



SPWM-75/150/240-MA

User Manual



Matter wireless dimming LED driver



The SPWM-MA series is Mean Well's latest AC-to-DC constant-voltage PWM LED driver, available in 75W, 150W, and 240W models with 12V, 24V, and 48V output options. Ideal for driving various LED strips, it maintains consistent color temperature and uniform brightness. The SPWM-75/150-MA features an input voltage range of 100–305 VAC, while the 240W model operates over 180–305 VAC. Featuring high efficiency and a fanless design, this series ensures reliable operation from -20 °C to +90 °C (-20 °C to +80 °C for the SPWM-150-MA) under free-air conditions. Equipped with multiple functions including Matter-based dimming control, the SPWM-MA series provides excellent design flexibility for LED lighting systems.

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1.Safety Guidelines

- Risk of electrical shock and energy hazard, Any failure should be examined by a qualified technician. Please do not remove the case from the power supply by yourself.
- Do not install this product in damp, high temperature, direct sunlight, or near fire sources.
- Do not install or wire the product while it is powered on.
- Please follow the specifications for input voltage and do not exceed the rated usage.
- Before power on debugging, please ensure that all wiring is correct and secure to avoid short circuits that may damage components and cause accidents.

2.Introduction

2.1 Model Encoding

SPWM - 75 - 24 -

Function options(MA)

Rated output voltage(75W&150W:12V/24V; 240W:24V/48V)

Rated wattage(75/150/240W)

Series name

Type	Function	Note
MA	Based on Matter over Thread technology	In stock

2.2 Features

- Matter over thread, Matter 1.5 specification
- Supports multiple output modes including dimming, color temperature, RGBW
- Constant voltage PWM style output with 1 to 4 channels
- Flicker free, complying with CE ErP directive
- Plastic housing with class II and PFC design
- Standby power consumption <0.5W
- Minimum dimming level 0.1%
- Dimming frequency selectable 3.2 kHz, 20 kHz
- Cooling by free air convection
- 5 years warranty

2.3 Specification

※ SPWM-75 series

SPECIFICATION		SPWM-75-12□	SPWM-75-24□
OUTPUT			
DC VOLTAGE		12V	24V
RATED CURRENT(Max.)		6.3A	3.2A
RATED POWER(Max.)		75.6W	76.8W
VOLTAGE ADJ. RANGE		11~14V	23~26V
PWM FREQUENCY (Typ.)		3.2kHz or 20kHz, Set by Dip Switch	
SETUP, RISE TIME Note.3		2500ms,80ms/ 230VAC ,2500ms,80ms/115VAC	
HOLD UP TIME (Typ.)		10ms/230VAC or 115VAC	
INPUT			
VOLTAGE RANGE Note.2		100 ~ 305VAC 156 ~ 410VDC (Please refer to "STATIC CHARACTERISTIC" section)	
FREQUENCY RANGE		47 ~ 63Hz	
POWER FACTOR (Typ.)		PF>0.97/115VAC, PF>0.95/230VAC, PF>0.92/277VAC @ full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)	
TOTAL HARMONIC DISTORTION		THD<10%@load≧50%/115VAC, 230VAC; @load≧75%/277VAC (Please refer to "TOTAL HARMONIC DISTORTION" section)	
EFFICIENCY (Typ.)		89%	90%
AC CURRENT (Typ.)		0.9A / 115VAC 0.45A / 230VAC 0.38A / 277VAC	
INRUSH CURRENT (Typ.)		COLD START 50A(twidth=500μs measured at 50% Ipeak) at 230VAC; Per NEMA 410	
MAX. NO. of PSUs on 16A CIRCUIT BREAKER		5 units (circuit breaker of type B) / 8 units (circuit breaker of type C) at 230VAC	
LEAKAGE CURRENT		<0.25mA / 277VAC	
STANDBY POWER CONSUMPTION		standby power consumption<0.5W (Dimming off)	
PROTECTION			
OVERLOAD		105~135%, hiccup mode, recovers automatically after fault condition is removed	
SHORT CIRCUIT		Hiccup mode, recovers automatically after fault condition is removed	
OVER VOLTAGE		15 ~ 20V	27~ 36V
OVER TEMPERATURE		Shut down O/P voltage, re- power on to recover after fault condition is removed	
OVER TEMPERATURE		Shut down O/P voltage, re- power on to recover after fault condition is removed	
ENVIRONMENT			
WORKING TEMP.		Tcase=-20~+90°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)	
MAX. CASE TEMP.		Tcase=90°C	
WORKING HUMIDITY		20 ~ 95% RH non-condensing	
STORAGE TEMP., HUMIDITY		-40 ~ +80°C, 10 ~ 95% RH	
TEMP. COEFFICIENT		±0.03%/°C (0 ~ 50°C)	
VIBRATION		5 ~ 100Hz, 2G 12min./1cycle, each along X,Y,Z axes according to EN50090-2-2	
SAFETY & EMC			
SAFETY STANDARDS		ENEC BS EN/EN61347-1, BS EN/EN61347-2-13(EL) appendix J suitable for emergency installations(DC input 176-280VDC), BS EN/EN62384, GB/T19510.1,GB/T19510.213; EAC TP TC 004 approved; Design refer to AS/NZS 61347-1, AS/NZS 61347-2-13	
WITHSTAND VOLTAGE		I/P-O/P:3.75kVAC	
ISOLATION RESISTANCE		I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH	
EMC EMISSION Note.4	Parameter	Standard	Test Level/Note
	Conducted	BS EN/EN55015(CISPR15) ,GB/T17743	-----
	Radiated	BS EN/EN55015(CISPR15) ,GB/T17743	-----
	Harmonic Current	BS EN/EN61000-3-2, GB 17625.1	Class C @load > 50%
	Voltage Flicker	BS EN/EN61000-3-3	-----
EMC IMMUNITY	Parameter	Standard	Test Level/Note
	ESD	BS EN/EN61000-4-2	Level 3, 8kV air; Level 2, 4kV contact
	Radiated	BS EN/EN61000-4-3	Level 2
	EFT/Burst	BS EN/EN61000-4-4	Level 2
	Surge	BS EN/EN61000-4-5	Level 4, 2kV/Line-Line
	Conducted	BS EN/EN61000-4-6	Level 2
	Magnetic Field	BS EN/EN61000-4-8	Level 2
	Voltage Dips and Interruptions	BS EN/EN61000-4-11:2020	30% dip 10 periods 100% interruption 0.5 periods
OTHERS			
MATTER STANDARD		Matter 1.5 Specification	
FLICKER Note.9		PstLM < 1, SVM < 0.4	
MTBF		2396.9 k hrs min. Telcordia SR-332 (Bellcore);	205.7 k hrs min. MIL-HDBK-217F (25°C)
DIMENSION		290*38*28.5mm (L*W*H)	
PACKING		0.28kg/42 pcs/13.5kg/0.67CUFT	
NOTE			
1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.			
2. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.			
3. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.			
4. The driver 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.			
5. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly @ point (or TMP per DLC), is about 75°C or less.			
6. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com			
7. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).			
8. It is not recommended to connect to capacitive loads.			
9. Flicker is measured at full load with the light source provided by MEAN WELL.			
10. RCM is on a voluntary basis. Non IC classification Independent LED control gear is not suitable for residential installations.			
※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx			

※ SPWM-150 series

SPECIFICATION	SPWM-150-12 □	SPWM-150-24 □	
OUTPUT			
DC VOLTAGE	12V	24V	
RATED CURRENT(Max.)	12.5A	6.3A	
RATED POWER(Max.)	150W	151.2W	
VOLTAGE ADJ. RANGE	11~14V	23~26V	
PWM FREQUENCY (Typ.)	3.2kHz or 20kHz, Set by Dip Switch		
SETUP, RISE TIME Note.3	2500ms,80ms/230VAC ,2500ms,80ms/115VAC		
HOLD UP TIME (Typ.)	10ms/230VAC or 115VAC		
INPUT			
VOLTAGE RANGE Note.2	100 ~ 305VAC 156 ~ 410VDC (Please refer to "STATIC CHARACTERISTIC" section)		
FREQUENCY RANGE	47 ~ 63Hz		
POWER FACTOR (Typ.)	PF>0.97/115VAC, PF>0.95/230VAC, PF>0.92/277VAC @ full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)		
TOTAL HARMONIC DISTORTION	THD <10% @load ≧ 50%/115VAC, 230VAC; @load ≧ 75%/277VAC (Please refer to "TOTAL HARMONIC DISTORTION" section)		
EFFICIENCY (Typ.)	92%	93%	
AC CURRENT (Typ.)	1.5A / 115VAC 1A / 230VAC 0.8A / 277VAC		
INRUSH CURRENT (Typ.)	COLD START 55A(twidth=500μs measured at 50% Ipeak) at 230VAC; Per NEMA 410		
MAX. NO. of PSUs on 16A CIRCUIT BREAKER	5 units (circuit breaker of type B) / 8 units (circuit breaker of type C) at 230VAC		
LEAKAGE CURRENT	<0.25mA / 277VAC		
STANDBY POWER CONSUMPTION	Standby power consumption<0.5W (Dimming off)		
PROTECTION			
OVERLOAD	105~150%, hiccup mode, recovers automatically after fault condition is removed		
SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed		
OVER VOLTAGE	15 ~ 20V	27~ 36V	
	Shut down O/P voltage, re-power on to recover after fault condition is removed		
OVER TEMPERATURE	Shut down O/P voltage, re-power on to recover after fault condition is removed		
ENVIRONMENT			
WORKING TEMP.	Tcase=-20~+80°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)		
MAX. CASE TEMP.	Tcase=80°C		
WORKING HUMIDITY	20 ~ 95% RH non-condensing		
STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH		
TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)		
VIBRATION	5 ~ 100Hz, 2G 12min./1cycle, each along X,Y,Z axes according to EN50090-2-2		
SAFETY & EMC			
SAFETY STANDARDS	ENEC BS EN/EN61347-1, BS EN/EN61347-2-13(EL) appendix J suitable for emergency installations(DC input 176-280VDC), BS EN/EN62384; GB/T19510.1,GB/T19510.213; EAC TP TC 004 approved; Design refer to AS/NZS 61347-1, AS/NZS 61347-2-13		
WITHSTAND VOLTAGE	I/P-O/P:3.75kVAC		
ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH		
EMC EMISSION Note.4	Parameter	Standard	Test Level/Note
	Conducted	BS EN/EN55015(CISPR15), GB/T17743	-----
	Radiated	BS EN/EN55015(CISPR15), GB/T17743	-----
	Harmonic Current	BS EN/EN61000-3-2, GB 17625.1	Class C @load > 50%
	Voltage Flicker	BS EN/EN61000-3-3	-----
EMC IMMUNITY	BS EN/EN61547		
	Parameter	Standard	Test Level/Note
	ESD	BS EN/EN61000-4-2	Level 3, 8kV air ; Level 2, 4kV contact
	Radiated	BS EN/EN61000-4-3	Level 2
	EFT/Burst	BS EN/EN61000-4-4	Level 2
	Surge	BS EN/EN61000-4-5	Level 4, 2kV/Line-Line
	Conducted	BS EN/EN61000-4-6	Level 2
	Magnetic Field	BS EN/EN61000-4-8	Level 2
	Voltage Dips and Interruptions	BS EN/EN61000-4-11:2020	30% dip 10 periods 100% interruption 0.5 periods
OTHERS			
MATTER STANDARD	Matter 1.5 Specification		
FLICKER Note.9	PstLM < 1, SVM < 0.4		
MTBF	1926.4k hrs min. Telcordia SR-332 (Bellcore); 158.1k hrs min. MIL-HDBK-217F (25°C)		
DIMENSION	340*38*28.5mm (L*W*H)		
PACKING	0.38kg/30pcs/13.0kg/0.66CUFT		
NOTE			
1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.			
2. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.			
3. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.			
4. The driver 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.			
5. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly @ point (or TMP, per DLC), is about 75°C or less.			
6. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com			
7. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).			
8. It is not recommended to connect to capacitive loads.			
9. Flicker is measured at full load with the light source provided by MEAN WELL.			
10. RCM is on a voluntary basis. Non IC classification Independent LED control gear is not suitable for residential installations.			
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※ SPWM-240 series

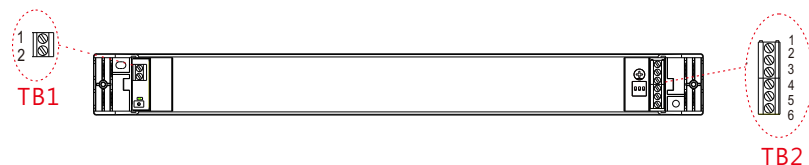
SPECIFICATION		SPWM-240-24 □	SPWM-240-48 □
OUTPUT			
DC VOLTAGE		24V	48V
RATED CURRENT(Max.)		10A	5A
RATED POWER(Max.)		240W	240W
VOLTAGE ADJ. RANGE		23~26V	47~50V
PWM FREQUENCY (Typ.)		3.2kHz or 20kHz, Set by Dip Switch	
SETUP, RISE TIME Note.3		2500ms, 80ms/230VAC	
HOLD UP TIME (Typ.)		10ms/230VAC	
INPUT			
VOLTAGE RANGE Note.2		180 ~ 305VAC 255 ~ 410VDC (Please refer to "STATIC CHARACTERISTIC" section)	
FREQUENCY RANGE		47 ~ 63Hz	
POWER FACTOR (Typ.)		PF>0.95/230VAC, PF>0.92/277VAC @ full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)	
TOTAL HARMONIC DISTORTION		THD <10% @load ≥ 50%, 230VAC; @load ≥ 75%/277VAC (Please refer to "TOTAL HARMONIC DISTORTION" section)	
EFFICIENCY (Typ.)		93%	94%
AC CURRENT (Typ.)		1.3A / 230VAC 1.1A / 277VAC	
INRUSH CURRENT (Typ.)		COLD START 60A(twidth=700μs measured at 50% Ipeak) at 230VAC; Per NEMA 410	
MAX. NO. of PSUs on 16A CIRCUIT BREAKER		3 units (circuit breaker of type B) / 5 units (circuit breaker of type C) at 230VAC	
LEAKAGE CURRENT		<0.25mA / 277VAC	
STANDBY POWER CONSUMPTION		standby power consumption<0.5W (Dimming off)	
PROTECTION			
OVERLOAD		105~150%, hiccup mode, recovers automatically after fault condition is removed	
SHORT CIRCUIT		Hiccup mode, recovers automatically after fault condition is removed	
OVER VOLTAGE		27 ~ 36V	52~ 63V
		Shut down O/P voltage, re-power on to recover after fault condition is removed	
OVER TEMPERATURE		Shut down O/P voltage, re-power on to recover after fault condition is removed	
ENVIRONMENT			
WORKING TEMP.		Tcase = -20 ~ +90°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)	
MAX. CASE TEMP.		Tcase=90°C	
WORKING HUMIDITY		20 ~ 95% RH non-condensing	
STORAGE TEMP., HUMIDITY		-40 ~ +80°C, 10 ~ 95% RH	
TEMP. COEFFICIENT		±0.03%/°C (0 ~ 50°C)	
VIBRATION		5 ~ 100Hz, 2G 12min./1cycle, each along X,Y,Z axes according to EN50090-2-2	
SAFETY & EMC			
SAFETY STANDARDS		ENEC BS EN/EN61347-1, BS EN/EN61347-2-13(EL) appendix J suitable for emergency installations(DC input 176-280VDC), BS EN/EN62384; GB/T19510.1, GB/T19510.213; EAC TP TC 004 approved; Design refer to AS/NZS 61347-1, AS/NZS 61347-2-13	
WITHSTAND VOLTAGE		I/P-O/P:3.75kVAC	
ISOLATION RESISTANCE		I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH	
EMC EMISSION Note.4	Parameter	Standard	Test Level/Note
	Conducted	BS EN/EN55015(CISPR15), GB/T17743	-----
	Radiated	BS EN/EN55015(CISPR15), GB/T17743	-----
	Harmonic Current	BS EN/EN61000-3-2, GB 17625.1	Class C @load ≥ 50%
	Voltage Flicker	BS EN/EN61000-3-3	-----
EMC IMMUNITY	BS EN/EN61547		
	Parameter	Standard	Test Level/Note
	ESD	BS EN/EN61000-4-2	Level 3, 8kV air; Level 2, 4kV contact
	Radiated	BS EN/EN61000-4-3	Level 2
	EFT/Burst	BS EN/EN61000-4-4	Level 2
	Surge	BS EN/EN61000-4-5	Level 4, 2kV/Line-Line
	Conducted	BS EN/EN61000-4-6	Level 2
	Magnetic Field	BS EN/EN61000-4-8	Level 2
	Voltage Dips and Interruptions	BS EN/EN61000-4-11:2020	30% dip 10 periods 100% interruption 0.5 periods
OTHERS			
MATTER STANDARD	Matter 1.5 Specification		
FLICKER Note.9	PstLM ≤ 1, SVM ≤ 0.4		
MTBF	1801.3k hrs min. Telcordia SR-332 (Bellcore); 155.5k hrs min. MIL-HDBK-217F (25°C)		
DIMENSION	380*38*28.5mm (L*W*H)		
PACKING	0.58kg/24pcs/14.98kg/0.61CUFT		
NOTE			
1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.			
2. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.			
3. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.			
4. The driver 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.			
5. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly @ point (or TMP per DLC), is about 75°C or less.			
6. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com			
7. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).			
8. It is not recommended to connect to capacitive loads			
9. Flicker is measured at full load with the light source provided by MEAN WELL.			
10. RCM is on a voluntary basis. Non IC classification Independent LED control gear is not suitable for residential installations.			
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2.4 Displays and operating elements



- A: AC INPUT TB1
- B: DC OUTPUT TB2
- C: LED INDICATOR
- D: RESET BUTTON
- E: DIP-SWITCH
- F: Vo ADJ

2.4.1 Terminal definition



Terminal	Pin No.	Assignment
TB1	1	AC/L
	2	AC/N

Terminal	Pin No.	Assignment
TB2	1	+V
	2	+V
	3	1/-R/C.W.
	4	2/-G/W.W.
	5	3/-B
	6	4/-W

2.4.2 Wiring requirements

TB1 and TB2 terminal wiring requirements:

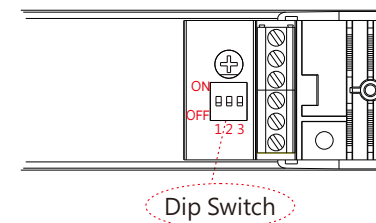
Terminal type	Wire	Stripping length	Suggested torque
M2.5 Screw	0.75~2.5mm ² (18~14AWG)	6-7mm	0.4 N·m (3.5 Lb·in)

2.4.3 LED Indicator

status	Indicator
Flash slowly	Bluetooth Broadcast is running, at which point the pairing operation can be performed.
Flash quickly	Factory Reset is running
Constantly ON	Matter wireless is connected
Constantly OFF	Matter wireless is disconnected and Bluetooth Broadcast is OFF

2.4.4 Operating Model

Type MA is a 4-channel output model, which can be configured via the onboard DIP switches to support standard Matter lighting device types including Dimmable Lights, Color Temperature Lights, and Extended Color Lights. Settings take effect immediately without power cycling. Detailed configuration information is shown in the table below, and the total output power of all channels shall not exceed the rated power of the product.



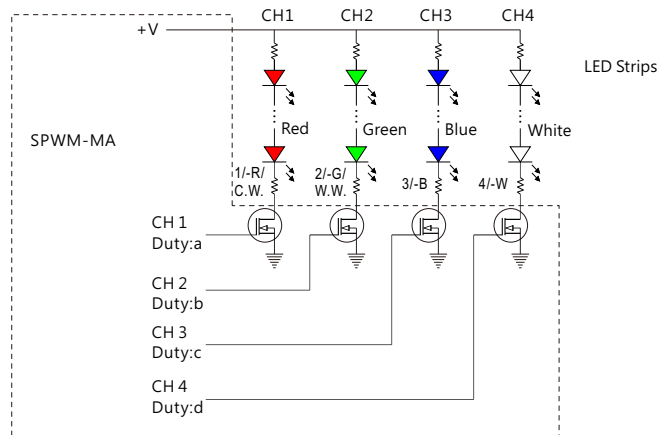
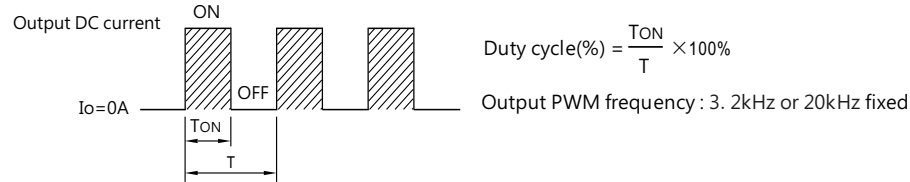
Dip Switch			Application	Output channels	Output connections schematic diagram												
1	2	3															
ON	ON	--	1 logic unit of LED (Dimmable light)	1 channel	<table border="1"> <tr> <th colspan="6">Output Terminal</th></tr> <tr> <td>4/-W</td><td>3/-B</td><td>2/-G/W.W.</td><td>1/-R/C.W.</td><td>+V</td><td>+V</td></tr> </table>	Output Terminal						4/-W	3/-B	2/-G/W.W.	1/-R/C.W.	+V	+V
Output Terminal																	
4/-W	3/-B	2/-G/W.W.	1/-R/C.W.	+V	+V												
OFF	OFF	--	1 logic unit of colour type (RGB) (Factory default settings)	3 channels	<table border="1"> <tr> <th colspan="6">Output Terminal</th></tr> <tr> <td>4/-W</td><td>3/-B</td><td>2/-G/W.W.</td><td>1/-R/C.W.</td><td>+V</td><td>+V</td></tr> </table>	Output Terminal						4/-W	3/-B	2/-G/W.W.	1/-R/C.W.	+V	+V
Output Terminal																	
4/-W	3/-B	2/-G/W.W.	1/-R/C.W.	+V	+V												
OFF	ON	--	2 logic units (RGB) (Dimmable light)	4 channels	<table border="1"> <tr> <th colspan="6">Output Terminal</th></tr> <tr> <td>4/-W</td><td>3/-B</td><td>2/-G/W.W.</td><td>1/-R/C.W.</td><td>+V</td><td>+V</td></tr> </table>	Output Terminal						4/-W	3/-B	2/-G/W.W.	1/-R/C.W.	+V	+V
Output Terminal																	
4/-W	3/-B	2/-G/W.W.	1/-R/C.W.	+V	+V												
ON	OFF	--	1 logic unit of colour type Tc (Color temperature light)	2 channels	<table border="1"> <tr> <th colspan="6">Output Terminal</th></tr> <tr> <td>4/-W</td><td>3/-B</td><td>2/-G/W.W.</td><td>1/-R/C.W.</td><td>+V</td><td>+V</td></tr> </table>	Output Terminal						4/-W	3/-B	2/-G/W.W.	1/-R/C.W.	+V	+V
Output Terminal																	
4/-W	3/-B	2/-G/W.W.	1/-R/C.W.	+V	+V												

Dip Switch			Application
1	2	3	
--	--	OFF	PWM frequency: 3.2 kHz(AC restart required)
--	--	ON	PWM frequency: 20 kHz(AC restart required)

2.4.5 Dimming operation

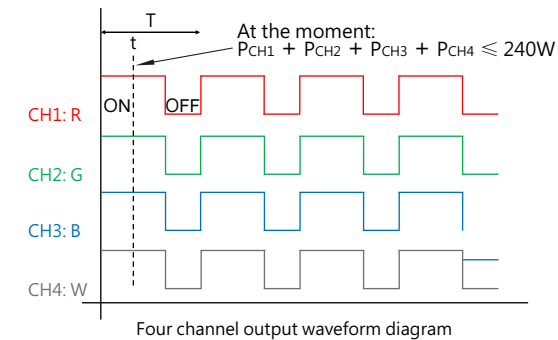
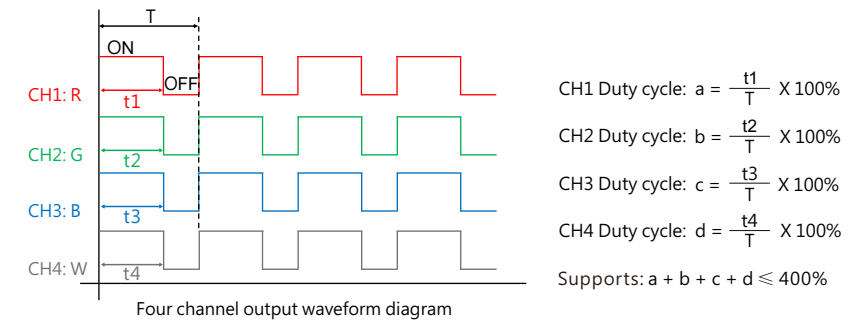
2.4.5.1 Dimming principle for PWM style output

Dimming is achieved by varying the duty cycle of the output current.



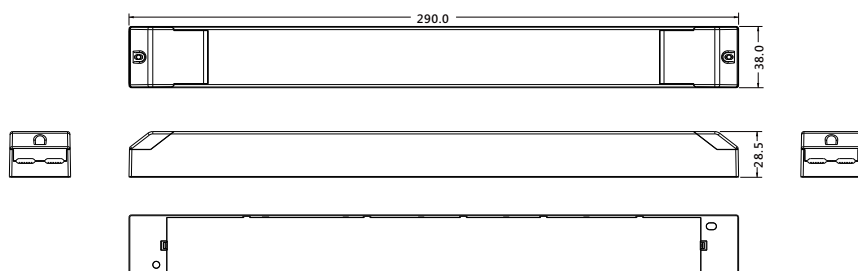
2.4.5.2 Color Control Mode

For the color control mode of the SPWM-MA series, the sum of the duty cycles of the four channels shall not exceed 400%. Meanwhile, the total output power of all four channels must never exceed the product's rated power at any time. Taking the SPWM-240-24MA as an example, the total power shall not exceed 240W at all times, as illustrated in the figure below.

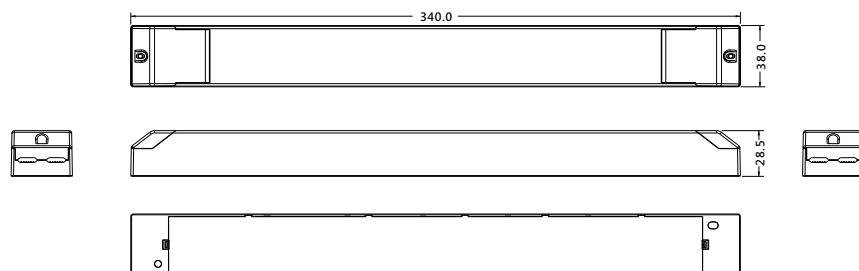


2.5 Mechanical Specifications

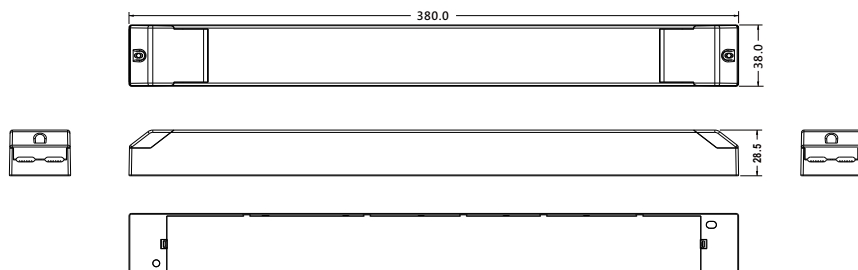
2.5.1 SPWM-75 series



2.5.2 SPWM-150 series



2.5.3 SPWM-240 series



2.6 Installation

2.6.1 Installation method

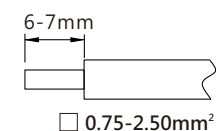
① Gently flip up the protective cover.



② Use a screwdriver, adjust the dip switch to set different application modes (Refer to Chapter 2.4.4 Operating Model).



③ Use a screwdriver to tighten the wire, with a suggested torque of 3.5 Lb-in.

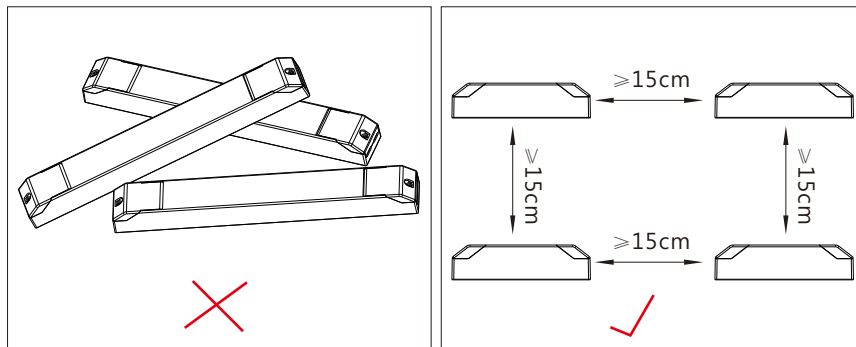


④ Close and tighten the protective cover with screws.

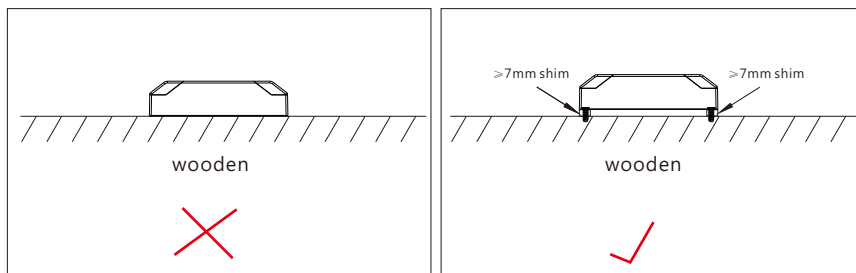


2.6.2 Installation Precautions

(1) Do not stack products. The distance between products should be $\geq 15\text{cm}$ to avoid affecting product heat dissipation, which may reduce product service life.

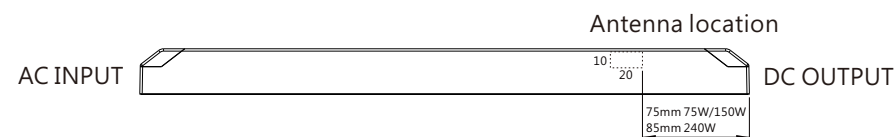


(2) When installing the product, a gasket of $\geq 7\text{mm}$ should be added below the fixing screw to maintain a gap for effective heat dissipation and extend the product's service life.



(3) Matter device has an integrated antenna for easy integration. In order to maximize the range in every direction, some design guidelines should be taken into consideration when mounting the device.

The antenna positions of the device are shown in the figure below:



- ① Keep the device as far away as possible from vertical metal structures.
- ② When the device is mounted on a metal plate (e.g., an aluminum luminaire housing), the RF signal may be blocked. In this case, it is necessary to provide a cutout in the metal plate beneath the antenna. The cutout should be as large as possible to ensure proper RF signal transmission.
- ③ The device's communication range may be influenced by environmental factors and installation positioning, necessitating on-site adjustments and testing.

3. Factory Reset

If the SPWM-MA has previously been paired with another device (in a paired state), it can be reset to participate in pairing again by restoring its factory settings. There are two ways to restore factory settings as follows.

3.1 By RESET BUTTON

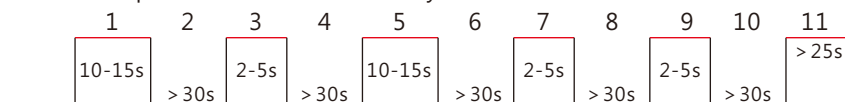
Press and hold the reset button for 10 seconds. When the LED indicator flashes quickly, release the button. The factory reset will then be completed.



3.2 By AC ON/OFF

When the power supply is designed inside the luminaire and the reset button is inaccessible, Factory Reset can be performed by toggling the AC ON/OFF. To perform Factory Reset through AC ON/OFF, the following process must be strictly followed. If the AC ON/OFF process is correct, the output light will flash for 15 seconds. When the flashing stops, it means the Factory Reset is completed.

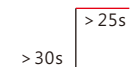
AC ON/OFF process to execute Factory Reset:



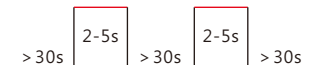
stage	Hold time	AC status
1	10-15s	ON
2	>30s	OFF
3	2-5s	ON
4	>30s	OFF
5	10-15s	ON
6	>30s	OFF
7	2-5s	ON
8	>30s	OFF
9	2-5s	ON
10	>30s	OFF
11	>25s	ON (should wait until output light stop flashing)

Note: If there is a malfunction in the 'AC ON/OFF' process, it can be reset by the following method and start from stage 1 again.

Method 1 : AC ON time exceeds 25 seconds.



Method 2 : Perform two AC on operations, 2 - 5 seconds each.



4.Matter

4.1 What is Matter

Matter is a unified smart home standard jointly developed by multiple member companies of the Connectivity Standards Alliance, aiming to ensure seamless interoperability among devices from different brands. Various enterprises have established their ecosystems based on the Matter standard, using their own apps and hub devices to interact with a variety of Matter-compliant devices, thus delivering a comprehensive user experience.

Refer to the official website of the CSA:
<https://csa-iot.org/all-solutions/matter/>

4.2 What is Thread

Thread, based on 6LoWPAN, fully utilizes open standards and IPv6 technology, featuring security and reliability, no single point of failure, ease of connection, and low power consumption. Developers and consumers can easily and securely use Thread to form a low-power wireless mesh network comprising over 250 devices. Within the network, each device can connect to the internet and access cloud services.

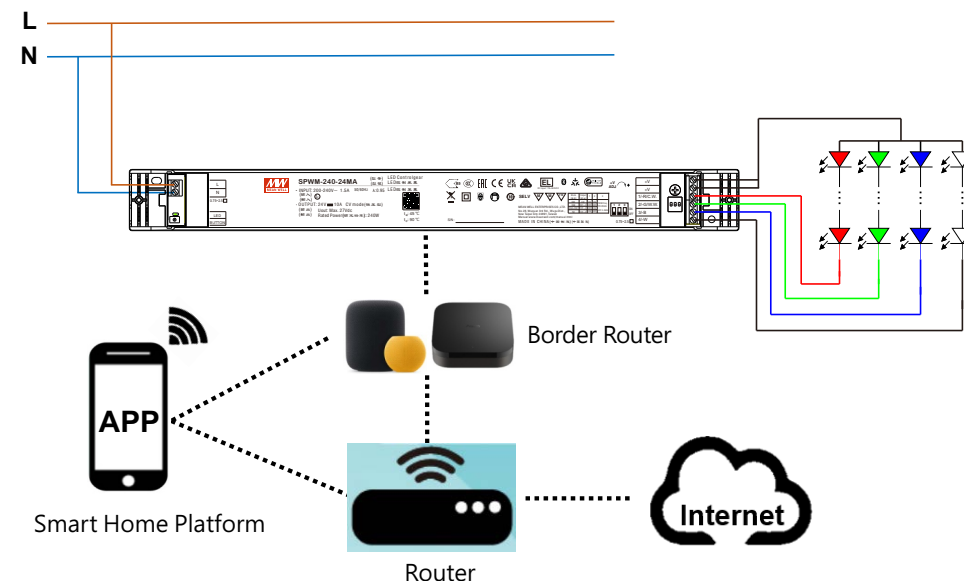
Refer to the official website of the Thread Group:
<https://www.threadgroup.org>

*The number of devices managed in a Thread network is influenced by the processing capacity of the hub device and the network topology. In typical application scenarios, it is recommended that the number of devices does not exceed 250 to ensure stability and response speed. However, consult your hub device provider and conduct onsite tests to expand the number of devices.

5.How to use Matter

5.1 Components

Matter aims to utilize the existing infrastructure in your home to reduce the complexity of your smart home. Users can easily set up and control devices without fully understanding the architecture of the smart home. The following diagram shows the configuration of the MEANWELL SPWM-MA series application system.



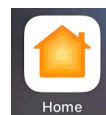
5.2 Commissioning using Apple ecosystem

5.2.1 Components

- Router: Provide stable wireless network.
- Border Router: Homepod.
- Apple's system devices: The operating system requirement is iOS 16.1 or above. For iPhone 15 Pro, iPhone 15 Pro Max, or newer models running iOS 18, there is no need to use HomePod as the home hub, and they can be directly paired with SPWM-MA.

Note: When using a mobile phone as a Thread Border Router, keep the phone within the communication range of the lights at all times.

- APP: " Home" .

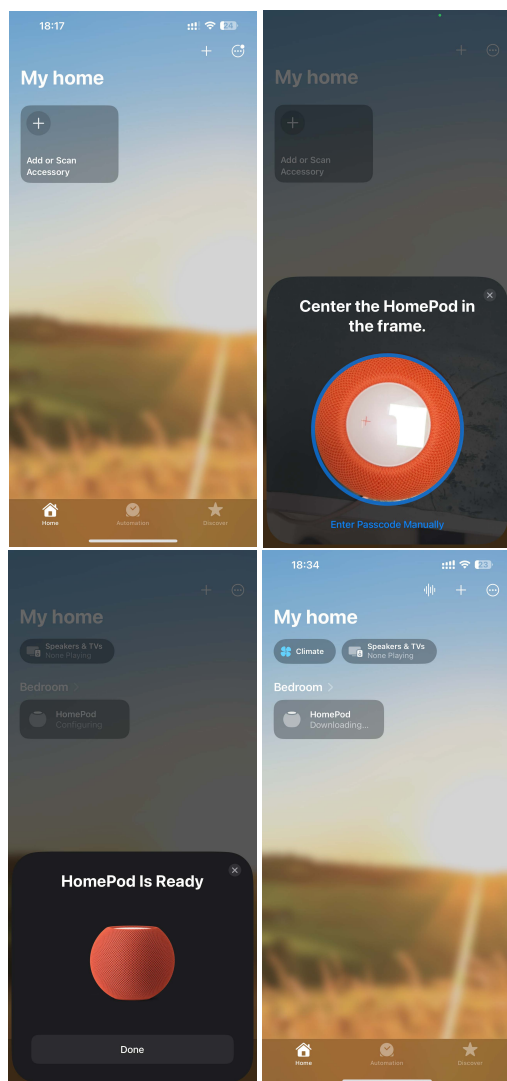


- Matter device : SPWM-150-24MA + RGBW light strip: Set DIP switch 1 to OFF, switch 2 to ON.

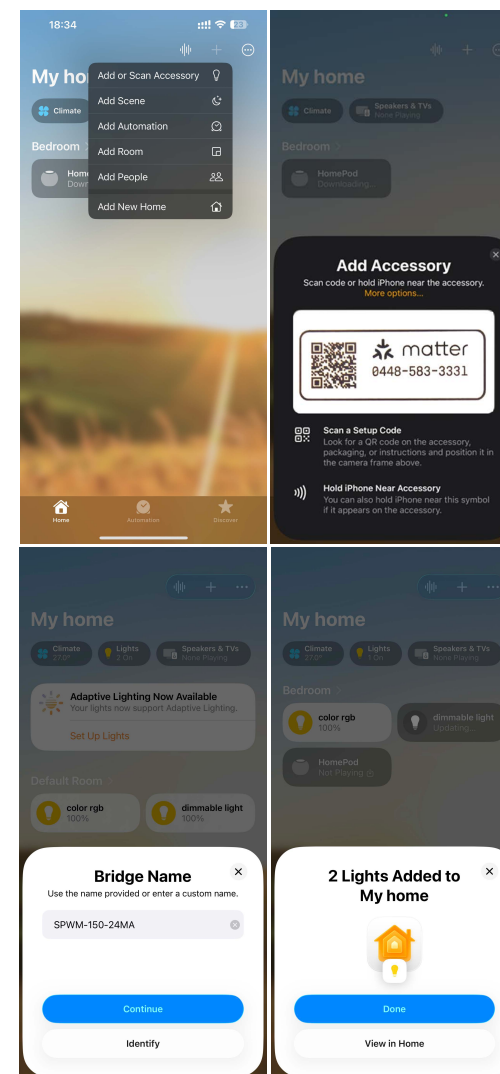
5.2.2 Step by step

- ① Check whether the router's network connection is stable and reliable.
- ② Check if your phone is connected to the correct wireless network.
- ③ Use an iPhone to open the "Home" APP. Tap "Add or Scan Accessories", and then add the HomePod to "My Home" following the APP's operation instructions.

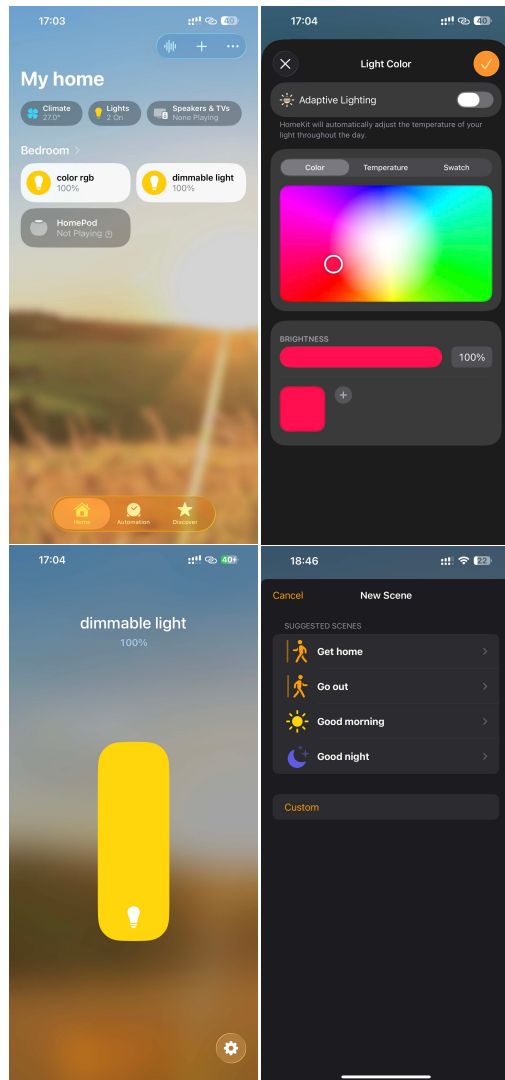
*For iPhone 15 Pro, iPhone 15 Pro Max, or later models running iOS 18 or later, you can skip this step.



- ④ Turn on the luminaire powered by SPWM-150-24MA. Confirm that the LED indicator of the SPWM-150-24MA is in a "Flash slowly" state. Then tap the "+" in the upper - right corner of the APP. Select "Add or Scan Accessory". Scan the QR code on the shell of the SPWM-150-24MA. Follow the operation instructions to add the light. You can customize the location and name of the light. Since the DIP switches are configured with two logic units, two sub-devices will be added: one RGB device (Color RGB) and one dimming device (Dimmable Light).



- ⑤After adding the light, you can perform on/off, color adjustment and dimming operations on the RGB device, and conduct switching and dimming operations on the dimmable light. You can also create scenes, set scheduled events and enable voice control.

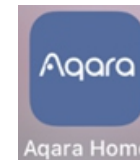


5.3 Commissioning using other ecosystems

Apart from the Apple ecosystem, there are other enterprises that build their own ecosystems based on the Matter standard. Using these enterprises' apps and hub devices, along with other Matter-enabled devices, users can achieve intelligent control of their smart homes. Take "Aqara" as an example for introduction below.

5.3.1 Components

- Router: Provide stable wireless network.
- Border Router : "Hub M3" .
- Smart devices: devices with Android or iOS operating systems.
- APP: download and install the "Aqara Home" APP from the app store.

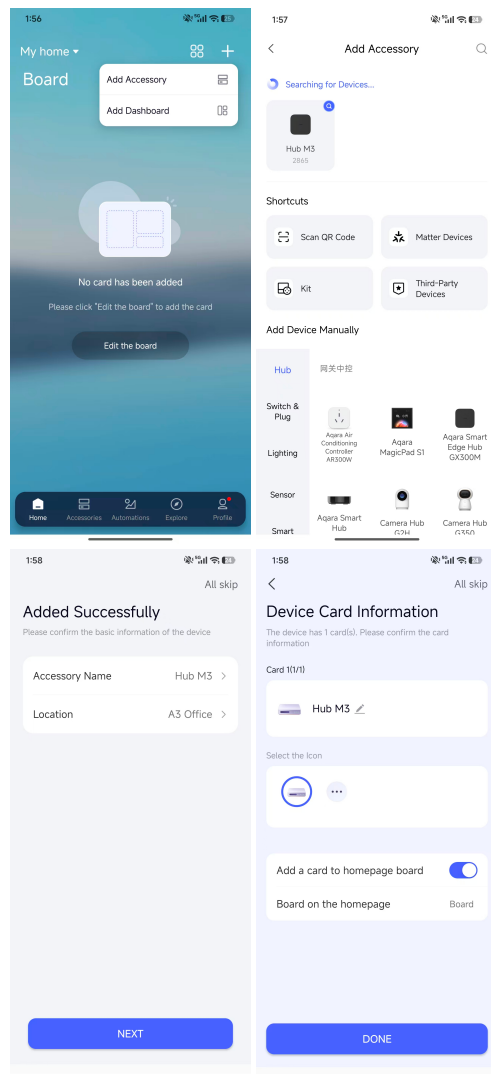


- Matter device : SPWM-150-24MA + RGBW light strip: Set DIP switch 1 to OFF, switch 2 to ON.

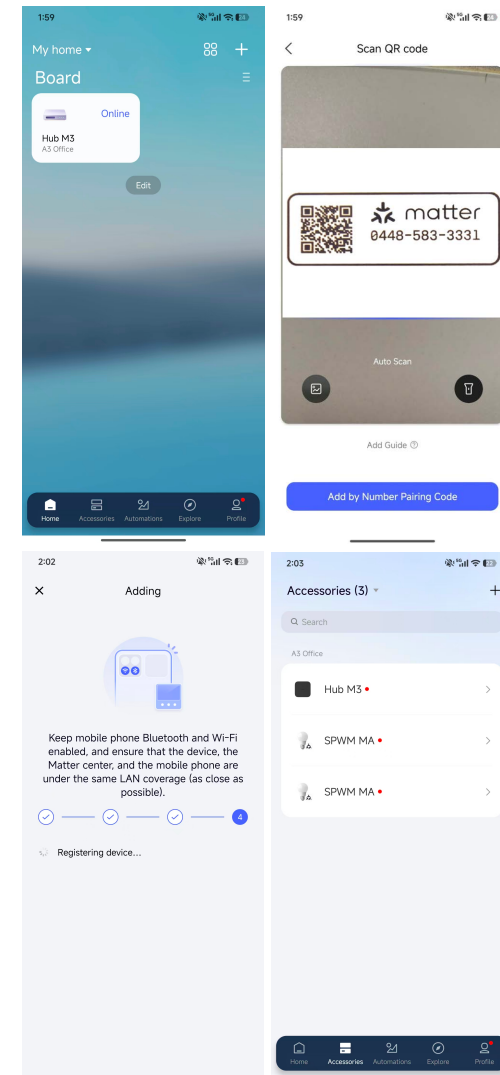
5.3.2 Step by Step

- ①Check whether the router's network connection is stable and reliable.
- ②Check if your phone is connected to the correct wireless network.

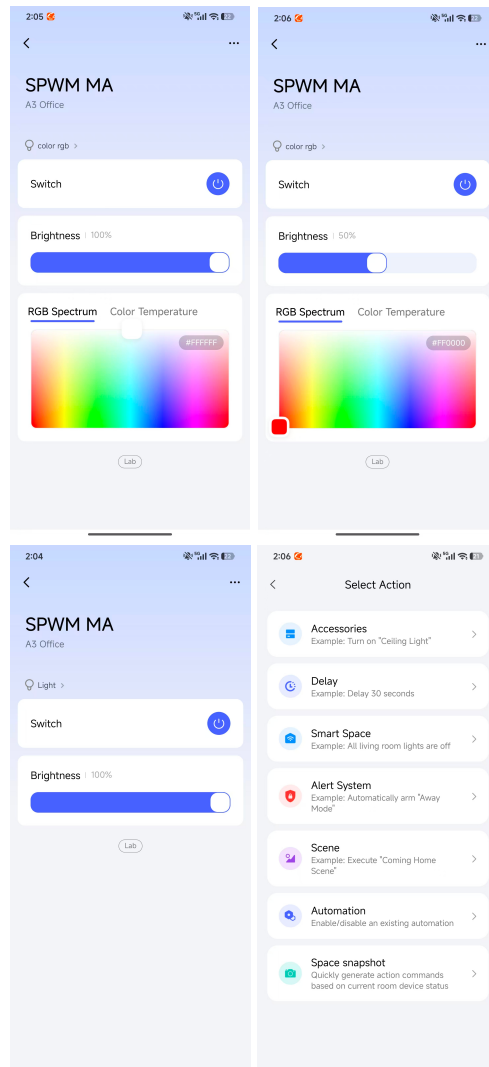
- ③Open the "Aqara Home" APP on your mobile phone. Tap the "+" in the upper - right corner, select "Add Accessory", and add the "Hub M3" to "Home". Make sure that the "Hub M3" is connected to the same local area network as your mobile phone.



- ④Turn on the luminaire powered by SPWM-150-24MA. Confirm that the LED indicator of the SPWM-150-24MA is in a "Flash slowly" state. Then tap the "+" in the upper-right corner of the APP. Select "Add Accessory". Scan the QR code on the shell of the SPWM-150-24MA. Follow the operation instructions to add the light. You can customize the location and name of the light. Since the DIP switches are configured with two logic units, two sub-devices will be added: one RGB device (Color RGB) and one dimming device (Dimmable Light).



- ⑤After adding the light, you can turn the RGB device on or off, adjust its color and brightness, and control on/off and dimming for the dimmable light. You can also create scenes and set scheduled events.



6.Common Faults and Troubleshooting

Issue	Cause	Recommended Actions
AC power is present, but LED indicator stays off and network pairing fails	The device times out (over 15 minutes) after power-on, and the network module enters low-power standby mode automatically	Restart the AC power supply or press and hold the reset button to reset the device. Start network pairing again once the LED indicator flashes
LED indicator stays on steadily and pairing mode cannot be activated	The device has been paired and is currently bound	Restore factory settings. Retry network pairing after the LED indicator starts flashing.
Slow or repeated failures during network pairing	The antenna is blocked by metal objects, or the device is too far from the router/ Thread Border Router, resulting in weak and unstable signals	1. Check the antenna and remove metal obstructions. 2. Move the device closer to the router/Thread Border Router and reduce wall penetration. 3. Ensure stable Wi-Fi/Thread network with minimal channel interference.
Slow response and laggy control when too many devices are connected	The processing capacity, bandwidth or Thread network capacity of the hub (Thread Border Router/Gateway) reaches its limit	1. Reduce the number of devices connected to a single hub. 2. Deploy additional Thread Border Routers to share the load. 3. Replace with a higher-performance gateway/ hub that supports more connected devices.
Devices cannot be controlled after power is restored following a full power outage	It takes time for the hub, router and devices to reconnect to the network after reboot	1. Avoid cutting off power to routers, hubs and all devices simultaneously if possible. 2. Wait until routers and hubs complete network initialization before operating devices after power restoration. 3. Extend the command retry interval to reduce load on the hub.

7.Warranty

This product provides five years warranty under normal usage. Do not replace parts or any form of modification to the product in order to keep the warranty effectively.

※MEAN WELL possesses the right to adjust the content of this manual.

Please refer to the latest version of our manual on our website.

<https://www.meanwell.com>



8.Environmental declaration information

https://www.meanwell.com//Upload/PDF/RoHS_PFOS.pdf

https://www.meanwell.com//Upload/PDF/REACH_SVHC.pdf

https://www.meanwell.com//Upload/PDF/Declaration_RoHS-E.pdf

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