

# MCHQ600VxB series

600W 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
- IP67 design for indoor and outdoor appliances
- Compliance to worldwide regulations for lighting
- Built-in 3 in 1 dimming function: 1-10V, PWM or resistance



## © MODEL ENCODING

MCHQ	600V	X	B	-Y
<b>Series</b>	<b>Rated output power</b>	<b>Rated output voltage</b>	<b>Three in one dimming function: 1-10V, PWM and resistance.</b>	<b>Case color</b>
		X = 12 -> 12VDC		-Y = blank -> grey
		X = 24 -> 24VDC		-Y = SC -> silver
		X = 36 -> 36VDC		
		X = 48 -> 54VDC		
		X = 54 -> 54VDC		

## © ELECTRICAL SPECIFICATION

MODEL	MCHQ600V12B	MCHQ600V24B	MCHQ600V36B	MCHQ600V48B	MCHQ600V54B
	MCHQ600V12B-SC	MCHQ600V24B-SC	MCHQ600V36B-SC	MCHQ600V48B-SC	MCHQ600V54B-SC
<b>OUTPUT</b>					
<b>Rated Voltage</b>	12V	24V	36V	48V	54V
<b>Constant Current Region</b>	[2] 6 ÷ 12V	12 ÷ 24V	18 ÷ 36V	24 ÷ 48V	27 ÷ 54V
<b>Rated Current</b>	40A	25A	16.7A	12.5A	11.2A
<b>Rated Power (max.)</b>	480W	600W	600W	600W	600W
<b>No Output Voltage (max.)</b>	14V	27V	40V	53V	60V
<b>Voltage Adjustment Range – Vadj potentiometer</b>	10.2 ÷ 12.6V	20.4 ÷ 25.2V	30.6 ÷ 37.8V	40.8 ÷ 50.4V	45.9 ÷ 56.7V
<b>Current Adjustment Range – Iadj potentiometer</b>	20 ÷ 40A	12.5 ÷ 25A	8.3 ÷ 16.7A	6.2 ÷ 12.5A	5.6 ÷ 11.2A
<b>Line Regulation</b>	± 1%				
<b>Load Regulation</b>	± 3%				
<b>Voltage Tolerance</b>	[3] ± 3%				
<b>Current Tolerance</b>	[3] ± 5%				
<b>Ripple &amp; Noise (max.) [4]</b>	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>
<b>Setup, Rise</b>	[5] 500ms, 30ms				
<b>Holdup time</b>	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

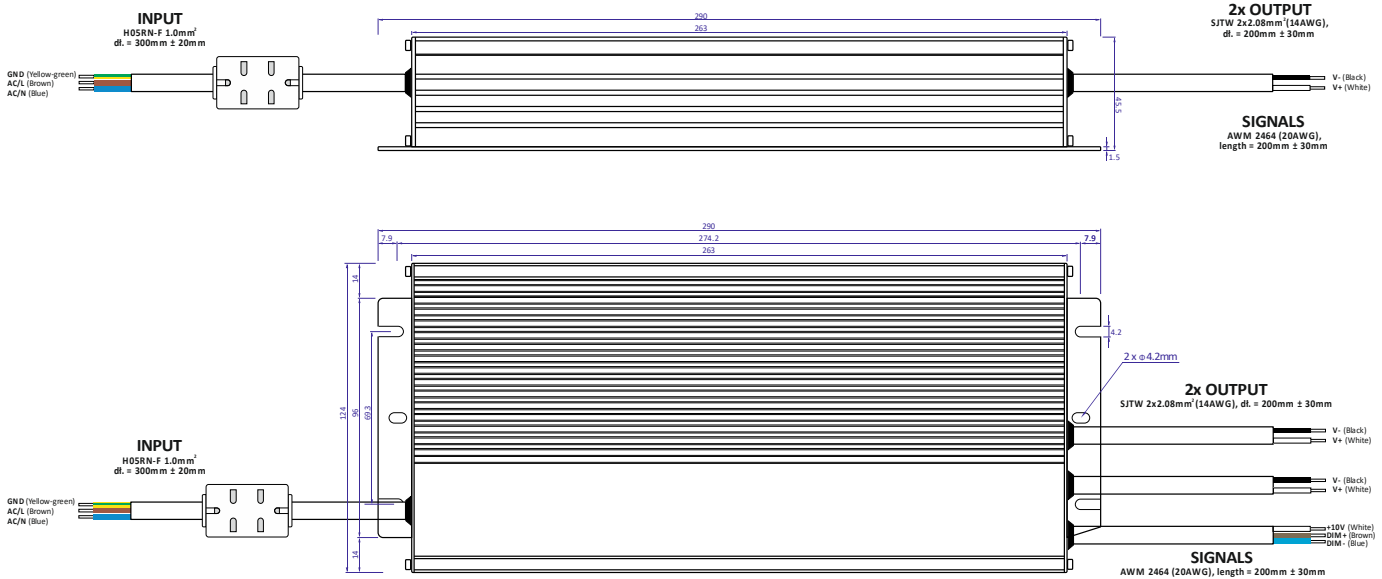
MCHQ600V12B	MCHQ600V24B	MCHQ600V36B	MCHQ600V48B	MCHQ600V54B
N/D	N/D	N/D	N/D	N/D

## EAN Code

MCHQ600V12B-SC	MCHQ600V24B-SC	MCHQ600V36B-SC	MCHQ600V48B-SC	MCHQ600V54B-SC
		N/D		N/D
5 902135 112238 9	5 902135 112308 9		5 902135 112278 5	

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

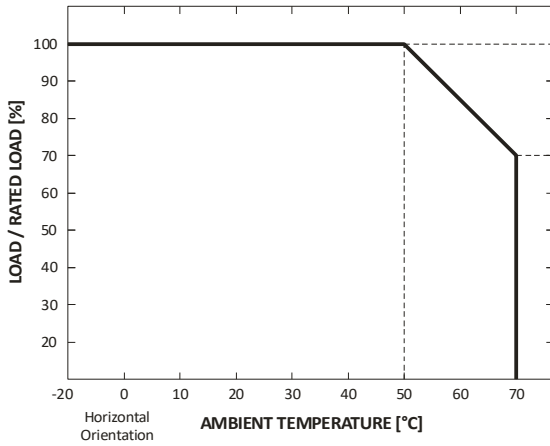


# MCHQ600VxB series

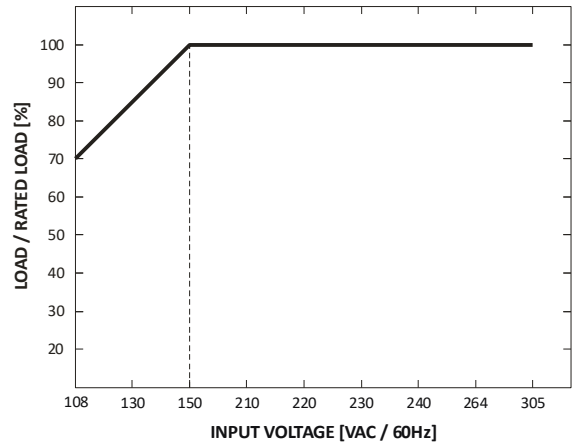
600W LED Switching Power Supply (CV+CC) with 3 in 1 dimming function



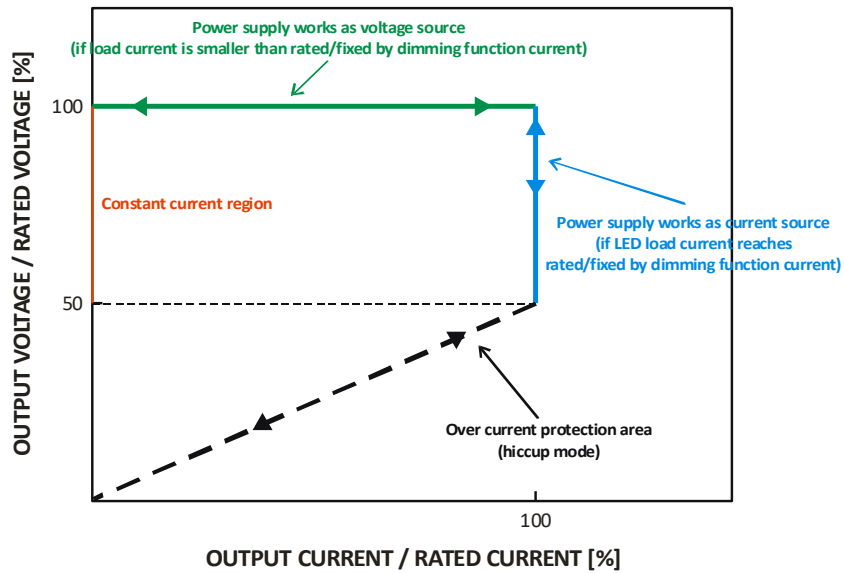
⊙ **DERATING CURVE**



⊙ **STATIC CHARACTERISTIC**



⊙ **CONSTANT VOLTAGE + CONSTANT CURRENT MODE OPERATION**



# MCHQ600VxB series

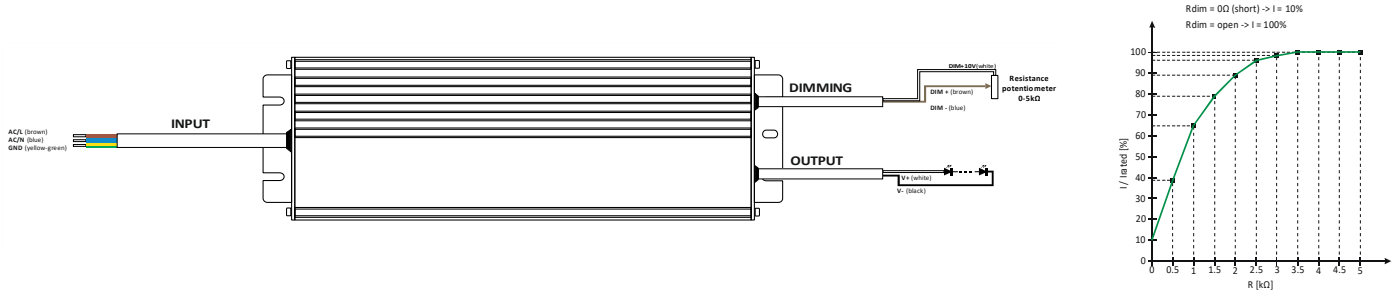
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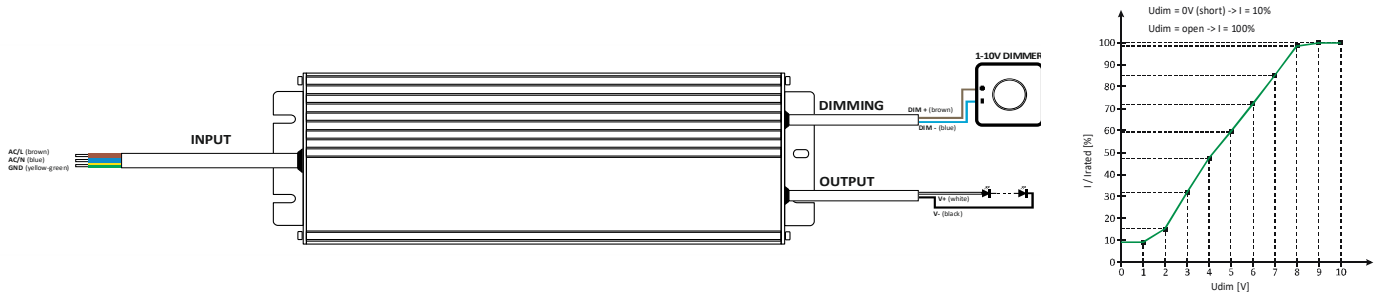
## DIMMING OPERATION

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:

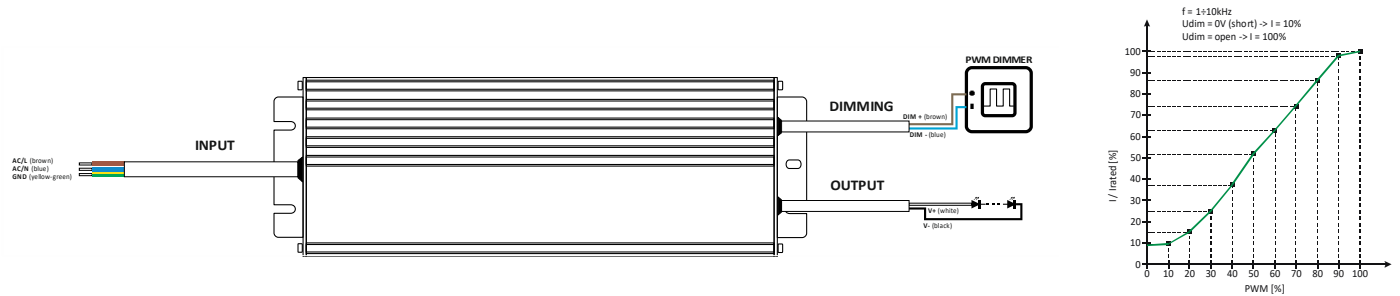
### 1. By variable resistance 0kΩ÷5kΩ:



### 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