



[ 2 YEAR WARRANTY ]



## NFC25 SERIES

Triple output



- Typical efficiency 80%
- Low profile 0.43 inches
- Remote ON/OFF
- BTR2511 conformance
- UL, CSA and TÜV approvals
- EN55022 conducted emissions level B
- Industry standard footprint
- Fixed operating frequency
- Load sharing facility
- Available RoHS compliant

The NFC25 series of dc-dc converters provide 25 Watts of power in a low profile, 11 mm, industry standard package. Key design specifications are tight line and load regulation, 80% efficiency, load sharing facility, conducted emissions to EN55022 level B, and the BTR2511 requirements (hold-up time, reverse polarity protection etc.). These specifications have been enhanced by adding such standard features as remote ON/OFF, short circuit protection and overvoltage protection. The input voltage ranges encompass 9 Vdc to 18 Vdc, 18 Vdc to 36 Vdc and 36 Vdc to 72 Vdc. The NFC25 Series is ideal for applications such as telecommunications, process control, factory automation, mobile and test equipment.

## SPECIFICATION

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

OUTPUT SPECIFICATIONS		
Voltage accuracy	5 V	±1.0%
Auxiliary outputs		±3.0%
Voltage adjustability	All Outputs	±10%
Line regulation	LL to HL, +5 V output	±0.2%
	LL to HL, auxiliaries	±1.5%
Load regulation	FL to NL, +5 V output	±1%, max.
	(See Note 6)	
	Auxiliary output	See diagram
Cross regulation		See graphs
Ripple and noise	5 V output	80 mV pk-pk, max.
(5 Hz to 20 MHz)	Auxiliaries	150 mV pk-pk, max.
Temperature coefficient	All outputs	±0.02%/°C, max.
Overvoltage protection	5 V output	6.8 V, typical
	Auxiliary	None
Short circuit protection	5 V output	Continuous
	Auxiliary	10 seconds, max.
INPUT SPECIFICATIONS		
Input voltage range	12 Vdc	9-18 Vdc
	24 Vdc	18-36 Vdc
	48 Vdc	36-72 Vdc
Continuous input overvoltage	ETS300-132 (48 Vdc version)	75 Vdc
No load input current	12 Vdc	120 mA
	24 Vdc	60 mA
	48 Vdc	50 mA
Input filter		Pi network
Remote ON/OFF		(See Note 9)
Logic compatibility		CMOS and TTL
On		>1.5 V or open
Off		<0.4 V

EMC CHARACTERISTICS		
Radiated noise	EN55022/11, FCC part 15	Class B
Conducted noise	EN55022/11, FCC part 15	
	48 V input models	Class B
	12 V and 24 V input models	Class A
GENERAL SPECIFICATIONS		
Efficiency		80% typical 78%, min.
Isolation voltage	Input/output	500 Vdc
Switching frequency	Fixed	150 kHz
Approvals and standards		EN60950, IEC950, UL1950 CSA C22.2 No. 950
Case material		Aluminum with plastic non-conductive base
Material flammability		UL94V-0
Weight		75 g (2.6 oz)
MTBF	MIL-HDBK-217E	330,000 hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating ambient	-25 °C to +70 °C
	Non-operating	-45 °C to +100 °C
	Cooling	Free air convection cooled
	Derating	None
Relative humidity	Non-condensing	5% to 95% RH
Altitude	Operating	10,000 feet max.
	Non operating	40,000 feet max.
Vibration	5-500 Hz	2.5 G rms (approx.)

### International Safety Standard Approvals

TÜV EN60950/IEC950 Reg. File No. 92 05 2584 533

UL1950 File No. E136005

CSA C22.2 No. 950 File No. LR41062C

# 25 Watt Wide input DC-DC converters

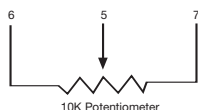
INPUT VOLTAGE (1)	OUTPUT VOLTAGE	OUTPUT CURRENT (MAX.)	INPUT CURRENT FULL LOAD	REGULATION		MODEL NUMBER (11,12)
				LINE (2)	LOAD (3,4)	
9-18 Vdc	5/±12 Vdc	5/±1 A	2.75 A	±0.2%/±1.5%	±1.0%/graph	NFC25-12T05-12J
9-18 Vdc (5)	5/±15 Vdc	5/±0.8 A	2.75 A	±0.2%/±1.5%	±1.0%/graph	NFC25-12T05-15-AJ
18-36 Vdc (5)	5/±12 Vdc	5/±1 A	1.35 A	±0.2%/±1.5%	±1.0%/graph	NFC25-24T05-12J
18-36 Vdc (5)	5/±15 Vdc	5/±0.8 A	1.35 A	±0.2%/±1.5%	±1.0%/graph	NFC25-24T05-15J
36-72 Vdc	5/±12 Vdc	5/±1 A	0.68 A	±0.2%/±1.5%	±1.0%/graph	NFC25-48T05-12J
36-72 Vdc	5/±15 Vdc	5/±0.8 A	0.68 A	±0.2%/±1.5%	±1.0%/graph	NFC25-48T05-15J

## Notes

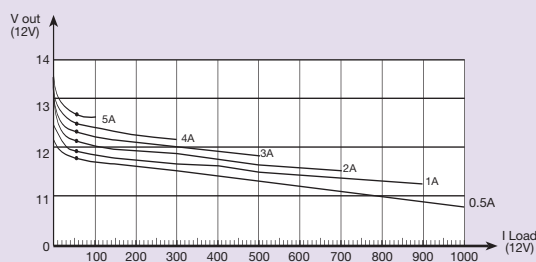
- Nominal input voltages are 12 Vdc, 24 Vdc and 48 Vdc.
- Measured from high line to low line at nominal loads.
- Measured from full load to no load (auxiliary outputs at no load).
- Auxiliary ±12 V load regulation, 15% full load to 100% full load.  
Initial: 5 V @ 2.1 A, ±12 V @ 0.6 A.  
Final: 5 V @ 2.1 A, ±12 V @ 0.09 A.  
Auxiliary ±15 V load regulation, 20% full load to 100% full load.  
Initial: 5 V @ 2.1 A, ±15 V @ 0.5 A.  
Final: 5 V @ 2.1 A, ±15 V @ 0.1 A.
- To order a model with reverse polarity inputs, add the suffix '-A' to the model number, e.g. **NFC25-24T05-12-A**.
- A minimum load of 1 Amp is required on the 5 V output in order to maintain regulation of the auxiliary outputs.
- A load sharing facility is available, whereby the 25 Watts of power is available to any single output or any combination of outputs. There are, however, two prerequisites: the maximum output current may not be exceeded and the regulation is maintained as per Note 6.
- Nominal load conditions:  
5 V @ 2.1 A, ±12 V @ 0.6 A and 5 V @ 2.1 A, ±15 V @ 0.5 A.
- The unit will be damaged by the application of a low impedance voltage source to the remote on/off pin.
- Maximum case temperature must not be exceeded. Derating may be extended or restricted depending on available cooling.
- The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

PIN CONNECTIONS		
PIN NUMBER	STANDARD PIN OUT	PIN OUT OPTION A (5)
1	- Input	+24V
2	+ Input	-24V
3	N/C	N/C
4	Remote	Remote
5	Adjust	Adjust
6	+5V	+5V
7	Return	Return
8	+12V or +15V	+12V or +15V
9	-12V or -15V	-12V or -15V

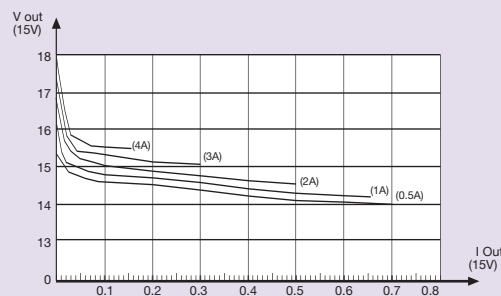
## EXTERNAL OUTPUT TRIMMING



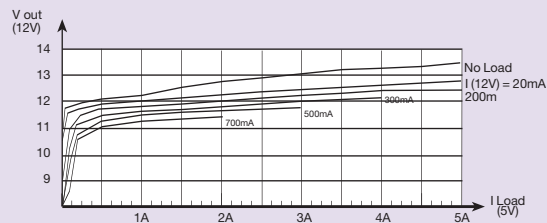
### Load Regulation, ±12V



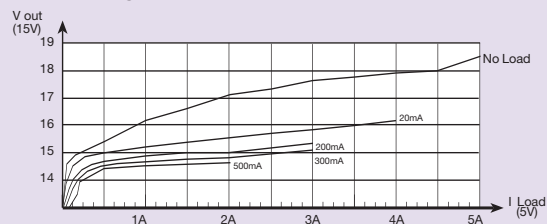
### Load Regulation, ±15V



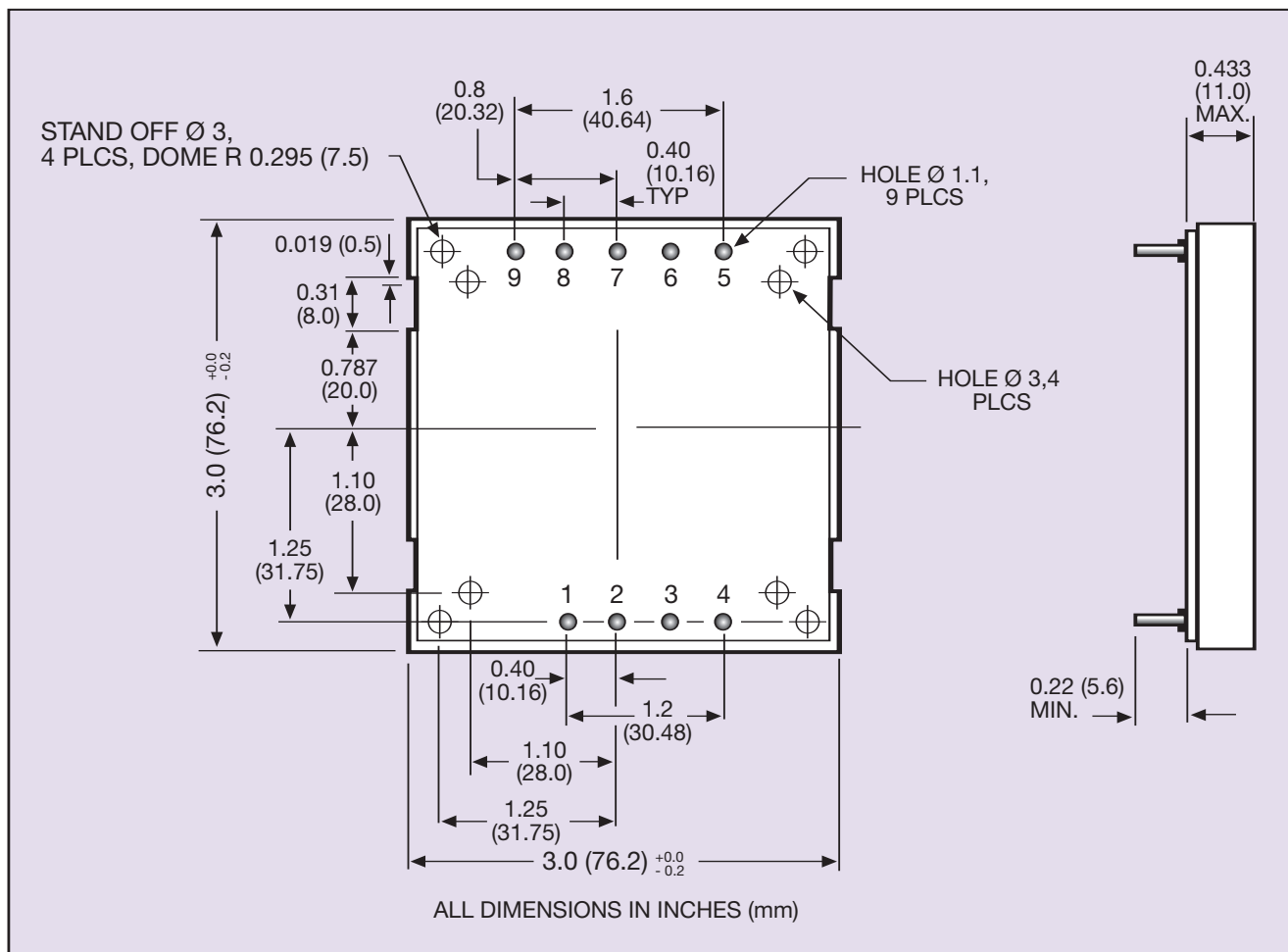
### Cross Regulation, ±12V



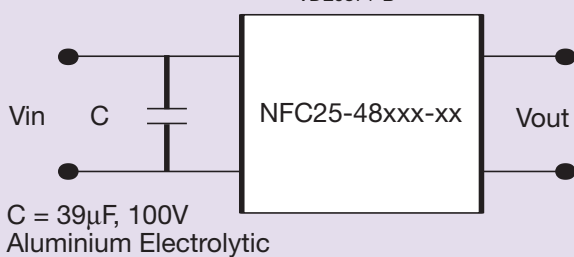
### Cross Regulation, ±15V



## 25 Watt Wide input DC-DC converters



Design Notes for 48V input versions:  
VDE0871-B



BTR2511 Reverse polarity protection

