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
OUTPUT		
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]	$350mV_{P-P}$	$450mV_{P-P}$
Setup, Rise, Holdup time [5]	500ms, 30ms, 15ms	
INPUT		
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		
Over Current	Range: 110 ÷ 120%	
	Type: constant current limiting to 50% rated voltage next hiccup mode. Recovers automatically after fault condition is removed.	
Short Circuit	Type: hiccup mode. Recovers automatically after fault condition is removed.	
Over Voltage	Max. 18V	Max. 35V
	Type: shut down output voltage. Re-power on to recovery.	
Over Temperature	Range: 110°C ± 10°C	
	Type: shut down output voltage. After temperature goes down re-power on to recovery.	
WORKING ENVIRONMENT		
Working Temperature	-40°C ÷ 70°C (refer to Derating Curve)	
Working Humidity	15 ÷ 95% RH non-condensing	
Storage Temperature and Humidity	-40°C ÷ 80°C, 10 ÷ 95% RH non-condensing	
Temperature Coefficient	± 0.05% / °C (-10°C ÷ 45°C)	
Vibration	10 ÷ 500Hz, 2G, 10min / cycle, period 30min. each along X, Y, Z axes	
SAFETY AND EMC REGULATIONS		
Safet Standards	Compliance to EN61347-1, EN61347-2-13	
Withstand Voltage	IN/OUT: 5.3kVDC/1min	
Isolation Resistance	IN/OUT; IN/GND; OUT/GND: 50MΩ/500VDC/25°C/70%	
EMC Emission	Compliance to EN55015	
EMC Immunity	Compliance to EN61547; EN61000-4-2, -3, -4, -5, -6, -8, -11; EN55024	
Harmonic Current	Compliance to EN61000-3-3; EN61000-3-2 class C (≥ 100% load)	
OTHERS		
MTBF	45 000h MIL-HDBK-217F (25°C)	
Dimensions	157 x 53 x 36.5mm (L x W x H)	
Weight and Packing	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 incudes 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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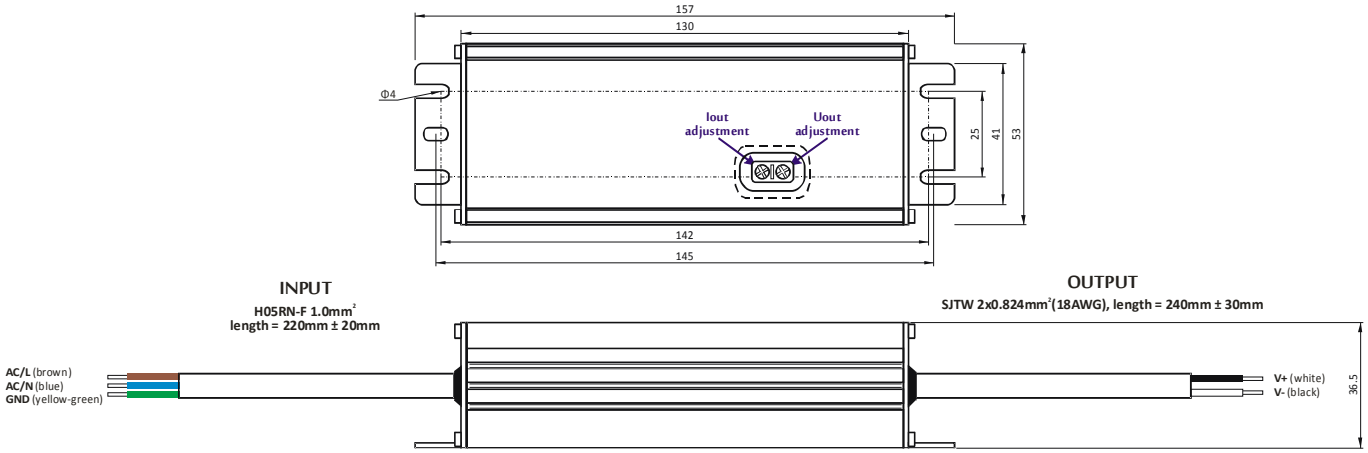
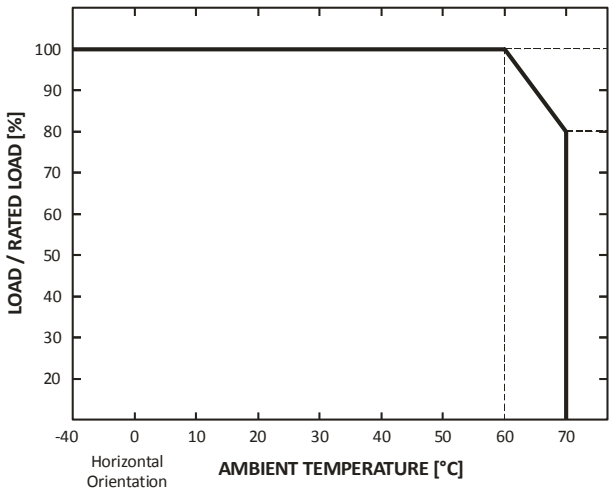
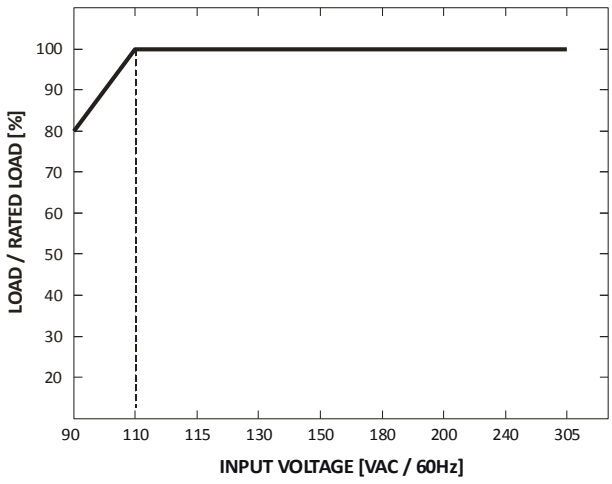
MECHANICAL SPECIFICATION



DERATING CURVE



STATIC CHARACTERISTIC



CONSTANT VOLTAGE + CONSTANT CURRENT MODE OPERATION