

## Data Sheet

### DC Power Supplies for PoE applications DIN-rail mounting

#### Description

Active network equipment which is supporting the Power-over-Ethernet function, typically requires a powerful 48 VDC power supply. For this particular demanding application MICROSENS offers special power supplies.

Main feature of these power supplies is the immunity against electromagnetic interference, which is important for sensitive applications like VoIP telephony. Further important features are high efficiency and the easy installation with Snap-on for DIN-rails.

The power supplies are available with the levels of 50, 120, 240 and 480 W. The output voltage of 48 V can be increased up to 56 VDC in order to compensate voltage losses on the power supply lines. All devices provide an excellent over voltage and overload protection mechanism.

#### Features

- Highest reliability and availability
- Power status inform with coloured LED display
- High efficiency
- Wide range input 85..264 VAC or 90..132/180..264 VAC (auto select)
- Adjustable output voltage 48 – 56 VDC or 45 – 55 VDC
- Power ratings 50 W / 120 W / 240 W / 480 W
- Effective electric surge and overload protection
- Parallel operation up to 3 power supplies (only MS700456 / 457 / 458)
- Compact dimensions
- Low weight
- Simple mounting on DIN-rails

## Technical Specifications

<b>Type</b>	Compact Power Supplies for Industrial Use		
<b>Input</b>	Rated input voltage	85..264 VAC (only MS700455) 90..132/180..264 VAC (auto select)	
	Input frequency (AC)	47-63 Hz	
	Input current (115/230 VAC)	1.1/0.7 A (MS700455) 2.8/1.4 A (MS700456) 5.4/2.2 A (MS700457) 7/3.5 A (MS700458)	
	DC input voltage range	90-375 VDC (MS700455) 210-370 VDC (MS700456/MS700457) 120-370 VDC (MS700458)	
	AC inrush current (115/230 V) at full load	MS700455: 35/50 A MS700456: 24/48 A MS700457: 30/60 A MS700458: 25/50 A	
	Power Factor Correction	Meets EN61000-3-2	
	<b>Output</b>	Rated output voltage	48 VDC
		Adjustment range	MS700455: 48..56 VDC MS700456: 45..55 VDC MS700457/458: 47..56 VDC
Rated output current		MS700455: 1,05 A MS700456: 2,5 A MS700457: 5 A MS700458: 10 A	
Rated output power		MS700455: 50 W MS700456: 120 W MS700457: 240 W MS700458: 480 W	
Overvoltage protection		125-137,5 % (MS700455) 120-145 % (MS700456/MS700457) 120-130 % (MS700458)	
Overcurrent protection (typ.)		> 120 % (MS700455) 120-145 % (MS700456/MS700457) 120-140 % (MS700458)	
Ripple (20MHz Bandwidth)		< 50 mV or < 100 mV (MS700457)	
<b>Efficiency</b>		(typical)	87 % or 90 % (MS700457) 90 % (MS700458)
	<b>Hold-up time</b>	(U <sub>in</sub> =115 V AC)	> 20 ms (MS700455)
(U <sub>in</sub> =230 V AC)		> 30 ms (MS700456/457/458)	

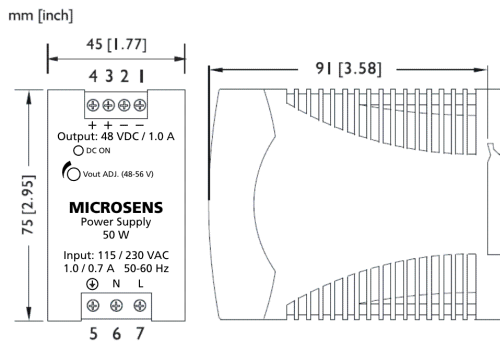
<b>Connections</b>	All wires 0,5 - 2,5 mm <sup>2</sup> / AWG=24-12 (MS700455) All wires 0,5 - 4 mm <sup>2</sup> / AWG=24-10 (MS700456/MS700457)	
<b>LED Indicators</b>	Green Red	DC on DC low (only MS700456/457/458)
<b>Safety</b>	IT-equipment	EN60950-1
<b>EMC</b>	Emission Immunity	EN55022 class B, EN61000-6-3 EN55024, EN61000-6-2
<b>CE</b>	Low Voltage Directive EMC RoHS	2006/95/EC 2004/108/EC 2011/65/EU
<b>Withstand voltage</b>	Input to output / 1 min.	3 kVAC
<b>Isolation Resistance</b>	Output to ground 500VDC	> 100 M $\Omega$ at 25 °C and 70 % RH
<b>Temperature</b>	Operating  Storage	MS700455: -10°C ... +70°C MS700456: -35°C ... +70°C MS700457: -40°C ... +70°C MS700458: -40°C ... +70°C  MS700455: -25°C ... +85°C MS700456: -40°C ... +85°C MS700457: -40°C ... +85°C MS700458: -40°C ... +85°C
<b>Derating</b>	61-70°C  56-70°C	5 % / °C (MS700455) 2.5 % / °C (MS700456/457) 2.5 % / °C (MS700458)
<b>Rel. Humidity</b>	Non condensing	20..90 % (MS700455) 20..95 % (MS700456/457/458)
<b>Cooling</b>	25 mm clearance on all sides	Convection
<b>Reliability (MTBF)</b>	MIL-HDBK-217F, GF 25°C Bellcore Issue 6, Method case 3, GB-GC	> 273.000 h (MS700455) > 512.000 h (MS700456) > 466.000 h (MS700457) > 487.000 h (MS700458)
<b>Dimensions</b>	(B x T x H)	MS700455: 45 x 91 x 75 mm MS700456: 63,5 x 116,6 x 125 mm MS700457: 83 x 116 x 125 mm MS700458: 175 x 116 x 125 mm
<b>Weight</b>		MS700455: 260 g MS700456: 920 g MS700457: 1000 g MS700458: 1920 g
<b>Enclosure material</b>		Plastic (MS700455) Metal (MS700456/457/458)
<b>Mounting</b>	DIN-Rail as per EN50022-35x15/7.5 (Snap-on self-locking spring)	

## Redundancy

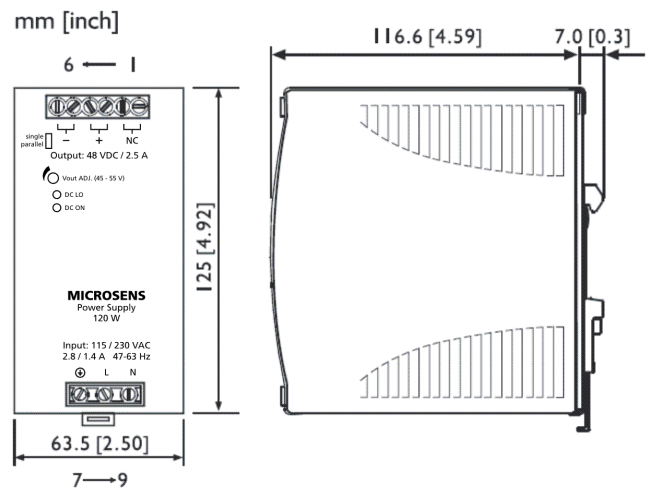
For redundancy it is possible to operate up to 3 devices (only MS700456 and MS700457) in parallel. Ensure that the switch on the front panel is in upper (parallel) position. Ensure that all connecting wires used are the same type, gauge and length. The output voltages must be adjusted to the exact same values. For parallel operation a minimum 10 % load is required. (Loading conditions: 10 to 90 %)

## Dimensions and Connections

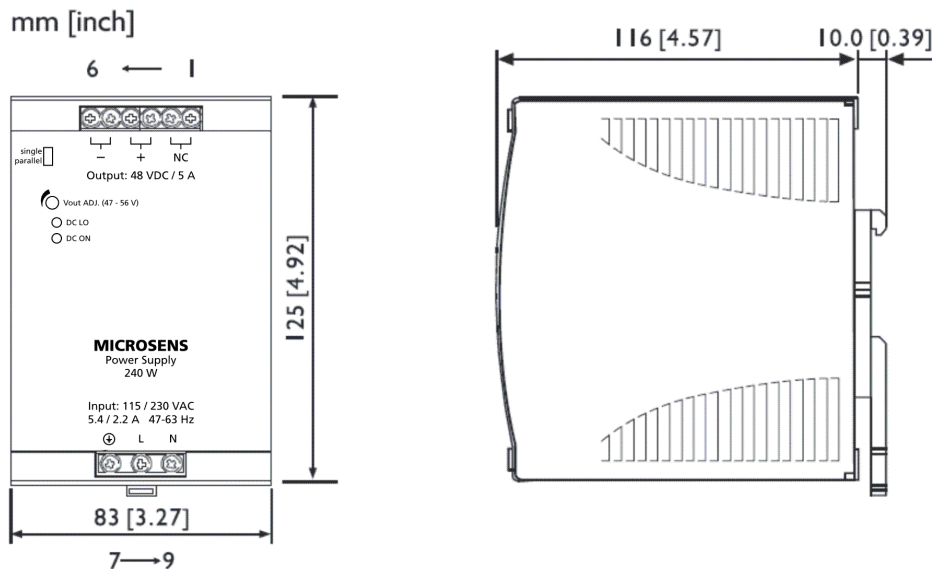
### MS700455



### MS700456



### MS700457



**MS700455**

Input Connector

- 5: PE
- 6: N
- 7: L

Output Connector

- 1: VCC-
- 2: VCC-
- 3: VCC+
- 4: VCC+

**MS700456/MS700457**

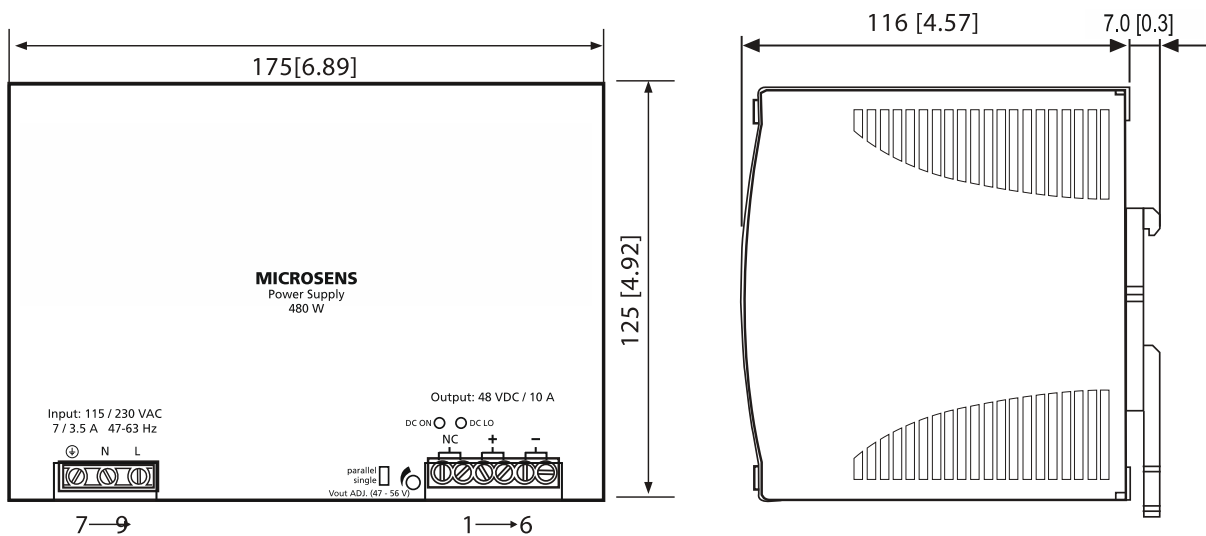
Input Connector

- 7: PE
- 8: L
- 9: N

Output Connector

- 1: NC
- 2: NC
- 3: VCC+
- 4: VCC+
- 5: VCC-
- 6: VCC-

**MS700458**



**MS700458**

Input Connector

- 7: PE
- 8: N
- 9: L

Output Connector

- 1: DC Good Relay
- 2: DC Good Relay
- 3: VCC+
- 4: VCC+
- 5: VCC-
- 6: VCC-

## Ordering Information

	Description	Art.-No.
	<b>Compact Power Supplies for Industrial Use</b>	
	DIN-Rail Power Supply 50 Watt 48 V / 1.05 A, Wide Range 85-264 VAC	<b>MS700455</b>
	DIN-Rail Power Supply 120 Watt 48 V / 2.5 A, Wide Range 90-132/180-264 VAC (auto select)	<b>MS700456</b>
	DIN-Rail Power Supply 240 Watt 48 V / 5 A, Wide Range 90-132/180-264 VAC (auto select)	<b>MS700457</b>
	DIN-Rail Power Supply 480 Watt 48 V / 10 A, Wide Range 90-132/180-264 VAC (auto select)	<b>MS700458</b>

This document in whole or in part may not be duplicated, reproduced, stored or retransmitted without prior written permission of MICROSENS GmbH & Co. KG. All information in this document is provided 'as is' and subject to change without notice. MICROSENS GmbH & Co. KG disclaims any liability for the correctness, completeness or quality of the information provided, fitness for a particular purpose or consecutive damage. MICROSENS is a trademark of MICROSENS GmbH & Co. KG. Any product names mentioned herein may be trademarks and/or registered trademarks of their respective companies. Aku/sh/hb/tk 19/17 MS70045x\_PWR\_DAT\_EN\_v1.0.3.docx