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MT240H105AQ_CP   Programmable Outdoor

■ Features
◆ Input voltage: 250-528Vac
◆ Built-in active PFC function .
◆ High efficiency: up to 92% Typ.
◆ Built-in Lightning protection
◆ Constant Current / 0-10V Dimming
/ Clock Dimming(CLK)/PWM Dimming
◆ Protection: OVP, SCP, OTP
◆ Full Power at 65%Iomax～100%Iomax (Constant Power)

■ Specification

Model (MT240H105AQ_CP)		105
Input	Efficiency(347Vac) Typ.	92%
	Voltage Range (Vac)	250～528
	Rated Input Voltage (Vac)	277-480
	Frequency Range (Hz)	47~63
	Power Factor	>0.9 at 277～480Vac input, with 80%～100% load conditions
	THD	< 30%, at 277 ~ 480Vac input, with 80% ~ 100% load conditions
	AC Current(Typ.)	1A MAX at 277VAC
	Inrush Current(Typ.)	65A at 347Vac input 25℃ cold start
Output	Rated Output Voltage (V)	342-228
	Output Voltage Range (V)	342-120
	Rated Current(mA)	700-1050
	Output Current Range(mA)	70-1050
	Rated Power (W)	240W(max)
	Output Current Set Range	6.5%Io_max～100%Io_max
	Constant Power Output Set	65%Io_max～100%Io_max
	Ripple Current(Idc (pk-av)/av)	10% max. (Idc (pk-av)/av) at 100% Iout
	Current Tolerance Note.1	±5%
	Line Regulation	±3%
	Load Regulation	±3%
	Setup, Rise Time	<1.5s，measured at 347Vac
	Hold Up Time	10ms at 347Vac 100% load
Dimming Control	12Vdc Output Voltage (Vdc)	10.8Vmin.～12Vtyp.～13.2Vmax.
	12Vdc Output Current(Vdc)	0mA~20mA max.
	0~10V/DMI+ Voltage	Absolute maximum voltage -10Vmin~20Vmax
	0~10V/DMI+ Short Current	280uA~450uA (DIM(+)=0)
	DIMMING FUNCTION	PWM&1~10V/10%Io~100%Io ref. Dimming module diagram and dimming cruve
Protection	Over Voltage(V)	430V max
		Hiccup mode.The power supply shall be self-recovery when the fault is removed.
	Short Circuit	Hiccup mode.The power supply shall be self-recovery when the fault is removed.
	Over Temperature	Decrease output current. Returning to normal after over temperature is removed.
Environment	Operating Temp.	-40~+50℃ (Tc≤ 90℃)
	Operating Humidity	20~95%RH, non-condensing
	Storage Temp., Humidity	-40~+85℃, 5-100%RH
	Temp. Coefficient	0.03%/℃（0~50℃）
	Vibration	10~500Hz, 5G 12min/cycle, period for 72min each along X、Y、Z axes
Safety & EMC	Safety Standard	UL8750，UL1012
	Withstand Voltage	I/P-O/P:3.75KVAC I/P-FG:1.875KV O/P-FG:1.5KV
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500Vdc/25℃/70%RH
	EMC Emission	FCC Part 15 Class B
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11，EN61547;Surge Immunity Test:AC line to AC line ±4KV,AC line to earth: ±6kV
Others	MTBF	250,000 hours, measured at full load, 25℃ ambient temperature MIL-HDBK-217F(25℃)
	Dimension	223 x90 x 45mm（LxWxH）
	Weight	1.5kg

Use to reset the working hour counting in the microcontroller of the driver and collaborate with CLO.
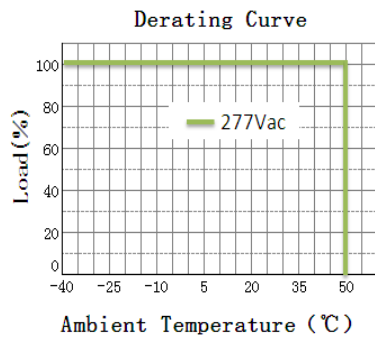Note.1: At Rated Current ,Includes set up tolerance, line regulation and load regulation.

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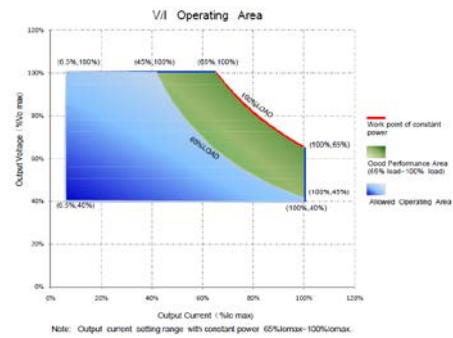Add: No.168, Mingjia Road, Shanghai 201107, P.R.China
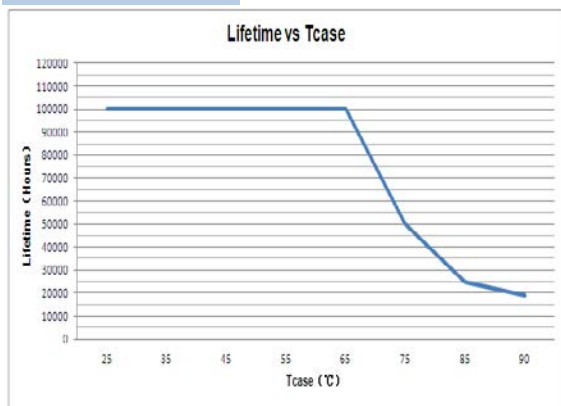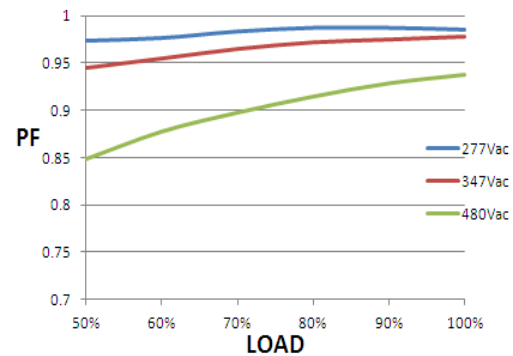Tel: +86 (0)21 52634688   Website: www.moons.com.cn

■ Curve
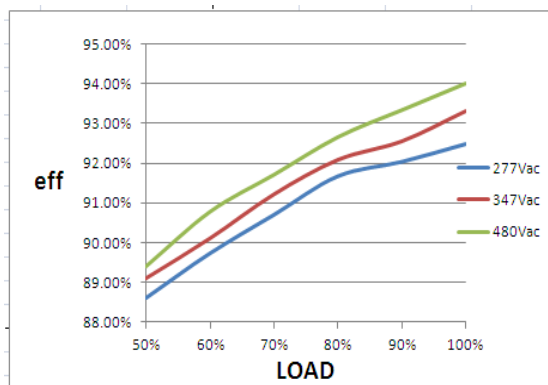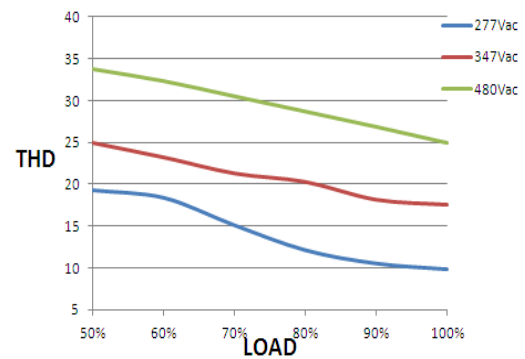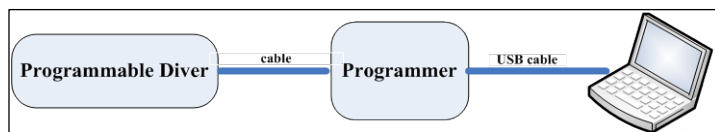
Derating Curve

Derating Curve — 277Vac; Load (%) vs Ambient Temperature (℃)

V/I Curve

V/I Operating Area
Note: Output current setting range with constant power 65%Iomax~100%Iomax.

LIFETIME Curve

Lifetime vs Tcase — Lifetime (Hours) vs Tcase (℃)

Power Factor Curv

PF vs LOAD — 277Vac, 347Vac, 480Vac

eff Curve

eff vs LOAD — 277Vac, 347Vac, 480Vac

THD Curve

THD vs LOAD — 277Vac, 347Vac, 480Vac

subject to change without notice

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■ Instruction

1.Field Programmable Topology

| Programmable Diver | —cable— | Programmer | —USB cable— | [laptop] |

The programmable driver can be programmed by using special PC software and the programmer module.

2.Dimming Interface Description

Pin description

Pin	Name	Value	Description
1	Vaux 12V	10.8V-13.2V	Passive dimmers power supply
2	Dim+/Program	0-10V	Dimming/Programming input
3	Dim-	0V	DC Ground

CLKS DIMMING PROGRAMMING INTERFACE

1 Vaux 12V / YE(黄色)
2 Dim+ Program / PU(紫色)
3 Dim- / GR(灰色)
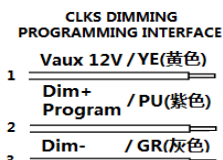
3.Dimming Software Function Instruction

■ Adjustable Output Current(AOC)

Adjustable Output Current(AOC)
Module Current 1050 mA
Max Current 1050 mA Power 150 W

Users can set the rated current between 7%*Max Current and 100%*Max Current.

■ Adjustable Startup Time(AST)

Adjustable Startup Time(AST)
Start Fadeup Time 5 s

Set driver's "Start Fade up Time". It means how much time the driver costs to achieve the "Module Current" that the user set. The valid value is 0s, 1s, 2s, 5s, 10s, 20s, 40s.
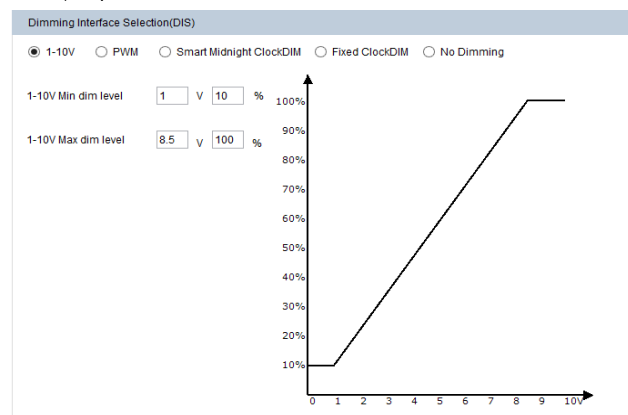
■ Fade Time(FT)

Fade Time(FT)
Fadeup Time 1 s

Set driver's "Fade up Time". This function is available in the Smart Midnight ClockDIM and Fixed ClockDIM mode; It means how much time the driver costs to achieve another dimming level from previous dimming level. The valid value is 0s, 1s, 2s, 5s, 10s, 20s, 40s.
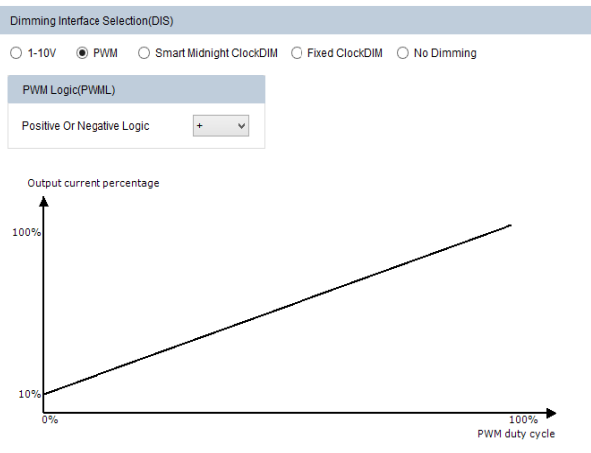
■ 1~10V

Allow users to set the max and min output current and corresponding output voltage to clarify the 1-10V dimming curve. Input a 0~10V signal from 2nd pin of the dimming interface. Default: input ≤1V, output current 10%; input ≥8.5V, output current 100%.

Dimming Interface Selection(DIS)
◉ 1-10V ○ PWM ○ Smart Midnight ClockDIM ○ Fixed ClockDIM ○ No Dimming

1-10V Min dim level 1 V 10 %
1-10V Max dim level 8.5 V 100 %

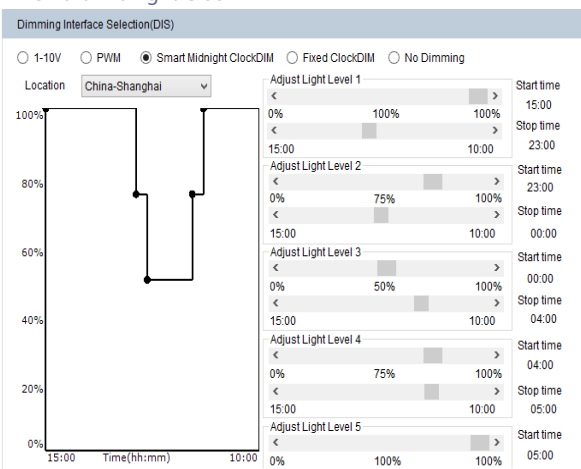■ PWM

Input a PWM signal from the 2nd pin(Dim+/Program) of the dimming interface to change the output current.User can set "Positive Logic" or "Negative Logic" of the PWM signal. PWM duty circle: 1%~99%(it has both positive and negative logics), frequency: 500Hz~5kHz, 3V~10V is high,-0.3V~0.8V is low.

Dimming Interface Selection(DIS)
○ 1-10V ◉ PWM ○ Smart Midnight ClockDIM ○ Fixed ClockDIM ○ No Dimming

PWM Logic(PWML)
Positive Or Negative Logic +

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■ Instruction

■ Smart Midnight ClockDIM

Smart Midnight ClockDIM allows dimming to predefined light levels based on the nightly operating time. With flexibility in setting time and light levels, the user can configure the driver for specific locations and application needs. Using Smart Midnight ClockDIM, it is possible to set up to 5 dim levels and time intervals. The driver does not have a real time clock. Instead it runs a virtual clock, determined by the length of nightly operating hours. After 3 ON-OFF cycles, the driver will calculate the virtual clock time. A valid ON-time is defined as a period during which the driver operates continuously for ≥4 hours to ≤24 hours. For example, if the requirement in summer is: 23:00-00:00: 75%, 00:00-04:00: 50%, 04:00-05:00: 75% (other time 100% or Off). The driver should be powered on for 7h, so it can calculate the virtual clock time as 22:00. Then we can set the dimming plan: 22:00~23:00: 100%, 23:00-00:00: 75%, 00:00-04:00: 50%, 04:00-05:00: 75%. From summer to winter, the valid ON-time changes day by day. The driver should be powered on for 17h in winter, and it also can calculate the virtual clock time as 17:00. Then the dimming plan is 17:00~23:00: 100%, 23:00-00:00: 75%, 00:00-04:00: 50%, 04:00-05:00: 75%, 05:00~10:00: 100%. From the above, if we set the dimming plan as shown in the picture, after repeating the driver ON-time for 3 consecutive days, the dimming plan takes effect from the 4th day onwards. Each day the driver powered on, it has a different start time according to the virtual clock time. So the driver can satisfy different requirements for different seasons.
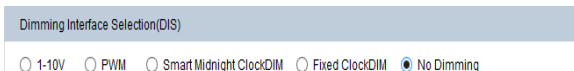
■ Constant Light Output(CLO)
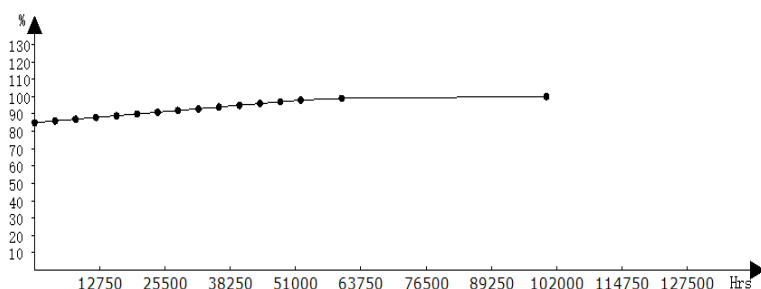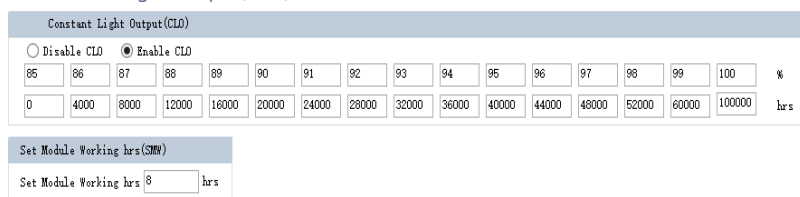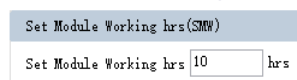

■ Fixed ClockDIM
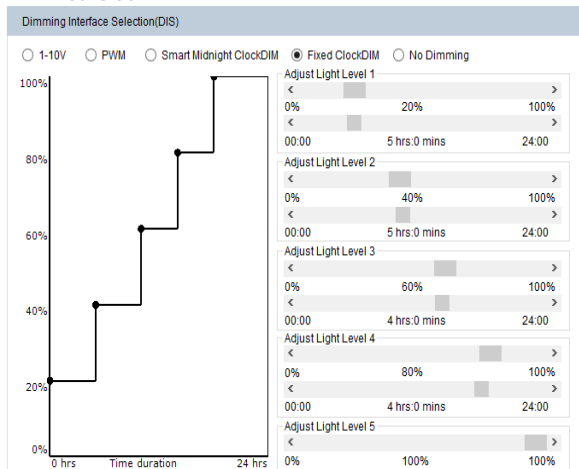
Allow users to separate 24hrs into 5 sections and corresponding output current.

■ No Dimming

The driver will be in constant output mode.

■ Set Module Working hrs(SMW)

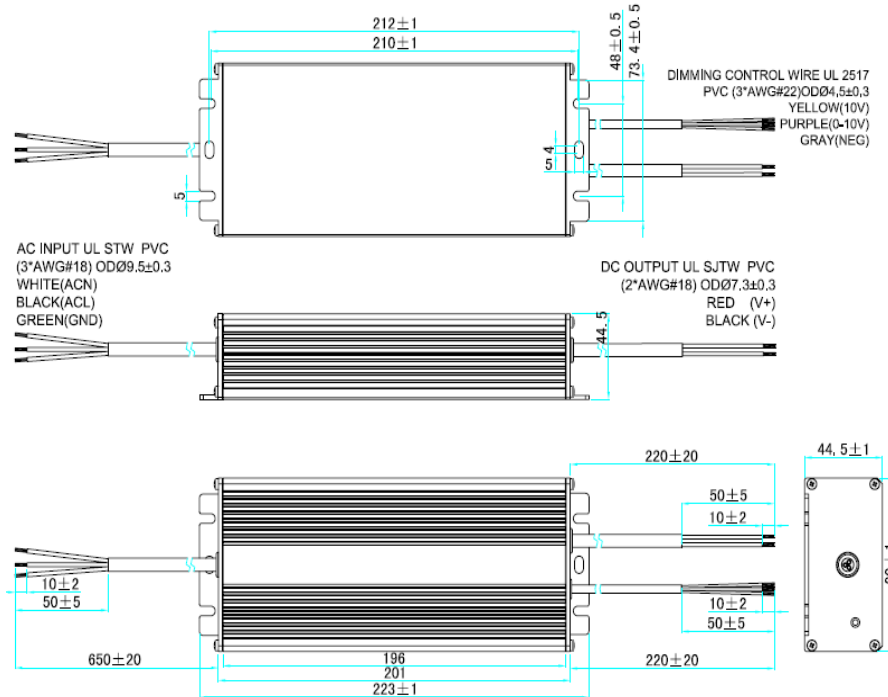User can check how much time the driver works through this function.

Traditional light sources suffer from depreciation in light output over time. This applies to LED light sources as well. The CLO feature enables LED solutions to deliver constant lumen output through the life of the light engine. Based on the type of LEDs used, heat sinking and driver current, it is possible to estimate the depreciation of light output for specific LEDs and this information can be entered into the driver. The driver counts the number of light source working hours and will increase output current based on this input to enable CLO.

When the CLO feature is enabled, the driver nominal output current will be defined by the CLO percentage as shown by the equation below: Driver target nominal output current = CLO percentage * AOC. For example, in the CLO profile shown in Figure, between 52,000-60,000 working hours, the CLO percentage is set at 98%. Assuming the nominal AOC is set to 500mA, the driver output current with CLO enabled will be 0.98 x 500 = 600 mA.

The CLO percentage can be set to a value between 85%-100%, in increments of 1%. The LED module working hours can be set at any value between (0-100,000 hours).

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■ **Mechanical Specification**

Dimensions(Unit:mm)

Label

RoHS Compliance:
Our products comply with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.