MCHQ60VxB series

60W LED Switching Power Supply (CV+CC) with 3 in 1 dimming function

■ **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
- Built-in 3 in 1 dimming function: 0-10V or PWM or resistance

ELECTRICAL SPECIFICATION

MODEL	MCHQ60V12B				
OUTPUT					
Rated Voltage	12V	15V	24V	36V	48V
Constant Current Region *[2]*	6 ÷ 12V	7.5 ÷ 15V	12 ÷ 24V	18 ÷ 36V	24 ÷ 48V
Rated Current	5A	4A	2.5A	1.67A	1.25A
Rated Power	60W				
No Output Voltage (max.)	15V	19V	29V	43V	56V
Line Regulation	± 1%				
Load Regulation	± 3%				
Current Tolerance *[3]*	± 5%				
Ripple & Noise (max.) *[4]*	$150mV_{P-P}$	$200mV_{P-P}$	$280mV_{P-P}$	$450mV_{P-P}$	$550mV_{P-P}$
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.)	88%	88%	88%	89%	89%
AC current (typ.)	0.66A / 115VAC; 0.33A / 230VAC				
Inrush current (max.)	75A / 230VAC(25°C)				

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PROTECTIONS					
Over Current	Range: 100 ÷ 160%				
	Type: constant current limiting to 60% 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. 25V	Max. 35V	Max. 60V	Max. 65V
	Type: shut down output voltage. Re-power on to recovery.				
Over Temperature	Range: 110°C ± 10°C				
	Type: shut down output voltage. Auto-recovery after temperature goes down.				

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, 5G, 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	5 years (43 200h) MIL-HDBK-217F (25°C)
Dimensions	172 x 53 x 36.5mm (L x W x H)
Weight and Packing	0.6 kg; 15pcs./box; box weight and dimensions: 9.2kg, 27.6 x 22.5 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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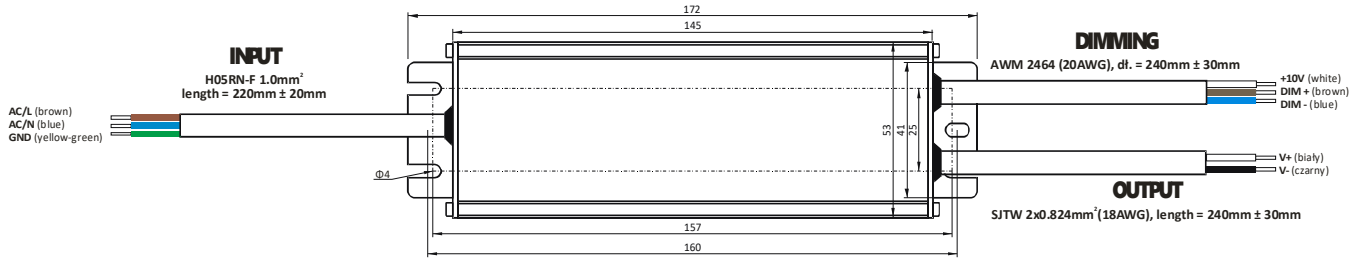
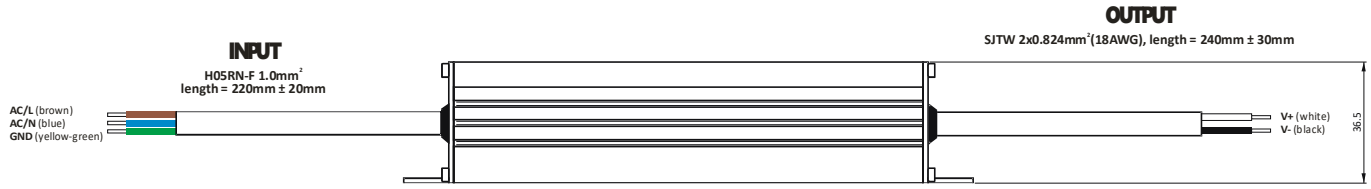
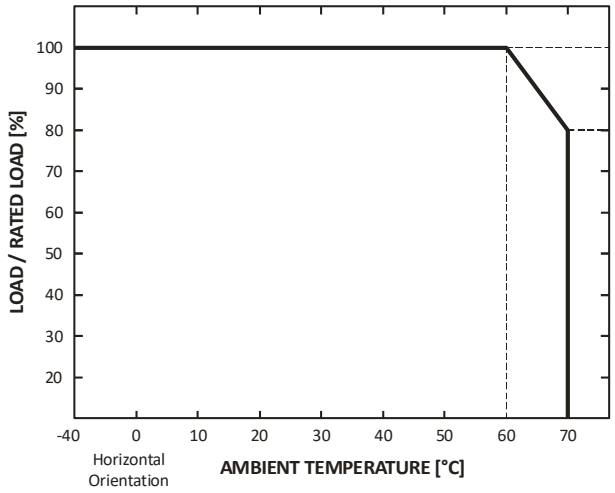
MECHANICAL SPECIFICATION

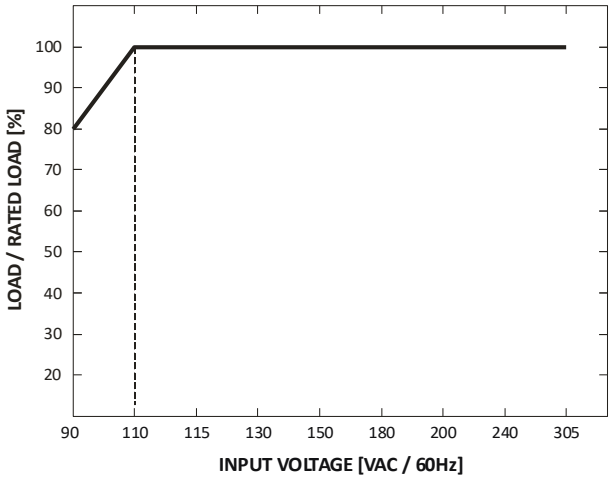




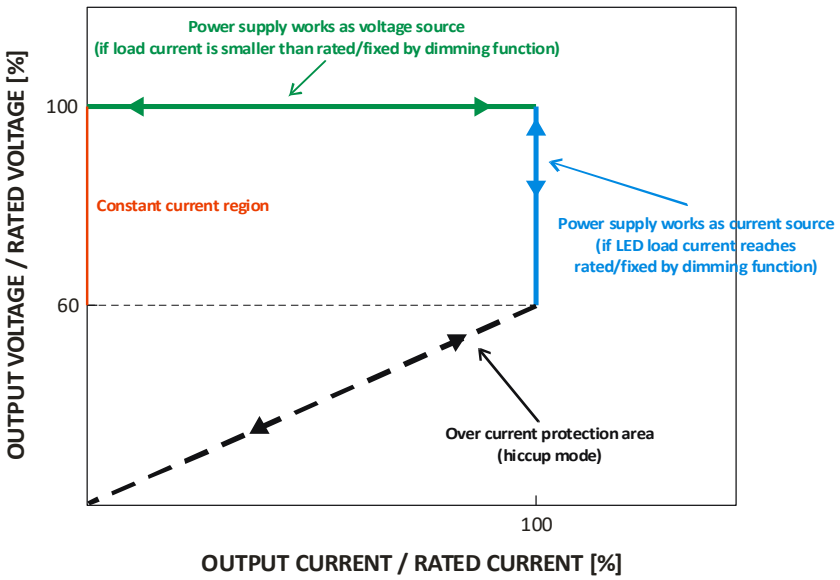
DERATING CURVE



STATIC CHARACTERISTIC



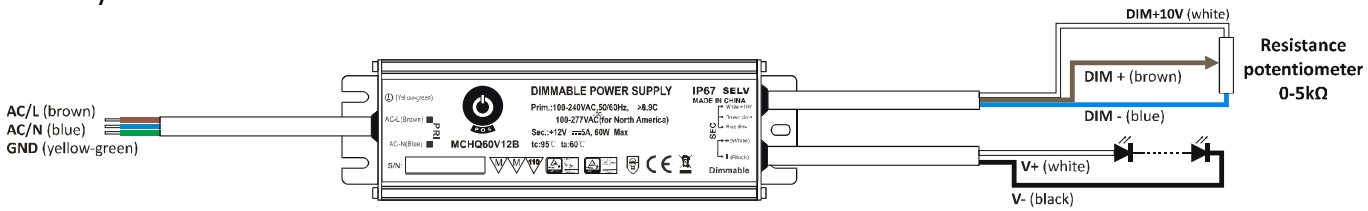
CONSTANT VOLTAGE + CONSTANT CURRENT MODE OPERATION

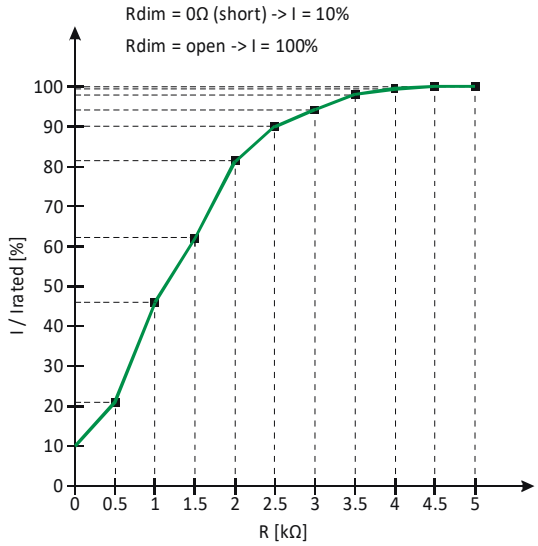


DIMMING OPERATION

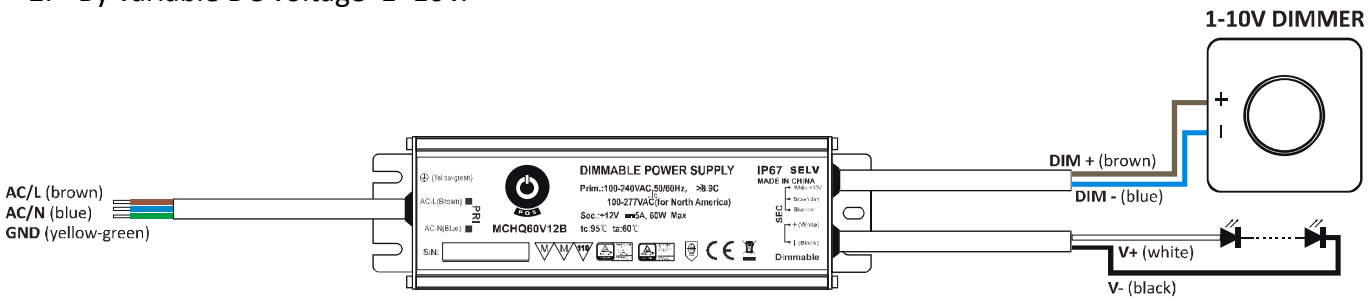
For use dimming function connect dimmer to DIM+ and DIM- terminals. Dimming effect is achieved by changing output constant current level in 10%÷100% range. You can use dimming function by one of three ways:

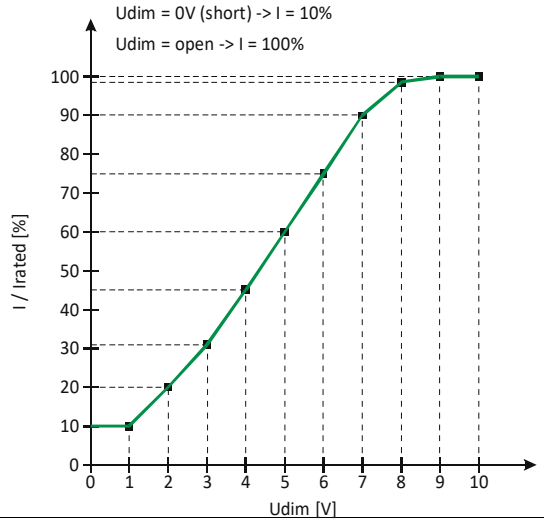
1. By variable resistance 0kΩ÷5kΩ:



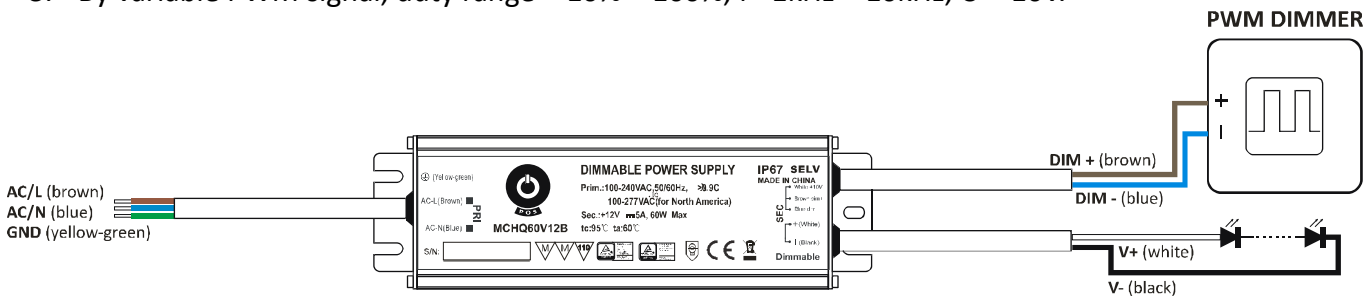


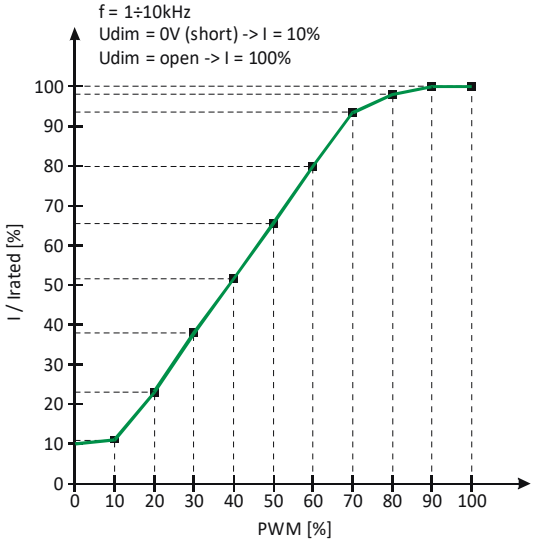
2. By variable DC voltage 1÷10V.





3. By variable PWM signal, duty range = 10% ÷ 100%, f =1kHz ÷ 10kHz, U = 10V.





Compatible dimmers
• OSRAM DIM MCU
• BERKER 2891 10
• Other 1-10V dimmers

MPL POWER ELEKTRO

MPL POWER ELEKTRO Sp. z o.o.
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CE

EU DECLARATION OF CONFORMITY

For the following equipment:

Part No.:	**MCHQ60VXA (X = 12, 15, 24, 36, 48); MCHQ60VXB (X = 12, 15, 24, 36, 48)**
	MCHQ60VXA-SC (X = 12, 15, 24, 36, 48); MCHQ60VXB-SC (X = 12, 15, 24, 36, 48)
Batch No.:	**S17xxxxxxxxx**

Is herewith confirmed to comply with the requirements set out in the Council Directive, the following standards were applied:

ROHS Directive 2011/65/EU

Low Voltage Directive 2014/35/UE:

Standard	Description
EN 61347-1:2015	Lamp controlgear. General and safety requirements
EN 61347-2-13:2014	Lamp controlgear. Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules
EN 62493:2015	Assessment of lighting equipment related to human exposure to electromagnetic field

Electromagnetic Compatibiity Directive 2014/30/UE:

Standard	Description
EN 55015:2013 + A1:2015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61000-3-2:2014	Electromagnetic compatibility (EMC). Limits. Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
EN 61000-3-3:2013	Electromagnetic compatibility (EMC). Limits. Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
EN 61547:2009	Equipment for general lighting purposes. EMC immunity requirements

Power supply is considered as component of final equipment 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 and LVD Directives.

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Pieczęć firmy

KIEROWNIK
Działu Technicznego
Łukasz Jaromin
Podpis i pieczęć osoby

Gliwice, 08.06.2017r.