

# MRS-350-S series

350W Constant Voltage Enclosed Switching Power Supply



## ■ Features:

- Selectable AC input range: 90~132VAC / 180~264VAC
- Low no-load power consumption < 0.75W
- Protections: Over current / Short circuit / Over Voltage / Over temperature
- Compact size with a low 1U profile
- LED indicator for power on
- Wide range of operating temperature range: -30°C to +70°C
- Operating altitude up to 5000m



## MODEL NUMBERING

MRS	-	350	-	X	-	S	-	Y
SERIES		RATED OUTPUT POWER		RATED OUTPUT VOLTAGE		INPUT VOLTAGE RANGE		OPTIONS
		350 means 350W		X = 05	5V	S means	Y = C	Terminal block with cover
				X = 12	12V	90~132VAC / 180~264VAC / 240~373VDC		
				X = 15	15V		Y = Q	Conformal coating
				X = 24	24V			
				X = 36	36V			
				X = 48	48V			

## ELECTRICAL SPECIFICATION

MODEL	MRS-350-05-S	MRS-350-12-S	MRS-350-15-S	MRS-350-24-S	MRS-350-36-S	MRS-350-48-S
<b>OUTPUT</b>						
RATED VOLTAGE	5V	12V	15V	24V	36V	48V
RATED CURRENT	60A	29A	23.2A	14.6A	9.7A	7.3A
RATED POWER	300W	348W	348W	350.4W	349.2W	350.4W
LINE REGULATION	± 0.5%					
LOAD REGULATION	± 2.0%	± 1.0%	± 0.5%			
RIPPLE & NOISE (MAX.) [3]	150mV <sub>p-p</sub>				200mV <sub>p-p</sub>	
HOLD UP TIME (TYP.)	16ms / 230VAC at full load; 12ms / 115VAC at full load					
<b>INPUT</b>						
VOLTAGE RANGE	SWITCH IN POSITION 115	90 ÷ 132VAC				
	SWITCH IN POSITION 230	180 ÷ 264VAC; 240 ÷ 373VDC				
FREQUENCY RANGE	47 ÷ 63Hz					
EFFICIENCY (TYP.)	83.5%	85%	86%	87%	88%	88.5%
AC CURRENT (TYP.)	3.4A / 230VAC; 6.4A / 115VAC					
INRUSH CURRENT (TYP.)	60A / 230VAC; 60A / 115VAC					
LEAKAGE CURRENT (MAX.)	0.75mA / 240VAC					

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## PROTECTIONS

<b>OVER CURRENT</b>	Range: 110% ÷ 180% rated current Type: hiccup mode, auto-recovery.
<b>SHORT CIRCUIT</b>	Type: hiccup mode, auto-recovery.
<b>OVER VOLTAGE</b>	5.75 ÷ 6.75VDC   13.8 ÷ 16.2VDC   18 ÷ 21VDC   28.8 ÷ 33.6VDC   41.4 ÷ 46.8VDC   55.2 ÷ 59.5VDC Type: hiccup mode, auto-recovery.
<b>OVER TEMPERATURE</b>	Type: hiccup mode, auto-recovery.

## WORKING ENVIRONMENT

<b>WORKING TEMPERATURE</b>	-30°C ÷ 70°C (Refer to Temperature Derating Curve)
<b>WORKING HUMIDITY</b>	20 ÷ 90% RH non-condensing
<b>STORAGE TEMPERATURE AND HUMIDITY</b>	-40°C ÷ 85°C, 10 ÷ 95% RH non-condensing
<b>TEMPERATURE COEFFICIENT</b>	± 0.02% / °C
<b>OPERATION ALTITUDE (MAX.)</b>	[6] 5000m

## SAFETY AND EMC REGULATIONS

<b>SAFETY STANDARDS</b>	Compliance to EN62368-1, EN60335-1
<b>WITHSTAND VOLTAGE</b>	IN/OUT: 3000VAC (< 10mA); IN/GND: 2000VAC (< 10mA) ; OUT/GND: 500VAC (< 10mA)
<b>ISOLATION RESISTANCE</b>	IN/OUT, IN/GND, OUT/GND: 100MΩ/500VDC
<b>EMC EMISSION</b>	Compliance to EN55032
<b>EMC IMMUNITY</b>	Compliance to EN55035; EN61000-4-2, -3, -4, -5, -6, -11

## OTHERS

<b>FAN ON/OFF CONTROL</b>	Temperature for RTH3 > 50°C -> ON; Temperature for RTH3 < 40°C -> OFF
<b>MTBF (MIN.)</b>	300 000h / 25°C per MIL-HDBK-217F
<b>DIMENSIONS AND CASE MATERIAL</b>	215 x 115 x 30mm (L x W x H); Metal (AL1100, SGCC)
<b>NET WEIGHT</b>	0.7kg

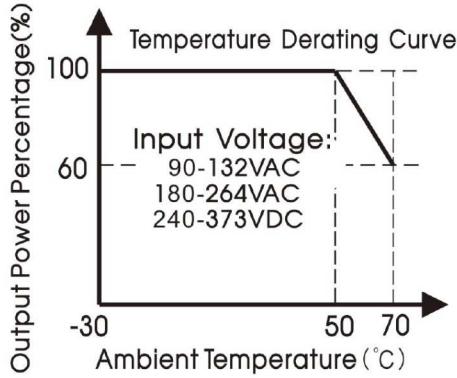
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load, 25°C of ambient temperature and humidity <75% RH.
2. One magnetic bead should be coupled with the output load line during CE/RE testing.
3. Ripple & noise is measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µF i 47µF parallel capacitor.
4. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability.
5. Case needs to be connected to the earth (⊕) of the system when the terminal equipment is operating.
6. The room temperature derating of 5°C / 1000m is needed for operating altitude greater than 2000m.
6. Power supply is considered as component not intended to apply by end-user. Power supply meets safety and EMC standards however the final equipment with power supply must be re-qualified to comply with EMC Directives.
7. This power supply does not meet the harmonic current requirements specified in EN61000-3-2. Please do not use this power supply under the following conditions:
  - a) The terminal equipment is used in the European Union
  - b) Supporting terminals are connected to a public power grid with 220VAC or a higher voltage that comply with the requirements of EN61000-3-2.
  - c) The power supply is installed in terminal equipment with average or continuous input power greater than 75W.
  - d) The power supply belongs to a part of lighting system.Exception: The power supply used in the following terminal equipment does not need to meet EN61000-3-2:
  - a) Professional equipment with a total rated input power greater than 1000W.
  - b) Symmetrically controller heating element with a rated power less than or equal to 200W.

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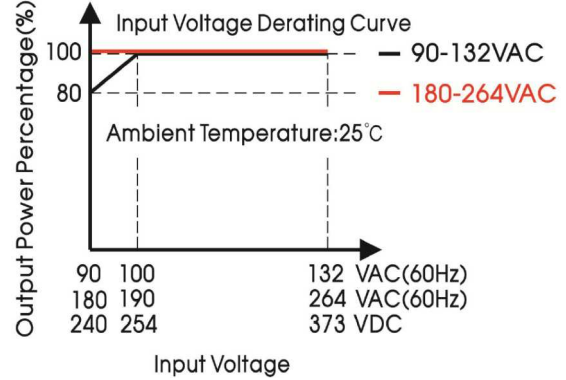
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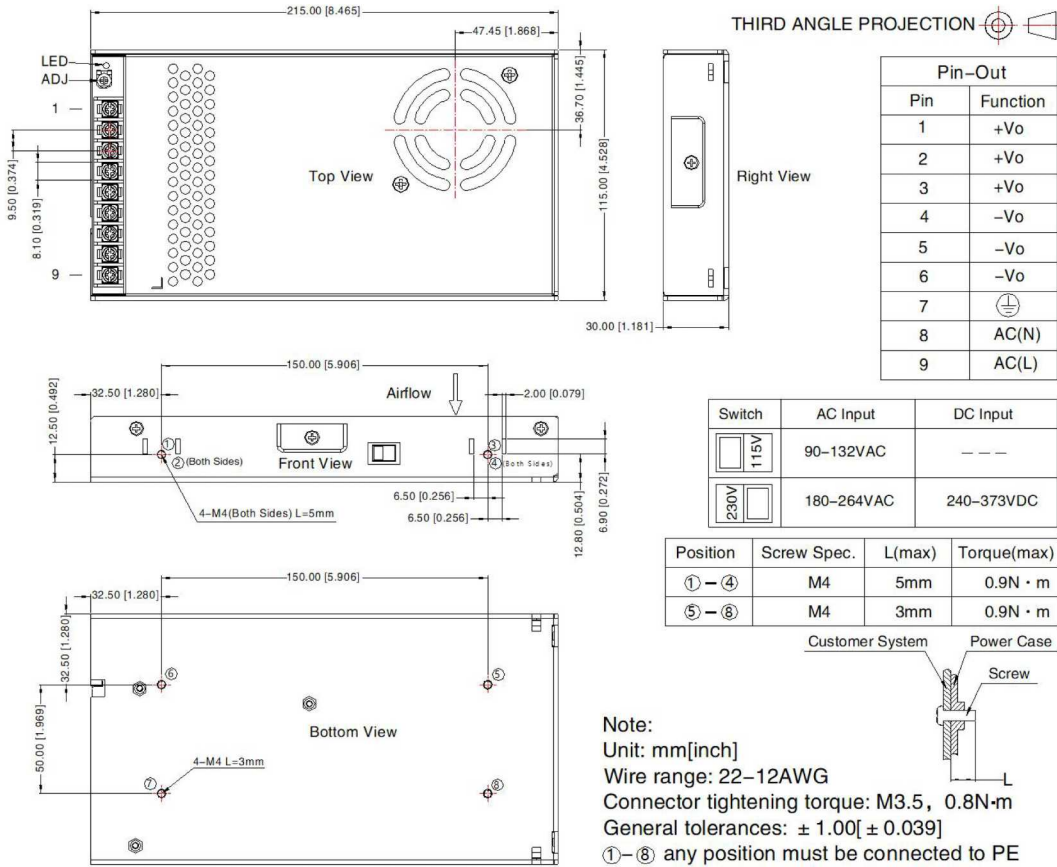
## DERATING CURVE



## STATIC CHARACTERISTIC



## MECHANICAL SPECIFICATION of MRS-350-S and MRS-350-S-Q



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## MECHANICAL SPECIFICATION of MRS-350-S-C

