

MRS-50-U series

50W Constant Voltage Enclosed Switching Power Supply



■ Features:

- Universal AC input / Full range
- Low no-load power consumption < 0.3W
- Protections: Over current / Short circuit / Over Voltage
- 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	-	50	-	X	-	U	-	Y
SERIES		RATED OUTPUT POWER		RATED OUTPUT VOLTAGE		INPUT VOLTAGE RANGE		OPTIONS
ENCLOSED TYPE SWITCHING POWER SUPPLY, 1U PROFILE, CONSTANT VOLTAGE DESIGN		50 means 50W		X = 05	5V	U means 85~264VAC / 120~373VDC	Y = C	Terminal block with cover
				X = 12	12V			
				X = 15	15V		Y = Q	Conformal coating
				X = 24	24V			
				X = 36	36V			
				X = 48	48V			

ELECTRICAL SPECIFICATION

MODEL	MRS-50-05-U	MRS-50-12-U	MRS-50-15-U	MRS-50-24-U	MRS-50-36-U	MRS-50-48-U
OUTPUT						
<i>RATED VOLTAGE</i>	5V	12V	15V	24V	36V	48V
<i>ADJUSTABLE VOLTAGE RANGE (MIN.)</i>	4.5V ÷ 5.5V	10.2V ÷ 13.8V	13.5V ÷ 18V	21.6V ÷ 28.8V	32.4V ÷ 39.6V	43.2V ÷ 52.8V
<i>RATED CURRENT</i>	10A	4.2A	3.4A	2.2A	1.45A	1.1A
<i>RATED POWER</i>	50W	50.4W	51W	52.8W	52.8W	52.8W
<i>LINE REGULATION</i>	± 0.5%					
<i>LOAD REGULATION</i>	± 1.0%	± 0.5%				
<i>RIPPLE & NOISE (MAX.) [2]</i>	80mV _{p-p}	120mV _{p-p}	120mV _{p-p}	150mV _{p-p}	200mV _{p-p}	200mV _{p-p}
<i>HOLD UP TIME (TYP.)</i>	30ms / 230VAC at full load; 8ms / 115VAC at full load					
INPUT						
<i>VOLTAGE RANGE</i>	85 ÷ 264VAC; 120 ÷ 373VDC					
<i>FREQUENCY RANGE</i>	47 ÷ 63Hz					
<i>EFFICIENCY (TYP.)</i>	86%	87%	88%	89%	89%	90%
<i>AC CURRENT (TYP.)</i>	0.8A / 230VAC; 1.2A / 115VAC					
<i>INRUSH CURRENT (TYP.)</i>	50A / 230VAC; 30A / 115VAC					
<i>LEAKAGE CURRENT (MAX.)</i>	0.75mA / 240VAC					

PROTECTIONS

OVER CURRENT	Range: 110% ÷ 200% rated current					
	Type: hiccup mode, auto-recovery.					
SHORT CIRCUIT	Type: hiccup mode, auto-recovery.					
OVER VOLTAGE	≤ 6.3VDC	≤ 16.2VDC	≤ 21.75VDC	≤ 33.6VDC	≤ 48.6VDC	≤ 60.0VDC
	Type: shut down output voltage. Re-power on to recovery.					

WORKING ENVIRONMENT

WORKING TEMPERATURE	-30°C ÷ 70°C (Refer to Temperature Derating Curve)	
WORKING HUMIDITY	20 ÷ 90% RH non-condensing	
STORAGE TEMPERATURE AND HUMIDITY	-40°C ÷ 85°C, 10 ÷ 95% RH non-condensing	
TEMPERATURE COEFFICIENT	± 0.03% / °C	
OPERATION ALTITUDE (MAX.)	[5]	5000m

SAFETY AND EMC REGULATIONS

SAFETY STANDARDS	Compliance to EN62368-1, EN60335-1, EN61558-1, EN61558-2-16
WITHSTAND VOLTAGE	IN/OUT: 4000VAC (< 10mA); IN/GND: 2000VAC (< 10mA) ; OUT/GND: 1250VAC (< 10mA)
ISOLATION RESISTANCE	IN/OUT, IN/GND, OUT/GND: 100MΩ/500VDC
EMC EMISSION	Compliance to EN55032
EMC IMMUNITY	Compliance to EN55035; EN61000-4-2, -3, -4, -5, -6, -11
HARMONIC CURRENT	Compliance to EN61000-3-3, EN61000-3-2

OTHERS

MTBF (MIN.)	300 000h / 25°C per MIL-HDBK-217F
DIMENSIONS AND CASE MATERIAL	99 x 82 x 30mm (L x W x H); Metal (AL1100, SGCC)
NET WEIGHT	0.18kg

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load, 25°C of ambient temperature and humidity <75% RH.

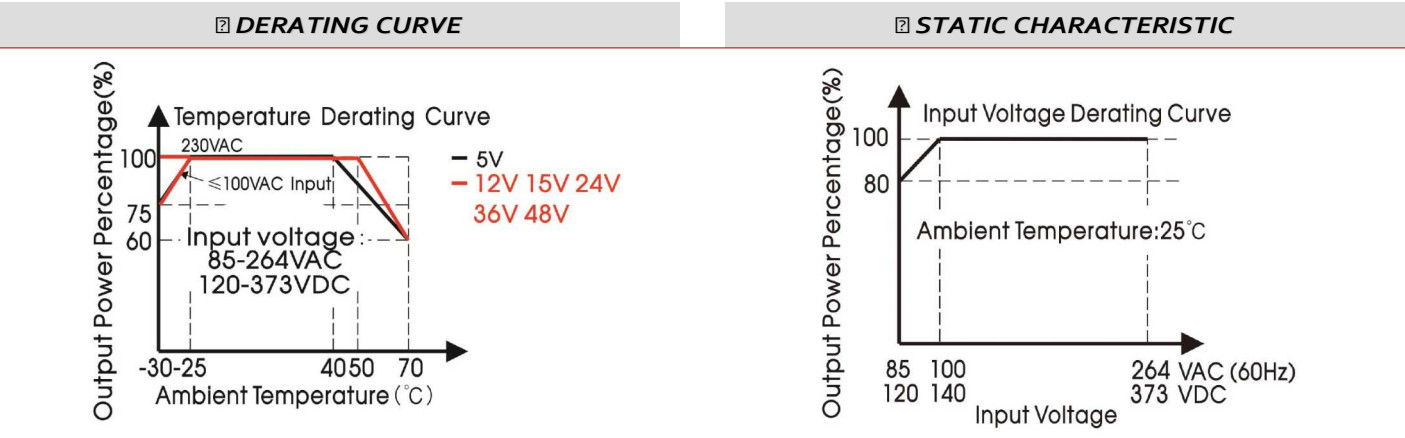
2. Ripple & noise is measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μF i 47μF parallel capacitor.

3. 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.

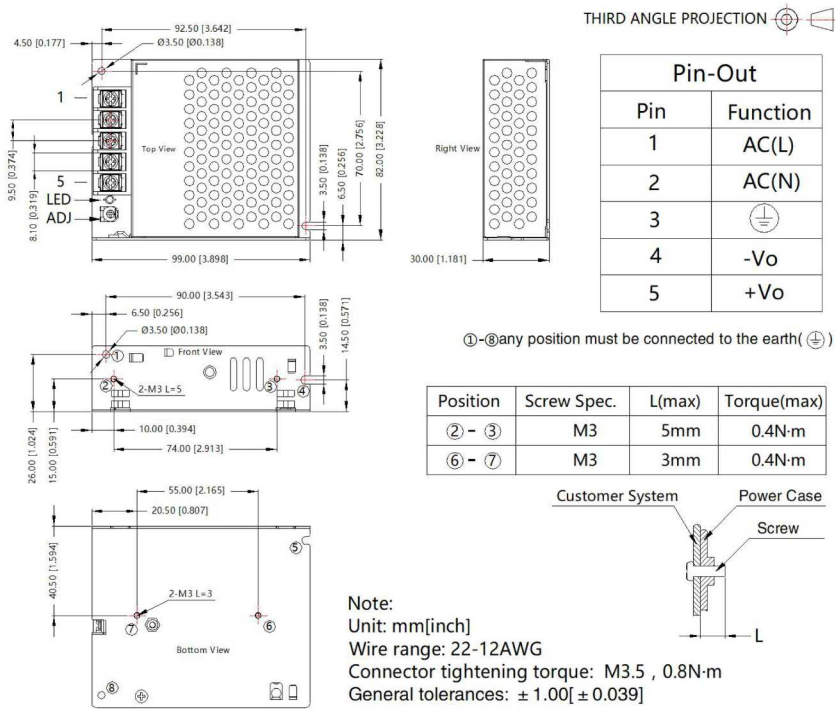
4. Case needs to be connected to the earth (⊕) of the system when the terminal equipment in operating.

5. The room temperature derating of 5°C / 1000m is needed for operating altitude greater than 2000m.

6. Power supply is considered as component not indented to apply by end-user. Power supply meets safety and EMC standards however the final equipment with power supply must be re-quality to comply with EMC Directives.



MECHANICAL SPECIFICATION of MRS-50-U and MRS-50-U-Q



MECHANICAL SPECIFICATION of MRS-50-U-C

