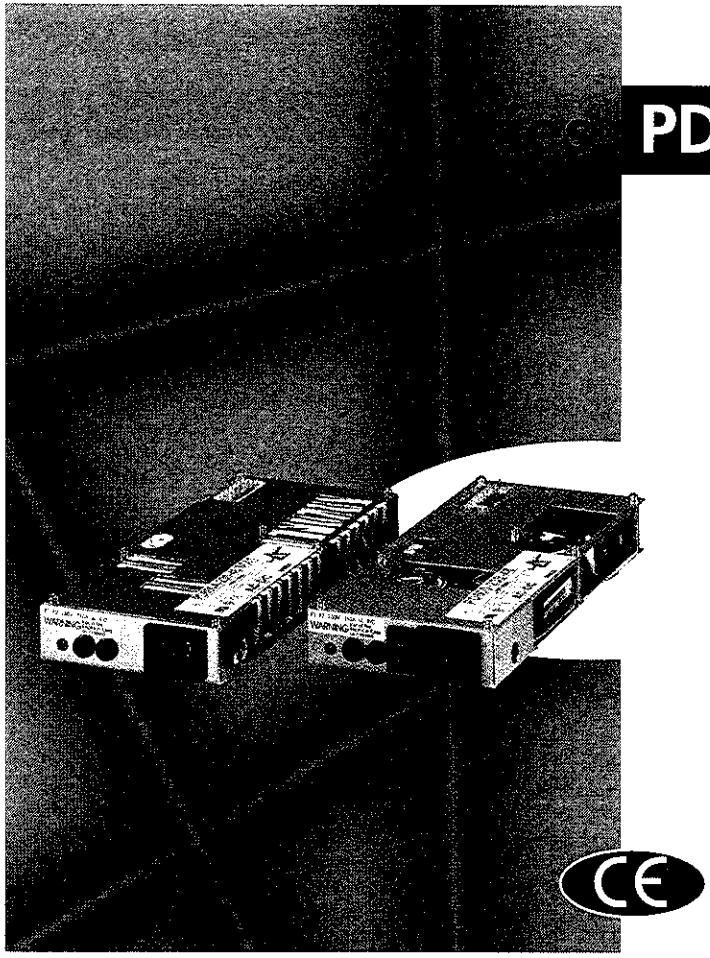


PD

LAMBDA
An Invensys company

600-800

WATTS

AC/DC FRONT END POWER MODULE

SINGLE OUTPUT

Wide range input (88-265VAC)

High efficiency 90% (typ)

Conducted EMC: EN55022 B

PFC EN61000-3-2

Susceptibility: EN61000-4 part 2, 3, 4, 5 (level 3)

High energy surge protection VDE0160 (W2 transient)

N + 1 redundant parallel operation

High reliability

1 year warranty

EDITION 2001

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%
Output current:	PD600-230-48: 8A at 88-265VAC 12A at 187-265VAC PD800A-230-48: 8A at 88-265VAC 15A at 187-265VAC
Maximum output power:	404W at 88-265V 606W at 187-265V 750W at 187-265VAC on PD800A
Over voltage protection:	60-62VDC (inverter shutdown method)
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. Increasable with external E-Caps
Efficiency:	Min. 90% (at 230VAC input)
Isolation voltage: (for 1 min.)	Input to baseplate: 2.1kVDC Input to output: 4.2kVDC Output to baseplate: 500VDC

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):	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
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)
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: 1 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
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 (*2)
PS800A-230-48/SC01	88-265VAC	50.5VDC A	808W	16.0	Yes	No	No	Yes	No	Forced air cooling (*2)
PD800A-230-48	88-265VAC	50.5VDC A	808W	16.0	Yes	Yes	No	No	Yes	Forced air cooling (*2)
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 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/PD800A-230-48	Single-sided aluminium-plate (external protection against contact is necessary).
PD800A-230-48/C01	5-sided aluminium cover.

AVAILABLE OPTIONS

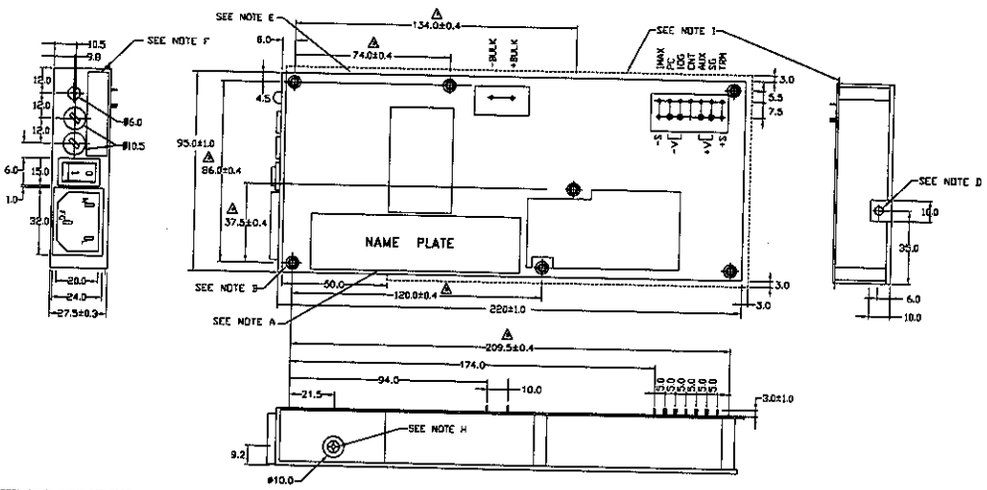
Option	Explanation	Model No.	Note
P01	Version with input pins for soldering on PCB	Suffix/P	Optional model
S	Version without the mainswitch	Suffix/S	
T	Version with mounting studs without threads	Suffix/T	

Series PD

LAMBDA
An Invensys company

EDITION 2001

PD600/PD800A



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 : 7XM3.0 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 - ø0.8
SECONDARY OUTPUT : 4 - 1.4X1
: 9 - ø0.8
RECOMENDED CUSTOMER PCB HOLES :
FOR 11X0.8 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.

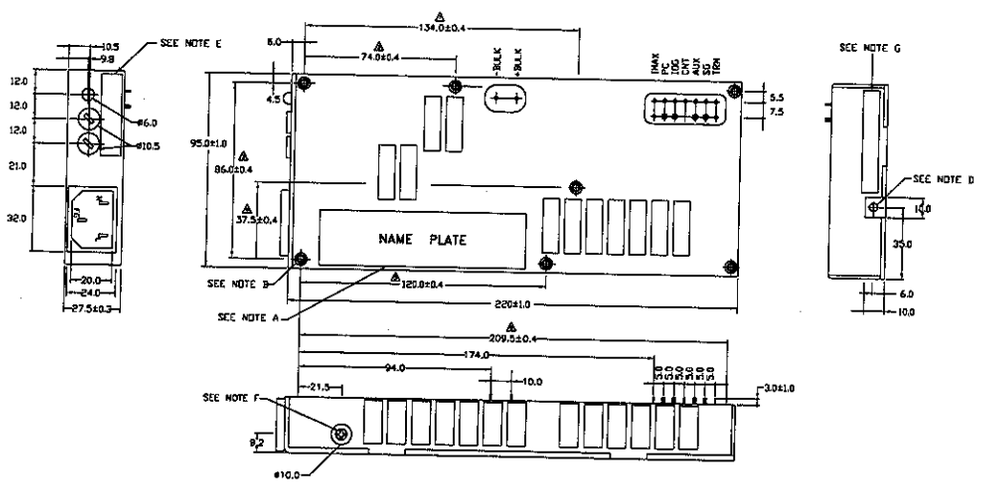
NOTE G : AC SWITCH ON/OFF INDICATION.

OFF ON

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

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

PD800A-230-48/SC01



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 : 7XM3.0 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 - ø0.8
SECONDARY OUTPUT : 4 - 1.4X1
: 9 - ø0.8
RECOMENDED CUSTOMER PCB HOLES :
FOR 11X0.8 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 : FUSE MARKING SEAL.

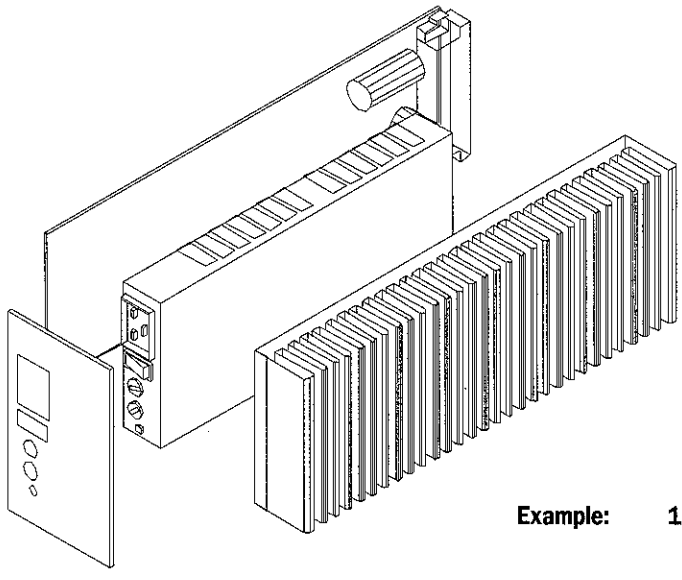
NOTE F : REMOVE THIS M3 COUNTERSUNK SCREW TO CHECK POWER MODULE WITHSTAND VOLTAGE.

NOTE G : SERIAL NUMBER LABEL.

FRONT PANEL SIGNALS

LED multicolour	Green	Constant voltage mode
		Constant power operation
	Light Green	

PCB MOUNTING & HEATSINK



Example: **19" 3U, 300mm depth**

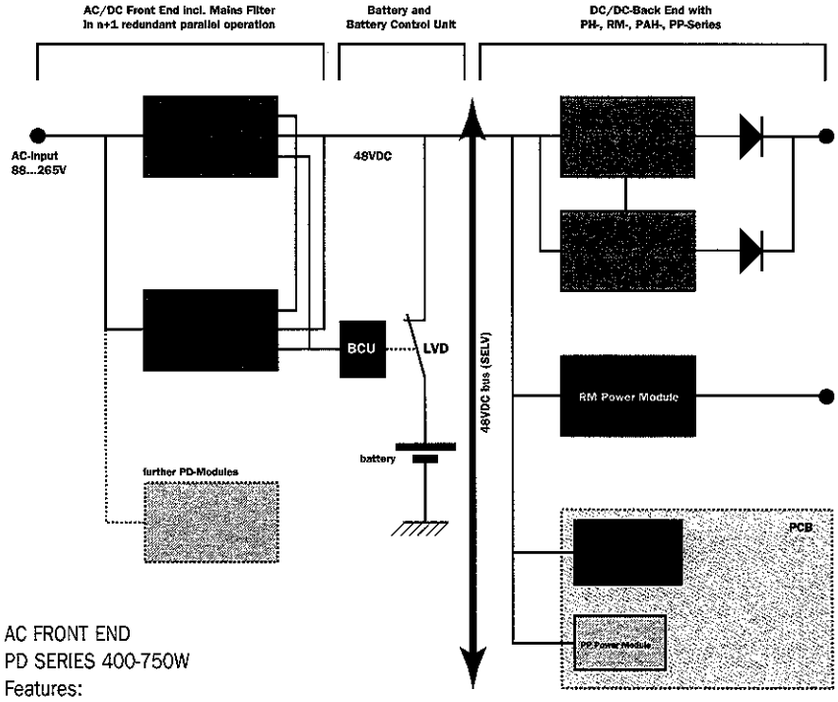
ACCESSORIES FOR PD600/PD800A

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

AVAILABLE TECHNICAL INFORMATION

Electrical and physical specifications

Thermal management



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 LRDP 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

RM 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

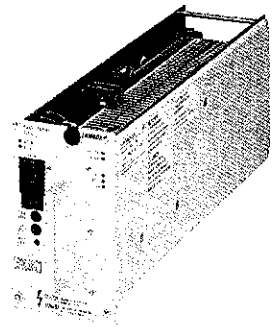
PP SERIES 1.5-25WATT, 5...15V O/P
Low profile 8mm
Wide Input range
Single & dual output

EDITION 2001

LAMBDA
An Invensys company

POWER SUPPLY DESIGN WITH PD600/PD800A POWER MODULES

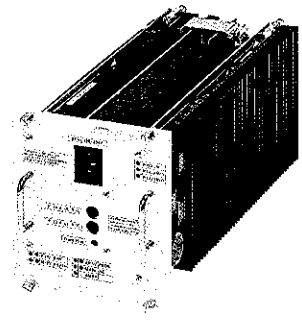
580W Multi-Output Power Supply for Television-Broadcast-Systems



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

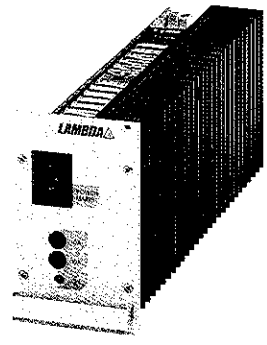
550W Multi-Output AC/DC Power Supply



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.

Series PD

LAMBDA
An Invensys company

EDITION 2001