ARTESYN TECHNOLOGIES

DPF1000 SERIES

Dual output

[2 YEAR WARRANTY]

CE (LVD)

- **1000W front end**
- **EN61000-3-2 compliant**
- **11 x 6.0 x 5.0 inch size**
- **Hot pluggable**
- **N+1 redundancy**
- **Full set of status signals**
- **EN55022, EN55011 conducted emissions level A**
- **UL, VDE and CSA safety approvals**

The DPF1000 is a 1000W universal input AC/DC front end power supply in a fully enclosed hot pluggable case with built-in fan, handle, IEC input connector, on/off switch and DIN output signal connector. Providing dual 48V and 5V outputs with a full set of status signals. The DPF1000 is designed for use as a front end in medium power communication applications adopting distributed power architecture. The DPF1000 is fully compliant with EN61000-3-2. Standard features include current sharing and full protection against overvoltage, overload and short circuit. Remote or local system monitoring is possible via a full set of status signals that include fan fail, DC good, power fail, remote inhibit and current monitoring. The DPF1000, with full international safety approval and the CE mark, meets conducted emissions EN55022 level A. The DPF1000 can be used in conjunction with our complete range of 3 to 200W DC/DC converters to fully configure a distributed power system.

SPECIFICATION

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

OUTPUT SPECIFICATIONS		
Voltage set point		-48V ±0.1V @ 10A
Total regulation (Full load to no load)	Main output Auxiliary output, 5V, 0.5A max.	±5.0% ±5.0%
Rise time	At turn-on	1.0s, max.
Transient response	Main output 75% to 100% step at 0.1A/µs	5.0% max. dev., 1ms recovery
Ripple and noise (20MHz)	Main output	1.0V pk-pk,
Overvoltage protection	latching	-57V to -60V min.
Output power limit		1200W
Short circuit protection		Yes
Current sharing	±10% sharing	0.1V/A droop 1/3L to FL

INPUT SPECIFICATIONS		
Input voltage range	1000W 1200W	90 to 264VAC 108 to 264VAC
Input frequency range		47Hz to 63Hz
Input surge current	25°C cold start	36A typ.
Input surge	300VAC	20ms
Safety ground leakage current	254.4VAC, 50Hz	2.5mA
Input current	90VAC, 1000W	14A rms max.
Input fuse	Replaceable	20A
Power factor	110VAC 220VAC	0.99 0.98

Notes
1 3 orthogonal axes, random vibration, 10 minute test per axis.

EMC CHARACTERISTICS		
Radiated noise	EN55022/11, FCC part 15	Level A
Conducted noise	EN55022/11	Level A
	FCC part 15	Level A
Harmonic current emm.	EN61000-3-2	Compliant
Electrical fast transients/bursts	EN61000-4-4	Level 3
Surge susceptibility	EN61000-4-5	Level 3

GENERAL SPECIFICATIONS		
Hold-up time	110VAC, 60Hz	20ms @ 1000W
Efficiency	110VAC @ 1kW	77% min.
Isolation voltage	Input/output Input/chassis	3000VAC 1500VAC
Switching frequency		200kHz
Approvals and standards		VDE0805, EN60950, IEC950 UL1950, BABT CSA C22.2 No. 950
Weight		4.3kg (9.5lbs)
MTBF	MIL-HDBK-217F @ 25°C full load	80,000 hours

ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating ambient, FL Non-operating 50°C to 70°C ambient	0°C to +50°C -40°C to +70°C Derate linearly to 50% at +70°C
Cooling		Built-in fan
Relative humidity	Operating	5% to 85% RH
Altitude	Operating Non-operating	10,000 feet max. 30,000 feet max.
Vibration (See Note 1)	5Hz to 500Hz	2.4G rms peak
Shock	MIL-STD-810E	516.4 Part IV

1000 Watt
AC/DC PFC front-end for distributed power architectures

OUTPUT VOLTAGE	OUTPUT CURRENT		RIPPLE	TOTAL REGULATION	MODEL NUMBER
	MIN	MAX			
-48V	0A	21A	1000mV	±5.0%	DPF1000-9617PE
+5V	0A	0.5A	100mV	±5.0%	

Control and supervisory functions

Bias Supply H (Pin 1)
Isolated 5V bias supply, maximum current 0.5A. Allows the system designer to power system control circuitry.

PFC Fail L (Pin 2)
A failure in the Power Factor Correction stage, i.e. loss of the 400V internal bus, is indicated by this open collector signal, asserted low.

Bias Return L (Pin 3)
Return path for the 5V bias supply. All signals are referenced to this return.

Remote Inhibit H (Pin 4)
The output is inhibited when this signal is tied high. IIL max. = 10mA.

Voltage Trim (Pin 5)
The output voltage can be adjusted up to -56V by connecting a 100k variable resistor between pin 5 and pin 14.

Current Monitor (Pins 13, 14)
Value: 0.1 x Iout. Tolerance: 10%. Range: 5 to 25A

Power Good L (Pin 15)
An open collector signal, asserted low. Threshold asserted: 44.5 to 46V, deasserted: 56.5 to 58V. See Figure 1.

Fan Fail Detect L (Pin 16)
An open collector signal, asserted low, indicates fan failure. See Figure 1.

Power Fail Detect H (Pin 17)
An open collector signal, asserted high, indicating AC line failure. The output voltage will stay within regulation 4ms after PFD is asserted.

PIN CONNECTIONS	
PIN NUMBER	SIGNAL
1	5V Bias
2	PFC Fail
3	5V Bias Return/Signal Return
4	Remote Inhibit H
5	Voltage Trim
6 to 12	-48V Return
13	Current Monitor +
14	Current Monitor -
15	Power Good L
16	Fan Fail Detect L
17	Power Fail Detect H
18 to 24	-48V

International Safety Standard Approvals

VDE0805/EN60950/IEC950 File No. 10401-3336-1090

UL1950 File No. E136005

CSA C22.2 No. 950 File No. LR50913/LR101320

Certificate No. PS/606473

Protection features

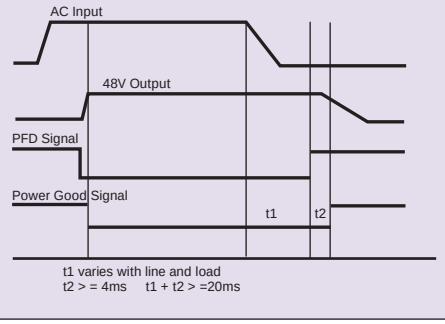
Overvoltage protection
The unit will shutdown and latch off if the output voltage exceeds the OVP threshold. Input power recycling is necessary to restart the unit.

Overcurrent and short circuit protection
The unit is protected against an overload on its output in the range 25 to 30A, with automatic recovery on overload removal. Under short circuit conditions, the unit shuts down.

Over temperature protection
If the internal temperature of the unit exceeds a safe limit, the unit shuts down and will need power recycling to re-start.

Input voltage sags
A user supplied jumper inhibits operation of the unit in the 110V range. This limits the input current to a safe level when operating at 230V to prevent circuit breakers tripping under brown out. This programmable jumper can be accessible by removing the cover plate. Refer to view A on page 102.

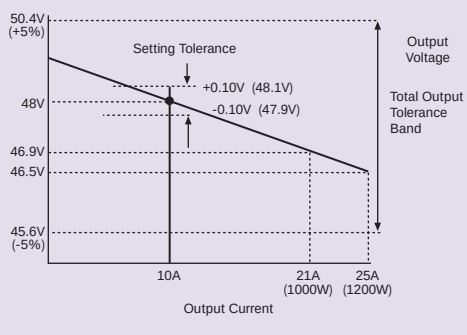
Figure 1:



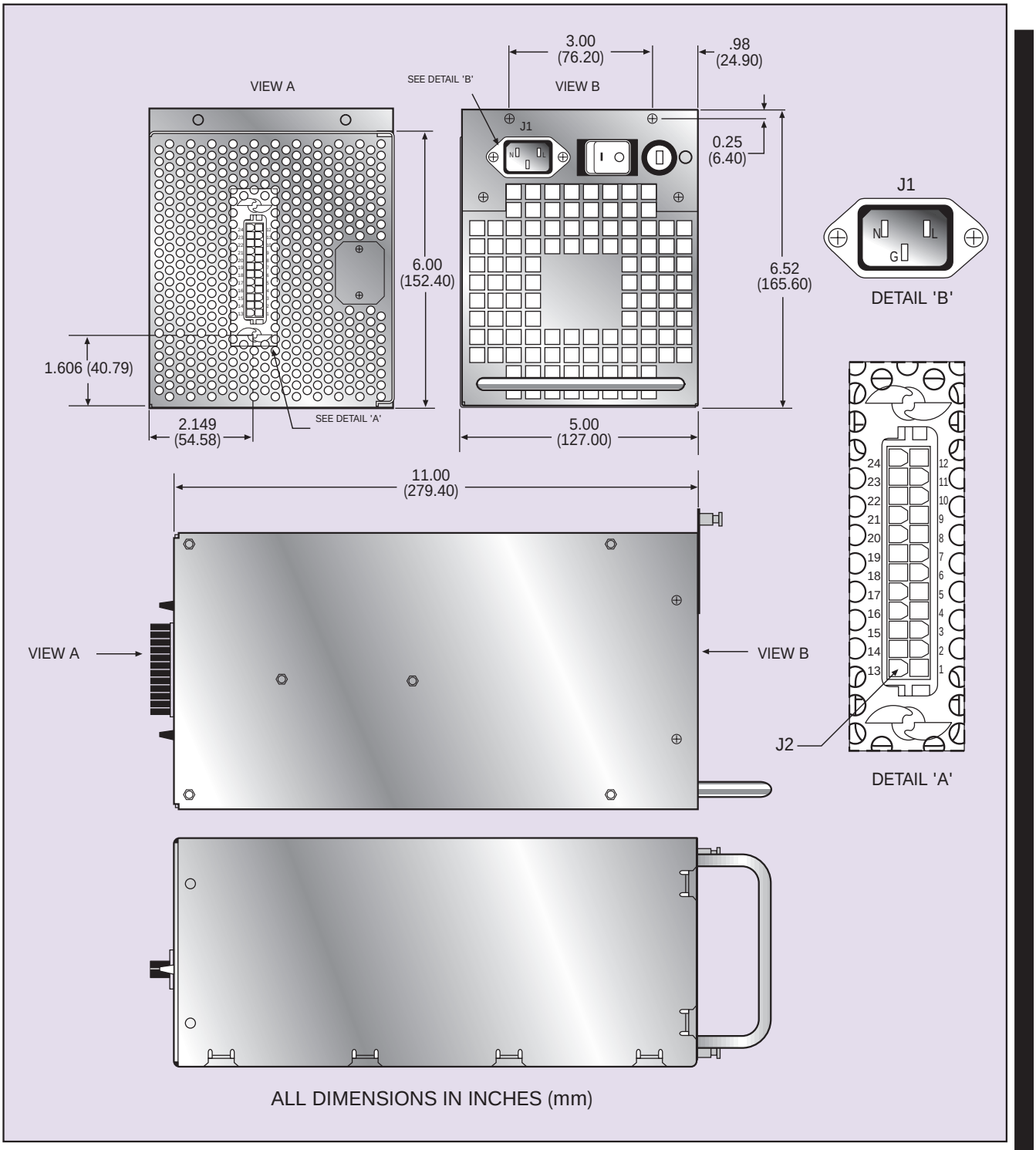
Load sharing

The DPF1000-9617PE power supply provides load sharing capability for implementing parallel operation. An internal OR-ing diode is used in each output to provide N+1 redundancy. The power supplies will share the load current within ±10% from full load down to 1/3 of the rated current of each power supply.
Method of current sharing of -48V output shall be via the "droop method", as illustrated in Figure 2 below:

Figure 2: Droop and Regulation Characteristics



1000 Watt
AC/DC PFC front-end for distributed power architectures



(J2) DC connector
Molex BMI receptacle 42474 part number 15-06-0240 or equivalent with Molex 5556 female crimp terminal part number 39-00-0182 or equivalent.

(J1) AC connector
Standard IEC connector.

(J2) DC mating connector
Molex BMI plug 42475 part number 15-06-0246 or equivalent with Molex 5558 male crimp terminal part number 39-00-0220 or equivalent.

(J1) AC mating connector
Standard IEC plug.