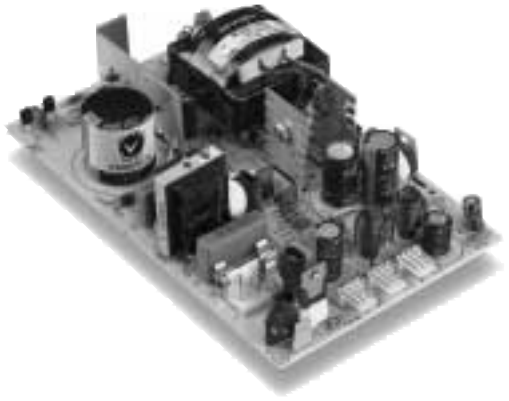
ARTESYN TECHNOLOGIES

NFS42 SERIES

Triple output



- **6.3 x 3.9 x 1.5 package (1U applications)**
- **Overvoltage and short circuit protection**
- **40W with free air convection**
- **EN55022, EN55011 conducted emissions level B**
- **UL, VDE, CSA and BABT safety approvals**

The NFS42 series is a 40W universal input AC/DC power supply on a 6.3 x 3.9 inch card with a maximum component height of 1.5 inches for use in 1U applications. The NFS42 series is available in three standard models with a lower component count and larger footprint than most standard 40W models to ensure greater reliability. The NFS42 provides 40W of output power with free air convection cooling which can be boosted to 50W with 20CFM of air. Standard features include overvoltage and short circuit protection. The series, with full international safety approval and the CE mark, meets conducted emissions EN55022 level B. The NFS42 series is designed for use in low power telecom and industrial applications such as PABX's, industrial PC's and machine control.

[2 YEAR WARRANTY]

CE (LVD)

SPECIFICATION

All specifications are typical for 110VAC input, 40 watts output at 25°C unless otherwise stated

OUTPUT SPECIFICATIONS		
Line regulation LL to HL, FL	Main output (Output 1) Output 2 Output 3	±1.0% ±1.0% ±0.1%
Total regulation (See Note 5)	Main output (Output 1) Output 2 Output 3	±3.0% ±5.0% ±5.0%
Overshoot/undershoot	At turn-on	0%
Transient response	+5V (1.5A to 3A)	500mV max. dev., 500µs recovery
Temperature coefficient	All Outputs	±0.03%/°C, max.
Overvoltage protection	+5V output	6.25V ±0.75V
Output power limit	Primary power limited	75W input power limit 50W output power limit
Short circuit protection		Yes, with auto-restart
Minimum output current	(See Note 8)	4 Watts
INPUT SPECIFICATIONS		
Input voltage range	Universal input	85 to 264VAC 120 to 370VDC
Input frequency range		47 to 440Hz
Maximum input surge current	110VAC, cold start 230VAC, cold start	7.5A 15A
Safety ground leakage current	110VAC, 60Hz 230VAC, 50Hz	0.66mA max. 1.2mA max.

International Safety Standard Approvals

VDE0805/EN60950/IEC950/IEC1010 File No. 10401-3336-1036
Licence No. 1485, 1650

UL1950 File No. E136005

CSA C22.2 No. 950 File No. LR41062C

Certificate No. PS/603173

EMC CHARACTERISTICS		
Conducted emissions	EN55022, FCC part 15	Level B
Radiated emissions	EN55022, FCC part 15	Level B
ESD air	EN61000-4-2, level 3	Perf. criteria 2
ESD contact	EN61000-4-2, level 4	Perf. criteria 1
Surge	EN61000-4-5, level 3	Perf. criteria 1
Fast transients	EN61000-4-4, level 3	Perf. criteria 1
Radiated immunity	EN61000-4-3, level 3	Perf. criteria 2
Conducted immunity	EN61000-4-6, level 3	Perf. criteria 1
GENERAL SPECIFICATIONS		
Hold-up time	110VAC input 230VAC input	16ms 100ms
Efficiency	110/230VAC input, 40W output	70% typical 65% min.
Isolation voltage	Input/output Input/chassis	3000VAC 1500VAC
Switching frequency	Variable	20kHz, min.
Approvals and standards (See Note 10)		VDE0805, EN60950, IEC950 IEC1010, UL1950, BABT CSA C22.2 No. 950
Weight		400g (14oz)
MTBF (See Note 8)	MIL-HDBK-217E, 25°C	230,000 hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance (See Notes 6, 7)	0°C to 50°C ambient, convection cooled 0°C to 50°C ambient, 20CFM forced air 50°C to 70°C ambient Peak (0°C to 50°C, max. 30s) Operating range, see derating curve Non-operating	40W 50W Derate linearly to 50% load 50W 0°C to +70°C -40°C to +85°C
Relative humidity	Non-condensing	5% to 95% RH
Altitude	Operating Non-operating	10,000 feet max. 30,000 feet max.
Vibration (See Note 9)	5Hz to 500Hz	2.4G rms approx.

40 to 50 Watt
AC/DC universal input switch mode power supplies

OUTPUT VOLTAGE	OUTPUT CURRENTS			RIPPLE (4)	TOTAL REGULATION (5)	MODEL NUMBER (A)
	MAX (1)	PEAK (2)	FAN (3)			
+5.1V (I_A)	3.0A	5.0A	3.5A	50mV	±3%	NFS42-7608
+12.0V (I_B)	2.0A	4.0A	2.5A	120mV	±5%	
–12.0V	0.2A	0.7A	0.3A	120mV	±5%	
+5.1V (I_A)	2.5A	5.0A	3.5A	50mV	±3%	NFS42-7627
+24.0V (I_B)	1.0A	3.0A	1.2A	240mV	±5%	
–12.0V	0.2A	0.7A	0.3A	120mV	±5%	
+5.1V (I_A)	2.5A	5.0A	3.5A	50mV	±3%	NFS42-7610
+15.0V (I_B)	1.6A	3.0A	2.0A	150mV	±5%	
–15.0V	0.2A	0.7A	0.3A	150mV	±5%	

Notes

1 Convection cooled, maximum 40W output power.
2 Peak outputs lasting less than 30 seconds with duty factor less than 10%. During peak loading, output may go outside total regulation limits. Maximum output power during peak loading is 50W.
3 Forced air, 20 CFM at 1 atmosphere. Total power out, 50W maximum.
4 Figure is peak-to-peak. Output noise measurements are across a 50MHz bandwidth made using a 12 inch twisted pair, terminated with a 47µF capacitor.
5 Total regulation is defined as the static output regulation at 25°C, including initial tolerance, line voltage within stated limits and output voltages adjusted to their factory settings. Also, for stated regulation:
NFS42-7608 : $0.25 \le x \le 5$
NFS42-7627 : $0.50 \le x \le 12$ Where $x = \frac{I_A}{I_B}$
NFS42-7610 : $0.30 \le x \le 12$
6 Derating curve is application specific for ambient temperatures >50°C, for optimum reliability no part of the heatsink should exceed 110°C and no semiconductor case temperature should exceed 115°C.
7 Caution: Allow a minimum of 1 second after disconnecting the power when making thermal measurements.
8 Artesyn Technologies recommends a minimum load of 4 Watts to achieve the design MTBF.
9 Three orthogonal axes, random vibration, 10 minute test for each axis.
10 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.

PIN CONNECTIONS			
J1	**NFS42-7608**	**NFS42-7627**	**NFS42-7610**
Pin 1	AC Neutral	AC Neutral	AC Neutral
Pin 2	AC Line	AC Line	AC Line
J2, J3, J4			
Pin 1	–12V	–12V	–15V
Pin 2	+12V	+24V	+15V
Pin 3	Return	Return	Return
Pin 4	+5.1V	+5.1V	+5.1V
E1	**Ground**	**Ground**	**Ground**

Mechanical notes

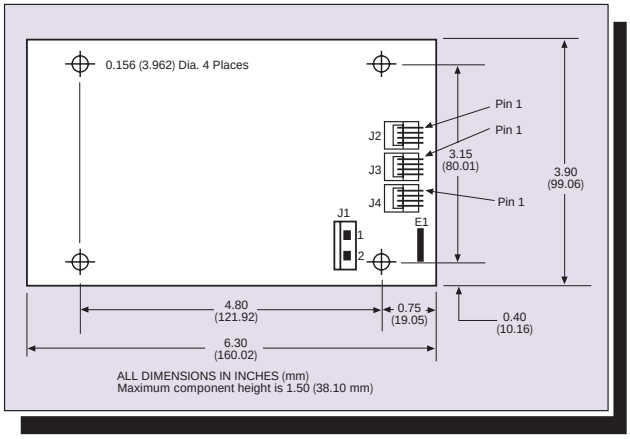
A A standard L-bracket and cover is available for mounting which contains all screws, connectors and necessary mounting hardware. Details are on page 83. Order part number 'NFS50 COVER KIT'.

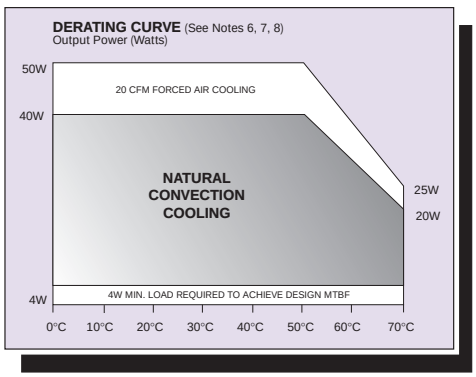
AC mating connector

Molex type 09-50-3031 or equivalent with 2878 series or equivalent crimp terminal.

DC mating connector

The NFS42 uses three 4-pin paralleled connectors with 0.098 inch pin spacing. Each pin is rated at 2.5 amps. The manufacturer suggests, that for each output, all three paralleled pins be used to minimise the current contribution of each. Lowering the current delivered through each pin improves output regulation and reduces pin heating which improves connector long term reliability.
Artesyn Technologies recommends, as the DC mating connector, a fourteen pin housing placed over all twelve pins simultaneously. This connector is available with polarising rib to prevent left or right pin misalignment. The relevant part is Molex type is 22-01-1143 or equivalent with associated crimp terminal 08-50-0114 or equivalent.





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