

CV40 Series

40W Multiple-Stage Output Current LED Power Supply



Case: 8917HQ
123.5 x 81.5 x 23 mm

Features

- Output current level selectable by DIP S.W.
- 180~295VAC input only
- Built-in active PFC function
- Protections: Short circuit / Over voltage / Over temperature
- Cooling by free air convection
- Fully isolated plastic case
- Class II power unit, no FG
- Built-in 0~10Vdc and PWM signal dimming function
- Built-in 12V/50mA auxiliary output
- IP20 design
- Logarithm or linear dimming curve selectable (meet IEC62386-207)
- Temperature compensation function by external NTC
- No load power consumption <1W(Note.7)
- Power supplies synchronization function up to 10 units
- Suitable for indoor LED lighting applications
- 3 years warranty



Specification

INPUT	Inrush Current (typ.)	20A(twidth=260μs measured at 50% Ipeak) at 230VAC, Cold Start					
	Voltage	180V ~ 295VAC 254 ~ 417VDC					
	Frequency	47 ~ 63 Hz					
	Power Factor	PF ≥ 0.97 5/230VAC, PF ≥ 0.96/277VAC at rated power (Please refer to "Power Factor Characteristic" curve)					
	Total Harmonic Distortion	Total harmonic distortion will be lower than 20% when output loading is 75% or higher					
	Efficiency	91%					
	AC Current (Typ.)	0.23A/230VAC 0.2A/277VAC					
	Leakage Current	<0.5mA / 240VAC					
OUTPUT	Selectable Current	350mA	500mA	600mA	700mA	900mA	1050mA
	DC Voltage Range	2 ~ 100V	2 ~ 80V	2 ~ 67V	2 ~ 57V	2 ~ 45V	2 ~ 40V
	Ripple Current	±5.0%					
	No Load Output Voltage	110V			65V		
	Ripple & Noise	700mVp-p					
	Current Accuracy	±5.0%					
	Set Up, Rise Time	1000ms, 80ms/230VAC at rated power					
	Hold Up Time	16ms/230VAC at rated power					
PROTECTION	Short Circuit	Constant current limiting, recovers automatically after fault condition is removed					
	Over Voltage	110 ~ 130V Protection type: Shutdown o/p voltage, re-power on to recover					
	Over Temperature	90°C+10°C (RTH2) Protection type: Shut down o/p voltage, re-power on to recover					
FUNCTION	Auxiliary Power	12V @ 50mA for driving fan; Tolerance ± 5%					
	Temp. Compensation	By external NTC (not provided with power supply), please see "Temperature Compensation Operation"					
	Dimming	Please see "Dimming Operation"					
	Synchronisation	Please see "Synchronisation Operation"					
ENVIRONMENT	Working Temperature	-30 ~ +60°C (Refer to Derating Curve)					
	Working Humidity	20 ~ 90% RH non-condensing					
	Storage Temperature	-40 ~ +80C, 10 ~ 95% RH					
	Temp. Coefficient	±0.03%/°C (0-50°C)					
	Vibration	10 ~ 500Hz, 2G 10 min./1cycle, period for 60min. each long X, Y, Z axes					
SAFETY & EMC	Safety Standards	UL8750, ENEC EN61347-1, EN61347-2-13, EN62384 independent approved					
	Withstand Voltage	I/P-O/P:3.75KVAC					
	Isolation Resistance	I/P-O/P:>100M Ohms / 500VDC / 25°C / 70% RH					
	EMC Emission	Compliance to EN55015, EN61000-3-2 Class C(≥40% rated power) ; EN61000-3-3					
	EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61547 light industry level (surge 2KV), criteria A					
OTHERS	MTBF	260.6K hrs min. MIL-HDBK-217F (25°C)					
	Packing	0.24kg; 54pcs/15Kg/1.12CUFT					

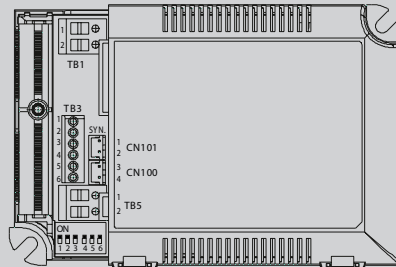
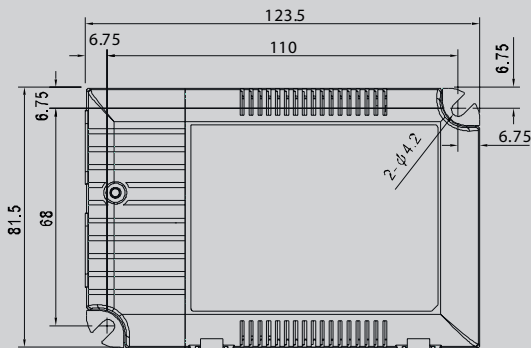
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μf parallel capacitor.
3. Derating may be needed under low input voltage. Please check the static characteristics for more details.
4. Length of set up time is measured at first cold start. Turning the power supply ON/OFF may lead to increase of the set up time.
5. Efficiency is measured at 500mA/80V output set by DIP switch.
6. No load power consumption<1W is measured at 180~277VAC, with lighting fixture connected and output current dimmed to 0%.
7. The lower 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 manufacturers must re-qualify EMC Directive on the complete installation again.

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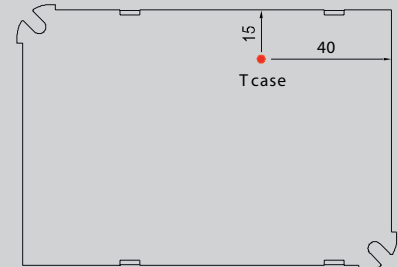
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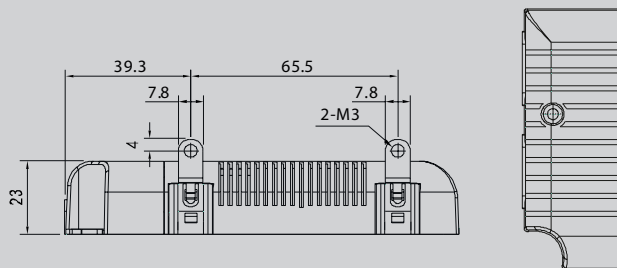
Mechanical Specification



T case: Max. Case Temperature.



Bottom View



Terminal Pin No. Assignment(TB1)

Pin No.	Assignment
1	AC/L
2	AC/N

Terminal Pin No. Assignment(TB3)

Pin No.	Assignment	Pin No.	Assignment
1	+FAN	4	-NTC
2	-FAN	5	DIM+
3	+NTC	6	DIM-

Terminal Pin No. Assignment(TB5)

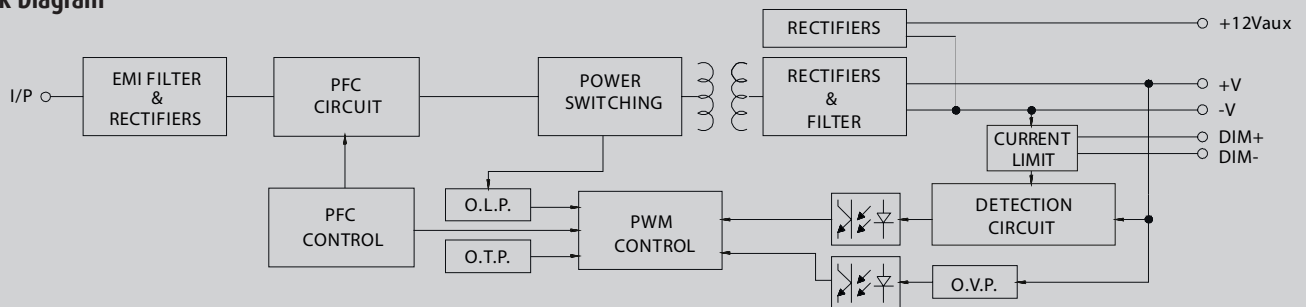
Pin No.	Assignment
1	+Vo
2	-Vo

SYN. Connector(CN101/CN100): JST B2B-XH or equivalent

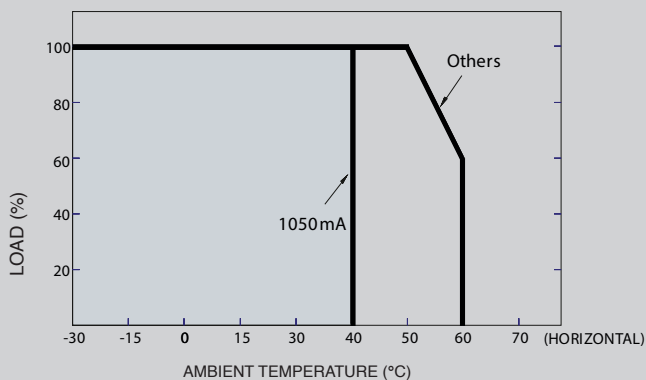
Pin No.	Assignment	Mating Housing	Terminal
1,3	+	JST XHP or equivalent	JST SXH-001T-P0.6 or equivalent
2,4	-		

PFC fosc : 60KHz
PWM fosc : 80KHz

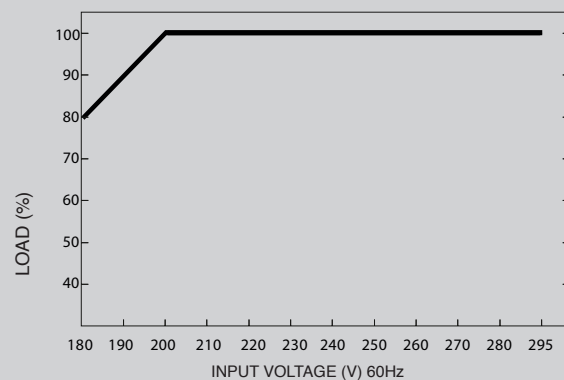
Block Diagram



Derating Curve



Static Characteristics



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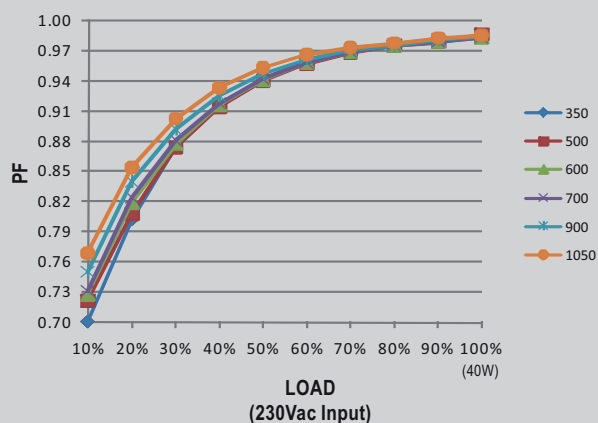
DIP Switch Table

CV40 is a multiple-stage output current supply, selection of output current through DIP switch as table below.

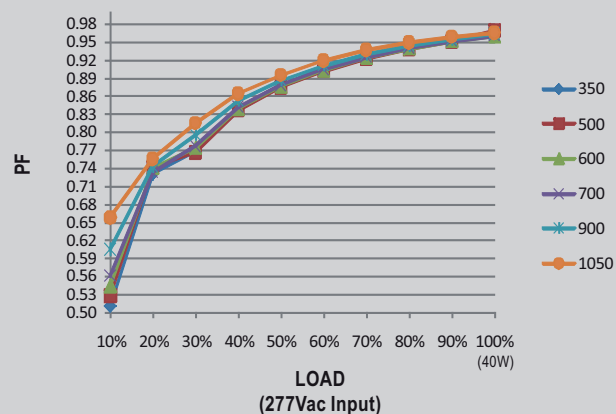
Io \ DIP S.W.	1	2	3	4	5	6
350mA	----	----	----	----	----	----
500mA	ON	----	----	----	----	----
600mA	ON	ON	----	----	----	----
700mA(Factory Setting)	ON	ON	ON	----	----	ON
900mA	ON	ON	ON	ON	----	ON
1050mA	ON	ON	ON	ON	ON	ON

Power Factor Characteristic

Constant Current Mode

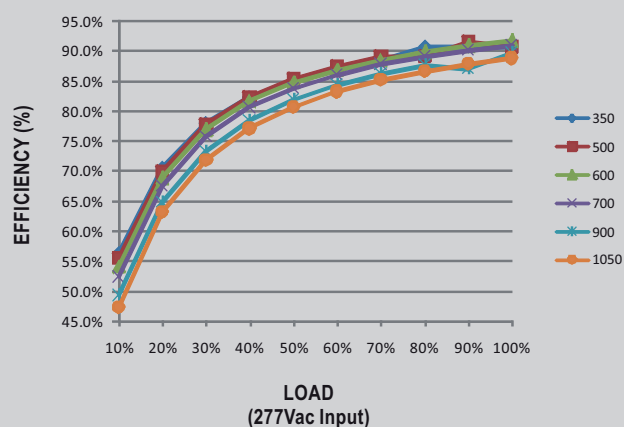
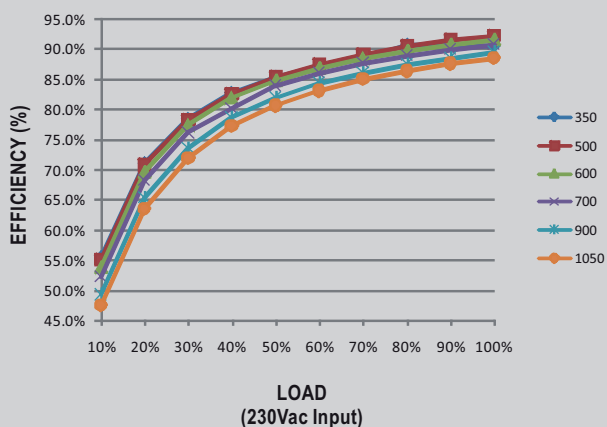


Constant Current Mode



Efficiency vs Load

CV40 series possess superior working efficiency that up to 91% can be reached in field applications.

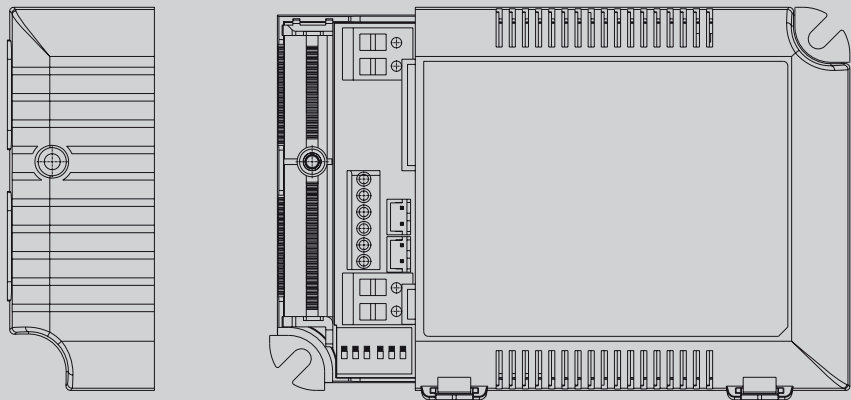


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Dimming Operation



Built-in 2 in 1 dimming function, output constant current level can be adjusted through output terminal by 0 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

Please DO NOT connect "DIM-" to "-Vo".

0 ~ 10V dimming function for output current adjustment (Typical)

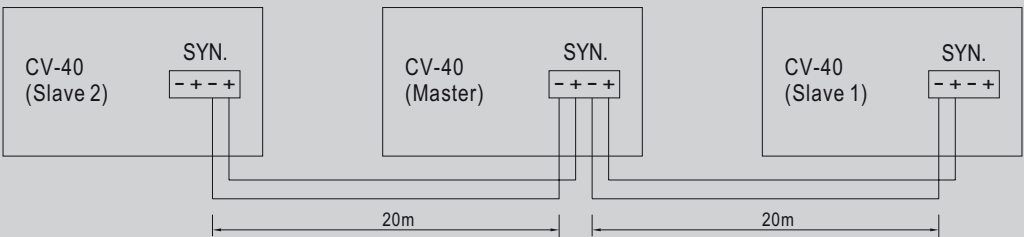
Dimming value	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Output current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	100%~108%

10V PWM signal for output current adjustment (Typical): Frequency range :100Hz ~ 3KHz

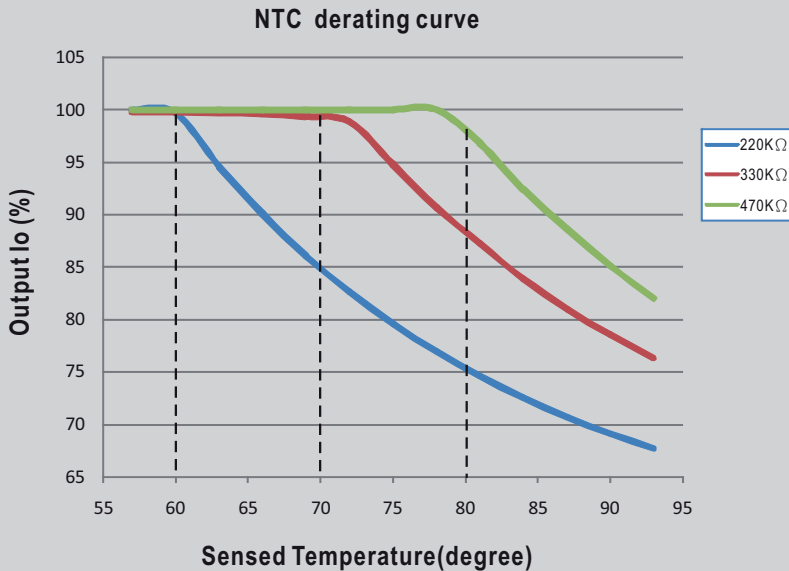
Duty value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Output current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	100%~108%

Synchronization Operation

- 10 drivers(max.) synchronization (1 master + 9 slaves)
- Maximum cable length between each units : 20 meter.



Temperature Compensation Operation



CV-40 have the built-in temperature compensation function ($T \uparrow, I_o \downarrow$). By connecting a temperature sensor (NTC resistor) between the NTC +/- terminal of CV-40 and the detecting point on the lighting system or the surrounding environment, output current of CV-40 could be correspondingly changed to ensure the long life of LED.

- 1.CV-40 can still be operated well when the NTC resistor is not connected and the value of output current will be the current level that you set through the DIP switch.
- 2.

NTC resistance	Output Current
220K	< 60℃, 100% of the rated current (corresponds to the setting current level) > 60℃, output current begin to reduce, details please refer to the curve.
330K	< 70℃, 100% of the rated current (corresponds to the setting current level) > 70℃, output current begin to reduce, details please refer to the curve.
470K	< 80℃, 100% of the rated current (corresponds to the setting current level) > 80℃, output current begin to reduce, details please refer to the curve.

Notes: 1. MW does not offer the NTC resistor and all the data above are measured by using THINKING TTC03 series.
2. If other brands of NTC resistor is applied,please check the temperature curve first.