

## NFC20 SERIES

Single and dual output



[ 2 YEAR WARRANTY ]



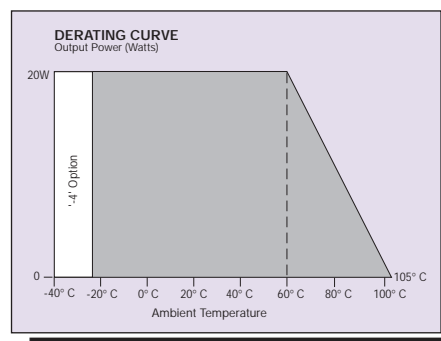
- 20 Watts output power
- Power density 13.6W/in<sup>3</sup>
- 2:1 input voltage range
- Remote ON/OFF control
- UL, CSA and VDE safety approvals
- Overvoltage protection
- Extended operating temperature range
- Fixed switching frequency

The NFC20 series of DC/DC converters offers 20 Watts of output power from the industry standard 2 x 1.6 x 0.46 inch case without a heatsink. Advantages of the NFC20 include increased power density, fixed switching frequency, tight line and load regulation, reduced board area requirements and many standard features. Among these features are remote on/off control, overvoltage protection, synchronization function and an extended operating temperature range option. Input voltage ranges of 18-36VDC and 36-72VDC mean that the NFC20 is ideally suited to process control, industrial automation, distributed power and telecommunications applications.

## SPECIFICATION All specifications are typical at nominal input, full load at 25°C unless otherwise stated

OUTPUT SPECIFICATIONS			
Voltage accuracy			±0.5%
Voltage adjustability	All outputs		±10%
Line regulation	LL to HL, single output		±0.1%
	LL to HL, dual output		±0.1%
Load regulation	FL to NL, single output	±0.5%, max.	
	FL to NL, dual output	±3.0%, max.	
Ripple and noise (5Hz to 20MHz)	Singles	75mV pk-pk, max., 20mV rms	
	Duals	100mV pk-pk, max.	
Temperature coefficient			±0.02%/°C max.
Overvoltage protection	Single output	125% Vout	
	Dual output	125% Vout total	
Short circuit protection (Clamp)	(See Note 7)	Continuous automatic recovery	
INPUT SPECIFICATIONS			
Input voltage range	24VDC	18 to 36VDC	
	48VDC	36 to 72VDC	
No load input current			20mA
Input filter	(See Note 5)	External capacitor	
Surge protection	24VDC	50V for 100ms	
	48VDC	100V for 100ms	
Remote ON/OFF Logic compatibility		CMOS/TTL	
Logic ON		Logic high or open	
Logic OFF		Logic low or Jumper pin 2 and 4	
Frequency synchronization		Switching frequency	±10%
Synchronization function		Negative going pulse on pin 4, max. 25% duty cycle	

GENERAL SPECIFICATIONS		
Efficiency		83% typical
Isolation voltage	Input/output	1000VAC/710VDC
Switching frequency	Fixed	200kHz ±5.0%
Approvals and standards		VDE0805, EN60950 IEC950, UL1950 CSA C22.2 No. 950
Case material		Aluminum alloy, hard black anodized finish
Cover material		10% glass reinforced polyetherimide GE ULTEM #2110 or equivalent
Material flammability		UL94V-0
Weight		45g (1.6oz)
MTBF	MIL-HDBK-217F	260,000 hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating ambient	-25°C to +60°C
	Option (See Note 6)	-40°C to +60°C
	Non-operating amb.	-55°C to +125°C
	Max. case temperature, Derating	+110°C max. See curve
	Cooling, vertical mount	Free air convection cooled

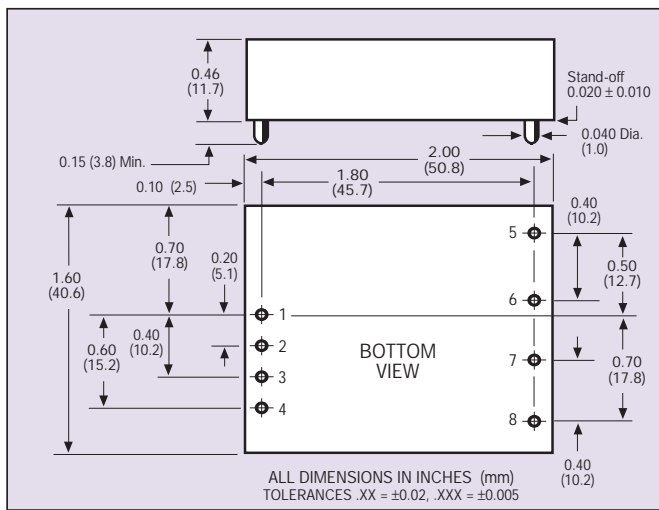


# 20 Watt Wide input DC/DC converters

INPUT VOLTAGE (1)	OUTPUT VOLTAGE	OVP	OUTPUT CURRENT	INPUT CURRENT (2)	EFFICIENCY	REGULATION		MODEL NUMBER
						LINE (3)	LOAD (4)	
18-36VDC	5VDC	6.2VDC	4000mA	1083mA	81%	±0.1%	±0.5%	NFC20-24S05
18-36VDC	12VDC	15VDC	1670mA	1030mA	83%	±0.1%	±0.5%	NFC20-24S12
18-36VDC	15VDC	18VDC	1330mA	1030mA	83%	±0.1%	±0.5%	NFC20-24S15
18-36VDC	±12VDC	30VDC	±833mA	1040mA	83%	±0.1%	±3%	NFC20-24D12
18-36VDC	±15VDC	36VDC	±666mA	1030mA	84%	±0.1%	±3%	NFC20-24D15
36-72VDC	5VDC	6.2VDC	4000mA	527mA	82%	±0.1%	±0.5%	NFC20-48S05
36-72VDC	12VDC	15VDC	1670mA	515mA	83%	±0.1%	±0.5%	NFC20-48S12
36-72VDC	15VDC	18VDC	1330mA	515mA	83%	±0.1%	±0.5%	NFC20-48S15
36-72VDC	±12VDC	30VDC	±833mA	510mA	85%	±0.1%	±3%	NFC20-48D12
36-72VDC	±15VDC	36VDC	±666mA	505mA	86%	±0.1%	±3%	NFC20-48D15

## Notes

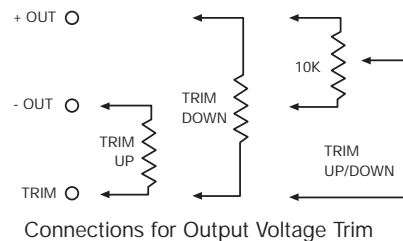
- Nominal input voltages are 24VDC and 48VDC.
- Maximum figure, at full load.
- Measured from low line to high line at full load.
- Measured from full load to no load.
- An external capacitor, connected across the input is required for normal operation. The capacitor should be capable of withstanding 600mA of ripple current. Recommended capacitors: Nippon Chemi-Con SXE series, 56µF/100V for the NFC20-48xxx and the Nippon Chemi-Con LXF series, 560µF/50V for the NFC20-24xxx.
- Extended operating temperature range is available on the following models: NFC20-24S05, -24S12, -24S15, -48S05, -48S12 and -48S15. The suffix -4 must be added to the NFC20 model number, e.g. **NFC20-48S05-4**.
- Long term continuous operation into a short circuit will compromise the reliability of the unit.



PIN CONNECTIONS		
PIN NUMBER	SINGLE OUTPUT	DUAL OUTPUT
1	+ Input	+ Input
2	- Input	- Input
3	No Pin	No Pin
4	Control	Control
5	No Pin	+ Output
6	+ Output	Common
7	- Output	- Output
8	Trim	Trim

## EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by ±10% using either method shown below



## International Safety Standard Approvals



VDE0805/EN60950/IEC950 File No. 10401-3336-1074  
Licence No. 1628



UL1950 Reg. File No. E136005



CSA C22.2 No. 950 File No. LR41062C

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