

Data Sheet

Industrial 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 120 and 240 W. The output voltage of 48 V can be increased up to 55 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 information with LED display
- High efficiency
- Wide range input 90..264 VAC or 127..370 VDC
- Adjustable output voltage 48..55 VDC
- Power ratings 120 W / 240 W
- Effective electric surge and overload protection
- Over temperature protection
- Compact dimensions
- Low weight
- Simple mounting on DIN-rails
- Screw terminal connectors at input and output

Technical Specifications

Type	48 VDC Industrial Power Supplies for PoE applications	
Input	Input voltage range ²	90..264 VAC or 127..370 VDC [DC input operation possible by connecting AC/L(+), AC/N(-)]
	Input frequency (AC)	47-63 Hz
	Input current (115/230 VAC)	2.25/1.3 A (MS700446) 2.5/1.3 A (MS700447)
	AC inrush current	20 A (115 VAC) / 35 A (230 VAC)
	Leakage current	< 1 mA at 240 VAC
Output	Rated output voltage	48 VDC
	Adjustment range	48..55 VDC
	Rated output current	2.5 A (MS700446) 5 A (MS700447)
	Current range	0~2.5 A (MS700446) 0~5 A (MS700447)
	Rated output power	120 W (MS700446) 240 W (MS700447)
	Ripple and noise (20MHz bandwidth)	< 150 mVpp
	Voltage tolerance ³	±1 %
	Line regulation	±0.5 %
	Load regulation	±1 %
	Setup time (230 VAC/ 115 VAC)	1200/2500 ms (MS700446) 1500/3000 ms (MS700447)
	Rise time	60 ms (MS700446) 100 ms (MS700447)
	Hold-up time (230 VAC/ 115 VAC)	16/10 ms (MS700446) 28/22 ms (MS700447)
Efficiency	Typical value	89 % (MS700446) 90 % (MS700447)
Protection	Overload	105~130 % of rated power (Constant current limiting, recovers automatically after fault condition is removed)
	Over voltage	56~65 V (shut-down output voltage, repowers automatically)
	Over temperature	shut-down output voltage, repowers automatically
LED Indicator	Green	DC on

Technical Specifications (continued)

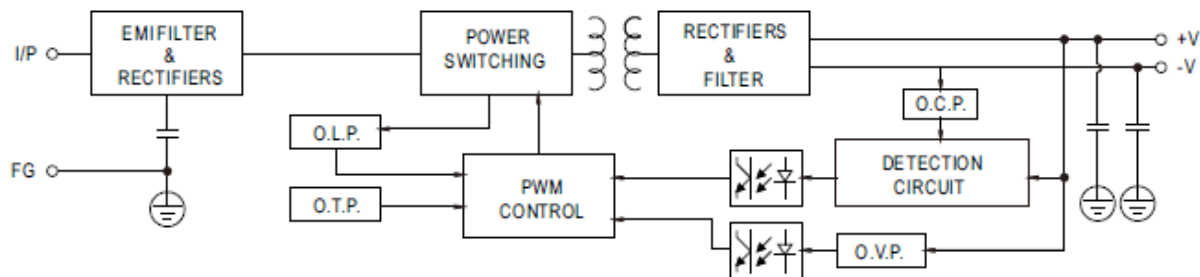
Safety	Standard	EN60950-1
	Withstand voltage	Input to output: 3 kVAC Input to FG: 2 kVAC Output to FG: 0.5 kVAC
	Isolation resistance (at 500 VDC, 25° C and 70% Relative Humidity)	Output to FG: > 100 MOhm Input to FG: > 100 MOhm Output to FG: > 100 MOhm
EMC	Emission	EN55032, EN61204-3 Class B, EN61000-3-2/-3
	Immunity	EN55024, EN61000-4-2,3,4,5,6,8,11, EN61000-6-2 (EN50082-2), EN61204-3, heavy industry level, criteria A
CE	Low Voltage Directive	2006/95/EC
	EMC	2004/108/EC
	RoHS	2011/65/EU
Environmental Conditions	Operating temperature	-20°C ... +70°C
	Storage temperature	-40°C ... +85°C
	Temp. coefficient	±0.03 %/° C (0-50° C)
	Relative humidity	20-95 % (non-condensing)
	Vibration	Component: 10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6
Cooling	Free air convection with sufficient clearance on all sides	On top: 40 mm at full load
		On bottom: 25 mm at full load Sides: 5mm at full load and 15 mm near of heat sources
Reliability (MTBF)	MIL-HDBK-217F, GF 25°C	> 456.300 h (MS700446)
		> 230.200 h (MS700447)
Dimensions	(W x H x D)	40 x 125.2 x 113.5 mm (MS700446)
		63 x 125.2 x 113.5 mm (MS700447)
Weight		0.6 Kg (MS700446)
		1 Kg (MS700447)
Enclosure material		Metal
Mounting	DIN-Rail as per EN50022-35x15/7.5 (Snap-on self-locking spring)	

¹ All parameters NOT specially mentioned are measured at 230 VAC input, rated load and 25° C of ambient temperature.

² At input voltages below 100 V derating must be considered. (MS700446: 1%/V; MS700447: 2%/V)

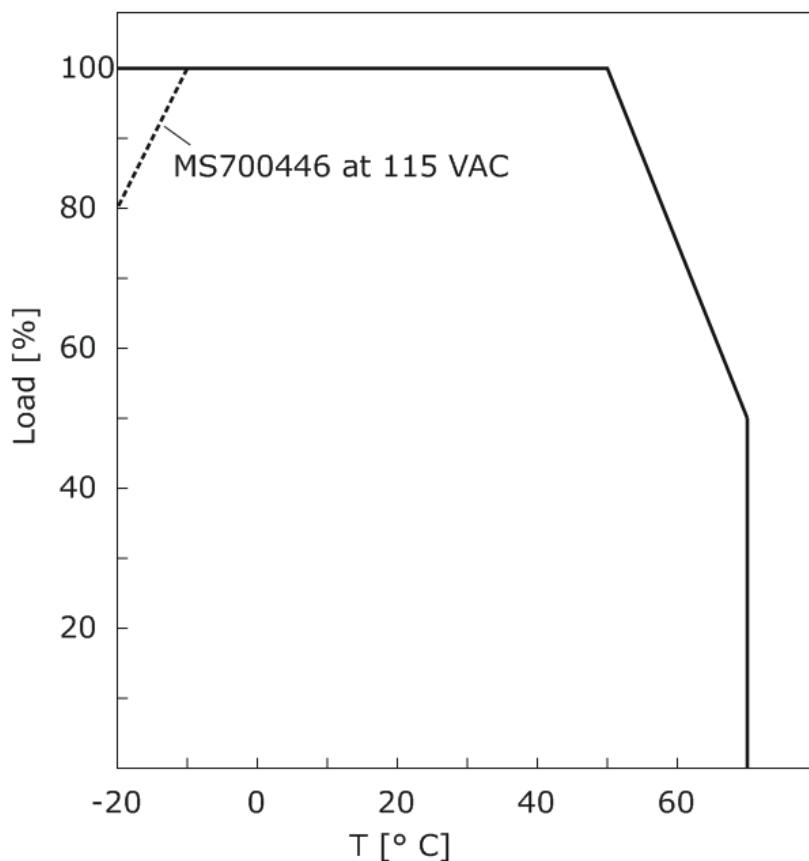
³ Tolerance includes set-up tolerance, line regulation and load regulation.

Block Diagram



Thermal Derating

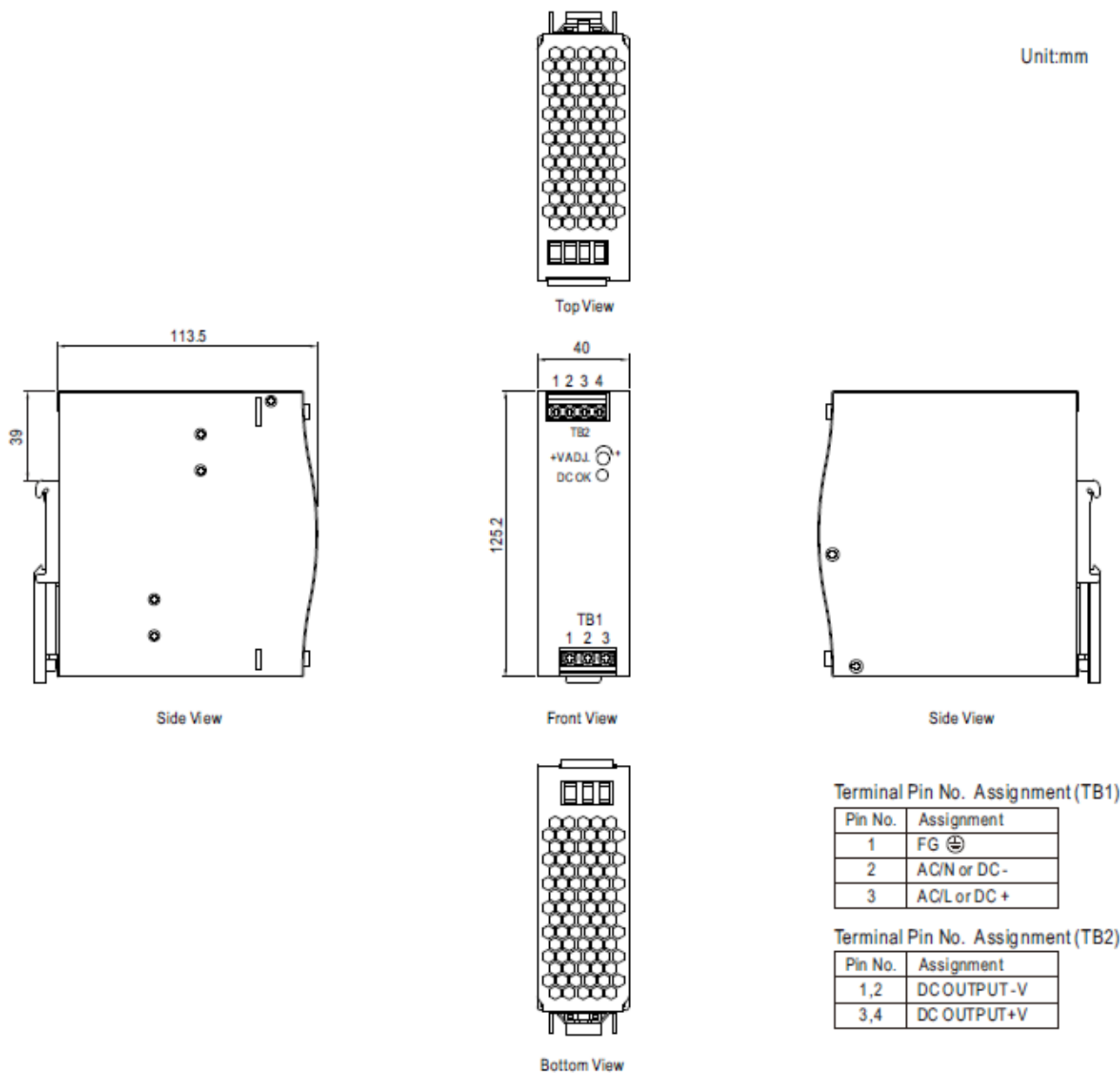
The following diagram shows the derating curve of both power supplies MS700446 and MS700447. At high temperature the curve is identical but MS700447 has additional derating at low temperatures.



Dimensions and Connections

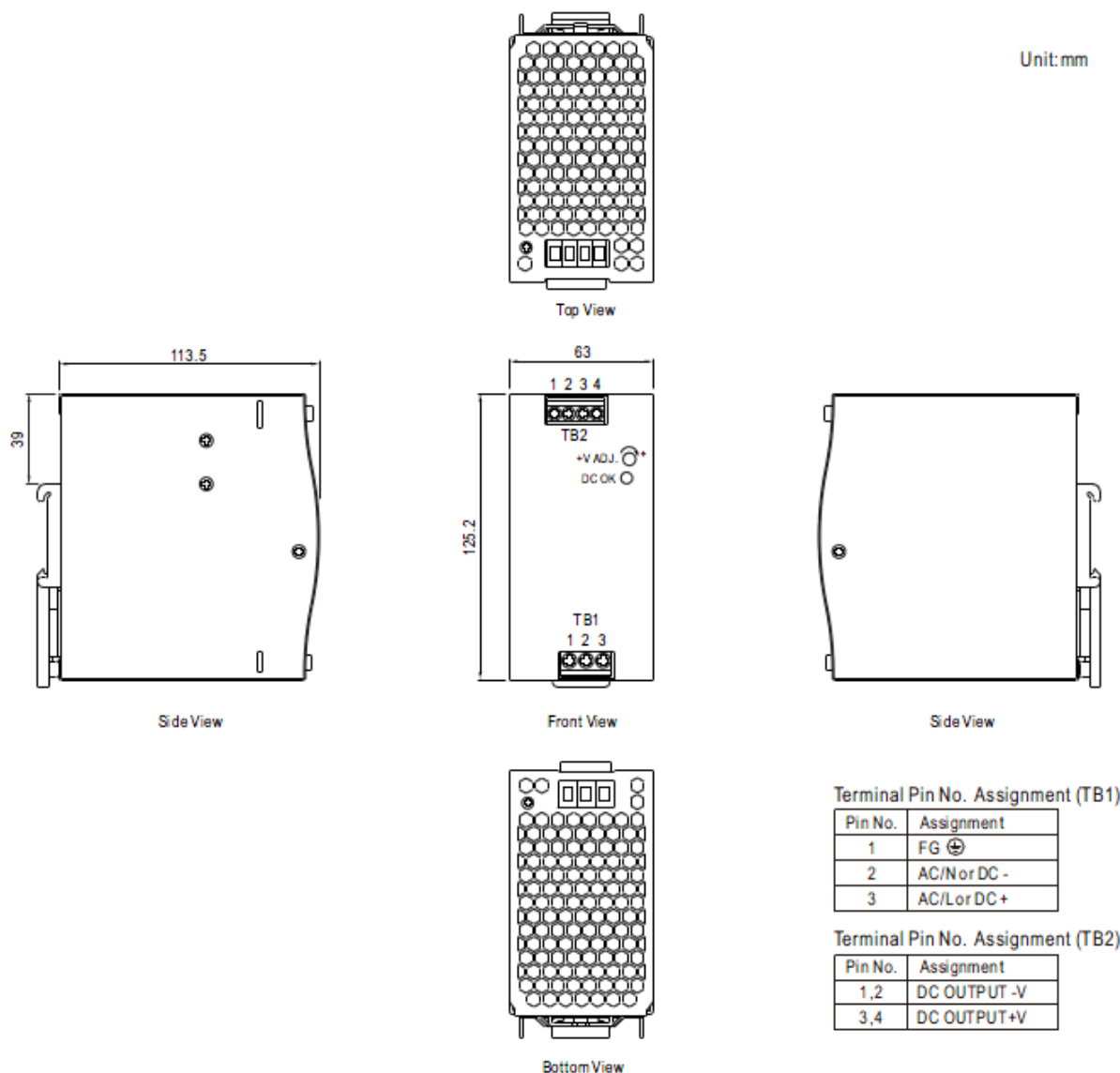
MS700446

Unit:mm



Dimensions and Connections (continued)

MS700447



Ordering Information

Description	Art.-No.
48 VDC Industrial Power Supplies for PoE applications	
DIN-Rail Power Supply 120 Watt 48 V / 2.5 A, Wide Range Input 127-264 VAC	MS700446
DIN-Rail Power Supply 240 Watt 48 V / 5 A, Wide Range Input 127-264 VAC	MS700447

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