

600-800

WATTS

AC/DC FRONT END POWER MODULE

SINGLE OUTPUT

Wide range input (88-265VAC)

High efficiency 90% (typ)

Conducted EMC: EN60950, EN55022-B

CSA950, UL1950

N + 1 redundant parallel operation

High reliability

1 year warranty

GENERAL

With the PD Series, LAMBDA is presenting a revolutionary new concept of AC/DC converters. Through its extreme compactness, an efficiency of 90% and the mechanical construction, these modules offer the maximum in design flexibility.

All functions, including filtering, power factor correction, AC/DC conversion as well as monitoring and signal-generation are integrated into the modules. The size and form of these power modules makes it very simple to use as a basic component for a 3U, 6U or an individually built power supply. Whatever size, form, physical interface and specification your system requires, the PD's will fit.

Your custom power supply is achieved by just putting four components together: • PCB • PD-module • Heatsink • Output-connector.

The PD Series meets all relevant EMC directives – and worldwide Telecom standards.

INPUT

Input voltage range:	88-265VAC (100-240VAC nom) 187-265VAC (200-240VAC nom)
Input current (typical):	3.0A at 230VAC input (4.2A PD800A) 5.5A at 115VAC input (5.5A PD800A)
Inrush current:	25A at 265VAC
Power factor:	>0.95

OUTPUT

Output voltage nom.:	50.5VDC
Output voltage range:	24-58.5VDC
Output voltage accuracy:	±1%
Maximum output current:	PD600-230-48: 8A at 88-265VAC 12A at 187-265VAC PD800A-230-48: 8A at 88-265VAC 16A at 187-265VAC
Maximum output power:	404W at 88-265V 606W at 187-265V 808W at 187-265VAC on PD800A
Over voltage protection:	60-62VDC (inverter shutdown method). Manual reset.
Over current protection:	Constant current characteristic 630W at PD600 800W at PD800A
Over temperature protection OTP:	Yes
Line regulation:	0.5% (at 88...265VAC/ 187...265VAC)
Load regulation:	0.5% (0...100% static load change)
Output ripple:	400mV typ.
Leakage current:	2mA typ.
Hold up time:	5ms min. Inreasable with external E-Caps
Efficiency:	Min. 90% (at 230VAC input)
Isolation voltage: (for 1 min.)	Input to output: 4.2kVDC Input to baseplate: 2.1kVDC Output to baseplate: 500VDC

OUTLINE SPECIFICATION (continued)

MONITORING AND ALARM

Remote sensing (+S/-S):	Compensation of voltage drop due to wire resistance
Output voltage (TRM):	Through external voltage source or adding external resistor
Parallel operation (PC):	Output current can be equally shared up to 5 units of the same model
Remote on/off (CNT):	Output of PSU can be turned on and off without disconnecting the input
Auxiliary supply (AUX):	11 to 13VDC, 30mA max. Power supply for external signals
Inverter operation:	Good operation condition of power module
Signal (IOG):	Can be monitored (open collector)
Over current protection adjustment (IMAX):	102% - 120% The setting can be changed through external voltage source or resistor

Please refer to Instruction Manual for further details.

ENVIRONMENTAL

Operating temperature:	-20 to +85°C baseplate temperature
Ambient temperature:	PD600: -20 to +45°C (convection cooling with heatsink PD800A: -20 to +50°C (forced air cooling, 1.5m/s air flow)
Storage temperature:	-40°C to +85°C

ENVIRONMENTAL (continued)

Vibration:	amplitude 0.825mm, constant (maximum 5G) X,Y,Z 1 hour each (non-operating)
Shock:	>20G (in package)
Weight:	750g typ.

SAFETY APPROVALS*

EN60950, UL1950, UL1459, CSA22.2 No.950-95, CSA22.2 No.225 telecommunication equipment.

*Contact Technical Sales for current status of approvals.

EMC

Conducted emission:	EN55022 B (SC01)
Conducted and radiated emission	EN55022 A, EN55022 B (SC01 suffix)
Susceptibility:	EN61000-4-2 & 3, 4, 5, 6 (Level 3) GSM 11.22
Power factor correction:	EN61000-3-2
Protection against high energy impulses from the mains-side:	VDE 0160 (W2)

WARRANTY

Warranty: year including parts and labour.

All specifications guaranteed worst case unless otherwise noted.

ELECTRICAL SPECIFICATION

Model No.	Input (*1)	Max. Output power 187-265VAC (*1)			AC Inlet	AC Switch	Input pins	Full cover	Top plate	Cooling
		50.5VDC A	606W	Amps						
PD600-230-48	88-265VAC	50.5VDC A	606W	12.0	Yes	Yes	No	No	Yes	Convection cooling
PD600-230-48/P01	88-265VAC	50.5VDC A	606W	12.0	No	No	Yes	No	Yes	Convection cooling
PD800A-230-48/C01	88-265VAC	50.5VDC A	808W	16.0	Yes	Yes	No	Yes	No	Forced air cooling (*1)
PS800A-230-48/SC01	88-265VAC	50.5VDC A	808W	16.0	Yes	No	No	Yes	No	Forced air cooling (*1)
PD800A-230-48	88-265VAC	50.5VDC A	808W	16.0	Yes	Yes	No	No	Yes	Forced air cooling (*1)
PD800A-230-48/P01	88-265VAC	50.5VDC A	808W	16.0	No	No	Yes	No	Yes	Forced air cooling (*2)

(*1) Output power will vary depending upon input voltage, 404/505W at input voltage 88/100-225VAC.

(*2) Minimum required airflow 1.5m/s for operation of PD800A module. For details of thermal design, refer to instruction manual.

DESCRIPTION OF COVER TYPE

PD600-230-48/P01 - PD800A-230-48/P01	Single-sided aluminium-plate (external protection against contact is necessary).
PD600 - PD800A-230-48/C01	5-sided aluminium cover.
PD600 - PD800A-230-48/SC01 - PD600 - PD800A-230-48	

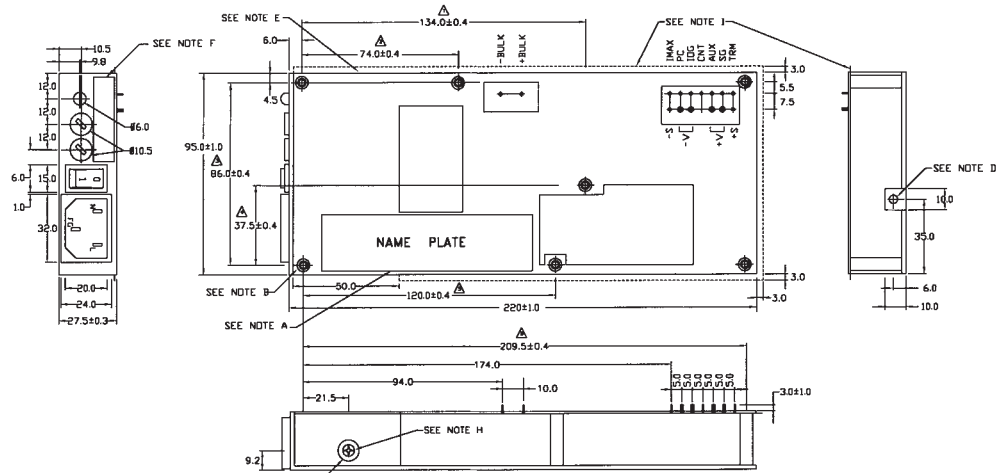
AVAILABLE OPTIONS

Option	Explanation	Model No.	Note
P01	Version with input pins for soldering on PCB	Suffix/P	Optional model
S	Version without the mains switch	Suffix/S	
T	Version with mounting studs without threads	Suffix/T	



Series PD

PD600/PD800AP01



NOTE A : MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND SAFETY MARKS ARE SHOWN HERE IN ACCORDANCE.

NOTE B : 7X ϕ 3.0 TAPPED HOLES FOR CUSTOMER CHASSIS MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER MODULE BY MORE THAN 10mm (FAR SIDE FOR HEATSINK).

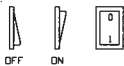
NOTE C : INPUT AND OUTPUT TERMINALS.
 INPUT : IEC 320 C14 PLUG
 PRIMARY OUTPUT : 2 - ϕ 0.8
 SECONDARY OUTPUT : 4 - 1.4X1
 9 - ϕ 0.8
 RECOMMENDED CUSTOMER PCB HOLES :
 FOR 11X ϕ 0.8 PINS : USE 1.2mm HOLE SIZE
 FOR 1.4X1 POWER PINS : USE 2mm HOLE SIZE
 REFER TO INSTRUCTION MANUAL FOR DETAILS.

NOTE D : M4.0 TAPPED HOLES FOR PROTECTIVE EARTH CONNECTION. SCREW MUST NOT PROTRUDE INTO POWER MODULE BY MORE THAN 6mm.

NOTE E : DATE CODE AND VERSION IS SHOWN ON THIS SIDE.

NOTE F : FUSE MARKING SEAL.

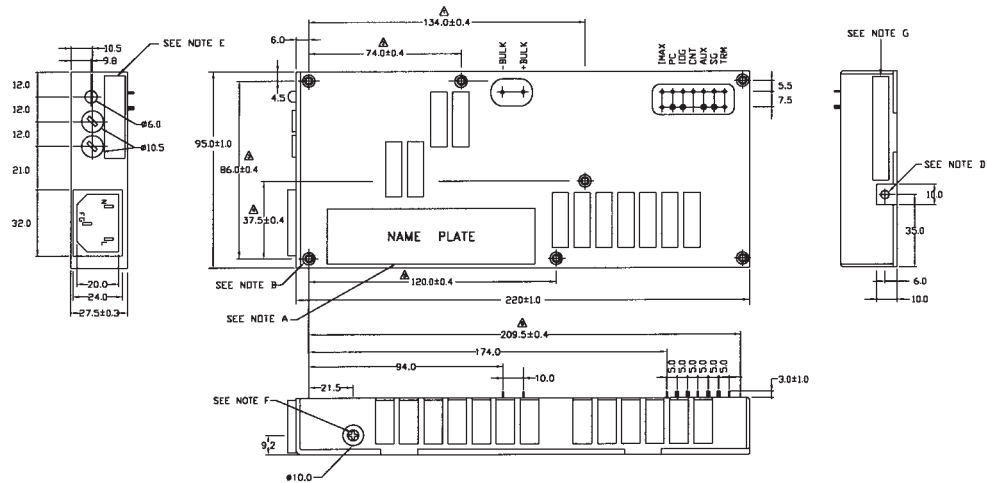
NOTE G : AC SWITCH ON/OFF INDICATION.



NOTE H : REMOVE THIS M3 COUNTERSUNK SCREW TO CHECK POWER MODULE WITHSTAND VOLTAGE.

NOTE I : NOMEK INSULATOR FOR PRIMARY TO GROUND CREEPAGE AND CLEARANCE.

PD600/PD800A-230-48/SC01 and PD800A-230-48/C01/SC01



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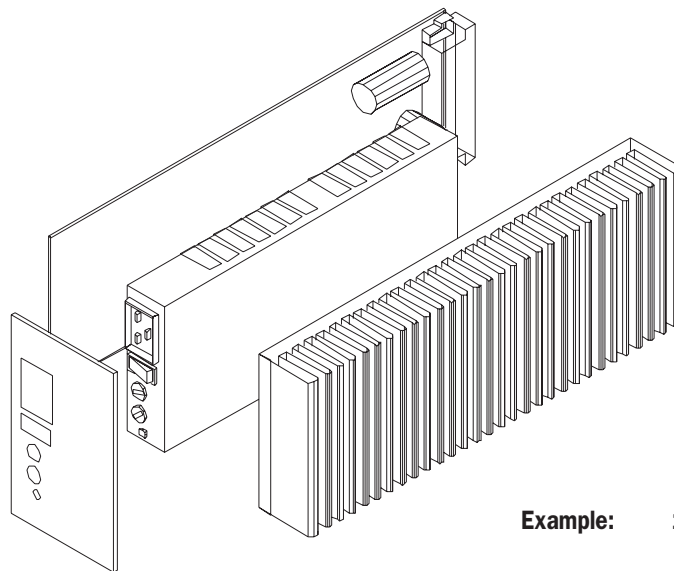
NOTE G : SERIAL NUMBER LABEL.

PHYSICAL SPECIFICATION (continued)

FRONT PANEL SIGNALS

Operational status indicator		
Medium	Colour	Status
LED multicolour	Green	Constant voltage mode
	Red	Constant current mode
	Orange	Constant power operation
	Light Green	Remote off

PCB MOUNTING & HEATSINK



Example: 19" 3U, 300mm depth

ACCESSORIES FOR PD600/PD800A

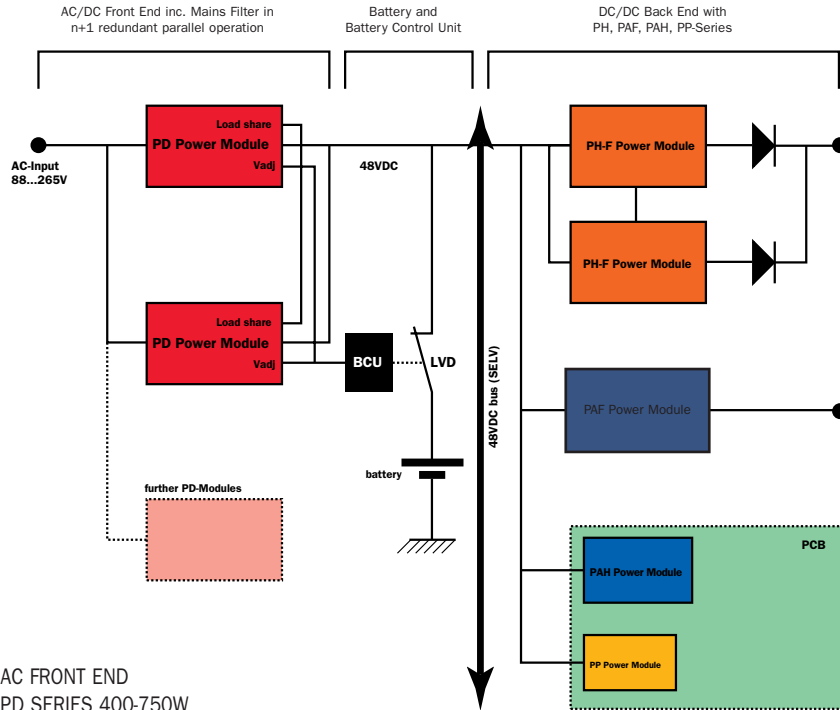
Item	Reference
Thermal pad	F-IM-0036
PCB	F-IM-0038
Heatsink	Contact Technical Sales

AVAILABLE TECHNICAL INFORMATION

Electrical and physical specifications
Thermal management

Details also available on Lambda's Engineering CD - please contact the sales office to request a copy.

APPLICATION EXAMPLES



AC FRONT END PD SERIES 400-750W

Features:

404 Watt at	Input: 88...265VAC
606/750 Watt at	Input: 187...265VAC
PFC:	EN61000-3-2
EMI:	EN55022 B
EMC	EN61000-4-2,3,4,5
	VDE 0160 W2
High efficiency	90%

N+1 Parallel operation

For chassis mounting design PD 800A series can also be used.

DC Back End

PH SERIES 50-600WATT, 2...48V O/P
 N+1 Redundant parallel operation
 High efficiency
 High density

PAF SERIES 30-100WATT, 2, 3.3, 5V O/P
 90% efficiency
 Soft start
 No heatsink
 8mm low profile

PAH SERIES 50-200WATT, 2.5...28V O/P
 Industry standard pinning, (half brick)
 Base plate temp. -40...+100°C
 High efficiency & high power density

PP SERIES 1.5-25WATT, 5...15V O/P
 Low profile 8mm
 Wide Input range
 Single & dual output

POWER SUPPLY DESIGN WITH PD600/PD800A POWER MODULES

580W Multi-Output Power Supply for Television-Broadcast-Systems

- Features:
- AC-DC front end 90-265VAC (PD800A)
 - 4 isolated outputs, 3 x 5V (PH150F), 1 x 12V (PH50S)
 - AC OK, DC OK, FAN OK signalisation
 - EN55022B
 - EN61000-3-2
 - EN61000-4-2,3,4,5
 - N+1 redundant parallel operation on 5V, 'Hot Swap' capability

- Application:
- Digital recorder



550W Multi-Output AC/DC Power Supply

- Features:
- 88-265VAC
 - 10 isolated outputs:
 - 2 x 5V (PH, PP), 2 x 5.5V (PP),
 - 3 x 12V (PH, PP),
 - 1 x 48V (PD800A), 2 x 24V (PH)
 - EN55022B
 - EN61000-3-2
 - EN61000-4-2,3,4,5

- Application:
- Basestation for GSM-Network



600/750W Rectifier Power Supply for Telecom-Applications

- Features:
- 88-265VAC, nom. 48V output
 - EN55022B
 - EN61000-3-2
 - EN61000-4-2,3,4,5,6
 - N+1 redundant parallel operation
 - 'Hot Swap' capability

- Applications:
- BTS, BSC for GSM-Network
 - PABX
 - ATM-Transmission equipment
 - Router
 - Directional radio systems

Available as standard version or integrated in a modular system (3 HE rack) with battery control unit.

