

MRS-100-U series

100W Constant Voltage Enclosed Switching Power Supply



■ Features:

- Universal AC input / Full range
- Low no-load power consumption < 0.3W for 5V/12V/15V/24V; < 0.5W for 36V/48V
- 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	-	100	-	X	-	U	-	Y
SERIES		RATED OUTPUT POWER		RATED OUTPUT VOLTAGE		INPUT VOLTAGE RANGE		OPTIONS
ENCLOSED TYPE SWITCHING POWER SUPPLY, 1U PROFILE, CONSTANT VOLTAGE DESIGN		100 means 100W		X = 05	5V	U means 85~264VAC / 120~373VDC		Terminal block with cover
			X = 12	12V	Y = C			
			X = 15	15V				
			X = 24	24V				
			X = 36	36V		Y = Q	Conformal coating	
			X = 48	48V				

🔍 ELECTRICAL SPECIFICATION

MODEL	MRS-100-05-U	MRS-100-12-U	MRS-100-15-U	MRS-100-24-U	MRS-100-36-U	MRS-100-48-U
OUTPUT						
RATED VOLTAGE	5V	12V	15V	24V	36V	48V
ADJUSTABLE VOLTAGE RANGE (MIN.)	4.5V ÷ 5.5V	10.2V ÷ 13.8V	13.5V ÷ 18V	21.6V ÷ 28.8V	32.4V ÷ 39.6V	43.2V ÷ 52.8V
RATED CURRENT	18A	8.5A	7A	4.5A	2.8A	2.8A
RATED POWER	90W	105W	105W	108W	100.8W	110.4W
LINE REGULATION	± 0.5%					
LOAD REGULATION	± 1.0%	± 0.5%				
RIPPLE & NOISE (MAX.) [2]	100mV _{p-p}	120mV _{p-p}	120mV _{p-p}	150mV _{p-p}	200mV _{p-p}	200mV _{p-p}
HOLD UP TIME (TYP.)	55ms / 230VAC at full load; 10ms / 115VAC at full load					
INPUT						
VOLTAGE RANGE	85 ÷ 264VAC; 120 ÷ 373VDC					
FREQUENCY RANGE	47 ÷ 63Hz					
EFFICIENCY (TYP.)	86%	87.5%	87.5%	90%	90%	91%
AC CURRENT (TYP.)	1.5A / 230VAC; 3A / 115VAC					
INRUSH CURRENT (TYP.)	65A / 230VAC; 35A / 115VAC					
LEAKAGE CURRENT (MAX.)	0.75mA / 240VAC					

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PROTECTIONS

OVER CURRENT	Range: 110% ÷ 160% rated current					
	Type: hiccup mode, auto-recovery.					
SHORT CIRCUIT	Type: hiccup mode, auto-recovery.					
OVER VOLTAGE	≤ 7.5VDC	≤ 19.2VDC	≤ 24VDC	≤ 38.4VDC	≤ 57.6VDC	≤ 60VDC
	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

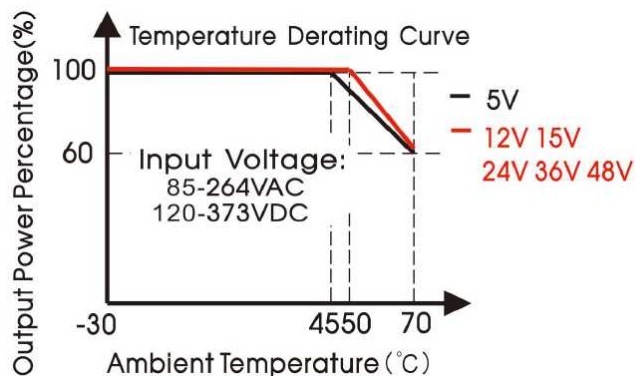
SAFETY STANDARDS	Compliance to EN62368-1, EN60335-1, EN61558-1, EN61558-2-16					
WITHSTAND VOLTAGE	IN/OUT: 4000VAC (< 10mA); IN/GND: 2000VAC (< 10mA) ; OUT/GND: 1250VAC (< 10mA)					
ISOLATION RESISTANCE	IN/OUT, IN/GND, OUT/GND: 100MΩ/500VDC					
EMC EMISSION	Compliance to EN55032					
EMC IMMUNITY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

OTHERS

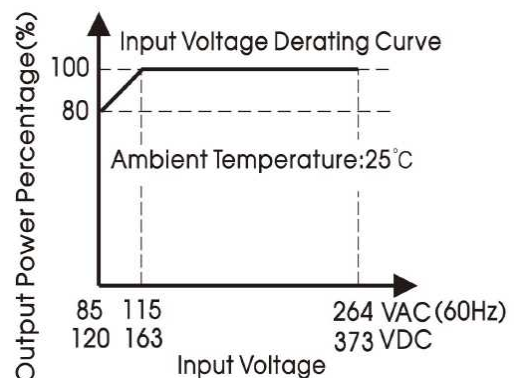
MTBF (MIN.)	300 000h / 25°C per MIL-HDBK-217F					
DIMENSIONS AND CASE MATERIAL	129 x 97 x 30mm (L x W x H); Metal (AL1100, SGCC)					
NET WEIGHT	5V: 0.35kg; 12V/15V/24V/36V/48V: 0.305kg					

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.

DERATING CURVE



STATIC CHARACTERISTIC

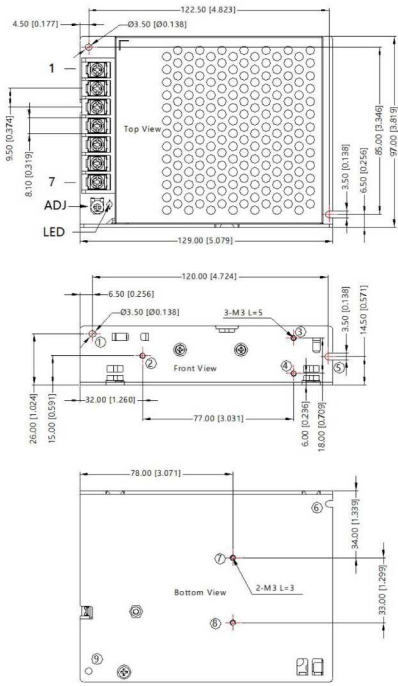


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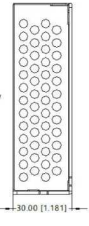
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MECHANICAL SPECIFICATION of MRS-100-U and MRS-100-U-Q



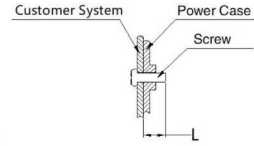
THIRD ANGLE PROJECTION



Pin-Out	
Pin	Function
1	AC(L)
2	AC(N)
3	⊕
4	-Vo
5	-Vo
6	+Vo
7	+Vo

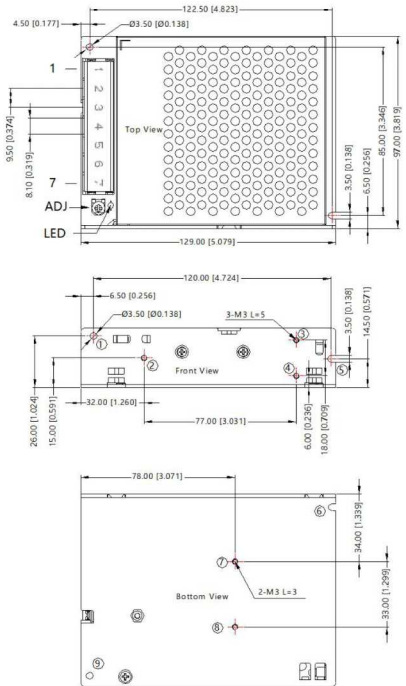
①-③ any position must be connected to the earth (⊕)

Position	Screw Spec.	L(max)	Torque(max)
② - ④	M3	5mm	0.4N·m
⑦ - ⑧	M3	3mm	0.4N·m

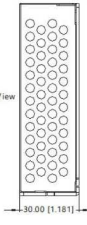


Note:
 Unit: mm[inch]
 Wire range: 22-12AWG
 Connector tightening torque: M3.5, 0.8N·m
 General tolerances: ± 1.00[± 0.039]

MECHANICAL SPECIFICATION of MRS-100-U-C



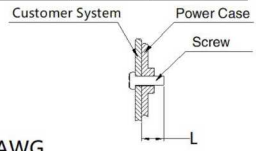
THIRD ANGLE PROJECTION



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3	⊕
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