

MFS-320-H series

320W Constant Voltage Enclosed Switching Power Supply with PFC function



■ Features:

- Universal AC input / Full range
- Built-in active PFC function
- 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
- Built-in DC Fan



MODEL NUMBERING

MFS	-	320	-	X	-	H	-	Y
SERIES	RATED OUTPUT POWER		RATED OUTPUT VOLTAGE		INPUT VOLTAGE RANGE		OPTIONS	
ENCLOSED TYPE SWITCHING POWER SUPPLY, 1U PROFILE, CONSTANT VOLTAGE DESIGN, PFC FUNCTION	320 means 320W		X = 04	4V	H means 85~305VAC / 120~430VDC		Y = C	Terminal block with cover
			X = 05	5V			Y = Q	Conformal coating
			X = 12	12V				
			X = 15	15V				
			X = 24	24V				
			X = 27	27V				
			X = 48	48V				

ELECTRICAL SPECIFICATION

MODEL	MFS-200-04-H	MFS-200-05-H	MFS-200-12-H	MFS-200-15-H	MFS-200-24-H	MFS-200-27-H	MFS-200-48-H
OUTPUT							
<i>RATED VOLTAGE</i>	4V	5V	12V	15V	24V	27V	48V
<i>ADJUSTABLE VOLTAGE RANGE (MIN.)</i>	3.6V ÷ 4.4V	4.5V ÷ 5.5V	10V ÷ 13.2V	13.5V ÷ 18V	20V ÷ 26.4V	26V ÷ 31.5V	41V ÷ 56V
<i>RATED CURRENT</i>	60A	60A	26.7A	21.4A	13.4A	11.9A	6.7A
<i>RATED POWER</i>	240W	300W	320.4W	321W	321.6W	321.6W	321.6W
<i>LINE REGULATION</i>	± 0.5%	± 0.5%	± 0.3%	± 0.3%	± 0.2%	± 0.2%	± 0.2%
<i>LOAD REGULATION</i>	± 1%	± 1%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%
<i>RIPPLE & NOISE (MAX.) [2]</i>	150mV _{p-p}	150mV _{p-p}	150mV _{p-p}	150mV _{p-p}	150mV _{p-p}	200mV _{p-p}	200mV _{p-p}
<i>HOLD UP TIME (TYP.)</i>	12ms / 115VAC at full load						
INPUT							
<i>VOLTAGE RANGE</i>	85 ÷ 305VAC; 120 ÷ 430VDC						
<i>FREQUENCY RANGE</i>	47 ÷ 63Hz						
<i>EFFICIENCY (TYP.)</i>	83%	84%	86.5%	89%	88.5%	88%	89%
<i>POWER FACTOR (TYP.)</i>	0.95 / 230VAC; 0.98 / 115VAC						
<i>AC CURRENT (TYP.)</i>	2.1A / 230VAC; 4.2A / 115VAC						
<i>INRUSH CURRENT (TYP.)</i>	65A / 230VAC; 35A / 115VAC						

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PROTECTIONS

OVER CURRENT	Range: 105% ÷ 200% rated current					
	Type: hiccup mode, auto-recovery.					
SHORT CIRCUIT	Type: auto-recovery < 5s after the short circuit disappear					
OVER VOLTAGE	≤ 5.3VDC	≤ 7VDC	≤ 16.2VDC	≤ 21.8VDC	≤ 32.4VDC	≤ 35VDC
	Type: hiccup mode, auto-recovery.					
OVER TEMPERATURE	Type: hiccup mode, auto-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 (0°C ÷ +45°C)

SAFETY AND EMC REGULATIONS

SAFETY STANDARDS	5V/12V/15V/24V/48V	4V/27V
	Compliance to EN62368-1	No CE mark
	Design refer to IEC/UL62368-1, GB4943.1, IEC60950-1, EN60335-1	Design refer to IEC/EN/UL62368-1, GB4943.1, IEC60950-1, EN60335-1
WITHSTAND VOLTAGE	IN/OUT: 4000VAC (< 10mA); IN/GND: 2000VAC (< 10mA) ; OUT/GND: 500VAC (< 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 class A and class D	

OTHERS

COOLING METHOD	Forced Air cooling
MTBF (MIN.)	250 000h / 25°C per MIL-HDBK-217F
DIMENSIONS AND CASE MATERIAL	215 x 115 x 30mm (L x W x H); Metal (AL1100, SGCC)
NET WEIGHT	0.75kg

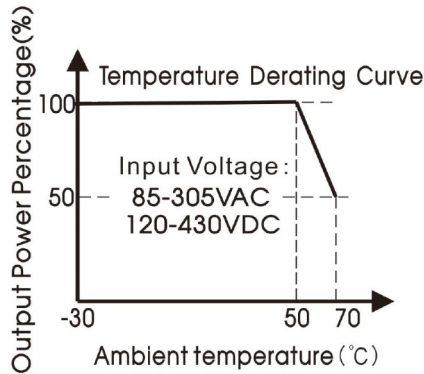
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load, 25°C of ambient temperature and humidity <75% RH.
2. Ripple & noise is measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μF i 47μF parallel capacitor.
3. In order to improve the efficiency 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.
7. One magnetic bead (nickel-zinc ferrite) should be coupled with the output load line during CE/RE testing.
8. All EMC items are tested on a metal plate (L x W x H, 450mm x 450mm x 3mm), the product should be assembled on such a plate.

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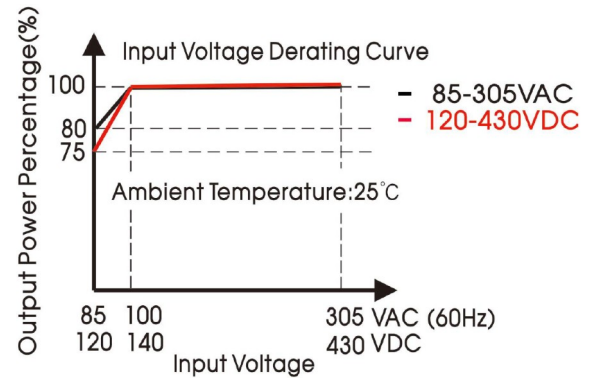
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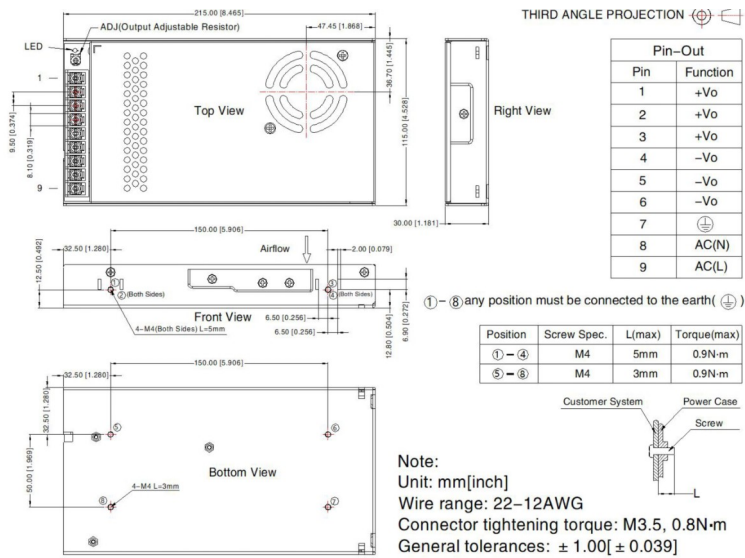
DERATING CURVE



STATIC CHARACTERISTIC



MECHANICAL SPECIFICATION of MFS-320-H and MFS-320-H-Q



MECHANICAL SPECIFICATION of MFS-320-H-C

