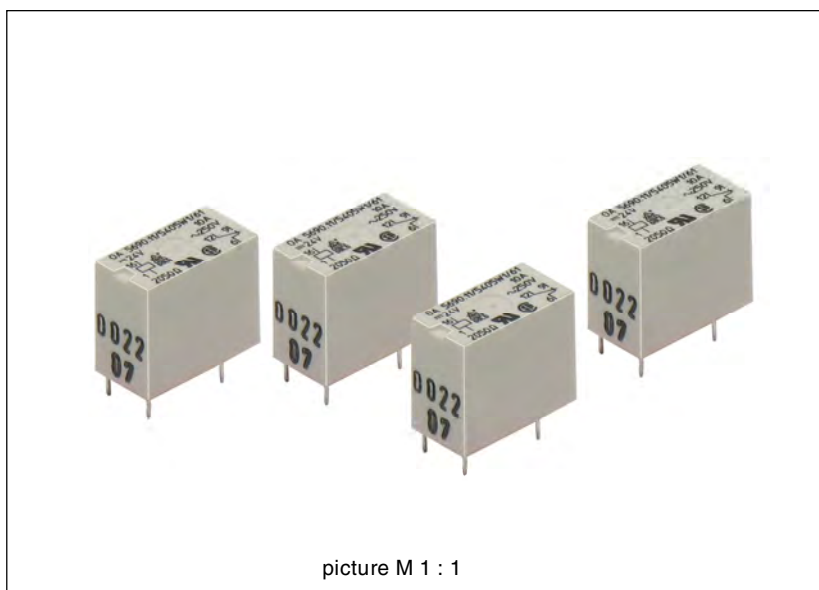


# Power miniature relay, monostable

## dilais® OA 5690

- clearance and creepage distances between contact-coil  $\geq 8$  mm  
as per IEC/EN 60 730; IEC/EN 60 335
- very small volume **DIL model**, can be plugged into standard IC-socket
- safe separation according to IEC/EN 60 335; IEC/EN 60 730
- high dielectric strength between contact-coil  $\geq 4$  kV
- low mutual capacitance
- low rated power consumption
- large voltage range
- high switching power
- high thermal continuous current
- different contact materials
- different connection arrangements
- high life
- wash proof, degree of protection IP 67
- Patent on construction for safe separation
- Approval: **UL** **SF**



## Technical data

| Relay type  |      | single contacts (10 A)   | standard variant<br>single contacts (5 A) |
|---|------|--|---|
| <b>1. 0 Relay coil</b>                              |      |  |   |
| 1. 1 Nominal voltage                                | DC V | 4, 5, 6, 12, 20, 24, 48  |   |
| 1. 2 Nominal consumption                            |      |  |   |
| 1 NO  | mW   | 160  | 135                                       |
| 1 changeover contact                                | mW   | 280  | 250                                       |
| <b>2. 0 Contacts</b>                                |      |  |   |
|   |      | single contacts  |   |
| 2. 1 Contact arrangement 1 NO, 1 changeover contact |      |  |   |
| 2. 2 Contact material                               |      | AgSnO <sub>2</sub> + 0,3 μm Au <sup>1)</sup>                             | AgNi 0,15 + 0,3 μm Au <sup>1)</sup>       |
| 2. 3 Rated insulation voltage                       |      | AC V 250   |   |
| Switching voltage min./max.                         |      | V AC/DC 10 / DC 120, AC 400 V  |   |
| 2. 4 Limiting continuous current I <sub>th</sub>    |      | A 10 5   |   |
| Switching current min./max.                         |      | A 0,01 <sup>3)</sup> / 10 0,01 <sup>3)</sup> / 5 (1mA/0,3) <sup>2)</sup> |   |
| 2. 5 Switching power min./max.                      |      | VA 3 / 2 500 1 / 1 250   |   |
| Switching power min./max.                           |      | W 3 / 120 1 / 120  |   |
| 2. 6 Switching capacity to IEC/EN 60 947-5-1 AC 15  |      | AC V/A NC: 230 / 2 NO: 230 / 5   |   |
| 2. 7 Electrical life                                |      | at 1 s ON, 1 s Off (see contacts service life)                           |   |
| at AC 230 V 5 A cos φ = 1 switching cycles          |      | 1 x 10 <sup>5</sup>  |   |
| at AC 230 V 10 A cos φ = 1 switching cycles         |      | 1 x 10 <sup>5</sup>  |   |
| 2. 8 Switching frequency max.                       |      | Switching cycles 20 / s  |   |
| 2. 9 Pick-up / Reset time                           |      | ms ≤ 6 (typically 4,5) / ≤ 5 (typically 3)                               |   |
| 2.10 Contact force                                  |      | cN NC approx. 8; NO approx. 10   |   |
| 2.14 Contact gap                                    |      | mm ≥ 0,3   |   |
| <b>3. 0 Other</b>                                   |      |  |   |
| 3. 1 Mechanical life                                |      | switching cycles > 50 x 10 <sup>6</sup>                                  |   |
| 3. 2 Temperature range                              |      | °C - 40 ... + 80   |   |
| 3. 3 Degree of protection, housing                  |      | IP 67 / IP 00 IEC/EN 60 529 , wash proof acc. to Qc 2 IEC/EN 60 068-2-17 |   |
| 3. 4 Housing material                               |      | Thermoplast GF PBT   |   |
| 3. 5 Vibration resistance                           |      | 10 ... 55 Hz; 1,2 mm amplitude; 10 g max. IEC/EN 60 068-2-6              |   |
| 3. 6 Climate resistance                             |      | 20 / 065 / 04 (climate category); A/B/D IEC/EN 60 068-1                  |   |
| 1) on request: AgSnO <sub>2</sub> + 0,3 μm Au       |      | 2) Values for AgNi 0,15 + 5 μm Au  |   |
|   |      | 3) Typical values  |   |

All technical data in this list relate to the state at the moment of edition.  
We reserve the right for technical improvements and changes at any time.

## Technical data

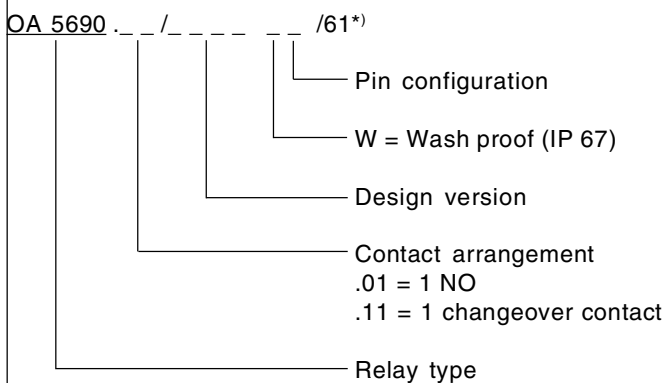
|      |                                      |       |           |
|------|--------------------------------------|-------|-----------|
| 3. 8 | Insulation according to IEC 60 664-1 |       |           |
|      | Rated insulation voltage             | AC V  | 250       |
|      | Contamination level                  |       | 3         |
|      | Overvoltage category                 |       | III       |
|      | Test voltage Contact-coil (1 min)    | AC kV | ≥ 4       |
| 3. 9 | Weight                               | g     | approx. 4 |

## Design versions

| Standard variant for switching current max. I = 5 A |                               |       |   |      | Standard variant for switching current max. I = 10 A |                               |       |  |      |
|---|-------------------------------|-------|---|------|--|-------------------------------|-------|--|------|
| U <sub>N</sub><br>V =                               | Resistance at 20°C<br>Ω ± 10% |       | OA 5690 .. / ...<br>AgNi 0,15 + 0,3 μm Au |      | U <sub>N</sub><br>V =                                | Resistance at 20°C<br>Ω ± 10% |       | OA 5690 .. / ...<br>AgSnO <sub>2</sub> + 0,3 μm Au |      |
|   | 1 NO                          | 1 C/O | .01/                                      | .11/ |  | 1 NO                          | 1 C/O | .01/   | .11/ |
| 4,5   | 155                           | 78    | 5461                                      | 5441 | 4,5  | 130                           | 78    | 5421   | 5401 |
| 6   | 315                           | 155   | 5462                                      | 5442 | 6  | 225                           | 130   | 5422   | 5402 |
| 12  | 1 070                         | 600   | 5463                                      | 5443 | 12   | 900                           | 510   | 5423   | 5403 |
| 20  | 2 960                         | 1 600 | 5464                                      | 5444 | 20   | 2 400                         | 1 450 | 5424   | 5404 |
| 24  | 4 300                         | 2 400 | 5465                                      | 5445 | 24   | 3 600                         | 2 050 | 5425   | 5405 |
| 48  | -                             | 9 200 | -   | 5446 | 48   | -                             | 6 560 | -  | 5406 |

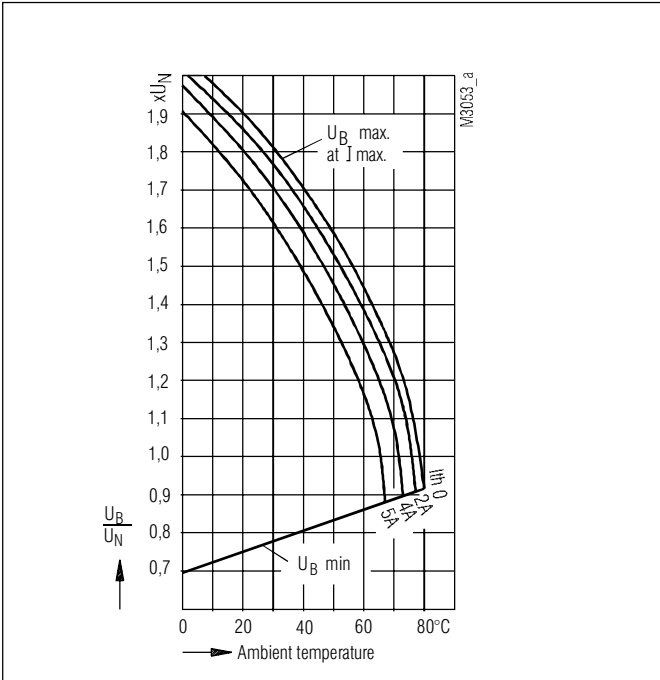
| Standard variant with goldplated contacts |                               |       |   |      |
|---|-------------------------------|-------|---|------|
| U <sub>N</sub><br>V =                     | Resistance at 20°C<br>Ω ± 10% |       | OA 5690 .. / ...<br>AgNi 0,15 + 5 μm Au |      |
|   | 1 NO                          | 1 C/O | .01/                                    | .11/ |
| 4,5                                       | 155                           | 78    | 5511                                    | 5491 |
| 6   | 315                           | 155   | 5512                                    | 5492 |
| 12  | 1 070                         | 600   | 5513                                    | 5493 |
| 20  | 2 960                         | 1 600 | 5514                                    | 5494 |
| 24  | 4 300                         | 2 400 | 5515                                    | 5495 |
| 48  | -                             | 9 200 | -                                       | 5496 |

## Ordering example

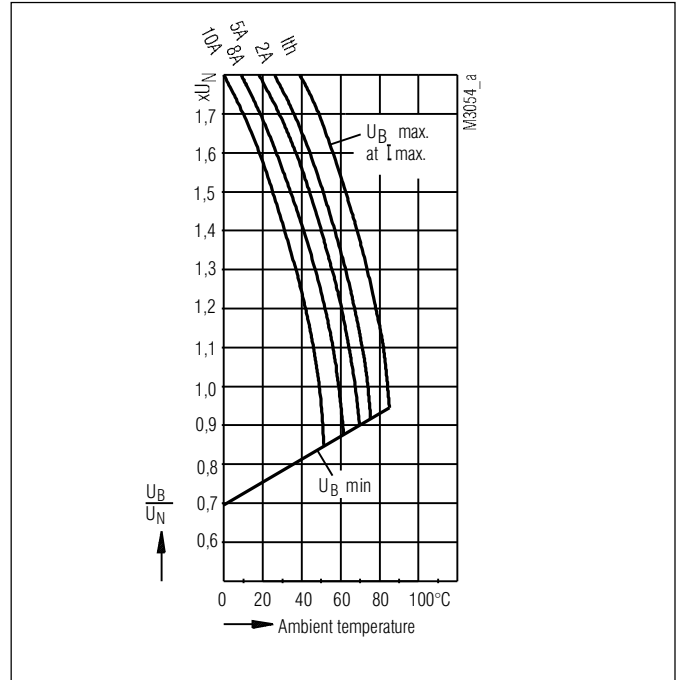


\*) /61 cURus approval

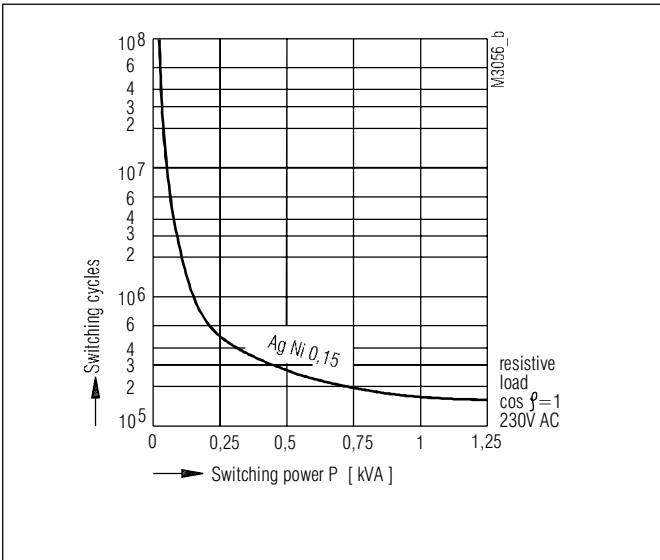
# Characteristics



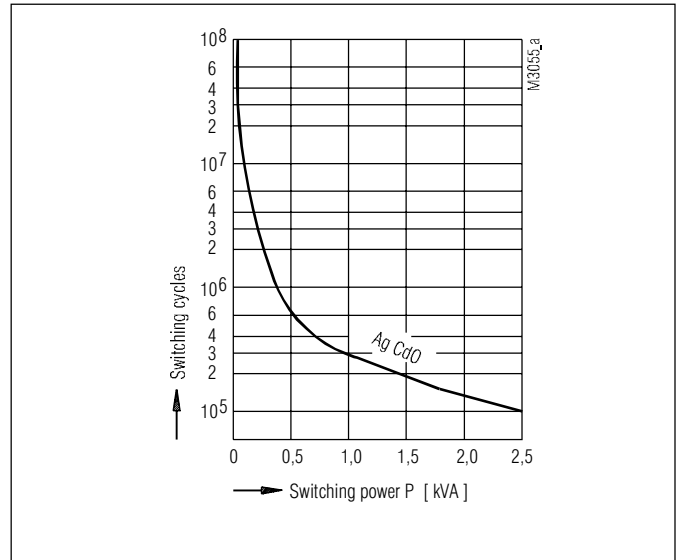
Operating voltage limit curve OA 5690.11 5 A - model



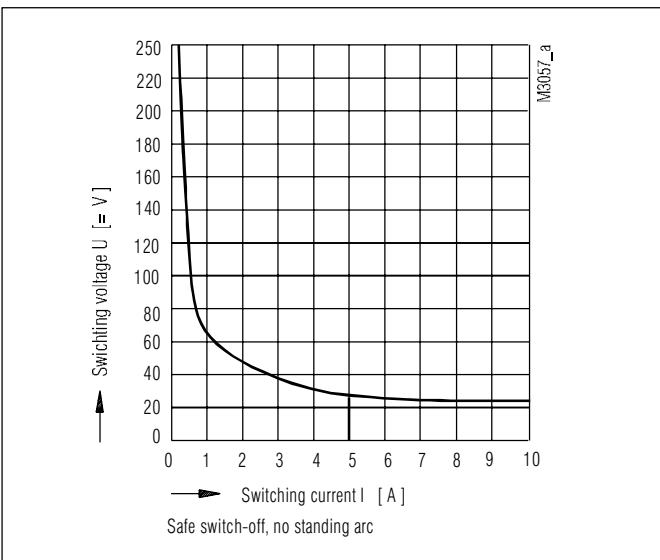
Operating voltage limit curve OA 5690.11 10 A - model



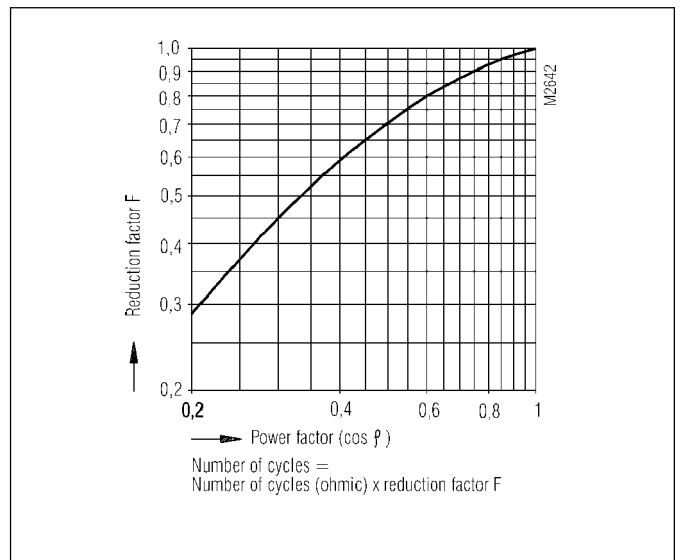
Contact service life OA 5690.11 5 A - model



Contact service life OA 5690.11 10 A - model



Limit curve for arc-free operation

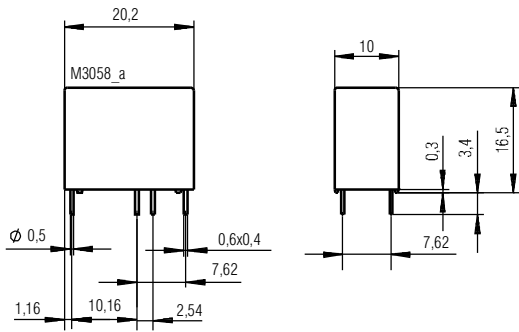


Reduction factor

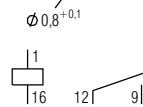
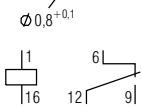
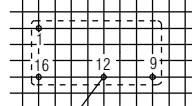
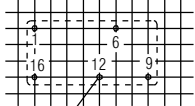
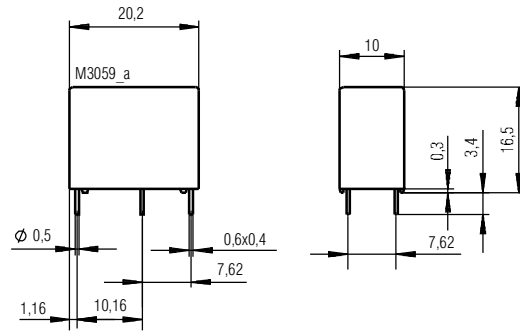
# Dimensions, pin configuration, connection diagrams

Drilling plan (solder side)  
Pin variant 1, pin compatible to OW 5699

OA 5690.11 / \_ \_ \_ \_ 1



OA 5690.01 / \_ \_ \_ \_ 1

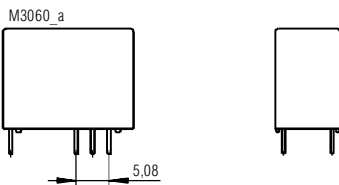


OA 5690.11/\_...1

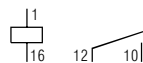
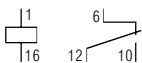
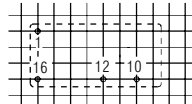
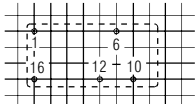
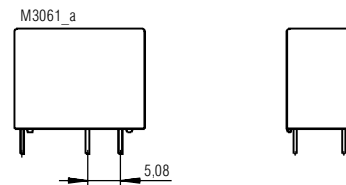
OA 5690.01/\_...1

Pin variant 2, pin compatible to OW 5691

OA 5690.11 / \_ \_ \_ \_ 2



OA 5690.01 / \_ \_ \_ \_ 2

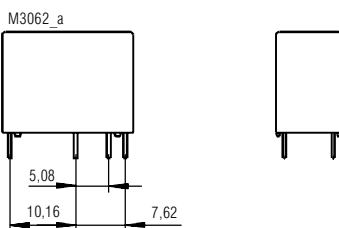


OA 5690.11/\_...2

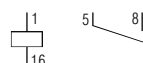
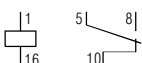
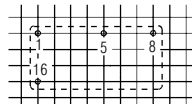
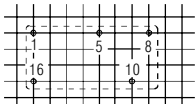
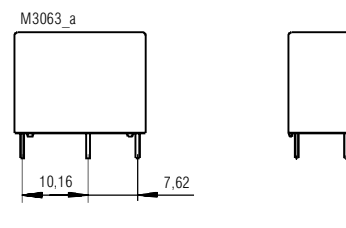
OA 5690.01/\_...2

Pin variant 3, pin compatible to various competitors relays

OA 5690.11 / \_ \_ \_ \_ 3



OA 5690.01 / \_ \_ \_ \_ 3



OA 5690.11/\_...3

OA 5690.01/\_...3

Connections for basic grid dimensions 2,5 mm as well as 2,54 mm according to IEC/EN 60 097 and IEC 60 326 average. Pin distance tolerance measured at the pin ends  $\pm 0,3$  mm. Dimensions are valid for untinned state.