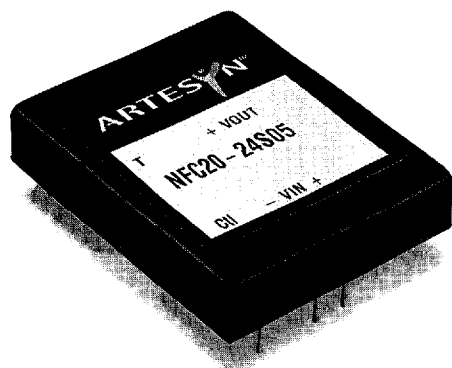


## NFC20 SERIES

Single and dual output



- 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.


[ 2 YEAR WARRANTY ]


### 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 LL to HL, dual output	±0.1% ±0.1%
Load regulation	FL to NL, single output FL to NL, dual output	±0.5%, max. ±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 SPECIFICATIONS		
Efficiency		83% typical
Isolation voltage	Input/output	500VAC/710VDC
Switching frequency	Fixed	200kHz ±5.0%
Approvals and standards	Safety	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-217E	260,000 hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating ambient Option, See Note 6 Non-operating amb. Max. case temperature, Derating Cooling, vertical mount	-25°C to +60°C -40°C to +60°C -55°C to +125°C +110°C max. See curve Free air convection cooled

#### 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

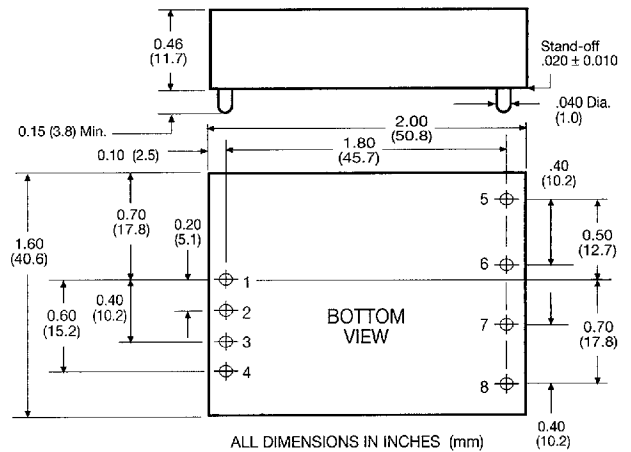
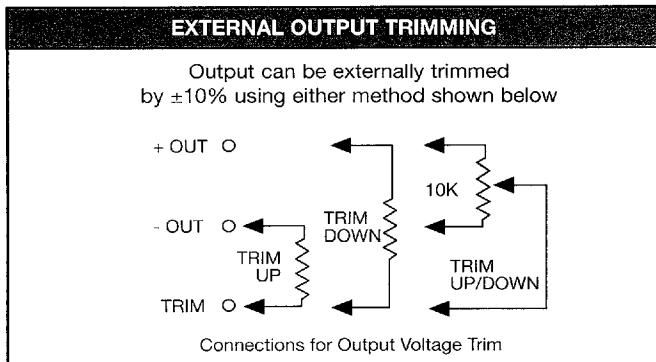
# 20 Watt Wide input DC/DC converters

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



TOLERANCES  
 .XX = ±0.02  
 .XXX = ±0.005

