

# PS-100/48, Power Supply

## DIN-Rail PoE Ready PSU

- 48 – 56 VDC
- 1.8 – 2.1 A
- 100 Watt
- 115 or 230 VAC Input
- PoE and PoE Plus Ready
- -10 to +70°C (14 to +158°F)



**EN 61000-6-2**  
Industrial Immunity

**EN 61000-6-3**  
Residential Emission

**EN 61000-6-4**  
Industrial Emission

The PS-100/48 is a DIN-rail industrial power supply (PSU) complying with a wide range of approvals. With the robust plastic housing the PS-100/48 is one of the markets most compact PSU:s. It has been specifically designed for use with the Westermo Power over Ethernet (PoE) products and meets the requirements for both PoE and PoE Plus as the output voltage can be adjusted between 48 and 56 VDC. In some applications there might be a need to power many Powered Devices (PD)s thus the unit can deliver up to 100 Watt.

Mounting and connecting the unit does not require any additional tools as both the DIN-rail connector and the terminal connectors have been designed, not only, with ruggedness and the ability to sustain harsh environments, but also the made easy methodology using spring clamps.

Every PS-100/48 has to pass rigorous quality tests including temperature cycling at full load to guarantee quality. With very high MTBF figures the PSU is built to last.

### Ordering Information

| Art.no    | Description                  |
|-----------|------------------------------|
| 3125-0050 | Westermo Power Supply PS-100 |

## Specifications PS-100/48

| Input                                                                                                                                                                                                                             |                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input voltage                                                                                                                                                                                                                     | AC 100 – 120 / 220 – 240 V (Auto Select), 47 to 63 Hz<br>(AC 85 to 132 V / AC 184 to 264 V, DC 220 to 375 V)                                                 |
| Input current                                                                                                                                                                                                                     | <2.1 A (@ AC 100 V <sub>in</sub> , 100 W P <sub>out</sub> )<br><1 A (@ AC 220 V <sub>in</sub> , 100 W P <sub>out</sub> )                                     |
| External Fusing                                                                                                                                                                                                                   | Not required, unit provides internal fuse<br>(T3A15H, not accessible)                                                                                        |
| Transient immunity                                                                                                                                                                                                                | Transient resistance acc. to VDE 0160 / W2<br>(750 V / 1.3 ms), over entire load range                                                                       |
| Hold-up time                                                                                                                                                                                                                      | >40 ms @ AC 230 V, 48 V / 2.1 A<br>>20 ms @ AC 196 V, 48 V / 2.1 A<br>>20 ms @ AC 100 V, 48 V / 2.1 A                                                        |
| Output                                                                                                                                                                                                                            |                                                                                                                                                              |
| Output voltage<br>*preset to                                                                                                                                                                                                      | 48 – 56 VDC (adj. by front panel potentiometer)<br>48 V ± 0.5% @ 2.1 A                                                                                       |
| Voltage regulation                                                                                                                                                                                                                | stat. <1% V <sub>out</sub> (Jumper in pos. 'Single Use')<br>stat. <3% V <sub>out</sub> (Jumper in pos. 'Parallel Use'), dyn. ±1.5% V <sub>out</sub> over all |
| Ripple/Noise                                                                                                                                                                                                                      | <50 m V <sub>PP</sub> (20 MHz bandwidth, 50 Ohm measurement)                                                                                                 |
| Overvoltage prot.                                                                                                                                                                                                                 | <60 V                                                                                                                                                        |
| Rated continuous loading                                                                                                                                                                                                          | Up to 2.1 A @ 48 V / 1.8 A @ 56 V (convection cooling), depending on built-in orientation, V <sub>in</sub> and T <sub>amb</sub>                              |
| Overload behaviour                                                                                                                                                                                                                | No switch-off at overload/short-circuit                                                                                                                      |
| Protection                                                                                                                                                                                                                        | Unit is protected against (also permanent) shortcircuit, overload and open-circuit                                                                           |
| Derating                                                                                                                                                                                                                          | Depending on built-in orientation                                                                                                                            |
| Parallel operation                                                                                                                                                                                                                | Yes (selectable by front panel jumper)                                                                                                                       |
| Power back immunity                                                                                                                                                                                                               | 63 V                                                                                                                                                         |
| Operation indicator                                                                                                                                                                                                               | Green LED                                                                                                                                                    |
| Environmental, EMC & Safety                                                                                                                                                                                                       |                                                                                                                                                              |
| Ambient temperature range                                                                                                                                                                                                         | (measured 25 mm below unit)                                                                                                                                  |
| Storage, transport                                                                                                                                                                                                                | –25°C to +85°C (–13 to 185°F)                                                                                                                                |
| Operation                                                                                                                                                                                                                         | –10°C to +70°C (14 to 158°F)                                                                                                                                 |
| Humidity                                                                                                                                                                                                                          | max. 95% (without condensation)                                                                                                                              |
| Electromagnetic emissions (EME)                                                                                                                                                                                                   | EN 61000-6-3 (includes EN 61000-6-4)<br>Class B (EN 55011, EN 55022)<br>EN 61000-3-2 (PFC)                                                                   |
| Electromagnetic immunity (EMI)                                                                                                                                                                                                    | EN 61000-6-2 (includes EN 61000-6-1)                                                                                                                         |
| Safe low voltage                                                                                                                                                                                                                  | SELV (EN 60950, VDE0100/T.410), PELV (EN 50178)                                                                                                              |
| Prot. class/degree                                                                                                                                                                                                                | Class 1 (EN 60950) / IP20 (EN 60529)                                                                                                                         |
| This unit fulfills all major safety approvals for EU (EN 60 950, EN 60204-1, EN 50178), USA (UL 60950, E137006, UL508 LISTED, E198865), Canada (CAN/CSA-C22.2 No 60950 [CUR], CAN/CSA-C22.2 No. 14 [CUL]), CB Scheme (IEC 60950). |                                                                                                                                                              |

## Efficiency & Reliability

|                                                                                                                                         |                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Efficiency                                                                                                                              | typ. 91% (230 VAC, 48 V / 2.1 A)                                                                           |
| Losses                                                                                                                                  | typ. 10 W (230 VAC, 48 V / 2.1 A)                                                                          |
| MTBF (Reliability)                                                                                                                      | appr. 500.000 h acc. to Siemensnorm SN 29500<br>48 V / 2.1 A, 230 VAC, $T_{amb} = +40^{\circ}\text{C}$     |
| Prior to shipment, every unit undergoes the following tests in order to isolate any defective units which might suffer an early failure | Run-in / burn-in (Full load, $T_{amb} = +60^{\circ}\text{C}$ , on/off cycle)<br><br>Functional test (100%) |

## Mechanical Details

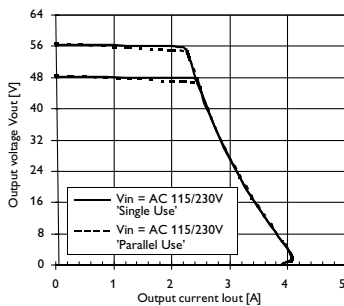
Robust plastic housing (US Patent No. D442, 923S), fine ventilation grid on three housing sides to keep out small parts (e.g. screws), IP20

## Dimensions and weight

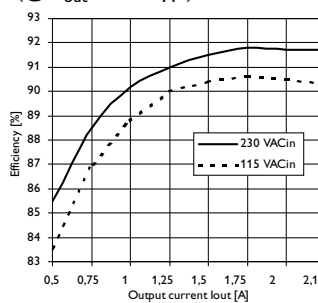
|           |                                                                                  |
|-----------|----------------------------------------------------------------------------------|
| W x H x D | 73 mm x 75 mm x 103 mm (+ DIN rail)<br>Depth incl. terminals: 98 mm (+ DIN rail) |
| Weight    | 360 g                                                                            |

## Diagrams

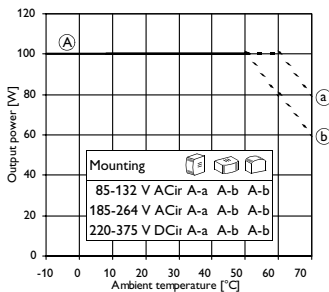
Output characteristic  $V_{out} / I_{out}$   
(min.)



Efficiency  
(@  $V_{out} = 48\text{V}$ , typ.)



Derating  
of output power



Hold-up time with ACin  
(at  $V_{out} = 48\text{V}$ , typ. + min.)

