



## PM80-series 60 to 80W 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

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

### 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.

### EMC

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

### Dual outputs

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

### How to read our product code:

Example **PM8048/24-24**

**PM80** = Family code

**48** = input voltage code 48

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

# DC Inputs

Nominal inputs	Input range	Code
24 Vd.c.	18 to 32V	24
48 Vd.c.	40 to 60V	48
110, 127 Vd.c.	88 to 150V	110
220, 250 Vd.c.	175 to 270V	220

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

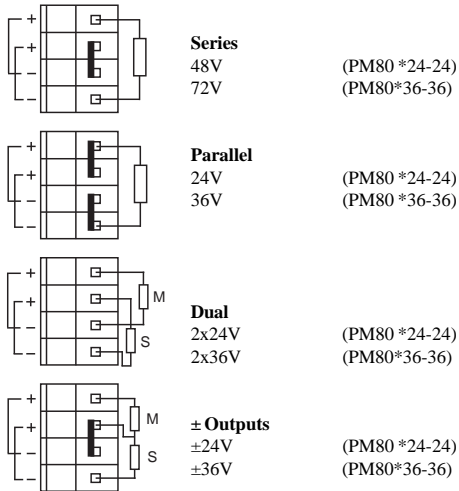
# General data / input data

Design topology	Fly back
Switching frequency	Typ. 45 kHz
Emission / immunity	See page 4
Safety EN/IEC60950	Class I
Max. accepted input ripple <sup>1</sup> 50-400Hz	2% of nominal
Input power at no load	<5 W
Inrush current limit	No
<b>Reverse input voltage protection</b>	
24, 48 input code	Parallel diode
110, 220 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 1. Jumper position on PM80 connector.

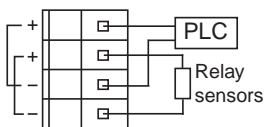


Figure 2. Use the 24V master (U1) for a PLC and the slave (U2) for relays and sensors. The advantage is that the PLC is isolated with less disturbance from relays and sensors.

# 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. <3m
<b>Output ripple (45kHz)<sup>2</sup></b>	Typ. 1mV <sub>RMS</sub>
Input ripple attenuation to output (50 to 400 Hz).	150:1
Emission / Immunity	See page 4
Temperature coefficient	0.02% /°C
<b>Output voltage adj. range</b>	
PM80*24-24	21.6 to 26.4V
PM80*36-36	32.4 to 39.6V
Current limit, fold-back.	See figure 4
Remote sense	No
Soft start	No
Start-up time	1s
Hold-up time, contact factory	2-25ms
Efficiency <sup>3</sup>	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/IEC61000-4-3, 10V/m test is applied
- Lowest efficiency measured within the whole input voltage range at 100% load.

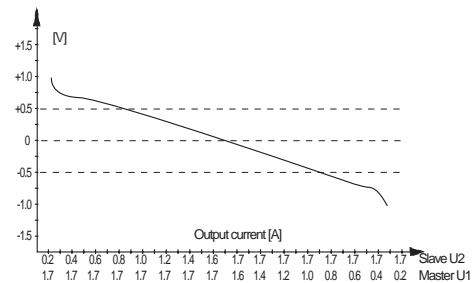


Figure 3. Voltage difference between U1 & U2 depending on load difference on PM80\*24-24

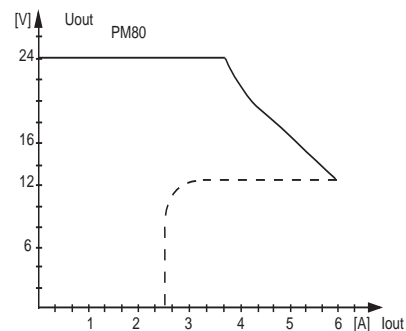


Figure 4. Current limit characteristic on PM80\*/24-24 With outputs connected in parallel

# Mechanical drawing

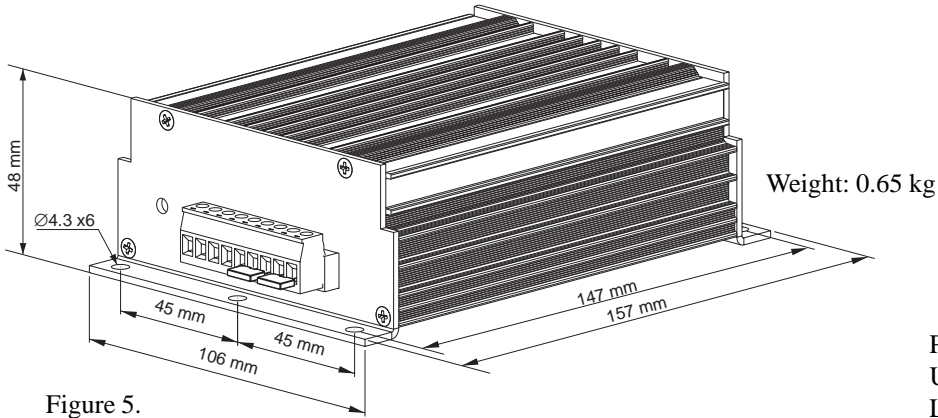
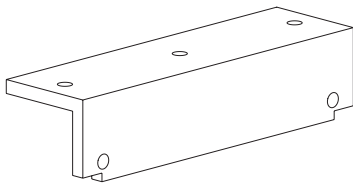


Figure 5. Dimensions



Optional bracket L60-1

PM50/80 wall mounted. Using standard accessories.

PM50/80 DIN-rail mounted. Using mounting bracket L60-1. (Optional)  
 PM50/80 DIN-rail mounted. Using standard accessories.

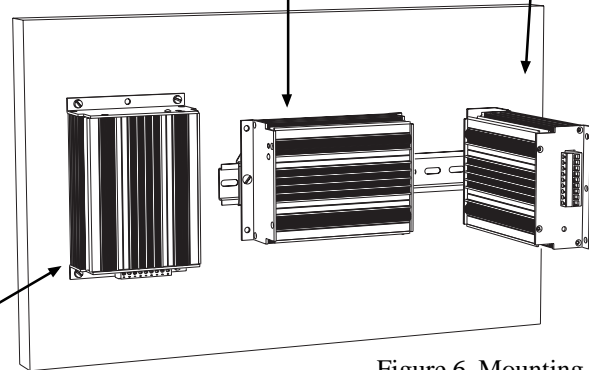


Figure 6. Mounting options

## Output voltage/power characteristics

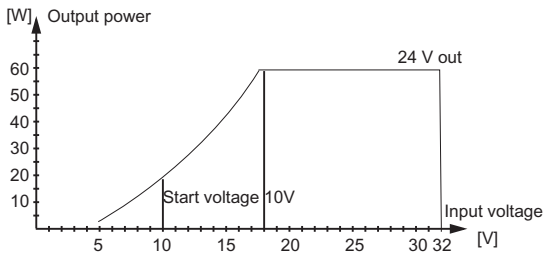


Figure 7. Output power PM80 24/24-24

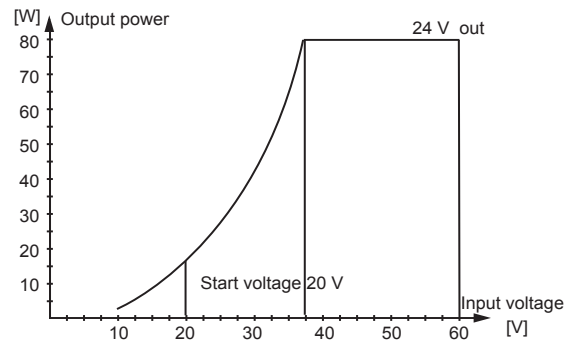


Figure 8. Output power PM80 48/24-24

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 20W output power at 10 V input.

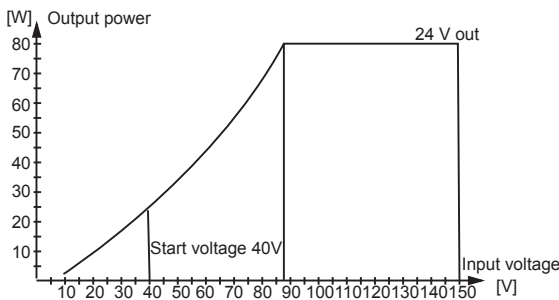


Figure 9. Output power PM80 110/24-24

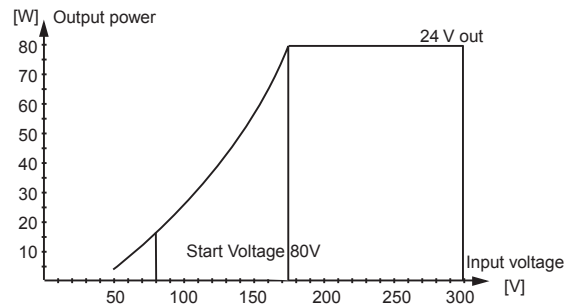


Figure 10. Output power PM80 220/24-24

## Safety and EMC

## CE Safety standard IEC60950

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	2kVd.c.
Input code 110, 220	2.5kVa.c. / 4kVd.c.
Input / Case Input code 24, 48	2kVd.c.
Input code 110, 220	2.5kVa.c. / 4kVd.c.
Output / Case all outputs	1 kVd.c.
Between U1 / U2	500Vd.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		Remarks
Emission standars	Input	Output	
EN55011/EN55022 (0.15-30MHz)	Level B	Level B	
EN55011/EN55022 (30-1000MHz)	Level B		Enclosure test
Immunity standards	IEC/EN61000-6-2		
EN/IEC61000-4-2	8 kV/15 kV		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	4 kV	4 kV	
EN/IEC61000-4-5, Input code 24, 48	0.5kV / 1 kV	0.5kV / 1 kV	Line-line 2Ω / Line-case 12Ω
EN/IEC61000-4-5, Input code 110 <sup>1</sup> , 220 <sup>1</sup>	1kV / 2 kV	0.5kV / 1 kV	
EN/IEC61000-4-6	10 V <sub>RMS</sub>	10 V <sub>RMS</sub>	AM-Modulated
EN/IEC61000-4-8	Not sensitive		Enclosure test
EN/IEC61000-4-10	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/htm/download.html](http://www.polyamp.com/htm/download.html)  
Specifications subject to change without notice.

Distributor



Polyamp AB Box 229 597 25 Åtvidaberg Sweden  
Telephone: +46 120 854 00 Telefax: +46 120 854 05  
<http://www.polyamp.se>, <http://www.polyamp.com>  
E-mail: [info@polyamp.se](mailto:info@polyamp.se)