



PE60 Series 60W

The PE60 series DC/DC converters has very wide input voltage ranges to cover demands in fork lifts, civil and military vehicles and train applications in a single unit. The output is low noise able to supply fork lift computers, communication radios or wideband data transfer equipments.

Two mechanical versions are available; one that is air cooled and self standing. The other is intended to be mounted on a cooler surface.

We also have two connector versions. The standard is a plug-in connector, displayed above. An optional feature is that the PE60 can be moulded to meet "IP54" and then the connector is flat tabs 6.3mm.

Input / Output

- Wide input voltage ranges.
- DC output 13.2, 24 & 48 Vd.c.
- Reverse input voltage protection with series diode.

Operation

- Operation temperature range -25 to +55°C and +70°C with derating.
- Fully encapsulated, meets IP20 as standard.
- Conformally coating; tropical version For environment with high non condensing humidity max 98% RH.
- Overvoltage protection OVP
The output voltage is limited to 15% over nominal output voltage by an extra regulation circuit.

Input ratings

Nominal inputs	Input range	Code
24, 28, 36, 48 Vd.c.	14.4 to 68V	B
60, 72, 96, 110 Vd.c.	43.2 to 155V	C

Inputs according to EN50155/IEC60571, ISO7637-2, MIL-STD1275D

Output ratings and type code

Output			Input	
Voltage	Current	Power	14.4 - 68V	43.2 - 155V
13.2V	4.5A	60W	PE60B13.2	PE60C13.2
24V	4.0A	96W*	PE100B24	PE100C24
48V	2.0A	96W*	PE100B48	PE100C48

How to read our product code:

Example **PE60B13.2**

PE60 = Family code

B = Input voltage code B

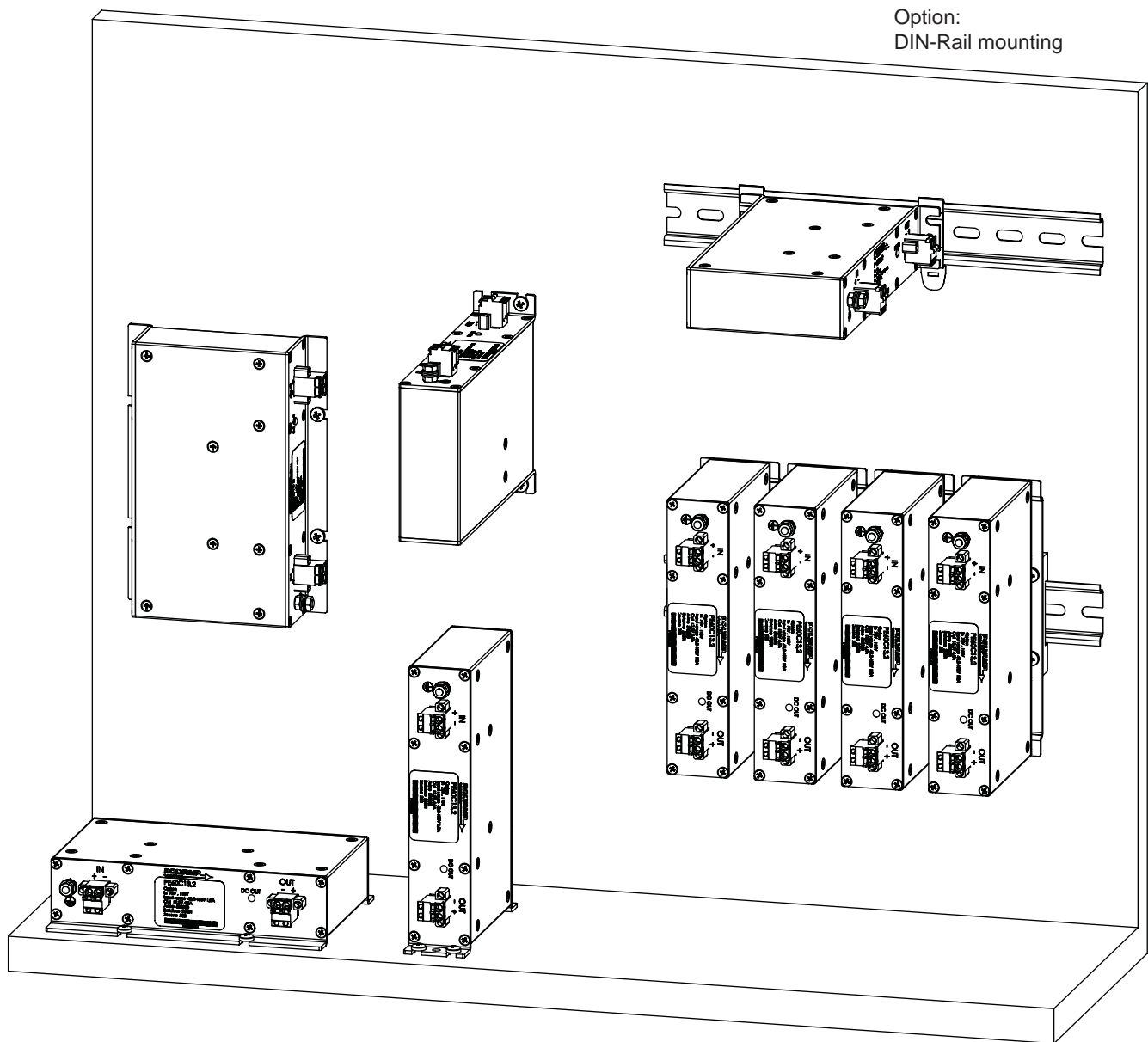
13.2 = Output voltage 13.2V

Other output voltages can be supplied on demand.

* Operation at 70°C derated to 60W

Mechanical mounting

The air cooled version of PE60 can be mounted in many different ways, which is illustrated below.



General data / input data

Design topology	Push-Pull
Switching frequency	Typ. 65 kHz
Safety EN/IEC60950	Class I Secondary circuit
Max. accepted input ripple ¹ 50-400 Hz input voltage	1% of nominal
Input power at no load	<5W
Inrush current limit	No
Isolation	
Input - Output	2.5 kVd.c.
Input - Case	1.5 kVd.c.
Reverse input voltage protection	
B, C input code	Series diode
Dimension (D x W x H)	190 x 95 x 30mm
Weight	1.0 kg

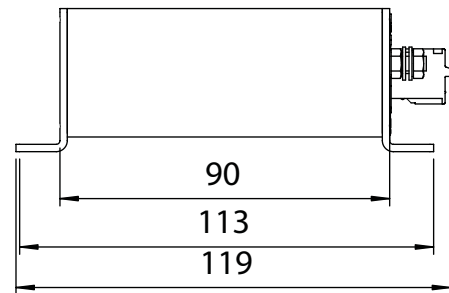
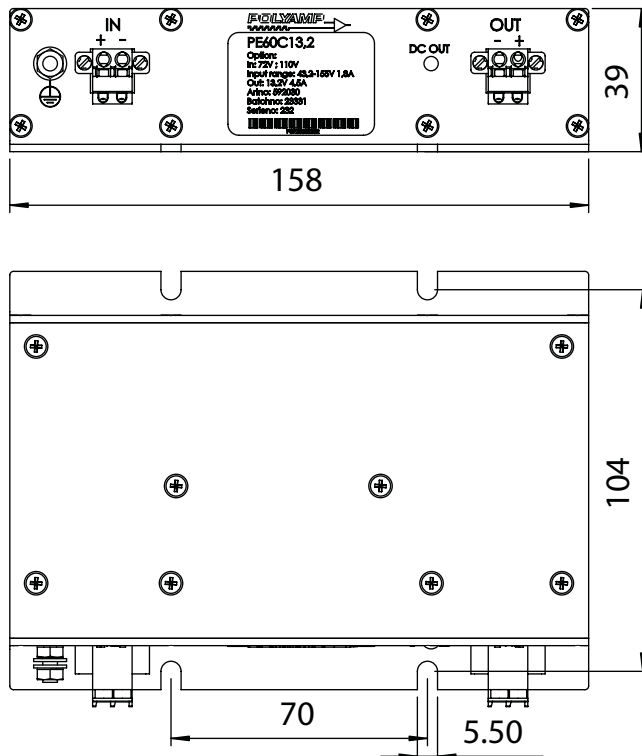
- Higher ripple affects the input, contact factory

Output data

Source regulation	0.2%
Load regulation	2%
Transient recovery time for 10%-90% load step to within 3% of nominal output voltage	Typ. <0.5ms
Output ripple (130kHz) ²	Typ. 1mV _{RMS}
Input ripple attenuation to output (50 to 400Hz)	1000:1
Emission / Immunity	See page 4
Temperature coefficient	0.05% / °C
Min output adjustment range	
Remote sense	No
Soft start	Yes
Start-up time	0.3s
Hold-up time, contact factory	2-15ms
Isolation output - case	1kVd.c.
Efficiency ³	79-83%
Operating temperature range at 100% load	-30 to +55°C
Storage temperature range	-40 to +85°C

- The output ripple might increase to 0.5% RMS of Vout, when EN/IEC61000-4-3, 10V/m test is applied
- Lowest efficiency measured within the whole input voltage range at 100% load.

Mechanical drawing



PE60 meets the requirements defined by CE mark as apparatus.

PE60 meets requirements of EMC directive and low voltage directive (LVD).

Thus a PE60 can be used as free standing unit or in installations as well as systems designed according to "The modular approach". PE60 can be used in installation without further EMC tests, if our installation instructions are followed. Please note that product standards can demand different levels or other basic standard tests. We test according to levels below. For higher levels or other tests, contact factory.

Isolation testable levels	Test voltage
Input / Output	2.5kVd.c.
Input / Case	1.5kVd.c.
Output / Case	1kVd.c.

We use the product standard Low voltage power supplies, DC outputs EN/IEC61204-3 and the generic EMC standards:
EN/IEC61000-6-2 (Immunity)
EN/IEC61000-6-3 (Emission)

EMC

EMC-standards	EMC-performance		
Emission standards	Input	Output	Remarks
EN55011/EN55022 (0.15-30MHz)	Level A	Level A	
EN55011/EN55022 (30-100MHz)	Level A		Enclosure test
Immunity standards	IEC/EN61000-6-2		
EN/IEC61000-4-2	4kV/8kV		Contact / air, Enclosure test
EN/IEC61000-4-3	10 V/m AM-Modulated		Output ripple can increase to 0.5% of Vout Enclosure test
EN/IEC61000-4-3	10 V/m Pulse modulated		Enclosure test
EN/IEC61000-4-4	2kV	2kV	
EN/IEC61000-4-5 EN50121-3-2 (IEC62236-3-2)	0.5kV / 0.5kV 1kV / 2kV	0.5kV / 0.5kV 1kV / 2kV	Line-line 2Ω / Line-case 12Ω Line-line 42Ω / Line-case 42Ω
EN/IEC61000-4-6	10 V _{RMS}	10 V _{RMS}	AM-Modulated
EN/IEC61000-4-8	Not sensitive		Enclosure test
EN/IEC61000-4-10	Not sensitive		Enclosure test

The PE60 series meets EN50121-3-2, EN50121-4 (IEC62236-3-2, IEC62236-4) environments.

Contact

For updates on this datasheet we refer to www.polyamp.com
Specifications subject to change without notice.



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