



PM80-series 60 to 80 W with 1 & 2 outputs.

Input / Output

- Optimized input voltage ranges.
- Input ranges from 18 to 300 Vd.c.
- Single outputs from 24 to 72 Vd.c.
- Two isolated outputs 24 or 36 Vd.c.
- Reverse input voltage protection.

Operation

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

Single outputs

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

- EN/IEC 61000-6-3. Emission.
- EN/IEC 61000-6-2. Immunity.
- EN/IEC 61000-4-4, 4 kV.
- EN/IEC 61000-4-5 level 2 & 3.

Output			Input				Connection
Voltage	Current	Power	18 - 32 V	40 - 60 V	88 - 150 V	175 - 300 V	
24 V	2.50 A	60 W	PM80 24/24-24				Parallel
24 V	3.34 A	80 W		PM80 48/24-24	PM80 110/24-24	PM80 220/24-24	Parallel
36 V	1.68 A	60 W	PM80 24/36-36				Parallel
36 V	2.24 A	80 W		PM80 48/36-36	PM80 110/36-36	PM80 220/36-36	Parallel
48 V	1.25 A	60 W	PM80 24/24-24				Series
48 V	1.67 A	80 W		PM80 48/24-24	PM80 110/24-24	PM80 220/24-24	Series
72 V	0.84 A	60 W	PM80 24/36-36				Series
72 V	1.12 A	80 W		PM80 48/36-36	PM80 110/36-36	PM80 220/36-36	Series

Dual outputs

Output					Input			
Voltage	Current	Voltage	Current	Power	18 - 32 V	40 - 60 V	88 - 150 V	175 - 300 V
24 V	1.25 A	24 V	1.25 A	60 W	PM80 24/24-24			
24 V	1.67 A	24 V	1.67 A	80 W		PM80 48/24-24	PM80 110/24-24	PM80 220/24-24
36 V	0.84 A	36 V	0.84 A	60 W	PM80 24/36-36			
36 V	1.12 A	36 V	1.12 A	80 W		PM80 48/36-36	PM80 110/36-36	PM80 220/36-36

How to read our product code:

Example **PM80 48/24-24**

PM80 = Family code

48 = input voltage code 48

24-24 = two outputs with nom. voltage 24 V

DC Inputs

Nominal inputs	Input range	Code
24 Vd.c.	18 - 32 V	24
48 Vd.c.	40 - 60 V	48
110, 127 Vd.c.	88 - 150 V	110
220, 250 Vd.c.	175 - 300 V	220

Input voltages meeting train standard EN 50155/IEC 60571, can be made on demand.

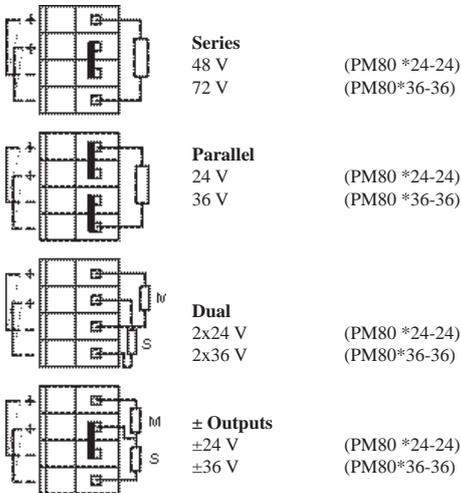
General data / input data

Design topology	Fly back
Switching frequency	Typ. 45 kHz
Emission / immunity	See page 4
Safety EN/IEC 60950	Class I
Max. accepted input ripple ¹ 50-400 Hz	2 % of nominal
Input power at no load	<5 W
Inrush current limit	No
Reverse input voltage protection	
24, 48, input code	Parallel diode
110, 220 input code	Series diode
Dimensions (D x W x H)	157 x 106 x 48 mm
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 1. Jumper position on PM80 connector.

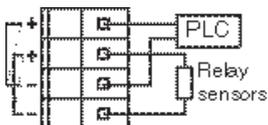


Figure 2. Use the 24V master (U1) for a PLC and the slave (U2) for relays and sensors. The advantage is that the PLC is isolated with less disturbance from relays and sensors.

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 3
Transient recovery time for 10 - 90 % load step to within 3 % of nominal output voltage.	Typ. <3 m
Output ripple (45 kHz)²	Typ. 1 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	
PM80*24-24	21.6 - 26.4 V
PM80*36-36	32.4 - 39.6 V
Current limit, fold-back.	See figure 4
Remote sense	No
Soft start	No
Start-up time	1 s
Hold-up time, contact factory	2-25 ms
Efficiency ³	83 - 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/IEC 61000-4-3, 10 V/m test is applied
- Lowest efficiency measured within the whole input voltage range at 100 % load.

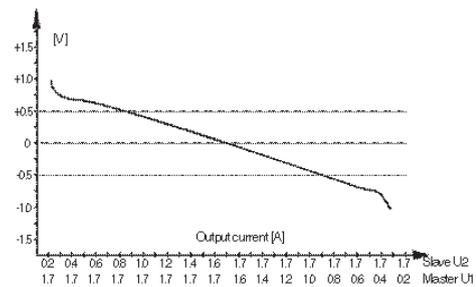


Figure 3. Voltage difference between U1 & U2 depending on load difference on PM80*24-24

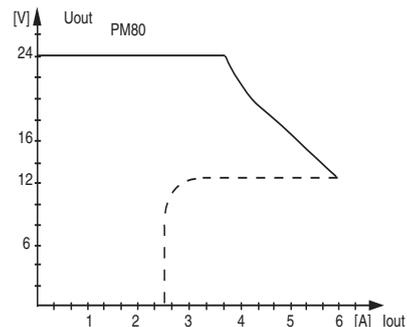


Figure 4. Current limit characteristic on PM80*/24-24 With outputs connected in parallel

Mechanical drawing

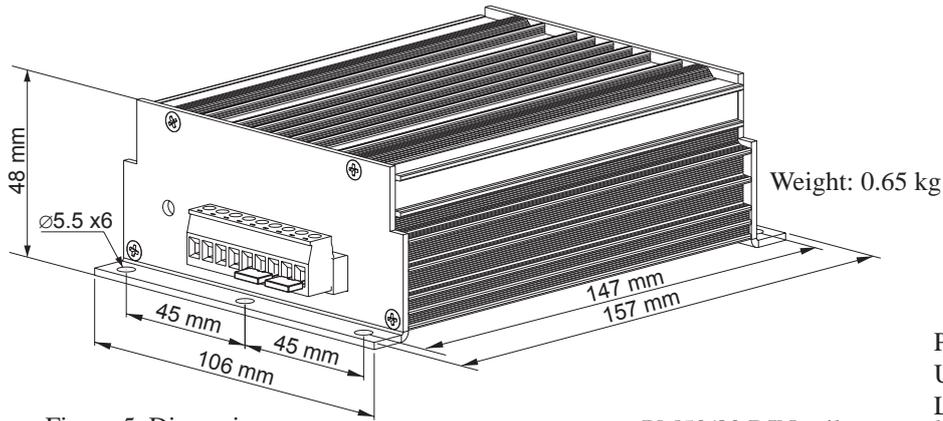
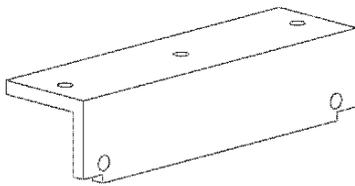


Figure 5. Dimensions



Optional bracket L60-1

PM50/80 wall mounted.
Using standard accessories.

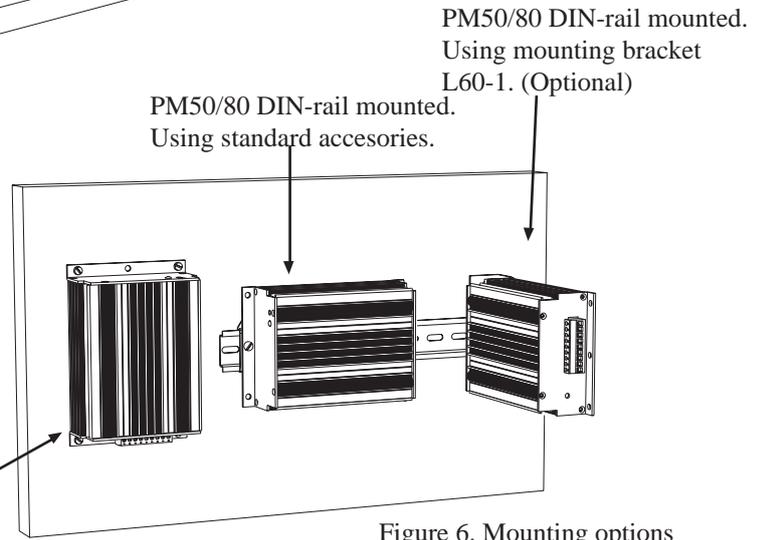


Figure 6. Mounting options

Output voltage/power characteristics

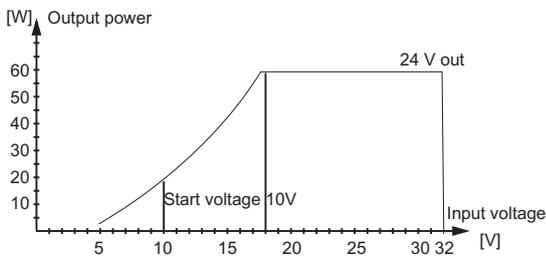


Figure 7. Output power PM80 24/24-24

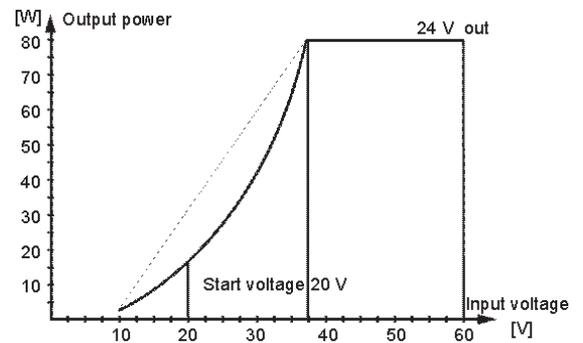


Figure 8. Output power PM80 48/24-24

The PM80 series have no low input voltage lock-out, which stops the converter. The output power is instead automatically derated, see figures 7 to 10. Example: PM8024/24-24, figure 7 has start voltage at 10 V and can supply 20 W output power at 10 V input.

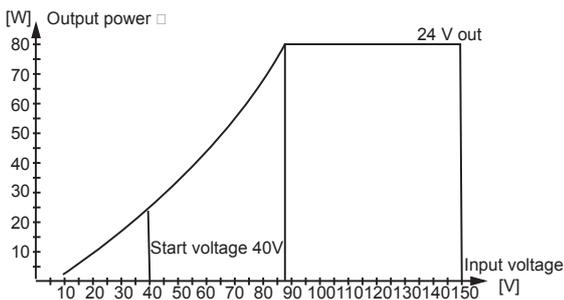


Figure 9. Output power PM80 110/24-24

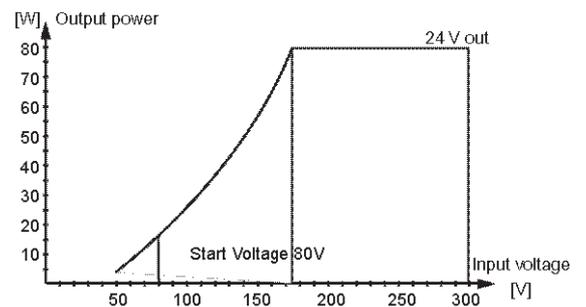


Figure 10. Output power PM80 220/24-24

PM80 meets the requirements defined by CE mark as apparatus.

PM80 meets requirements of EMC directive and low voltage directive (LVD).

Thus a PM80 can be used as free standing unit or in installations as well as systems designed according to "The modular approach". PM80 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: Input code 24, 48	2 kVd.c.
Input code 110, 220	2.5 kVa.c. / 4 kVd.c.
Input / Case: Input code 24, 48	2 kVd.c.
Input code 110, 220	2.5 kVa.c. / 4 kVd.c.
Output / Case all outputs	1 kVd.c.
Between U1 / U2	500 Vd.c.

We use the product standard Low voltage power supplies, DC outputs EN/IEC 61204-3 and the generic EMC standards:

EN/IEC 61000-6-2 (Immunity)

EN/IEC 61000-6-3 (Emission)

EMC

EMC-standards	EMC-performance		
Emission standards	Input	Output	Remarks
EN 55011/EN 55022 (0.15-30 MHz)	Level B	Level B	
EN 55011/EN 55022 (30-1000 MHz)	Level B		Enclosure test
Immunity standards	EN/IEC 61000-6-2		
EN/IEC 61000-4-2	8 kV/15 kV		Contact / air, Enclosure test
EN/IEC 61000-4-3	10 V/m AM-Modulated		Output ripple can increase to 0.5 % of Vout Enclosure test
EN/IEC 61000-4-4	4 kV	4 kV	
EN/IEC 61000-4-5, Input code 24, 48	0.5 kV / 1 kV	0.5 kV / 1 kV	Line-line 2 Ω / Line-case 12 Ω
EN/IEC 61000-4-5, Input code 110, 220	1 kV / 2 kV ¹	0.5 kV / 1 kV	
EN 50121-3-2/IEC 62236-3-2	1 kV / 2 kV	1 kV / 2 kV	Line-line 42 Ω / Line-case 42 Ω
EN/IEC 61000-4-6	10 V _{RMS}	10 V _{RMS}	AM-Modulated
EN/IEC 61000-4-8	Not sensitive		Enclosure test
EN/IEC 61000-4-10	Not sensitive		Enclosure test

1 Higher level 2kV / 4kV with external filters, contact factory.

Contact

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



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