

HX-T3-Z1

Category: Tunable White / CCT Controllers

Source model: HX-T3-Z1

Internal reference: HOION-CTRL-091

Product Overview

Single color dimmer can achieve stepless and smooth dimming. It adopts both knob control manner and remote control. The digital tube displays the brightness percentage, users can transfer the light to the appropriate brightness. It can also be controlled by smart home system through Zigbee 3.0 technology; It is compatible with multiple remote controls and can be flexibly combined according to project requirements, achieving single or multiple group control.

Technical Details

Product Feature

Working voltage: DC12-24V, Max. output current up to 25A, 300W/12V, 600W/24V.

RF frequency 2.4GHz, Wireless-sync-control.

Supports manual knob dimming, Zigbee 3.0 smart lighting control and remote control.

PWM frequency is adjustable (6 levels: 500Hz, 1KHz, 2KHz, 4KHz, 8KHz, 12KHz).

External antenna, convenient to extend the antenna outside the metal case when needed.

This product is designed the Tuya-ZS2S module and complies with the ZigBee 3.0 standard protocol. It needs to be used in conjunction with a ZigBee 3.0 gateway. The performance of Zigbee 3.0 will enable users to experience a high-quality and stable wireless intelligent system. It can also be connected to smart home hubs such as Amazon Alexa, Apple Home, and Google Assistant through smart gateways/bridges integrated with the matter-Zigbee protocol, such as the Philips Hue bridge and the Samsung SmartThings Station.

Integrated with multiple remote controls, it can be used in any combination to achieve single zone or partition control.

Short-circuit protection.

3-year warranty.

Technical Parameters

| Working temperature | -20-60℃ | Supply voltage | DC12-24V

| Output | 1 channel | Static power consumption | <1W

| Max. output current | 25A | Max. output power | 300W/12V; 600W/24V

| Net weight | 72g | External dimension | L103*W40*H24 mm

| Gross weight | 82g | Packing size | L110*W42*H28mm

| RF frequency | 2.4GHz | Control method | Knob, remote control, TUYA-APP

| RF distance | Up to 30 meters | Short circuit protection | Yes

| Zigbee 3.0 | IEEE 802.15.4 | Zigbee frequency | 2.4GHz ISM band

| Memory function | Yes | PWM frequency | 2KHz (factory default), 500Hz, 1KHz, 4KHz, 8KHz, 12KHz

| Max. output current | PWM≤2KHz: 25A

PWM=4KHz: 20A

PWM=8KHz: 15A

PWM=12KHz: 10A | Max. output power | PWM≤2KHz: 300W/12V; 600W/24V

PWM=4KHz: 240W/12V, 480W/24V

PWM=8KHz: 180W/12V; 360W/24V

PWM=12KHz: 120W/12V; 240W/24V

Connection port instruction

Direction for use

Connect the load wire at first, followed by the power wire; Please ensure short circuit can not occur between connecting wire before turning on the power;

Adopt rotary button, function as follows:

Clockwise rotation to brighten up brightness to 100% as the maximum; Counterclockwise rotation to dim down the brightness to 0% as the minimum.

The button-type knob that comes with the dimmer can realize the dimming function, and 5 levels of brightness (10%, 30%, 50%, 70%, 100%) can be achieved by short pressing the knob button.

PWM display: P005=500Hz; P010=1KHz; P020=2KHz (factory default); P040=4KHz, P080= 8KHz; P120=12KHz.

PWM Frequency Adjustment operation :

- 1)
by HX-RFBT-2.4G remote control: Press and hold the remote control "Set" for 5 seconds after switch off the dimmer by remote control(the dimmer is in off state) within 10 seconds, display will show as: P***. Means enter "PWM adjusting" state. Pressing to adjust the PWM frequency, pressing "Set" button again to save it after finish the setting operation. Then the dimmer return to power on state automatically.
- 2)
by HX-RFBT10-2.4G remote control: Press and hold the remote control "Set" for 5 seconds after switch off the dimmer by remote control(the dimmer is in off state) within 10 seconds, display will show as: P***. Means enter "PWM adjusting" state. Press Brightness +/- keys to adjust the PWM frequency, pressing "Set" button again to save it after finish the setting operation. Then the dimmer return to power on state automatically.
- 3)
by HX-RFBT12-2.4G remote control : Pressing DIY1->DIY2-> DIY1->DIY2-> DIY1->DIY2 (3 times for each) within 5 seconds after switching off the dimmer by remote control, display will show as: P***. Means enter "PWM adjusting" state.; press □/□ to adjust the PWM, pressing "DIY1" button again to save it after finish the setting operation. Then the dimmer return to power on state automatically.
- 4) by HX-RFBT15-2.4G remote control: Pressing C->D->C->D->C->D (3 times for each, C-matching key, D-clearing key) within 5 seconds after switching off the dimmer by remote control, display will show as: P***. Means enter "PWM adjusting" state. Rotating the knob to adjust the PWM frequency, pressing "C" button again to save it after finish the setting operation. Then the dimmer return to power on state automatically.
- 5) by Knob button on dimmer: long press the knob button for 5S to enter PWM adjustment, display will show as: P***, means enter "PWM adjusting" state. Rotating the knob to adjust the PWM frequency, short press the knob to save it after finish the setting operation. Then the dimmer return to power on state automatically.

Please note: PWM setting operation should be finished within 1 minute, Will automatically exit PWM adjusting status without save it after 60 seconds.

Reset and network configuration

This product uses the Tuya-ZS2S module and complies with the ZigBee 3.0 standard protocol. It needs to be used in conjunction with a ZigBee 3.0 gateway. The performance of Zigbee 3.0 enables users to experience a high-quality and stable wireless intelligent system. It can also be connected to smart home hubs such as Amazon Alexa, Apple Home, and Google Assistant through smart gateways/bridges integrated with the matter-Zigbee protocol, such as the Philips Hue bridge and the Samsung SmartThings Station.

Note: The application expandability of the intelligent system requires the compatibility of the gateway simultaneously.

When configuring the network, first connect the load light and power supply to the ZigBee 3.0 controller, and place it close to the ZigBee 3.0 gateway. The device has 2 reset methods, and you can choose according to your convenience:

- (1) Power on the controller continuously five times, with each power-on duration not exceeding 10 seconds. You will see the load light flashing, and the device will enter the network configuration state.
- (2) If the device has been configured for the network before, when it is in the connected state, you can directly delete the device on the mobile APP where it was previously added. You will see the load light flashing, and the device will enter the network configuration state.

When the device successfully enters the network configuration state, the load light will keep flashing until the network configuration is successful, or it will exit the flashing prompt state after flashing continuously for 30 seconds (the network configuration state will continue for up to 10 minutes).

When you can view the device on the mobile APP, it means that the network configuration is successful.

Examples of Network Configuration Applications

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APP |
Gateway/bridge |
Operation

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PHILIPS-hue | Install the Philips Hue APP — Create an account — Add the Philips Hue bridge — Reset the device and Add the lighting fixtures.

Available to connect to Amazon Alexa, Apple Home and Google Assistant through Hue.

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Samsung-

SmartThings | Install the Samsung SmartThings APP — Create an account — Add the SmartThings Station —Reset the device and Add the lighting fixtures

Available to connect to Amazon Alexa, Apple Home and Google Assistant.

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Tuya-

THP10-Z-X | Install the Smart Life APP -- Create a home -- Add the Tuya ZigBee 3.0 gateway -- Reset the device and Enter the gateway interface to add sub - devices.

Available to connect to Amazon Alexa, Apple Home, Google Assistant, Yandex Alice.

Note: The application expandability of the intelligent system requires the compatibility of the gateway simultaneously.

Wireless-synchronization function

Receivers will transmit the control signals from the remote control and self-inspection the work statues for each other, so multiple receivers in same zone will wireless-sync-work completely.

Compatible remote control

|
RFBT05A-2.4G

(4 zone) |
RW11

(1 zone) |
RW12

(1 zone) |
RW41

(4 zone)

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RFBT10-2.4G

(4 zone) |
RFBK-DIMCCT-2.4G

(4 zone) |
RFBT12-2.4G

(1 zone) |
RFBT-2.4G

(1 zone)

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HX-T3-Z1

RFBT15-2.4G

(1 zone) |

RFBT02B-2.4G

(1 zone) |

HWP86-DIM-2.4G

(1 zone) |

HWP86-DIM-2.4G-4S

(4 zone)

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HWP86-DMX-CCT-2.4G-4S

(4 zone) |

HWP86-DMX-CCT-2.4G-4S

(4 zone) |

WP86-AP

(RF signal repeater) |

THP10-Z-X

(TUYA-Zigbee-gate way)

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Remark:

- 1. Compatible with various types of remote controllers at the same time, and can be combined according to the project situation.
- 2. T3-Z1 cannot be controlled by the remote controller by default (it can be used after the code pairing operation).
- 3. Please refer the data sheet of the remote control for more information.

Typical Applications

Application Circuit 1:

Application Circuit 2: wireless-sync diagram

Tips: Further distances or special environments can be used in conjunction with WP86-AP (RF signal amplifier) to expand signal coverage.

Application Circuit 3: Smart home application (Zigbee 3.0)

30 meters Wirless-sync by Zigbee 3.0

Precautions

- 1.The working voltage is DC12V~24V, and it must not be connected to other voltages;
- 2.Ensure that the wiring is correct and no short circuit before power-on;
- 3.It supports wireless-sync-dimming by remote control, please refer to the remote control setting manual for details;
- 4.PWM dimming frequency is adjustable via remote control. The maximum output load power corresponding to different PWM frequencies is different. Please do not overload it.
- 5.Warranty of this product is 3 years, exclude the artificial situation of damaged or overload working.

Product information for placing order

| Product name | Item number

| Zigbee 3.0 LED Dimmer | HX-T3-Z1 (controlled by knob/RF/TUYA-Zigbee 3.0)

Source reference: <https://www.hoionlighting.com/products/LEDdiaoguangqi/LEDshuangsewenkongzhiqi/2025/1010/424.html>