

# 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			
				X = 12	12V			
				X = 15	15V		Y = Q	Conformal coating
				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 &amp; NOISE (MAX.) [2]</i>	150mV <sub>p-p</sub>	150mV <sub>p-p</sub>	150mV <sub>p-p</sub>	150mV <sub>p-p</sub>	150mV <sub>p-p</sub>	200mV <sub>p-p</sub>	200mV <sub>p-p</sub>
<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

<b>OVER CURRENT</b>	Range: 105% ÷ 200% rated current					
	Type: hiccup mode, auto-recovery.					
<b>SHORT CIRCUIT</b>	Type: auto-recovery < 5s after the short circuit disappear					
<b>OVER VOLTAGE</b>	≤ 5.3VDC	≤ 7VDC	≤ 16.2VDC	≤ 21.8VDC	≤ 32.4VDC	≤ 35VDC
	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>	± 0.03% / °C (0°C ÷ +45°C)

## SAFETY AND EMC REGULATIONS

<b>SAFETY STANDARDS</b>	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
<b>WITHSTAND VOLTAGE</b>	IN/OUT: 4000VAC (< 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	
<b>HARMONIC CURRENT</b>	Compliance to EN61000-3-3, EN61000-3-2 class A and class D	

## OTHERS

<b>COOLING METHOD</b>	Forced Air cooling
<b>MTBF (MIN.)</b>	250 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>	0.75kg

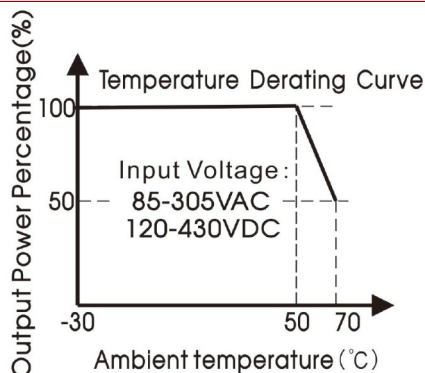
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load, 25°C of ambient temperature and humidity <75% RH.
2. Ripple & noise is measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μF i 47μF parallel capacitor.
3. In order to improve the efficiency 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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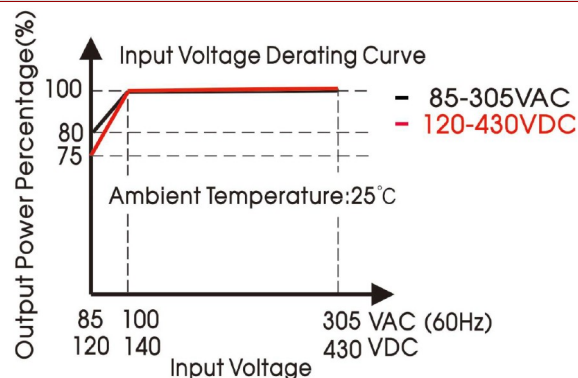
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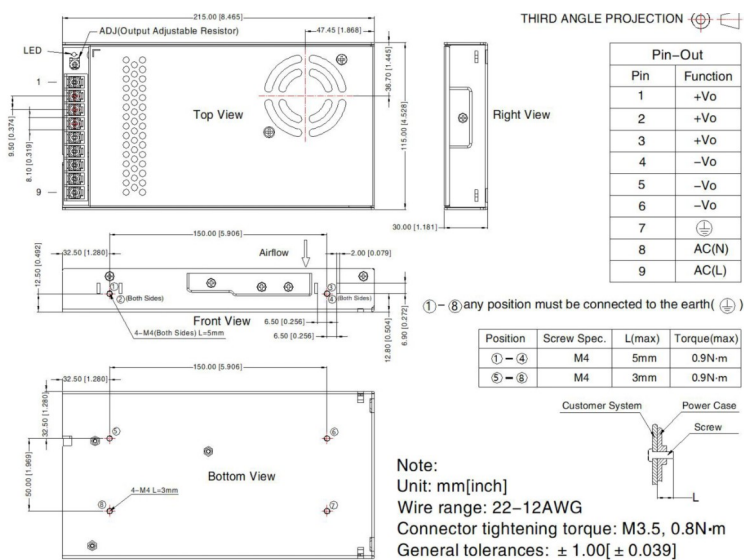
DERATING CURVE



STATIC CHARACTERISTIC



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



## MECHANICAL SPECIFICATION of MFS-320-H-C

