NFC10 SERIES

Single and dual output

- **10 Watts output power**
- **Power density 13.3W/in³**
- **2:1 input voltage range**
- **UL, CSA and VDE safety approvals (48V input units)**
- **Overvoltage protection**
- **Extended operating temperature range**
- **Fixed switching frequency**

The NFC10 offers 10 Watts of output power from a 2 x 1 x 0.375 inch package without derating to 71°C. A range of 15 models with 2:1 wide input voltages of 9–18, 18–36 and 36–72VDC and single and dual outputs are offered. Features of the NFC10 series include fixed frequency operation, high MTBF, overvoltage protection and tight load regulation. All of the models have been designed to meet EN60950 (Vin <60VDC) safety requirements. Typical applications are telecommunications, industrial automation and distributed power.

[2 YEAR WARRANTY]

SPECIFICATION

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

OUTPUT SPECIFICATIONS		
Line regulation	LL to HL, single output LL to HL, dual output	±1.0% ±1.0%
Load regulation	FL to 10% FL, singles FL to 10% FL, duals	±1.0% max. ±2.0% max.
Total error band	Singles Duals	±3.0% max. ±5.0% max.
Ripple and noise	5Hz to 20MHz	100mV pk-pk, max. 20mV rms max.
Transient response	25% step	±2.0% max. dev., 500µs recovery
Temperature coefficient		±0.02%/°C, max.
Overvoltage protection clamp	Single output Dual output	125% Vout 125% Vout total
Short circuit protection	See Note 9	Continuous automatic recovery

INPUT SPECIFICATIONS		
Input voltage range	12VDC 24VDC 48VDC	9 to 18VDC 18 to 36VDC 36 to 72VDC
Input filter		Pi filter
Surge protection	24VDC 48VDC	50V for 100ms 100V for 100ms
Continuous protection	ETSI requirement for 48V and 60VDC telecoms	75VDC

GENERAL SPECIFICATIONS		
Efficiency	See table	79% to 86%
Isolation voltage	Input/output	500VAC/710VDC
Switching frequency	Fixed	400kHz ±10%
Approvals and standards See Note 5	Safety	VDE0805, EN60950, IEC950, UL1950 CSA C22.2 No. 950
Case material		Thick aluminum alloy, hard black anodized finish
Cover material	UL94V-0	10% glass reinforced polyetherimide GE ULTEM #2110 or equivalent
Material flammability		UL94V-0
Weight		27g (0.95oz.)
MTBF	MIL-HDBK-217E	760,000 hours

ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating ambient	–25°C to +71°C
	Max. case temperature, See Notes 6 and 8	+110°C max.
	Non-operating amb,	–55°C to +125°C
	Option, ambient, see Note 7	-40°C to +71°C
	Derating, see curve, and Note 8	None to +71°C
	Cooling	Free air convection cooled

10 Watt
Wide input DC/DC converters

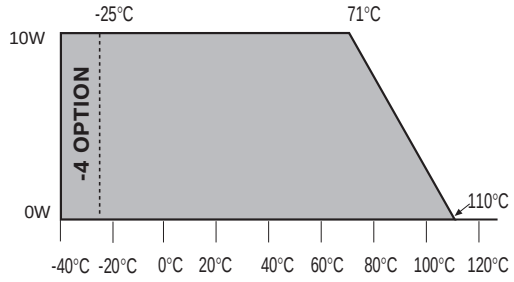
INPUT VOLTAGE (1)	OUTPUT VOLTAGE	OVP	OUTPUT CURRENT	INPUT CURRENT (2)	EFFICIENCY	REGULATION		MODEL NUMBER
						LINE (3)	LOAD (4)	
9-18VDC	5VDC	6.2VDC	2000mA	1085mA	79%	±1.0%	±1.0%	NFC10-12S05
9-18VDC	12VDC	15VDC	833mA	1055mA	82%	±1.0%	±1.0%	NFC10-12S12
9-18VDC	15VDC	18VDC	666mA	1055mA	82%	±1.0%	±1.0%	NFC10-12S15
9-18VDC	±12VDC	30VDC	±416mA	1055mA	81%	±1.0%	±2.0%	NFC10-12D12
9-18VDC	±15VDC	36VDC	±333mA	1055mA	81%	±1.0%	±2.0%	NFC10-12D15
18-36VDC	5VDC	6.2VDC	2000mA	535mA	81%	±1.0%	±1.0%	NFC10-24S05
18-36VDC	12VDC	15VDC	833mA	530mA	84%	±1.0%	±1.0%	NFC10-24S12
18-36VDC	15VDC	18VDC	666mA	530mA	84%	±1.0%	±1.0%	NFC10-24S15
18-36VDC	±12VDC	30VDC	±416mA	520mA	82%	±1.0%	±2.0%	NFC10-24D12
18-36VDC	±15VDC	36VDC	±333mA	520mA	82%	±1.0%	±2.0%	NFC10-24D15
36-72VDC	5VDC	6.2VDC	2000mA	265mA	82%	±1.0%	±1.0%	NFC10-48S05
36-72VDC	12VDC	15VDC	833mA	260mA	86%	±1.0%	±1.0%	NFC10-48S12
36-72VDC	15VDC	18VDC	666mA	260mA	86%	±1.0%	±1.0%	NFC10-48S15
36-72VDC	±12VDC	30VDC	±416mA	255mA	84%	±1.0%	±2.0%	NFC10-48D12
36-72VDC	±15VDC	36VDC	±333mA	255mA	84%	±1.0%	±2.0%	NFC10-48D15

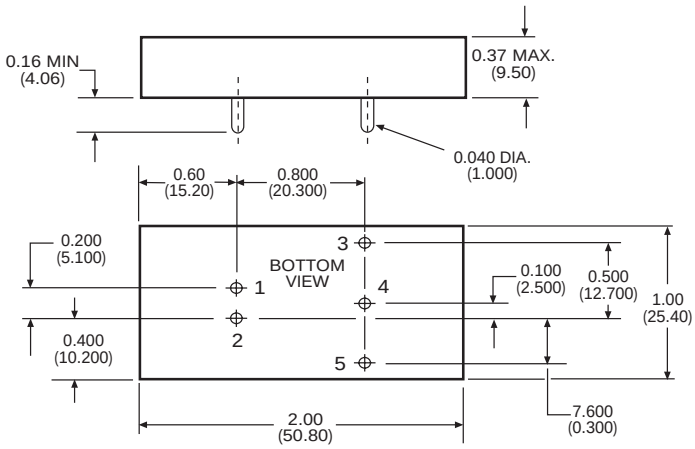
Notes

1 Nominal input voltages are 12VDC, 24VDC and 48VDC.
2 Maximum figure, at full load.
3 Measured from high line to low line.
4 Measured from full load to 10% full load.
5 Designed to meet EN60950 with an input voltage that does not exceed the SELV limit of 60VDC.
6 Maximum case temperature must not be exceeded. Derating curve may be extended or restricted depending on available cooling.
7 Extended operating temperature range is available on the following models: NFC10-12S12, -24S05, -24S12, -24S15. The suffix '–4' must be added to the model number, e.g. **NFC10-24S05-4.**
8 Derating curve assumes unrestricted natural convection cooling. Higher ambient temperatures are permitted with forced air cooling, if the case temperature does not exceed 110°C.
9 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	+ Output	+ Output
4	No Pin	Common
5	– Output	– Output

DERATING CURVE (See Note 8)





DIMENSIONS IN INCHES (mm)
Tolerance .xx = ± 0. 02
.xxx = ± 0.005

International Safety Standard Approvals: 48V input units

VDE0805/EN60950/IEC950 File No. 10401-3336-1077, VDE licence No. 1663

UL1950 File No. E136005

CSA C22.2 No. 950 File No. LR41062C/LR50913C/LR101320