



NFC20 SERIES

Single and dual output

- 20 Watts output power
- Power density 13.6W/in³
- 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.

[2 YEAR WARRANTY]

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

OUTPUT SPECIFICATIO	ONS			
Voltage accuracy		±0.5%		
Voltage adjustability	All outputs ±			
Line regulation	LL to HL, single output ±0.1 LL to HL, dual output ±0.1			
Load regulation	FL to NL, single FL to NL, dual o	output ±0.5%, max. utput ±3.0%, max.		
Ripple and noise (5Hz to 20MHz)	Singles Duals	75mV pk-pk, max., 20mV rms 100mV pk-pk, max.		
Temperature coefficient		±0.02%/°C max.		
Overvoltage protection	Single output Dual output	125% Vout 125% Vout total		
Short circuit protection (Clamp)	(See Note 7)	Continuous automatic recovery		
INPUT SPECIFICATIONS				
Input voltage range	24VDC 48VDC	18 to 36VDC 36 to 72VDC		
No load input current		20mA		
Input filter	(See Note 5)	External capacitor		
Surge protection	24VDC 48VDC	50V for 100ms 100V for 100ms		
Remote ON/OFF Logic compatibility Logic ON Logic OFF		CMOS/TTL Logic high or open 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 SPECIFICAT				
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	polye	10% glass reinforced therimide 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 Option (See Note Non-operating am Max. case temper Derating Cooling, vertical m	t -25°C to +60°C 6) -40°C to +60°C b55°C to +125°C ature, +110°C max. See curve nount Free air convection cooled		
DERATING CU Output Power (Watts 20W	RVE			

105° C

60°C 80°C

-4' Option

40° C -20° C 0° C 20° C 40° C

Ambient Temperatu

20 Watt Wide input DC/DC converters

INPUT	OUTPUT	01/5	OUTPUT	INPUT	FFFICIENCY	REGULATION		MODEL
VOLTAGE ⁽¹⁾	VOLTAGE	VOLTAGE OVP CURRENT CURRENT (2) EFFICIEN	EFFICIENCY	LINE ⁽³⁾	LOAD ⁽⁴⁾	NUMBER		
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. 1
- Maximum figure, at full load. 2
- Measured from low line to high line at full load. 3
- Measured from full load to no load. 4
- 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, 56μ F/100V for the NFC20-48xx and the Nippon Chemi-Con LXF series, 5 560µF/50V for the NFC20-24xxx.
- Extended operating temperature range is available on the following models: NFC20-24S05, -24S12, -24S15, -48S05, -48S12 and -48S15. 6 The suffix -4 must be added to the NFC20 model number, e.g. NFC20-48S05-4.
- 7 Long term continuous operation into a short circuit will compromise the reliability of the unit.



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

International Safety Standard Approvals



📭 UL1950 Reg. File No. E136005

Ð CSA C22.2 No. 950 File No. LR41062C

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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