

# MCHQ40VxA series

40W 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



IP65 SELV

## ELECTRICAL SPECIFICATION

MODEL	MCHQ40V12A	MCHQ40V24A
<b>OUTPUT</b>		
Rated Voltage	12V	24V
Constant Current Region [2]	6 ÷ 12V	12 ÷ 24V
Rated Current	3.3A	1.66A
Rated Power	39.6W	39.84W
No Output Voltage (max.)	15V	30V
Voltage Adjustment Range – Vadj potentiometer	10 ÷ 13.5V	22 ÷ 27V
Current Adjustment Range – Iadj potentiometer	2.2 ÷ 3.3A	1 ÷ 1.66A
Line Regulation	± 1%	
Load Regulation	± 3%	
Voltage Tolerance [3]	± 3%	
Current Tolerance [3]	± 5%	
Ripple & Noise (max.) [4]	350mV <sub>p-p</sub>	450mV <sub>p-p</sub>
Setup, Rise, Holdup time [5]	500ms, 30ms, 15ms	
<b>INPUT</b>		
Voltage Range	90 ÷ 305VAC	
Frequency Range	47 ÷ 63Hz	
Power Factor (typ.)	PF > 0.98 / 115VAC; PF > 0.95 / 230VAC at full load	
Efficiency (typ.)	87%	88%
AC current (typ.)	0.55A / 115VAC; 0.22A / 230VAC	
Inrush current (max.)	60A / 230VAC(25°C)	

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## PROTECTIONS

<b>Over Current</b>	Range: 110 ÷ 120%	
	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. 18V	Max. 35V
	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 / 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
<b>Harmonic Current</b>	Compliance to EN61000-3-3; EN61000-3-2 class C ( ≥ 100% load)

## OTHERS

<b>MTBF</b>	45 000h MIL-HDBK-217F (25°C)
<b>Dimensions</b>	157 x 53 x 36.5mm (L x W x H)
<b>Weight and Packing</b>	0.5kg; 15pcs./box; box weight and dimensions: 8.2kg, 27.6 x 21 x 27cm

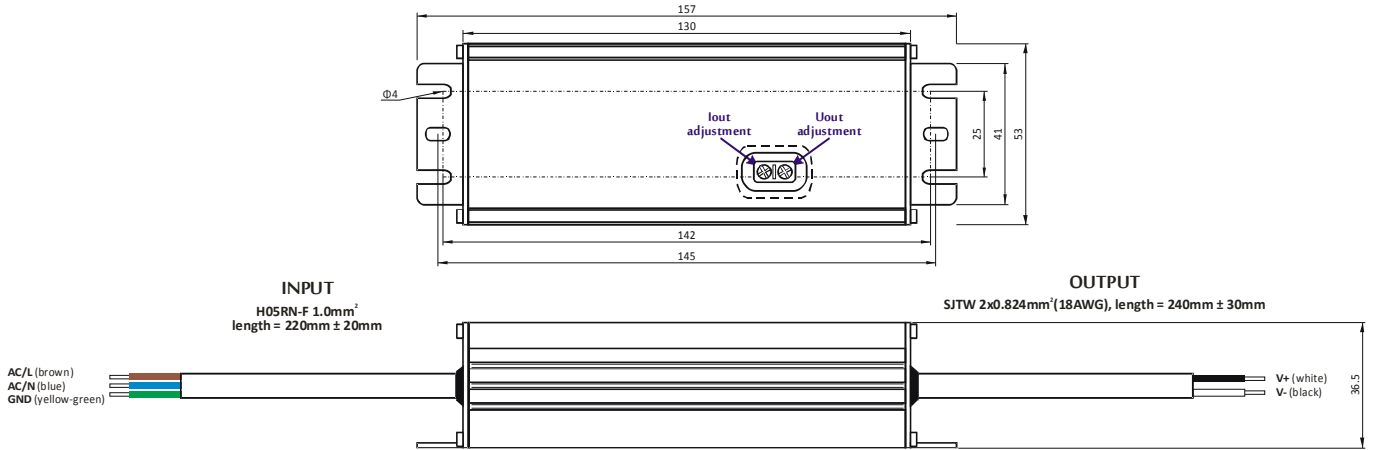
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Constant current operation region is within announced range. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements 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 a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment must be re-qualify to comply with EMC Directives.

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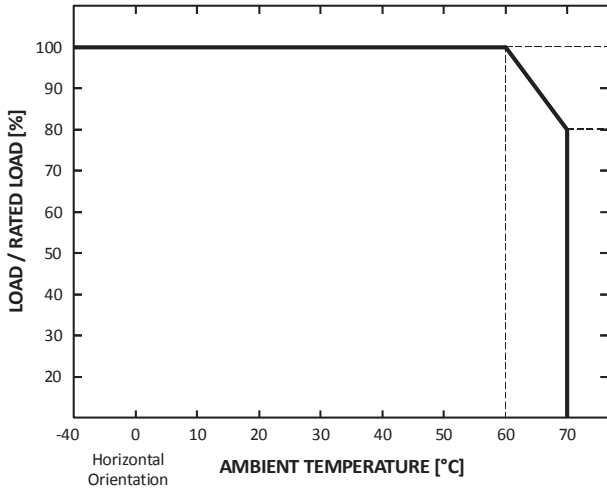
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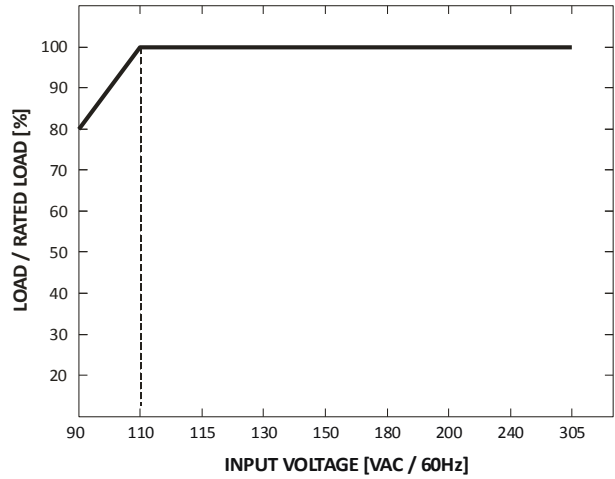
## MECHANICAL SPECIFICATION



## DERATING CURVE



## STATIC CHARACTERISTIC



## CONSTANT VOLTAGE + CONSTANT CURRENT MODE OPERATION

