

Patent No. 4912620 [2 YEAR WARRANTY]

((LVD)

NFS200 SERIES

Triple and quad output

- 5.0 x 9.0 x 2.5 inch package
- Overvoltage and short circuit protection
- 200W with 30CFM
- · Adjustable outputs
- Isolated outputs
- · Power fail detect signals
- EN55022, EN55011 conducted emissions level A

EMC CHARACTERISTICS

· UL, VDE, CSA and BABT safety approvals

The NFS200 series is a 200W universal input AC/DC power supply in a 5 x 9 x 2.5 inch package. The NFS200 series has four multiple output models and has proven itself to be highly reliable and versatile product for a wide range of communication and industrial applications, with a very high peak capability on the auxiliary outputs for drive and motor applications. The NFS200 provides 200W of output power with 30CFM of air. Standard features include overvoltage and short circuit protection, adjustable outputs, isolated outputs and power fail detect. The series, with full international safety approval and the CE mark, meets conducted emissions EN55022 level A. The NFS200 series is designed for use in medium power data networking, computer, telecom and industrial applications such as servers, PABX's, printers and process automation.

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

OUTPUT SPECIFICATION	ONS			
Voltage adjustability	+5V output	±5.0%		
Line regulation	LL to HL, FL Main output	±0.1% max.		
Load regulation	Main output Auxiliary outputs	±2.0% max. ±2.5% max.		
Overshoot/undershoot	At turn-on	0%		
Transient response	+5V (20A to 30A step)	±200mV max. dev. 500µs recovery to 1.0%		
Temperature coefficient	All outputs	±0.02%/°C		
Overvoltage protection	+5V output	6.25V±0.5V		
Short circuit protection	Yes, with auto-recovery			
Fan output current (See Note 8)	J1: pins 3 and 4	12.1V @ 0.75A max.		
INPUT SPECIFICATION	IS			
Input voltage range	Universal input	90VAC to 264VAC 130VDC to 370VDC		
Input frequency range		47Hz to 63Hz		
Input surge current	110VAC, 60Hz 230VAC, 50Hz	40A max. 80A max.		
Safety ground leakage current	110VAC, 60Hz 230VAC, 50Hz	0.9mA max. 1.6mA max.		

Conducted emissions Radiated emissions ESD air ESD contact Surge Fast transients Radiated immunity Conducted immunity	EN55022, FCC part 15 EN55022, FCC part 15 EN61000-4-2, level 3 EN61000-4-2, level 4 EN61000-4-5, level 3 EN61000-4-4, level 3 EN61000-4-6, level 3	Level A Level A Perf. criteria 1 Perf. criteria 1 Perf. criteria 1 Perf. criteria 1 Perf. criteria 1 Perf. criteria 1		
GENERAL SPECIFICAT	TIONS			
Hold-up time	110VAC After PFD flag @ 200W	15ms 5ms		
Efficiency	110/230VAC @ 200W	70% typ.		
Isolation voltage	Input/output Input/chassis	3000VAC 1500VAC		
Switching frequency	Variable	80 to 100kHz		
Standards and approvals (See Note 9)	IEC1010	N60950, IEC950), UL1950, BABT A C22.2 No. 950		
Weight		1.34kg (47.30oz)		
MTBF (See Note 1)	MIL-HDBK-217E	84,000 hours		
ENVIRONMENTAL SPECIFICATIONS				
Thermal performance (See Notes 3, 10)	Operating Non-operating 0°C to 50°C ambient, 30CFM forced air 50°C to 70°C ambient, 30CFM forced air	0°C to +70°C -40°C to +85°C 200W Derate linearly to 100W at 70°C		
Relative humidity	Non-condensing	5% to 95% RH		
Altitude		10,000 feet max. 40,000 feet max.		
Vibration	Three orthogonal axes, random vibration 10 minute test for each axis	2.4G rms 5 to 500Hz		

200 Watt AC/DC universal input switch mode power supplies

OUTPUT	OU	OUTPUT CURRENTS		51551 = (4)	TOTAL	MODEL NUMBER ^(A)	
VOLTAGE	MIN ⁽¹⁾	PEAK (2)	MAX ⁽³⁾	RIPPLE (4)	REGULATION (5)	OPEN FRAME	CASED
+5.1V	5.0A	30A	30.0A	50mV	±2%	NFS200-7601 ⁽⁶⁾	NFS200-7601CF (6)
+12.1V	0A	12A	8.0A	120mV	±2.5%		
-12.1V	0A	5.0A	4.0A	120mV	±2.5%		
-5.2V ⁽⁶⁾	0A	6.0A	6.0A	50mV	±2.5%		
+5.1V	5.0A	30A	30.0A	50mV	±2%	NFS200-7602 ⁽⁷⁾	NFS200-7602CF (7)
+12.1V	0A	12A	8.0A	120mV	±2.5%		
-12.1V	0A	5.0A	4.0A	120mV	±2.5%		
24.0V ⁽⁷⁾	0A	3.0A	3.0A	240mV	±2.5%		
+5.1V	5.0A	30A	30.0A	50mV	±2%	NFS200-7603 ⁽⁷⁾	NFS200-7603CF (7)
+12.1V	0A	12A	8.0A	120mV	±2.5%		
-12.1V	0A	5.0A	4.0A	120mV	±2.5%		
12.0V ⁽⁷⁾	0A	4.0A	4.0A	120mV	±2.5%		
+5.1V	5.0A	30A	30A	50mV	±2.5%	NFS200-7608	NFS200-7608CF
+12.1V	0A	12.0A	8.0A	120mV	±2.5%		
-12.1V	0A	5.0A	4.0A	120mV	±2.5%		

PIN CONNECTIONS					
TB1	NFS200-7601	NFS200-7602	NFS200-7603	NFS200-7608	
Term 1	AC Line	AC Line	AC Line	AC Line	
Term 2	AC Neutral	AC Neutral	AC Neutral	AC Neutral	
Term 3	Safety Ground	Safety Ground	Safety Ground	Safety Ground	
TB2					
Term 1	+5.1V	+5.1V	+5.1V	+5.1V	
Term 2	+5.1V	+5.1V	+5.1V	+5.1V	
Term 3	Return	Return	Return	Return	
Term 4	Return	Return	Return	Return	
Term 5	Return	Return	Return	Return	
Term 6	+12.1V	+12.1V	+12.1V	+12.1V	
Term 7	-12.1V	-12.1V	-12.1V	-12.1V	
Term 8	-5.2V ⁽⁶⁾	24V Return ⁽⁷⁾	12V Return ⁽⁷⁾		
Term 9	-5.2V Return(6)	+24V ⁽⁷⁾	+12V ⁽⁷⁾		
Term 10					
J1					
Pin 1	PFD	PFD	PFD	PFD	
Pin 2	PFD Return	PFD Return	PFD Return	PFD Return	
Pin 3	Fan Return	Fan Return	Fan Return	Fan Return	
Pin 4 ⁽⁸⁾	Fan	Fan	Fan	Fan	

- 25W minimum total output load required for reliable operation. Also, ±12V output peak current capability requires a +5.1V @ 5A minimum load.
- Peak output current lasting less than 30 seconds with duty cycle less than 10%. During peak loading, outputs may drift outside total regulation
- Requires forced air, 30CFM minimum, or 350LFM.
- Figure is peak-to-peak. Output noise is measured across a 50MHz bandwidth using a 12 inch twisted pair, terminated with a 47µF capacitor.
- Total regulation is defined as the static output regulation at 25°C, including initial tolerance, line voltage within stated limits, load currents within stated limits, and output voltages adjusted to their factory settings.
- 6 Although the -5.2V return is electrically connected to the 'main' return (terminals 3, 4 and 5, which are all connected together), Artesyn Technologies recommends that system cabling allow –5.2V return current flow to terminal 9.
- The auxiliary output is floating, and can be referenced as either positive or negative. The return is the negative terminal of the pair
- 8 Any fan current must be subtracted from the total available +12.1V current. Supplied fans draw 0.14A.
- This product is only for installation by professional installers within other equipment and must not be operated as a stand alone product.
- 10 Derating curve is application specific for ambient temperatures >50°C, for optimum reliability no part of the heat sink should exceed 90°C and no semi-conductor temperature should exceed 100°C.

International Safety Standard Approvals



VDE0805/EN60950/IEC950/IEC1010 File No. 10401-3336-1058 Licence No. 3613



UL1950 File No. E136005



CSA C22.2 No. 950 File No. LR41062C



Certificate No. PS/603176

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200 Watt AC/DC universal input switch mode power supplies

Mechanical notes

A A standard cover and fan assembly can be added during manufacturing. Details are on page 84. To order, add suffix 'CF" to the model number. e.g. NFS200-7601CF.

AC (TB1) connector

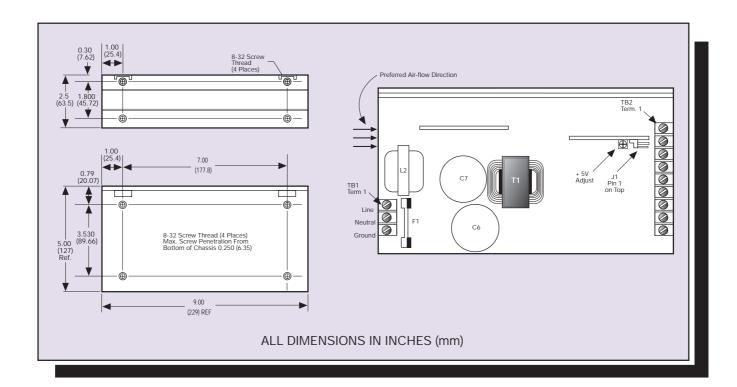
Kulka P/N 4597A-6/32-03 or equivalent

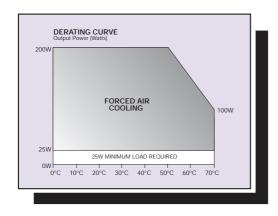
DC (TB2) connector

Kulka P/N 4597A-6/32-09 or equivalent

J1 mating connector

Molex 22-01-1043 or equivalent with 4809 series or equivalent crimp terminal





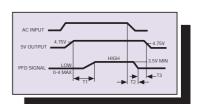
POWER FAIL DETECT SIGNAL

50ms≤T1≤200ms

T2 will vary with line and load

T3≥5ms Pout: 200W

PFD output is an open collector which will sink ≤40mA in the low state





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