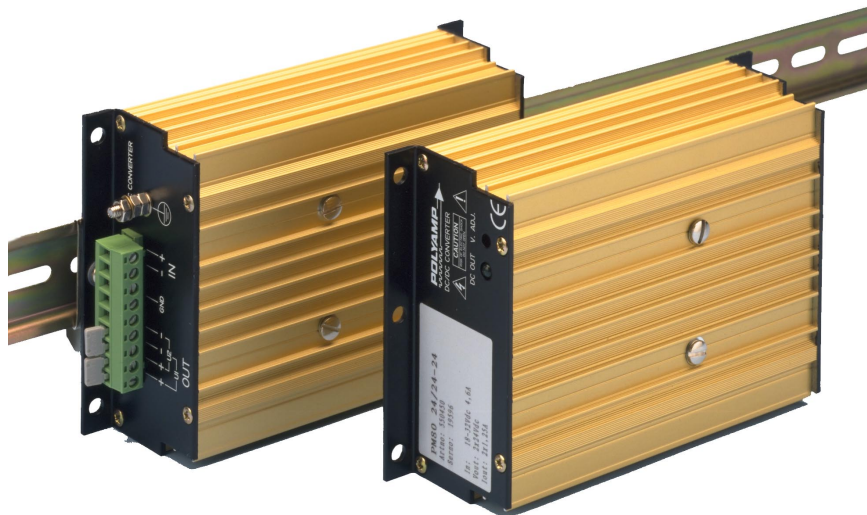




PM50-series 32 to 50W with 1&2 outputs.

Input / Output

- Wide input voltage ranges.
- Input ranges from 10 to 270 Vd.c.
- Single outputs from 12 to 132 Vd.c.
- Two isolated outputs 12-16,18 or 60 Vd.c.
- Reverse input voltage protection.

Operation

- Operating temperature range -25 to +55°C.
- Fully encapsulated, meets IP20 as standard.
- Convection cooled.

Features

- Conformally coating; tropical version for environment with high non condensing humidity max 98% RH.
- Wall or DIN-rail mounting.
- One unit covers many output voltages.
- Output voltage adjustable on frontpanel.

EMC

- EN61000-6-3 Emission.
- EN61000-6-2 Immunity.
- EN/IEC61000-4-4, 4kV.
- EN/IEC61000-4-5 level 2&3.

Single outputs PM50

Output			Input				Connection
Voltage	Current	Power	10 - 30V	20 - 60V	50 - 150V	90 - 270V	
12V	2.67A	32W	PM50A15-15				Parallel
12V	3.34A	40W		PM50B15-15	PM50C15-15	PM50D15-15	Parallel
15V	2.67A	40W	PM50A15-15				Parallel
15V	3.34A	50W		PM50B15-15	PM50C15-15	PM50D15-15	Parallel
18V	2.60A	47W	PM50A18-18				Parallel
18V	3.20A	57W		PM50B18-18			Parallel
18V	2.78A	50W			PM50C18-18		Parallel
24V	1.34A	32W	PM50A15-15				Series
24V	1.67A	40W		PM50B15-15	PM50C15-15	PM50D15-15	Series
28V	1.34A	37W	PM50A15-15				Series
28V	1.67A	47W		PM50B15-15	PM50C15-15	PM50D15-15	Series
36V	1.30A	47W	PM50A18-18				Series
36V	1.60A	57W		PM50B18-18			Series
36V	1.39A	50W			PM50C18-18		Series
60V	0.67A	40W	PM50A60-60				Parallel
60V	0.84A	50W		PM50B60-60	PM50C60-60	PM50D60-60	Parallel
110V	0.34A	37W	PM50A60-60				Series
110V	0.42A	46W		PM50B60-60	PM50C60-60	PM50D60-60	Series

How to read our product code:

Example **PM50B15-15**

PM50 = Family code

B = input voltage code B

15-15 = two outputs with nom. voltage 12-16V

Dual outputs

Outputs					Input			
Voltage	Current	Voltage	Current	Power	10 - 30V	20 - 60V	50 - 150V	90 - 270V
12V	1.34A	12V	1.34A	32W	PM50A15-15			
12V	1.67A	12V	1.67A	40W		PM50B15-15	PM50C15-15	PM50D15-15
15V	1.34A	15V	1.34A	40W	PM50A15-15			
15V	1.67A	15V	1.67A	50W		PM50B15-15	PM50C15-15	PM50D15-15
18V	1.30A	18V	1.30	47W	PM50A18-18			
18V	1.60A	18V	1.60A	57W		PM50B18-18		
18V	1.39A	18V	1.39A	50W			PM50C18-18	
60V	0.34A	60V	0.34A	40W	PM50A60-60			
60V	0.42A	60V	0.42A	50W		PM50B60-60	PM50C60-60	PM50D60-60

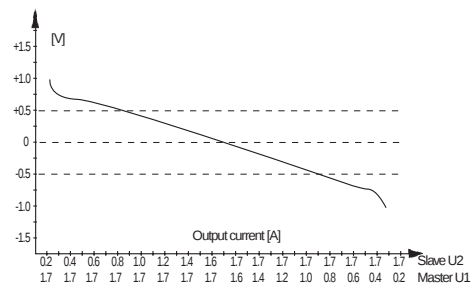


Figure 1. Voltage difference between U1 & U2 depending on load difference on PM50*15-15. On PM50*60-60 the voltage difference is relatively smaller.

DC Inputs

Nominal inputs	Input range	Code
12, 24 Vd.c.	10 to 30V	A
24, 28, 36, 48 Vd.c.	20 to 60V	B
72, 96, 110, 127 Vd.c.	50 to 150V	C
110, 127, 220, 250 Vd.c.	90 to 270V	D

Input voltages meeting train standard EN50155/IEC60571, can be made on demand.

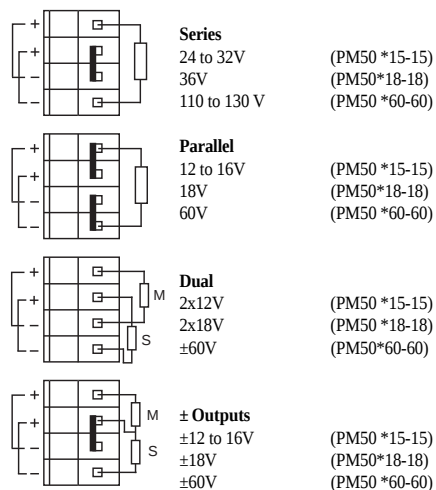
General data / input data

Design topology	Fly back
Switching frequency	Typ. 45 kHz
Emission / immunity	See page 4
Safety EN/IEC60950	Class I
Max. accepted input ripple ¹ 50-400Hz	2% of nominal
Input power at no load	<5 W
Inrush current limit	No
Reverse input voltage protection	
A, B input code	Parallel diode
C, D input code	Series diode
Dimensions (D x W x H)	157x106x48mm
Weight	0.65 kg

- Higher ripple affects the input, contact factory

How to connect the output

Use the supplied jumpers shown below



*= Input voltage code. M = Master output U1. S= Slave output U2.

Figure 3. Jumper position on PM50 connector. (Series & Parallel)

Output data

Source regulation	0.2%
Load regulation parallel outputs	0.2%
Load regulation with series connected outputs 10-100% load.	1%
Load regulation on U1	0.2%
Load regulation on U2	See figure 1
Transient recovery time for 10%-90% load step to within 3% of nominal output voltage.	Typ. <3ms
Output ripple (45kHz)²	
PM50A15-15, PM50*15-15	Typ. 1mV _{RMS}
PM50A60-60, PM50*60-60	Typ. 2 mV _{RMS}
Input ripple attenuation to output (50 to 400 Hz).	150:1
Emission / Immunity	See page 4
Temperature coefficient	0.02% /°C
Output voltage adj. range	
PM50*15-15	12 to 16 V
PM50*18-18	17 to 20V
PM50*60-60	54 to 66 V
Current limit, fold-back.	See figure 2
Remote sense	No
Soft start	No
Start-up time	1s
Hold-up time, contact factory	2-25ms
Efficiency ³	78-85%
Operating temperature range at 100% load.	-25 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.

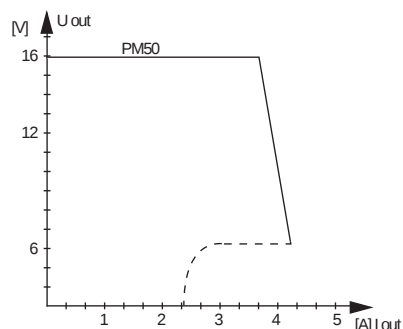


Figure 2. Current limit characteristic for PM50*15-15 with outputs connected in parallel.

Mechanical drawing

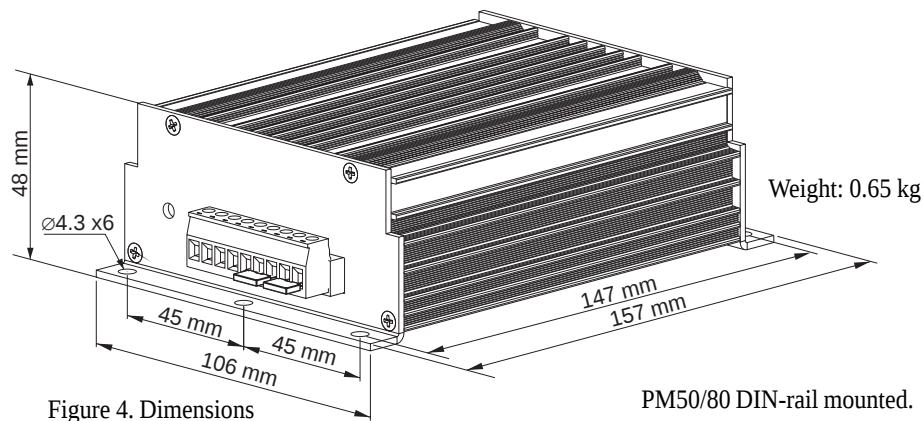
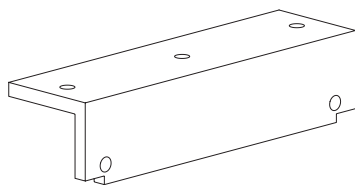


Figure 4. Dimensions



Optional bracket L60-1

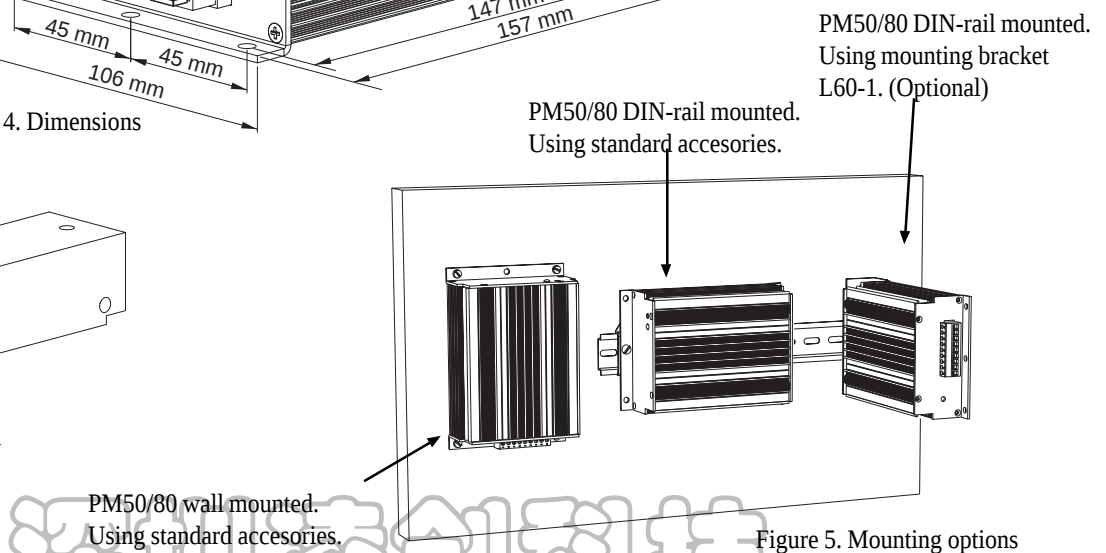


Figure 5. Mounting options

Output voltage/power characteristics

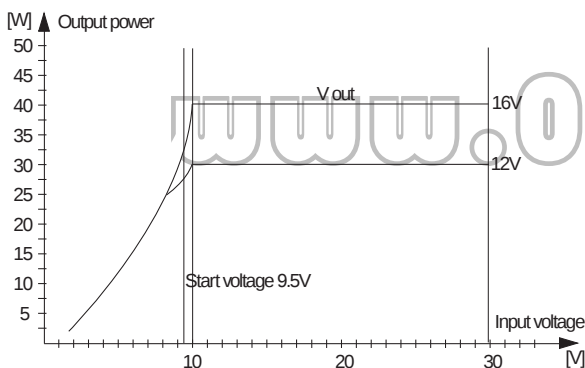


Figure 6. Output power PM50A15-15

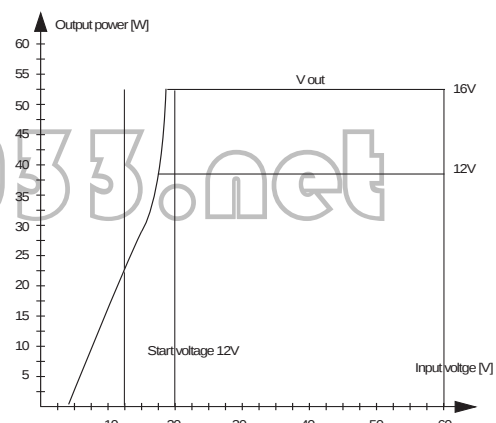


Figure 7. Output power PM50B15-15

The PM50 series have no low input voltage lock-out, which stops the converter. The output power is instead automatically derated, see figures 6 to 9. Example: PM50A15-15, figure 6, has start voltage at 9.5 V and can supply 15W output power at 6 V input.

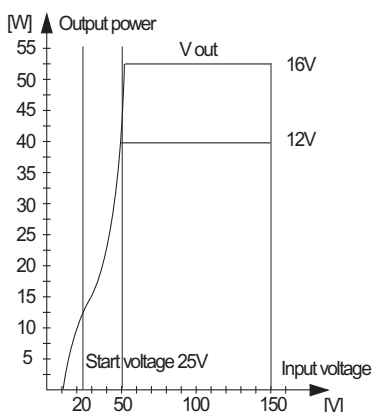


Figure 8. Output power PM50C15-15

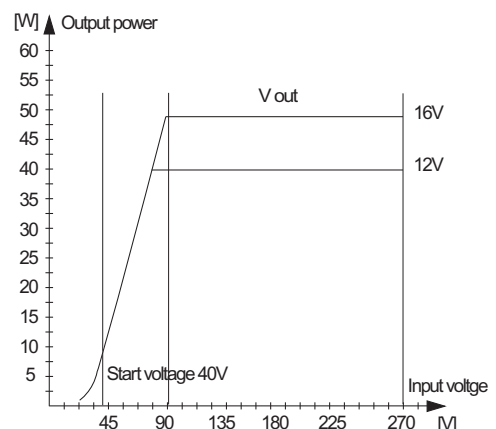


Figure 9. Output power PM50D15-15