250 VAC
Rated current / limiting continuous current	6 A
Maximum breaking capacity AC	1500 VA
Contact material	AgNi
Minimum contact load	10 mA / 5 V
Contact resistance	≤ 100 mOhm / 1 A / 24 VDC
	≤ 20 Ohm / 10 mA / 5 VDC
Rated frequency of operation with 7 without load	6 min ⁻¹ / 300 min ⁻¹

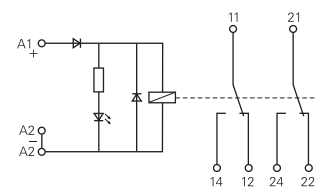
Coil data

DC energizing voltage U _{rtd}	24 VDC
Input circuit	LED
Minimum operate voltage, % of rated coil voltage	90%
Minimum release voltage (+23°C), % of rated coil voltage	10%
Limiting voltage, % of rated coil voltage	110%

Insulation

Surge voltage resistance coil-contacts	4000 V _{rms}
open contact circuit	1000 V _{rms}
adjacent contacts	2000 V _{rms}
Clearance / creepage coil-contact	≥ 8 / 8 mm
adjacent contacts	≥ 3 / 3 mm
Insulation to IEC 60664	
Voltage rating	250 V
Pollution degree	2
Overvoltage category	III

Terminal assignment



S0532-A

¹⁾ According to EN50205 only 1NO / 1NC (11-14 and 22-21 or 12 - 11 and 21 - 24) shall be used as forcibly guided contacts.

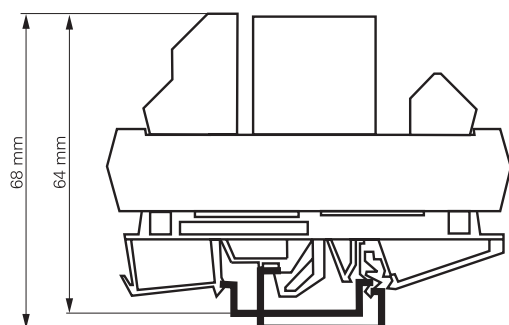
Safety Relay on DIN-rail SR2 Z (Continued)

Other data

Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Environment	
Ambient temperature	-25...+50 °C
Processing	
Connections (according IEC)	
solid wire	0.2...2.5 mm ²
stranded wire	0.2...2.5 mm ²
AWG	28...14
Installation position	any
Mounting	in rows with zero spacing
Type of connection	screwless clamp connectors
Relay weight	50 g
Packaging unit	2 pcs

Dimensions

Module width 20 mm
Module length 87 mm



S0533-A

Fit onto mounting rails according to
DIN EN 50022 or DIN EN 50035

Product key

Typical product key

SR2Z

Y

024

Type

SR2Z Safety Relay on DIN-rail SR2 Z

Contact configuration

Y 2 CO contacts (2 form C)

Coil

DC Coil code = rated coil voltage (e.g. 024=24 VDC)

Other types on request

Product key	Type	Contact configuration	Coil	Part number
SR2ZY024	2-pole module	2 CO contacts	24 VDC	9-1415536-1

Safety Relay on DIN-rail SR6 Z

- 6 pole 8 A
- SR6 on printed circuit board
- AC / DC input
- Screwless clamp connectors
- Module width 46 mm

Applications

Elevator control, machine control



F0238-C

Contact data

Contact set	single contact, forcibly guided type A according to EN50205
Rated voltage / max. switching voltage AC	250 VAC / 250 VAC
Rated current / limiting continuous current	8 A
Maximum breaking capacity AC	2000 VA
Contact material	AgSnO ₂
Minimum contact load	10 mA / 5 V
Contact resistance	≤ 100 mOhm / 1 A / 24 VDC ≤ 20 Ohm / 10 mA / 5 VDC
Rated frequency of operation with / without load	6 min ⁻¹ / 150 min ⁻¹

Coil data

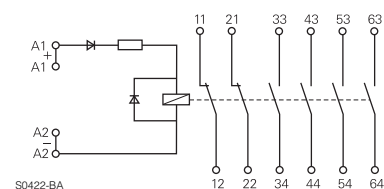
DC energizing voltage U _{rtd}	6, 12, 18, 21, 24, 36, 40, 48, 60, 115 VDC
AC/DC energizing voltage U _{rtd}	12, 21, 24, 40, 48, 60, 115 VAC/VDC
AC energizing voltage U _{rtd}	230 VAC
Input circuit	bridge rectifier, series resistor
Minimum operate voltage, % of rated coil voltage	90%
Minimum release voltage (+23°C), % of rated coil voltage	10%
Limiting voltage, % of rated coil voltage	110%

Insulation

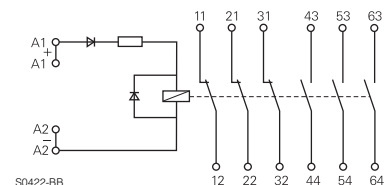
Surge voltage resistance coil-contacts	3000 V _{rms}
open contact circuit	1000 V _{rms}
adjacent contacts	2000 V _{rms}
Clearance / creepage coil-contact	≥ 5.5 / 5.5 mm
adjacent contacts	≥ 3 / 3 mm
Insulation to IEC 60664	
Voltage rating	250 V
Pollution degree	2
Overvoltage category	III

Terminal assignment

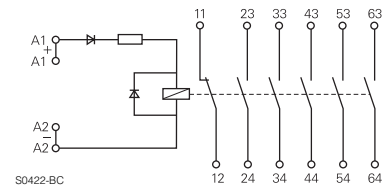
DC module, 4 NO+2 NC version



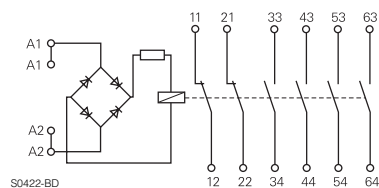
DC module, 3 NO+3 NC version



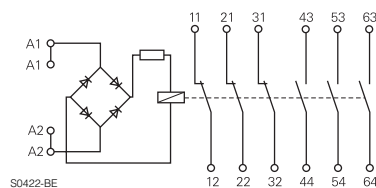
DC module, 5 NO+1 NC version



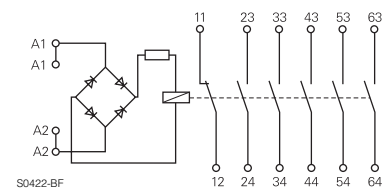
AC/DC module, 4 NO+2 NC version



AC/DC module, 3 NO+3 NC version



AC/DC module, 5 NO+1 NC version



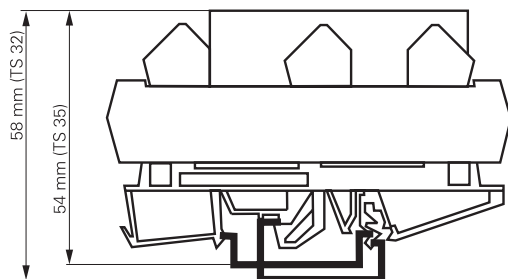
Safety Relay on DIN-rail SR6 Z (Continued)

Other data

Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Environment	
Ambient temperature	-25...+50 °C
Processing	
Connections (according IEC)	
solid wire	0.2...2.5 mm ²
stranded wire	0.2...2.5 mm ²
AWG	28...14
Installation position	any
Mounting	in rows with zero spacing
Type of connection	screwless clamp connectors
Relay weight	90 g
Packaging unit	2 pcs

Dimensions

Module width 46 mm
Module length 87 mm



S0423-A

Fit onto mounting rails according to
DIN EN 50022 or DIN EN 50035

Product key

Typical product key

SR6Z

A

524

Type

SR6Z

Safety Relay on DIN-rail SR6 Z

Contact configuration

- A** 3 NO + 3 NC contacts (3 form A + 3 form B)
- B** 4 NO + 2 NC contacts (4 form A + 2 form B)
- C** 5 NO + 1 NC contacts (5 form A + 1 form B)

Coil

DC Coil code = rated coil voltage (e.g. 024=24 VDC)
AC/DC coil code: 524=24 VAC/VDC, 615=115 VAC/VDC
AC coil code: 730=230 VAC

Other types on request

Product key	Type	Contact configuration	Contact material	Coil	Part number
SR6ZA024	6-pole safety relay module	3 NO + 3 NC contacts	AgSnO ₂	24 VDC	7-1415033-1
SR6ZA524				24 VAC/VDC	9-1415059-1
SR6ZA615				115 VAC/VDC	1415060-1
SR6ZA730		4 NO + 2 NC contacts		230 VAC	1-1415060-1
SR6ZB024				24 VDC	5-1415033-1
SR6ZB524				24 VAC/VDC	2-1415060-1
SR6ZB615		5 NO + 1 NC contacts		115 VAC/VDC	6-1415046-1
SR6ZB730				230 VAC	3-1415060-1
SR6ZC024				24 VDC	3-1415042-1
SR6ZC524				24 VAC/VDC	4-1415060-1
SR6ZC615				115 VAC/VDC	5-1415060-1
SR6ZC730				230 VAC	6-1415060-1

Slimline Interface Relay SNR

- 1 pole 6 A, 1 CO contact
- Sensitive coil 170 mW
- Strong coil pins for DIN-rail socket
- 4 kV coil-contact, 6 / 8 mm clearance / creepage
- Reinforced insulation (protection class II, VDE 0601)
- Reduced system width for increased packing density on the DIN rail

Applications

Interface technology, panel boards, mechanical engineering, process control



F0270-C

Approvals

VDE REG.-Nr. 6666, cULus E214024
Technical data of approved types on request

Contact data

Contact configuration	1 CO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	240 / 400 VAC
Rated current	6 A
Maximum breaking capacity AC	1500 VA
Limiting making capacity, max 4 s, duty factor 10%	10 A
Contact material	AgSnO ₂ AgSnO ₂ gold plated
Minimum contact load	100mA, 12V 50mW
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / release time	max 12 / 5 ms
Bounce time NO / NC contact	max 3 / 8 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
V23092-****-A301	CO	6 A, 250 VAC, cosφ=1	85°C	5x10 ³
UL 508				
V23092-****-A301	NO / NC	6 A, 250 VAC, general purpose	85°C	6x10 ³
V23092-****-A301	NO / NC	B300	85°C	6x10 ³
V23092-****-A301	NO / NC	R300	85°C	6x10 ³

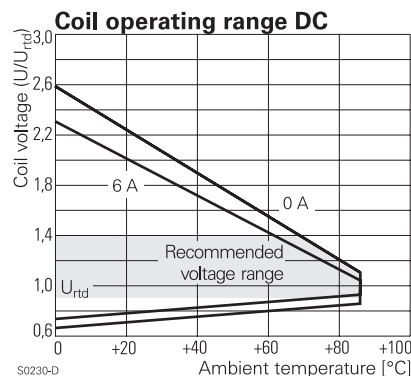
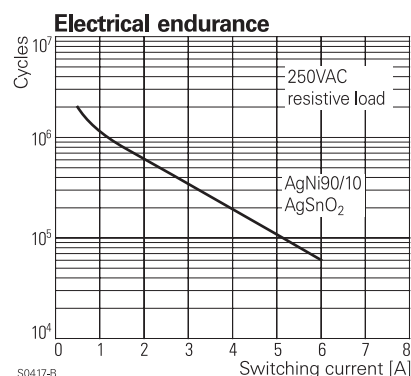
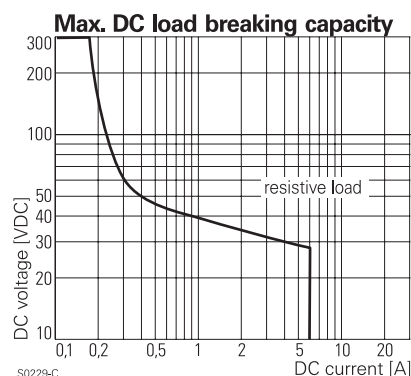
Coil data

Rated voltage range DC coil	5...60 VDC
Operative range to IEC 61810	2

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.25	147 ± 10%	170
012	12	8.4	0.6	848 ± 10%	170
024	24	16.8	1.2	3390 ± 10%	170
048	48	33.6	2.4	10600 ± 15%	217
060	60	42.0	3.0	20500 ± 15%	176

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request



Slimline Interface Relay SNR (Continued)

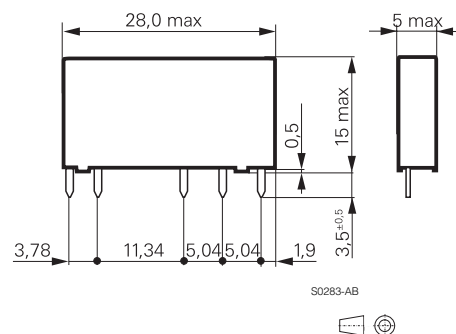
Insulation

Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 6 / 8 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

Other data

Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0404
Environment	
Ambient temperature range	-40...+85°C (+55°C in socket)
Vibration resistance (function) NO / NC contact	10 / 5 g
Shock resistance (function) NO / NC contact	10 / 5 g
Shock resistance (destruction)	30 g
Category of protection	RTIII - wash tight
Processing	
Mounting distance	dense packing of sockets
Relay weight	6 g
Packaging unit	20 / 1000 pcs

Dimensions



Accessories

For details see datasheet Accessories Slim Interface Relay SNR

NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1, table 12); for relays mounted on sockets deratings may apply.

Relay Packages

Complete packages consisting of a relay mounted on a socket see Relay Package SNR

Product key

Typical product key

V23092 -S1 012 -A 3 01

Type

V23092 Slim Interface Relay SNR

Version

S1 plug-in version, wash tight

Coil

Coil code: please refer to coil versions table

Contact system

A standard

Contact material

2 AgSnO₂, gold plated **3** AgSnO₂

Contact configuration

01 1 CO contact (1 form C)

Other types on request

Product key	Version	Contacts	Cont. material	Coil	Part number
V23092-S1005-A201	plug-in	1 CO contact	AgSnO ₂ , gold plated	5 VDC	1956024-9
V23092-S1005-A301	vertical version		AgSnO ₂		1-1956024-0
V23092-S1012-A201	wash tight		AgSnO ₂ , gold plated	12 VDC	1956024-1
V23092-S1012-A301			AgSnO ₂		1956024-2
V23092-S1024-A201			AgSnO ₂ , gold plated	24 VDC	1956024-3
V23092-S1024-A301			AgSnO ₂		1956024-4
V23092-S1048-A201			AgSnO ₂ , gold plated	48 VDC	1956024-5
V23092-S1048-A301			AgSnO ₂		1956024-6
V23092-S1060-A201			AgSnO ₂ , gold plated	60 VDC	1956024-7
V23092-S1060-A301			AgSnO ₂		1956024-8

Interface Power Relay RT

- 1 pole 12 / 16 A, 2 pole 8 A, 1 CO contact or 2 CO contacts
- DC- or AC coil
- Sensitive coil 400 mW
- Reinforced insulation, protection class II (VDE 0700)
- 5 kV / 10 mm coil-contact
- 1 pole 12 A with 3.5 or 5 mm pinning
- Recycleable packaging



F0269-C

Applications

Panel boards, mechanical engineering

Approvals

VDE REG.-Nr. 6106, **CE** us E214025
Technical data of approved types on request

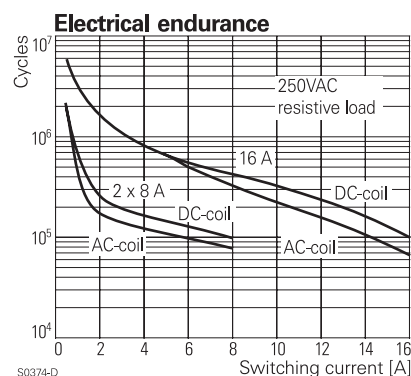
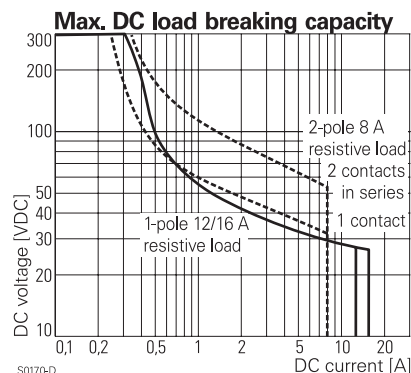
Contact data	1-pole	2-pole
Contact configuration	1 CO	2 CO
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	240 / 400 VAC	
Rated current	12 / 16 A	8 A
Maximum breaking capacity AC	3000 / 4000 VA	2000 VA
Limiting making capacity, max 4 s, df 10%	25 / 30 A	15 A
Contact material	AgNi 90/10	
Rated frequency of operation DC coil with / without load	6 / 1200 min ⁻¹	
AC coil with / without load	6 / 600 min ⁻¹	
Operate- / release time DC coil	max 8 / 6 ms	max 10 / 5 ms
Bounce time DC coil, NO / NC contact	max 4 / 6 ms	max 4 / 9 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RT314 DC-coil	NO	10 A, 400 VAC, cosφ=1	85°C	150x10 ³
RT314 AC-coil	NO	16 A, 250 VAC, cosφ=1	70°C	50x10 ³
RT314 AC-coil	CO	16 A, 250 VAC, cosφ=1	70°C	10x10 ³
RT424 AC coil	CO	8 A, 250 VAC, cosφ=1	70°C	30x10 ³
UL 508				
RT314	NO	16 A, 250 VAC, general purpose, DF: 10%	85°C	50x10 ³
RT314	NO	A300	40°C	6x10 ³
RT314	NC	B300	40°C	6x10 ³
RT314	NO	240 VAC, 1 hp	40°C	1x10 ³
RT424 DC coil	NO / NC	8 A, 30 VDC, general purpose	85°C	6x10 ³
RT424 DC coil	NO	10 A, 250 VAC, general purpose	85°C	30x10 ³
RT424 DC coil	NO / NC	motor, 1/2 hp, 240 VAC	85°C	1x10 ³
RT424 DC coil	NO / NC	pilot duty, B300, R300	85°C	6x10 ³
EN60730-1				
RT314 DC-coil	NO	12(2) A, 250 VAC	85°C	100x10 ³
RT424 DC coil	NO / NC	6(2) A, 250 VAC	85°C	100x10 ³

Coil data

Rated coil voltage range DC coil	5...110 VDC
AC coil	24...230 VAC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F



Interface Power Relay RT (Continued)

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
006	6	4.2	0.6	90 ± 10%	400
012	12	8.4	1.2	360 ± 10%	400
024	24	16.8	2.4	1440 ± 10%	400
048	48	33.6	4.8	5520 ± 10%	417
060	60	42.0	6.0	8570 ± 12%	420
110	110	77.0	11.0	28800 ± 12%	420

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coil versions, AC-coil 50Hz

Coil code	Rated voltage VAC	Operate voltage 50 Hz VAC	Release voltage 50 Hz VAC	Coil resistance Ohm	Rated coil power 50 Hz VA
524	24	18.0	3.6	350 ± 10%	0.76
615	115	86.3	17.3	8100 ± 15%	0.76
730	230	172.5	34.5	32500 ± 15%	0.74

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree 12 A version	3
16 A version	3
2 x 8 A version	3
Rated voltage system	240 V
Overvoltage category	III

Other data	1-pole	2-pole
Mechanical endurance DC coil	> 30 x 10 ⁶	> 30 x 10 ⁶
AC coil	> 10 x 10 ⁶	> 5 x 10 ⁶
Material	RoHS - Directive 2002/95/EC compliant as per product date code 0413	
Environment		
Ambient temperature range DC coil	-40...+85°C	
AC coil	-40...+70°C	
Vibration resistance (function), NO / NC contact 20 / 5 g, 30 ... 500 Hz	100 g	
Shock resistance (destruction)	RTII	
Category of protection		
Processing		
Mounting distance	dense packing of sockets	
Relay weight	14 g	
Packaging unit	20 / 500 pcs	

Accessories

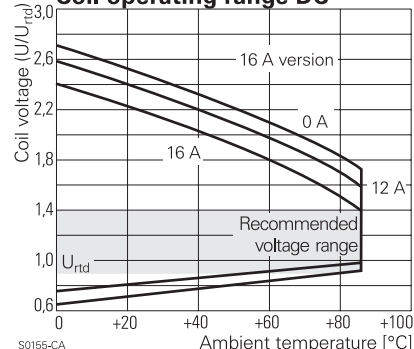
For Details see datasheet Accessories Interface Power Relay RT

NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1, table 12); for relays mounted on sockets deratings may apply.

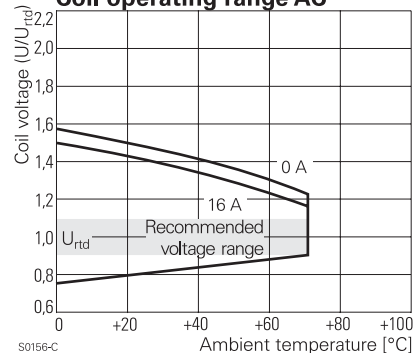
Relay Packages

Complete packages consisting of a relay mounted on a socket see Package RT

Coil operating range DC



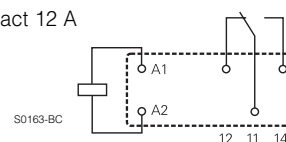
Coil operating range AC



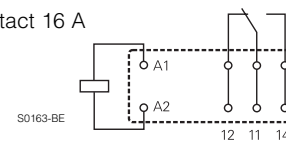
Terminal assignment

Bottom view on pins

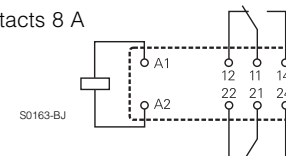
1 CO contact 12 A



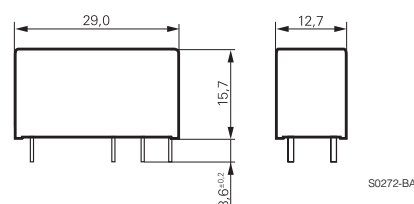
1 CO contact 16 A



2 CO contacts 8 A



Dimensions



Interface Power Relay RT (Continued)

Product key		Typical product key		RT	3	1	4	024
Type		RT Interface Power relay RT						
Version								
1	1-pole, 12 A, pinning 3.5 mm	3	1-pole, 16 A, pinning 5 mm					
2	1-pole, 12 A, pinning 5 mm	4	2-pole, 8 A, pinning 5 mm					
Contact configuration								
1	1 CO contact (1 form C)	2	2 CO contacts (2 form C)					
Contact material								
4	AgNi 90/10							
Coil								
		Coil code: please refer to coil versions table, preferred types in bold print						

Wash tight version on request

Product key	Version	Contacts	Cont. material	Coil	Coil	Part number
RT114024	1-pole, 12 A pinning 3.5 mm	1 CO contact	AgNi 90/10	DC-coil	24 VDC	1-1393239-3
RT114524				AC-coil	24 VAC	1-1393239-7
RT114615					115 VAC	1-1393239-8
RT114730					230 VAC	1-1393239-9
RT214024	1-pole, 12 A pinning 5 mm			DC-coil	24 VDC	5-1393239-5
RT214524				AC-coil	24 VAC	5-1393239-9
RT214615					115 VAC	6-1393239-0
RT214730					230 VAC	1419108-6
RT314024	1-pole, 16 A pinning 5 mm			DC-coil	24 VDC	9-1393239-8
RT314524				AC-coil	24 VAC	1393240-4
RT314615					115 VAC	1393240-6
RT314730					230 VAC	1393240-7
RT424024	2-pole, 8 A pinning 5 mm	2 CO contacts		DC-coil	24 VDC	6-1393243-8
RT424524				AC-coil	24 VAC	7-1393243-6
RT424615					115 VAC	7-1393243-8
RT424730					230 VAC	7-1393243-9

Interface Plug-in Relay XT

- 1 pole 16 A, 2 pole 8 A, 1 CO contact or 2 CO contacts
- DC- or AC coil, sensitive coil 400 mW
- Reinforced insulation, protection class II (VDE 0700)
- 4 kV / 8 mm coil-contact
- Manual test tab, optionally lockable¹⁾
- Version with mechanical and/or electrical indicator optionally available
- Suitable for use in Tyco standard RT sockets
- Recycleable packaging

Applications

Panel boards, mechanical engineering

Approvals

VDE REG.-Nr. B758, cULus E214025
Technical data of approved types on request

Contact data	1-pole	2-pole
Contact configuration	1 CO	2 CO
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	240 / 400 VAC	
Rated current	16 A	8 A
Limiting continuous current	16 A	8 A, UL: 10 A
Maximum breaking capacity AC	4000 VA	2000 VA
Limiting making capacity,max 4 s, df 10%	30 A	15 A
Contact material	AgNi 90/10	
Rated frequency of operation with / without load	6 / 600 min ⁻¹	
Operate- / release time DC coil	max 8 / 6 ms	max 10 / 5 ms
Bounce time DC coil, NO / NC contact	max 4 / 6 ms	max 4 / 9 ms

Contact ratings

Type	ContactLoad	Ambient temp. [°C]	Cycles
IEC 61810			
XT3	CO 16 A, 250 VAC, cosφ=1	70°C	30x10 ³
XT3	NO 16 A, 250 VAC, cosφ=1	70°C	50x10 ³
XT4	CO 8 A, 250 VAC, cosφ=1	70°C	50x10 ³
XT4 DC-coil	NO 8 A, 250 VAC, cosφ=1	70°C	100x10 ³
UL 508			
XT3	CO 16 A, 250 VAC, general purpose	70°C	30x10 ³
XT4	CO 10 A, 250 VAC, general purpose	70°C	20x10 ³
XT4	CO 8 A, 250 VAC, general purpose	70°C	30x10 ³

Coil data

Rated coil voltage range DC coil	6...110 VDC
AC coil	24...230 VAC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F

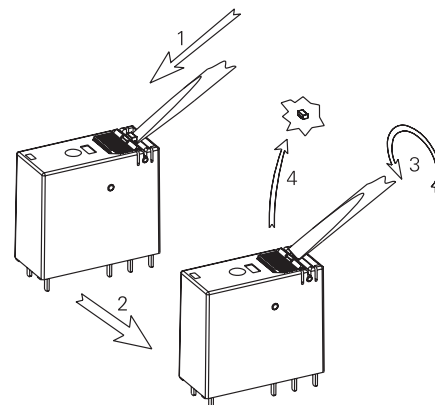
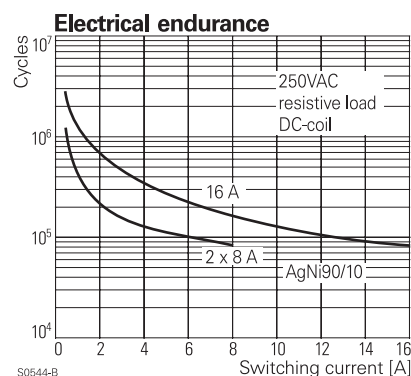
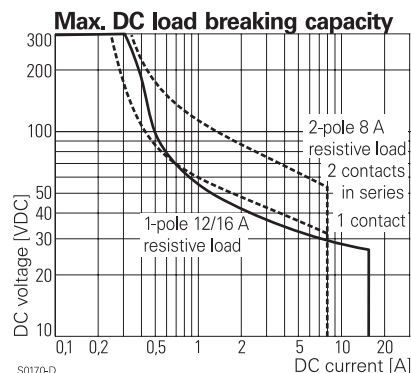
¹⁾ Locking function description

If the test button is pulled out too forcefully, it may bypass the momentary testing position and go straight into the locked position.

Delivery status is with testing possibility only, to reach locking position please remove the locking plastic pip according drawing.



F0289-B



Interface Plug-in Relay XT (Continued)

Coil versions, DC-coil

Coil code	LED & PD*	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW	opt. LED power mW
012	LB2	12	8.4	1.2	360±10%	400	10
024	LC4	24	16.8	2.4	1440±10%	400	19
048	LE8	48	33.6	4.8	5520±10%	417	39
110	MB0	110	77.0	11.0	28800±12%	420	87

All figures are given for coil without preenergization, at ambient temperature +23°C

*) Protection diode PD; standard polarity: +A1 / -A2

Other coil voltages on request

Coil versions, AC-coil

Coil code	LED	Rated voltage VAC	Operate voltage 50 / 60 Hz VAC	Release voltage 50 / 60 Hz VAC	Coil resistance Ohm	Rated coil power 50 / 60 Hz VA	opt. LED power 50 / 60 Hz VA
524	R24	24	18.0 / 19.2	3.6	350±10%	0.76 / 0.58	0.012
615	S15	115	86.3 / 92.0	17.3	8100±15%	0.76 / 0.58	0.054
730	T30	230	172.5 / 184.0	34.5	32500±15%	0.74 / 0.58	0.073

All figures are given for coil without preenergization, at ambient temperature +23°C

Other coil voltages on request

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms} in combination with RT78726
	4000 V _{rms} in combination with RT78725
open contact circuit	1000 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 175 V
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

Other data

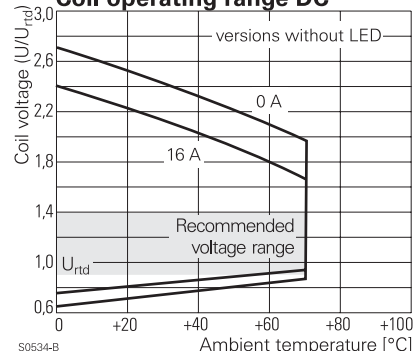
	1-pole	2-pole
Mechanical endurance DC coil	> 10 x 10 ⁶	
AC coil	> 5 x 10 ⁶	
Material		
RoHS - Directive 2002/95/EC		compliant
Environment		
Ambient temperature range DC coil	-40...+70°C	
AC coil	-40...+70°C	
Vibration resistance (function), NO / NC cont.	20 / 5 g, 30 ... 500 Hz	
Shock resistance (destruction)	100 g	
Category of protection	RTII	
Processing		
Mounting distance	≥ 4,5 mm, dense packing of sockets	
Relay weight	16 g	
Packaging unit	10 / 250 pcs	

Accessories

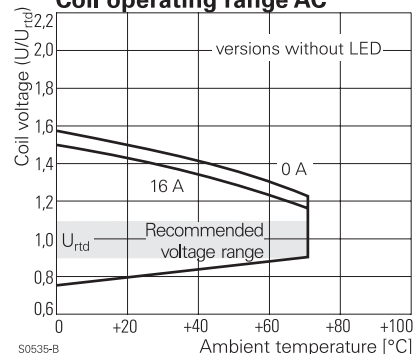
For Details see datasheet Accessories Interface Power Relay XT

NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1, table 12); for relays mounted on sockets deratings may apply.

Coil operating range DC



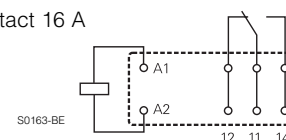
Coil operating range AC



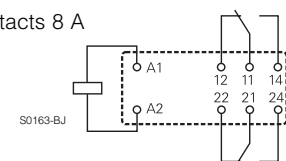
Terminal assignment

Bottom view on pins

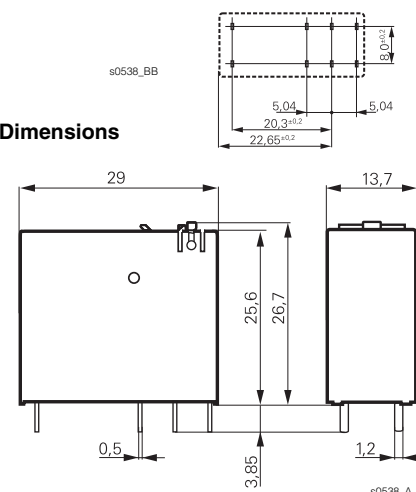
1 CO contact 16 A



2 CO contacts 8 A



Dimensions



Interface Plug-in Relay XT (Continued)

Product key		Typical product key	XT	3	7	4	T30
Type	XT Interface Plug-in Relay XT						
Version	3 1-pole, 16 A, pinning 5 mm 4 2-pole, 8 A, pinning 5 mm						
Contact configuration	1 1 CO contact (1 form C) 2 2 CO contacts (2 form C)		7 1 CO contact (1 form C) with test button and mechanical indicator 8 2 CO contacts (2 form C)with test button and mechanical indicator				
Contact material	4 AgNi 90/10						
Coil	Coil code: please refer to coil versions table, preferred types in bold print						

Product key	Contacts	Cont. material	Coil	Coil	Part number
XT374LC4	1 CO contact	AgNi 90/10	DC-coil	24 VDC	1887112-1
XT374R24	16 A	test button,	AC-coil	24 VAC	1887113-3
XT374T30		mechanical		230 VAC	1887113-1
XT484LC4	2 CO contacts	and electrical	DC-coil	24 VDC	1887212-1
XT484R24	8 A	indicator	AC-coil	24 VAC	1887213-3
XT484T30				230 VAC	1887213-1

Miniature Relay PT

- 2 pole 12 A, 3 pole 10 A or 4 pole 6 A, 2, 3 or 4 CO contacts
- DC- or AC-coil
- Switching performance up to 3000 VA
- Relay height 29 mm
- Mechanical indicator, optional LED and protection diode
- Manual test tab, optionally lockable.
- White marking tabs



F0191-B

Applications

Universal use in control and automation

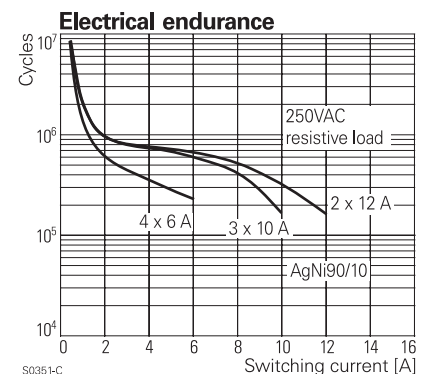
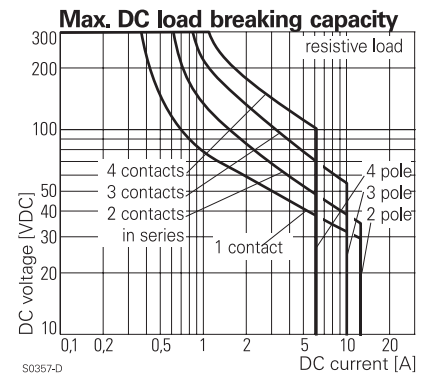
Approvals

VDE REG.-Nr. 115719, c RU us E214025, 00/20059(E2)
Technical data of approved types on request

Contact data	PT2	PT3	PT5
Contact configuration	2 CO	3 CO	4 CO
Contact set	single contact		
Type of interruption	micro disconnection		
Rated voltage / max. switching voltage AC	240 / 400 VAC	240 / 400 VAC	240/240 VAC
Rated current	12 A	10 A	6 A
Maximum breaking capacity AC	3000 VA	2500 VA	1500 VA
Limiting making capacity, max 20 ms	24 A	20 A	12 A
Contact material	AgNi90/10, AgNi90/10 gold plated		
Minimum contact load	12V/10mA, 20mV/1mA gold plated		
Rated frequency of operation with / without load	6/600 min ⁻¹		
Operate time	typ 15 ms		
Release time DC coil without / with protection diode	typ 10 / 18 ms		
Bounce time DC coil NO / NC contact	typ 6 / 8 ms		

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
PT 2 DC/AC-coil	CO	12 A, 250 VAC, cosφ=1	70°C	70x10 ³
PT 2 DC/AC-coil	NO of CO	9 A, 250 VAC, cosφ=1	80°C	150x10 ³
PT 2 DC/AC-coil	NO of CO	4 A, 250 VAC, cosφ=1	80°C	300x10 ³
PT 3 DC/AC-coil	CO	10 A, 250 VAC, cosφ=1	70°C	100x10 ³
PT 5 DC/AC-coil	CO	6 A, 250 VAC, cosφ=1	70°C	100x10 ³
UL 508				
PT 2	CO	12 A, 250 VAC, general purpose	70°C	6.000
PT 2	CO	12 A, 250 VAC, resistive	70°C	100x10 ³
PT 2	NO of CO	12 A, 250 VAC, resistive	70°C	100x10 ³
PT 2	NC of CO	12 A, 250 VAC, resistive	70°C	100x10 ³
PT 3	CO	10 A, 250 VAC, general purpose	70°C	6.000
PT 3	CO	10 A, 250 VAC, resistive	70°C	100x10 ³
PT 3	NO of CO	10 A, 250 VAC, resistive	70°C	100x10 ³
PT 3	NC of CO	10 A, 250 VAC, resistive	70°C	100x10 ³
PT 5	CO	6 A, 250 VAC, general purpose	70°C	6.000
PT 5	CO	6 A, 250 VAC, resistive	70°C	100x10 ³
PT 5	NO of CO	6 A, 250 VAC, resistive	70°C	100x10 ³
PT 5	NC of CO	6 A, 250 VAC, resistive	70°C	100x10 ³
EN60947-4-1				
PT 2	NO of CO	400 VAC, 3,75 A, AC3, opposite polarity	70°C	
PT 2	NO of CO	230 VAC, 1,7A, AC5b (400W lamp load), opposite polarity	70°C	
PT 3	NO of CO	250 VAC, 2 A, AC3, opposite polarity	70°C	
PT 3	NO of CO	230 VAC, 1,7A, AC5b (400W lamp load), opposite polarity	70°C	
PT 5	NO of CO	250 VAC, 3 A, AC3, same polarity	70°C	
PT 5	NO of CO	230 VAC, 1,7A, AC5b (400W lamp load), same polarity	70°C	



Miniature Relay PT (Continued)

Coil data

Rated coil voltage range DC coil	6...220 VDC
AC coil	6...230 VAC
Operative range to IEC 61810 DC coil, AC-coil 50Hz	2
AC coil 60 Hz at 70°C, % of U_{rtd}	90...110%

Coil versions, DC-coil

Coil code	STD	LED bipolar	LED+ PD*	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW	opt. LED power mW
006	L06	LA6		6	4.5	0.6	48±10%	750	3.5
012	L12	LB2		12	9.0	1.2	192±10%	750	10
024	L24	LC4		24	18.0	2.4	777±10%	741	18
048	L48	LE8		48	36.0	4.8	3072±10%	750	38
060	L60	LG0		60	45.0	6.0	4845±12%	743	56
110	M10	MB0		110	82.5	11.0	16133±15%	750	96.5
220	N20	NC0		220	165.0	22.0	64533±15%	750	202.5

All figures are given for coil without preenergization, at ambient temperature +23°C

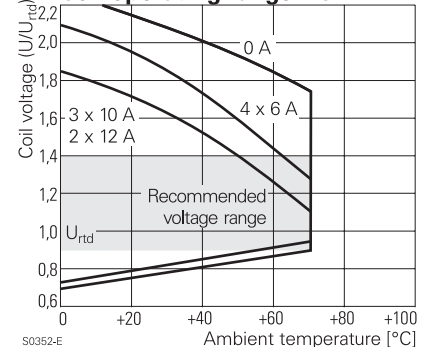
*) Protection diode PD; standard polarity: +A1 / -A2

Coil versions, AC-coil 50 / 60 Hz

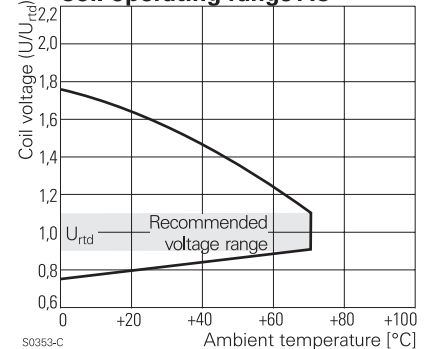
Coil code	STD	LED	Rated voltage VAC	Operate voltage 50 / 60 Hz VAC	Release voltage 50 / 60 Hz VAC	Coil resistance Ohm	Rated coil power 50 / 60 Hz VA
506	R06		6	4.8 / 5.4	1.8	11±10%	1.0 / 0.85
512	R12		12	9.6 / 10.8	3.6	48±10%	1.0 / 0.85
524	R24		24	19.2 / 21.6	7.2	192±10%	1.0 / 0.79
548	R48		48	38.4 / 43.2	14.4	777±10%	1.0 / 0.87
560	R60		60	48.0 / 54.0	18.0	1306±10%	1.0 / 0.87
615	S15		115	92.0 / 103.5	34.5	4845±12%	1.0 / 0.86
730	T30		230	184.0 / 207.0	69.0	19465±15%	1.0 / 0.90

All figures are given for coil without preenergization, at ambient temperature +23°C

Coil operating range DC



Coil operating range AC



Insulation	PT2	PT3	PT5
Dielectric strength coil-contact circuit	2500 V _{rms}	2500 V _{rms}	2500 V _{rms}
open contact circuit	1200 V _{rms}	1200 V _{rms}	1200 V _{rms}
adjacent contact circuits	2500 V _{rms}	2500 V _{rms}	2000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4/4 mm	≥ 4/4 mm	≥ 4/4 mm
adjacent cont. circuits	≥ 3.5/9.5 mm	≥ 2.6/3.5 mm	≥ 1.8/3.5 mm
Material group of insulation parts	IIIa		
Insulation to IEC 61810-1			
Type of insulation coil-contact circuit	basic	basic	basic
open contact circuit	micro disc.	micro disc.	micro disc.
adjacent contact circuits	basic	basic	functional
Rated insulation voltage	250 V	250 V	250 V
Pollution degree	2	2	2
Rated voltage system	230 / 400 V	240 V	240 V
Overvoltage category	III	III	III

Other data

Mechanical endurance DC coil	30x10 ⁶ cycles
AC coil	20x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Environment	
Ambient temperature range	-40...+70°C
Vibration resistance (function) NO / NC contact	7/4 g
Shock resistance (function) NO / NC contact	20/5 g
Category of protection	RTII - flux proof
Processing	
Mounting distance	≥ 0 mm, dense packing
Resistance to soldering heat	270°C / 10s
Relay weight	30 g
Packaging unit	10/250 pcs

Miniature Relay PT (Continued)

Accessories

For details see datasheet

Accessories Miniature Relay PT

NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1, table 12); for relays mounted on sockets deratings may apply.

Relay Packages

Complete packages consisting of a relay mounted on a socket see Package PT

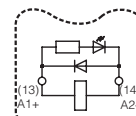
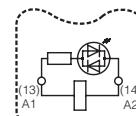
PCB layout / terminal assignment

Bottom view on pins

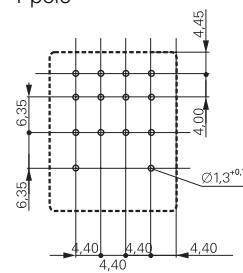
Circuit

LED

protection diode+LED

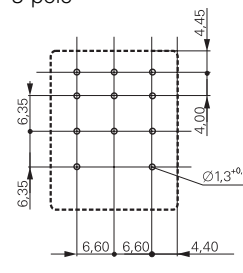


4-pole



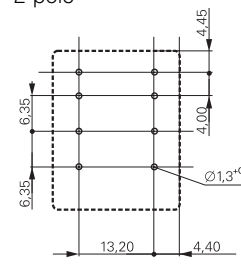
S0354-AA

3-pole

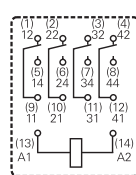


S0354-AB

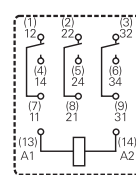
2-pole



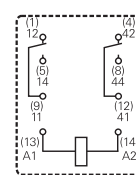
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S0354-AD



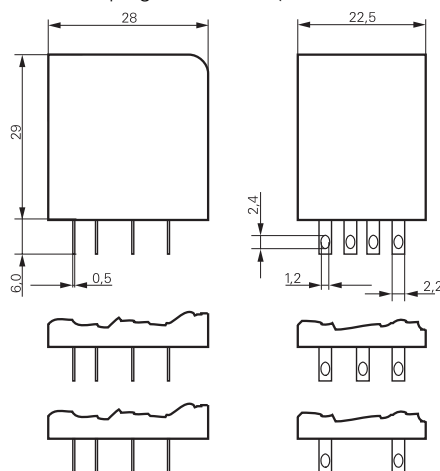
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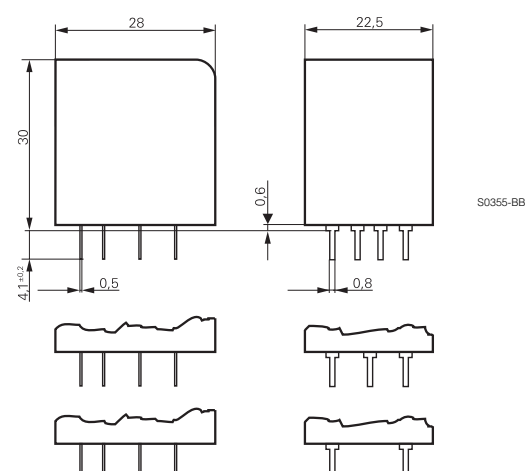
S0354-AF

Dimensions

Solder- and plug-in terminals (standard version)



PCB version



Product key

Typical product key

PT **5** **7** **0** **730**

Type

PT Miniature Relay PT

Contact configuration

- 2** 2 CO contacts (2 form C)
- 3** 3 CO contacts (3 form C)
- 5** 4 CO contacts (4 form C)

Contact material

- 7** AgNi 90/10, with test button*)
- 8** AgNi 90/10 gold plated, with test button*)

Version

- 0** standard, 2.8 mm quick connect term.
- 1** PCB terminals

Coil

Coil code: please refer to coil versions table, preferred types in bold print

*) Version with closed cap without test button available on request
Other types on request

Miniature Relay PT (Continued)

Product key	Cont. Config.	Cont. material	Version	Coil	Coil	Part number
PT270024	2 CO contacts	AgNi 90/10 test button	AMP 2.8 connectors	DC-coil	24 VDC	4-1419111-2
PT270524				AC-coil	24 VAC	4-1419111-8
PT270615					115 VAC	5-1419111-0
PT270730					230 VAC	5-1419111-1
PT270L24				DC-coil+LED	24 VDC	9-1415001-1
PT270R24				AC-coil+LED	24 VAC	1415002-1
PT270S15					115 VAC	2-1415039-1
PT270T30					230 VAC	3-1415002-1
PT271024			PCB terminals	DC-coil	24 VDC	5-1419111-3
PT271524				AC-coil	24 VAC	5-1419111-6
PT271615					115 VAC	4-1419135-0
PT271730					230 VAC	5-1419111-8
PT370024	3 CO contacts	AgNi 90/10 test button	AMP 2.8 connectors	DC-coil	24 VDC	6-1419111-1
PT370524				AC-coil	24 VAC	6-1419111-6
PT370615					115 VAC	6-1419111-8
PT370730					230 VAC	6-1419111-9
PT370L24				DC-coil+LED	24 VDC	5-1415002-1
PT370R24				AC-coil+LED	24 VAC	7-1415002-1
PT370S15					115 VAC	9-1415039-1
PT370T30					230 VAC	9-1415002-1
PT371024			PCB terminals	DC-coil	24 VDC	7-1419111-1
PT371524				AC-coil	24 VAC	7-1419111-3
PT371615					115 VAC	1393154-8
PT371730					230 VAC	7-1419111-5
PT570024	4 CO contacts	AgNi 90/10 test button	AMP 2.8 connectors	DC-coil	24 VDC	1-1393154-2
PT570524				AC-coil	24 VAC	8-1419111-7
PT570615					115 VAC	9-1419111-0
PT570730					230 VAC	9-1419111-1
PT570L24				DC-coil+LED	24 VDC	6-1415001-1
PT570LC4				DC-coil+LED+PD		7-1415541-0
PT570R24				AC-coil+LED	24 VAC	7-1415001-1
PT570S15					115 VAC	7-1415003-1
PT570T30					230 VAC	8-1415001-1
PT571024			PCB terminals	DC-coil	24 VDC	9-1419111-3
PT571524				AC-coil	24 VAC	9-1419111-6
PT571615					115 VAC	1-1393154-5
PT571730					230 VAC	9-1419111-8
PT580024		AgNi 90/10 gold plated test button	AMP 2.8 connectors	DC-coil	24 VDC	1-1393154-7
PT580524				AC-coil	24 VAC	2-1393154-1
PT580730					230 VAC	2-1393154-2
PT580L24				DC-coil+LED	24 VDC	5-1415026-1
PT580R24				AC-coil+LED	24 VAC	6-1415026-1
PT580T30					230 VAC	7-1415026-1
PT581024			PCB terminals	DC-coil	24 VDC	7-1419135-2
PT581730				AC-coil	230 VAC	2-1393154-3

Miniature Power Relay PTF

- 2 pole 15 A, 2 CO contacts
- DC or AC coil
- Plug-in version, PCB or chassis mount version

Applications

Panel boards, domestic appliances



F0281-B

Approvals

VDE REG.-Nr. A379, cULus E58304
Technical data of approved types on request

Contact data

Contact configuration	2 CO contacts
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	240 / 400 VAC
Rated current	10 A / 250 VAC 15 A / 120 VAC
Maximum breaking capacity AC	2500 VA / 250 VAC 1800 VA / 120 VAC
Limiting making capacity, max 20 ms	20 A / 250 VAC 30 A / 120 VAC
Contact material	AgNi90/10
Minimum contact load	5V/100mA
Rated frequency of operation with / without load	6/600 min ⁻¹
Operate- / release time DC coil	max 15 / 10 ms
Bounce time DC coil NO / NC contact	max 5 / 5 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
PT F2 DC-coil	CO	15 A, 250 VAC, cosφ=1	70°C	35x10 ³
PT F2 AC-coil	CO	15 A, 250 VAC, cosφ=1	70°C	6x10 ³
UL 508				
PT F2	NO / NC	10 A, 250 VAC, resistive	70°C	100x10 ³
PT F2	NO / NC	15 A, 120 VAC, resistive	70°C	100x10 ³

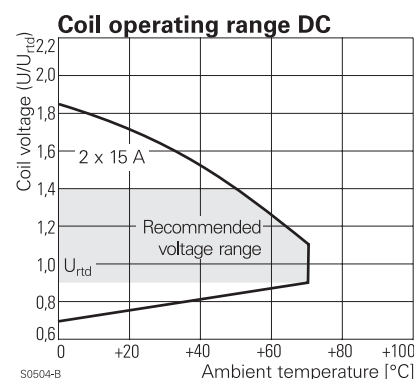
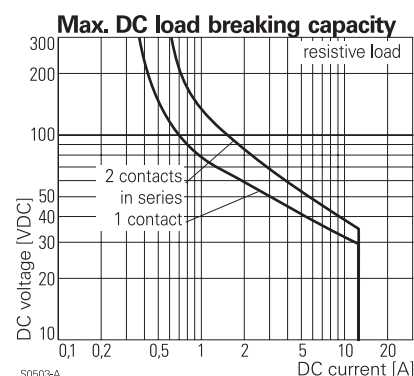
Coil data

Rated coil voltage range DC coil	6...220 VDC
AC coil	6...230 VAC
Operative range to IEC 61810 DC coil, AC-coil 50Hz	2
AC coil 60 Hz at 70°C, % of U _{rtid}	90...110%

Coil versions, DC-coil

Coil code	LED	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power
STD	bipolar	VDC	VDC	VDC	Ohm	mW
006	L06	6	4.5	0.6	48±10%	750
012	L12	12	9.0	1.2	192±10%	750
024	L24	24	18.0	2.4	777±10%	741
048	L48	48	36.0	4.8	3072±10%	750
060	L60	60	45.0	6.0	4845±12%	743
110	M10	110	82.5	11.0	16133±15%	750
220	N20	220	165.0	22.0	64533±15%	750

All figures are given for coil without preenergization, at ambient temperature +23°C



Miniature Power Relay PTF (Continued)

Coil versions, AC-coil 50 / 60 Hz

Coil code	LED	Rated voltage	Operate voltage 50 / 60 Hz	Release voltage 50 / 60 Hz	Coil resistance	Rated coil power 50 / 60 Hz
		VAC	VAC	VAC	Ohm	VA
506	R06	6	4.8 / 5.4	1.8	11 ± 10%	1.0 / 0.85
512	R12	12	9.6 / 10.8	3.6	48 ± 10%	1.0 / 0.85
524	R24	24	19.2 / 21.6	7.2	192 ± 10%	1.0 / 0.79
548	R48	48	38.4 / 43.2	14.4	777 ± 10%	1.0 / 0.87
560	R60	60	48.0 / 54.0	18.0	1306 ± 10%	1.0 / 0.87
615	S15	115	92.0 / 103.5	34.5	4845 ± 12%	1.0 / 0.86
730	T30	230	184.0 / 207.0	69.0	19465 ± 15%	1.0 / 0.90

All figures are given for coil without preenergization, at ambient temperature +23°C

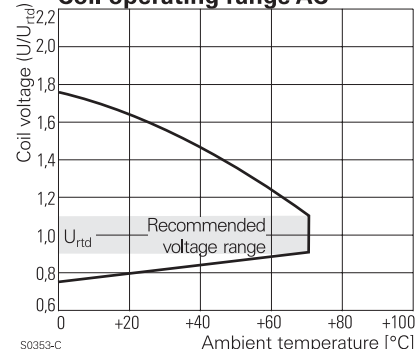
Insulation

Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	1200 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 3.1 / 3.1 mm
adjacent contact circuits	≥ 4.4 / 8.8 mm
Material group of insulation parts	IIIa
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

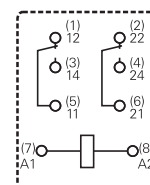
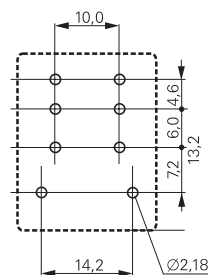
Mechanical endurance DC coil	20x10 ⁶ cycles
AC coil	15x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant
Environment	
Ambient temperature range	-40...+70°C
Vibration resistance (function) NO / NC contact	7 / 4 g
Shock resistance (function) NO / NC contact	20 / 5 g
Category of protection	RTII - flux proof
Processing	
Resistance to soldering heat	270°C / 10 s
Relay weight	30 g
Packaging unit	20 pcs

Coil operating range AC



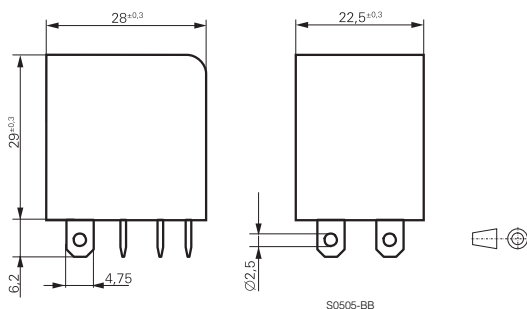
PCB layout / terminal assignment

Bottom view on pins

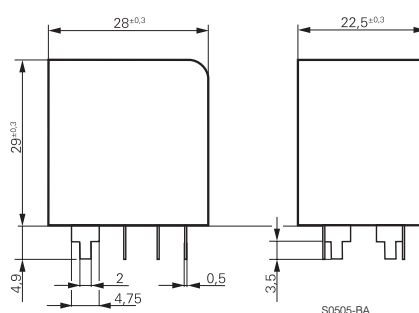


Dimensions

Solder- and plug-in terminals (standard version)



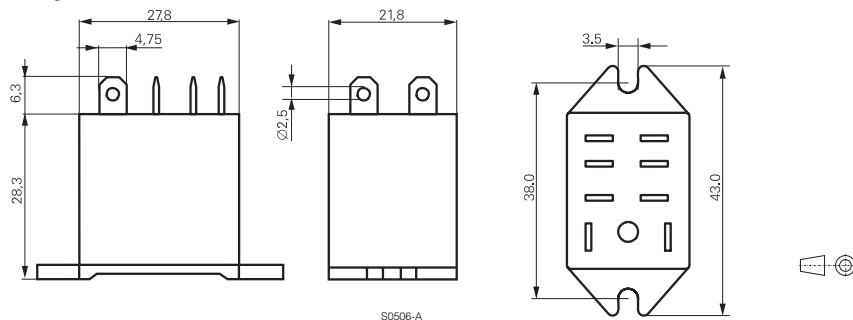
PCB version



Miniature Power Relay PTF (Continued)

Dimensions

Flange mount version



Product key

Typical product key

PTF **2** **0** **524**

Type

PTF Miniature Power Relay PTF

Contact material

2 AgNi 90/10

Version

- 0** Quick connect terminals
- 1** PCB terminals
- 2** Flange mount cover

Coil

Coil code: please refer to coil versions table, preferred types in bold print

Product key	Contacts	Cont. material	Terminal	Coil	Coil	Part number
PTF20024	2 CO contacts	AgNi 90/10	quick connect term.	DC-coil	24 VDC	1461937-3
PTF21024			PCB			1-1461937-0
PTF20524			quick connect term.	AC-coil	24 VAC	1461938-3
PTF20615					115 VAC	1461938-7
PTF20730					230 VAC	1461938-9
PTF21524			PCB		24 VAC	1-1461938-2
PTF21615					115 VAC	1-1461938-6
PTF21730					230 VAC	1-1461938-8
PTF20L24			quick connect term.	DC + LED	24 VDC	1461944-3
PTF20R24				AC + LED	24 VAC	1461945-3
PTF20S15					115 VAC	1461945-7
PTF20T30					230 VAC	1461945-9
PTF22024			flange mount cover	DC-coil	24 VDC	1721058-3
PTF22524				AC-coil	24 VAC	1-1721058-0
PTF22615					115 VAC	1-1721058-4
PTF22730					230 VAC	1-1721058-6

Multimode Relay MT

- 2 / 3 pole 10 A, 2 CO or 3 CO contacts
- DC and AC coils
- Mechanical indicator as standard
- Electrical indicator
- New test system with front operated finger protected push-to-test button and integral locking test tab
- White write on panel

Applications

Mechanical engineering, plant control



F0161-B

Approvals

VDE REG.-Nr. 6182, c **us** E214025
Technical data of approved types on request

Contact data

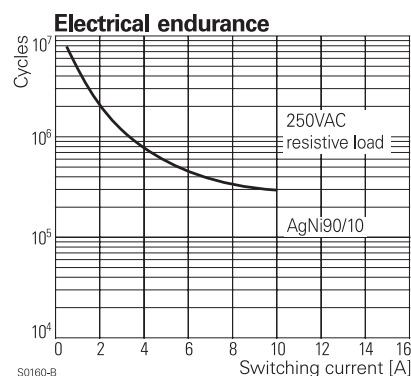
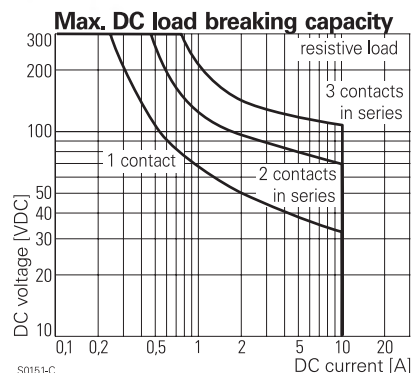
Contact configuration	2 CO or 3 CO		
Contact set	single cont.	single cont.	bifurcated
Type of interruption	micro disconnection		
Rated voltage / max. switching voltage AC	240 / 400 VAC		
Rated current	10 A	10 A	4 A
Maximum breaking capacity AC	2500 VA	2500 VA	500 VA
Limiting making capacity, max 20 ms	20 A	20 A	8 A
Contact material	AgNi90/10	AgNi90/10 gold plated	AgNi90/10 gold plated
Minimum contact load	12V/10mA	20mV/1mA	20mV/1mA
Rated frequency of operation with / without load	20/100 min ⁻¹		
Operate- / release time DC coil	max 15 / 10 ms		
Bounce time DC coil NO / NC contact	max 4 / 5 ms		

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
MT22 DC coil	CO	10 A, 250 VAC, cosφ=1	35°C	100x10 ³
MT22 AC coil	CO	10 A, 250 VAC, cosφ=1	35°C	20x10 ³
MT32 DC coil	CO	10 A, 250 VAC, cosφ=1	35°C	100x10 ³
MT32 AC coil	CO	10 A, 250 VAC, cosφ=1	35°C	20x10 ³
MT2	CO	10 A, 250 VAC, resistive	40°C	30x10 ³
MT2	NO / NC	B300	40°C	6.000
MT2	CO	4 A, 25 VAC, resistive, bifurcated	40°C	30x10 ³
MT3	CO	10 A, 250 VAC, resistive	40°C	30x10 ³
UL 508				
MT3	NO / NC	B300	40°C	6.000
MT3	CO	4 A, 25 VAC, resistive, bifurcated	40°C	30x10 ³

Coil data

Rated coil voltage range DC coil	6...220 VDC
AC coil	6...230 VAC
Operative range to IEC 61810	2



Multimode Relay MT (Continued)

Coil versions, DC-coil

Coil code	PD*)	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power W
006	0A6	6	4.5	0.6	32±10%	1.1
012	0B2	12	9.0	1.2	110±10%	1.3
024	0C4	24	18.0	2.4	475±10%	1.2
048	0E8	48	36.0	4.8	2000±10%	1.2
060	0G0	60	45.0	6.0	2850±10%	1.3
110	1B0	110	82.5	11.5	10000±12%	1.2
220	2C0	220	165.0	22.0	40000±15%	1.2

All figures are given for coil without preenergization, at ambient temperature +23°C

*) Protection diode PD; standard polarity: 2-pole relays: +2/-7, 3-pole relays: +2/-10

Coil versions, AC-coil 50 / 60 Hz

Coil code	Rated voltage VAC	Operate voltage 50 / 60 Hz VAC	Release voltage 50 / 60 Hz VAC	Coil resistance Ohm	Rated coil power 50 / 60 Hz VA
006	6	4.8 / 5.1	2.4	5.3±10%	2.29/1.98
012	12	9.6 / 10.2	4.8	24±10%	2.19/1.86
024	24	19.2 / 20.4	9.6	86±10%	2.26/ 1.95
048	48	38.4 / 40.8	19.2	345±10%	2.28/1.97
060	60	48.0 / 51.0	24.0	544±10%	2.27/1.96
115	115	92.0 / 97.8	46.0	2000±10%	2.37/2.00
230	230	184.0 / 195.5	92.0	8300±12%	2.32/ 1.96

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 2.8/4.0 mm
adjacent contact circuits	≥ 2.8/4.0 mm
Material group of insulation parts	IIIa
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	2 pole basic
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240 V
Overvoltage category	III

Other data

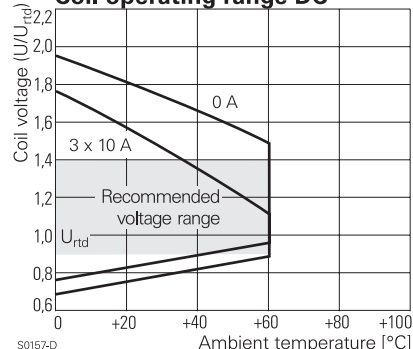
Mechanical endurance	20x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0415
Environment	
Ambient temperature range DC coil	-40...+60°C
AC coil	-45...+50°C
Vibration resistance (function) NO / NC contact	5/2 g
Shock resistance (function) NO / NC contact	50/10 g
Category of protection	RTI - dust protected
Processing	
Relay weight	80 g
Packaging unit	25 pcs

Accessories

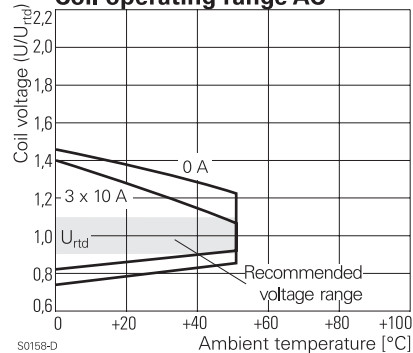
For details see datasheet

Accessories Multimode Relay MT

Coil operating range DC

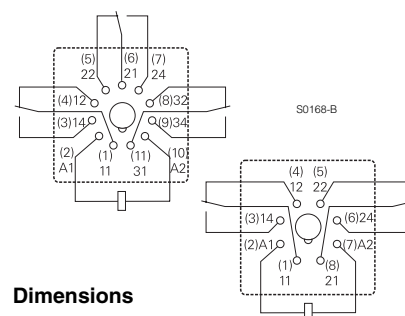


Coil operating range AC

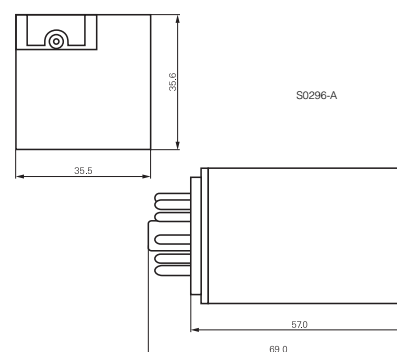


Terminal assignment

Bottom view on pins



Dimensions



Multimode Relay MT (Continued)

Product key		Typical product key		MT	3	2	6	230
Type								
MT Multimode Relay MT								
Contact configuration								
2 2 CO contacts (2 form C), 8-pin		3 3 CO contacts (3 form C), 11-pin						
Contact material								
2 AgNi 90/10		B AgNi 90/10 bifurcated contacts, gold plated						
3 AgNi 90/10, gold plated								
Version								
1 DC with test button		6 AC with test button						
3 DC with test button and bipolar LED		8 AC with test button and LED						
Coil								
Coil code: please refer to coil versions table, preferred types in bold print								
Other types on request								

Product key	Contact configuration	Contact material	Version	Coil	Part number
MT221012	2 CO contacts 8-pin	AgNi 90/10	DC	12 VDC	4-1393090-9
MT221024			with test button	24 VDC	5-1393090-0
MT221048				48 VDC	5-1393090-1
MT221060				60 VDC	5-1393090-2
MT221110				110 VDC	5-1393090-3
MT221220				220 VDC	5-1393090-4
MT223024			DC+LED+test button	24 VDC	5-1393090-7
MT226012			AC	12 VAC	6-1393090-3
MT226024			test button	24 VAC	6-1393090-4
MT226048				48 VAC	6-1393090-5
MT226115				115 VAC	6-1393090-7
MT226230				230 VAC	6-1393090-8
MT228024			AC+LED	24 VAC	6-1393090-9
MT228115			test button	115 VAC	7-1393090-0
MT228230				230 VAC	7-1393090-1
MT321012	3 CO contacts 11-pin	AgNi 90/10	DC	12 VDC	6-1393091-8
MT321024			with test button	24 VDC	7-1393091-0
MT321048				48 VDC	7-1393091-1
MT321060				60 VDC	7-1393091-2
MT321110				110 VDC	7-1393091-4
MT321220				220 VDC	7-1393091-7
MT323024			DC+LED+test button	24 VDC	8-1393091-4
MT3230C4			DC+LED+PT+TB	24 VDC	7-1393091-9
MT326012			AC	12 VAC	9-1393091-6
MT326024			test button	24 VAC	9-1393091-7
MT326048				48 VAC	9-1393091-8
MT326115				115 VAC	1393092-1
MT326230				230 VAC	1393092-2
MT328024			AC+LED	24 VAC	1393092-4
MT328115			test button	115 VAC	1393092-7
MT328230				230 VAC	1393092-8
MT331024		AgNi 90/10 gold plated	DC	24 VDC	1-1393092-1
MT331110			with test button	110 VDC	1-1393092-3
MT331220				220 VDC	1-1393092-5
MT333024			DC+LED+test button	24 VDC	1-1393092-8
MT3330C4			DC+LED+PD+TB	24 VDC	1-1393092-6
MT333110			DC+LED	110 VDC	2-1393092-0
MT333220			test button	220 VDC	2-1393092-2
MT336115			AC	115 VAC	2-1393092-5
MT336230			test button	230 VAC	2-1393092-6
MT338024			AC+LED	24 VAC	2-1393092-7
MT338115			test button	115 VAC	8-1415025-1
MT338230				230 VAC	2-1393092-8

Power Relay RM 2/3/7

- 2 / 3 pole 10 / 16 A, 2 CO or 3 CO contacts
- Switching capacity up to 6000 VA
- DC- or AC-coil
- Mechanical indicator
- Push-to-test button
- Plug-in version, PCB terminals, chassis- or DIN-rail mount

Applications

Elevator control, power supplies



F0163-B

Approvals

VDE REG.-Nr. 40003144, **CE** us E214025
Technical data of approved types on request

Contact data	RM2	RM3	RM7
Contact configuration	2 CO	3 CO	3 CO
Contact set	single contact		
Type of interruption	micro disconnection		
Rated voltage / max. switching voltage AC	400 / 440 VAC		
Rated current	16 A	10 A	16 A
Maximum breaking capacity AC	6000 VA	3800 VA	6000 VA
Limiting making capacity, max 20 ms	40 A	40 A	40 A
Contact material	AgCdO		
Rated frequency of operation with / without load	16/100 min ⁻¹		
Operate- / release time DC coil	max 15/10 ms		
Bounce time DC coil NO / NC contact	max 4 / 6 ms		

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
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IEC 61810

RM20	CO	16 A, 400 VAC, cosφ=1	35°C	100x10 ³
RM30	CO	10 A, 400 VAC, cosφ=1	35°C	100x10 ³
RM70	CO	16 A, 400 VAC, cosφ=1	35°C	100x10 ³

UL 508

RM2	NO	16 A, 277 VAC, general purpose	50°C	30x10 ³
RM2	NO	16 A, 415 VAC, resistive	50°C	100x10 ³
RM20	NO	10 A, 48 VDC	50°C	30x10 ³
RM3	CO	10 A, 415 VAC, resistive	50°C	100x10 ³
RM30	NO / NC	10 A, 277 VAC, general purpose	50°C	30x10 ³
RM7	NO	16 A, 415 VAC, resistive	50°C	100x10 ³
RM7	NO / NC	16 A, 277 VAC, general purpose	50°C	30x10 ³

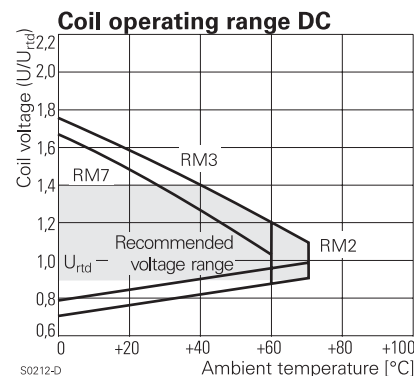
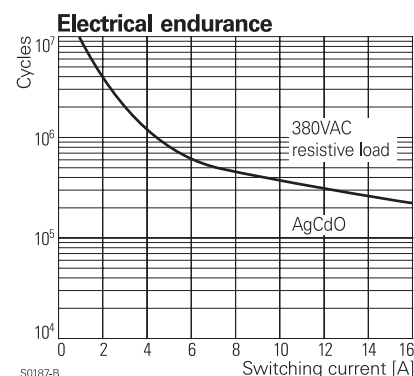
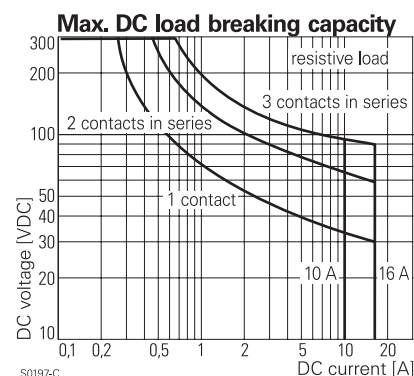
Coil data	RM2	RM3	RM7
Rated coil voltage range DC coil	6...220 VDC		
AC coil	6...400 VAC		
Operative range to IEC 61810	2		

Coil versions, DC-coil

Coil code	STD	LED	PD*	LED+	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power W
bipolar				PD*					

Coil versions, DC-coil, RM2, RM3

006	L06	0A6	LA6	6	4.5	0.6	32±10%	1.1
012	L12	0B2	LB2	12	9.0	1.2	110±10%	1.3
024	L24	0C4	LC4	24	18.0	2.4	475±10%	1.2
048	L48	0E8	LE8	48	36.0	4.8	2000±10%	1.2
060	L60	0G0	LG0	60	45.0	6.0	2850±10%	1.3
110	M10	1B0	MB0	110	82.5	11.0	10000±12%	1.2
221	N21	2C1	NC1	220	165.0	22.0	40000±15%	1.2



Power Relay RM 2/3/7 (Continued)

Coil versions, DC-coil, RM7

Coil code	STD	LED	PD*	LED+	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power
	bipolar			PD*	VDC	VDC	VDC	Ohm	W
006	L06	0A6		LA6	6	4.5	0.6	24±10%	1.5
012	L12	0B2		LB2	12	9.0	1.2	86±10%	1.7
024	L24	0C4		LC4	24	18.0	2.4	345±10%	1.7
048	L48	0E8		LE8	48	36.0	4.8	1340±10%	1.7
060	L60	0G0		LG0	60	45.0	6.0	2200±10%	1.6
110	M10	1B0		MB0	110	82.5	11.0	7300±10%	1.7
221	N21	2C1		NC1	220	165.0	22.0	30000±15%	1.6

All figures are given for coil without preenergization, at ambient temperature +23°C

*) Protection diode PD; standard polarity: +A1 / -A2

Coil versions, AC-coil 50 / 60 Hz

Coil code	STD	LED	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power
			VAC	50 / 60 Hz VAC	50 / 60 Hz VAC	Ohm	50 / 60 Hz VA

Coil versions, AC-coil, RM2, RM3

506	R06	6	4.8 / 5.1	2.4	5.3±10%	2.29/1.98
512	R12	12	9.6 / 10.2	4.8	24±10%	2.19/1.86
524	R24	24	19.2 / 20.4	9.6	86±10%	2.26/ 1.95
548	R48	48	38.4 / 40.8	19.2	345±10%	2.28/1.97
560	R60	60	48.0 / 51.0	24.0	544±10%	2.27/1.96
615	S15	115	92.0 / 97.8	46.0	2000±10%	2.37/2.00
730	T30	230	184.0 / 195.5	92.0	8300±12%	2.32/ 1.96
900	V00	400	320.0 / 340.0	160.0	27500±15%	2.31/1.96

Coil versions, AC-coil, RM7

506	R06	6	4.8 / 5.1	2.4	4.7±10%	2.86/2.36
512	R12	12	9.6 / 10.2	4.8	19.5±10%	2.71/2.27
524	R24	24	19.2 / 20.4	9.6	80±10%	2.62/2.00
548	R48	48	38.4 / 40.8	19.2	320±10%	2.60/2.17
560	R60	60	48.0 / 51.0	24.0	500±10%	2.62/2.20
615	S15	115	92.0 / 97.8	46.0	1850±10%	2.65/2.22
730	T30	230	184.0 / 195.5	92.0	7500±10%	2.69/ 2.26
900	V00	400	320.0 / 340.0	160.0	23500±15%	2.61/2.20

All figures are given for coil without preenergization, at ambient temperature +23°C

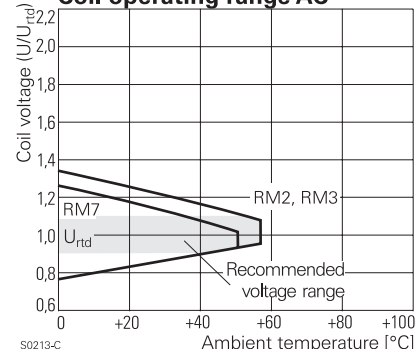
Insulation

Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4.0/14.9 mm
adjacent contact circuits	≥ 6.1/7.3 mm
Material group of insulation parts	IIIa
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

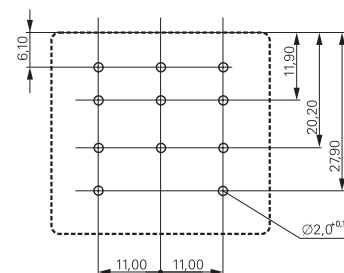
	RM2	RM3	RM7
Mechanical endurance	20x10 ⁶ cycles		
Material			
RoHS - Directive 2002/95/EC	compliant as per product date code 0415		
Environment			
Ambient temperature range DC coil	-45...+70°C	-45...+60°C	-45...+60°C
AC coil	-45...+55°C	-45...+55°C	-45...+50°C
Vibration resistance (function) NO/NC	5/2 g	5/2 g	12/4 g
Category of protection	RT1 - dust protected		
Processing			
Resistance to soldering heat	270°C / 10 s		
Relay weight	81 g		
Packaging unit	10/25 pcs		

Coil operating range AC



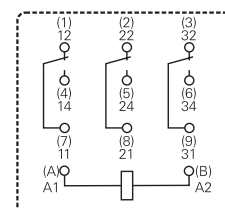
PCB layout / terminal assignment

Bottom view on pins



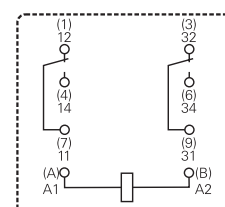
S0269-AA

3 CO contacts



S0269-AB

2 CO contacts



S0269-AD

Power Relay RM 2/3/7 (Continued)

Accessories

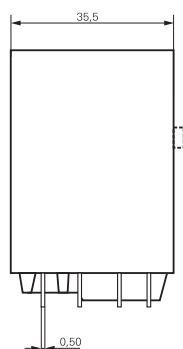
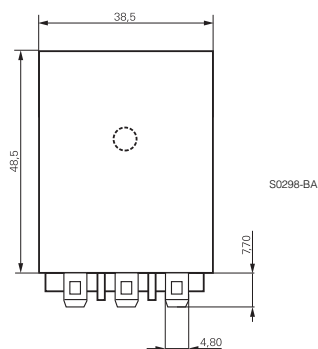
For details see datasheet

Accessories Power Relay RM

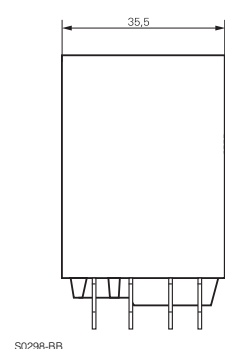
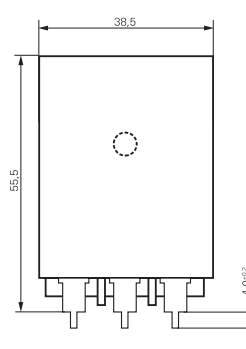
NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1, table 12); for relays mounted on sockets deratings may apply.

Dimensions

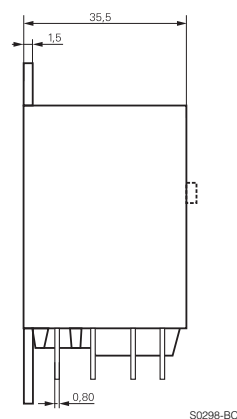
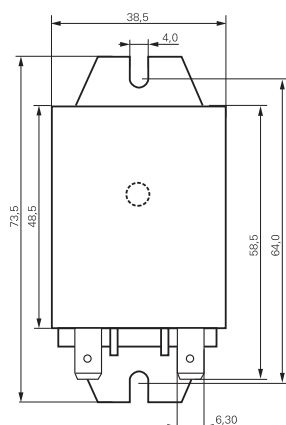
Plain cover, plug-in version



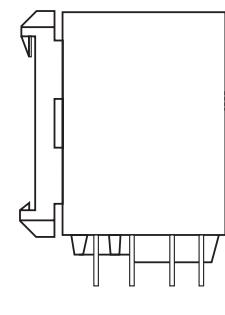
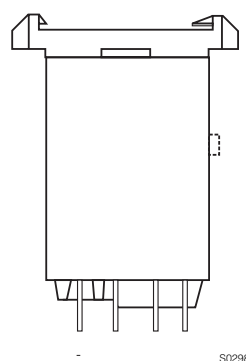
PCB version



Cover with mounting brackets, 6.3 mm quick connect (4.8 mm available)



Cover with DIN-snap-on attachment (6.3 mm quick connect only)
horizontal vertical



Product key

Typical product key

RM 7 0 2 730

Type

RM Power relay RM 2/3/7

Contact configuration

2 2 CO contacts (2 form C), 16 A
3 3 CO contacts (3 form C), 10 A

7 3 CO contacts (3 form C), 16 A

Version

0 AgCdO, without test button

3 AgCdO, with test button

Enclosure

2 plain cover, 4.8 mm quick connect terminals
3 cover with mounting brackets, 4.8 mm quick connect terminals
5 cover with mounting brackets, 6.3 mm quick connect terminals
7 PCB version
8 cover with DIN-snap-on attachment, horizontal, 6.3 mm quick connect terminals
9 cover with DIN-snap-on attachment, vertical, 6.3 mm quick connect terminals

Coil

Coil code: please refer to coil versions table, preferred types in bold print

Power Relay RM 2/3/7 (Continued)

Product key	Contacts	Version	Enclosure	Coil	Coil	Part number
RM202024	2 CO contacts 16 A	without test button	plain cover quick c. 4.8 mm	DC-coil	24 VDC	8-1393149-2
RM202524				AC-coil	24 VAC	1-1393146-9
RM202615					115 VAC	2-1393146-0
RM202730					230 VAC	1-1393148-4
RM203024			mounting brackets quick c. 4.8 mm	DC-coil	24 VDC	1-1393148-6
RM203524				AC-coil	24 VAC	2-1393146-5
RM203615					115 VAC	2-1393146-6
RM203730					230 VAC	2-1393146-8
RM205024			mounting brackets quick c. 6.3 mm	DC-coil	24 VDC	2-1393146-9
RM205524				AC-coil	24 VAC	3-1393146-0
RM205615					115 VAC	3-1393146-1
RM205730					230 VAC	3-1393146-2
RM207024			PCB version	DC-coil	24 VDC	3-1393146-3
RM207615				AC-coil	115 VAC	8-1393149-5
RM207730			DIN-snap-on horizontal		230 VAC	3-1393146-4
RM208024				DC-coil	24 VDC	3-1393146-5
RM208730				AC-coil	230 VAC	8-1393149-6
RM209730					230 VAC	3-1393146-6
RM232024		with test button	plain cover quick c. 4.8 mm	DC-coil	24 VDC	3-1393146-8
RM232524				AC-coil	24 VAC	3-1393146-9
RM232615					115 VAC	4-1393146-0
RM232730					230 VAC	3-1393107-4
RM233024			mounting brackets quick c. 4.8 mm	DC-coil	24 VDC	3-1393107-5
RM233615				AC-coil	115 VAC	4-1393146-2
RM235024				DC-coil	24 VDC	8-1393149-8
RM235730				AC-coil	230 VAC	4-1393146-5
RM239730			DIN vertical		230 VAC	4-1393148-7
RM302024				DC-coil	24 VDC	8-1393149-9
RM302524	3 CO contacts 10 A	without test button	plain cover quick c. 4.8 mm	AC-coil	24 VAC	5-1393146-3
RM302615					115 VAC	5-1393146-4
RM302730					230 VAC	5-1419150-3
RM303024			mounting brackets quick c. 4.8 mm	DC-coil	24 VDC	6-1393148-4
RM303615				AC-coil	115 VAC	5-1393146-5
RM303730					230 VAC	5-1393146-7
RM307024			PCB version	DC-coil	24 VDC	7-1393148-2
RM307730				AC-coil	230 VAC	5-1393146-9
RM332024		with test button	plain cover quick c. 4.8 mm	DC-coil	24 VDC	9-1393149-2
RM332524				AC-coil	24 VAC	9-1393149-3
RM332730					230 VAC	9-1393149-4
RM333024				DC-coil	24 VDC	9-1393149-6
RM335730			mount. br. q.c.4.8	AC-coil	230 VAC	6-1393107-1
RM338730			mount. br. q.c.6.3		230 VAC	7-1393148-7
RM339730			DIN horizontal		230 VAC	6-1393107-2
RM702024			DIN vertical		230 VAC	8-1393146-5
RM702524	3 CO contacts 16 A	without test button	plain cover quick c. 4.8 mm	DC-coil	24 VDC	1393844-9
RM702615				AC-coil	24 VAC	1-1393844-0
RM702730					115 VAC	1-1393844-1
RM703024					230 VAC	1-1393844-2
RM703524			mounting brackets quick c. 4.8 mm	DC-coil	24 VDC	9-1393146-1
RM703615				AC-coil	24 VAC	9-1393146-2
RM703730					115 VAC	9-1393146-2
RM705024					230 VAC	9-1393146-4
RM705524			mounting brackets quick c. 6.3 mm	DC-coil	24 VDC	9-1393146-6
RM705615				AC-coil	24 VAC	9-1393146-7
RM705730					115 VAC	1-1393844-4
RM707024					230 VAC	1-1393844-5
RM707524			PCB version	DC-coil	24 VDC	9-1393146-8
RM707730				AC-coil	24 VAC	1393147-1
RM708024			DIN horizontal quick c. 6.3 mm		230 VAC	1393147-2
RM708730				DC-coil	24 VDC	1393147-4
RM709024				AC-coil	24 VAC	1-1419136-0
RM709730					230 VAC	2-1393149-2
RM732024		with test button	DIN vertical	AC-coil	230 VAC	1393147-5
RM732524				DC-coil	24 VDC	1-1393844-7
RM732615				AC-coil	24 VAC	1-1393147-0
RM732730					115 VAC	1-1393147-1
RM733730			mount. br. q.c. 4.8		230 VAC	1-1393844-8
RM735024					230 VAC	1-1393147-5
RM735024				DC-coil	24 VDC	3-1393149-6
RM735524				AC-coil	24 VAC	3-1393149-7
RM735730					230 VAC	4-1393149-1
RM737730			PCB version		230 VAC	2-1393147-0
RM738024			DIN-snap-on horizontal	DC-coil	24 VDC	2-1393844-0
RM738730				AC-coil	230 VAC	2-1393147-2
RM739024			DIN-snap-on vertical	DC-coil	24 VDC	4-1393149-5
RM739730				AC-coil	230 VAC	2-1393844-2

Power Relay RM 5/6 3 mm

- 2 / 3 pole 10 / 16 A, 2 NO or 3 NO contacts
- 3 mm contact gap
- DC- or AC coil
- Push-to-test button
- Plug-in version, PCB terminals, chassis- or DIN-rail mount

Applications

Power supplies, pump control



F0164-B

Approvals

VDE REG.-Nr. 40003144, c **UL** us E214025
Technical data of approved types on request

Contact data	RM5	RM6
Contact configuration	2 NO	3 NO
Contact set	single contact	
Type of interruption	full disconnection	
Rated voltage / max. switching voltage AC	400 / 440 VAC	230 / 400 VAC
Rated current	16 A	10 A
Maximum breaking capacity AC	6000 VA	3800 VA
Limiting making capacity, max 20 ms	25 A	25 A
Contact material	AgCdO	
Contact gap	3 mm	
Rated frequency of operation with / without load	16/100 min ⁻¹	
Operate- / release time DC coil	max 15 / 10 ms	
Bounce time DC coil NO / NC contact	max 4 / 6 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RM50	NO	16 A, 230 / 400 VAC, cosφ=1	35°C	100x10 ³
RM50	NO	10 A, 48 VDC	70°C	30x10 ³
RM60	NO	10 A, 230 / 400 VAC, cosφ=1	35°C	100x10 ³
UL 508				
RM5	NO	16 A, 415 VAC, resistive	50°C	100x10 ³
RM5	NO	16 A, 277 VAC, general purpose	50°C	30x10 ³
RM6	NO	10 A, 415 VAC, resistive	50°C	100x10 ³
RM6	NO	10 A, 277 VAC, general purpose	50°C	30x10 ³

Coil data

Rated coil voltage range DC coil	6...220 VDC
AC coil	6...400 VAC
Operative range to IEC 61810	90...100% U _{rd}

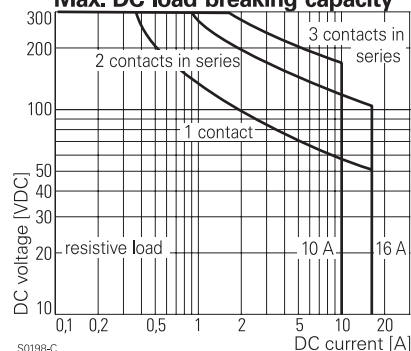
Coil versions, DC-coil

Coil code	STD	LED	PD*	LED+	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power W
	bipolar			PD*					
006	L06	0A6	LA6		6	4.5	0.6	24±10%	1.5
012	L12	0B2	LB2		12	9.0	1.2	86±10%	1.7
024	L24	0C4	LC4		24	18.0	2.4	345±10%	1.7
048	L48	0E8	LE8		48	36.0	4.8	1340±10%	1.7
060	L60	0G0	LG0		60	45.0	6.0	2200±10%	1.6
110	M10	1B0	MB0		110	82.5	11.0	7300±10%	1.7
221	N21	2C1	NC1		220	165.0	22.0	30000±15%	1.6

All figures are given for coil without preenergization, at ambient temperature +23°C

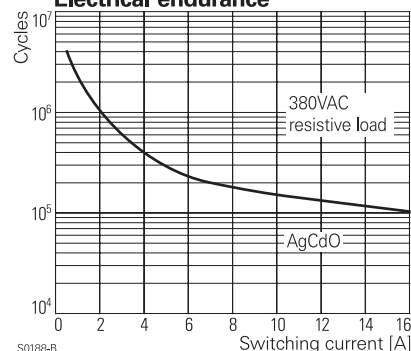
*) Protection diode PD; standard polarity: +A1 / -A2

Max. DC load breaking capacity



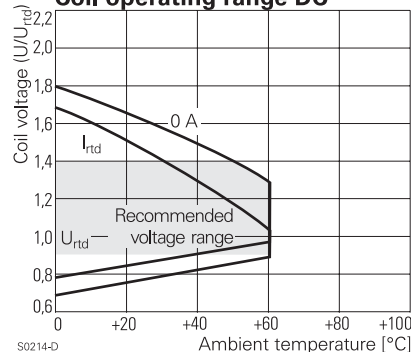
S0198-C

Electrical endurance



S0188-B

Coil operating range DC



S0214-D

Power Relay RM 5/6 3 mm (Continued)

Coil versions, AC-coil 50 / 60 Hz

Coil code	LED	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power
STD		VAC	50 / 60 Hz	50 / 60 Hz	Ohm	50 / 60 Hz
506	R06	6	4.8 / 5.1	2.4	4.7 ± 10%	2.86 / 2.36
512	R12	12	9.6 / 10.2	4.8	19.5 ± 10%	2.71 / 2.27
524	R24	24	19.2 / 20.4	9.6	80 ± 10%	2.62 / 2.00
548	R48	48	38.4 / 40.8	19.2	320 ± 10%	2.60 / 2.17
560	R60	60	48.0 / 51.0	24.0	500 ± 10%	2.62 / 2.20
615	S15	115	92.0 / 97.8	46.0	1850 ± 10%	2.65 / 2.22
730	T30	230	184.0 / 195.5	92.0	7500 ± 10%	2.69 / 2.26
900	V00	400	320.0 / 340.0	160.0	23500 ± 15%	2.61 / 2.20

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	2500 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4/14.9 mm
adjacent contact circuits	≥ 6.1/7.3 mm
Material group of insulation parts	IIIa
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	full disconnection ≥ 3 mm
adjacent contact circuits	basic
Rated insulation voltage	250 / 400 V ¹⁾
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

¹⁾ in combination with socket RM 78704 or isolated quick connects

Other data

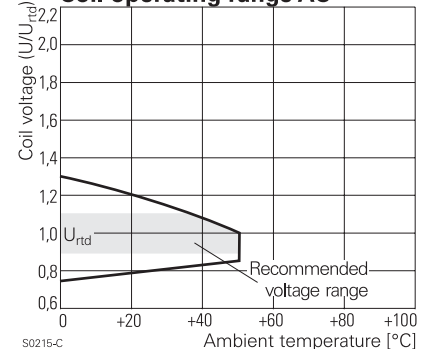
Mechanical endurance	20x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0415
Environment	
Ambient temperature range DC coil	-45...+60°C
AC coil	-45...+50°C
Vibration resistance (function) NO / NC contact	12 g, 30...150 Hz
Category of protection	RTI - dust protected
Processing	
Mounting position	versions with test button not to be mounted with button on top
Resistance to soldering heat	270°C / 10 s
Relay weight	81 g
Packaging unit	10/25 pcs

Accessories

For details see datasheet Accessories Power Relay RM

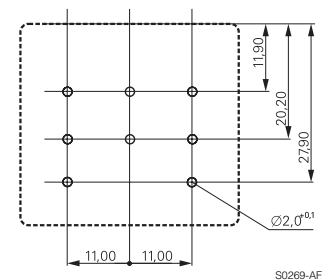
NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1, table 12); for relays mounted on sockets deratings may apply.

Coil operating range AC

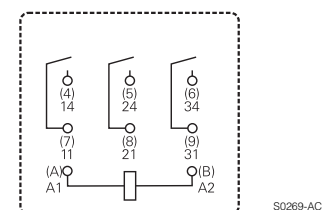


PCB layout / terminal assignment

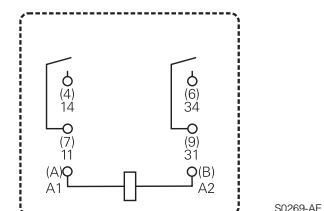
Bottom view on pins



3 NO contacts



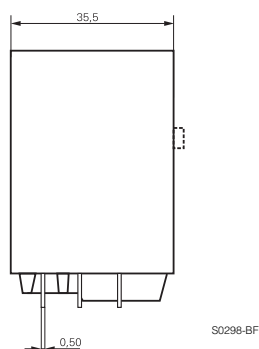
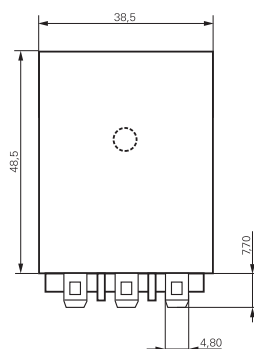
2 NO contacts



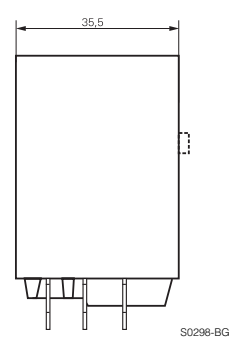
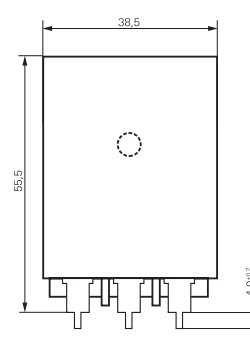
Power Relay RM 5/6 3 mm (Continued)

Dimensions

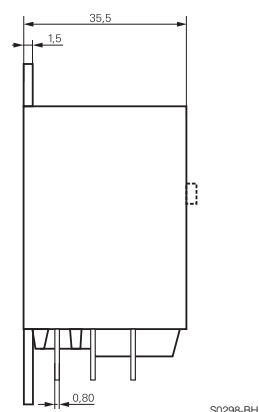
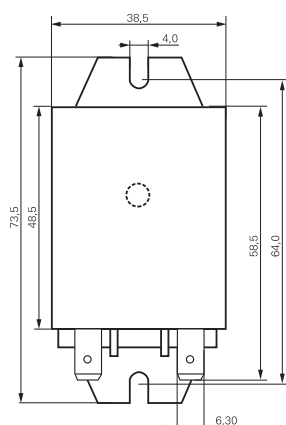
Plain cover, plug-in version



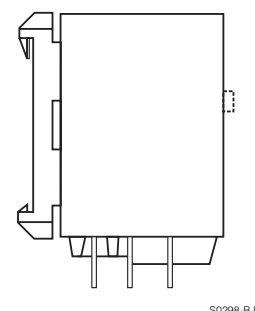
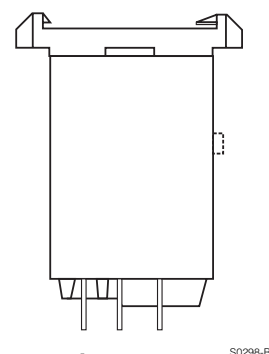
PCB version



Cover with mounting brackets, 6.3 mm quick connect (4.8 mm available)



Cover with DIN-snap-on attachment (6.3 mm quick connect only)
horizontal vertical



Product key

Typical product key

RM 5 0 2 524

Type

RM Power relay RM 5/6 3 mm

Contact configuration

5 2 NO contacts (2 form A), 16 A

6 3 NO contacts (3 form A), 10 A

Version

0 AgCdO, without test button, without mechanical indicator

3 AgCdO, with test button, without mechanical indicator

Enclosure

2 plain cover, 4.8 mm quick connect terminals

3 cover with mounting brackets, 4.8 mm quick connect terminals

5 cover with mounting brackets, 6.3 mm quick connect terminals

7 PCB version

8 cover with DIN-snap-on attachment, horizontal, 6.3 mm quick connect terminals

9 cover with DIN-snap-on attachment, vertical, 6.3 mm quick connect terminals

Coil

Coil code: please refer to coil versions table, preferred types in bold print

Power Relay RM 5/6 3 mm (Continued)

Product key	Contacts	Version	Enclosure	Coil	Coil	Part number
RM502024	2 NO contacts 16 A	without	plain cover	DC-coil	24 VDC	6-1393146-1
RM502524		test button	quick c. 4.8 mm	AC-coil	24 VAC	6-1393146-2
RM502615		without			115 VAC	6-1393146-3
RM502730		mech.indicator			230 VAC	6-1393146-4
RM503024			mounting brackets	DC-coil	24 VDC	8-1393148-0
RM503615			quick c. 4.8 mm	AC-coil	115 VAC	6-1393146-5
RM505024			mounting brackets	DC-coil	24 VDC	8-1393148-3
RM505615			quick c. 6.3 mm	AC-coil	115 VAC	6-1393146-6
RM505730					230 VAC	9-1393149-9
RM507024				DC-coil	24 VDC	1393844-1
RM507524				AC-coil	24 VAC	5-1415008-1
RM507615					115 VAC	6-1415015-1
RM507730					230 VAC	1415008-1
RM535024				DC-coil	24 VDC	7-1393146-2
RM535524	3 NO contacts 10 A	with test button w/o mech.indicator	mounting brackets quick c. 6.3 mm	AC-coil	24 VAC	9-1393148-0
RM602024		without	plain cover	DC-coil	24 VDC	1393844-4
RM602615		test button	quick c. 4.8 mm	AC-coil	115 VAC	9-1393148-7
RM605730		without	mount.br. q.c.6.3		230 VAC	7-1393146-6
RM607024		mechanical ind.	PCB version	DC-coil	24 VDC	1393844-6
RM607524				AC-coil	24 VAC	7-1393146-8
RM607615					115 VAC	8-1415015-1
RM607730					230 VAC	7-1393146-9
RM632024		with	plain cover	DC-coil	24 VDC	8-1393146-0
RM632730		test button	quick c. 4.8 mm	AC-coil	230 VAC	1393149-7
RM635024		without	mount.br. q.c.6.3	DC-coil	24 VDC	7-1393107-7
RM637024		mech.indicator	PCB version		24 VDC	1393149-9

Power Relay RM 8

- 2 pole 25 A, 2 CO contacts
- DC- or AC-coil
- Mechanical indicator
- Push-to-test button
- Chassis- or DIN-rail mount

Applications

Cleaning equipment, heating and cooling equipment



F0165-B

Approvals

VDE REG.-Nr. 40003144, **CE** E214025
Technical data of approved types on request

Contact data	RM8
Contact configuration	2 CO contacts
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	400 VAC
Rated current	25 A
Maximum breaking capacity AC	6000 VA
Limiting making capacity, max 20 ms	60 A
Contact material	AgCdO
Rated frequency of operation with / without load	16/100 min ⁻¹
Operate- / release time DC coil	max 15/10 ms
Bounce time DC coil NO / NC contact	max 4/6 ms

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RM80	CO	25 A, 250 VAC, cosφ=1	35°C	10x10 ³
UL 508				
RM80	NO / NC	25 A, 240 VAC, 1 phase per pole, general purpose	40°C	6x10 ³
RM80	NO / NC	25 A, 415 VAC, resistive	50°C	10x10 ³

Coil data

Rated coil voltage range DC coil	6...220 VDC
AC coil	6...400 VAC
Operative range to IEC 61810	2

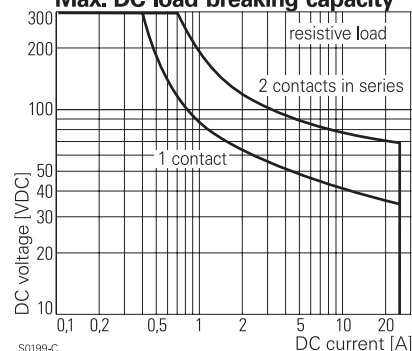
Coil versions, DC-coil

Coil code	STD	LED	PD*	LED+	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power W
				bipolar					
006	L06	0A6	LA6		6	4.5	0.6	32±10%	1.1
012	L12	0B2	LB2		12	9.0	1.2	110±10%	1.3
024	L24	0C4	LC4		24	18.0	2.4	475±10%	1.2
048	L48	0E8	LE8		48	36.0	4.8	2000±10%	1.2
060	L60	0G0	LG0		60	45.0	6.0	2850±10%	1.3
110	M10	1B0	MB0		110	82.5	11.0	10000±12%	1.2
221	N21	2C1	NC1		220	165.0	22.0	40000±15%	1.2

All figures are given for coil without preenergization, at ambient temperature +23°C

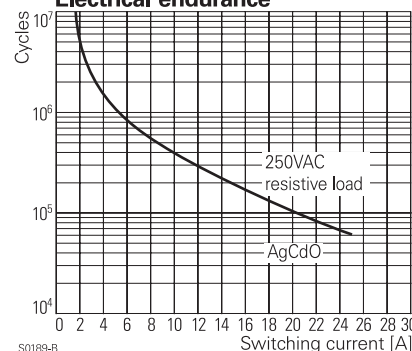
*) Protection diode PD; standard polarity: +A1 / -A2

Max. DC load breaking capacity



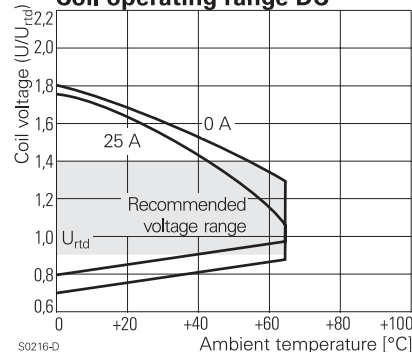
S0199-C

Electrical endurance



S0189-B

Coil operating range DC



S0216-D

Power Relay RM 8 (Continued)

Coil versions, AC-coil 50 / 60 Hz

Coil code	LED	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power
STD		VAC	50 / 60 Hz	50 / 60 Hz	Ohm	50 / 60 Hz
506	R06	6	4.8 / 5.1	2.4	4.7 ± 10%	2.86 / 2.36
512	R12	12	9.6 / 10.2	4.8	19.5 ± 10%	2.71 / 2.27
524	R24	24	19.2 / 20.4	9.6	80 ± 10%	2.62 / 2.00
548	R48	48	38.4 / 40.8	19.2	320 ± 10%	2.60 / 2.17
560	R60	60	48.0 / 51.0	24.0	500 ± 10%	2.62 / 2.20
615	S15	115	92.0 / 97.8	46.0	1850 ± 10%	2.65 / 2.22
730	T30	230	184.0 / 195.5	92.0	7500 ± 10%	2.69 / 2.26
900	V00	400	320.0 / 340.0	160.0	23500 ± 15%	2.61 / 2.20

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

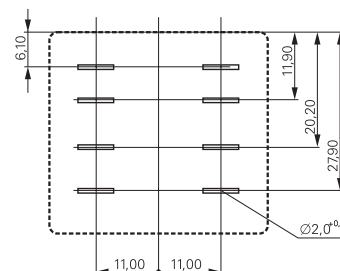
Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	4000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4/14.9 mm
adjacent contact circuits	≥ 15.3/15.3 mm
Material group of insulation parts	IIIa
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

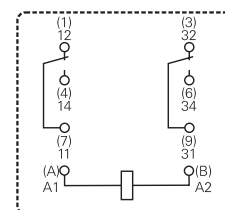
Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0415
Environment	
Ambient temperature range DC coil	-45...+65°C
AC coil	-45...+40°C
Vibration resistance (function) NO / NC contact	10/5 g, 30...150 Hz
Category of protection	RTI - dust protected
Processing	
Relay weight	81 g
Packaging unit	10/25 pcs

Terminal assignment

Bottom view on pins



S0269-AG

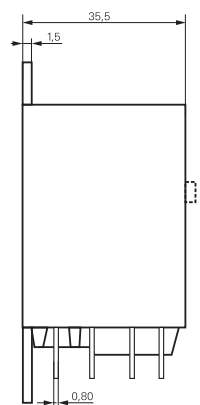
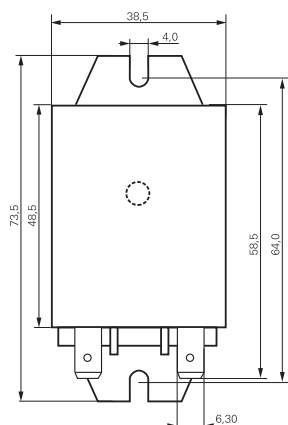


S0269-AD

Power Relay RM 8 (Continued)

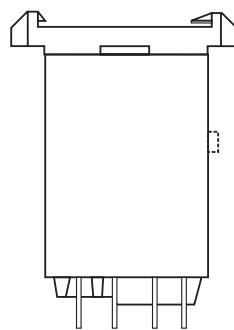
Dimensions

Cover with mounting brackets, 6.3 mm quick connect terminals



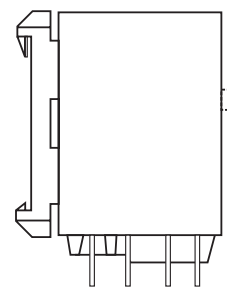
SO298-BC

Cover with DIN-snap-on attachment
horizontal



SO298-BD

vertical



SO298-BE

Product key

Typical product key

RM 8 0 9 024

Type

RM Power relay RM 8

Contact configuration

8 2 CO contacts (2 form C), 25 A

Version

0 AgCdO, without test button **3** AgCdO, with test button

Enclosure

- 5** cover with mounting brackets, 6.3 mm quick connect terminals
- 8** cover with DIN-snap-on attachment, horizontal, 6.3 mm quick connect terminals
- 9** cover with DIN-snap-on attachment, vertical, 6.3 mm quick connect terminals

Coil

Coil code: please refer to coil versions table, preferred types in bold print

Product key	Contacts	Version	Enclosure	Coil	Coil	Part number
RM805024	2 CO contacts 25 A	without test button	mounting brackets quick c. 6.3 mm	DC-coil	24 VDC	2-1393844-7
RM805524				AC-coil	24 VAC	2-1393147-9
RM805615					115 VAC	3-1393147-1
RM805730					230 VAC	3-1393147-3
RM808024			DIN-snap-on horizontal	DC-coil	24 VDC	2-1393844-9
RM808524				AC-coil	24 VAC	3-1393147-7
RM808730					230 VAC	5-1393149-7
RM809024			DIN-snap-on vertical	DC-coil	24 VDC	5-1393149-8
RM809615				AC-coil	115 VAC	3-1393147-8
RM809730					230 VAC	3-1393147-9
RM835024		with test button	mounting brackets quick c. 6.3 mm	DC-coil	24 VDC	4-1393147-1
RM835524				AC-coil	24 VAC	4-1393147-3
RM835615					115 VAC	4-1393147-4
RM835730					230 VAC	4-1393147-6
RM838024			DIN-snap-on horizontal	DC-coil	24 VDC	4-1393147-8
RM838524				AC-coil	24 VAC	5-1393147-0
RM838730					230 VAC	5-1393147-1
RM839024			DIN-snap-on vertical	DC-coil	24 VDC	5-1393147-4
RM839524				AC-coil	24 VAC	5-1393147-5
RM839730					230 VAC	5-1393147-6

Power Relay RM C/D

- 1 pole 30 A, 1 NO or 1 NO + 1 NC contact
- Switching capacity up to 7500 VA
- DC- or AC-coil
- Push-to-test button
- Chassis mount

Applications

Battery chargers, heating control



F0166-B

Approvals

UL E214025

Technical data of approved types on request

Contact data	RMC	RMD
Contact configuration	1 NO and 1 NC	1 NO
Contact set	single bridging contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	400 / 440 VAC	
Rated current	30 A	
Maximum breaking capacity AC	7500 VA	
Limiting making capacity, max 20 ms	60 A	
Contact material	AgCdO	
Rated frequency of operation with / without load	16/100 min ⁻¹	
Operate- / release time DC coil	max 20/20 ms	
Bounce time DC coil NO / NC contact	max 4/6 ms	

Contact ratings

Type	Contact Load	Ambient temp. [°C]	Cycles
UL 508			
RMC/D NO / NC	30 A, 277 VAC, general purpose	50°C	10x10 ³
RMC/D NO / NC	30 A, 415 VAC, resistive	50°C	10x10 ³

Coil data

Rated coil voltage range DC coil	6...220 VDC
AC coil	6...400 VAC
Operative range to IEC 61810	2

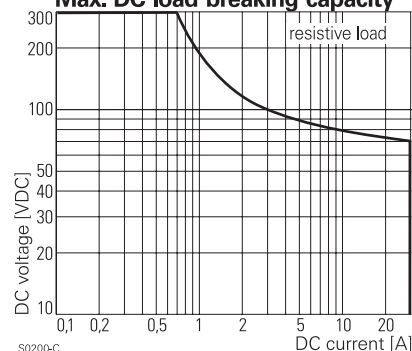
Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power W
STD LED PD* LED+ bipolar PD*					
006 L06 0A6 LA6	6	4.5	0.6	32±10%	1.1
012 L12 0B2 LB2	12	9.0	1.2	110±10%	1.3
024 L24 0C4 LC4	24	18.0	2.4	475±10%	1.2
048 L48 0E8 LE8	48	36.0	4.8	2000±10%	1.2
060 L60 0G0 LG0	60	45.0	6.0	2850±10%	1.3
110 M10 1B0 MB0	110	82.5	11.0	10000±12%	1.2
221 N21 2C1 NC1	220	165.0	22.0	40000±15%	1.2

All figures are given for coil without preenergization, at ambient temperature +23°C

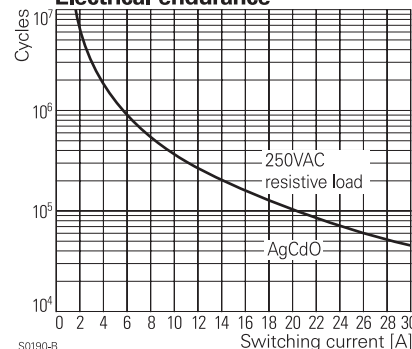
*) Protection diode PD; standard polarity: +A1 / -A2

Max. DC load breaking capacity



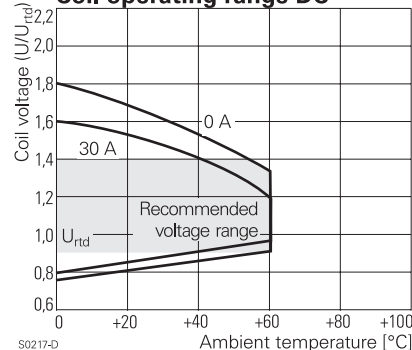
S0200-C

Electrical endurance



S0190-B

Coil operating range DC



S0217-D

Power Relay RM C/D (Continued)

Coil versions, AC-coil 50 / 60 Hz

Coil code	LED	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power
STD		VAC	50 / 60 Hz VAC	50 / 60 Hz VAC	Ohm	50/ 60 Hz VA
524	R24	24	19.2 / 20.4	9.6	80±10%	2.62 / 2.00
548	R48	48	38.4 / 40.8	19.2	320±10%	2.60 / 2.17
560	R60	60	48.0 / 51.0	24.0	500±10%	2.62 / 2.20
615	S15	115	92.0 / 97.8	46.0	1850±10%	2.65 / 2.22
730	T30	230	184.0 / 195.5	92.0	7500±10%	2.69 / 2.26
900	V00	400	320.0 / 340.0	160.0	23500±15%	2.61 / 2.20

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

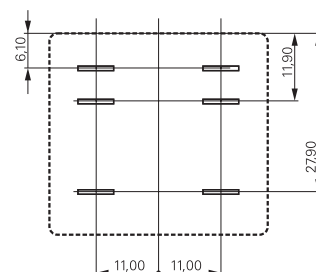
Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	1500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4/14.9 mm
Material group of insulation parts	IIIa
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	basic
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	230 / 400 V
Overvoltage category	III

Other data

Mechanical endurance	10x10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0415
Environment	
Ambient temperature range DC coil	-45...+60°C
AC coil	-45...+40°C
Vibration resistance (function) NO / NC contact	10/5 g, 30...150 Hz
Category of protection	RTI - dust protected
Processing	
Relay weight	81 g
Packaging unit	10 pcs

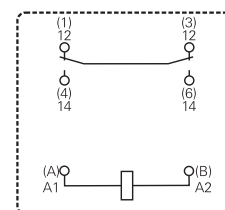
Terminal assignment

Bottom view on pins



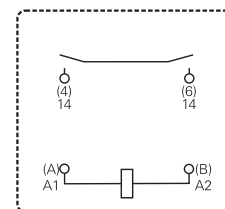
S0269-AK

1 NO and 1 NC contact, RMC



S0269-AH

1 NO contact, RMD

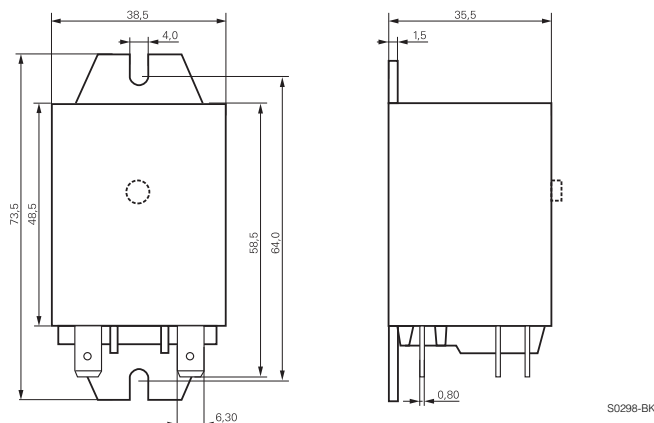


S0269-AI

Power Relay RM C/D (Continued)

Dimensions

Cover with mounting brackets, 6.3 mm quick connect terminals



S0298-BK

Product key

Typical product key

RM D 0 5 730

Type

RM Power Relay RM C/D

Contact configuration

- C** 1 NO contact and 1 NC contact, 30 A
D 1 NO contact, 30 A

Version

- 0** AgCdO, without test button **3** AgCdO, with test button

Enclosure

- 5** cover with mounting brackets, 6.3 mm quick connect terminals

Coil

Coil code: please refer to coil versions table, preferred types in bold print

Product key	Contacts	Version	Enclosure	Coil	Coil	Part number
RMC05024	1 NO + 1 NC contact 30 A	without	mounting brackets quick c. 6.3 mm	DC-coil	24 VDC	4-1393844-5
RMC05524		test button		AC-coil	24 VAC	1393146-5
RMC05615					115 VAC	8-1393147-7
RMC05730					230 VAC	1393146-6
RMC35024		with test button		DC-coil	24 VDC	1393146-7
RMD05024	1 NO contact 30 A	without			24 VDC	1393146-9
RMD05524		test button	AC-coil	24 VAC	1-1393146-1	
RMD05615				115 VAC	1415009-1	
RMD05730				230 VAC	4-1393844-7	
RMD35024		with		DC-coil	24 VDC	2-1419136-2
RMD35730		test button		AC-coil	230 VAC	1393097-5

Sockets and Accessories

Relay-Socket combinations specified according to IEC 61810-1 and IEC 61984 and accessories for DIN-rail

relay	socket	plastic retaining clip			metal retaining clip		module	marking tag
SNR	STxFxxx							ST37040
	rel.height	12.3 mm	15.7 mm	25.5 mm				
RT pinning 3.5	RT78724		RT17017				PTMxxxxx	RT17040
RT pinning 5.0	RT7872P		RT17017				PTMxxxxx	RT17040
	RT78726		RT17017				PTMxxxxx	RT17040
	RT78725		RT17017				PTMxxxxx	RT17040
XT pinning 5.0	RT7872P			XT17017			PTMxxxxx	RT17040
	RT78726			XT17017			PTMxxxxx	RT17040
	RT78725			XT17017			PTMxxxxx	RT17040
	rel.height	29mm			29mm	36mm		
PT2	PT7872P	PT17016			PT28800	ZG28801	PTMxxxxx	PT17040
	PT78722	PT17021			PT28800	ZG28801	PTMxxxxx	PT17040
	PT78720	PT17016			PT28800	ZG28801	PTMxxxxx	PT17040
		PT17024						
PT78741		PT17016			PT28800	ZG28801	PTMT00A0	PT17040
		PT17024						
PT3	PT78730	PT17016			PT28800	ZG28801	PTMxxxxx	PT17040
		PT17024						
PT5	PT7874P	PT17016			PT28800	ZG28801	PTMxxxxx	PT17040
	PT78742	PT17021			PT28800	ZG28801	PTMxxxxx	PT17040
	PT78740	PT17016			PT28800	ZG28801	PTMxxxxx	PT17040
		PT17024						
	PT78741	PT17016			PT28800	ZG28801	PTMT00A0	PT17040
		PT17024						
MT2	MT78755				MT28800			
	MT78745				MT28800		MTMxxxxx	
MT3	MT78750				MT28800			
	MT78760				MT28800			
	MT78740				MT28800		MTMxxxxx	
RMxx2	RM78705							

Relay-Socket combinations specified according to IEC 61810-1 and IEC 61984 and accessories

for printed circuit board		plastic retaining clip			metal retaining clip		in mounting plate	
relay	socket						socket	metal retaining clip
	rel.height	12.3mm	15.7mm	25.5mm	15.7mm	25.5mm		
RY pinning 3.2	RY78600	RY16037						
E pinning 2.5	RP78600			RP16100		RP28500		
RT pinning 3.5	RP78601		RT16041		RT28516			
RT pinning 5.0	RP78602		RT16041		RT28516			
	rel.height				29mm	36mm		29mm 36mm
PT2	PT78604				PT28802	ZG28800	PT78600	PT28802 ZG28800
	PT78602				PT28802	ZG28800	PT78601	PT28802 ZG28800
PT3	PT78603				PT28802	ZG28800		
PT5	PT78604				PT28802	ZG28800	PT78600	PT28802 ZG28800
							PT78601	PT28802 ZG28800
MT2	MT78602						MT78612	
MT3	MT78603						MT78613	
RMxx2	RM78702				RM28802		RM78700	RM28802
							RM78701	RM28802

All sockets in this catalog have been tested and approved with the Tyco Electronics Schrack product range.

For combination of sockets with other relays with similar design and pinning Tyco Electronics cannot take responsibility for any malfunction.

Accessories Slim Interface Relay SNR

- Module width 6.2 mm
- Reduced system width for increased packing density on the DIN rail
- DC and AC version
- Electrical indicator as standard (LED)
- Protection circuit
- Screw- or cage clamp terminals
- Jumper bars
- RoHS compliant (Directive 2002/95/EC)



F0260-B

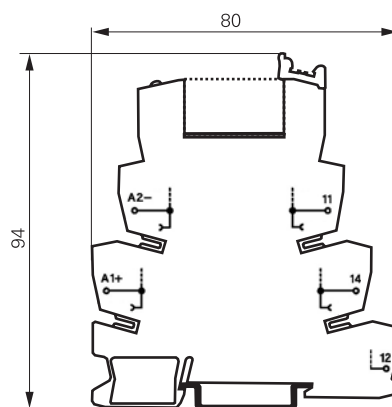
Approvals

VDE REG.-Nr. 6666, cULus E224918

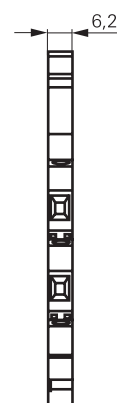
Technical data	ST3F / ST4F
Rated voltage / max. switching voltage AC	240 / 400 VAC
Rated current	6 A
Dielectric strength coil-contact circuit	4000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 6/8 mm
Material group of insulation parts	IIIa
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	functional
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
RoHS - Directive 2002/95/EC	compliant
Ambient temperature range	-20...+55 °C
Terminals	screw / cage clamp
Terminal screw torque acc. IEC 61984	0.5 Nm
max.	0.6 Nm
Wire cross section	
single wire	0.14...2.5 mm ²
fine wire	0.14...2.5 mm ²
with bootlace crimp (DIN 46228/1)	0.14...2.5 mm ²
Insertion cycles	A (10)
Max. Insertion Force total	100 N
Mounting distance	≥ 0 mm, dense packing
Weight	26 g
Packaging unit	10 pcs

Sockets

Product code		Part Number
ST 3F LC4	Din-rail socket 24VDC, for relays 12 / 24 / 48 VDC, with LED, protection and polarity diode, screw terminals	2-1416100-0
ST 3F SM5	Din-rail socket 115 VAC / VDC with LED and protection circuit, screw terminals	2-1416100-1
ST 3F TP0	Din-rail socket 230 VAC / VDC with LED and protection circuit, screw terminals	2-1416100-2
ST 4F LC4	Din-rail socket 24VDC, for relays 12 / 24 / 48 VDC, with LED, protection and polarity diode, cage clamp terminals	2-1416100-3
ST 4F SM5	Din-rail socket 115 VAC / VDC with LED and protection circuit, cage clamp terminals	2-1416100-4
ST 4F TP0	Din-rail socket 230 VAC / VDC with LED and protection circuit, cage clamp terminals	2-1416100-5



S0487-AA



Version with
screw terminals



Version with
cage clamp terminals

S0487-AA

Accessories Slim Interface Relay SNR (Continued)

Accessories

Product code		Part Number
ST 36 040	Separation element	2-1416100-6
ST 37 001	Jumper bar, red, 500 mm	2-1416100-7
ST 37 002	Jumper bar, blue, 500 mm	2-1416100-8
ST 37 003	Jumper bar, grey, 500 mm	2-1416100-9
ST 37 040	Marking plate, consisting of 100 marking tabs	4-1416100-0

Relay Packages

Complete packages consisting of a relay mounted on a socket: see Relay Package SNR

Accessories Miniature PCB Relay RYII

- Accessories for Miniature PCB Relay RYII, pinning 3.2 mm
- Socket with PCB terminals
- No reduction of protection class or creepage/clearance with plastic retainer
- Easy replacement of relays
- Socket can be used as connector for diagnosis function
- Sockets and accessories: RoHS compliant (Directive 2002/95/EC)
- Not suitable for MSR-type



F0125-A

Socket with PCB terminals

RY 78 600 pinning 3.2 mm

Approvals

cUL us E135149

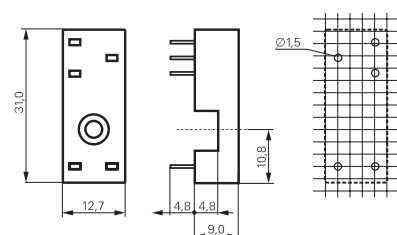
Technical data	RY 78 600
Rated voltage / max. switching voltage AC	240 / 400 VAC
Rated current	12 A
Limiting continuous current	see derating curve
Dielectric strength coil-contact circuit	5000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8/8 mm
Material group of insulation parts	IIIa
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	functional
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
RoHS - Directive 2002/95/EC	compliant
Ambient temperature range	-40...+80°C
Terminals	pcb
Insertion cycles	A (10)
Max. Insertion Force total	100 N
Mounting distance	≥ 0, dense packing
Resistance to soldering heat	270°C / 10 s
Weight	3 g
Packaging unit	100 pcs

Socket with PCB terminals

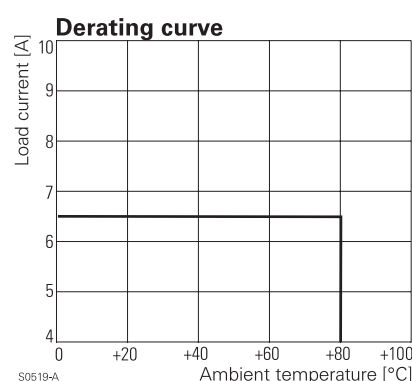
Type	Part Number
RY 78 600 Socket with PCB terminals, pinning 3.2 mm	7-1393161-3

Accessories for RY78600

RY 16 037 Plastic retaining clip	6-1393161-5
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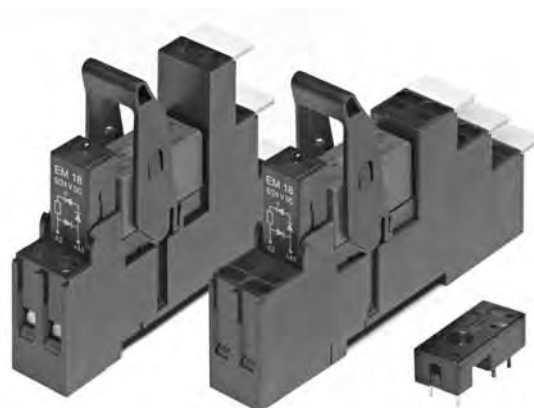


S0322-AA



Accessories Industrial Power Relay RT

- For Industrial Power Relay RT
pinnings 3.5mm / 5mm; relay height 15.7 mm
- New retainer clip with ejection function
- Easy replacement of relays on a densely packed DIN rail
- No reduction of protection class or creepage/clearance with plastic retainer
- Simple plug-in indicator- and protection modules
- White snap-on marking tags
- RoHS compliant (Directive 2002/95/EC)

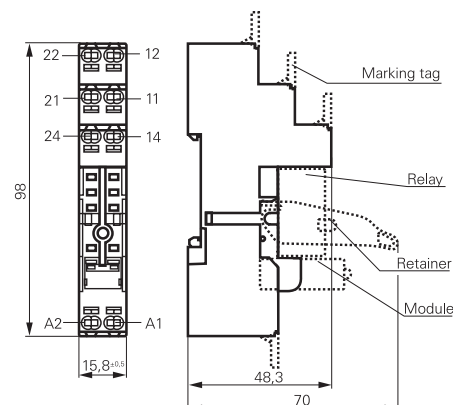


F0228-G

Premium socket with screwless terminals for DIN rail mounting

RT 78 72P Premium socket, logical terminal arrangement

- Screwless Clamps
- Mounting of solid wires without tool
- Double Clamps per terminal
- Jumper links for interconnection
- Open coil circuit for active modules
- Logical terminal arrangement



Approvals

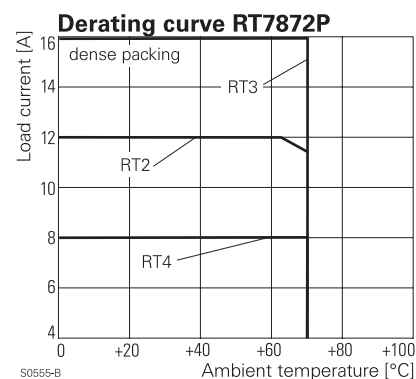
VDE REG.-Nr. 6106, cULus E135149

Technical data

Rated voltage / max. switching voltage AC	240 / 400 VAC
Rated current	2 x 8 A, 16 A*)
Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm
Material group of insulation parts	IIIa
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	functional
adjacent contact circuits	functional
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
RoHS - Directive 2002/95/EC	compliant

*) For 1 pole relays (16 A) the relay terminals 11-21, 12-22 and 14-24 have to be bridged.

- Not suitable for bistable relays with 2 coils!



Accessories Industrial Power Relay RT (Continued)

Technical data (Continued)

Ambient temperature range	
for mounting/handling	-20...+70°C
in operation	-40...+70°C
Terminals	screwless
Wire strip length	12 mm
Wire cross section	
solid wire	1 x 0.75/1/1.5 mm ² 2 x 0.75/1 mm ² 2 x 1.5 mm ²
with standard isolation (no oversize isolation)	2 x 1.5 mm ²
stranded wire	
without bootlace crimp	1 x 0.75/1/1.5 mm ² 2 x 0.75/1 mm ² 2 x 1.5 mm ²
without bootlace crimp with standard isolation	2 x 1.5 mm ²
with bootlace crimp	1 x 0.75/1 mm ² 2 x 0.75 mm ² 1 x 1.5 mm ²
with bootlace crimp without isolation	1 x 1.5 mm ²
or isolation min 18 mm long	

For stranded wires with braids 0.05 mm or smaller the use of bootlace crimps is recommended. When using stranded wires without bootlace crimp the clamp must be opened during insertion.

Insertion cycles	A (10)
Max. Insertion Force total	100 N
Mounting distance	≥ 0, dense packing
Weight	36 g
Packaging unit	10 pcs

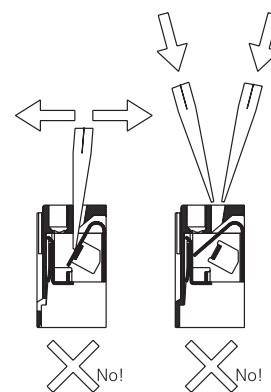
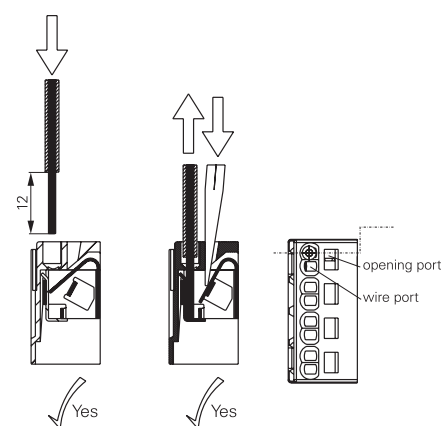
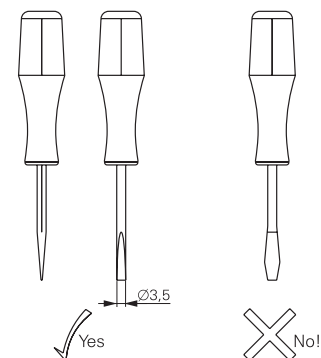
Socket with screwless terminals for DIN rail mounting

Type	Part Number
RT 78 72P Premium socket, logical terminal arrangement Socket with screwless terminals, pinning 5 mm for DIN rail mounting	1860200-1

Accessories for RT 78 72P

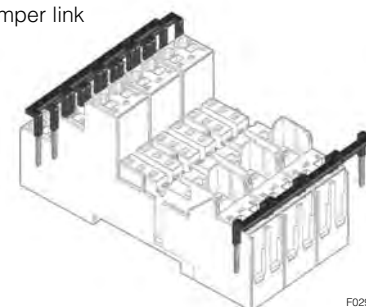
Type	Part Number
RT 17 017 Plastic retaining clip, relay height 15.7	2022103-1
RT 17 040 Marking tag	2-1415038-1
RT 17 0P1 Jumper link, max load 12 A	1860211-1

How to use, Precautions



S0553-A

Jumper link



F0296-A

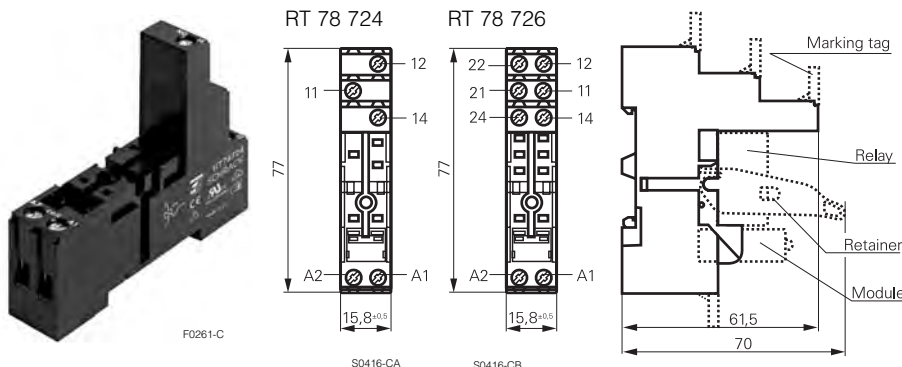
Accessories Industrial Power Relay RT (Continued)

Socket with screw-type terminals for DIN rail mounting

RT 78 724 Socket with screw-type terminals, pinning 3.5 mm for DIN rail mounting

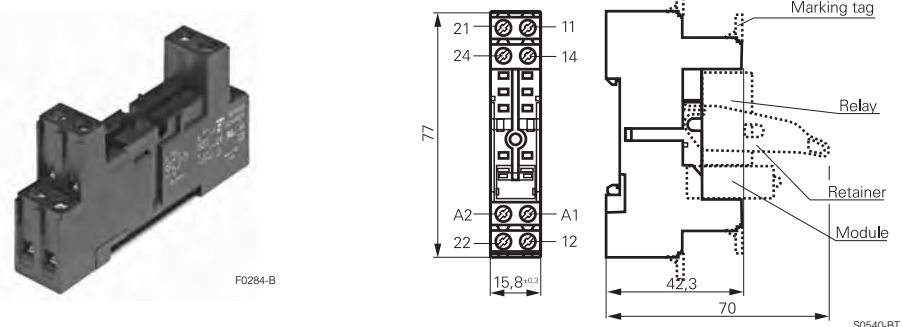
RT 78 726 Socket with screw-type terminals, pinning 5 mm for DIN rail mounting, logical terminal arrangement

- Din-rail socket with logical setup of connections (input/output)
- High quality rising clamp terminals
- Captive combination terminal screws
- Jumper bars for interconnection



RT 78 725 Socket with screw-type terminals, pinning 5 mm for DIN rail mounting, conventional terminal arrangement

- Conventional terminal arrangement



Approvals

VDE REG.-Nr. 6106 in preparation, cULus E135149

Technical data

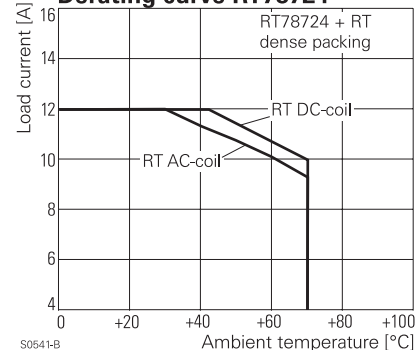
	RT 78 724 / RT 78 726	RT 78 725
Rated voltage / max. switching voltage AC	240 / 400 VAC	
Rated current	12 A, 2 x 8 A, 16 A*)	
Dielectric strength coil-contact circuit	5000 V _{rms}	4000 V _{rms}
open contact circuit	1000 V _{rms}	1000 V _{rms}
adjacent contact circuits	2500 V _{rms}	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm	≥ 4.7 / 4.7 mm
Material group of insulation parts	IIIa	
Insulation to IEC 60664-1		
Type of insulation coil-contact circuit	reinforced	basic
open contact circuit	functional	functional
adjacent contact circuits	functional	functional
Rated insulation voltage	250 V	
Pollution degree	2	
Rated voltage system	230 / 400 V	
Overvoltage category	III	
RoHS - Directive 2002/95/EC	compliant	
Ambient temperature range		
for mounting/handling	-20...+70°C	
in operation	-40...+70°C	

*) For 1 pole relays (16 A) the relay terminals 11-21, 12-22 and 14-24 have to be bridged.

For 1 pole relays (12 A) the relay terminals 11-12-14 have to be connected to the socket terminals 21-12-24

- Not suitable for bistable relays with 2 coils!

Derating curve RT78724



Accessories Industrial Power Relay RT (Continued)

Technical data (Continued)	RT 78 724 / RT 78 726	RT 78 725
Terminals	screw	
Terminal screw torque acc. IEC 61984	0.5 Nm	
max.	0.7 Nm	
Wire cross section		
single wire	2 x 2.5 mm ²	
fine wire	2 x 2.5 mm ²	
with bootlace crimp (DIN 46228/1)	2 x 1.5 mm ²	
Insertion cycles	A (10)	
Max. Insertion Force total	100 N	
Mounting distance	≥ 0, dense packing	
Weight	36 g	
Packaging unit	10 pcs	

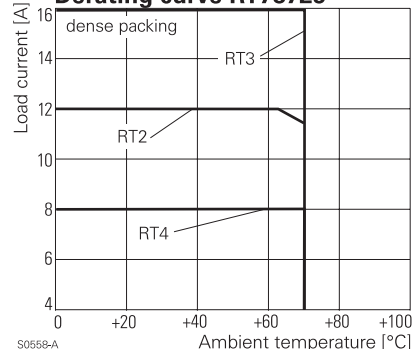
Socket with screw-type terminals for DIN rail mounting

Type	Part Number
RT 78 724 Socket with screw-type terminals, pinning 3.5 mm for DIN rail mounting, logical terminal arrangement	8-1415035-1
RT 78 726 Socket with screw-type terminals, pinning 5 mm for DIN rail mounting, logical terminal arrangement	6-1415035-1
RT 78 725 Socket with screw-type terminals, pinning 5 mm for DIN rail mounting, conventional terminal arrangement	1860306-1

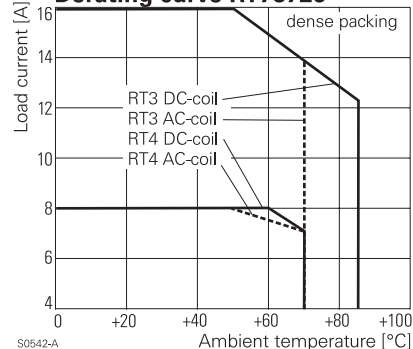
Accessories for RT 78 724, RT 78 725, RT 78 726

Type	Part Number
RT 17 017 Plastic retaining clip, relay height 15.7	2022103-1
RT 17 040 Marking tag	2-1415038-1
RT 17 0R8 Jumper bar, max load 12 A for connection of up to 8 RT sockets	1860517-8

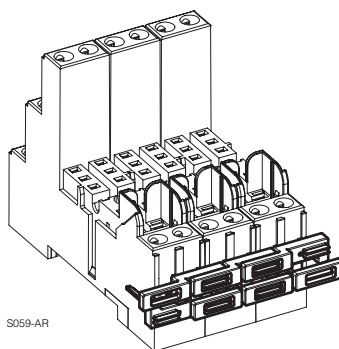
Derating curve RT78725



Derating curve RT78726

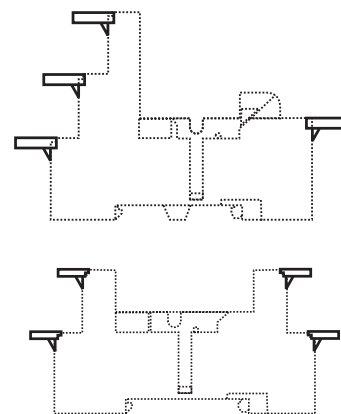


Jumper bar



Marking tags

- White marking area 15.5 x 6 mm
- Snaps on socket in up to 4 positions



Accessories Industrial Power Relay RT (Continued)

LED- and Protection Modules for RT 78 72P, RT 78 724, RT 78 725, RT 78 726

Easy insertion of module into the socket

Wiring in parallel to the coil

Type	Part Number
PTM T0 0A0 EM09 Protection diode (standard, A1+, A2-)	9-1415036-1
PTM T0 0L0 EM01 Protection diode (A1-, A2+)	1415037-1
PTM U0 524 EM02 RC-network 6...60 VAC	1-1415037-1
PTM U0 730 EM03 RC-network 110...230 VAC	2-1415037-1
PTM V0 524 EM04 Varistor 24 VAC	3-1415037-1
PTM V0 615 EM13 Varistor 115 VAC	6-1415365-1
PTM V0 730 EM05 Varistor 230 VAC	4-1415037-1
PTM R0 730 EM29 Bleeder Resistor 110...230 VAC	1-1415539-2

LED

PTM L0 024 EM18 red LED 6...24 VDC w. prot.diode (std, A1+, A2-)	5-1415036-1
PTM G0 024 EM12 green LED 6...24 VDC w. prot.diode (std, A1+, A2-)	2-1415036-1
PTM L1 024 EM08 red LED 6...24 VDC w. prot. diode (A1-, A2+)	8-1415036-1
PTM L0 060 EM16 red LED 24...60 VDC w. prot.diode (std, A1+, A2-)	5-1415539-3
PTM G0 060 EM25 green LED 24...60 VDC w. prot.diode (std, A1+, A2-)	7-1415539-7
PTM L0 110 EM19 red LED 60...110 VDC w. prot. diode (A1+, A2-)	2-1415392-1
PTM G0 110 EM26 green LED 60...110 VDC w. prot diode (A1+, A2-)	1-1415539-7
PTM L0 220 EM27 red LED 110...220 VDC w. prot. diode (A1+, A2-)	1-1415539-4
PTM G0 220 EM28 green LED 110...220 VDC w. prot diode (A1+, A2-)	1-1415539-6
PTM L0 524 EM07 red LED 6...24 VDC/VAC	6-1415036-1
PTM G0 524 EM11 green LED 6...24 VDC/VAC	3-1415036-1
PTM L0 560 EM14 red LED 24...60 VDC/VAC	1-1415539-3
PTM G0 560 EM30 green LED 24...60 VDC/VAC	1-1415539-5
PTM L0 730 EM06 red LED 110...230 VAC	7-1415036-1
PTM G0 730 EM10 green LED 110...230 VAC	4-1415036-1



F0231-A



F0232-A

Relay Packages

Complete packages consisting of a relay mounted on a socket: see Relay Package RT

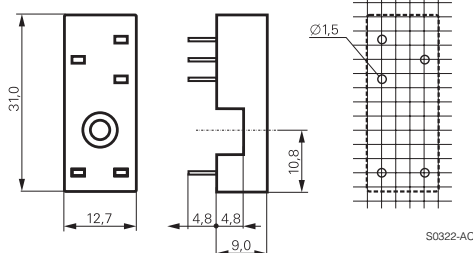
Accessories Industrial Power Relay RT (Continued)

Sockets for PCB mount

RP 78 601 Socket with PCB terminals, pinning 3.5 mm



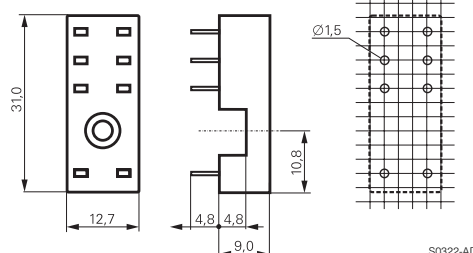
F0116-A



RP 78 602 Socket with PCB terminals, pinning 5 mm



F0117-A



Approvals

UL E135149

Technical data	RP 78 601 / RP 78 602
Rated voltage / max. switching voltage AC	240 / 400 VAC
Rated current	12 A*)
Limiting continuous current	see derating curve
Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm
Material group of insulation parts	IIIa
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	functional
adjacent contact circuits	functional
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
RoHS - Directive 2002/95/EC	compliant
Ambient temperature range	-40...+80°C
Terminals	pcb
Insertion cycles	A (10)
Max. Insertion Force total	100 N
Mounting distance	≥ 0, dense packing
Resistance to soldering heat	270°C / 10 s
Weight	3 g
Packaging unit	100 pcs

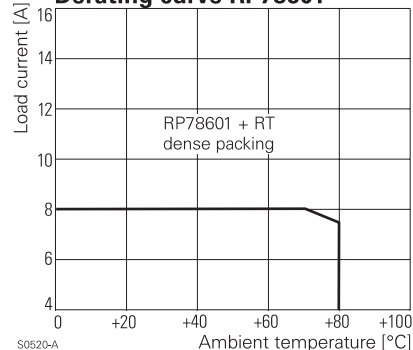
Socket with PCB terminals

Type	Part Number
RP 78 601 Socket with PCB terminals, pinning 3.5 mm	8-1393234-4
RP 78 602 Socket with PCB terminals, pinning 5 mm	8-1393234-5

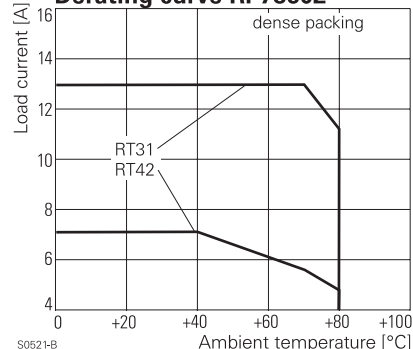
Accessories for RP 78 601, RP 78 602

Type	Part Number
RT 16 041 Plastic retaining clip RT, relay height 15.7 mm	3-1393161-4
RT 28 516 Metal retaining clip RT, relay height 15.7 mm	1419108-7

Derating curve RP78601



Derating curve RP78602



*) For 1 pole relays (16 A) the relay terminals 11-21, 12-22 and 14-24 have to be bridged on the PCB.

Accessories Interface Plug-in Relay XT

- For Interface Plug-in Relay XT, pinning 5 mm
- Retainer clip with ejection function
- Easy replacement of relays on a densely packed DIN rail
- No reduction of protection class or creepage/clearance with plastic retainer
- Simple plug-in indicator- and protection modules
- White snap-on marking tags
- RoHS compliant (Directive 2002/95/EC)



F0290-E

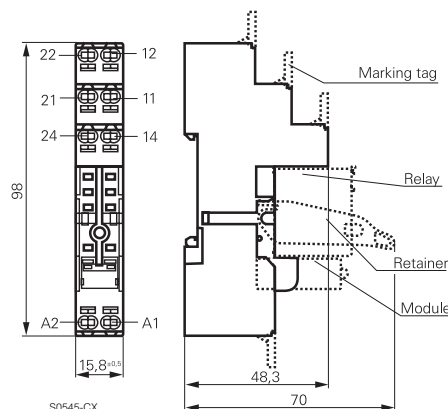
Premium socket with screwless terminals for DIN rail mounting

RT 78 72P Premium socket, logical terminal arrangement

- Screwless Clamps
- Mounting of solid wires without tool
- Double Clamps per terminal
- Jumper links for interconnection
- Open coil circuit for active modules
- Logical terminal arrangement



F0301-B



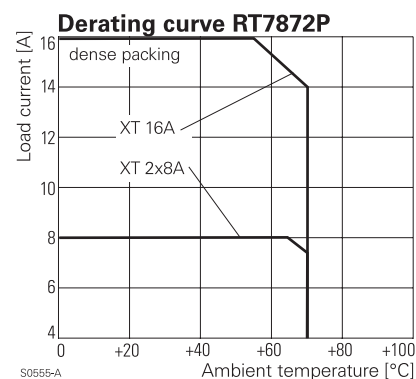
Approvals

VDE REG.-Nr. 6106 in preparation, **UL** E135149

Technical data

Rated voltage / max. switching voltage AC	240 / 400 VAC
Rated current	2 x 8 A, 16 A*)
Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm
Material group of insulation parts	IIIa
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	functional
adjacent contact circuits	functional
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
RoHS - Directive 2002/95/EC	compliant

*) For 1 pole relays (16 A) the relay terminals 11-21, 12-22 and 14-24 have to be bridged.



Accessories Interface Plug-in Relay XT (Continued)

Technical data (Continued)

Ambient temperature range	
for mounting/handling	-20...+70°C
in operation	-40...+70°C
Terminals	screwless
Wire strip length	12 mm
Wire cross section	
solid wire	1 x 0.75 / 1 / 1.5 mm ²
	2 x 0.75 / 1 mm ²
with standard isolation (no oversize isolation)	2 x 1.5 mm ²
stranded wire	
without bootlace crimp	1 x 0.75 / 1 / 1.5 mm ²
	2 x 0.75 / 1 mm ²
without bootlace crimp with standard isolation	2 x 1.5 mm ²
with bootlace crimp	1 x 0.75 / 1 mm ²
	2 x 0.75 mm ²
with bootlace crimp without isolation	1 x 1.5 mm ²
or isolation min 18 mm long	

For stranded wires with braids 0.05 mm or smaller the use of bootlace crimps is recommended. When using stranded wires without bootlace crimp the clamp must be opened during insertion.

Insertion cycles	A (10)
Max. Insertion Force total	100 N
Mounting distance	≥ 0, dense packing
Weight	36 g
Packaging unit	10 pcs

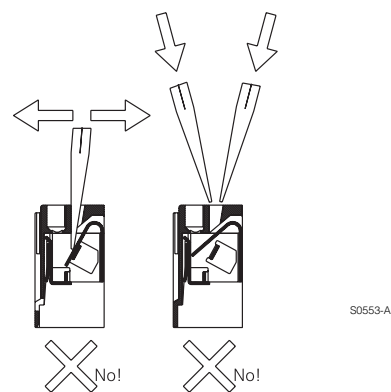
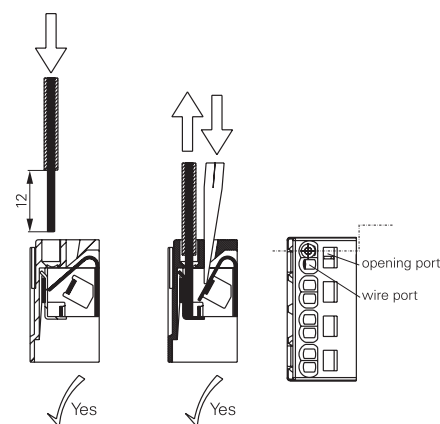
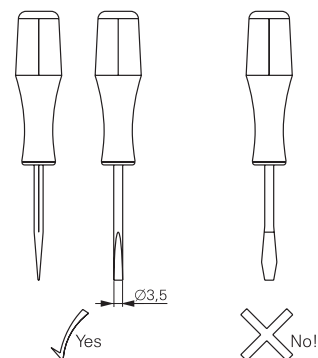
Socket with screwless terminals for DIN rail mounting

Type	Part Number
RT 78 72P Premium socket, logical terminal arrangement	
Socket with screwless terminals, pinning 5 mm for DIN rail mounting	1860200-1

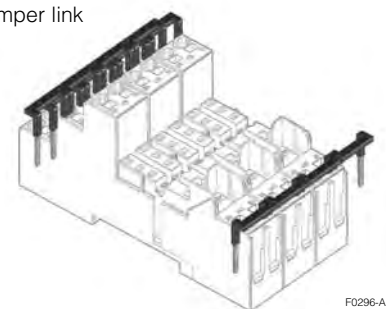
Accessories for RT 78 72P

Type	Part Number
XT 17 017 Plastic retaining clip, relay height 25.5 mm	2022104-1
RT 17 040 Marking tag	2-1415038-1
RT 17 0P1 Jumper link, max load 12 A	1860211-1

How to use, Precautions



Jumper link



Accessories Interface Plug-in Relay XT (Continued)

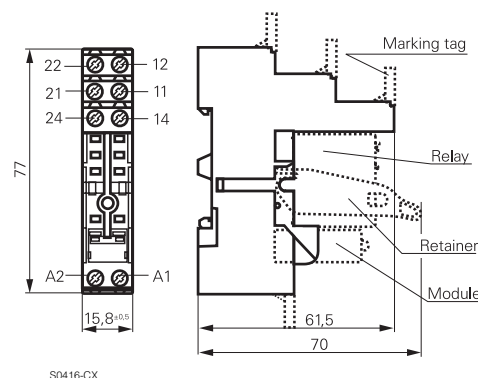
Socket with screw-type terminals for DIN rail mounting

RT 78 726 Socket with screw-type terminals, logical terminal arrangement

- Din-rail socket with logical setup of connections (input/output)
- High quality rising clamp terminals
- Captive combination terminal screws
- Jumper bars for interconnection



F0286-B



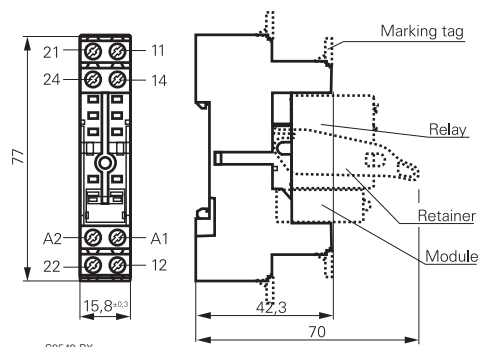
S0416-CX

RT 78 725 Socket with screw-type terminals, conventional terminal arrangement

- Conventional terminal arrangement



F0284-B



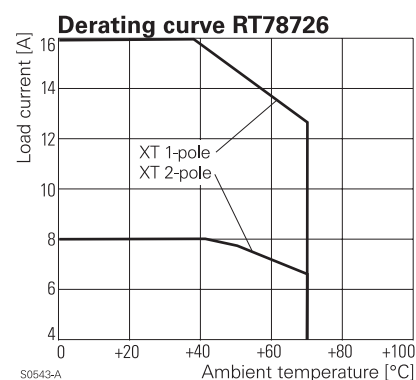
S0540-BX

Approvals

VDE REG.-Nr. 6106 in process, **UL** E135149 in process

*) For 1 pole relays (16 A) the relay terminals 11-21, 12-22 and 14-24 have to be bridged.

Technical data	RT 78 726	RT 78 725
Rated voltage / max. switching voltage AC	240 / 400 VAC	
Rated current	2 x 8 A, 16 A*)	
Dielectric strength coil-contact circuit	5000 V _{rms}	4000 V _{rms}
open contact circuit	1000 V _{rms}	1000 V _{rms}
adjacent contact circuits	2500 V _{rms}	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 8 / 8 mm	≥ 4.7 / 4.7 mm
Material group of insulation parts	IIIa	
Insulation to IEC 60664-1		
Type of insulation coil-contact circuit	reinforced	basic
open contact circuit	functional	
adjacent contact circuits	functional	
Rated insulation voltage	250 V	
Pollution degree	2	
Rated voltage system	230 / 400 V	
Overvoltage category	III	
RoHS - Directive 2002/95/EC	compliant	
Ambient temperature range		
for mounting/handling	-20...+70°C	
in operation	-40...+70°C	



Accessories Interface Plug-in Relay XT (Continued)

Technical data (Continued)	RT 78 726	RT 78 725
Terminals		screw
Terminal screw torque acc. IEC 61984	0.5 Nm	
max.	0.7 Nm	
Wire cross section		
single wire	2 x 2.5 mm ²	
fine wire	2 x 2.5 mm ²	
with bootlace crimp (DIN 46228/1)	2 x 1.5 mm ²	
Insertion cycles	A (10)	
Max. Insertion Force total	120 N	
Mounting distance	≥ 0, dense packing	
Weight	36 g	
Packaging unit	10 pcs	

Socket with screw-type terminals for DIN rail mounting

Type	Part Number
RT 78 726 Socket with screw-type terminals, pinning 5 mm for DIN rail mounting, logical terminal arrangement	6-1415035-1
RT 78 725 Socket with screw-type terminals, pinning 5 mm for DIN rail mounting, conventional terminal arrangement	1860306-1

Accessories for RT 78 725, RT 78 726

Type	Part Number
XT 17 017 Plastic retaining clip, relay height 25.5 mm	2022104-1
RT 17 040 Marking tag	2-1415038-1
RT 17 0R8 Jumper bar, max load 12 A for connection of up to 8 RT sockets	1860517-8

LED- and Protection Modules for RT 78 72P, RT 78 725, RT 78 726

Easy insertion of module into the socket

Wiring in parallel to the coil

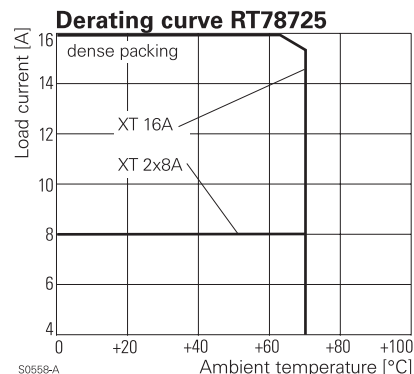
Type	Part Number
PTM T0 0A0 EM09 Protection diode (standard, A1+, A2-)	9-1415036-1
PTM T0 0L0 EM01 Protection diode (A1-, A2+)	1415037-1
PTM U0 524 EM02 RC-network 6...60 VAC	1-1415037-1
PTM U0 730 EM03 RC-network 110...230 VAC	2-1415037-1
PTM V0 524 EM04 Varistor 24 VAC	3-1415037-1
PTM V0 615 EM13 Varistor 115 VAC	6-1415365-1
PTM V0 730 EM05 Varistor 230 VAC	4-1415037-1
PTM R0 730 EM29 Bleeder Resistor 110...230 VAC	1-1415539-2

LED

PTM L0 024 EM18	red LED 6...24 VDC w. prot.diode (std, A1+, A2-)	5-1415036-1
PTM G0 024 EM12	green LED 6...24 VDC w. prot.diode (std, A1+, A2-)	2-1415036-1
PTM L1 024 EM08	red LED 6...24 VDC w. prot. diode (A1-, A2+)	8-1415036-1
PTM L0 060 EM16	red LED 24...60 VDC w. prot.diode (std, A1+, A2-)	5-1415539-3
PTM G0 060 EM25	green LED 24...60 VDC w. prot.diode (std, A1+, A2-)	7-1415539-7
PTM L0 110 EM19	red LED 60...110 VDC w. prot. diode (A1+, A2-)	2-1415392-1
PTM G0 110 EM26	green LED 60...110 VDC w. prot diode (A1+, A2-)	1-1415539-7
PTM L0 220 EM27	red LED 110...220 VDC w. prot. diode (A1+, A2-)	1-1415539-4
PTM G0 220 EM28	green LED 110...220 VDC w. prot diode (A1+, A2-)	1-1415539-6
PTM L0 524 EM07	red LED 6...24 VDC/VAC	6-1415036-1
PTM G0 524 EM11	green LED 6...24 VDC/VAC	3-1415036-1
PTM L0 560 EM14	red LED 24...60 VDC/VAC	1-1415539-3
PTM G0 560 EM30	green LED 24...60 VDC/VAC	1-1415539-5
PTM L0 730 EM06	red LED 110...230 VAC	7-1415036-1
PTM G0 730 EM10	green LED 110...230 VAC	4-1415036-1

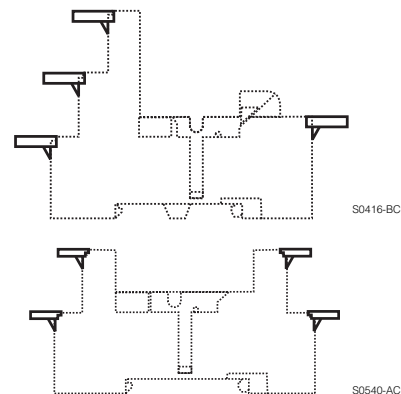
Relay Packages

Complete packages consisting of a relay mounted on a socket: see Relay Package XT

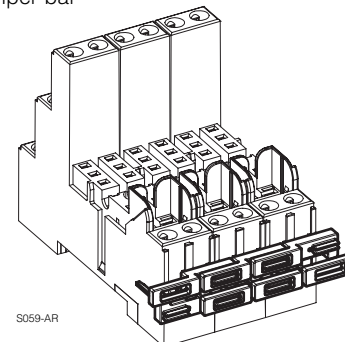


Marking tags

- White marking area 15.5 x 6 mm
- Snaps on socket in up to 4 positions



Jumper bar



Accessories Miniature Relay PT

- Easy replacement of relays on a densely packed DIN rail
- No reduction of protection class or creepage/clearance with plastic retainer
- Plug-in indicator- and protection modules
- Retainer clip with ejection function for relays of 29 mm height
- DIN-rail sockets and accessories: RoHS compliant (Directive 2002/95/EC)



F0263-F

Premium socket with screwless terminals for DIN rail mounting

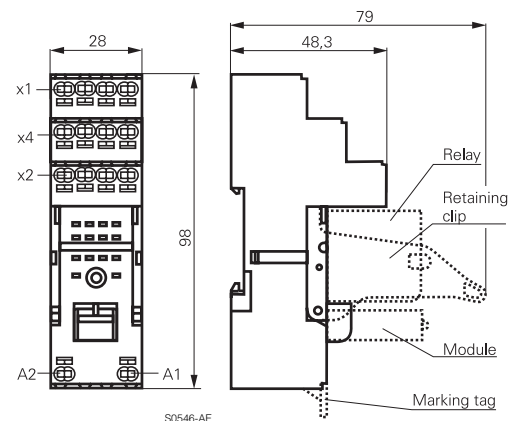
PT 78 74P Premium socket, logical terminal arrangement, 4 pole

PT 78 72P Premium socket, logical terminal arrangement, 2 pole

- PT 2/4 pole 6/12 A
- Screwless Clamps
- Mounting of solid wires without tool
- Double Clamps per terminal
- Jumper links for interconnection
- Open coil circuit for active modules
- Logical terminal arrangement



F0300-B

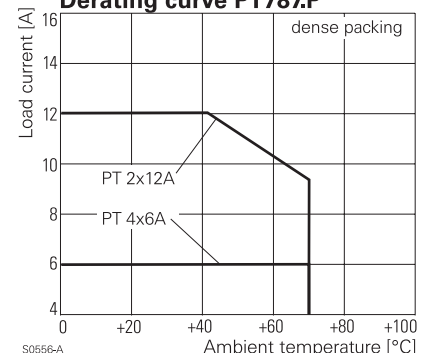


Approvals

VDE REG.-Nr. 115719, c **UL** us E135149

Technical data	2-pole	4-pole
Rated voltage / max. switching voltage AC	240 / 400 VAC	240 VAC
Rated current	12 A	6 A
Limiting continuous current	see derating curve	
Dielectric strength coil-contact circuit	2500 V _{rms}	2500 V _{rms}
open contact circuit	1200 V _{rms}	1200 V _{rms}
adjacent contact circuits	2500 V _{rms}	2000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4/4 mm	≥ 4/4 mm
adjacent contact circuits	≥ 3.5/9.5 mm	≥ 1.8/3.5 mm
Material group of insulation parts	IIla	
Insulation to IEC 60664-1		
Type of insulation coil-contact circuit	basic	
open contact circuit	functional	
adjacent contact circuits	basic	
Rated insulation voltage	250 V	
Pollution degree	2 ¹⁾	
Rated voltage system	230 / 400 V	
Overvoltage category	III	

Derating curve PT787.P



¹⁾ with inserted relay pollution degree 1 in region of contact pins / socket inlets.

Accessories Miniature Relay PT (Continued)

Technical data (Continued)	2-pole	4-pole
RoHS - Directive 2002/95/EC	compliant	
Ambient temperature range		
for mounting/handling	-25...+70°C	
in operation	-40...+70°C	
Terminals	screwless	
Wire strip length	12 mm	
Wire cross section		
solid wire	1 x 0.75/1.5 mm ²	
	2 x 0.75/1 mm ²	
with standard isolation (no oversize isolation)	2 x 1.5 mm ²	
stranded wire		
without bootlace crimp	1 x 0.75/1.5 mm ²	
	2 x 0.75/1 mm ²	
without bootlace crimp with standard isolation	2 x 1.5 mm ²	
with bootlace crimp	1 x 0.75/1 mm ²	
	2 x 0.75 mm ²	
with bootlace crimp without isolation	1 x 1.5 mm ²	
or isolation min 18 mm long		
For stranded wires with braids 0.05 mm or smaller the use of bootlace crimps is recommended		
When using stranded wires without bootlace crimp the clamp must be opened during insertion		
Insertion cycles	A (10)	
Max. Insertion Force total	100 N	
Mounting distance	≥ 0, dense packing	
Weight	44 g	60 g
Packaging unit	10 pcs	

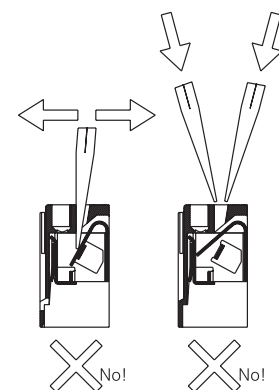
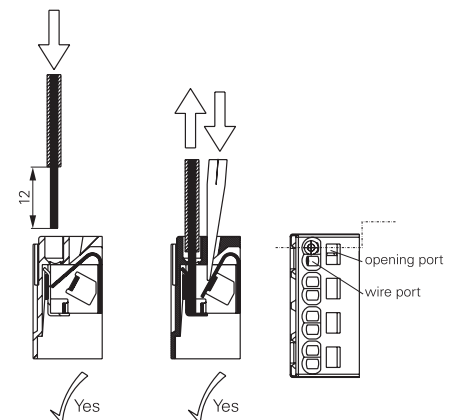
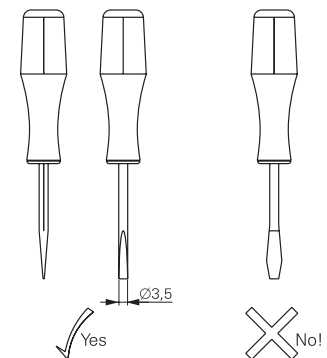
Socket with screwless terminals for DIN rail mounting

Type		Part Number
PT 7872P	Premium socket, logical terminal arrangement	
	Socket with screwless terminals 2 pole	1860100-1
PT 7874P	Premium socket, logical terminal arrangement	
	Socket with screwless terminals 4 pole	1860000-1

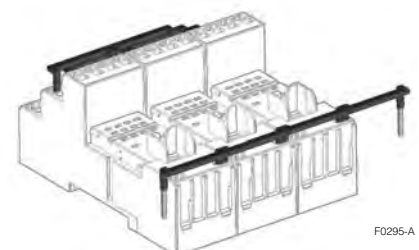
Accessories for PT 78 72P, PT 78 74P

Type		Part Number
PT 17 021	Plastic retaining clip, relay height 29 mm	2-1415526-1
PT 28 800	Metal retaining clip PT, relay height 29 mm	5-1419111-9
PT 17 040	Marking tag	6-1415037-1
PT 17 0P1	Jumper link, max load 12 A	1860214-1

How to use, Precautions



Jumper link



When connecting more than 2 poles with staggered jumper bars the lower bars need to be stripped and shortened to an appropriate length to enable correct fitting.

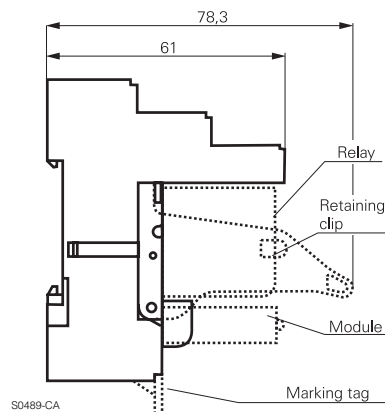
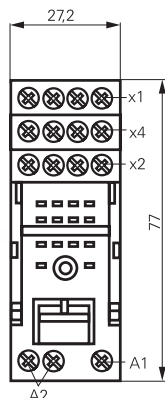
Accessories Miniature Relay PT (Continued)

PT DIN-rail socket with screw type terminals PT 78 722 / PT 78 742

- Socket with logical arrangement of control/load terminals
- High quality rising clamp terminals
- Captive combination terminal screws
- Second A2 for easier looping
- Jumper bars for interconnection



F0264-C

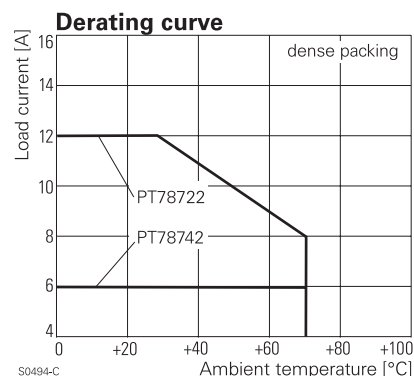


S0489-CA

Approvals

VDE REG.-Nr. 115719, c RU us E135149

Technical data	2-pole	4-pole
Rated voltage / max. switching voltage AC	240 / 400 VAC	240 VAC
Rated current	12 A	6 A
Limiting continuous current	see derating curve	
Dielectric strength coil-contact circuit	2500 V _{rms}	2500 V _{rms}
open contact circuit	1200 V _{rms}	1200 V _{rms}
adjacent contact circuits	2500 V _{rms}	2000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4 / 4 mm	≥ 4 / 4 mm
adjacent contact circuits	≥ 3.5 / 9.5 mm	≥ 1.8 / 3.5 mm
Material group of insulation parts	IIIa	
Insulation to IEC 60664-1		
Type of insulation coil-contact circuit	basic	
open contact circuit	functional	
adjacent contact circuits	basic	
Rated insulation voltage	250 V	
Pollution degree	2 ¹⁾	
Rated voltage system	230 / 400 V	
Overvoltage category	III	
RoHS - Directive 2002/95/EC	compliant	
Ambient temperature range	-40...+70°C	
Terminals	screw	
Terminal screw torque acc. IEC 61984	0.5 Nm	
max.	0.7 Nm	
Wire cross section		
single wire	2 x 2.5 mm ²	
fine wire	2 x 2.5 mm ²	
with bootlace crimp (DIN 46228/1)	2 x 1.5 mm ²	
Insertion cycles	A (10)	
Max. Insertion Force total	100 N	
Mounting distance	≥ 0, dense packing	
Weight	44 g	60 g
Packaging unit	10 pcs	



¹⁾ with inserted relay pollution degree 1 in region of contact pins / socket inlets.

Accessories Miniature Relay PT (Continued)

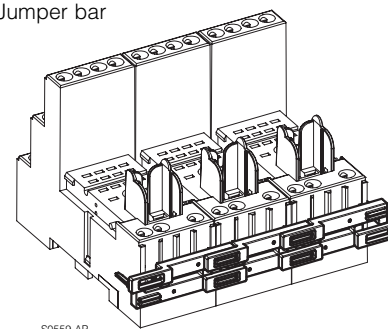
DIN-rail socket with screw type terminals, In/Out arrangement

Type		Part Number
PT 78 722	DIN-rail socket with screw type terminals, In/Out arrangement 2 pole	1415526-1
PT 78 742	DIN-rail socket with screw type terminals, In/Out arrangement 4 pole	1-1415526-1

Accessories for PT 78 722, PT 78 742

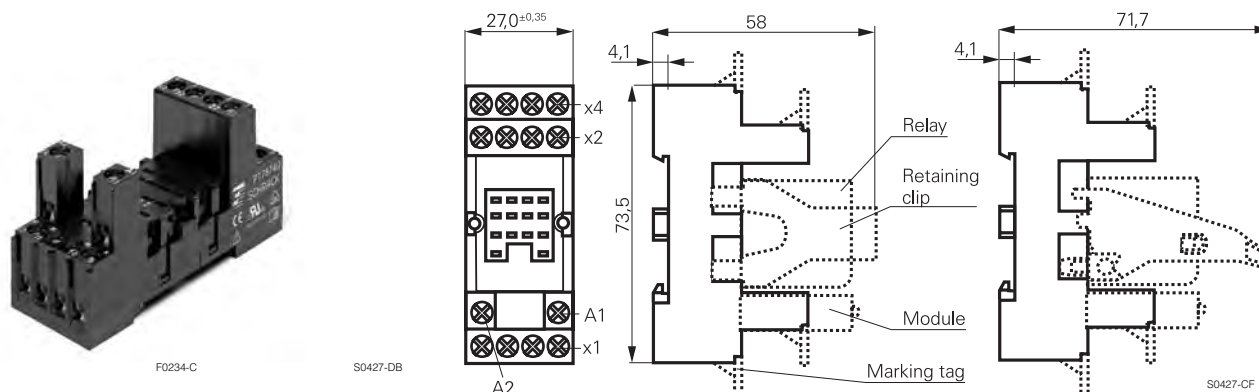
Type		Part Number
PT 17 021	Plastic retaining clip, relay height 29 mm	2-1415526-1
PT 28 800	Metal retaining clip PT, relay height 29 mm	5-1419111-9
PT 17 040	Marking tag	6-1415037-1
PT 17 0R6	Jumper bar, max load 12 A for connection of up to 6 PT sockets	1860517-5

Jumper bar



S0559-AP

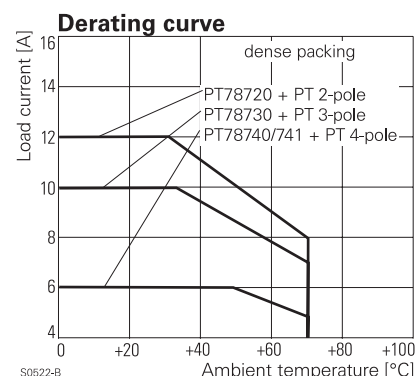
PT DIN-rail socket with screw type terminals PT 78 720/730/740/741



Approvals

VDE REG.-Nr. 115719, c **UL** us E135149

Technical data	2-pole	3-pole	4-pole
Rated voltage / max. switching voltage AC		240 / 400 VAC	
Rated current	12 A	10 A	6 A
Limiting continuous current	see derating curve		
Dielectric strength coil-contact circuit	2500 V _{rms}	2500 V _{rms}	2500 V _{rms}
open contact circuit	1200 V _{rms}	1200 V _{rms}	1200 V _{rms}
adjacent contact circuits	2500 V _{rms}	2500 V _{rms}	2000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4/4 mm	≥ 4/4 mm	≥ 4/4 mm
adjacent cont. circuits	≥ 3.5/9.5 mm	≥ 2.6/3.5 mm	≥ 1.8/3.5 mm
Material group of insulation parts	IIla		
Insulation to IEC 60664-1			
Type of insulation coil-contact circuit	basic	basic	basic
open contact circuit	functional	functional	functional
adjacent contact circuits	basic	basic	functional
Rated insulation voltage		250 V	
Pollution degree		2	
Rated voltage system		230 / 400 V	
Overvoltage category		III	
RoHS - Directive 2002/95/EC	compliant		
Ambient temperature range	-40...+70°C		
Terminals	screw		
Terminal screw torque acc. IEC 61984	0.5 Nm		
max.	0.7 Nm		
Wire cross section			
single wire	2 x 2.5 mm ²		
fine wire	2 x 2.5 mm ²		
with bootlace crimp (DIN 46228/1)	2 x 1.5 mm ²		



Accessories Miniature Relay PT (Continued)

Technical data (Continued)	2-pole	3-pole	4-pole
Insertion cycles		A (10)	
Max. Insertion Force total		100 N	
Mounting distance		≥ 0, dense packing	
Weight	41 g	48 g	55 g
Packaging unit		10 pcs	

DIN-rail socket with screw type terminals

Type		Part Number
PT 78 720	DIN-rail socket with screw type terminals, 2 pole	6-1415034-1
PT 78 730	DIN-rail socket with screw type terminals, 3 pole	9-1415071-1
PT 78 740	DIN-rail socket with screw type terminals, 4 pole	4-1415033-1
PT 78 741	DIN-rail socket with screw type terminals, 4 pole package with protection diode module A1+, A2-	5-1415034-1

Accessories for PT 78 720, PT 78 730, PT 78 740, PT 78 741

Type		Part Number
PT 17 016	Plastic retaining clip PT, relay height 29 mm	5-1415037-1
PT 17 024	Plastic retaining clip PT with ejecting function, relay height 29 mm	1816124-1
PT 28 800	Metal retaining clip PT, relay height 29 mm	5-1419111-9
PT 17 040	Marking tag	6-1415037-1
PT 17 0R6	Jumper bar, max load 12 A for connection of up to 6 PT sockets	1860517-5

LED- and Protection Modules for PT 78 72P, PT 78 74P, PT 78 722, PT 78 742, PT 78 720, PT 78 730, PT 78 740

Easy insertion of module into the socket
Wiring in parallel to the coil

Type		Part Number
PTM T0 0A0	EM09 Protection diode (standard, A1+, A2-)	9-1415036-1
PTM T0 0L0	EM01 Protection diode (A1-, A2+)	1415037-1
PTM U0 524	EM02 RC-network 6...60 VAC	1-1415037-1
PTM U0 730	EM03 RC-network 110...230 VAC	2-1415037-1
PTM V0 524	EM04 Varistor 24 VAC	3-1415037-1
PTM V0 615	EM13 Varistor 115 VAC	6-1415365-1
PTM V0 730	EM05 Varistor 230 VAC	4-1415037-1
PTM R0 730	EM29 Bleeder Resistor 110...230 VAC	1-1415539-2

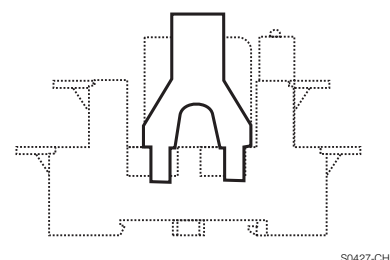
LED

PTM L0 024	EM18	red LED 6...24 VDC w. prot.diode (std, A1+, A2-)	5-1415036-1
PTM G0 024	EM12	green LED 6...24 VDC w. prot.diode (std, A1+, A2-)	2-1415036-1
PTM L1 024	EM08	red LED 6...24 VDC w. prot. diode (A1-, A2+)	8-1415036-1
PTM L0 060	EM16	red LED 24...60 VDC w. prot.diode (std, A1+, A2-)	5-1415539-3
PTM G0 060	EM25	green LED 24...60 VDC w. prot.diode (std, A1+, A2-)	7-1415539-7
PTM L0 110	EM19	red LED 60...110 VDC w. prot. diode (A1+, A2-)	2-1415392-1
PTM G0 110	EM26	green LED 60...110 VDC w. prot diode (A1+, A2-)	1-1415539-7
PTM L0 220	EM27	red LED 110...220 VDC w. prot. diode (A1+, A2-)	1-1415539-4
PTM G0 220	EM28	green LED 110...220 VDC w. prot diode (A1+, A2-)	1-1415539-6
PTM L0 524	EM07	red LED 6...24 VDC/VAC	6-1415036-1
PTM G0 524	EM11	green LED 6...24 VDC/VAC	3-1415036-1
PTM L0 560	EM14	red LED 24...60 VDC/VAC	1-1415539-3
PTM G0 560	EM30	green LED 24...60 VDC/VAC	1-1415539-5
PTM L0 730	EM06	red LED 110...230 VAC	7-1415036-1
PTM G0 730	EM10	green LED 110...230 VAC	4-1415036-1

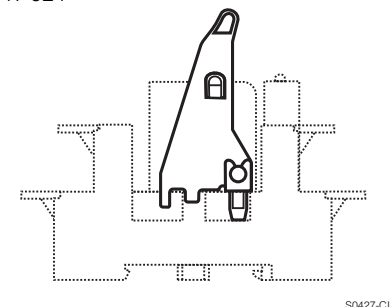
Relay Packages

Complete packages consisting of a relay mounted on a socket: see Relay Package PT

PT17 016



PT17 024



Marking tags

- White marking area 28 x 6 mm
- Snaps on socket in up to 4 positions



F0231-A



F0232-A

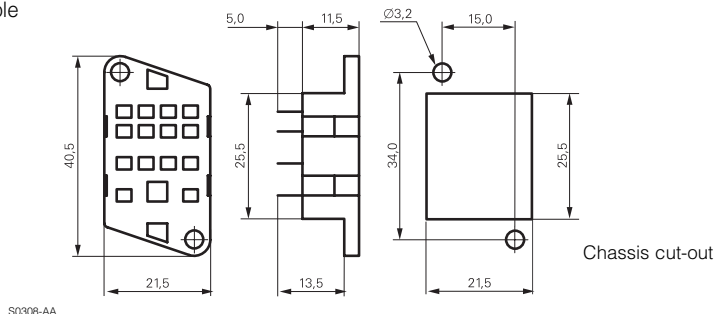
Accessories Miniature Relay PT (Continued)

PT sockets for PCB mount and with solder terminals

PT 78 600, socket with solder terminals, 4-pole



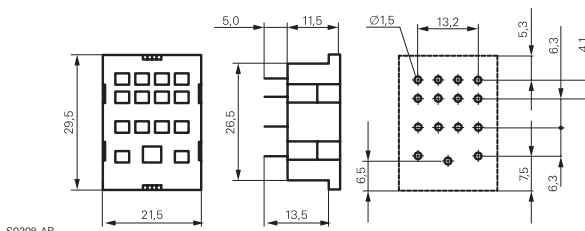
F0132-A



PT 78 602, PT 78 603, PT 78 604, socket with PCB terminals, 2-, 3- and 4-pole



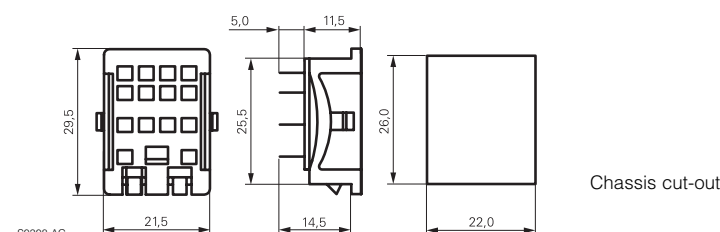
F0133-A



PT 78 601, socket with solder terminals, 4-pole



F0134-A



Technical data	2-pole	3-pole	4-pole
Rated voltage / max. switching voltage AC	240 / 400 VAC		
Rated current	12 A	10 A	6 A
Dielectric strength coil-contact circuit	2500 V _{rms}	2500 V _{rms}	2500 V _{rms}
open contact circuit	1200 V _{rms}	1200 V _{rms}	1200 V _{rms}
adjacent contact circuits	2500 V _{rms}	2500 V _{rms}	2000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4/4 mm	≥ 4/4 mm	≥ 4/4 mm
adjacent cont. circuits	≥ 3.5/9.5 mm	≥ 2.6/3.5 mm	≥ 1.8/3.5 mm
Material group of insulation parts	IIIa		
Insulation to IEC 60664-1			
Type of insulation coil-contact circuit	basic	basic	basic
open contact circuit	functional	functional	functional
adjacent contact circuits	basic	basic	functional
Rated insulation voltage	250 V		
Pollution degree	2		
Rated voltage system	230 / 400 V		
Overvoltage category	III		

Accessories Miniature Relay PT (Continued)

Technical data (Continued)	2-pole	3-pole	4-pole
RoHS - Directive 2002/95/EC	compliant as per product date code 0517		
Ambient temperature range	-40...+80°C		
Terminals	pcb, solder terminals		
Insertion cycles	A (10)		
Max. Insertion Force total	100 N		
Mounting distance	≥ 0, dense packing		
Resistance to soldering heat	270°C / 10 s		
Weight	6 g	7 g	7 g
Packaging unit	25 pcs		

PT sockets

Type		Part Number
PT 78 600	Socket with solder terminals, 4 pole	4-1415043-1
PT 78 602	Socket with PCB terminals, 2 pole	5-1415043-1
PT 78 603	Socket with PCB terminals, 3 pole	1393162-5
PT 78 604	Socket with PCB terminals, 4 pole	3-1415043-1
PT 78 601	Socket with solder terminals, 4 pole	6-1415043-1

Accessories for PT 78 600, PT 78 601, PT 78 602, PT 78 603, PT 78 604

Type		Part Number
PT 28 802	Metal retaining clip PT, relay height 29 mm	1393162-1

Accessories Multimode Relay MT

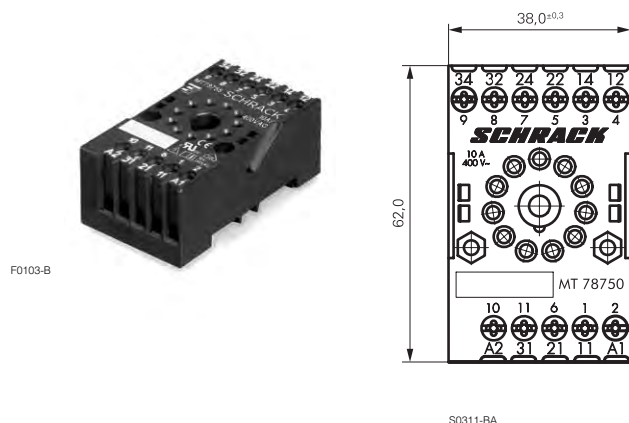
- Snap-on mounting on DIN-rail
- Screw mounting
- Pozidrive screws with rising clamp terminals
- Logical layout of input/output connections
- White marking area
- Din-rail sockets and accessories: RoHS compliant (Directive 2002/95/EC)



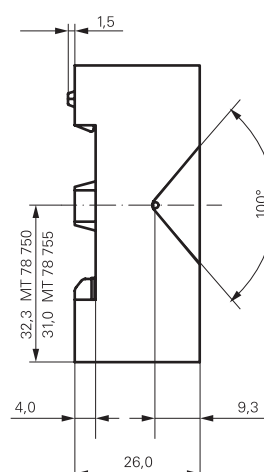
F0235-B

MT DIN-rail sockets with screw-type terminals

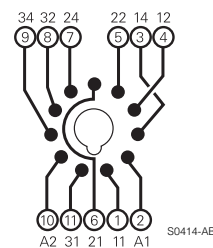
MT 78 750 MT3 DIN-rail socket with screw-type terminals, 11-pin
MT 78 755 MT2 DIN rail socket with screw type terminals, 8-pin



S0311-BA

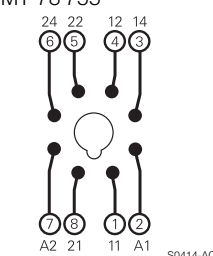


MT 78 750



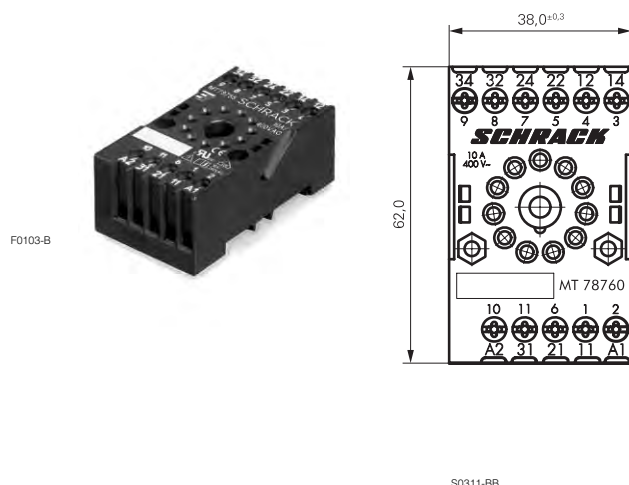
S0414-AB

MT 78 755

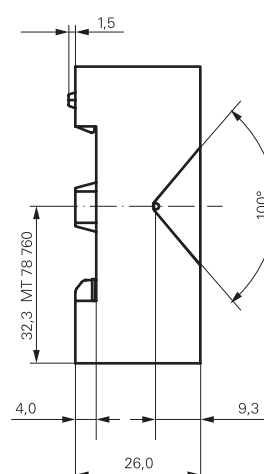


S0414-AC

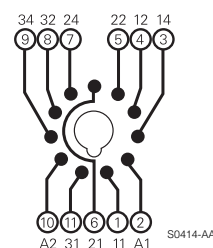
MT 78 760 MT3 DIN-rail socket with screw-type terminals, 11-pin



S0311-BB



MT 78 760



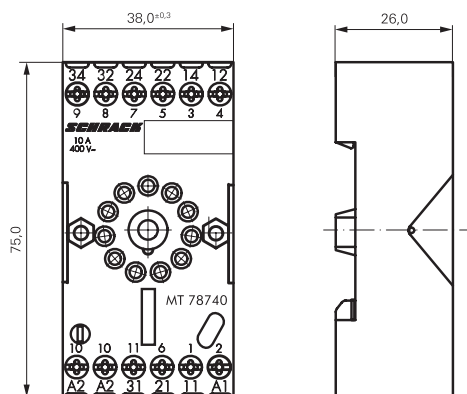
S0414-AA

Accessories Multimode Relay MT (Continued)

MT 78 740 MT3 DIN-rail socket with screw-type terminals, 11-pin
MT 78 745 MT2 DIN rail socket with screw type terminals, 8-pin



F0200-B



Socket system MT 78 740 and MT 78 745

- 8/11 pin socket for MT2 / MT3
- Double A2 screw for simple further connection of coil supply

S0366-A

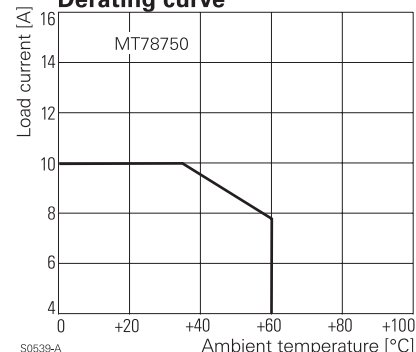
Approvals

VDE REG.-Nr. 6182, c **UL** US E135149

Technical data MT 78 750/755/760/740/745

Rated voltage / max. switching voltage AC	240 / 400 VAC
Rated current	10 A
Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 2.8/4 mm
Material group of insulation parts	IIIa
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	basic
open contact circuit	functional
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
RoHS - Directive 2002/95/EC	
DIN-rail sockets and retainers:	compliant
Ambient temperature range	-20...+80°C
Terminals	screw
Terminal screw torque acc. IEC 61984	0.5 Nm
max.	0.7 Nm
Wire cross section	
single wire	2 x 2.5 mm ²
fine wire	2 x 2.5 mm ²
with bootlace crimp (DIN 46228/1)	2 x 1.5 mm ²
Insertion cycles	A (10)
Max. Insertion Force total	100 N
Mounting distance	≥ 0, dense packing
Weight MT 78 750/760	54 g
MT 78 755	47 g
MT 78 740	62 g
MT 78 745	56 g
Packaging unit	25 pcs

Derating curve



S0539-A

DIN-rail sockets with screw-type terminals

Type	Part Number
MT 78 750 DIN-rail socket with screw-type terminals 11-pin	1415035-1
MT 78 755 DIN-rail socket with screw-type terminals 8-pin	3-1415035-1
MT 78 760 DIN-rail socket with screw-type terminals 11-pin	8-1415034-1
MT78 740 DIN-rail socket with screw-type terminals, 11-pin	8-1393163-3
MT78 745 DIN-rail socket with screw-type terminals, 8-pin	8-1393163-4

Accessories Multimode Relay MT (Continued)

Accessories for MT 78 750, MT 78 755, MT 78 760, MT 78 740, MT 78 745

Type	Part Number
MT 28 800 Metal retaining clip MT	8-1393163-0

LED and Protection modules for MT 78 740, MT 78 745

Type	Part Number
MTM T0 0A0 Protection diode 1N4007 (A1+, A2-)	7-1393163-6
MTM U0 524 RC-network 6...24 VAC	7-1393163-7
MTM U0 730 RC-network 110...230 VAC	7-1393163-8

LED

MTM L0 024 red LED 24 VAC / VDC	7-1393163-4
MTM G0 024 green LED 24 VAC / VDC	6-1419149-6
MTM L0 730 red LED 110...230 VAC / VDC	7-1393163-5
MTM G0 730 green LED 110...230 VAC / VDC	6-1419149-7



F0201-B



F0202-B

Function modules for MT 78 740, MT 78 745

Type	Part Number
MTM Z0 W00 Delay ON	7-1393163-9
MTM F0 W00 Multifunction	7-1393163-3

Technical data - Function modules

Nominal voltage	24...240 VDC / VAC
Mains frequency	48...63 Hz
Precision of time setting	+ 0,5 %
Readiness for repetition	≤ 0,5 % or 5 ms
Influence of temperature	≤ 0,1 %/°C
Time range switchable	0,05s...240h in 8 ranges
RoHS - Directive 2002/95/EC	compliant as per product date code 0515
Ambient temperature	-25...+55 °C



F0203-B



F0204-B

Function modules for MT 78 740, MT 78 745

Function

Delay ON



Delay OFF



single shot leading edge



single shot trailing edge



Delay ON

triggerd by signal contact



single shot



flasher starting with pause



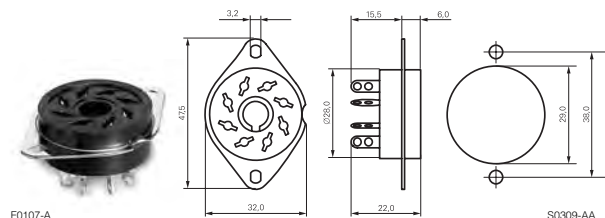
flasher starting with pulse



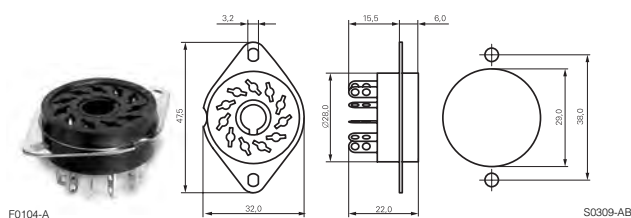
Accessories Multimode Relay MT (Continued)

MT sockets for PCB and with solder terminals MT 78 602/603/612/613

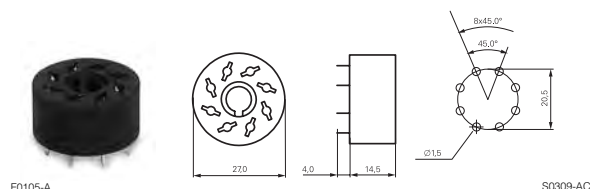
MT 78 612 Socket 8-pin with solder terminals



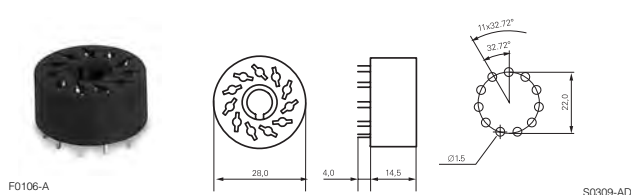
MT 78 613 Socket 11-pin with solder terminals



MT 78 602 Socket 8-pin with PCB terminals



MT 78 603 Socket 11-pin with PCB terminals



Technical data		MT 78 602/603/612/613
Rated voltage / max. switching voltage AC		240 / 400 VAC
Rated current		10 A
Dielectric strength coil-contact circuit		2500 V _{rms}
open contact circuit		1500 V _{rms}
adjacent contact circuits		2500 V _{rms}
Clearance / creepage coil-contact circuit		≥ 2.8/4 mm
Material group of insulation parts		IIIa
Insulation to IEC 60664-1		
Type of insulation coil-contact circuit		basic
open contact circuit		functional
adjacent contact circuits		basic
Rated insulation voltage		250
Pollution degree		2
Rated voltage system		230 / 400
Overvoltage category		III
RoHS - Directive 2002/95/EC		
MT 78 602, MT 78 603		compliant as per product date code 0517
MT 78 612, MT 78 613		compliant as per product date code 0543
Ambient temperature range		-40...+70°C
Terminals		pcb, solder terminals
Insertion cycles		A (10)
Max. Insertion Force total		100 N
Mounting distance		≥ 0, dense packing
Resistance to soldering heat		270°C / 10 s
Weight		7 g
Packaging unit		25 pcs

Sockets with solder and PCB terminals

Type	Part Number
MT 78 612 Socket 8-pin with solder terminals	7-1415043-1
MT 78 613 Socket 11-pin with solder terminals	8-1415043-1
MT 78 602 Socket 8-pin with PCB terminals	9-1415043-1
MT 78 603 Socket 11-pin with PCB terminals	1415044-1

Accessories Power Relay RM

- For RM 2 / 3 pole, 10 / 16 A
- RoHS compliant (Directive 2002/95/EC)



F0237-B

RM Socket with screw-type terminals RM 78 705

Approvals

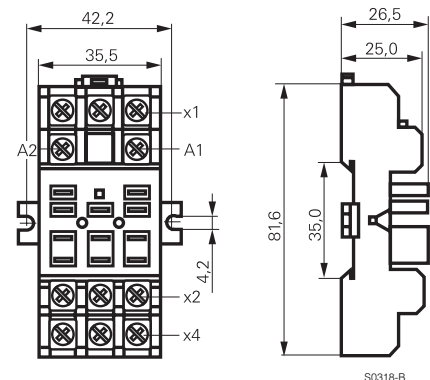
 REG.-Nr. 5333 ÜG-2 (RM 78 704), REG.-Nr. 4003144 in preparation

Technical data

Rated voltage / max. switching voltage AC	250 VAC
Rated current	16 A
Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4.0/14.9 mm
Material group of insulation parts	IIIa
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	basic
open contact circuit	functional
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III
RoHS - Directive 2002/95/EC	
RM 78 704	compliant as per product date code 0312
RM 78 705	compliant as per product date code 0522
Ambient temperature range	-40...+40°C
Terminals	screw
Terminal screw torque acc. IEC 61984	0.8 Nm
max.	1.2 Nm
Wire cross section	
single wire	2 x 2.5 mm ²
fine wire	2 x 2.5 mm ²
with bootlace crimp (DIN 46228/1)	2 x 1.5 mm ²
Insertion cycles	A (10)
Max. Insertion Force total	100 N
Mounting distance	≥ 0, dense packing
Weight	66 g
Packaging unit	100 pcs



F0114-B



S0318-B

Socket with screw-type terminals

Type	Part Number
RM 78 705 Socket with screw-type terminals	2-1393844-5

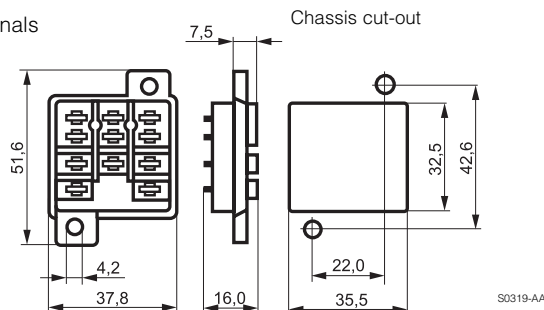
Accessories Power Relay RM (Continued)

RM Sockets for PCB and with solder terminals RM 78 700/701/702

RM 78 700 Socket with quick connect terminals



F0110-A

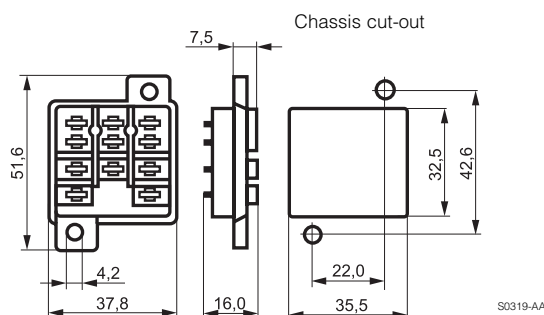


S0319-AA

RM 78 701 Socket with solder terminals



F0111-A

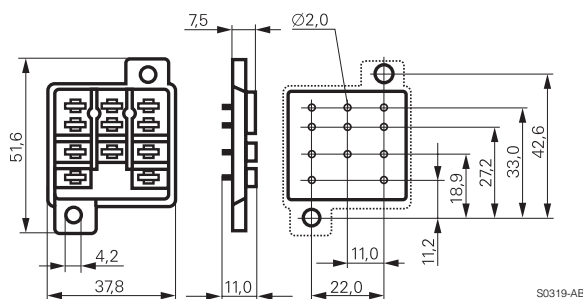


S0319-AA

RM 78 702 Socket with PCB terminals



F0112-A



S0319-AB

Approvals

UL E135149

Technical data

RM 78 700/701/702

Rated current	10 A
Rated voltage / max. switching voltage AC	240 / 400 VAC
Dielectric strength coil-contact circuit	2500 V _{rms}
open contact circuit	1500 V _{rms}
adjacent contact circuits	2500 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4.0/6.3 mm
Material group of insulation parts	IIIa
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	basic
open contact circuit	functional
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	2
Rated voltage system	230 / 400 V
Overvoltage category	III

Accessories Power Relay RM (Continued)

Technical data (Continued)		RM 78 700/701/702
RoHS - Directive 2002/95/EC		compliant
Ambient temperature range		-40...+70°C
Terminals		pcb, solder terminals
Insertion cycles		A (10)
Max. Insertion Force total		100 N
Mounting distance		≥ 0, dense packing
Resistance to soldering heat		270°C / 10 s
Weight		9 g
Packaging unit		25 pcs

Sockets		
Type		Part Number
RM 78 700	Socket with quick connect terminals	1419118-6
RM 78 701	Socket with solder terminals	4-1393149-9
RM 78 702	Socket with PCB terminals	2-1393844-3

Accessories for RM 78 700, RM 78 701, RM 78 702		
Type		Part Number
RM 28 802	Metal retaining clip RM	1419118-5

Relay Package SNR

- Relay package consisting of DIN-rail socket and relay
- 1 CO with 6 A rated load
- Module width only 6.2 mm
- Reduced system width for increased packing density on the DIN rail
- RoHS compliant (Directive 2002/95/EC)



F0260-BS

Approvals

Relay: REG.-Nr. 6666, E214024

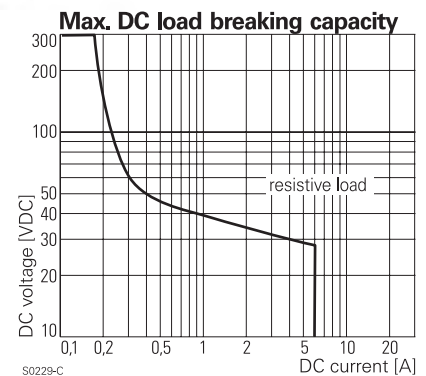
Socket: REG.-Nr. 6666, 224918
Technical data of approved types on request

Contact data

Contact configuration	1 CO
Contact set	single contact
Type of interruption	micro disconnection
Rated voltage / max. switching voltage AC	240 / 400 VAC
Rated current	6 A
Maximum breaking capacity AC	1500 VA
Limiting making capacity, max 4 s, duty factor 10%	10 A
Contact material	AgSnO ₂ AgSnO ₂ gold plated
Minimum contact load	100mA, 12V 50mW
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / release time	max 12 / 5 ms
Bounce time NO / NC contact	max 3 / 8 ms

Contact ratings

For contact ratings see datasheet Slim Interface Relay SNR



Input data

Rated input voltage DC	12, 24 VDC, 115, 230 VAC/VDC*)
Operative range to IEC 61810	2
*) Version 115, 230 VAC/VDC equipped with 60 VDC relay	

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
LB2	12	8.4	0.6	848 ± 10%	184
LC4	24	16.8	1.2	3390 ± 10%	220

Coil versions, AC-coil 50Hz

Coil code	Rated voltage VAC	Operate voltage 50 Hz VAC	Release voltage 50 Hz VAC	Coil resistance Ohm	Rated coil power 50 Hz mVA
SM5	115	82.0	9.0	not applicable	403
TP0	230	160.0	15.0	not applicable	736

Other coil voltages on request

Relay Package SNR (Continued)

Insulation

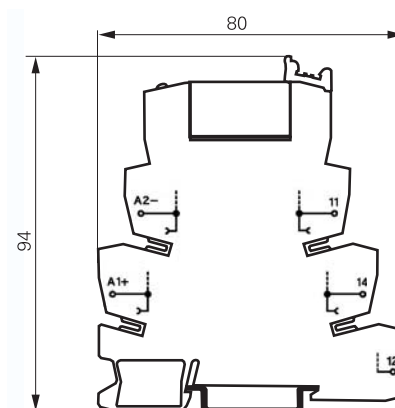
Dielectric strength coil-contact circuit	4000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 6 / 8 mm
Material group of insulation parts	IIIa
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree	3 2
Rated voltage system	240 V 230 / 400 V
Overvoltage category	III

Other data

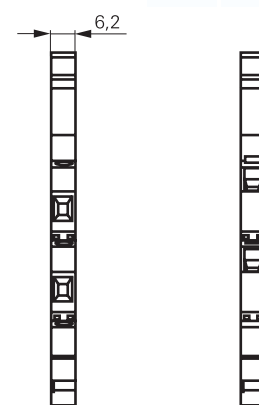
Mechanical endurance	10x10 ⁶ cycles
Material	RoHS - Directive 2002/95/EC compliant as per product date code 0404
Environment	Ambient temperature range -40...+55°C
Processing	
Terminals	screw / cage clamp
Terminal screw torque acc. IEC 61984	0.5 Nm
max. 0.6 Nm	
Wire cross section	
single wire	0.14...2.5 mm ²
fine wire	0.14...2.5 mm ²
with bootlace crimp (DIN 46228/1)	0.14...2.5 mm ²
Insertion cycles	A (10)
Max. Insertion Force total	100 N
Mounting distance	≥ 0 mm, dense packing of sockets
Weight	32 g
Packaging unit	10 pcs

Accessories

For accessories see datasheet Accessories Slim Interface Relay SNR



S0487-BA



S0487-AA

Version with
screw terminals

Version with
cage clamp terminals

Product key

Typical product key

ST **4P** **3** **TP0**

Type

ST Relay Package SNR

Version

3P Relay set, SNR 1-pole CO (1 form C), 6 A, screw terminals
4P Relay set, SNR 1-pole CO (1 form C), 6 A, cage clamp terminals

Contact material

2 AgSnO₂, gold plated **3** AgSnO₂

Coil

LB2 12 VDC **LC4** 24 VDC
SM5 115 VDC/VAC **TP0** 230 VDC/VAC

Other types on request

Product key	Socket	Terminals	Relay	Contacts	Coil	Part number
ST3P2LC4	ST3FLC4	screw	V23092-S1024-A201	AgSnO ₂ gold pl.	24 VDC	3-1416100-0
ST3P3LB2			V23092-S1012-A301	AgSnO ₂	12 VDC	3-1416100-1
ST3P3LC4			V23092-S1024-A301		24 VDC	3-1416100-2
ST3P3SM5	ST3FSM5		V23092-S1060-A301		115 VDC/VAC	3-1416100-3
ST3P3TP0	ST3FTP0				230 VDC/VAC	3-1416100-4
ST4P2LC4	ST4FLC4	cage clamp	V23092-S1024-A201	AgSnO ₂ gold pl.	24 VDC	3-1416100-5
ST4P3LB2			V23092-S1012-A301	AgSnO ₂	12 VDC	3-1416100-6
ST4P3LC4			V23092-S1024-A301		24 VDC	3-1416100-7
ST4P3SM5	ST4FSM5		V23092-S1060-A301		115 VDC/VAC	3-1416100-8
ST4P3TP0	ST4FTP0				230 VAC/VAC	3-1416100-9

Relay Package RT

- Relay package consisting of RT relay, DIN-rail socket, plastic retaining clip, module and marking tag
- 1 CO with 16 A or 2 CO with 8 A rated load
- Sensitive DC- or AC coil
- Reinforced insulation (protection class II / VDE 0700), safe separation to VDE 0160
- Jumper bars for interconnection
- Further accessories see Accessories RT



F0287-C

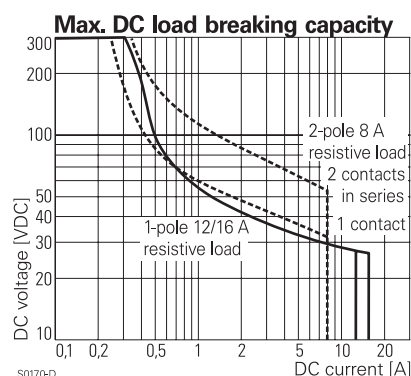
Approvals

Relay: REG.-Nr. 6106, E214025

Socket: REG.-Nr. 6106, E135149
Technical data of approved types on request

Contact data	1-pole	2-pole
Contact configuration	1 CO	2 CO
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	240 / 400 VAC	
Rated current	16 A*)	8 A
Limiting continuous current	16 A*)	8 A, UL: 10 A
Maximum breaking capacity AC	4000 VA	2000 VA
Limiting making capacity, max 4 s, df 10%	30 A	15 A
Contact material	AgNi 90/10, AgNi90/10 gold plated	
Rated frequency of operation with / without load	6 / 1200 min ⁻¹	

*) For full load current (16 A) the relay terminals 11-21, 12-22 and 14-24 have to be bridged.



Contact ratings

For contact ratings see datasheet Interface Power relay RT

Coil data

Rated coil voltage range DC coil	24 VDC
AC coil	24, 115, 230 VAC
Operative range to IEC 61810	2

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
LC4	24	16.8	2.4	1440 ± 10%	400

Coil versions, AC-coil 50Hz

Coil code	Rated voltage VAC	Operate voltage 50 Hz VAC	Release voltage 50 Hz VAC	Coil resistance Ohm	Rated coil power 50 Hz VA
R24	24	18.0	3.6	350 ± 10%	0.76
S15	115	86.3	17.3	8100 ± 15%	0.76
T30	230	172.5	34.5	32500 ± 15%	0.74

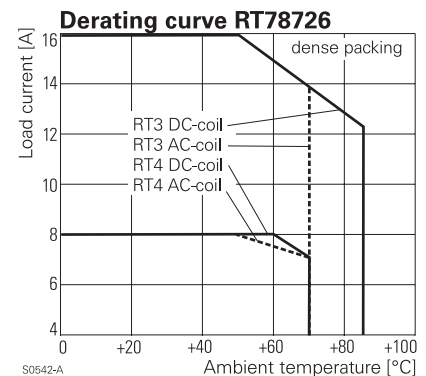
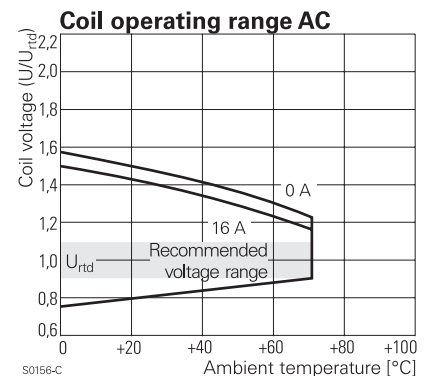
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Relay Package RT (Continued)

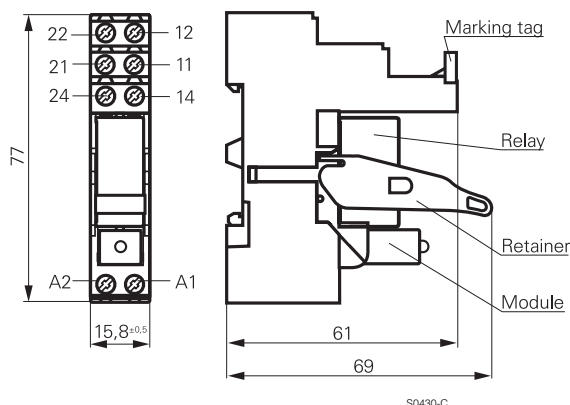
Insulation	1-pole	2-pole
Dielectric strength coil-contact circuit	5000 V _{rms}	
open contact circuit	1000 V _{rms}	
adjacent contact circuits	2500 V _{rms}	
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm	
Material group of insulation parts	IIIa	
Tracking index of relay base	PTI 250 V	
Insulation to IEC 60664-1		
Type of insulation coil-contact circuit		reinforced
open contact circuit		micro disconnection
adjacent contact circuits		functional
Rated insulation voltage		250 V
Pollution degree,	3	2
Rated voltage system	240 V	230 / 400 V
Overvoltage category		III

Other data

Mechanical endurance	1-pole	2-pole
DC coil	> 30 x 10 ⁶	>30 x 10 ⁶
AC coil	> 10 x 10 ⁶	>5 x 10 ⁶
Material		
RoHS - Directive 2002/95/EC	compliant as per product date code 0535	
Environment		
Ambient temperature range DC coil	-20...+85°C	
AC coil	-20...+70°C	
Processing		
Terminals	screw	
Terminal screw torque acc. IEC 61984	0.5 Nm	
max.	0.7 Nm	
Wire cross section		
single wire	2 x 2.5 mm ²	
fine wire	2 x 2.5 mm ²	
with bootlace crimp (DIN 46228/1)	2 x 1.5 mm ²	
Insertion cycles	A (10)	
Max. Insertion Force total	100 N	
Mounting distance	≥ 0, dense packing of sockets	
Weight	54 g	
Packaging unit	10 pcs	



Dimensions



Relay Package RT (Continued)
Product key

Typical product key

RT 4S 4 T30
Type
RT Relay Package RT

Version
3S Relay set: RT 1-pole CO (1 form C), 16 A, red LED

4S Relay set: RT 2-pole CO (2 form C), 8 A, red LED

Contact material
4 AgNi 90/10, CO contact

5 AgNi 90/10 gold plated, CO contact

Coil
LC4 24 VDC

S15 115 VAC

R24 24 VAC

T30 230 VAC

Other types on request

Product key	Socket	Retainer	Marking tag	Module	Relay	Coil	Part number
RT3S4LC4	RT78726	RT17017	RT17040	PTML0024	RT314024	24 VDC	4-1415073-1
RT3S4R24				PTML0524	RT314524	24 VAC	5-1415073-1
RT3S4S15				PTML0730	RT314615	115 VAC	5-1415528-1
RT3S4T30				PTML0730	RT314730	230 VAC	6-1415073-1
RT3S5LC4				PTML0024	RT315024	24 VDC	7-1415073-1
RT3S5R24				PTML0524	RT315524	24 VAC	8-1415073-1
RT3S5T30				PTML0730	RT315730	230 VAC	9-1415073-1
RT4S4LC4				PTML0024	RT424024	24 VDC	1-1415073-1
RT4S4R24				PTML0524	RT424524	24 VAC	2-1415073-1
RT4S4S15				PTML0730	RT424615	115 VAC	8-1415532-1
RT4S4T30				PTML0730	RT424730	230 VAC	3-1415073-1
RT4S5LC4				PTML0024	RT425024	24 VDC	1415074-1
RT4S5R24				PTML0524	RT425524	24 VAC	1-1415074-1
RT4S5T30				PTML0730	RT425730	230 VAC	2-1415074-1

Relay Package XT

- Relay package consisting of XT relay, DIN-rail socket, plastic retaining clip and marking tag
- 1 CO with 16 A or 2 CO with 8 A rated load
- Sensitive DC- or AC coil
- Reinforced insulation (protection class II / VDE 0700), safe separation to VDE 0160
- Jumper bars for interconnection
- Further accessories see Accessories XT
- Manual test lab, optionally lockable
- Mechanical and electrical indicators



F0288-DP

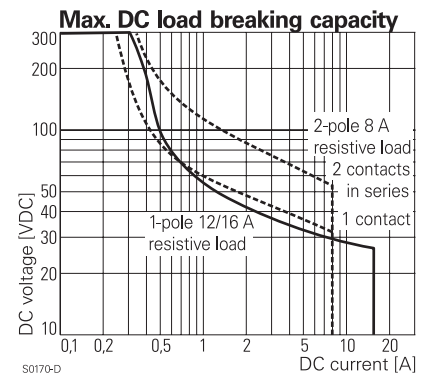
Approvals

Relay: REG.-Nr. 6106, E214025

Socket: REG.-Nr. 6106, E135149
Technical data of approved types on request

Contact data	1-pole	2-pole
Contact configuration	1 CO	2 CO
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	240 / 400 VAC	
Rated current	16 A*)	8 A
Limiting continuous current	16 A*)	8 A, UL: 10 A
Maximum breaking capacity AC	4000 VA	2000 VA
Limiting making capacity, max 4 s, df 10%	30 A	15 A
Contact material	AgNi 90/10	
Rated frequency of operation with / without load	6 / 600 min ⁻¹	

*) For full load current (16 A) the relay terminals 11-21, 12-22 and 14-24 have to be bridged.



Contact ratings

For contact ratings see datasheet Interface Plug-in Relay XT

Coil data

Rated coil voltage range DC coil	24 VDC
AC coil	24, 115, 230 VAC
Operative range to IEC 61810	2

Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
LC4	24	16.8	2.4	1440 ± 10%	419

Coil versions, AC-coil 50Hz

Coil code	Rated voltage VAC	Operate voltage 50 Hz VAC	Release voltage 50 Hz VAC	Coil resistance Ohm	Rated coil power 50 Hz VA
R24	24	18.0	3.6	350 ± 10%	0.77
S15	115	86.3	17.3	8100 ± 15%	0.81
T30	230	172.5	34.5	32500 ± 15%	0.81

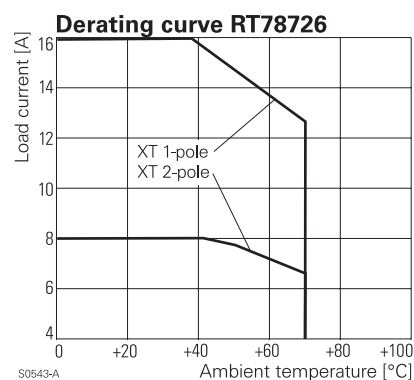
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Relay Package XT (Continued)

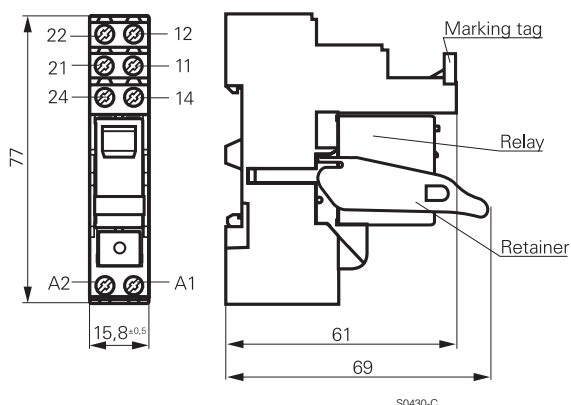
Insulation	1 pole	2 pole
Dielectric strength coil-contact circuit		5000 V _{rms}
open contact circuit		1000 V _{rms}
adjacent contact circuits		2500 V _{rms}
Clearance / creepage coil-contact circuit		≥ 8 / 8 mm
Material group of insulation parts		IIIa
Tracking index of relay base		PTI 175 V
Insulation to IEC 60664-1		
Type of insulation coil-contact circuit		reinforced
open contact circuit		micro disconnection
adjacent contact circuits		basic
Rated insulation voltage		250 V
Pollution degree	3	2
Rated voltage system	240 V	230 / 400 V
Overvoltage category		III

Other data

Mechanical endurance DC coil	> 10 x 10 ⁶
AC coil	> 5 x 10 ⁶
Material	
RoHS - Directive 2002/95/EC	compliant
Environment	
Ambient temperature range DC coil	-40...+70°C
AC coil	-40...+70°C
Processing	
Terminals	screw
Terminal screw torque acc. IEC 61984	0.5 Nm
max.	0.7 Nm
Wire cross section	
single wire	2 x 2.5 mm ²
fine wire	2 x 2.5 mm ²
with bootlace crimp (DIN 46228/1)	2 x 1.5 mm ²
Insertion cycles	A (10)
Max. Insertion Force total	100 N
Mounting distance	≥ 0, dense packing of sockets
Weight	56 g
Packaging unit	10 pcs



Dimensions



Relay Package XT (Continued)

Product key

Typical product key

XT **4S** **4** **T30**
Type
XT Relay Package XT

Version
3S Relay set: XT 1-pole CO (1 form C), 16 A, red LED

4S Relay set: XT 2-pole CO (2 form C), 8 A, red LED

Contact material
4 AgNi 90/10, CO contact

Coil
LC4 24 VDC

S15 115 VAC

R24 24 VAC

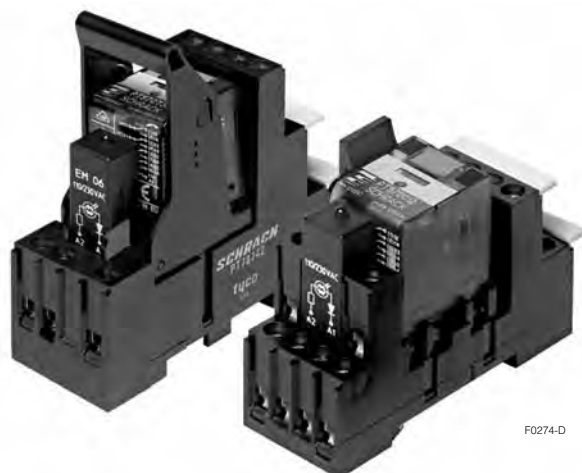
T30 230 VAC

Other types on request

Product key	Socket	Retainer	Marking tag	Relay	Coil	Part number
XT3S4LC4	RT78726	XT17017	RT17040	XT374LC4	24 VDC	4-1415540-1
XT3S4R24				XT374R24	24 VAC	4-1415540-2
XT3S4S15				XT374S15	115 VAC	4-1415540-3
XT3S4T30				XT374T30	230 VAC	4-1415540-4
XT4S4LC4				XT484LC4	24 VDC	4-1415540-5
XT4S4R24				XT484R24	24 VAC	4-1415540-6
XT4S4S15				XT484S15	115 VAC	4-1415540-7
XT4S4T30				XT484T30	230 VAC	4-1415540-8

Relay Package PT

- Relay package consisting of PT relay, DIN-rail socket, plastic retaining clip, module and marking tag
- 2 pole 12 A, 3 pole 10 A or 4 pole 6 A
- DC- or AC coil
- Mechanical and electrical indicator
- Manual test tab, optionally lockable



F0274-D

Approvals

Relay: REG.-Nr. 115719, US E214025, 00/20059(E2)

Socket: REG.-Nr. 115719, US E135149

Technical data of approved types on request

Contact data	PT2	PT3	PT5
Contact configuration	2 CO	3 CO	4 CO
Contact set	single contact		
Type of interruption	micro disconnection		
Rated voltage / max. switching voltage AC	240 / 400 VAC	240 / 400 VAC	240 / 240 VAC
Rated current	12 A	10 A	6 A
Limiting continuous current	see derating curve		
Maximum breaking capacity AC	3000 VA	2500 VA	1500 VA
Limiting making capacity, max 20 ms	24 A	20 A	12 A
Contact material	AgNi90/10, AgNi90/10 gold plated		
Minimum contact load	12V/10mA, 20mV/1mA gold plated		
Rated frequency of operation with / without load	6 / 600 min ⁻¹		

Contact ratings

For contact ratings see datasheet Miniature Relay PT

Coil data

Rated coil voltage range DC coil	6...220 VDC
AC coil	6...230 VAC
Operative range to IEC 61810 DC coil, AC-coil 50Hz	2
AC coil 60 Hz at 70°C, % of U _{rd}	90..110%

Coil versions, DC-coil

Coil code	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power
LED+PD*)	VDC	VDC	VDC	Ohm	mW
LB2	12	9.0	1.2	192±10%	750
LC4	24	18.0	2.4	777±10%	741

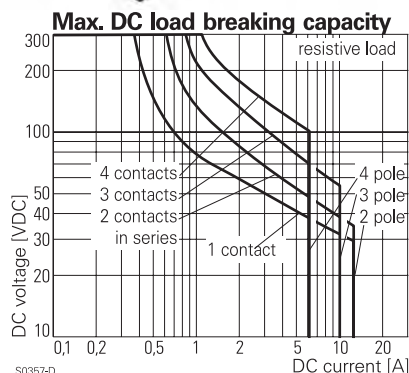
*) Protection diode PD

Coil versions, AC-coil 50 / 60 Hz

Coil code	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power
LED	VAC	50 / 60 Hz	50 / 60 Hz	Ohm	50 / 60 Hz
	VAC	VAC	VAC	Ohm	VA
RC4	24	19.2 / 21.6	7.2	192±10%	1.0 / 0.79
SB5	115	92.0 / 103.5	34.5	4845±12%	1.0 / 0.86
TD0	230	184.0 / 207.0	69.0	19465±15%	1.0 / 0.90

All figures are given for coil without preenergization, at ambient temperature +23°C

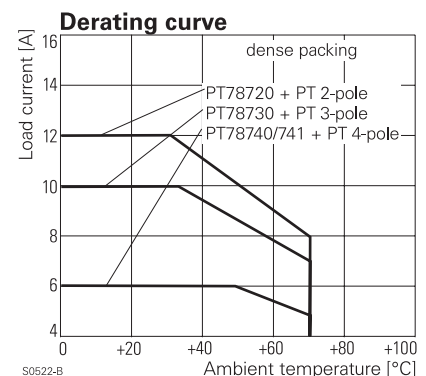
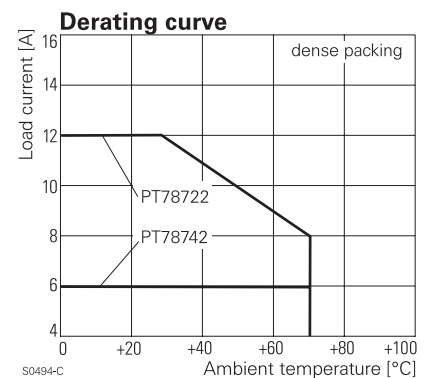
Other coil voltages on request



Relay Package PT (Continued)

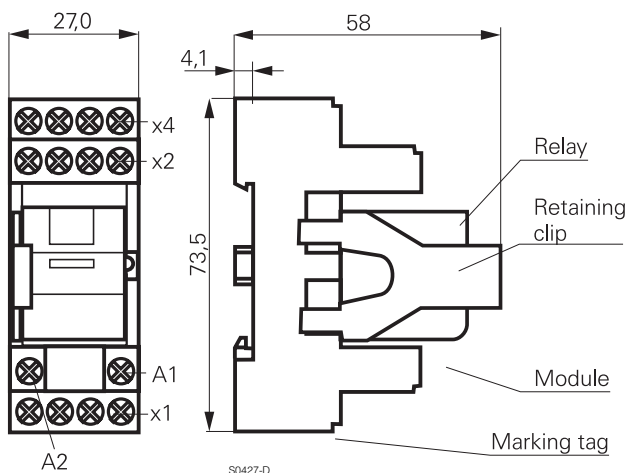
Insulation	PT2	PT3	PT5
Dielectric strength coil-contact circuit	2500 V _{rms}	2500 V _{rms}	2500 V _{rms}
open contact circuit	1200 V _{rms}	1200 V _{rms}	1200 V _{rms}
adjacent contact circuits	2500 V _{rms}	2500 V _{rms}	2000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 4 / 4 mm	≥ 4 / 4 mm	≥ 4 / 4 mm
adjacent cont. circuits	≥ 3.5 / 9.5 mm	≥ 2.6 / 3.5 mm	≥ 1.8 / 3.5 mm
Material group of insulation parts	IIIa		
Insulation to IEC 60664-1			
Type of insulation coil-contact circuit	basic		
open contact circuit	micro disconnection		
adjacent contact circuits	basic		
Rated insulation voltage	250 V		
Pollution degree	2	2	2
Rated voltage system	230 / 400 V	240 V	240 V
Overvoltage category	III	III	III

Other data	PT2	PT3	PT5
Mechanical endurance DC coil		30x10 ⁶ cycles	
AC coil		20x10 ⁶ cycles	
Material			
RoHS - Directive 2002/95/EC	compliant as per product date code 0535		
Environment			
Ambient temperature range	-40...+70°C		
Processing			
Terminals	screw		
Terminal screw torque acc. IEC 61984	0.5 Nm		
max.	0.7 Nm		
Wire cross section			
single wire	2 x 2.5 mm ²		
fine wire	2 x 2.5 mm ²		
with bootlace crimp (DIN 46228/1)	2 x 1.5 mm ²		
Insertion cycles	A (10)		
Max. Insertion Force total	100 N		
Mounting distance	≥ 0, dense packing of sockets		
Weight with PT78720 / PT78730 / PT78740	71 g	78 g	85 g
with PT78722 / PT78742	74 g	-	90 g
Packaging unit	5 pcs		

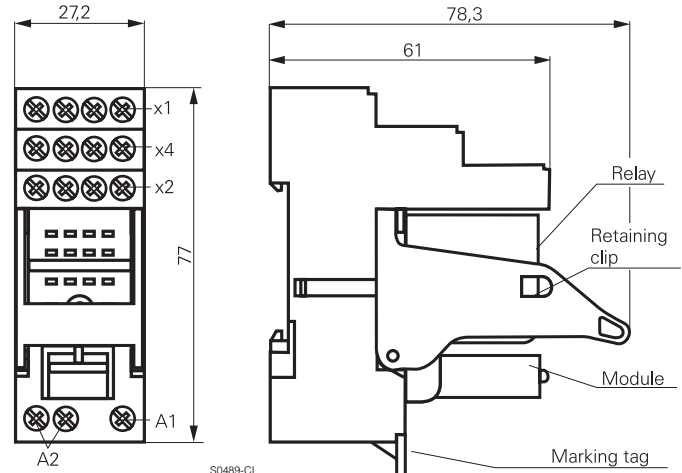


Dimensions

Package with PT 78 720 / PT 78 730 / PT 78 740



Package with PT 78 722 / PT 78 742



Relay Package PT (Continued)

Product key		Typical product key		PT	5L	8	LC4
Type	PT Relay Package PT						
Version	2S Relay set: PT 2-pole CO contacts (2 form C), red LED 3S Relay set: PT 3-pole CO contacts (3 form C), red LED 5S Relay set: PT 4-pole CO contacts (4 form C), red LED 2L Relay set: PT 2-pole CO contacts (2 form C), red LED, with logical arrangement of control / load terminals 5L Relay set: PT 4-pole CO contacts (4 form C), red LED, with logical arrangement of control / load terminals						
Contact material	7 AgNi 90/10, with test button 8 AgNi 90/10 gold plated, with test button						
Coil	LB2 12 VDC RC4 24 VAC TD0 230 VAC			LC4 24 VDC SB5 115 VAC			

Other types on request

Product key	Socket	Retainer	Marking tag	Module	Relay	Coil	Part number
PT2S7LB2	PT78720	PT17016	PT17040	PTML0024	PT270012	12 VDC	7-1415074-1
PT2S7LC4					PT270024	24 VDC	8-1415074-1
PT2S7RC4				PTMV0524	PT270R24	24 VAC	5-1415074-1
PT2S7SB5				PTMV0615	PT270S15	115 VAC	2-1415366-1
PT2S7TD0				PTMV0730	PT270T30	230 VAC	6-1415074-1
PT3S7LB2	PT78730			PTML0024	PT370012	12 VDC	1-1415075-1
PT3S7LC4					PT370024	24 VDC	2-1415075-1
PT3S7RC4				PTMV0524	PT370R24	24 VAC	9-1415074-1
PT3S7SB5				PTMV0615	PT370S15	115 VAC	1-1415366-1
PT3S7TD0				PTMV0730	PT370T30	230 VAC	1415075-1
PT5S7LB2	PT78740			PTML0024	PT570012	12 VDC	9-1415075-1
PT5S7LC4					PT570024	24 VDC	1415076-1
PT5S7RC4				PTMV0524	PT570R24	24 VAC	7-1415075-1
PT5S7SB5				PTMV0615	PT570S15	115 VAC	1415366-1
PT5S7TD0				PTMV0730	PT570T30	230 VAC	8-1415075-1
PT5S8LB2				PTML0024	PT580012	12 VDC	5-1415075-1
PT5S8LC4					PT580024	24 VDC	6-1415075-1
PT5S8RC4				PTMV0524	PT580R24	24 VAC	3-1415075-1
PT5S8TD0				PTMV0730	PT580T30	230 VAC	4-1415075-1
PT2L7LB2	PT78722	PT17021		PTML0024	PT270012	12 VDC	8-1415534-7
PT2L7LC4					PT270024	24 VDC	8-1415534-9
PT2L7RC4				PTMV0524	PT270R24	24 VAC	9-1415534-0
PT2L7SB5				PTMV0615	PT270S15	115 VAC	9-1415534-2
PT2L7TD0				PTMV0730	PT270T30	230 VAC	9-1415534-4
PT5L7LB2	PT78742			PTML0024	PT570012	12 VDC	1415535-7
PT5L7LC4					PT570024	24 VDC	1415535-9
PT5L7RC4				PTMV0524	PT570R24	24 VAC	1-1415535-1
PT5L7SB5				PTMV0615	PT570S15	115 VAC	1-1415535-3
PT5L7TD0				PTMV0730	PT570T30	230 VAC	1-1415535-5
PT5L8LB2				PTML0024	PT580012	12 VDC	1-1415535-7
PT5L8LC4					PT580024	24 VDC	1-1415535-8
PT5L8RC4				PTMV0524	PT580R24	24 VAC	1-1415535-9
PT5L8TD0				PTMV0730	PT580T30	230 VAC	2-1415535-0

Definitions

Technical data

Unless otherwise stated, the stated technical data are based on laboratory tests under standardized conditions and are within the conditions of normal use for these components. The vast number of influencing factors does not allow to test our products for all imaginable applications and processes. Furthermore, the large number of possible variations within a relay family makes it impossible to give a comprehensive description of the different characteristics for all variants in one datasheet. Typical data should be derived from the standard versions.

The decision on the suitability of a specific component is the sole responsibility of the user. To ensure the suitability of the product for a specific application the user has to test these products before the use under the most stringent conditions they will be exposed to in the actual application. Taking into consideration the functionality and safety, the user has to rate the actual service life in relation to the expected life of the relay. The use of the relay beyond its specified characteristics or tested life expectancy carries the risk of dangerous conditions; the user has to prevent such conditions by adequate measures.

All product data are intended for users with knowledge and experience in the application of such specifications. The utilization is at the risk of the user.

The user has to verify the accordance with existing regulations and relevant standards for the application; in particular with reference to the insulation requirements as function of applied voltages and ambient conditions.

The standards are based on the principal assumption of heating effects and risk of fire in case electrical currents $>0.2A$ or $>0.5A$ being conducted and switched. Our relays are manufactured with self extinguishing plastics corresponding to the up-to-date technology and standards requirements. Protection against excessive heat and possible spread of fire under all operation conditions even in case of malfunction can only be ensured by the design of the equipment as well as by application instructions for the end user; it is the responsibility of the manufacturer of the equipment to take the appropriate measures.

Specification

In order to improve the performance and quality we continuously develop our products. We reserve the right to change technical parameters and product specification without prior notice. With the technical data listed are for description purposes of the components only and are not an agreement and do not guarantee specific characteristics and parameters; for detailed questions please contact our application support. Drawings, photos data and descriptions are subject to change without prior notice.

Availability

The ordering code structure does allow a large number of possible variations, but not all possible variations are defined as standard types in the current product portfolio (ordering codes) and thus may not be included in the product range. Special versions to customer specifications can be supplied. Please contact your local sales organisation. Right to change the availability and delivery conditions reserved.

AC

Pertaining to alternating quantities such as voltage or current, to devices operated with these, or to quantities associated with these devices. If not otherwise stated the indicated data is given for 50 Hz.

AC-coil

Relays for direct energization with AC supply. If not otherwise stated the data is given for 50 Hz supply.

Adjacent contact circuits

Insulation parameters between two adjacent contact circuits, which do not have a conductive connection. The level of insulation depends on the design and rated voltage.

Ambient temperature

The temperature in the vicinity of the relay (distance according to IEC 61810-1). The minimum ambient temperature is the minimum operating temperature, the maximum ambient temperature is the maximum operating temperature for the use of the relay or accessory. This temperature range should not be exceeded. Ambient temperature range according to IEC 61810-1 and indicated in °C.

Approvals

With the approval label the independent approval agency and/or test house confirms the compliance with the relevant product standards and/or certain product characteristics.

NOTE: the ordering code structure does allow a large number of possible variations, but not all variations are defined as standard types (ordering codes) and thus some relays may not be included in the list of approved relays. Technical data and approved types on request.

	BEAB	British Electrotechnical Approvals Board, England
	CSA	Canadian Standards Association, Canada
	DEMKO	Danmarks Elektriske Materielkontrol, Danmark
	KEMA	Naamloze Vennootschap tot Keuring van Electrotechnische Materialen, Nederlande
	LLOYD's	Lloyd's Register of Shipping
	NEMKO	Norges Elektriske Materielkontroll, Norge
	ÖVE	Österreichischer Verband für Elektrotechnik, Österreich
	SEMKO	Svenska Elektriska Materielkontrollanstalten AB, Schweden
	FIMKO	Sähkötarkastuskeskus Elinspektionscentralen, Finnland
	SEV	Eidgenössisches Starkstrominspektorat, Schweiz
	TÜV	Technischer Überwachungs-Verein, Deutschland
	UL	Underwriters Laboratories, Inc., USA; UL Component Recognition Mark for the United States
	UL	UL Component Recognition Mark for Canada
	UL	UL Component Recognition Mark for the United States and Canada
	VDE	VDE-Prüfstelle, Deutschland (Gutachten mit Fertigungsüberwachung)

Definitions (Continued)

Basic insulation

Insulation applied to live parts to provide basic protection against electric shock.

Bifurcated contact

Contact with two simultaneously operating contact points. Bifurcated contacts increase the contact reliability considerably, especially when switching low currents and voltages (dry circuits).

Bistable Relay, switching characteristics

In a bistable relay, the contacts remain in the last switching position after the input voltage is disconnected.

Bistable, polarized relay

A polarized bistable relay adopts one switching position on energizing in a particular direction and the other switching position when the energizing is in the opposite direction. In a bistable relay with one winding, the opposite energizing is created by a voltage with opposite polarity being applied to the same winding.

In a bistable relay with two windings, the opposing energizing is created by a voltage being applied to the second winding with opposite winding sense.

Bistable, remanent relay (remanence relay)

A remanent, bistable relay which adopts a particular switching position following an energizing direct current in any direction and is then held in this position by the remanence in the magnetic circuit, i.e. through the magnetization of parts of the magnetic circuit. The contacts return to their original position following a small energizing current of limited amplitude of the opposite polarity. This demagnetises the magnetic circuit.

Bounce

An unintentional phenomenon that can occur during the making or breaking of a contact circuit when the contact elements touch successively and separate again before they have reached their final position.

Bounce time

The time from the first to the last closing or opening of a relay contact. Unless otherwise stated the indicated times are maximum values and are for energization with rated voltage, without any components in series or parallel to the coil, and at reference temperature.

Break contact

See > NC contact

Bridging contact

Compound contact with two simultaneously operating contacts connected in series by the design of the relay.

Category of protection (IEC 61810)

The 'Relay Technology Categories' (IEC 61810) describe the degree of sealing of the relay case or its contact unit:

- RT 0: unenclosed relay
Relay not provided with a protective case
- RT I: dust protected relay
Relay provided with a case which protects its mechanism from dust
- RT II: flux proof relay
Relay capable of being automatically soldered without allowing the migration of solder fluxes beyond the intended areas. These are the contacts, movable parts of the magnetic system and their immediate environment.

RT III: wash tight (washable) relay

Relay capable of being automatically soldered and subsequently undergoing a washing process to remove flux residues without allowing the ingress of flux or washing solvents.

The test to evaluate the sealing of the case for wash tight relays is performed according to the IEC 60068-2-17, Qc test.

NOTE - Please refer to the 'Processing' section for additional information.

In service this type of relay is sometimes vented to the atmosphere after soldering or washing process; in this case the requirements with respect to clearances and creepage distances can change.

RT IV: sealed relay

RT V: hermetically sealed relay

Change-over contact

See > CO contact

Clearance distance

Shortest distance in air between two conductive parts or between a conductive part and the accessible surface of the relay.

CO contact

Compound contact consisting of a NO (make) contact and a NC (break) contact with a common terminal. On changing the switch position, the contact previously closed opens first followed by the closing of the contact that was previously open.

Note: in case of a switching arc the NO and NC contact may be temporarily electrically connected.

Coil data

The coil data is specified according to IEC 61810-1.

Unless otherwise indicated the data is given for ambient temperature 23°C, coil temperature equal to ambient temperature (cold coil, without preenergization), 50 Hz for AC supply, individual mounting of relays.

Indicated data for the operative range class, is given for the minimum allowed mounting distance.

A duty factor of 100% (permanently operated) is permissible.

Coil insulation system according to UL1446

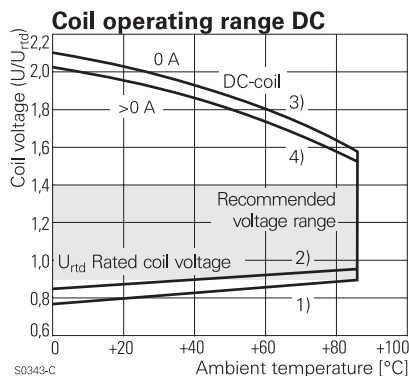
These requirements cover test procedures to be used in the evaluation of electrical insulation systems intended for connection to branch circuits rated 600 volts or less. This standard refers to insulation systems and does not cover individual insulating materials.

Coil operative range

Admissible range of energizing voltage with respect to the ambient temperature. The upper limit is the maximum coil voltage, the lower limit is the operate voltage U_{min} (coil without preenergization) and/or the operate voltage U_1 (preenergized coil). The diagrams are valid for individual mounting of relays without thermal interference and connection wiring according to IEC 61810-1, table 12. The use of a relay with an energising voltage other than the rated coil voltage may lead to reduced electrical life. In case the application requires an energization with other than the rated coil voltage, the coil voltage should be within the recommended voltage range (shaded area) to keep the influence on electrical life to a minimum.

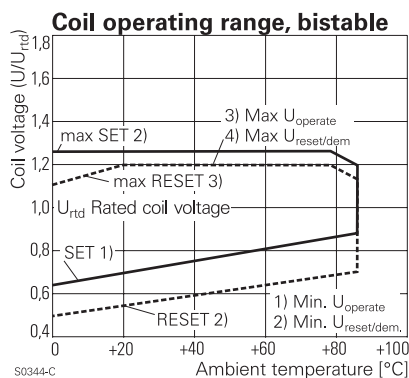
Definitions (Continued)

curve 1: operate- / minimal voltage U_0 (without preenergization)
 curve 2: operate- / minimal voltage U_1 (preenergized coil)
 curve 3: maximum voltage at contact current = 0 A
 curve 4: limiting voltage U_2 at rated contact current I_{rated}
 recommended voltage range (shaded area):
 the coil voltage should be within the recommended voltage range to minimise any adverse effects on electrical life



Coil operative range for bistable relays

curve 1: operate voltage at coil temperature equal to ambient temperature
 curve 2: minimum reset voltage
 curve 3: maximum operate voltage
 curve 4: maximum reset voltage
 For bistable relays, all curves are given for pulse energization (short energization duration)



Coil power

Power consumption of the coil at rated coil voltage and coil resistance, given as rated power.

Coil resistance

Electrical resistance of the relay coil at reference temperature.

Coil-contact circuit data

Insulation parameters between the coil system and the contact circuit/system.

Contact bounce

See > Bounce

Contact configuration

According to the different switching functions of the relay contacts, the various contact configurations, design and description are specified:

- NO contact
- NC contact
- CO contact
- Bridging contact

Contact	Reference D	GB	USA	Circuit diag.
NO contact make cont.	1	A	SPST-NO	
NC contact break cont.	2	B	SPST-NC	
CO contact change-over c.	21	C	SPDT	
Bridging NO	1	X	SPST-NO	
Bridging NO/ Bridging NC		X	DM-DB	

Contact current

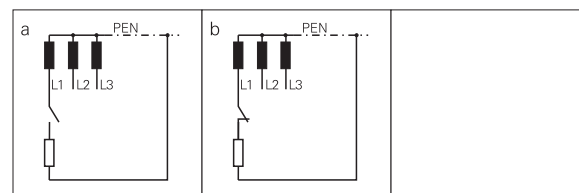
Electrical current which a relay contact carries before opening or after closing (rated current of the load).

Contact gap

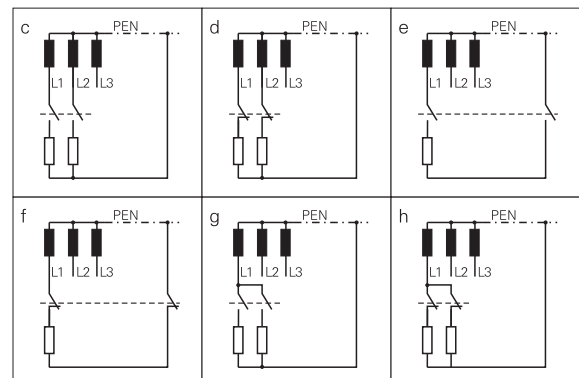
Shortest distance between the open contact points.

Contact loading / schematic for contact loading

Single-pole contact

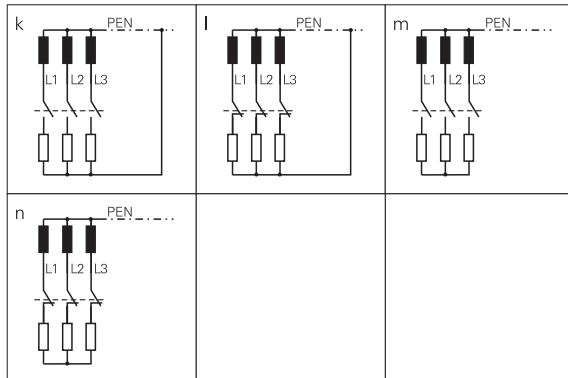


Double-pole contact

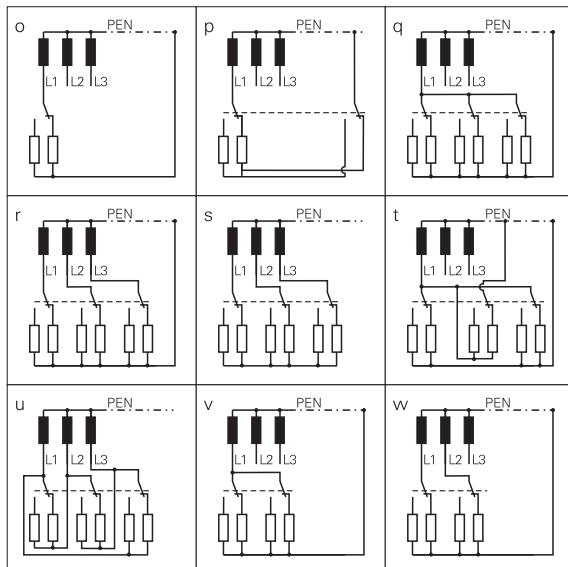


Definitions (Continued)

Multi-pole contact



Change-over contact



Contact material

The list gives an overview of the most important plating- and contact materials. The switching capacity of the contacts and the respective electrical endurance depends not only on the contact material but also to a high degree on the relay design. Decisive for the application therefore is the optimal combination of the mechanical system and the contact material. The characteristics for certain relay types cannot be transferred to other designs, neither can these values be used as given limits for existing products.

1) Plating materials:

Gold

- best corrosion resistance, not used as solid material because too soft, high tendency towards cold-welding
- gold platings $\leq 1 \mu\text{m}$ (hv), only as storage protection, no protection against aggressive atmosphere.

Hard gold plated (htv)

- very good corrosion resistance, low and stable contact resistance at lowest loads, low tendency to cold welding
- dry-circuit switching (switching without current/voltage), recommended range of application $\geq 1 \text{ V}$, 1 mA, 50 mW

2) Contact materials:

Silver-Nickel AgNi90/10

- high resistance against electrical wear, low welding tendency, higher contact resistance than AgNi0.15
- circuits with medium to high loads, DC- and AC-circuits, recommended range of application $\geq 12 \text{ V}$, 10 mA

Fine-grain silver AgNi0.15

- relatively low contact resistance, low resistance against aggressive atmosphere
- universally applicable in medium and low load range, especially in DC-circuits, recommended range of application $\geq 12 \text{ V}$, 10 mA

Silver-Tin-Oxide AgSnO₂

- low welding tendency, high wear resistivity with heavy loads, low material transfer
- circuits with high requirements to make- and break currents, DC- and AC loads, recommended range of application $\geq 12 \text{ V}$, 100 mA

Tungsten W

- highest melting point, for high switching rates and low ON-time
- as prerun contact in circuits with highest make loads

Silver-Cadmium-Oxide AgCdO

- compliant with RoHS directive (Directive 2002/95/EC) only under time limited exception, therefore not recommended for new designs
- low welding tendency, high wear resistance
- for switching of inductive loads, AC-circuits, $\geq 12 \text{ V}$, 100 mA

Contact ratings

See > Electrical Endurance

Contact resistance

Electrical resistance between the relay terminals of a closed contact, measured with indicated measuring current and indicated source voltage. The specified contact resistance is reached reliably only above a particular load. Considerably increased contact resistances can occur with smaller loads. After a prolonged period of a steady state operate/release position or storage of the relay a certain number of cycles are recommended before measurement of the contact resistance. According to IEC 61810-7 the following measurement parameters are applied (for general purpose relays category CC2 is applicable):

Category	Load		Measurement	
	V	A	V	A
CC0	0.03	0.01	0.03	0.01
CC1	without electrical arc		10	0.1
CC2	with electrical arc		30	1

Contact set

See

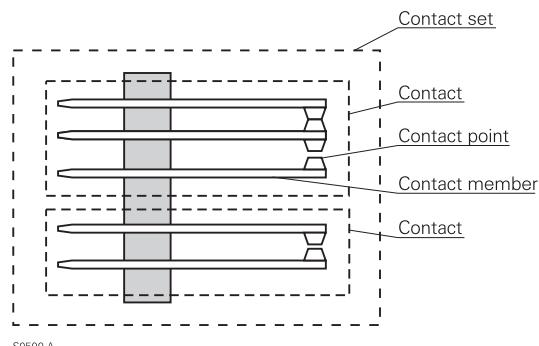
- bridging contact
- forcibly guided contact
- pre-make contact
- single contact
- twin/bifurcated contact

Contact terminations (insulation)

Insulation parameters of the contact. In case of a micro-disconnection/functional insulation the clearance/creepage data reflect the outside of the relay, there are no dimensional requirements for the internal design of the contact system.

Definitions (Continued)

Contact terms



Contact type

See > Contact set

Creepage distance

Shortest distance along the surface of the insulating material between conductive parts according to IEC 61810-1.

CTI

See > Tracking index

Cycle

Operation and subsequent release/reset of a relay.

DC

Pertaining to time independent electric quantities such as voltage or current (DC refers to direct current).

Degree of protection (IEC 60529)

Degrees of protection provided by enclosures (IP Code) for electrical equipment.

Under certain circumstances this data is relevant for industrial relays and accessories. For relays as components (e.g. PCB relays) the IP classification is not used, see > Category of protection.

Definition of degree of protection (IP code) IEC 60529 outlines an international classification system for the sealing effectiveness of enclosures of electrical equipment against the intrusion into the equipment of foreign bodies (i.e., tools, dust, fingers) and moisture. This classification system utilizes the letters IP (Ingress Protection) followed by two digits.

Degree of protection - First digit

The first digit of the IP code indicates the degree that connection is protected against contact with moving parts and the degree that equipment is protected against solid foreign bodies intruding into an enclosure.

- 0 No special protection
- 1 Protection from a large part of the body such as hand or from solid objects greater than 50 mm in diameter
- 2 Protection against objects not greater than 80 mm in length and 12 mm in diameter
- 3 Protection from entry by tools, wires, etc., with a diameter or thickness greater than 2.5 mm
- 4 Protection from entry by solid objects with a diameter or thickness greater than 1.0 mm
- 5 Protection from the amount of dust that would interfere with the operation of the equipment
- 6 Dust-tight

Degree of protection - Second digit

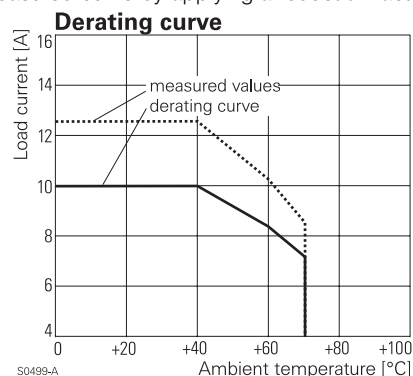
Second digit indicates the degree of protection of the equipment inside the enclosure against the harmful entry of various forms of moisture (e.g. dripping, spraying, submersion, etc.)

- 0 No special protection
- 1 Protection from vertically dripping water
- 2 Protection from dripping water when tilted up to 15°
- 3 Protection from sprayed water
- 4 Protection from splashed water
- 5 Protection from water projected from a nozzle
- 6 Protection against heavy seas, or powerful jets of water
- 7 Protection against temporary immersion
- 8 Protection against complete continuous submersion in water (up to 1 meter deep for 15 minutes)

Derating curve (sockets)

The derating curve - given for a specific combination relay-socket - indicates the maximum permissible continuous current (limiting continuous current) of a socket, loaded on all contact circuits over the entire temperature range.

In case of reduced duty factor a higher load current is permissible. Please contact our technical support for specific data. According to the standards the derating curve is derived from the measured curve by applying a reduction factor of 0.80.



Dielectric strength

Voltage (rms value in AC voltage, 50 Hz 1 min) the insulation can withstand between relay elements that are insulated from one another.

Dimensions

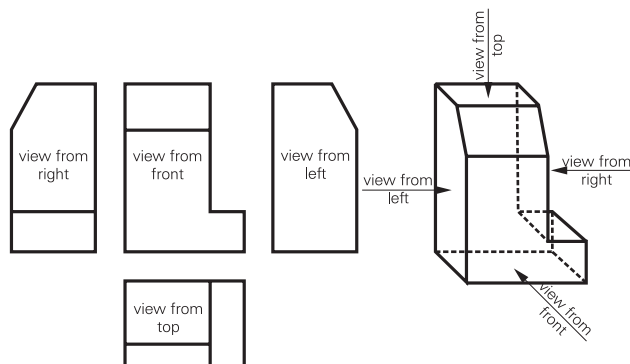
Dimensions are in mm.

PCB pin dimensions are indicated without solder (pre-tinning).

Definitions (Continued)

Dimensions, drawings

Unless otherwise stated (see symbol below) technical drawings for product dimensions are using ISO Method E projection (European projection) according to ISO/R 128.



Symbol for Method E projection



Symbol for Method A projection



DIN-rail

Unless otherwise stated, our products for DIN-rail mounting are designed and tested for DIN-rails according to TH35-7.5 / EN60175.

Use of other rails (e.g. according to TH35-15) is neither tested nor approved.

When mounting the sockets on a DIN-rail and when assembling the socket accessories it is recommended to provide an adequate temperature (> 0°C) during the mounting process.

Dust-proof relay

Relay with a case to protect against penetration of dust.

Duty factor, DF

Ratio of the duration of energization to the total period in which intermittent or continuous or temporary duty takes place. Duty factor is expressed as percentage of the total period.

Electrical endurance

Number of cycles a relay can perform with electrical contact load defined under specified conditions according IEC 61810-1 and IEC 61810-2.

Unless otherwise specified the electrical endurance refers to:

- NO contact
- AC mains, 50 Hz
- duty factor 50%
- rated frequency of operation
- schematic for contact loading A
- resistive load
- the rated voltage (coil)
- ambient temperature 23°C
- category of protection RTII - flux proof
- individual mounting of relays without thermal interference and connection wiring according to IEC 61810-1, table 12.
- relay in upright position (terminals of a print relay pointing downwards).

Unless otherwise stated, the electrical endurance is specified according to severity level B according IEC 61810-2.

For relay failure modes see also > Failure criteria.

Any use beyond the specified electrical endurance is not in scope of the specified data, the avoidance of such situation requires consideration by the user.

Experience shows that the electrical endurance for inductive

loads remains constant down to a power factor of appr. 0.8; contact our technical support on electrical endurance for loads with power factors below 0.8.

Electrical endurance graph

The electrical endurance graph indicates the typical electrical endurance with resistive load and 250 VAC rated voltage as "Mean Cycles to Failure" (MCTF) according Weibull distribution. These statistical data do not guarantee a minimum value; this data can be used to estimate the MCTF value.

Please note:

- the graph for electrical endurance is only valid for the indicated contact material (in case no contact material is specified, it is valid for the contact materials as listed in the respective data sheet), it is not permissible to deduce electrical endurance information for other contact materials.
- it is not permissible to deduce electrical endurance information by extrapolation beyond the range indicated by the curve. This applies especially to the range below 0.5 A as at this level the contact wear is small and other failure modes are dominant.

For details please contact our technical support.

Also see > Electrical endurance

Failure criteria

Set of rules used to decide whether an observed event constitutes a failure. A contact failure is the occurrence of break and/or make malfunctions of a contact under test, exceeding a specified number.

Flux proof / suitable for processing on soldering lines

See > Category of protection (IEC 61810) - RT II.

Forcibly guided contacts

Contact configuration according to EN 50205 with at least one NO contact, one NC contact and a mechanically linked system, designed that the NO and NC contacts within the complete contact set are never closed at the same time, even in case of malfunction. These relays are implemented in the control of safety technology for the protection against damage to persons or objects.

Frequency of operation

Number of operation cycles per unit of time.

With contact loads considerably below rated load a higher frequency of operation may be admissible. This has to be tested for the specific application. For further assistance please contact our application support.

Full disconnection

Contact separation for the disconnection of conductors so as to provide the equivalent of basic insulation between those parts intended to be disconnected.

Note: there are dielectric strength and dimensional requirements.

Functional insulation

Insulation between conductive parts, necessary for the proper functioning of the relay only.

Industrial relays and accessories

Relays and accessories designed for use in closed and electrically secure switching cabinets. In these applications there are lower standard requirements of the insulating properties of components. These products are to be handled by trained personnel only.

Insertion cycles

The symbol A indicates that the insertion and extraction must be done without any load current on the relay/socket contacts. Unless otherwise stated the accessories are designed for 10 insertion cycles, insertion and extraction without load; A (10).

Definitions (Continued)

Insulation resistance

Electrical resistance (initial product condition) measured by applying a DC voltage of 500 V between two elements of a component that are insulated from one another.

The requirements according to IEC 61810-1 are:

- for functional insulation > 2 MOhm
- for basic insulation > 2 MOhm and
- for reinforced insulation > 7 MOhm.

Insulation to IEC 61810-1

Data for insulation coordination on:

- type of insulation
- rated insulation voltage
- pollution degree
- overvoltage category

are based on clearance and creepage and the insulation.

Latching relay

See > Bistable relay

Limiting continuous current

Is the highest steady state load current a relay or an accessory can withstand continuously while satisfying specified temperature rise requirements; it is identical with the limiting continuous thermal current I_{th} .

Unless otherwise stated the data for relays is given under following condition: all contacts equally loaded with the respective current, input voltage 110% of nominal coil voltage, max ambient temperature, minimum allowed mounting distance, test conditions according to the heat test arrangement IEC EC 61810-1 Annex B. In combinations with accessories/sockets the limiting continuous current is specified by the derating curve (see > derating curve).

Limiting making capacity

The making capacity expressed as a current with a power factor of 1.0 a contact is able to make under specified conditions; for 20 ms data expressed as peak value, for 4 s data expressed as rms value.

Unless otherwise stated the data refers to the NO contact, rated voltage and a current for a duration of max. 20 ms for at least 100 cycles or 4 s with duty factor of 10%.

Limiting voltage (coil)

The highest permissible input voltage at the reference temperature at which the relay, with continuous energization, heats up to its max. permissible coil temperature.

Magnetically latching relay

See > Bistable relay

Make contact

See > NO contact

Make current

See > Limiting making capacity

Material group of insulation parts

Categorization of insulation materials according to their tracking indices, according to IEC 60664-1.

Max. DC load breaking capacity

Switching of loads at voltage and current below the max. DC load breaking capacity curve is possible for a limited number of switching operations, the arc is extinguished (max. arc duration 10 ms at resistive load). The breaking capacity curve is affected in both position and shape by the contact material and relay design (contact distance, break speed of the contacts, etc.). No statement on the electrical endurance can be derived from these curves. For practical use it is recommended to keep a distinct margin from the DC load breaking capacity curve.

Max. insertion force total

The force during the insertion of the relay into the socket has to be applied in insertion direction (no tilting) and equally on all connections. The maximum applied force must not exceed the indicated max. insertion force.

Max. operate/reset duration

Maximum duration a bistable coil is energized with rated DC voltage.

Maximum breaking capacity AC

The max switching capacity the contact is intended to break under specified load conditions. The switching current must not exceed the indicated rated current.

Maximum switching voltage

Maximum voltage that may occur between the switching contacts before closing or after opening the contact. Data given for AC refer to a mid-point earthed 3-phase supply system with 230 / 400 VAC.

Maximum voltage (coil)

See > Limiting voltage

MCTF - Mean Cycles to Failure

Expected value of the distribution of operations to failure, average number of operations according to Weibull.

Mechanical endurance

Number of cycles without contact load during which the relay remains within the specified characteristics.

Mechanical life

See > Mechanical endurance

Micro disconnection

Adequate contact separation in at least one contact so as to provide functional security.

Note: there is a requirement for the dielectric strength of the contact gap, but no dimensional requirements.

Minimum contact load

General purpose relays are designed for category CC2 loads according to IEC61810; basically these relays are designed for switching loads with the effect of switching arcs. Specific insulation requirements however may call for the use of general purpose relays in applications with low signal loads or for dry switching (switching without the generation of an electrical arc). Note that increased contact resistance may occur if the load conditions are not in scope of the test conditions for category CC2 according to IEC61810. Also see the minimum contact loads recommended for the different contact materials. Also see > Minimum switching power.

Minimum energization duration

Minimum duration the coil is energized with rated DC voltage. Unless otherwise stated the proposed minimum energization duration is 100 ms.

Minimum operate/reset duration

Minimum duration a bistable coil is energized with rated DC voltage.

Minimum switching power

Product of the switching current and switching voltage for reliable switching. Low contact resistance is reached reliably only above a particular load. Considerably increased contact resistances can occur with smaller loads.

Definitions (Continued)

Monostable relays, switching characteristics

A relay is called monostable when its contacts return automatically to the rest position after the input voltage is disconnected.

Monostable, neutral relay, non-polarized relay

A neutral, monostable relay operates independently of the direction of the energizing current (coil supply).

Monostable, polarized relay

A polarized, monostable relay only operates in a specific direction of energization.

Mounting

Describes specific mounting options of the relay. See also > Mounting / Placement.
For Mounting on DIN-rail (relays and accessories) see > DIN-rail.

Mounting distance

The distance between two adjacent relays in parallel and unidirectional mounting according to IEC 61810-1 or distance to other electrical components. Insulation requirements may stipulate an increase to the minimum distance between the relays or to choose a different placement.

If not otherwise stated the product data refers to relays in 'single mounting'.

In addition to this definition we use:

- dense packing: relays mounted at minimum distance; this minimum distance is defined by the requirements of the insulation coordination at rated voltage 230 VAC, and/or by mechanical requirements for the mounting of the relay (e.g. use of sockets)
- single packing: relays mounted at a distance without any thermal impact of adjacent relays or components.

Mounting / placement

Unless other restrictions are stated the relays can be mounted in any direction. The relay connections have to be fully contacted and with adequate cross-sections to ensure the current flow and heat dissipation.

For the arrangement of the relays the insulation requirements, heat dissipation and the magnetic interrelation has to be taken into consideration.

NC contact

A contact that is open when the relay is in its operate condition, and which is closed when the relay is in its release condition.

NO contact

A contact that is closed when the relay is in its operate condition, and which is open when the relay is in its release condition.

Nominal power (coil)

See > Coil power

Nominal voltage (coil)

See > Rated coil voltage

Non-operate voltage

Value of the input voltage at which a relay does not operate

Non-release voltage, hold voltage

The value of the input voltage at which a monostable relay does not release after energization with rated coil voltage and minimum energization duration at standard conditions (no vibration or shock applied to the relay).

Open contact circuit data

Insulation parameters of the contact circuit.

Operate

Process in which a relay shifts from the release/rest condition to the operate condition.

Operate category

See > Operative range

Operate condition

For a monostable relay, specified condition of the relay when it is energized by the specified energizing quantity and has responded to that quantity; for a bistable relay, the condition other than the release condition as declared by the manufacturer

Operate time (DC coils)

The time interval that elapses from energizing a relay in the rest state with the rated voltage (pulse or square signal) at an ambient temperature of 23°C to the moment when the last output circuit is closed or opened (bounce time not included).

This definition refers to DC-coils only, due to the dependancy of the phase angle considerably longer operate times may occur with AC magnetic systems.

Operate voltage

Value of coil voltage at which a mono- or bistable relay operates

Operate voltage U_1

Value of the coil voltage at which a relay operates, having previously been energized at the same voltage and with rated contact load (thermal equilibrium has to be achieved).

Operate voltage without preenergizing U_0

Minimum permissible input voltage at which the relay operates, for a coil temperature equal to the reference temperature (23°C coil temperature without preenergizing).

Operative range

According to IEC 61810-1.

Class 1: 80%..110% of the rated coil voltage (or range)

Class 2: 85%..110% of the rated coil voltage (or range)

For diagram specification see > Coil operative range

Operative voltage range

Permissible range for the energizing voltage as function of the ambient temperature. The operative range is defined by the limiting coil voltage U_2 and the operate voltage U_1 (coil with preenergization)

Overvoltage category

Classification of electrical equipment according to the overvoltage to be expected

Packaging unit

Minimum delivery quantity (e.g. per carton/plastic bar) and quantity per box.

PCB relays

Relays, designed for the use on printed circuit boards.

Peak inrush current

See > Limiting making capacity

Pollution degree

Number characterizing the expected pollution of the micro environment.

Pre-make contact

Contact with two operating contact points of different material, with one contact switching prior to the other one. Pre-make contacts are used mainly for high inrush currents.

Definitions (Continued)

Product date code

Printed on the product. Indicates the date of production of the product, unless otherwise stated given in the format 'year+week' (e.g. 0412 indicates production in 2004 week 12).

Product key

The ordering code structure does allow a large number of possible variations, but not all possible variations are defined as standard types (ordering codes) and thus not included in the product range.

Special versions to customer specifications can be supplied. Please contact your local sales organization.

Product marking/specials



'Caution' - this symbol indicates a general possible cause of risk - refer to the specification/data sheet for details.



'Read instructions' - this symbol refers to important information in the respective data sheets or specification



Symbol for a NO contact



Symbol for a NC contact



Symbol for a CO contact



Symbol for a forcibly guided contact set (safety relays)



Symbol for coil information

For information on production date code, see > Product date code

PTI

See > Tracking index

Push-to-test button, test tab

For manual operation of the relay. The test button is to be used for test purposes of an equipment or installation. The push-to-test button is not designed for standard ON / OFF operations, for continuous electrical operation in the manually set ON state, and is not to be used as a switch.

Before operating the test tab, the operator has to make sure that the load and any other connected item will operate safely.

As safety functions of the equipment might be bypassed and no insulation requirements apply the test button is to be operated by trained personnel only.

Quick connect terminals (spade terminals)

The connectors indicated in the datasheet may be used for the connection to the relay. When using this connector type the given plug cycles and the maximum permissible current have to be taken into consideration. The connector and wire cross section have to be selected so that under the current load the increase of the temperature at the connector point must not exceed 45 K. For high contact currents it is recommended to solder the connection. Furthermore the correct insulation of the connectors/plugs have to be used.

Rated coil voltage range

Voltage range at which the relay displays the operating characteristics.

These specified operating characteristics are given for a constant DC supply or sinusoidal AC supply. Other operating conditions (e.g. pulse control, ramp voltage, half wave rectifying, etc.) may lead to characteristics other than specified.

Rated coil voltage, Nominal voltage (coil),

Rated voltage at which the relay displays the operating characteristics.

These specified operating characteristics are given for a constant DC supply or sinusoidal AC supply. Other operating conditions (e.g. pulse control, ramp voltage, half wave rectifying, etc.) may lead to characteristics other than specified.

Rated current (contacts)

Current a relay can switch on and off and a relay or accessory can carry under specified conditions.

Unless otherwise defined the rated current covers:

- contact current, switching current
- limiting continuous current

For a relay the specified conditions are defined under contact ratings; see > contact ratings.

For accessories the rated current is specified for a duty factor of 50% at rated frequency of operation and at ambient temperature 23°C; the respective derating curves should be followed.

Rated frequency of operation (switching rate)

Number of cycles per unit of time.

Rated insulation voltage

The voltage an insulation can withstand for longterm. Base for the dimensioning of the creepage distance.

Rated voltage (contacts)

Rated voltage (switching voltage) is voltage between the switching contacts before closing or after opening of the contact.

Rated voltage system (insulation)

Rated values of the power supply system. Unless otherwise stated the insulation refers to a three-phase system, mid-point earthed. The rated impulse voltage is the base for the dimensioning of the clearances.

Recommended minimum switching power

see > Minimum switching power

Reference values

Reference values for all tests according to IEC 61810-1.

Reinforced insulation

A single insulation system applied to live parts which provides a degree of protection against electric shock, comparable to a system comprising basic insulation and supplementary insulation.

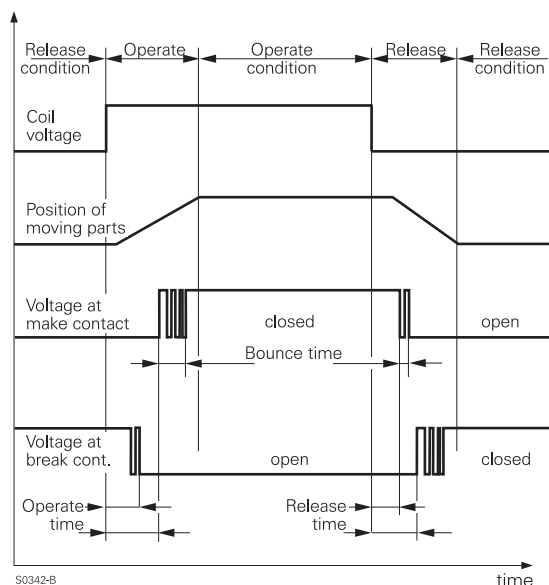
Definitions (Continued)

Relay cycles

Due to the self induction of the coil and the inertia of the parts to be moved, on activating a relay the operations do not take place suddenly. The function diagram below shows the different cycles for the most important relay configurations of undelayed power relays. Unless otherwise stated the indicated times are maximum values, the cycles specified apply to DC-coils energized with rated voltage (without any components in series or parallel to the coil) and at the reference temperature.

See

- operate time
- release time/reset time
- bounce time
- minimum energization duration



Relay Technology Categories

The 'Relay Technology Categories' describe the degree of sealing of the relay case or its contact unit. See 'Category of environmental protection'.

Relays with forcibly guided contacts

The compliance with regulations for the safety of persons and material is imperative in our technical world. National and international regulations take various risks into account. These safety standards also make demands on components which share with their function the safety level of a plant, machine or the equipment. For safety relays the demand for forcibly guided contact system according ZH1/457, issued by the professional association applies; the contacts have to be linked mechanically in a way, that NO and NC contacts may not be closed at the same time. It has to be ensured that over the entire life and even in case of malfunction (e.g. contact welding) the open contact gap will be at least 0.5 mm. If specified they also comply with the wider requirements according to EN 50205 "relays with forcibly guided contacts"

Release

Process in which a monostable relay shifts from the operate state back to the rest state.

Release time

The time interval that elapses from the point of time at which a monostable relay in the operating state has the rated voltage disconnected to the point of time at which the last output circuit has closed or opened (not including the bounce time). Unless otherwise stated the indicated times are maximum values and are valid for energization with rated voltage, without any components in series or parallel to the coil, and at reference temperature.

Release voltage

The input voltage at which a monostable relay must have released to the rest state at the reference temperature.

Reset

Process in which a bistable relay returns from the operate state back to the rest state.

Reset time

The time interval that elapses from the point of time at which a bistable relay in the operating state has the rated voltage (applied in the opposite direction for 1-coil systems and to the reset coil for 2-coil systems) to the point of time at which the last output circuit has closed or opened (not including the bounce time).

Reset voltage max.

The input voltage that must not be exceeded to a bistable coil for reset to the rest state at the reference temperature. Please note the wiring diagram and the polarity (see > Bistable relay).

Reset voltage min.

The input voltage that has to be applied to a bistable coil for reset to the rest state at the reference temperature. Please note the wiring diagram and the polarity (see > Bistable relay).

Resistance to soldering heat

According to IEC 60068-2-20, method 1A.

Rest state

Switch position of a monostable relay in the unenergized state. In bistable relays this is the switch position specified by the manufacturer. The contact position is not defined at delivery.

RoHS - Directive 2002/95/EC

Directive on the Restriction of Hazardous Substances (Directive 2002/95/EU, RoHS directive) restricting the use of certain materials as Lead (Pb), Cadmium (Cd), Mercury (Hg), hexavalent Chromium (Cr6), polybrominated Biphenyls (PBB) and polybrominated Diphenylethers (PBDE).

'Compliant'

indicates that the entire product group is compliant with the RoHS directive and none of the above materials is intentionally added and/or are below the limits set forth in the directive.

'Compliant versions'

indicates that certain products within the respective product group are compliant with the RoHS directive. The RoHS compliant selection is indicated together with the information on the RoHS compliance. Some products of that product group however do contain materials (e.g. Cd) listed above and thus are not compliant with the RoHS directive.

Safety relays

See > Relays with forcibly guided contacts

Schematic for contact loading

See > Contact loading

Definitions (Continued)

Set voltage

Value of coil voltage at which a bistable relay operates.

Shock resistance (destruction)

This test is used to evaluate the resistance of the relay to heavy mechanical shocks leading to a permanent damage to the relay. This test is performed according to the IEC 60068-2-27, Ea test.

Shock resistance (function)

This test is used to evaluate the resistance of the relay to mechanical shocks such as those that could occur in transport or during operation (no opening of closed relay contacts with a duration > 10 µs). This test is performed according to the IEC 60068-2-27, Ea test.

Single contact

Contact system with one contact point per contact member (contact blade).

Soldering temperature/time, IEC 60068-2-20

See > Resistance to soldering heat

Standards

The relays in this catalog have been designed, specified and tested in accordance to the relay standard IEC 61810-1 'Electromechanical Elementary Relays - part 1: General and Safety Requirements'. Where the corresponding approvals are stated in the datasheet, the relays and sockets are tested to IEC 61810 resp. EN 61984 and UL508.

Typical application for these relays are general industrial equipment, electrical facilities, electrical machines, appliances for household and similar use, information technology and business equipment, building automation equipment, automation equipment, electrical installation equipment, medical equipment, control equipment, telecommunications, vehicles, transportations, etc.

If required, the relays are assessed in line with these applications in accordance with the relevant sections of the application IEC standards (e.g IEC 60730-1, IEC 60335-1, IEC 60950-1).

Switching current

Electric current which a relay contact makes and/or breaks.

Switching power

Product of the switching current and switching voltage (in W for direct current, in VA for alternating current).

Switching rate

See > Frequency of operation

Switching voltage

Voltage between the switching contacts before closing or after opening of the contact.

Technical data

Technical data in this catalog are based on the IEC 61810-1 and EN 61810-1 respectively and are guidelines for appropriate use under standard conditions. For additional information please contact our technical support.

Terminal screw torque

The maximum indicated terminal screw torque must not be exceeded.

Test tab

See > Push-to-test button

Tracking

Progressive degradation of a solid insulating material by local discharges to form conducting or partially conducting paths.

Tracking index

PTI - Proof tracking index - numerical value of the proof voltage expressed in volts which a material in test can withstand without tracking under specified conditions (according IEC 212-01-45)
CTI - Comparative tracking index - numerical value of the maximum voltage expressed in volts which a material in test can withstand without tracking under specified conditions (according IEC 212-01-45)

Twin contact

Contact with two simultaneously operating contact points per contact member (contact blade). Twin contacts increase the contact reliability considerably, especially when switching low currents and voltages (dry circuits).

Type of contact

See > Contact set

Type of insulation

Quality of insulation system, depending on design and application conditions; applied as:

- functional insulation
- basic insulation
- reinforced insulation.

Type of interruption

Describes the quality of the contact separation. See:

- micro disconnection
- full disconnection

Vibration resistance (function)

This test is used to evaluate the resistance of the relay to harmonic mechanical oscillations such as those that could occur in transport or during operation. No opening of closed relay contacts with a duration > 10 µs). This test is performed according to the IEC 60068-2-6, Fc test. Unless otherwise stated the values refer to a frequency range 30...150 Hz.

Wash tight/immersion cleanable

See > Category of protection (IEC 61810) - RT III

Relays that can be cleaned together with the printed circuit board after soldering. The washing requires a suitable solvent. The term "immersion cleanable/wash tight" is not identical with "hermetically sealed"!

Unless otherwise stated the relays are wash tight according to Qc2 IEC 60068-2-17, tested with a water immersion test at 70°C for 1 minute.

Contact our technical support for suitable solvents and washing parameters. The user needs to verify the compatibility of lacquer, solvents and drying process.

Processing Information

Processing

The relays may be processed on all standard commercial solder and cleaning equipment for this type of electrical and electromechanical components.

Mounting

Unless otherwise stated the relay can be mounted in any position. The relays can be further processed in the industry standard commercial soldering and cleaning (for suitable products) plants.

Insertion

No pressure should be exerted on the relay cover and terminal pins after the relay has been inserted in the printed circuit board. The relays have to be removed from the packaging in an orderly way, processing of relays in bulk is not permitted. Dimensions and pcb layout indicated in the data sheet are indicated for the manual placement on the pcb's. For automated pick-and-place we refer to detailed component drawings.

After insertion in the printed circuit board, the terminal pins must not be bent in order to fix them; this could alter the relay parameters. Bending the terminal pins in relays sealed against washing can damage the sealing. However, if fixing must be carried out before soldering, please contact our application support.

Fluxing

The fluxing process should be set up so that the flux wets only the underside of the printed circuit board. The flux should only be visible as foam flux through any open perforations in the printed circuit board. If the printed circuit board is flooded by flux, bursting flux bubbles can lead to contamination in open relays and, consequently, to failures. To protect against corrosion, no acidiferous flux should be used. The recommended flux types are 1.1.3, 1.2.3 or 2.2.3 according to DIN EN 29454 T.1.

Preheating

During preheating for common wave soldering processes, the temperature of the upper surface of the printed circuit board should not exceed 120°C. Note that any not completely dried flux might evaporate in an explosive reaction and sputter; ensure that no flux penetrates the insides of open relays.

Soldering

PIN version

Unless otherwise stated all pcb relays sold after January 1st 2005 are pretinned with Sn99,3Cu0,7. The pre-soldered pins are suited for standard soldering processes with Pb-solder as well as for Pb-free solder processes. The solder bath temperature should not exceed 270°C for appr. 10 s for flux-proof relay versions (RT II) and should be max. 260°C for appr 5 s for wash-tight relays (RT III).

For other bath temperatures and solder time (e.g. higher solder bath temperature with reduced dipping time) contact our technical support.

Manual soldering

For manual soldering, we recommend a soldering temperature of 300 to 350°C for a maximum soldering time of 2 s.

Cooling

The thermal loading resulting from the soldering process can be reduced at the end of the process by cooling. Do not change the temperature suddenly, especially avoid cold shock for the hot relay.

Cleaning

We recommend avoiding washing processes in order to protect the environment. The fluxes we specify render a wash process unnecessary. If cleaning is required for other reasons, the following points must be observed independently of the washing process:

- do not stress the terminals mechanically before or during the mounting, soldering or cleaning process
- the printed circuit must be washed immediately after the soldering process
- do not lower the temperature while the relay is in contact with any liquid, e.g. some residue of cleaning medium can be between relay and PCB
- do not use jet pressure higher than 1,5 bar or ultrasonic pressure higher than 0,5 bar. Do not use any ultrasonic pressure for relays with gold plated contacts
- the individual wash stations must be separate from one another to prevent cross-contamination!
- after the final washing process, the printed circuit boards must be cleaned again using a clean washing medium!

Protective lacquering

Relays with a category of protection II are not suited for coating processes, relays with category of protection III are suitable for washing processes but not necessarily suited for coating processes. Please contact our application support for recommended relay versions and processes. The user has to conduct thorough testing with their processes, used lacquers, coatings or casting compound. Solvents may damage the component case or compromise their sealing properties. Ensure a complete drying of the solvent and complete hardening of the coating according to the producer's specification to prevent components, capable of creep, that might damage the relay in the long term.

Silicon containing laquer or potting compound must not be used! Coatings, especially potting compounds may impact the heat dissipation of the relay. Therefore it is necessary to conduct thermal tests of relays in potted assemblies.

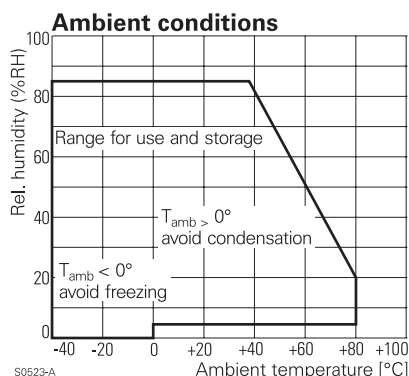
Application information

Humidity / condensation

Standard conditions:

Annual mean relative air humidity $\leq 75\%$ at ambient temperature 21°C , on 30 complete days distributed naturally over the year 95% at ambient temperature $\leq 25^\circ\text{C}$, on the remaining days occasionally 85% at 23°C . No condensing or freezing allowed (storage and/or use).

For use and storage at other conditions, condensation or freezing due to temperature changes has to be avoided. Use and storage within the limits indicated in the graph.



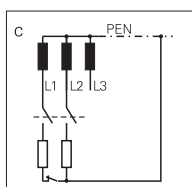
Switching of different polarities in a multi-pole relay

Switching of different potentials on adjacent contact circuits of a multi-pole relay is permitted as long as the sum of applied voltages does not exceed the rated insulation voltage.

The switching of different voltages with the generation of an electrical arc and the switching of reverse polarity on adjacent contact circuits of a multi-pole relay without contact separated chambers however is not permitted. The contact load has to be connected to the same contact side.

Application sample 1:

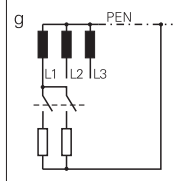
- rated insulation voltage of the contacts 250 VAC
- contact circuit 1: load voltage 230 VAC, 1 A inductive load, dry switching (switching without contact load)
- contact circuit 2: signal load 12 VDC, 100 mA resistive load



Application sample 2:

- rated insulation voltage of the contacts 250 VAC
- contact circuit 1: load voltage 230 VAC, 1 A inductive load
- contact circuit 2: load voltage 230 VAC, 3 A resistive load

Both contacts generate an electrical arc during the switching process. Both contact circuits are supplied by a common phase L1. This phase 1 is connected to the CO contact. The loads are connected to the neutral conductor (PEN). Switching of different polarities in a multi-pole relay



Combination of relay and socket, insulation requirements

The new relay standard IEC 61810-1 has an important impact on the combination of a relay and the respective socket. The relay sockets have to comply with the requirements of IEC 61984 and the insulation requirements of the IEC 60664-1.

Even if the socket alone fulfills or exceeds the insulation requirements as clearance/creepage for the relay, the combination of a relay with a socket may reduce the creepage and lead to a lower rated insulation voltage. Hence restrictions for the combination relay-socket may be the consequence, e.g. a reduction of the voltage range or of the pollution degree. Especially for miniature multi-pole relay and respective sockets with small distance between the contact circuits these restrictions have a big impact.

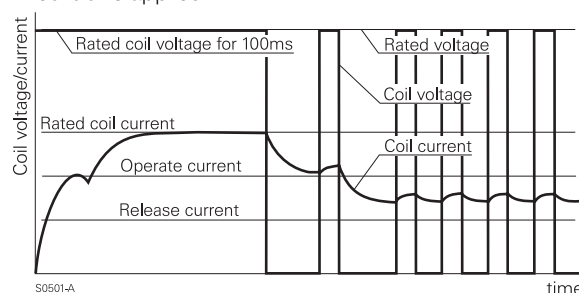
Apart from the insulation properties, the thermal characteristics of the combination relay and socket are of utmost importance (see > derating curves).

As sockets from different sources are not directly comparable, the compliance with the technical specification can only be guaranteed for an approved combination relay-socket. As design details and characteristics for non Tyco Electronics / Schrack products are beyond our control, guarantees for technical parameters and characteristics regarding such combinations is not possible.

Risks as reduced dielectric strength, fire hazard, etc. due to use based on unclear or omitted data, limitations or restrictions must not be underestimated. As an improper use of not approved combinations relay-socket cannot be ruled out, we only guarantee the characteristics and parameters for the approved combinations of relays and sockets as indicated in the catalog and data sheets. Combination of relay and socket, insulation requirements

Reduction of coil power consumption

For monostable DC relays a reduction of coil power is possible if vibration or shock requirements are low. After an energizing pulse of 100 ms with rated coil voltage the coil, power consumption can be reduced to 50% by using constant DC supply (71% of rated coil voltage). After an energizing pulse of at least 100 ms additional savings in coil power consumption of monostable DC relays can be achieved if the coil current is controlled, e.g. by pulse width modulation (PWM). For the minimum recommended coil current please contact our technical support. The used frequency should be chosen so that it is outside of the audible range. The characteristics of the application regarding electromagnetic compatibility (EMC) has to be checked when PWM control is applied.



Safety Relays / Definitions

Relays with forcibly guided contacts

General information

Relays with forcibly guided contacts play a decisive role in avoiding accidents on machines and in systems. Safety control circuits ensure switching into a fail-safe condition. Forcibly guided contacts monitor the function of the safety control circuits. For this safety function, all the assumed faults that can occur must already have been taken into consideration and their effects examined. Standard EN 50205 "Relays with forcibly guided contacts" contains current internationally-defined design requirements. Relays with forcibly guided contacts that comply with EN 50205 are also referred to as "safety" relays.

Function

Power relays with forcibly guided (linked) contacts: Power relays with at least one break and one make contact where all contacts are mechanically linked to guarantee that make and break contacts can never be simultaneously in the closed position.

Contact gaps shall never be less than 0.5 mm over the operating life, not only under normal operating conditions, but also when a fault occurs.

This requirement allows the respective exclusive-or contact to detect the fault of a contact to open. For example, the welding of a make contact is indicated by the non-closing of the break contact when the energization is switched off.

To fulfill the specifications of the standard, the assumed faults must be considered:

Assumed fault	Effect
Failure of the contact to open due to welding	The failure of any make contact to open has the effect that none of the break contacts close even when the relay is not energized. The failure of any break contact to open has the effect that none of the make contacts close when the relay is energized.
Failure of the contact to open due to failure of the drive	The drive has no effect on the forcibly guided contact operation.
Breakage of the contact spring	Simultaneous closing of the break and make contacts is not possible even as a result of breakage. Completely insulated contact chambers (SR2, SR4, SR6) or barriers (SR2M) guarantee a contact gap of 0.5 mm.

Safety Relays / Definitions (Continued)

Application example

The configuration of safety control circuits is basically only possible with specified fault conditions. Safety relays have the characteristic that make and break contacts can never both be closed at the same time.

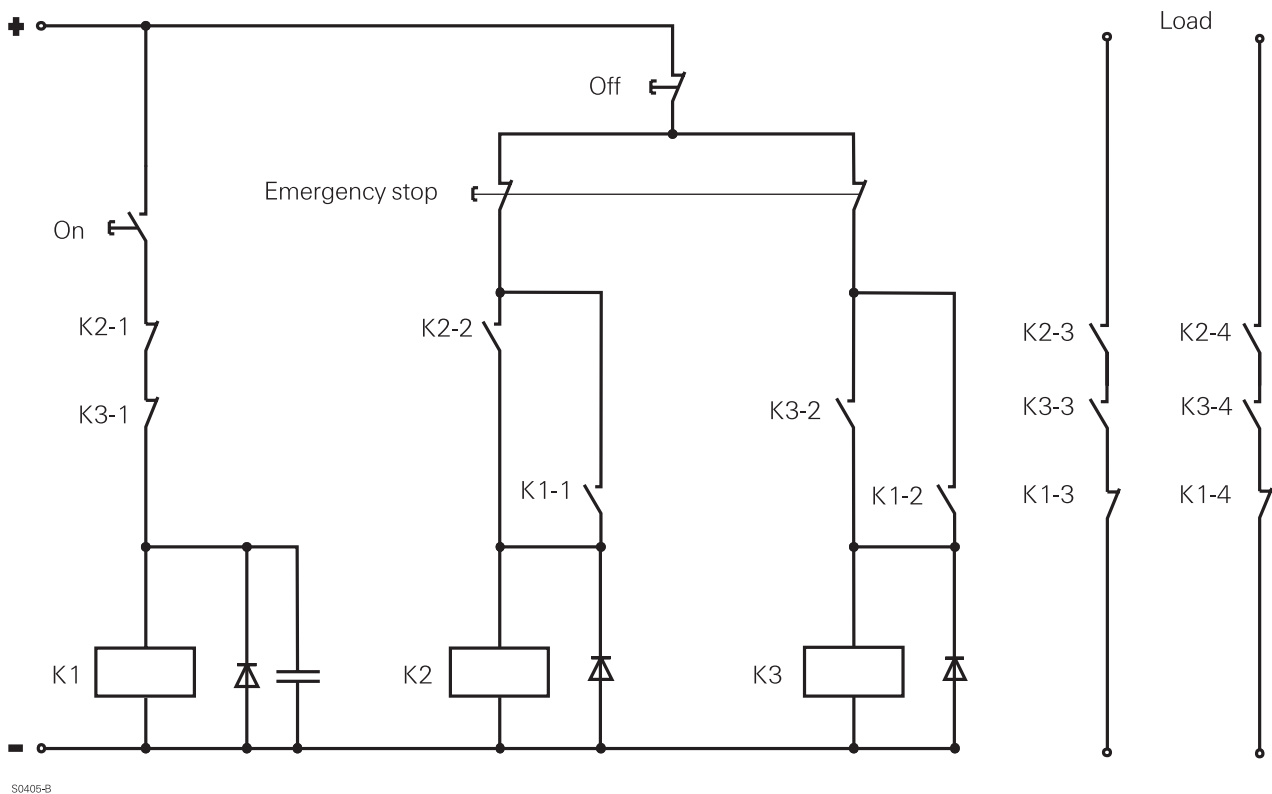
The following circuit diagram shows an emergency stop control circuit consisting of three 4-pole safety relays.

The first fault to occur

- does not cause the safety function to fail because more components are used than required for the circuit to function (redundancy).
- prevents a restart and can be detected as a result (self monitoring)

Operation

- Closing the "ON" switch causes the K1 relay to be pulled in
- The K2 and K3 relays are energized via the make contacts K1-1 and K1-2 and hold themselves via K2-2 or K3-2
- The break contacts K2-1 and K3-1 cause the drop-out of K1 where the load circuit is released via the break contacts of K1-3 or K1-4.



Fault analysis (examples):

Type of fault	Is there any danger arising from the fault?	Is a restart possible?
Failure of contact K2-3 to open	No, K3-3 opens when the emergency stop switch is actuated	No, K2-1 and K2-3 cannot be closed at the same time (fault excluded by forcibly guid). "ON" button does not cause K1 to close
Failure of contact K1-3 to open	No, K2-3 and K3-3 open when the emergency stop switch is actuated	No, K1-1 and K1-2 cannot close due to closed K1-3. K2 and K3 are not energized

Part number reference list (Continued)

Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page
1-1393092-1	MT331024	MT	177	1-1393224-2	RYA31024	RYII	45	1-1415037-1	PTMU0524	PT acc.	208	1-1461937-0	PTF21024	PTF	174
1-1393092-2	MT331048	MT	177	1-1393224-3	RYA31048	RYII	45	1-1415039-1	PT570R48	PT	170	1-1461938-2	PTF21524	PTF	174
1-1393092-3	MT331110	MT	177	1-1393224-4	RYA32005	RYII	45	1-1415044-1	RM232LC4	RM 2/3/7	180	1-1461938-6	PTF21615	PTF	174
1-1393092-5	MT331220	MT	177	1-1393224-5	RYA32009	RYII	45	1-1415048-1	PT370R48	PT	170	1-1461938-8	PTF21730	PTF	174
1-1393092-6	MT3330C4	MT	177	1-1393224-6	RYA32012	RYII	45	1-1415054-1	SR4M4036	SR4 D/M	148	1-1649179-1	T92P7D22-36	T92	133
1-1393092-7	MT3330E8	MT	177	1-1393224-7	RYA32021	RYII	45	1-1415055-1	SR4D4018	SR4 D/M	148	1-1649305-0	T7NV5D4-09-WG	T7N	121
1-1393092-8	MT3330Z4	MT	177	1-1393224-8	RYA32024	RYII	45	1-1415060-1	SR6ZA730	SR6Z	160	1-1649305-1	T7NV5D4-12-WG	T7N	121
1-1393092-9	MT3331B0	MT	177	1-1393224-9	RYA33005	RYII	45	1-1415068-1	V23092-A1005-A801		40	1-1649305-2	T7NV5D4-24-WG	T7N	121
1-1393107-5	RM202L48	RM 2/3/7	180	1-1393225-0	RY610012	RYII	45	1-1415072-1	PT580S15	PT	170	1-1649305-3	T7NV5D4-36-WG	T7N	121
1-1393107-6	RM202M10	RM 2/3/7	180	1-1393225-1	RY610015	RYII	45	1-1415073-1	RT4S4LC4	RT pack.	224	1-1649324-1	T7NV5D4-48-WG	T7N	121
1-1393107-7	RM202006	RM 2/3/7	180	1-1393225-2	RY610018	RYII	45	1-1415074-1	RT4S5R24	RT pack.	224	1-1649324-2	T7NV5D4-05-WG-A		121
1-1393146-1	RMD05524	RM C/D	191	1-1393225-3	RY610021	RYII	45	1-1415075-1	PT3S7LB2	PT pack.	230	1-1649324-3	T7NV5D4-06-WG-A		121
1-1393146-5	RM202110	RM 2/3/7	180	1-1393225-4	RY610024	RYII	45	1-1415076-1	MT3B3048	MT	177	1-1649324-4	T7NV5D4-09-WG-A		121
1-1393146-6	RM202221	RM 2/3/7	180	1-1393225-5	RY610048	RYII	45	1-1415078-1	RM732110	RM 2/3/7	180	1-1649324-5	T7NV5D4-12-WG-A		121
1-1393146-7	RM202506	RM 2/3/7	180	1-1393225-6	RY610060	RYII	45	1-1415352-1	RT424A48	RT2bistable	101	1-1649324-6	T7NV5D4-24-WG-A		121
1-1393146-8	RM202512	RM 2/3/7	180	1-1393225-7	RY611005	RYII	45	1-1415352-2	PB114018	PB	112	1-1649324-7	T7NV5D4-36-WG-A		121
1-1393146-9	RM202524	RM 2/3/7	180	1-1393225-8	RY611006	RYII	45	1-1415354-1	SR6M4110	SR6 D/M	151	1-1649324-8	T7NV5D4-48-WG-A		121
1-1393147-0	RM732524	RM 2/3/7	180	1-1393225-9	RY611012	RYII	45	1-1415356-1	PBH34024	PBH	115	1-1649341-0	T9CP1A54-120	T9C	130
1-1393147-1	RM732615	RM 2/3/7	180	1-1393230-0	RP3SL018	RP3SL	83	1-1415357-1	PT270S00	PT	170	1-1649341-6	T9CP5A54-12	T9C	130
1-1393147-5	RM733730	RM 2/3/7	180	1-1393230-1	RP3SL024	RP3SL	83	1-1415366-1	PT3S7S85	PT pack.	230	1-1649341-7	T9CP5A54-24	T9C	130
1-1393147-8	RM735012	RM 2/3/7	180	1-1393230-2	RP3SL048	RP3SL	83	1-1415368-1	MT321080	MT	177	1-1649341-8	T9CP5A54-48	T9C	130
1-1393147-9	RM735548	RM 2/3/7	180	1-1393230-3	RP3SL060	RP3SL	83	1-1415390-1	PE014F05	PEbistable	26	1-1649341-9	T9CP5A54-120	T9C	130
1-1393148-1	RM202L24	RM 2/3/7	180	1-1393230-4	RP3SL110	RP3SL	83	1-1415391-1	PE014H12	PEbistable	26	1-1721058-0	PTF22524	PTF	174
1-1393148-2	RM202048	RM 2/3/7	180	1-1393236-3	V23092-A1012-A801		40	1-1415404-1	Q430 25 0911 00		136	1-1721058-4	PTF22615	PTF	174
1-1393148-3	RM202627	RM 2/3/7	180	1-1393236-8	V23092-A1018-A201		40	1-1415404-3	Q430 25 1011 00		136	1-1721058-6	PTF22730	PTF	174
1-1393148-4	RM202730	RM 2/3/7	180	1-1393236-9	V23092-A1018-A301		40	1-1415404-6	Q430 25 2811 00		136	1-1721081-1	PCJ-109D3MH	PCJ	43
1-1393148-5	RM203012	RM 2/3/7	180	1-1393238-1	RTB14003	RTI	55	1-1415502-1	RX314012	RX1	79	1-1721081-2	PCJ-112D3MH	PCJ	43
1-1393148-6	RM203024	RM 2/3/7	180	1-1393238-2	RTB14005	RTI	55	1-1415503-1	RX114012C	RX1	79	1-1721081-4	PCJ-124D3MH	PCJ	43
1-1393149-3	RM703006	RM 2/3/7	180	1-1393238-3	RTB14006	RTI	55	1-1415504-1	RTH34048	RTH105	77	1-1721105-0	PCD-112-D2MH	PCD	110
1-1393149-4	RM703012	RM 2/3/7	180	1-1393238-4	RTB14009	RTI	55	1-1415507-1	RTE25048	RT2	95	1-1721105-1	PCD-124-D2MH	PCD	110
1-1393149-8	RM707012	RM 2/3/7	180	1-1393238-5	RTB14012	RTI	55	1-1415510-1	RX334012C	RX1	79	1-1721105-2	PCD-148-D2MH	PCD	110
1-1393149-9	RM707060	RM 2/3/7	180	1-1393238-7	RTB14018	RTI	55	1-1415511-1	RHF34048	RF	86	1-1721133-0	T7NV1D4-09-WG	T7N	121
1-1393154-0	PT380524	PT	170	1-1393238-8	RTB14020	RTI	55	1-1415512-1	RHF4D406	RF	86	1-1721133-1	T7NV1D4-12-WG	T7N	121
1-1393154-1	PT380548	PT	170	1-1393238-9	RTB14024	RTI	55	1-1415513-1	RHF4D424	RF	86	1-1721133-2	T7NV1D4-24-WG	T7N	121
1-1393154-2	PT570024	PT	170	1-1393239-1	RT114018	RTI	55	1-1415514-1	RF354005	RF	86	1-1721133-3	T7NV1D4-36-WG	T7N	121
1-1393154-3	PT570125	PT	170	1-1393239-2	RT114020	RTI	55	1-1415515-1	RF3D4024	RF	86	1-1721133-4	T7NV1D4-48-WG	T7N	121
1-1393154-4	PT571512	PT	170	1-1393239-3	RT114024	RTI	55	1-1415516-1	RF3F4060	RF	86	1-1721249-0	LN113024	LN/LNH	124
1-1393154-5	PT571615	PT	170	1-1393239-4	RT114048	RTI	55	1-1415518-1	RF354005WG	RF	86	1-1721249-2	LN113036	LN/LNH	124
1-1393154-6	PT580012	PT	170	1-1393239-5	RT114060	RTI	55	1-1415519-1	RF3D4012WG	RF	86	1-1721249-3	LN113048	LN/LNH	124
1-1393154-7	PT580024	PT	170	1-1393239-6	RT114110	RTI	55	1-1415520-1	RF3F4060WG	RF	86	1-1721249-4	LN113005	LN/LNH	124
1-1393154-8	PT580048	PT	170	1-1393239-7	RT114524	RTI	55	1-1415521-1	RFH54009WG	RF	86	1-1721253-0	LNH13009	LN/LNH	124
1-1393154-9	PT580060	PT	170	1-1393239-8	RT114615	RTI	55	1-1415522-1	RFHD4048WG	RF	86	1-1721253-1	LNH13012	LN/LNH	124
1-1393203-0	V23148-A0005-C101		107	1-1393239-9	RT114730	RTI	55	1-1415526-1	PT78742	PT acc.	208	1-1721253-2	LNH13024	LN/LNH	124
1-1393203-1	V23148-A0007-A101		107	1-1393240-0	RT315006	RTI	55	1-1415527-1	RT334012WG	RT1	55	1-1721253-3	LNH13036	LN/LNH	124
1-1393203-2	V23148-A0007-B101		107	1-1393240-1	RT315012	RTI	55	1-1415534-1	PBH14007	PBH	115	1-1721253-4	LNH13048	LN/LNH	124
1-1393203-3	V23148-A0007-C101		107	1-1393240-2	RT315015	RTI	55	1-1415535-1	PT5L7RC4	PT pack.	230	1-1721381-0	T7SS5E6-12	T7S	118
1-1393203-4	V23148-A0008-A101		107	1-1393240-3	RT315018	RTI	55	1-1415535-3	PT5L7S85	PT pack.	230	1-1721381-1	T7SS5E6-24	T7S	118
1-1393203-8	V23148-A0103-A101		107	1-1393240-4	RT315024	RTI	55	1-1415535-5	PT5L7TD0	PT pack.	230	1-1721382-0	T7SS1E6-12	T7S	118
1-1393203-9	V23148-A0103-B101		107	1-1393240-5	RT315036	RTI	55	1-1415535-7	PT5L8LB2	PT pack.	230	1-1721382-1	T7SS1E6-24	T7S	118
1-1393204-0	V23148-B0007-A101		107	1-1393240-6	RT315048	RTI	55	1-1415535-8	PT5L8LC4	PT pack.	230	1-1833005-0	RFH34024WG	RF	86
1-1393204-1	V23148-B0007-B101		107	1-1393240-7	RT315060	RTI	55	1-1415535-9	PT5L8RC4	PT pack.	230	1-1833005-1	RFH54006WG	RF	86
1-1393204-2	V23148-B0007-C101		107	1-1393240-8	RT315080	RTI	55	1-1415536-9	RT444012WG	RTH	77	1-1833005-2	RFHD4012WG	RF	86
1-1393204-3	V23148-B0008-A101		107	1-1393240-9	RT315110	RTI	55	1-1415537-8	RTH44F12	RT2	95	1-1860211-1	RT170P1	XT acc.	204
1-1393210-2	T9AS1D12-110	T9A	127	1-1393243-0	RTE24024	RT2	95	1-1415537-9	RTD15524	RT1	55	1-1956024-0	V23092-S1005-A301		40
1-1393210-3	T9AS1D12-12	T9A	127	1-1393243-1	RTE24048	RT2	95	1-1415538-1	RTH14012WG	RTH	77	1-1956024-1	MT326115	MT	177
1-1393210-4	T9AS1D12-15	T9A	127	1-1393243-3	RTE24060	RT2	95	1-1415539-3	PTML0560	PT acc.	208	1-1956024-2	MT326230	MT	177
1-1393210-6	T9AS1D12-22	T9A	127	1-1393243-4	RTE24110	RT2	95	1-1415539-4	PTML0220	PT acc.	208	1-1956024-3	MT328012	MT	177
1-1393210-8	T9AS1D12-24	T9A	127	1-1393243-5	RTE24524	RT2	95	1-1415539-5	PTMG0560	PT acc.	208	1-1956024-4	MT328024	MT	177
1-1393210-9	T9AS1D12-28	T9A	127	1-1393243-7	RTE24615	RT2	95	1-1415539-6	PTMG0220	PT acc.	208	1-1956024-5	MT328048	MT	177
1-1393212-0	T9257D12-24	T92	133	1-1393243-8	RTE24730	RT2	95	1-1415539-7	PTMG0110	PT acc.	208	1-1956024-6	MT328060	MT	177
1-1393212-1	T9257D12-26	T92	133	1-1393243-9	RTE25005	RT2	95	1-1415539-8	RT184005WG	RTsensitive	65	1-1956024-7	MT328115	MT	177
1-1393212-2	T9257D12-6	T92	133	1-1393244-0	RT445110	RT2	95	1-1415540-0	RT31KF12	RTInrush	70	1-1956024-8	MT328230	MT	177
1-1393212-3	T9257D22-10	T92	133	1-1393258-1	V23047-A1021-A501		145	1-1415540-1	RT33KF12	RTInrush	70	1-1956024-9	RMD35730	RM C/D	191
1-1393212-4	T9257D22-12	T92	133	1-1393258-2	V23047-A1021-A511		145	1-1415540-5	RTHH4006WG	RTH105	77	1-1956024-10	RMD05524	RM C/D	191
1-1393212-5	T9257D22-18	T92	133	1-1393258-5	V23047-A1024-A501		145	1-1415540-6	RTHH4009WG	RTH105	77	1-1956024-11	RMD05524	RM C/D	191
1-1393212-6	T9257D22-22	T92	133	1-1393258-7	V23047-A1024-A511		145	1-1415540-7	RTD14024WG	RT1	55	1-1956024-12	RMD05524	RM C/D	191
1-1393212-7	T9257D22-24	T92	133	1-1393260-0	SR6B4048	SR6	154	1-1415541-3	RM602524	RM 5/6	184	1-1956024-13	RMD05524	RM C/D	191
1-13932															

Part number reference list (Continued)

Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page
1393204-4	V23148-B0003-A101		107	1393244-7	RT444730	RT2	95	1415536-4	RTB84012	RTsensitive	65	1721181-2	OJ-SS-105LMH2		36
1393204-5	V23148-B0003-B101		107	1393244-8	RT445009	RT2	95	1415538-7	RT314024WG	RT1	55	1721181-3	OJ-SS-106LMH2		36
1393204-6	V23148-B0003-C101		107	1393244-9	RT445024	RT2	95	1415538-8	RTD15F05	RT1	55	1721181-4	OJ-SS-109LMH2		36
1393204-7	V23148-B0005-A101		107	1393258-2	V23047-A1005-A501		145	1415539-1	RT444012WG	RT2	95	1721181-5	OJ-SS-112LMH2		36
1393204-8	V23148-B0005-B101		107	1393258-3	V23047-A1009-A501		145	1415539-2	RT334006WG	RT1	55	1721181-6	OJ-SS-124LMH2		36
1393204-9	V23148-B0005-C101		107	1393258-4	V23047-A1012-A501		145	1415539-4	RT114024WG	RT1	55	1721249-1	LN133006	LN/LNH	124
1393212-1	T92S7A22-12	T92	133	1393258-5	V23047-A1012-A511		145	1415539-5	RT314A24WG	RT1	55	1721249-2	LN133009	LN/LNH	124
1393212-2	T92S7A22-120	T92	133	1393258-8	V23047-A1018-A501		145	1415539-8	RM609730	RM 5/6	184	1721249-3	LN133012	LN/LNH	124
1393212-3	T92S7A22-208	T92	133	1393258-9	V23047-A1018-A511		145	1415540-4	MT333012	MT	177	1721249-4	LN133024	LN/LNH	124
1393212-4	T92S7A22-24	T92	133	1393260-1	SR6B4005	SR6	154	1415540-5	MT333048	MT	177	1721249-5	LN133036	LN/LNH	124
1393212-5	T92S7A22-240	T92	133	1393260-1	SR6B4006	SR6	154	1415898	RTS3T012	RTIPower	73	1721249-6	LN133048	LN/LNH	124
1393212-6	T92S7A22-277	T92	133	1393260-1	V23050-A1005-A542		154	1415898-0	RTS3T012	RTIPower	73	1721249-7	LN113006	LN/LNH	124
1393212-7	T92S7D12-110	T92	133	1393260-2	V23050-A1006-A542		154	1415898-1	RTS3T024	RTIPower	73	1721249-8	LN113009	LN/LNH	124
1393212-8	T92S7D12-12	T92	133	1393260-3	V23050-A1009-A542		154	1415898-2	RTS3TA12	RTIPower	73	1721249-9	LN113012	LN/LNH	124
1393212-9	T92S7D12-18	T92	133	1393260-4	SR6B4012	SR6	154	1415898-3	RTS3TA24	RTIPower	73	1721253-1	LNH33005	LN/LNH	124
1393217-1	RE030005	RE	31	1393260-4	V23050-A1012-A542		154	1415898-4	RTS3TF03	RTIPower	73	1721253-2	LNH33006	LN/LNH	124
1393217-2	RE030006	RE	31	1393260-5	SR6B4018	SR6	154	1415898-5	RTS3TF12	RTIPower	73	1721253-3	LNH33009	LN/LNH	124
1393217-3	RE030009	RE	31	1393260-5	V23050-A1018-A542		154	1415898-6	RTS3TF24	RTIPower	73	1721253-4	LNH33012	LN/LNH	124
1393217-4	RE030012	RE	31	1393260-6	SR6B4021	SR6	154	1415898-7	RTT3TA12	RTIPower	73	1721253-5	LNH33024	LN/LNH	124
1393217-7	RE030018	RE	31	1393260-6	V23050-A1021-A542		154	1415898-8	RTT3TA24	RTIPower	73	1721253-6	LNH33036	LN/LNH	124
1393217-8	RE030024	RE	31	1393260-7	SR6B4024	SR6	154	1415898-9	RTT3TF12	RTIPower	73	1721253-7	LNH33048	LN/LNH	124
1393218-1	REL30005	REL	29	1393260-7	V23050-A1024-A542		154	1415899-1	RZ01-1A4-D005	RZ	52	1721253-8	LNH13005	LN/LNH	124
1393218-2	REL30006	REL	29	1393260-8	V23050-A1036-A542		154	1415899-2	RZ01-1A4-D006	RZ	52	1721253-9	LNH13006	LN/LNH	124
1393218-3	REL30048	REL	29	1393260-9	SR6B4040	SR6	154	1415899-3	RZ01-1A4-D009	RZ	52	1721381-1	T7SV5E6-05	T7S	118
1393219-1	PEL14012	PE	24	1393260-9	V23050-A1040-A542		154	1415899-4	RZ01-1A4-D012	RZ	52	1721381-2	T7SV5E6-06	T7S	118
1393219-3	PE014005	PE	24	1393844-1	RM507024	RM 5/6	184	1415899-5	RZ01-1A4-D024	RZ	52	1721381-3	T7SV5E6-09	T7S	118
1393219-4	PE014006	PE	24	1393844-2	RM509LC4	RM 5/6	184	1415899-6	RZ01-1A4-D048	RZ	52	1721381-4	T7SV5E6-12	T7S	118
1393219-5	PE014009	PE	24	1393844-3	RM602012	RM 5/6	184	1415899-7	RZ01-1C4-D005	RZ	52	1721381-5	T7SV5E6-24	T7S	118
1393219-6	PE014012	PE	24	1393844-4	RM602024	RM 5/6	184	1415899-8	RZ01-1C4-D006	RZ	52	1721381-7	T7SS5E6-05	T7S	118
1393219-8	PE014018	PE	24	1393844-6	RM607024	RM 5/6	184	1415899-9	RZ01-1C4-D009	RZ	52	1721381-8	T7SS5E6-06	T7S	118
1393219-9	PE014021	PE	24	1393844-7	RM702012	RM 2/3/7	180	1415900-2	RT31C012	RT bifurc.	67	1721381-9	T7SS5E6-09	T7S	118
1393220-1	PEL14003	PE	24	1393844-8	RM702048	RM 2/3/7	180	1415900-5	RTB7D012	RT bifurc.	67	1721382-1	T7SV1E6-05	T7S	118
1393220-2	PEL14024	PE	24	1393844-9	RM702524	RM 2/3/7	180	1415900-6	RTB7D024	RT bifurc.	67	1721382-2	T7SV1E6-06	T7S	118
1393222-2	V23061-A1001-A302		49	1415002-1	PT270R24	PT	170	1415900-7	RT31C024	RT bifurc.	67	1721382-3	T7SV1E6-09	T7S	118
1393222-4	V23061-A1002-A302		49	1415008-1	RM507730	RM 5/6	184	1415900-8	RT33C012	RT bifurc.	67	1721382-4	T7SV1E6-12	T7S	118
1393222-5	V23061-A1002-A402		49	1415009-1	RMD05615	RM C/D	191	1416200-9	V23061-B1010-A301		49	1721382-5	T7SV1E6-24	T7S	118
1393222-6	V23061-A1002-A502		49	1415013-1	MT228012	MT	177	1419105-2	RM703627	RM 2/3/7	180	1721382-7	T7SS1E6-05	T7S	118
1393222-9	V23061-A1003-A302		49	1415015-1	SR6A4024	SR6	154	1419108-1	RT1	55	1721382-8	T7SS1E6-06	T7S	118	
1393224-1	RYA30005	RYII	45	1415015-1	V23050-A1024-A533		154	1419108-7	RT acc.	198	1721382-9	T7SS1E6-09	T7S	118	
1393224-2	RYA30006	RYII	45	1415017-1	SR6C4024	SR6	154	1419118-5	RM28802	RM acc.	219	1721547-2	PCJ-105D3M-WG	PCJ	43
1393224-3	RYA30009	RYII	45	1415017-1	V23050-A1024-A551		154	1419118-6	RM78700	RM acc.	219	1721547-4	PCJ-109D3M-WG	PCJ	43
1393224-4	RYA30012	RYII	45	1415018-1	V23050-A1009-A533		154	1419136-6	RM205048	RM 2/3/7	180	1721547-5	PCJ-112D3M-WG	PCJ	43
1393224-5	RYA30019	RYII	45	1415019-1	V23050-A1036-A551		154	1419136-7	RM502900	RM 5/6	184	1721547-7	PCJ-124D3M-WG	PCJ	43
1393224-6	RYA30024	RYII	45	1415026-1	PT280R24	PT	170	1419136-9	RM705110	RM 2/3/7	180	1721548-1	LN313006	LN/LNH	124
1393224-7	RYA31005	RYII	45	1415029-1	RT31KA12	RTInrush	70	1419144-8	RT44005	RT2	95	1721548-2	LN313009	LN/LNH	124
1393224-8	RYA31006	RYII	45	1415030-1	PB134005	PB	112	1423262-1	T92S11A22-110	T92	133	1721548-3	LN313012	LN/LNH	124
1393224-9	RYA31012	RYII	45	1415035-1	MT78750	MT acc.	215	1423316-1	T92S11D22-36	T92	133	1721548-4	LN313024	LN/LNH	124
1393225-1	RY551018	RYII	45	1415037-1	PTMT00L0	PT acc.	208	1423337-1	T92P11A12-240	T92	133	1721548-5	LN313005	LN/LNH	124
1393225-2	RY551024	RYII	45	1415039-1	RTH34024	RTH105	77	1423338-1	T92P11A12-208	T92	133	1721733-4	T7SV1E4-12	T7S	118
1393225-3	RY552012	RYII	45	1415044-1	MT78603	MT acc.	215	1423340-1	T92P11A12-277	T92	133	1721734-1	T7SV5E4-05	T7S	118
1393225-4	RY553009	RYII	45	1415048-1	PT270R48	PT	170	1423829-1	T92P7A22-24	T92	133	1721734-2	T7SV5E4-06	T7S	118
1393225-5	RY553012	RYII	45	1415054-1	SR4M4021	SR4 D/M	148	1423890-1	T92P11A12-24	T92	133	1721734-3	T7SV5E4-09	T7S	118
1393225-6	RY553024	RYII	45	1415055-1	SR4D4012	SR4 D/M	148	1423967-1	T92P7D52-24	T92	133	1721734-4	T7SV5E4-12	T7S	118
1393225-7	RY610005	RYII	45	1415060-1	SR6Z4615	SR6Z	160	1440004-0	PCH-112D2	PCH	33	1721734-5	T7SV5E4-24	T7S	118
1393225-8	RY610006	RYII	45	1415062-1	SR6D4110	SR6 D/M	151	1440004-1	PCH-124D2	PCH	33	1721735-1	T7SV1E4-05	T7S	118
1393225-9	RY610009	RYII	45	1415066-1	PT570M10	PT	170	1461350-2	PCH-105D2M	PCH	33	1721735-2	T7SV1E4-06	T7S	118
1393230-1	RP3SLA05	RP3SL	83	1415068-1	V23092-A1005-A802		40	1461350-3	PCH-106D2M	PCH	33	1721735-3	T7SV1E4-09	T7S	118
1393230-2	RP3SLA06	RP3SL	83	1415070-1	PB114048	PB	112	1461350-4	PCH-109D2M	PCH	33	1721735-5	T7SV1E4-24	T7S	118
1393230-3	RP3SLA12	RP3SL	83	1415072-1	PT580006	PT	170	1461350-5	PCH-112D2M	PCH	33	1721743-1	LN333006	LN/LNH	124
1393230-4	RP3SLA24	RP3SL	83	1415074-1	RT45SLC4	RT pack.	224	1461350-6	PCH-124D2M	PCH	33	1721743-2	LN333012	LN/LNH	124
1393230-5	RP3SLF12	RP3SL	83	1415075-1	PT3S7TD0	PT pack.	230	1461350-7	PCH-148D2M	PCH	33	1721743-3	LN333024	LN/LNH	124
1393230-6	RP3SLF24	RP3SL	83	1415076-1	PT5S7LC4	PT pack.	230	1461352-2	PCH-105L2M	PCH	33	1721743-4	LN333009	LN/LNH	124
1393230-7	RP3SL005	RP3SL	83	1415078-1	SR6D4012	SR6 D/M	151	1461352-3	PCH-106L2M	PCH	33	1721743-6	LN333005	LN/LNH	124
1393230-8	RP3SL006	RP3SL	83	1415350-1	PE514048	PE	24	1461352-4	PCH-109L2M	PCH	33	1721766-2	PCH-105D2-WG	PCH	33
1393230-9	RP3SL012	RP3SL	83	1415352-1	PT371700	PT	170	1461352-5	PCH-112L2M	PCH	33	1721766-3	PCH-106D2-WG	PCH	33
1393236-1	V23092-A1005-A201		40	1415354-1	SR6M4018	SR6 D/M	151	1461352-6	PCH-124L2M	PCH	33	1721766-4	PCH-109D2-WG	PCH	33
1393236-2	V23092-A1005-A301		40	1415356-1	PBH34036	PBH	115	1461410-2	PCH-148D2	PCH	33	1721766-5	PCH-112D2-WG	PCH	33
1393236-3	V23092-A1006-A301		40	1415366-1	PT5S7SB5	PT pack.	230	1461937-3	PTF20024	PTF	174	1721766-6	PCH-124D2-WG	PCH	33
1393236-4	V23092-A1012-A201		40	1415390-1	PE014F03	PEbistable	26	1461938-3	PTF20524	PTF	174	1721766-7	PCH-105D2M-WG	PCH	33
1393236-5	V23092-A1012-A202		40	1415391-1	PE014H06	PEbistable	26	1461938-7	PTF20615	PTF	174	1721767-2	PCH-106D2M-WG	PCH	33
1393236-7	V23092-A10														

Part number reference list (Continued)

Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page
1833007-2	RY210024	RYII	45	1956180-1	RY213060	RYII	45	2-1393238-5	RTB14615	RT1	55	2-1415535-1	MT236024	MT	177
1833008-1	RY610012	RYII	45	2022103-1	RT17017	RT acc.	198	2-1393238-6	RTB14730	RT1	55	2-1415535-2	MT236048	MT	177
1833008-2	RY610024	RYII	45	2022104-1	XT17017	XT acc.	204	2-1393238-7	RTB15110	RT1	55	2-1415535-3	RM203048	RM 2/3/7	180
1833008-3	RY610009	RYII	45	2-1388008-1	RY611012	RYII	45	2-1393238-8	RTB15730	RT1	55	2-1415535-4	RM237730	RM 2/3/7	180
1833009-1	RY530012	RYII	45	2-1388008-2	RY611024	RYII	45	2-1393238-9	RTB34005	RT1	55	2-1415535-5	RX424048C	RX2	104
1833009-2	RY530024	RYII	45	2-1393092-0	MT333110	MT	177	2-1393239-1	RT115024	RT1	55	2-1415535-7	RX114006C	RX1	79
1860000-1	PT7874P	PT acc.	208	2-1393092-1	MT333200	MT	177	2-1393239-2	RT115110	RT1	55	2-1415536-0	RTH34024WG	RTH	77
1860100-1	PT7872P	PT acc.	208	2-1393092-2	MT333220	MT	177	2-1393239-3	RT134005	RT1	55	2-1415536-5	PT371048	PT	170
1860200-1	RT7872P	RT/XT acc.	198	2-1393092-4	MT336048	MT	177	2-1393239-4	RT134006	RT1	55	2-1415536-6	RM305048	RM 2/3/7	180
1860211-1	RT170P1	RT/XT acc.	198	2-1393092-5	MT336115	MT	177	2-1393239-6	RT134012	RT1	55	2-1415537-0	RTD15615	RT1	55
1860214-1	PT170P1	PT acc.	208	2-1393092-6	MT336230	MT	177	2-1393239-8	RT134018	RT1	55	2-1415538-2	RT33L012WG	RTInrush	70
1860306-1	RT78725	RT/XT acc.	198	2-1393092-7	MT338024	MT	177	2-1393239-9	RT134020	RT1	55	2-1415538-3	RT115730	RT1	55
1860517-5	PT170R6	PT acc.	208	2-1393092-8	MT338230	MT	177	2-1393240-0	RT315524	RT1	55	2-1415538-5	PB514012	PB	112
1860517-8	RT170R8	RT acc.	198	2-1393146-0	RM202615	RM 2/3/7	180	2-1393240-1	RT33KA05	RTInrush	70	2-1415538-6	PB534012	PB	112
1887100-2	XT314012	XT	167	2-1393146-2	RM203006	RM 2/3/7	180	2-1393240-2	RT33K005	RTInrush	70	2-1415539-0	PE514F03	PEbistable	26
1887100-3	XT314024	XT	167	2-1393146-3	RM203110	RM 2/3/7	180	2-1393240-3	RT33K012	RTInrush	70	2-1415539-6	RM605024	RM 5/6	184
1887100-4	XT314048	XT	167	2-1393146-4	RM203125	RM 2/3/7	180	2-1393240-4	RT33K024	RTInrush	70	2-1415541-0	PB133009	PB	112
1887100-6	XT314110	XT	167	2-1393146-5	RM203524	RM 2/3/7	180	2-1393240-5	RT33K048	RTInrush	70	2-1415541-4	PB134018	PB	112
1887101-3	XT314524	XT	167	2-1393146-6	RM203615	RM 2/3/7	180	2-1393240-6	RT33LA06	RTInrush	70	2-1415541-6	RTD15730	RT1	55
1887101-6	XT314600	XT	167	2-1393146-7	RM203627	RM 2/3/7	180	2-1393240-7	RT33LA12	RTInrush	70	2-1415589-0	RT33L018	RTIPower	73
1887101-7	XT314615	XT	167	2-1393146-8	RM203730	RM 2/3/7	180	2-1393240-8	RT33LF12	RTInrush	70	2-1415589-1	RTS3L048	RTIPower	73
1887101-8	XT314700	XT	167	2-1393146-9	RM205024	RM 2/3/7	180	2-1393240-9	RT33LF24	RTInrush	70	2-1415589-2	RTS3L060	RTIPower	73
1887101-9	XT314730	XT	167	2-1393147-0	RM737730	RM 2/3/7	180	2-1393243-0	RT2E5012	RT2	95	2-1415589-3	RTS3LA12	RTIPower	73
1887102-1	XT314LC4	XT	167	2-1393147-1	RM738012	RM 2/3/7	180	2-1393243-1	RT2E5024	RT2	95	2-1415589-4	RTS3LA24	RTIPower	73
1887102-2	XT314LC24	XT	167	2-1393147-2	RM738730	RM 2/3/7	180	2-1393243-2	RT2E5060	RT2	95	2-1415589-5	RTS3LF12	RTIPower	73
1887102-3	XT314LB2	XT	167	2-1393147-3	RM739221	RM 2/3/7	180	2-1393243-3	RT2E5110	RT2	95	2-1415589-6	RTS3LF24	RTIPower	73
1887102-4	XT314LE8	XT	167	2-1393147-4	RM805LC4	RM 8	188	2-1393243-4	RT2E5524	RT2	95	2-1415589-7	RTS3L012WG	RTIPower	73
1887102-5	XT314MB0	XT	167	2-1393147-5	RM8050C4	RM 8	188	2-1393243-6	RT2E5615	RT2	95	2-1415589-8	RTS3T036	RTIPower	73
1887102-6	XT314L12	XT	167	2-1393147-6	RM805048	RM 8	188	2-1393243-8	RT2E5730	RT2	95	2-1415589-9	RZ03-1C4-D006	RZ	52
1887103-1	XT314T30	XT	167	2-1393147-7	RM805072	RM 8	188	2-1393258-0	V23047-A1036-A501		145	2-1415589-1	RZ03-1C4-D009	RZ	52
1887103-3	XT314R24	XT	167	2-1393147-8	RM805512	RM 8	188	2-1393258-1	V23047-A1040-A501		145	2-1415589-2	RZ03-1C4-D012	RZ	52
1887103-4	XT314S15	XT	167	2-1393147-9	RM805524	RM 8	188	2-1393258-2	V23047-A1040-A511		145	2-1415589-3	RZ03-1C4-D024	RZ	52
1887103-5	XT314S00	XT	167	2-1393148-5	RM207110	RM 2/3/7	180	2-1393258-3	V23047-A1060-A511		145	2-1415589-4	RZ03-1C4-D048	RZ	52
1887103-6	XT314T00	XT	167	2-1393149-2	RM709024	RM 2/3/7	180	2-1393844-0	RM738024	RM 2/3/7	180	2-1415589-5	RZ03-1C4-D012	RZ	52
1887110-2	XT374012	XT	167	2-1393149-8	RM732048	RM 2/3/7	180	2-1393844-1	RM7380C4	RM 2/3/7	180	2-1415589-6	RZ03-1C4-D024	RZ	52
1887110-3	XT374024	XT	167	2-1393154-0	PT580110	PT	170	2-1393844-2	RM739730	RM 2/3/7	180	2-1415589-7	RZ03-1C4-D009	RZ	52
1887110-4	XT374048	XT	167	2-1393154-1	PT580524	PT	170	2-1393844-3	RM78702	RM acc.	219	2-1415589-8	RZ03-1C4-D012	RZ	52
1887110-6	XT374110	XT	167	2-1393154-2	PT580730	PT	170	2-1393844-5	RM78705	RM acc.	219	2-1415589-9	RZ03-1C4-D024	RZ	52
1887111-3	XT374524	XT	167	2-1393154-3	PT581730	PT	170	2-1393844-6	RM805012	RM 8	188	2-1416000-0	V23061-A1016-A302		49
1887111-7	XT374615	XT	167	2-1393203-0	V23148-A0103-C101		107	2-1393844-7	RM805024	RM 8	188	2-1416010-3	RE034005	RE	31
1887111-9	XT374730	XT	167	2-1393203-1	V23148-A0105-A101		107	2-1393844-9	RM808024	RM 8	188	2-1416010-4	RE034006	RE	31
1887112-1	XT374LC4	XT	167	2-1393203-2	V23148-A0105-B101		107	2-1415004-1	RY533036	RYII	45	2-1416010-5	RE034009	RE	31
1887112-2	XT374LC24	XT	167	2-1393203-3	V23148-A0105-C101		107	2-1415009-1	RM705048	RM 2/3/7	180	2-1416010-6	RE034012	RE	31
1887112-3	XT374LB2	XT	167	2-1393203-4	V23148-A0107-A101		107	2-1415012-1	V23047-A1110-A511		145	2-1416010-7	RE034024	RE	31
1887112-4	XT374LE8	XT	167	2-1393203-5	V23148-A0107-B101		107	2-1415013-1	MT228110	MT	177	2-1416010-8	RE034048	RE	31
1887112-5	XT374MB0	XT	167	2-1393203-6	V23148-A0107-C101		107	2-1415014-1	MT328127	MT	177	2-1416010-9	RY212060	RYII	45
1887112-6	XT374L12	XT	167	2-1393203-7	V23148-A1005-A101		107	2-1415017-1	V23050-A1005-A551		154	2-1416100-0	ST3FLC4	SNR acc.	195
1887113-1	XT374T30	XT	167	2-1393203-8	V23148-A1007-A101		107	2-1415018-1	V23050-A1018-A533		154	2-1416100-1	ST3FSM5	SNR acc.	195
1887113-3	XT374R24	XT	167	2-1393203-9	V23148-A1105-A101		107	2-1415019-1	SR6C4048	SR6	154	2-1416100-2	ST3FTP0	SNR acc.	195
1887113-4	XT374S15	XT	167	2-1393210-0	T9AS1D12-5	T9A	127	2-1415019-1	V23050-A1048-A551		154	2-1416100-3	ST4FLC4	SNR acc.	195
1887200-2	XT424012	XT	167	2-1393210-1	T9AS1D12-6	T9A	127	2-1415021-1	RT234F12	RT1	55	2-1416100-4	ST4FSM5	SNR acc.	195
1887200-3	XT424024	XT	167	2-1393210-2	T9AS1D12-9	T9A	127	2-1415024-1	RT315F12	RT1	55	2-1416100-5	ST4FTP0	SNR acc.	195
1887200-4	XT424048	XT	167	2-1393217-0	RE032006	RE	31	2-1415026-1	PT380L24	PT	170	2-1416100-6	ST36040	SNR acc.	195
1887200-6	XT424110	XT	167	2-1393217-1	RE032009	RE	31	2-1415030-1	PB134012	PB	112	2-1416100-7	ST37001	SNR acc.	195
1887201-3	XT424524	XT	167	2-1393217-2	RE032012	RE	31	2-1415036-1	PTMG0024	PT acc.	208	2-1416100-8	ST37002	SNR acc.	195
1887201-6	XT424600	XT	167	2-1393217-3	RE032018	RE	31	2-1415037-1	PTMU0730	PT acc.	208	2-1416100-9	ST37003	SNR acc.	195
1887201-7	XT424615	XT	167	2-1393217-4	RE032024	RE	31	2-1415038-1	RT17040	RT/XT acc.	198	2-1419135-1	PE014015	PE	24
1887201-8	XT424700	XT	167	2-1393217-5	RE032048	RE	31	2-1415039-1	PT270S15	PT	170	2-1419136-2	RM0335024	RM C/D	191
1887201-9	XT424730	XT	167	2-1393219-0	PE514012	PE	24	2-1415045-1	PT571220	PT	170	2-1419142-2	PE014003	PE	24
1887202-1	XT424LC4	XT	167	2-1393219-1	PE514018	PE	24	2-1415054-1	SR4M4040	SR4 D/M	148	2-1419142-3	RE032021	RE	31
1887202-2	XT424L24	XT	167	2-1393219-2	PE514024	PE	24	2-1415055-1	SR4D4021	SR4 D/M	148	2-1419152-6	RT334F24	RT1	55
1887202-3	XT424LB2	XT	167	2-1393219-3	PE514036	PE	24	2-1415060-1	SR6ZB524	SR6Z	160	2-1423008-7	T92S7A12-110	T92	133
1887202-4	XT424LE8	XT	167	2-1393222-0	V23061-A1005-A302		49	2-1415062-1	RM835180	RM 8	188	2-1599771-8	T92S1A22-240	T92	133
1887202-5	XT424MB0	XT	167	2-1393222-3	V23061-A1005-A402		49	2-1415068-1	V23092-A1012-A802		40	2-1649280-0	T7NVN1D4-05-WG-A		121
1887202-6	XT424L12	XT	167	2-1393222-8	V23061-A1005-A602		49	2-1415073-1	RT4AS4R24	RT pack.	224	2-1649280-1	T7NVN1D4-06-WG-A		121
1887203-1	XT424T30	XT	167	2-1393223-1	V23061-B1007-A401		49	2-1415074-1	RT4ASST30	RT pack.	224	2-1649280-2	T7NVN1D4-09-WG-A		121
1887203-3	XT424R24	XT	167	2-1393223-6	V23061-B1007-A601		49	2-1415075-1	PT33S7LC4	PT pack.	230	2-1649280-3	T7NVN1D4-12-WG-A		121
1887203-4	XT424S15	XT	167	2-1393224-0	RYA33021	RYII	45	2-1415078-1	RT33L110	RTInrush	70	2-1649280-4	T7NVN1D4-24-WG-A		121
1887203-5	XT424S00	XT	167	2-1393224-1	RYA33024	RYII	45	2-1							

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2-1833007-4	RY211048	RYII	45	3-1393239-5	RT134730	RT1	55	3-1415539-3	PT371560	PT	170	4-1393238-7	RTB84009	RTSensitive	65
2-1833008-1	RY611012	RYII	45	3-1393239-6	RT174005	RTSensitive	65	3-1415540-0	RT33KF06	RTInrush	70	4-1393239-0	RT174048	RTSensitive	65
2-1833009-2	RY611024	RYII	45	3-1393239-7	RT174006	RTSensitive	65	3-1415540-8	PE514F12	PEbistable	26	4-1393239-1	RT174060	RTSensitive	65
2-1833008-3	RY611006	RYII	45	3-1393239-8	RT174012	RTSensitive	65	3-1415541-8	PB634005	PB	112	4-1393239-5	RT184005	RTSensitive	65
2-1833009-1	RY531024	RYII	45	3-1393239-9	RT174024	RTSensitive	65	3-1415541-9	PB634006	PB	112	4-1393239-6	RT184006	RTSensitive	65
2-1833009-2	RY531012	RYII	45	3-1393240-0	RT33L005	RTInrush	70	3-1415589-1	RTS3TA06	RTIPower	73	4-1393239-7	RT184012	RTSensitive	65
2-1833009-3	RY531005	RYII	45	3-1393240-1	RT33L006	RTInrush	70	3-1415898-6	RTS3L110	RTIPower	73	4-1393239-8	RT184018	RTSensitive	65
2-1833009-4	RY531048	RYII	45	3-1393240-2	RT33L009	RTInrush	70	3-1416100-0	T3P2LCA	SNR pack	222	4-1393239-9	RT184024	RTSensitive	65
2-1833011-1	RYA31005	RYII	45	3-1393240-3	RT33L012	RTInrush	70	3-1416100-1	T3P3LB2	SNR pack	222	4-1393240-0	RT334005	RT1	55
2-1833011-2	RYA31012	RYII	45	3-1393240-4	RT33L018	RTInrush	70	3-1416100-2	T3P3LCA	SNR pack	222	4-1393240-1	RT334006	RT1	55
2-1833011-3	RYA31024	RYII	45	3-1393240-5	RT33L024	RTInrush	70	3-1416100-3	T3P3SM5	SNR pack	222	4-1393240-3	RT334009	RT1	55
2-1833011-4	RYA31048	RYII	45	3-1393240-6	RT33L048	RTInrush	70	3-1416100-4	T3P3TP0	SNR pack	222	4-1393240-5	RT334012	RT1	55
3-1393107-2	RM232048	RM 2/3/7	180	3-1393240-7	RT33L060	RTInrush	70	3-1416100-5	ST4P2LCA	SNR pack	222	4-1393240-6	RT334015	RT1	55
3-1393107-4	RM232730	RM 2/3/7	180	3-1393240-8	RT334F05	RT1	55	3-1416100-6	ST4P3LB2	SNR pack	222	4-1393240-7	RT334018	RT1	55
3-1393107-5	RM233024	RM 2/3/7	180	3-1393240-9	RT334F12	RT1	55	3-1416100-7	ST4P3LCA	SNR pack	222	4-1393240-8	RT334024	RT1	55
3-1393107-8	RM302LC4	RM 2/3/7	180	3-1393243-0	RTE44A24	RT2	95	3-1416100-8	ST4P3SM5	SNR pack	222	4-1393240-9	RT334036	RT1	55
3-1393146-0	RM205524	RM 2/3/7	180	3-1393243-1	RTE44009	RT2	95	3-1416100-9	ST4P3TP0	SNR pack	222	4-1393243-2	RT423024	RT2	95
3-1393146-1	RM205615	RM 2/3/7	180	3-1393243-2	RTE44012	RT2	95	3-1416200-7	V23061-C2007-A402		49	4-1393243-3	RT423730	RT2	95
3-1393146-2	RM205730	RM 2/3/7	180	3-1393243-3	RTE44024	RT2	95	3-1416200-8	V23061-B1003-A301		49	4-1393243-4	RT424A05	RT2bistable	101
3-1393146-3	RM207024	RM 2/3/7	180	3-1393243-4	RTE44615	RT2	95	3-1419104-3	T9A5SD22-12	T9A	127	4-1393243-5	RT424A06	RT2bistable	101
3-1393146-4	RM207730	RM 2/3/7	180	3-1393243-5	RTE44730	RT2	95	3-1419104-6	T9A5SD22-24	T9A	127	4-1393243-6	RT424A12	RT2bistable	101
3-1393146-5	RM208024	RM 2/3/7	180	3-1393844-0	RM809012	RM 8	188	3-1419108-5	RTD34012	RT1	55	4-1393243-7	RT424A24	RT2bistable	101
3-1393146-6	RM209730	RM 2/3/7	180	3-1393844-1	RM835012	RM 8	188	3-1419108-8	RTD34024	RT1	55	4-1393243-9	RT424A36	RT2bistable	101
3-1393146-8	RM232024	RM 2/3/7	180	3-1415001-1	RT314A60	RTbistable	62	3-1419136-9	RT174036	RTSensitive	65	4-1393844-5	RMC05024	RM C/D	191
3-1393146-9	RM232524	RM 2/3/7	180	3-1415002-1	PT270130	PT	170	3-1419136-9	RT31LA06	RTInrush	70	4-1393844-7	RMD05730	RM C/D	191
3-1393147-0	RM805548	RM 8	188	3-1415006-1	V23047-A1048-A501		145	3-1461491-0	PCN-105D3MHZ	PCN	38	4-1415011-1	MT221125	MT	177
3-1393147-1	RM805615	RM 8	188	3-1415007-1	RYA30021	RYII	45	3-1461491-1	PCN-106D3MHZ	PCN	38	4-1415014-1	MT226127	MT	177
3-1393147-2	RM805627	RM 8	188	3-1415011-1	V23047-A1006-A501		145	3-1461491-3	PCN-112D3MHZ	PCN	38	4-1415017-1	V23050-A1009-A551		154
3-1393147-3	RM805730	RM 8	188	3-1415013-1	MT228127	MT	177	3-1461491-6	PCN-124D3MHZ	PCN	38	4-1415018-1	V23050-A1036-A533		154
3-1393147-4	RM805900	RM 8	188	3-1415015-1	RM232V00	RM 2/3/7	180	3-1721381-1	T7SS5E6-05-WG	T7S	118	4-1415019-1	V23050-A1085-A551		154
3-1393147-5	RM8081B2	RM 8	188	3-1415017-1	V23050-A1006-A551		154	3-1721381-2	T7SS5E6-06-WG	T7S	118	4-1415026-1	PT380T30	PT	170
3-1393147-6	RM808012	RM 8	188	3-1415018-1	SR6A4021	SR6	154	3-1721381-3	T7SS5E6-09-WG	T7S	118	4-1415028-1	PT570R12	PT	170
3-1393147-7	RM808524	RM 8	188	3-1415018-1	V23050-A1021-A533		154	3-1721381-4	T7SS5E6-12-WG	T7S	118	4-1415031-1	PT580L48	PT	170
3-1393147-8	RM809615	RM 8	188	3-1415019-1	SR6C4060	SR6	154	3-1721381-5	T7SS5E6-24-WG	T7S	118	4-1415033-1	PT78740	PT acc.	208
3-1393147-9	RM809730	RM 8	188	3-1415019-1	V23050-A1060-A551		154	3-1721382-1	T7SS1E6-05-WG	T7S	118	4-1415036-1	PTMG0730	PT acc.	208
3-1393148-9	RM235012	RM 2/3/7	180	3-1415020-1	PT570N20	PT	170	3-1721382-2	T7SS1E6-06-WG	T7S	118	4-1415037-1	PTMG0730	PT acc.	208
3-1393149-6	RM735024	RM 2/3/7	180	3-1415026-1	PT380R24	PT	170	3-1721382-3	T7SS1E6-09-WG	T7S	118	4-1415043-1	PT78600	PT acc.	208
3-1393149-7	RM735524	RM 2/3/7	180	3-1415028-1	PT570L12	PT	170	3-1721382-4	T7SS1E6-12-WG	T7S	118	4-1415044-1	RM808548	RM 8	188
3-1393161-4	RT16041	RT acc.	198	3-1415030-1	PB134024	PB	112	3-1721382-5	T7SS1E6-24-WG	T7S	118	4-1415053-1	SR4M4024	SR4 D/M	148
3-1393203-0	V23148-A1105-B101		107	3-1415035-1	MT78755	MT acc.	215	4-1393090-8	MT221006	MT	177	4-1415054-1	SR4M4060	SR4 D/M	148
3-1393203-1	V23148-A1107-A101		107	3-1415036-1	PTMG0524	PT acc.	208	4-1393090-9	MT221012	MT	177	4-1415055-1	SR4D4036	SR4 D/M	148
3-1393210-2	T9A5SD12-10	T9A	127	3-1415037-1	PTMG0524	PT acc.	208	4-1393146-0	RM232615	RM 2/3/7	180	4-1415060-1	SR6ZC524	SR6Z	160
3-1393210-3	T9A5SD12-12	T9A	127	3-1415042-1	SR6ZC024	SR6Z	160	4-1393146-2	RM233615	RM 2/3/7	180	4-1415062-1	RM732006	RM 2/3/7	180
3-1393210-4	T9A5SD12-18	T9A	127	3-1415043-1	PT78604	PT acc.	208	4-1393146-4	RM235048	RM 2/3/7	180	4-1415068-1	PT570600	PT	170
3-1393210-5	T9A5SD12-22	T9A	127	3-1415044-1	RM809548	RM 8	188	4-1393146-5	RM235730	RM 2/3/7	180	4-1415072-1	PT580L12	PT	170
3-1393210-7	T9A5SD12-24	T9A	127	3-1415046-1	PT581012	PT	170	4-1393146-7	RM238012	RM 2/3/7	180	4-1415073-1	RT3S4LCA	RT pack.	224
3-1393210-8	T9A5SD12-48	T9A	127	3-1415054-1	SR4M4048	SR4 D/M	148	4-1393146-8	RM302LE8	RM 2/3/7	180	4-1415075-1	PT5S8TDO	PT pack.	230
3-1393210-9	T9A5SD12-5	T9A	127	3-1415055-1	SR4D4024	SR4 D/M	148	4-1393146-9	RM302MBO	RM 2/3/7	180	4-1415076-1	PT270700	PT	170
3-1393211-8	T92P11A12-120	T92	133	3-1415060-1	SR6ZB730	SR6Z	160	4-1393147-0	RM835L12	RM 8	188	4-1415078-1	RY631005-A	RYII	45
3-1393211-9	T92P11A22-12	T92	133	3-1415068-1	V23092-A1048-A802		40	4-1393147-1	RM835024	RM 8	188	4-1415353-1	V23092-B1005-A201		40
3-1393222-4	V23061-A1006-A302		49	3-1415069-1	RM507900	RM 5/6	184	4-1393147-2	RM835048	RM 8	188	4-1415356-1	PBH34006	PBH	115
3-1393222-5	V23061-A1006-A402		49	3-1415073-1	RT454T30	RT pack.	224	4-1393147-3	RM835524	RM 8	188	4-1415358-1	V23092-B1048-A201		40
3-1393222-6	V23061-A1006-A502		49	3-1415075-1	PT5S8RC4	PT pack.	230	4-1393147-4	RM835615	RM 8	188	4-1415369-1	RM509730	RM 5/6	184
3-1393222-7	V23061-A1006-A602		49	3-1415076-1	PT270600	PT	170	4-1393147-6	RM835730	RM 8	188	4-1415382-1	RT134F24	RT1	55
3-1393222-9	V23061-A1007-A302		49	3-1415353-1	SR6M4024	SR6 D/M	151	4-1393147-7	RM838012	RM 8	188	4-1415390-1	PE014F18	PEbistable	26
3-1393223-5	V23061-B1008-A401		49	3-1415355-1	PT370L48	PT	170	4-1393147-8	RM838024	RM 8	188	4-1415400-1	RY631024	RYII	45
3-1393223-6	V23061-B1008-A501		49	3-1415356-1	PBH34009	PBH	115	4-1393147-9	RM838048	RM 8	188	4-1415410-8	0410 83 046 001		91
3-1393223-7	V23061-B1009-A401		49	3-1415358-1	PT581048	PT	170	4-1393148-7	RM239730	RM 2/3/7	180	4-1415410-9	0410 83 050 001		91
3-1393223-8	V23061-B1009-A401		49	3-1415363-1	RTE24F05	RT2	95	4-1393149-1	RM735730	RM 2/3/7	180	4-1415419-0	0419 11 1201 00		142
3-1393224-0	RYA52012	RYII	45	3-1415366-1	PT270L12	PT	170	4-1393149-5	RM739024	RM 2/3/7	180	4-1415419-2	0419 11 1301 00		142
3-1393224-1	RY210005	RYII	45	3-1415379-1	RT33LA24	RTInrush	70	4-1393149-9	RM78701	RM acc.	219	4-1415419-9	0419 31 0301 00		142
3-1393224-2	RY210006	RYII	45	3-1415390-1	PE014F12	PEbistable	26	4-1393210-0	T9A5SD12-9	T9A	127	4-1415502-1	RX334012	RX1	79
3-1393224-3	RY210009	RYII	45	3-1415391-1	RY610008	RYII	45	4-1393211-0	T92P11A22-120	T92	133	4-1415503-1	RX314024C	RX1	79
3-1393224-4	RY210010	RYII	45	3-1415402-1	RT31LF12	RTInrush	70	4-1393211-2	T92P11A22-208	T92	133	4-1415504-1	RX424730	RX2	104
3-1393224-5	RY210012	RYII	45	3-1415410-0	0410 63 046 001		89	4-1393211-3	T92P11A22-24	T92	133	4-1415506-1	RM732900	RM 2/3/7	180
3-1393224-6	RY210015	RYII	45	3-1415410-4	0410 63 050 001		89	4-1393211-4	T92P11A22-240	T92	133	4-1415511-1	RFH54006	RF	86
3-1393224-7	RY210018	RYII	45	3-1415410-5	0410 63 050 002		89	4-							

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4-1415538-3	RT424730WG	RT2	95	5-1393238-9	RTD14005	RT1	55	5-1416200-8	V23061-C2007-A802		49	6-1393243-1	RT424006	RT2	95
4-1415539-7	RTD34036	RT1	55	5-1393239-2	RT214005	RT1	55	5-1419111-0	PT270615	PT	170	6-1393243-2	RT424009	RT2	95
4-1415539-8	RT31L012WG	RTInrush	70	5-1393239-3	RT214006	RT1	55	5-1419111-1	PT270730	PT	170	6-1393243-3	RT424012	RT2	95
4-1415539-9	RT23015	RT2	95	5-1393239-4	RT214012	RT1	55	5-1419111-2	PT271012	PT	170	6-1393243-5	RT424015	RT2	95
4-1415541-1	PB634012	PB	112	5-1393239-5	RT214024	RT1	55	5-1419111-3	PT271024	PT	170	6-1393243-6	RT424018	RT2	95
4-1415541-2	PB634024	PB	112	5-1393239-6	RT214048	RT1	55	5-1419111-4	PT271048	PT	170	6-1393243-7	RT424020	RT2	95
4-1415898-0	RTS3T110	RTIPower	73	5-1393239-7	RT214060	RT1	55	5-1419111-5	PT271110	PT	170	6-1393243-8	RT424024	RT2	95
4-1415898-1	RTS3TF06	RTIPower	73	5-1393239-8	RT214110	RT1	55	5-1419111-6	PT271524	PT	170	6-1393243-9	RT424036	RT2	95
4-1416100-0	ST37040	SNR acc.	195	5-1393240-0	RT334048	RT1	55	5-1419111-7	PT271548	PT	170	6-1415001-1	PT570L24	PT	170
4-1416200-6	V23061-D1007-A301		49	5-1393240-1	RT334060	RT1	55	5-1419111-8	PT271730	PT	170	6-1415003-1	RM732M10	RM 2/3/7	180
4-1416200-7	V23061-D2007-A301		49	5-1393240-2	RT334110	RT1	55	5-1419111-9	PT28800	PT acc.	208	6-1415011-1	V23047-A1006-A511		145
4-1416200-8	V23061-B1004-A301		49	5-1393240-3	RT334506	RT1	55	5-1419135-0	PT370060	PT	170	6-1415012-1	MT223125	MT	177
4-1416200-9	V23061-D2005-A301		49	5-1393240-4	RT334524	RT1	55	5-1419135-6	PT380615	PT	170	6-1415013-1	MT321250	MT	177
4-1419111-0	PT270006	PT	170	5-1393240-5	RT334615	RT1	55	5-1419135-8	PT380730	PT	170	6-1415014-1	V23050-A1015-A542		154
4-1419111-1	PT270012	PT	170	5-1393240-6	RT334730	RT1	55	5-1419136-2	RY613005	RYII	45	6-1415015-1	RM507615	RM 5/6	184
4-1419111-2	PT270024	PT	170	5-1393243-0	RT242A60	RT2bistable 101	101	5-1419136-3	RY632005	RYII	45	6-1415017-1	V23050-A1018-A551		154
4-1419111-3	PT270048	PT	170	5-1393243-1	RT424F03	RT2bistable 101	101	5-1419150-2	RM239012	RM 2/3/7	180	6-1415018-1	SR6A4048	SR6	154
4-1419111-4	PT270060	PT	170	5-1393243-2	RT424F05	RT2bistable 101	101	5-1419150-3	RM302730	RM 2/3/7	180	6-1415018-2	V23050-A1048-A533		154
4-1419111-5	PT270110	PT	170	5-1393243-3	RT424F06	RT2bistable 101	101	5-1440005-2	TN5504-05	T7N	121	6-1415020-1	RT315615	RT1	55
4-1419111-6	PT270220	PT	170	5-1393243-4	RT424F12	RT2bistable 101	101	6-1393090-0	MT223220	MT	177	6-1415026-1	PT580R24	PT	170
4-1419111-7	PT270506	PT	170	5-1393243-5	RT424F18	RT2bistable 101	101	6-1393090-2	MT226006	MT	177	6-1415027-1	SR6D4024	SR6 D/M	151
4-1419111-8	PT270524	PT	170	5-1393243-6	RT424F24	RT2bistable 101	101	6-1393090-3	MT226012	MT	177	6-1415029-1	PB114005	PB	112
4-1419111-9	PT270548	PT	170	5-1393243-7	RT424F48	RT2bistable 101	101	6-1393090-4	MT226024	MT	177	6-1415030-1	PT580N20	PT	170
4-1419135-0	PT271615	PT	170	5-1393243-8	RT424003	RT2	95	6-1393090-5	MT226048	MT	177	6-1415032-1	RP3SLA15	RP3SL	83
4-1419135-1	PT280615	PT	170	5-1393243-9	RT424005	RT2	95	6-1393090-6	MT226060	MT	177	6-1415034-1	RT7820	PT acc.	208
4-1419135-5	PT281024	PT	170	5-1415002-1	PT370L24	PT	170	6-1393090-7	MT226115	MT	177	6-1415035-1	RT7826	RT/XT acc.	198
4-1419135-6	PT281110	PT	170	5-1415006-1	PT380220	PT	170	6-1393090-8	MT226230	MT	177	6-1415036-1	PTML0524	PT acc.	208
4-1419136-1	RT33LF05	RTInrush	70	5-1415008-1	RM507524	RM 5/6	184	6-1393090-9	MT228024	MT	177	6-1415037-1	PT17040	PT acc.	208
4-1419136-3	RT423012	RT2	95	5-1415011-1	MT221250	MT	177	6-1393091-4	MT3210B2	MT	177	6-1415043-1	PT78601	PT acc.	208
4-1419136-4	RT423048	RT2	95	5-1415012-1	MT223006	MT	177	6-1393091-5	MT3210C4	MT	177	6-1415046-1	SR6ZB615	SR6Z	160
4-1419136-5	RT423110	RT2	95	5-1415014-1	RT33K110	RTInrush	70	6-1393091-7	MT3210G6	MT	177	6-1415048-1	PT580125	PT	170
4-1833007-1	RY212012	RYII	45	5-1415015-1	RM309900	RM 2/3/7	180	6-1393091-8	MT3210I2	MT	177	6-1415053-1	SR4M4006	SR4 D/M	148
4-1833007-2	RY212024	RYII	45	5-1415017-1	V23050-A1015-A551		154	6-1393098-2	V23148-B1007-A101		107	6-1415053-2	SR6M4006	SR6 D/M	151
4-1833007-3	RY212005	RYII	45	5-1415018-1	V23050-A1040-A533		154	6-1393107-1	RM335730	RM 2/3/7	180	6-1415054-1	SR4M4110	SR4 D/M	148
4-1833008-1	RY612024	RYII	45	5-1415019-1	SR6C4110	SR6	154	6-1393107-2	RM339730	RM 2/3/7	180	6-1415055-1	SR4D4048	SR4 D/M	148
4-1833008-2	RY612012	RYII	45	5-1415019-2	V23050-A1110-A551		154	6-1393146-0	RM332110	RM 2/3/7	180	6-1415060-1	SR6ZC730	SR6Z	160
4-1833008-3	RY612005	RYII	45	5-1415026-1	PT580L24	PT	170	6-1393146-1	RM502024	RM 5/6	184	6-1415072-1	PT570S00	PT	170
5-1393090-0	MT221024	MT	177	5-1415031-1	PT580M10	PT	170	6-1393146-2	RM502524	RM 5/6	184	6-1415073-1	RT3S4T30	RT pack.	224
5-1393090-1	MT221048	MT	177	5-1415033-1	SR6ZB024	SR6Z	160	6-1393146-3	RM502615	RM 5/6	184	6-1415074-1	PT2S7T20	PT pack.	230
5-1393090-2	MT221060	MT	177	5-1415034-1	PT78741	PT acc.	208	6-1393146-4	RM502730	RM 5/6	184	6-1415075-1	PT58L8C4	PT pack.	230
5-1393090-3	MT221110	MT	177	5-1415036-1	PTML0024	PT acc.	208	6-1393146-5	RM503615	RM 5/6	184	6-1415351-1	RT314F09	RT1bistable	62
5-1393090-4	MT221220	MT	177	5-1415043-1	PT78602	PT acc.	208	6-1393146-6	RM505615	RM 5/6	184	6-1415352-1	PT280700	PT	170
5-1393090-5	MT2230C4	MT	177	5-1415046-1	RM6020C4	RM 5/6	184	6-1393146-8	RM507012	RM 5/6	184	6-1415353-1	SR6M4021	SR6 D/M	151
5-1393090-6	MT223012	MT	177	5-1415048-1	PT580560	PT	170	6-1393146-9	RM507110	RM 5/6	184	6-1415355-1	PBH14024	PBH	115
5-1393090-7	MT223024	MT	177	5-1415053-1	SR4M4005	SR4 D/M	148	6-1393148-2	RM302110	RM 2/3/7	180	6-1415356-1	PBH14012	PBH	115
5-1393090-8	MT223048	MT	177	5-1415054-1	SR4M4085	SR4 D/M	148	6-1393148-3	RM303012	RM 2/3/7	180	6-1415357-1	PBH14018	PBH	115
5-1393090-9	MT223110	MT	177	5-1415055-1	SR4D4040	SR4 D/M	148	6-1393148-4	RM303024	RM 2/3/7	180	6-1415358-1	PBH134009	PB	112
5-1393107-3	RM332012	RM 2/3/7	180	5-1415060-1	SR6ZC615	SR6Z	160	6-1393148-5	RM303524	RM 2/3/7	180	6-1415365-1	PTM0615	PT acc.	208
5-1393107-4	RM335615	RM 2/3/7	180	5-1415061-1	RM702900	RM 2/3/7	180	6-1393161-5	RY16037	RYII acc.	197	6-1415369-1	RM307615	RM 2/3/7	180
5-1393146-0	RM302012	RM 2/3/7	180	5-1415063-1	V23092-A1024-A802		40	6-1393211-0	T92P7A22-24	T92	133	6-1415390-1	PE014F48	PEbistable	26
5-1393146-1	RM302060	RM 2/3/7	180	5-1415068-1	PT57090	PT	170	6-1393211-2	T92P7A22-240	T92	133	6-1415502-1	RX114012	RX1	79
5-1393146-2	RM302221	RM 2/3/7	180	5-1415071-1	RM735900	RM 2/3/7	180	6-1393211-3	T92P7A22-277	T92	133	6-1415503-1	RX314730C	RX1	79
5-1393146-3	RM302524	RM 2/3/7	180	5-1415072-1	PT570T00	PT	170	6-1393211-5	T92P7D12-12	T92	133	6-1415504-1	RT424024C	RX2	104
5-1393146-4	RM302615	RM 2/3/7	180	5-1415073-1	RT3S4R24	RT pack.	224	6-1393211-6	T92P7D12-24	T92	133	6-1415510-1	RFH34012	RF	86
5-1393146-5	RM303615	RM 2/3/7	180	5-1415074-1	PT2S7RC4	PT pack.	230	6-1393211-7	T92P7D12-6	T92	133	6-1415511-1	RFH54012	RF	86
5-1393146-7	RM303730	RM 2/3/7	180	5-1415075-1	PT5S8L82	PT pack.	230	6-1393211-8	T92P7D22-110	T92	133	6-1415512-1	RFHD4060	RF	86
5-1393146-8	RM307012	RM 2/3/7	180	5-1415351-1	RT314A09	RT1bistable	62	6-1393211-9	T92P7D22-12	T92	133	6-1415513-1	RF334048	RF	86
5-1393146-9	RM307730	RM 2/3/7	180	5-1415352-1	PT280600	PT	170	6-1393222-1	V23061-A1010-A402		49	6-1415514-1	RF354048	RF	86
5-1393147-0	RM838524	RM 8	188	5-1415356-1	PBH34005	PBH	115	6-1393222-3	V23061-A1010-A602		49	6-1415515-1	RF3F4006	RF	86
5-1393147-1	RM838730	RM 8	188	5-1415390-1	PE014F24	PEbistable	26	6-1393222-5	V23061-A1013-A402		49	6-1415517-1	RF334009WG	RF	86
5-1393147-2	RM8390C4	RM 8	188	5-1415400-1	RT114F24	RT1	55	6-1393222-6	V23061-A1014-A302		49	6-1415518-1	RF354048WG	RF	86
5-1393147-3	RM839012	RM 8	188	5-1415419-5	0419 31 1301 00		142	6-1393222-7	V23061-A1015-A302		49	6-1415519-1	RF3F4006WG	RF	86
5-1393147-4	RM839024	RM 8	188	5-1415502-1	RX334024	RX1	79	6-1393224-0	RY213005	RYII	45	6-1415520-1	RFH34024WG	RF	86
5-1393147-5	RM839524	RM 8	188	5-1415503-1	RX114730C	RX1	79	6-1393224-1	RY213012	RYII	45	6-1415521-1	RFHD4005WG	RF	86
5-1393147-6	RM839730	RM 8	188	5-1415504-1	RX424012C	RX2	104	6-1393224-2	RY213024	RYII	45	6-1415522-1	RFH4012WG	RF	86
5-1393149-7	RM808730	RM 8	188	5-1415511-1	RFH54009	RF	86	6-1393224-3	RY213048	RYII	45	6-1415527-1	RX424110C	RX2	104
5-1393149-8	RM809024	RM 8	188	5-1415512-1	RFHD4048	RF	86	6-1393224-4	RY230048	RYII	45	6-1415534-4	RX114005C	RX1	79
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Part number reference list (Continued)

Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page
6-1419111-5	PT370512	PT	170	7-1393236-3	V23092-B1024-A202	40		7-1415534-2	RX424615C	RX2	104	8-1393224-7	RY533009	RYII	45
6-1419111-6	PT370524	PT	170	7-1393236-4	V23092-B1024-A301	40		7-1415534-7	RTD34012WG	RT1	55	8-1393224-8	RY533012	RYII	45
6-1419111-7	PT370548	PT	170	7-1393236-5	V23092-B1024-A302	40		7-1415534-8	RTD34024WG	RT1	55	8-1393224-9	RY533024	RYII	45
6-1419111-8	PT370615	PT	170	7-1393236-6	V23092-B1048-A301	40		7-1415535-2	RTH34009	RTH105	77	8-1393233-0	RP7SLA24	RP3SL	83
6-1419111-9	PT370730	PT	170	7-1393236-7	V23092-B1060-A201	40		7-1415535-7	RX314009	RX1	79	8-1393234-4	RP78601	RT acc.	198
6-1419135-9	PT580220	PT	170	7-1393236-8	V23092-B1060-A301	40		7-1415537-6	SR6B6K12	SR6	154	8-1393234-5	RP78602	RT acc.	198
6-1419149-5	MT3B1110	MT	177	7-1393236-9	V23092-B1905-A201	40		7-1415537-7	SR6B6K15	SR6	154	8-1393236-0	V23092-B1905-A202		40
6-1419149-6	MTMG0024	MT acc.	215	7-1393238-1	RTD14060	RT1	55	7-1415537-8	SR6B6K18	SR6	154	8-1393236-1	V23092-B1905-A302		40
6-1419149-7	MTMG0730	MT acc.	215	7-1393238-2	RTD14110	RT1	55	7-1415537-9	SR6B6K21	SR6	154	8-1393236-2	V23092-B1924-A302		40
6-1440006-1	T7NS5D4-06	T7N	121	7-1393238-3	RTD14524	RT1	55	7-1415538-1	RT134024WG	RT1	55	8-1393238-0	RTD15024	RT1	55
6-1440006-2	T7NS5D4-09	T7N	121	7-1393238-4	RTD14615	RT1	55	7-1415538-2	RT134012WG	RT1	55	8-1393238-1	RTD34A05	RT1	55
6-1440006-3	T7NS5D4-12	T7N	121	7-1393238-5	RTD14730	RT1	55	7-1415538-3	PT281615	PT	170	8-1393238-3	RTD34005	RT1	55
6-1440006-5	T7NS5D4-24	T7N	121	7-1393238-9	RTD15012	RT1	55	7-1415538-4	RM303048	RM 2/3/7	180	8-1393238-4	RTD34015	RT1	55
6-1440006-6	T7NS5D4-36	T7N	121	7-1393239-0	RT31K012	RTInrush	70	7-1415538-5	RT334024WG	RT1	55	8-1393238-5	RTD34048	RT1	55
6-1440006-7	T7NS5D4-48	T7N	121	7-1393239-1	RT31K024	RTInrush	70	7-1415538-6	RT114012WG	RT1	55	8-1393238-6	RTD34524	RT1	55
6-1440006-9	T7NS104-05	T7N	121	7-1393239-2	RT31L006	RTInrush	70	7-1415538-7	RT424024WG	RT2	95	8-1393238-7	RTD34615	RT1	55
6-1833007-1	RY213012	RYII	45	7-1393239-3	RT31L012	RTInrush	70	7-1415538-8	RT424012WG	RT2	95	8-1393238-8	RTD34730	RT1	55
6-1833007-2	RY213024	RYII	45	7-1393239-4	RT31L018	RTInrush	70	7-1415539-0	PB534024	PB	112	8-1393239-0	RT314A12	RT1bistable	62
6-1833007-3	RY213005	RYII	45	7-1393239-5	RT31L024	RTInrush	70	7-1415539-5	RTD14A05	RT1	55	8-1393239-1	RT314A24	RT1bistable	62
6-1833008-1	RY613012	RYII	45	7-1393239-6	RT31L048	RTInrush	70	7-1415539-7	PTMG0060	PT acc.	208	8-1393239-3	RT314A48	RT1bistable	62
6-1833008-2	RY613024	RYII	45	7-1393239-7	RT314A03	RT1bistable	62	7-1415539-8	PTM33012	PB	112	8-1393239-4	RT314F03	RT1bistable	62
6-1833008-3	RY613005	RYII	45	7-1393239-8	RT314A05	RT1bistable	62	7-1415539-9	RTHH4005	RTH105	77	8-1393239-5	RT314F05	RT1bistable	62
6-1833009-1	RY533012	RYII	45	7-1393239-9	RT314A06	RT1bistable	62	7-1415540-9	RT114009WG	RT1	55	8-1393239-6	RT314F06	RT1bistable	62
6-1833009-2	RY533005	RYII	45	7-1393243-0	RT2	95		7-1415541-9	SR6V6K18	SR6	154	8-1393239-7	RT314F12	RT1bistable	62
6-1833009-3	RY533024	RYII	45	7-1393243-2	RT2	95		7-1416200-0	V23061-D2010-A801	A801	49	8-1393239-8	RT314F24	RT1bistable	62
6-1833009-4	RY533048	RYII	45	7-1393243-3	RT2	95		7-1419111-0	PT371012	PT	170	8-1393239-9	RT314F36	RT1bistable	62
6-1833011-1	RYA33005	RYII	45	7-1393243-4	RT2	95		7-1419111-1	PT371024	PT	170	8-1393243-0	RT245005	RT2	95
6-1833011-2	RYA33012	RYII	45	7-1393243-5	RT2	95		7-1419111-2	PT371110	PT	170	8-1393243-1	RT245006	RT2	95
6-1833011-3	RYA33024	RYII	45	7-1393243-6	RT2	95		7-1419111-3	PT371524	PT	170	8-1393243-2	RT245012	RT2	95
6-1833011-4	RYA33048	RYII	45	7-1393243-7	RT2	95		7-1419111-4	PT371548	PT	170	8-1393243-3	RT245015	RT2	95
7-1393090-0	MT228115	MT	177	7-1393243-8	RT2	95		7-1419111-5	PT371730	PT	170	8-1393243-4	RT245018	RT2	95
7-1393090-1	MT228230	MT	177	7-1393243-9	RT2	95		7-1419111-9	PT570006	PT	170	8-1393243-5	RT245024	RT2	95
7-1393090-2	MT231024	MT	177	7-1415001-1	PT570R24	PT	170	7-1419135-2	PT581024	PT	170	8-1393243-6	RT245036	RT2	95
7-1393090-4	MT236115	MT	177	7-1415002-1	PT370R24	PT	170	7-1440006-0	T7NS1D4-06	T7N	121	8-1393243-7	RT245048	RT2	95
7-1393090-5	MT236230	MT	177	7-1415003-1	PT570S15	PT	170	7-1440006-1	T7NS1D4-09	T7N	121	8-1393243-8	RT245060	RT2	95
7-1393091-0	MT321024	MT	177	7-1415006-1	V23047-A1005-A511	145		7-1440006-2	T7NS1D4-12	T7N	121	8-1393243-9	RT245080	RT2	95
7-1393091-1	MT321048	MT	177	7-1415008-1	MT3B3180	MT	177	7-1440006-4	T7NS1D4-24	T7N	121	8-1415001-1	PT570T30	PT	170
7-1393091-2	MT321060	MT	177	7-1415011-1	V23047-A1009-A511	145		7-1440006-5	T7NS1D4-36	T7N	121	8-1415005-1	PT281012	PT	170
7-1393091-3	MT321180	MT	177	7-1415012-1	MT226110	MT	177	7-1440006-6	T7NS1D4-48	T7N	121	8-1415006-1	RTH14012	RTH	77
7-1393091-4	MT321110	MT	177	7-1415013-1	MT323125	MT	177	8-1393090-9	MT3B30C4	MT	177	8-1415011-1	V23047-A1036-A511	145	
7-1393091-5	MT321125	MT	177	7-1415014-1	RT31LA24	RTInrush	70	8-1393091-3	MT323012	MT	177	8-1415013-1	MT323250	MT	177
7-1393091-6	MT3212C0	MT	177	7-1415015-1	RM602110	RM 5/6	184	8-1393091-4	MT323024	MT	177	8-1415015-1	RM607615	RM 5/6	184
7-1393091-7	MT321220	MT	177	7-1415017-1	V23050-A1021-A551	154		8-1393091-5	MT323048	MT	177	8-1415017-1	SR6A4005	SR6	154
7-1393091-8	MT3230B2	MT	177	7-1415018-1	SR6A4060	SR6	154	8-1393091-6	MT323060	MT	177	8-1415017-2	V23050-A1005-A533	154	
7-1393091-9	MT3230C4	MT	177	7-1415018-1	V23050-A1060-A533	154		8-1393091-7	MT323180	MT	177	8-1415018-1	V23050-A1085-A533	154	
7-1393107-0	RM535730	RM 5/6	184	7-1415022-1	PT370560	PT	170	8-1393091-9	MT323110	MT	177	8-1415022-1	RY612060	RYII	45
7-1393107-2	RM602548	RM 5/6	184	7-1415025-1	RTH14024	RTH105	77	8-1393096-4	MT321036	MT	177	8-1415025-1	MT338115	MT	177
7-1393107-4	RM632012	RM 5/6	184	7-1415026-1	PT580T30	PT	170	8-1393096-6	MT326110	MT	177	8-1415026-1	PT370125	PT	170
7-1393107-7	RM635024	RM 5/6	184	7-1415027-1	PT271006	PT	170	8-1393107-6	RM705900	RM 2/3/7	180	8-1415027-1	RM5070A6	RM 5/6	184
7-1393146-0	RM508L82	RM 5/6	184	7-1415028-1	RM702M10	RM 2/3/7	180	8-1393146-0	RM632024	RM 5/6	184	8-1415029-1	PB114012	PB	112
7-1393146-1	RM532L24	RM 5/6	184	7-1415029-1	PB114006	PB	112	8-1393146-2	RM635012	RM 5/6	184	8-1415031-1	PT380048	PT	170
7-1393146-2	RM535024	RM 5/6	184	7-1415031-1	PT380048	PT	170	8-1393146-3	RM702L24	RM 2/3/7	180	8-1415034-1	MT78760	MT acc.	215
7-1393146-4	RM5390C4	RM 5/6	184	7-1415033-1	SR6ZA024	SR6Z	160	8-1393146-4	RM7020C4	RM 2/3/7	180	8-1415035-1	RT78724	RT acc.	198
7-1393146-5	RM602221	RM 5/6	184	7-1415036-1	PTML0730	PT acc.	208	8-1393146-5	RM702024	RM 2/3/7	180	8-1415039-1	PT571006	PT	170
7-1393146-6	RM605730	RM 5/6	184	7-1415043-1	MT78612	MT acc.	215	8-1393146-6	RM702110	RM 2/3/7	180	8-1415043-1	MT78613	MT acc.	215
7-1393146-7	RM607012	RM 5/6	184	7-1415045-1	RT115615	RT1	55	8-1393146-7	MT702221	RM 2/3/7	180	8-1415047-1	RTHH4012	RTH	77
7-1393146-8	RM607524	RM 5/6	184	7-1415048-1	RT423F24	RT2	95	8-1393146-8	RM702627	RM 2/3/7	180	8-1415048-1	RTS884018	RTSensitive	65
7-1393146-9	RM607230	RM 5/6	184	7-1415053-1	SR4M4009	SR4 D/M	148	8-1393147-7	RM056515	RM C/D	191	8-1415053-1	SR4M4012	SR4 D/M	148
7-1393148-1	RM307006	RM 2/3/7	180	7-1415054-1	SR4D4005	SR4 D/M	148	8-1393148-0	RM503024	RM 5/6	184	8-1415054-1	SR4D4006	SR4 D/M	148
7-1393148-2	RM307024	RM 2/3/7	180	7-1415055-1	SR4D4060	SR4 D/M	148	8-1393148-2	RM505012	RM 5/6	184	8-1415055-1	SR4D4085	SR4 D/M	148
7-1393148-7	RM338730	RM 2/3/7	180	7-1415060-1	MT3B1060	MT	177	8-1393148-3	RM505024	RM 5/6	184	8-1415067-1	V23092-A1005-A202	40	
7-1393148-8	RM502012	RM 5/6	184	7-1415072-1	RT24F12	RT2	95	8-1393148-4	RM507048	RM 5/6	184	8-1415072-1	PT370M10	PT	170
7-1393161-3	RY78600	RYII acc.	197	7-1415073-1	RT335L24	RT pack.	224	8-1393149-1	RM202012	RM 2/3/7	180	8-1415073-1	RT335R24	RT pack.	224
7-1393163-3	MTMFO0W0	MT acc.	215	7-1415074-1	PT257L82	PT pack.	230	8-1393149-2	RM202024	RM 2/3/7	180	8-1415074-1	PT257L24	PT pack.	230
7-1393163-4	MTML0024	MT acc.	215	7-1415075-1	PT557RC4	PT pack.	230	8-1393149-3	RM205012	RM 2/3/7	180	8-1415075-1	PT557T70	PT pack.	230
7-1393163-5	MTML0730	MT acc.	215	7-1415076-1	RT31L060	RTInrush	70	8-1393149-4	RM207012	RM 2/3/7	180	8-1415077-1	PB114009	PB	112
7-1393163-6	MTMT00A0	MT acc.	215	7-1415352-1	PT280012	PT	170	8-1393149-5	RM207615	RM 2/3/7	180	8-1415352-1	RT314036	RT1	55
7-1393163-7	MTMU0524	MT acc.	215	7-1415353-1	SR6M4012	SR6 D/M	151	8-1393149-6	RM208730	RM 2/3/7	180				

Part number reference list (Continued)

Part.No.	Product key	Relay	Page	Part.No.	Product key	Relay	Page
8-1415534-7	PT2L7LB2	PT pack.	230	9-1415002-1	PT370T30	PT	170
8-1415534-9	PT2L7LC4	PT pack.	230	9-1415006-1	RTH34012	RTH	77
8-1415535-3	RM307048	RM 2/3/7	180	9-1415008-1	PT280048	PT	170
8-1415535-6	RT314012WG	RT1	55	9-1415011-1	V23047-A1048-A511		145
8-1415536-6	0410 83 046 001 WG		91	9-1415013-1	MT326127	MT	177
8-1415536-7	0410 83 050 001 WG		91	9-1415017-1	V23050-A1006-A533		154
8-1415537-0	SR6B6K24	SR6	154	9-1415018-1	SR6A4110	SR6	154
8-1415539-9	RT31K006	RTInrush	70	9-1415018-1	V23050-A1110-A533		154
8-1415540-1	RTE23615	RT2	95	9-1415019-1	RP7SL060	RP3SL	83
8-1419082-5	RM732012	RM 2/3/7	180	9-1415025-1	PT280L24	PT	170
8-1419111-0	PT570012	PT	170	9-1415027-1	RT33K060	RTInrush	70
8-1419111-1	PT570048	PT	170	9-1415029-1	PB114024	PB	112
8-1419111-2	PT570060	PT	170	9-1415036-1	PTMT00A0	PT acc.	208
8-1419111-3	PT570110	PT	170	9-1415039-1	PT370S15	PT	170
8-1419111-4	PT570220	PT	170	9-1415043-1	MT78602	MT acc.	215
8-1419111-5	PT570506	PT	170	9-1415044-1	RM2030C4	RM 2/3/7	180
8-1419111-6	PT570512	PT	170	9-1415047-1	RTH44024	RTH105	77
8-1419111-7	PT570524	PT	170	9-1415053-1	SR4M4018	SR4 D/M	148
8-1419111-8	PT570548	PT	170	9-1415054-1	SR4D4009	SR4 D/M	148
8-1419111-9	PT570560	PT	170	9-1415055-1	SR4D4110	SR4 D/M	148
8-1419132-7	PT270627	PT	170	9-1415059-1	SR6ZA524	SR6Z	160
8-1419132-8	PT570627	PT	170	9-1415067-1	V23092-A1005-A302		40
8-1419132-9	PT580615	PT	170	9-1415071-1	PT78730	PT acc.	208
9-1393090-1	MT3B3024	MT	177	9-1415073-1	RT3S5T30	RT pack.	224
9-1393090-2	MT3B6024	MT	177	9-1415074-1	PT3S7RC4	PT pack.	230
9-1393090-3	MT3B6115	MT	177	9-1415075-1	PT5S7LB2	PT pack.	230
9-1393090-4	MT3B6230	MT	177	9-1415351-1	PT371600	PT	170
9-1393090-5	MT3B8024	MT	177	9-1415353-1	RM502LE8	RM 5/6	184
9-1393090-7	MT3B8230	MT	177	9-1415355-1	PBH14036	PBH	115
9-1393091-0	MT3232C0	MT	177	9-1415356-1	PBH14005	PBH	115
9-1393091-1	MT323220	MT	177	9-1415357-1	PBH34022	PBH	115
9-1393091-5	MT326006	MT	177	9-1415366-1	SR6D4040	SR6 D/M	151
9-1393091-6	MT326012	MT	177	9-1415389-1	PE014F02	PEbistable	26
9-1393091-7	MT326024	MT	177	9-1415390-1	PE014H05	PEbistable	26
9-1393091-8	MT326048	MT	177	9-1415502-1	RX134012	RX1	79
9-1393091-9	MT326060	MT	177	9-1415509-1	RX134012C	RX1	79
9-1393107-0	RM709615	RM 2/3/7	180	9-1415510-1	RFH34009	RF	86
9-1393107-1	RM732T30	RM 2/3/7	180	9-1415511-1	RFH54060	RF	86
9-1393107-2	RM732221	RM 2/3/7	180	9-1415512-1	RFHF4009	RF	86
9-1393107-5	RM739012	RM 2/3/7	180	9-1415513-1	RF334024	RF	86
9-1393146-1	RM703524	RM 2/3/7	180	9-1415514-1	RF3D4006	RF	86
9-1393146-2	RM703615	RM 2/3/7	180	9-1415515-1	RF3F4024	RF	86
9-1393146-4	RM703730	RM 2/3/7	180	9-1415517-1	RF334048WG	RF	86
9-1393146-5	RM705012	RM 2/3/7	180	9-1415518-1	RF3D4006WG	RF	86
9-1393146-6	RM705024	RM 2/3/7	180	9-1415519-1	RF3F4024WG	RF	86
9-1393146-7	RM705524	RM 2/3/7	180	9-1415520-1	RFH54005WG	RF	86
9-1393146-8	RM707024	RM 2/3/7	180	9-1415521-1	RFHD4012WG	RF	86
9-1393146-9	RM707110	RM 2/3/7	180	9-1415522-1	RFHF4060WG	RF	86
9-1393148-0	RM535524	RM 5/6	184	9-1415528-1	RX114524	RX1	79
9-1393148-4	RM602048	RM 5/6	184	9-1415532-1	RT424700	RT2	95
9-1393148-7	RM602615	RM 5/6	184	9-1415534-0	PT2L7RC4	PT pack.	230
9-1393149-2	RM332024	RM 2/3/7	180	9-1415534-2	PT2L7SB5	PT pack.	230
9-1393149-3	RM332524	RM 2/3/7	180	9-1415534-4	PT2L7TD0	PT pack.	230
9-1393149-4	RM332730	RM 2/3/7	180	9-1415535-4	RTH14024WG	RTH	77
9-1393149-5	RM332880	RM 2/3/7	180	9-1415535-5	RX424048	RX2	104
9-1393149-6	RM333024	RM 2/3/7	180	9-1415536-1	SR2ZY024	SR2Z	158
9-1393149-9	RM505730	RM 5/6	184	9-1415536-4	PT381024	PT	170
9-1393211-0	T92S11D12-24	T92	133	9-1415536-5	RT31KF24	RTInrush	70
9-1393211-1	T92S11D12-48	T92	133	9-1415537-4	SR6C6K24	SR6	154
9-1393211-3	T92S11D22-12	T92	133	9-1415538-9	RTE23020	RT2	95
9-1393211-4	T92S11D22-24	T92	133	9-1415539-4	RM232036	RM 2/3/7	180
9-1393211-7	T92S7A12-120	T92	133	9-1419111-0	PT570615	PT	170
9-1393211-8	T92S7A12-24	T92	133	9-1419111-1	PT570730	PT	170
9-1393211-9	T92S7A12-240	T92	133	9-1419111-2	PT571012	PT	170
9-1393222-1	V23061-B1005-A301		49	9-1419111-3	PT571024	PT	170
9-1393222-4	V23061-B1005-A401		49	9-1419111-4	PT571048	PT	170
9-1393222-9	V23061-B1005-A601		49	9-1419111-5	PT571110	PT	170
9-1393224-0	RY533048	RYII	45	9-1419111-6	PT571524	PT	170
9-1393224-1	RY550005	RYII	45	9-1419111-7	PT571548	PT	170
9-1393224-2	RY550006	RYII	45	9-1419111-8	PT571730	PT	170
9-1393224-3	RY550009	RYII	45	9-1419143-5	RT174009	RTsensitive	65
9-1393224-4	RY550012	RYII	45	9-1440003-7	PCH-105D2	PCH	33
9-1393224-5	RY550018	RYII	45	9-1440003-8	PCH-106D2	PCH	33
9-1393224-6	RY550024	RYII	45	9-1440003-9	PCH-109D2	PCH	33
9-1393224-7	RY550048	RYII	45				
9-1393224-8	RY551005	RYII	45				
9-1393224-9	RY551012	RYII	45				
9-1393239-0	RT314003	RT1	55				
9-1393239-1	RT314005	RT1	55				
9-1393239-3	RT314006	RT1	55				
9-1393239-4	RT314009	RT1	55				
9-1393239-5	RT314012	RT1	55				
9-1393239-6	RT314015	RT1	55				
9-1393239-7	RT314018	RT1	55				
9-1393239-8	RT314024	RT1	55				
9-1393243-0	RT425110	RT2	95				
9-1393243-1	RT425524	RT2	95				
9-1393243-2	RT425615	RT2	95				
9-1393243-3	RT425730	RT2	95				
9-1393243-4	RT443730	RT2	95				
9-1393243-5	RT444005	RT2	95				
9-1393243-6	RT444006	RT2	95				
9-1393243-7	RT444012	RT2	95				
9-1393243-9	RT444024	RT2	95				
9-1415001-1	PT270L24	PT	170				

Notes

Notes

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