

# MCHQ600VxA series

600W LED Switching Power Supply (CV+CC) with output voltage and current level adjustment



## ■ Features:

- Universal AC input / Full range (Max. 305VAC)
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in active PFC function
- IP65 design for indoor and outdoor appliances
- Compliance to worldwide regulations for lighting
- Output voltage and constant current level adjustable by internal potentiometers



## © MODEL ENCODING

MCHQ	600V	X	A	-Y
Series	Rated output power	Rated output voltage	Adjustment of output voltage and constant current level by built-in potentiometers	Case color
		X = 12 -> 12VDC		-Y = blank -> grey
		X = 24 -> 24VDC		-Y = SC -> silver
		X = 36 -> 36VDC		
		X = 48 -> 54VDC		
		X = 54 -> 54VDC		

## © ELECTRICAL SPECIFICATION

MODEL	MCHQ600V12A	MCHQ600V24A	MCHQ600V36A	MCHQ600V48A	MCHQ600V54A
	MCHQ600V12A-SC	MCHQ600V24A-SC	MCHQ600V36A-SC	MCHQ600V48A-SC	MCHQ600V54A-SC
<b>OUTPUT</b>					
Rated Voltage	12V	24V	36V	48V	54V
Constant Current Region [2]	6 ÷ 12V	12 ÷ 24V	18 ÷ 36V	24 ÷ 48V	27 ÷ 54V
Rated Current	40A	25A	16.7A	12.5A	11.2A
Rated Power (max.)	480W	600W	600W	600W	600W
No Output Voltage (max.)	14V	27V	40V	53V	60V
Voltage Adjustment Range – Vadj potentiometer	10.2 ÷ 12.6V	20.4 ÷ 25.2V	30.6 ÷ 37.8V	40.8 ÷ 50.4V	45.9 ÷ 56.7V
Current Adjustment Range – Iadj potentiometer	20 ÷ 40A	12.5 ÷ 25A	8.3 ÷ 16.7A	6.2 ÷ 12.5A	5.6 ÷ 11.2A
Line Regulation	± 1%				
Load Regulation	± 3%				
Voltage Tolerance [3]	± 3%				
Current Tolerance [3]	± 5%				
Ripple & Noise (max.) [4]	150mV <sub>p-p</sub>	300mV <sub>p-p</sub>	300mV <sub>p-p</sub>	300mV <sub>p-p</sub>	300mV <sub>p-p</sub>
Setup, Rise [5]	500ms, 30ms				
Holdup time	30ms (230 VAC), 10ms (115 VAC) at full load				

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## INPUT

<b>Voltage Range</b>	108 ÷ 305VAC				
<b>Frequency Range</b>	47 ÷ 63Hz				
<b>Power Factor (typ.)</b>	PF > 0.98 / 115VAC; PF > 0.95 / 230VAC at full load				
<b>Efficiency (typ.)</b>	93%	95%	95%	95.5%	95%
<b>AC current (typ.)</b>	6A / 115VAC; 3A / 230VAC				
<b>Inrush current (max.)</b>	55A / 230VAC(25°C)				
<b>Leakage current</b>	0.7mA max (230VAC / 50Hz)				

## PROTECTIONS

<b>Over Current</b>	Range: 110 ÷ 160%				
	Type: constant current limiting to 50% rated voltage next hiccup mode. Recovers automatically after fault condition is removed.				
<b>Short Circuit</b>	Type: hiccup mode. Recovers automatically after fault condition is removed.				
<b>Over Voltage</b>	Max. 17V	Max. 32V	Max. 45V	Max. 60V	Max. 67V
	Type: shut down output voltage. Re-power on to recovery.				
<b>Over Temperature</b>	Range: 110°C ± 10°C				
	Type: shut down output voltage. After temperature goes down re-power on to recovery.				

## WORKING ENVIRONMENT

<b>Working Temperature</b>	-40°C ÷ 70°C (refer to Derating Curve)
<b>Working Humidity</b>	15 ÷ 95% RH non-condensing
<b>Storage Temperature and Humidity</b>	-40°C ÷ 80°C, 10 ÷ 95% RH non-condensing
<b>Temperature Coefficient</b>	± 0.05% / °C (-10°C ÷ 45°C)
<b>Vibration</b>	10 ÷ 500Hz, 2G, 10min / 1 cycle, period 30min. each along X, Y, Z axes

## SAFETY AND EMC REGULATIONS


<b>Safety Standards</b>	Compliance to EN61347-1, EN61347-2-13
<b>Withstand Voltage</b>	IN/OUT: 5.3kVDC/1min
<b>Isolation Resistance</b>	IN/OUT; IN/GND; OUT/GND: 50MΩ/500VDC/25°C/70%
<b>EMC Emission</b>	Compliance to EN55015
<b>EMC Immunity</b>	Compliance to EN61547; EN61000-4-2, -3, -4, -5, -6, -8, -11; EN55024; EN61547
<b>Harmonic Current</b>	Compliance to EN61000-3-2 class C (≥ 100% load)

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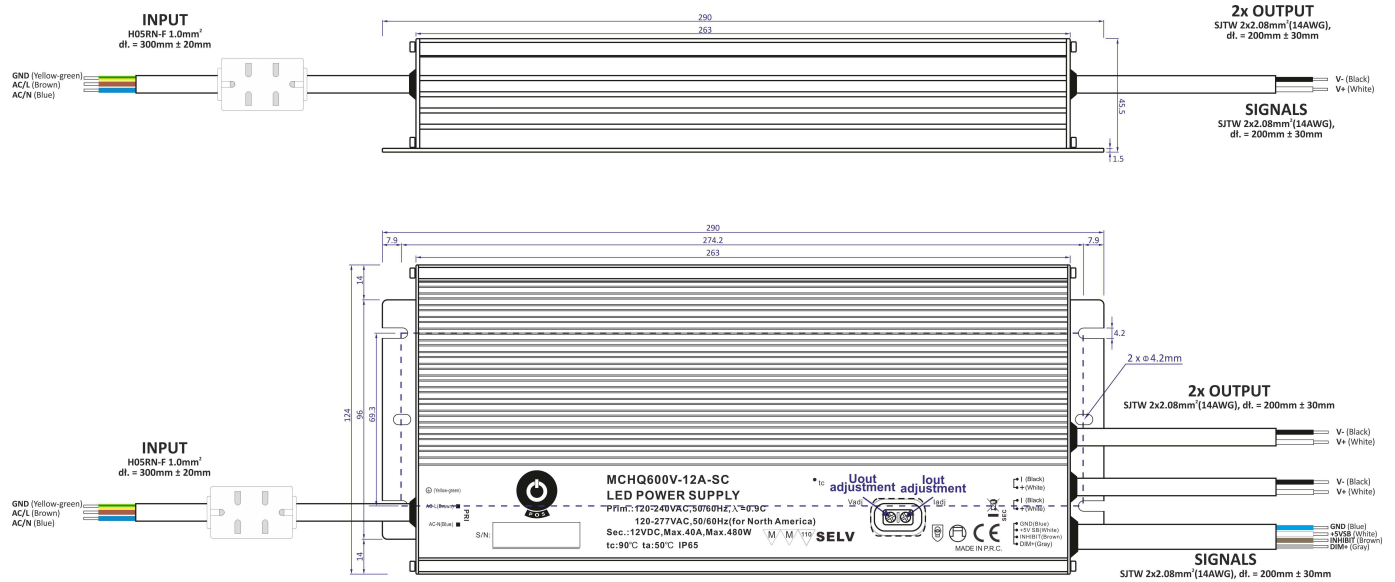


## OTHERS

<b>MTBF</b>	155 000h MIL-HDBK-217F (25°C)				
<b>Dimensions</b>	290 x 124 x 45.5mm (L x W x H)				
<b>Weight and Packing</b>	3.25kg; 2pcs./box; box weight and dimensions: 7kg, 42 x 17.5 x 14.5cm				
<b>EAN Code</b>	MCHQ600V12A	MCHQ600V24A	MCHQ600V36A	MCHQ600V48A	MCHQ600V54A
	TBD	TBD	TBD	TBD	TBD
	MCHQ600V12A-SC	MCHQ600V24A-SC	MCHQ600V36A-SC	MCHQ600V48A-SC	MCHQ600V54A-SC
	 5 902135 121818	TBD	TBD	TBD	TBD

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Constant current operation region is within announced range. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
3. Tolerance includes set up tolerance, line regulation and load regulation.
4. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μF i 47μF parallel capacitor.
5. Setup and rise time is measured from 0 to 90% rated output voltage.
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



## SIGNALS

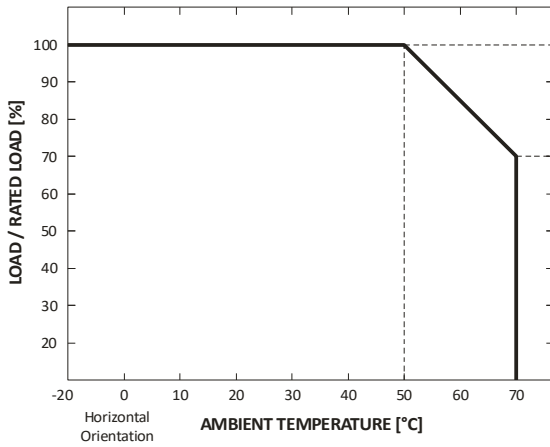
<b>Remote Control</b>	<b>ON:</b> INHIBIT and GND -> open; <b>OFF:</b> INHIBIT and GND -> short
<b>+5V<sub>SB</sub></b>	5VDC ± 0.5VDC /0.5A

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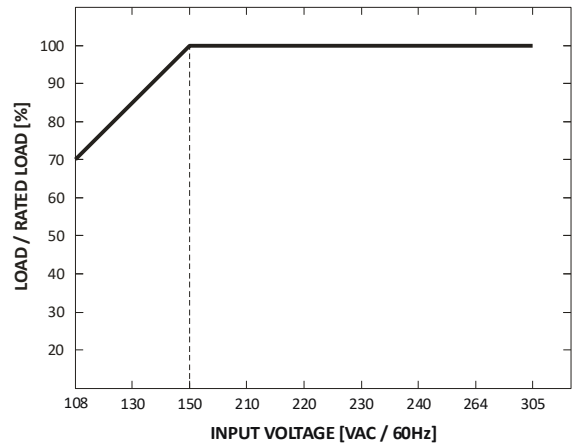
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© **DERATING CURVE**



© **STATIC CHARACTERISTIC**



© **CONSTANT VOLTAGE + CONSTANT CURRENT MODE OPERATION**

