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POWERBOX Defense Line
ECD250D and ECD350D Series
250 Watts and 350 Watts Single Output
DC/DC Baseplate Power Supply

ECD250D/ECD350D – a powerful baseplate cooled DC/DC power supply suitable for Defense applications that require an IP classified enclosure. Fulfills MIL-STD-461G and MIL-STD-1275F as an off-the-shelf product. A ruggedized product suitable for applications in harsh environments.

Features

Conductive cooling
IP 65 enclosure
Conformal coating, IPC-A-610 Compliant
Vibration/shock according to MIL-STD-810H
EMC according to MIL-STD-461G CE102, RE102
Meet MIL-STD-1275 D, E and F ¹⁾ and MIL-STD-704
Remote On/Off, Power Good
OCP, OVP, OTP, SCP

Input

Input voltage range	ECD250D12	11 – 33VDC ²⁾
	ECD350D28	18 – 33VDC
Nominal input voltage	ECD250D12	12VDC / 28VDC
	ECD350D28	28 VDC
Input current	ECD250D12	24A typ. @12VDC 11A typ. @28VDC
	ECD350D28	15A typ. @28VDC
Input fuse	Yes (2x 30A)	
Turn on time	500ms max.	

Output

Output voltage	See table
Output current	
Output power	
Efficiency	
Line regulation	0.5% max
Load regulation	0.5% mV max. 10-90% load change
Temp. coefficient	± 0.02%/°C
Ripple & noise (20MHz BW)	1%
Paralleling	No

Table

Part Number	Output voltage	Output current	Efficiency
ECD250D12/24	24V	10.5A	92% ⁴⁾
ECD250D12/28	28V	9A	92% ⁴⁾
ECD350D28/28	28V	12.5A	92% ⁴⁾



Environmental

Operating temperature	-40°C to +60°C	
Baseplate temperature	ECD250D12	-40°C to +100°C
	ECD350D28	-40°C to +80°C
Derating	See manual	
Operating humidity	20-95%RH (No condensing)	
Altitude operation	Maximum 5000m	
Storage temperature	-40°C to +85°C	
Storage humidity	20-95%RH (No condensing)	
Vibration	MIL-STD-810H, Cat. 24 Fig. 514.8 E-1	
Shock	MIL-STD-810H, Procedure 1, 40G 11ms, ground material	

Mechanical

Size W x H x D	280 x 49 x 200 mm	
IP class	IP65	
Weight	2.7kg typ.	
Connectors ³⁾	Input	D38999/24FD18PN
	Output	D38999/24FC98SN
	Signal	D38999/24FB4SN
Connector placement	Input and Output on the same short end	
Enclosure surface	Black paint	
	Cooling and grounding areas not painted	

General

MTBF		
MIL-HDBK-217F	> 120kh @ 25°C, full load GB	

Protection Circuit and Others

Over current protection	Yes, auto recovery
Current limit type	Hick-up mode
Over voltage protection	Yes, shut down
Over temp. protection	Yes, auto recovery activated by baseplate temperature
Remote ON/OFF	Yes ⁵⁾
Power Good	Yes Normal operation: Low Abnormal operation : High

Isolation

Input - Output, RC, PG	2250VDC
Input - FG	2250VDC
Output - FG	500VDC
Output - RC, PG	1000VDC

Safety Standards

RoHS	Yes, Directive 2011/65/EU (2015/863)
CE/UKCA	Yes

EMC

Conducted Emission	MIL-STD-461G CE102
Radiated Emission	MIL-STD-461G RE102
Conducted Susceptibility	MIL-STD-461G CS101/CS114/CS115/CS116
Radiated Susceptibility	MIL-STD-461G RS103

EMS Immunity

ESD	EN61000-4-2
EFT/Burst	EN61000-4-4
Surges	EN61000-4-5

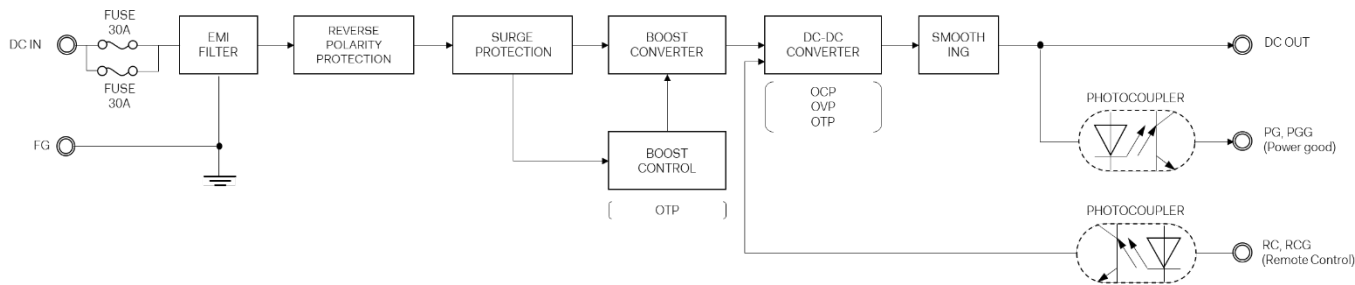
MIL-STD Compliance

MIL-STD-461G	See EMC
MIL-STD-810H	See Environmental
MIL-STD-1275	D, E, F ¹⁾
MIL-STD-704	Only for 28VDC system

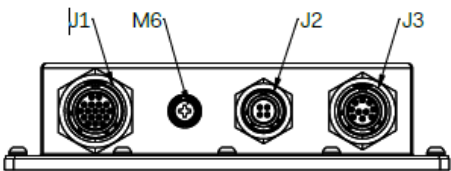
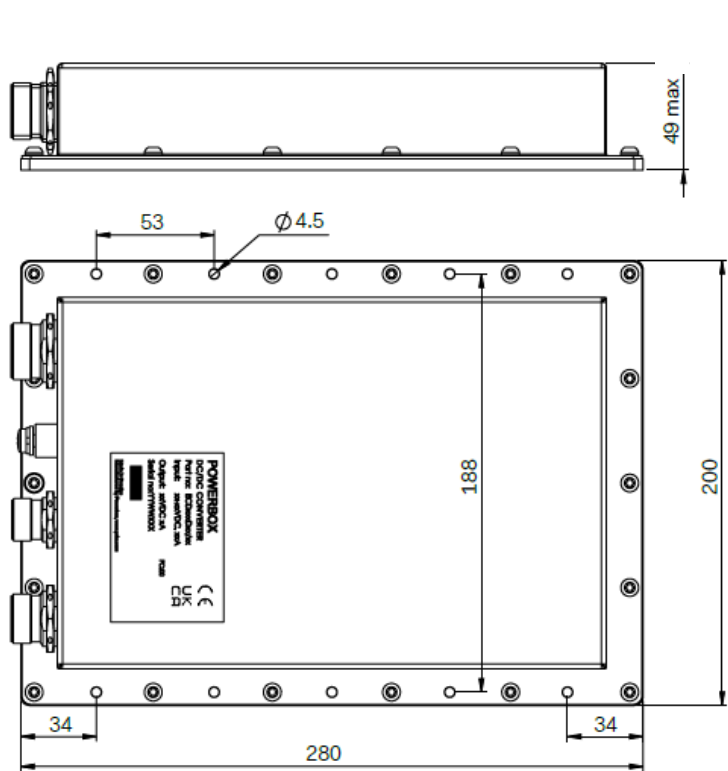
<Notes>

- 1) Refer to instruction manual - Compliance
- 2) Refer to instruction manual – Input voltage range
- 3) The mating connector is shown in the Mechanical dimensions.
- 4) Measured at rated input voltage of 28VDC and rated output current.
- 5) External supply is required to control.

Block diagram



Mechanical dimensions



J1 Input	
Mating connector D38999/26FD18SN	
A, B, C, D, E, N, P, R, U	+Vin
F, G, H, J, K, L, M, S, T	-Vin

J2 Signal	
Mating connector D38999/26FB4PN	
A	PG
B	PGG
C	RC
D	RCG

J3 Output	
Mating connector D38999/26FC98PN	
A, B, C, D, E	+Vout
F, G, H, J, K	-Vout