P R
B X

POWERBOX Defense Line
ECDA Series
Single Output
AC/DC Baseplate Power Supply

ECDA – a powerful baseplate cooled power supply suitable for defense applications that require an IP classified enclosure. Designed to meet MIL-STD-461 as an off-the-shelf product. A ruggedized product suitable for applications in harsh environments.

Features

Conductive cooling
IP65 enclosure
Conformal coating
Vibration/shock according to MIL-STD-810H
EMC according to MIL-STD-461G CE102, RE102
Meet MIL-STD-1399-300
Power Good, Remote On/Off
OCP, OVP, OTP, SCP

Input

Voltage range	85-305VAC (Nominal: 100-277) at 47-63Hz 85-200VAC at 400Hz[5)]
Input voltage DC	No
Frequency	47-63Hz (Nominal: 50/60), 400Hz[5)]
Protection class	I (with ground)
Power factor	0.98/0.95 (115VAC/230VAC)
Inrush current	40A typical
Input current	See table
Hold up time	> 20ms
Input fuse	Yes
Turn on time	600ms typical (Remote on: 100ms)
Leakage current	< 1.5mA at 277VAC/60Hz

Output

Output voltage Output current Output power	See table
Output peak power	N/A
Minimum load	0A
Line regulation	0.5% maximum
Load regulation	4.0% maximum 10-90% load change
Temperature coefficient	± 0.02%/°C
Ripple & noise (20MHz BW)	1.5%

Environmental

Operating temperature (Baseplate temperature)	–40°C to +75°C
Operating temperature (Ambient temperature)	–40°C to +75°C
Derating	No derating
Operating humidity	20-95%RH (non-condensing)
Altitude operation	Maximum 5000m
Storage temperature	–40°C to +85°C
Storage humidity	20-95%RH (non-condensing)
Vibration	MIL-STD-810H, Method 514.8, Figure 514.8E-1
Shock	MIL-STD-810H, Procedure 1, 20G 11ms

Mechanical

Size W x H x D	204 x 50.8 x 326 mm	
IP class	IP65	
Weight	3.6kg typical	
Connectors	Input	: D38999/24FD5PA
	Output	: MS3474L18-32S
	Signals	: MS3474L10-6S
	The mating connector is shown in the Mechanical dimensions.	

Genera

MTBF Telcordia	>1,800,000h @25°C, full load

Table

Part number	Output voltage [1)]	Output current	Output power	Input current 115VAC/230VAC	Efficiency 115VAC/230VAC
ECD470A29	29.4VDC typ.	0-16A	470W	5.0A / 2.6A	87.5% / 89.5%
ECD500A12	12.4VDC typ.	0-42A	504W	5.4A / 2.8A	85.0% / 87.0%
ECD500A24	24.4VDC typ.	0-20.5A	500W	5.3A / 2.7A	87.5% / 89.5%
ECD500A28	28.3VDC typ.	0-18A	504W	5.3A / 2.7A	87.5% / 89.5%
ECD700A12	12.5VDC typ.	0-58A	696W	7.5A / 3.8A	84.0% / 86.0%
ECD1000A28	28.4VDC typ.	0-36A 0-32A at 400Hz [5)]	1008W 896W at 400Hz [5)]	11.0A / 5.2A	87.0% / 90.0%

PBSE10289711B 2025.12.01

Protection Circuit and Others	
Over current protection	Yes, works over 105% of rating, auto recovery
Type of current limit	Constant current [3]
Over voltage protection	Yes
Over temp. protection	Yes
Remote ON/OFF	Yes
Other functions [2]	Remote sense Voltage adjustment Adjustable constant current limit Parallel operation

Control and Communication	
Power good (PG)	Yes, normal operation: Low

Isolation	
Input - Output, RC, PG	3000VAC
Input - FG	2000VAC
Output, RC, PG - FG	500VAC
Output, RC - PG	100VAC

Safety Standards	
Test report according to	UL62368-1 3rd ed. 2019 CSA 22.2 No. 62368-1:19 3rd ed. IEC62368-1:2018 EN62368-1:2020+A11:2020 BS EN62368-1:2020+A11:2020
RoHS	Yes, Directive 2011/65/EU (2015/863)

EMC (Excluding 400Hz)	
Harmonic attenuator	EN61000-3-2 class A [4]
Flicker	EN61000-3-3
Conducted noise	MIL-STD-461G CE102
Radiated noise	MIL-STD-461G RE102
EMS immunity	
ESD	EN61000-4-2
Radiated immunity	EN61000-4-3
EFT/Burst	EN61000-4-4
Surges	EN61000-4-5
Conducted immunity	EN61000-4-6
Power freq. Magnetic field	EN61000-4-8
Voltage dips and interruptions	EN61000-4-11
Conducted susceptibility	MIL-STD-461G CS101
	MIL-STD-461G CS114
	MIL-STD-461G CS115
	MIL-STD-461G CS116

Note

1) Factory setting voltage at room temperature and full load. Adjusting to specified voltage is available by request. Please contact us for more information.

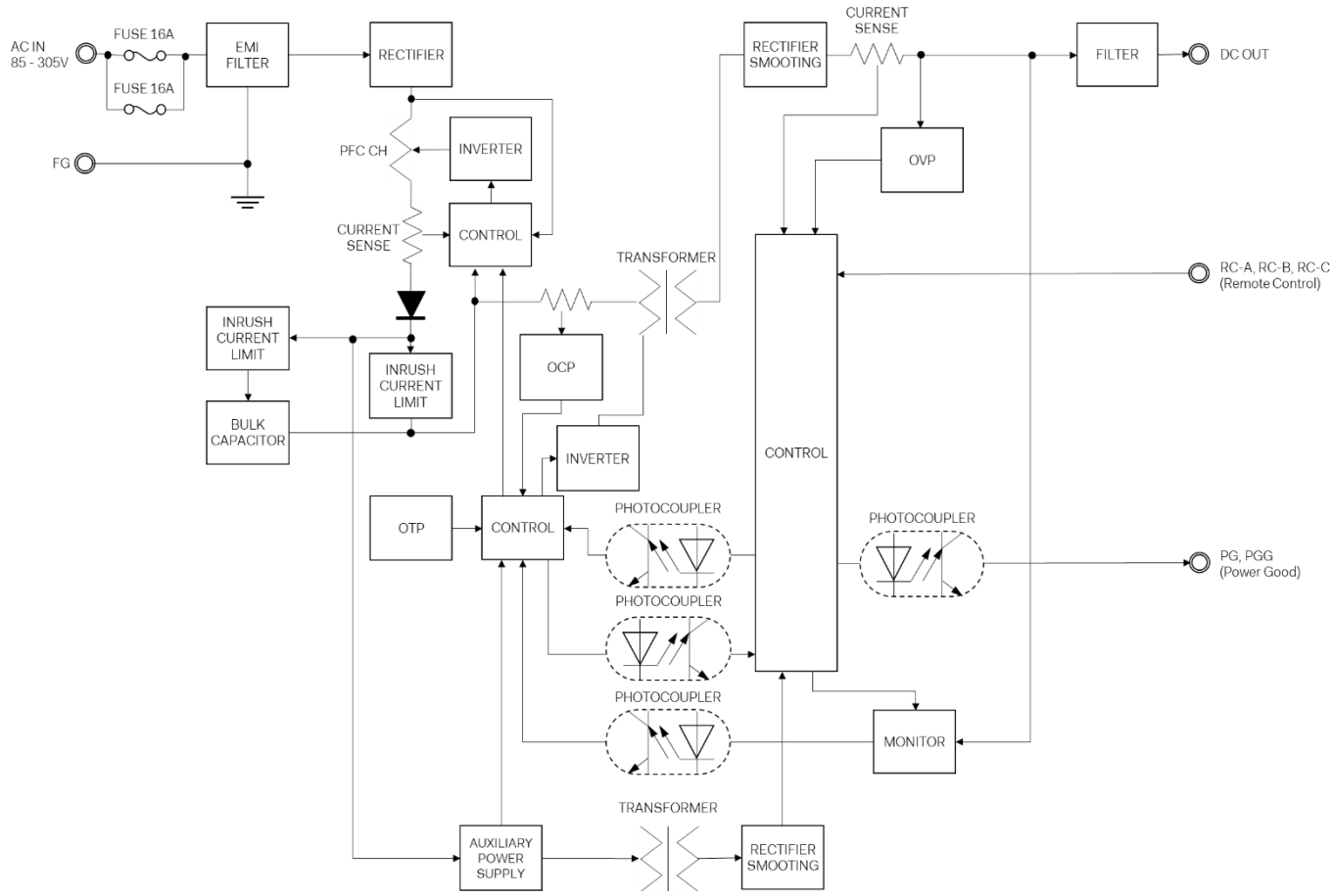
2) Other functions are available by request. Please contact us for more information.

3) For ECD1000A28, type of over current protection will be changed from constant current to hiccup below 95VAC input.

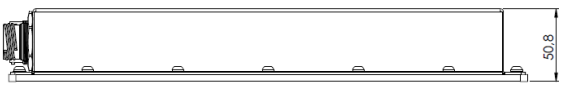
4) Only ECD1000A28 also meets class C with more than 60% load.

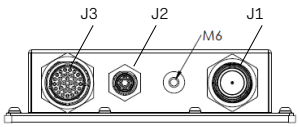
5) See manual for more information.

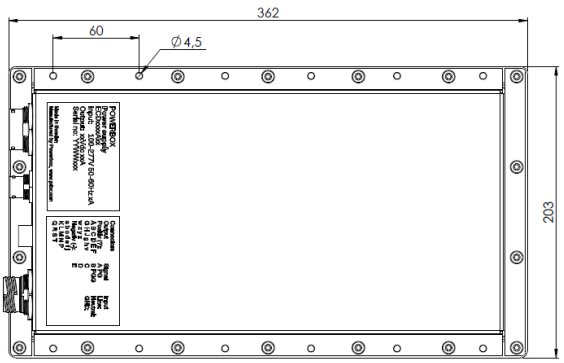
Block diagram



Mechanical dimensions







J1: Input	
Mating connector: D38999/26FD5SA	
A	AC/N
B	AC/L
C	NC
D	Earth
E	NC

J2: Signal	
Mating connector: MS3475L10-6P	
A	PG
B	PGG
C	RC-A
D	RC-B
E	RC-C
F	NC

J3: Output		
Mating connector: MS3475L18-32P		
A	J	+Vout
B	V	
C	W	
D	X	
E	Y	
F	Z	
G	g	
H	h	
K	U	-Vout
L	a	
M	b	
N	c	
P	d	
R	e	
S	f	
T	j	