

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]

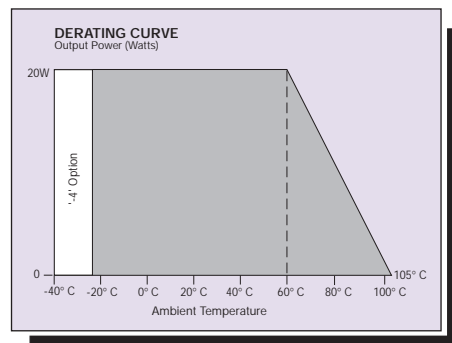


SPECIFICATION

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

| OUTPUT 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 | 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 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 |

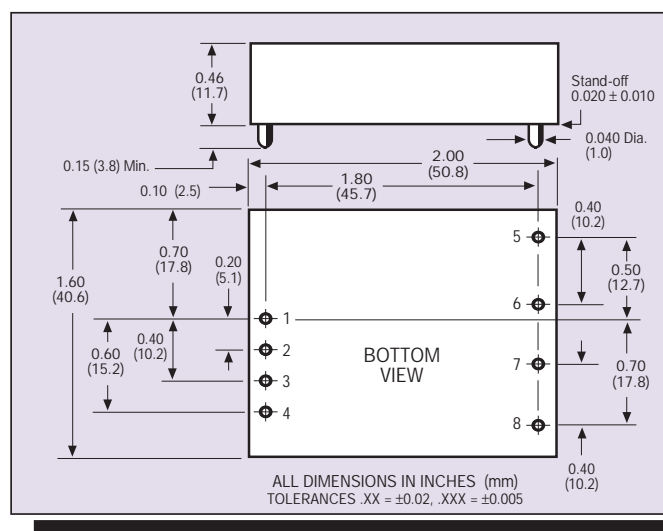


20 Watt Wide input DC/DC converters

| 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.

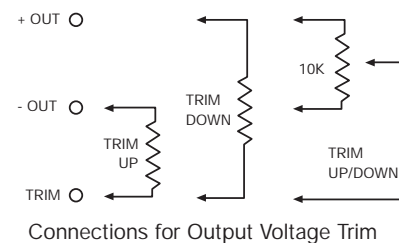


PIN CONNECTIONS

| 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



Connections for Output Voltage Trim

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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