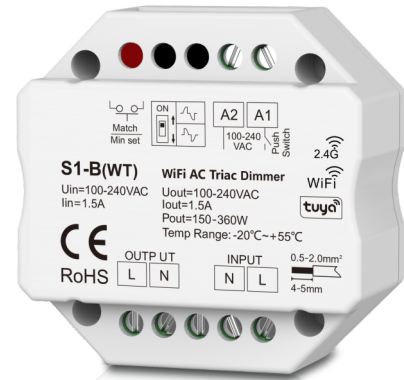# S1-B(WT)

Triac

WiFi & RF AC Triac Dimmer

- WiFi + RF + Push AC phase-cut dimmer, 1 channel output.
- To dim and switch single color dimmable LED lamps, traditional incandescent and halogen lights.
- Tuya smart APP cloud control, support on/off, brightness adjust, delay turn on/off light, timer run, scene function.
- Voice control, support for Amazon Alexa, Google Assistant, Tmall Genie and Xiaodu voice assistant.
- 256 levels 0-100% dimming smoothly without any flash.
- Leading edge dimming or trailing edge dimming set by dip switch.
- Min brightness can be set by key.
- Light on/off fade time 3s selectable.
- Compatibility with RF 2.4G single zone or multiple zone dimming remote control.
- Each S1-B(WT) controller can also work as WiFi-RF converter, then use Tuya smart APP to control one or more RF dimming LED controller or driver synchronously.
- Connect with external push switch to achieve on/off and 0-100% dimming function.
- Easy to be placed in standard wall junction box behind a push switch.
- Over-heat / Over-load protection, recover automatically.

CE RoHS emc LVD

Technical Parameters

Input and Output

Input voltage	AC100-240V
Output voltage	AC100-240V
Output current	Max 1.5A
Output power	150-360W

Warranty and Protection

Warranty	5 years
Protection	Over-heat / Over-load

Dimming data

Input signal	WiFi + RF + Push Dim
Control distance	30m(Barrier-free space)
Dimming level	256 levels
Dimming range	0 -100%

Environment

Operation temperature	Ta: -20°C ~ +55°C
Case temperature (Max.)	Tc: +85°C
IP rating	IP20

Safety and EMC

EMC standard (EMC)	ETSI EN 301 489-1 V2.2.3
	ETSI EN 301 489-17 V3.2.4
Safety standard(LVD)	EN 62368-1:2020+A11:2020
Radio Equipment(RED)	ETSI EN 300 328 V2.2.2
Certification	CE,EMC,LVD,RED

Package

Size	L60 x W60 x H40mm
Gross weight	0.061kg

Compatible Load Types

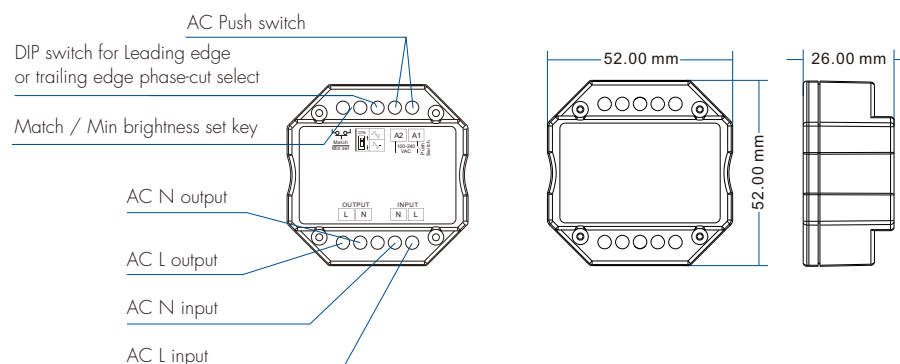| Load type	Maximum load	Remarks
Dimmable LED lamps	200W @ 220V 100W @ 110V	Due to variety of LED lamp designs, maximum number of LED lamps is further dependent on power factor result when connected to dimmer.
Triac dimmable LED drivers	200W @ 220V 100W @ 110V	Maximum permitted number of drivers is 200W divided by driver nameplate power rating, and make sure the surge current is no more than 2 times 65A.
Incandescent lighting, HV halogen lamps	400W @ 220V 200W @ 110V	

Recommended number of load connection

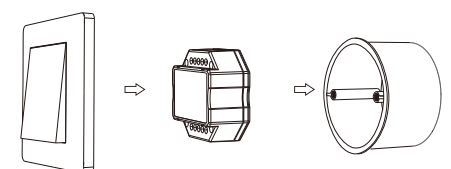| Load type	Output power per load	Quantity
Dimmable downlight	5.5W @ 220V~240V	20
Triac dimmable LED driver	12W @ 200V~240V	15
Triac dimmable LED driver	36W @ 200V~240V	4
Triac dimmable LED driver	75W @ 200V~240V	2

Because different manufacturers triac dimmable LED driver nameplate power rating is different, you can refer to the formula to calculate the max. number of LED driver. Formula: D max = 200W/RP, at the same time need to meet the sum of the surge current (I surge) does not exceed 130A.
For example: triac dimmable LED driver nameplate power rating(RP) =15.4W, surge current =10A/230VAC, Then D max= 200/15.4 =13(pcs), I surge=13*10 =130A, the max. number of triac dimmable LED driver is 13.

Mechanical Structures and Installations
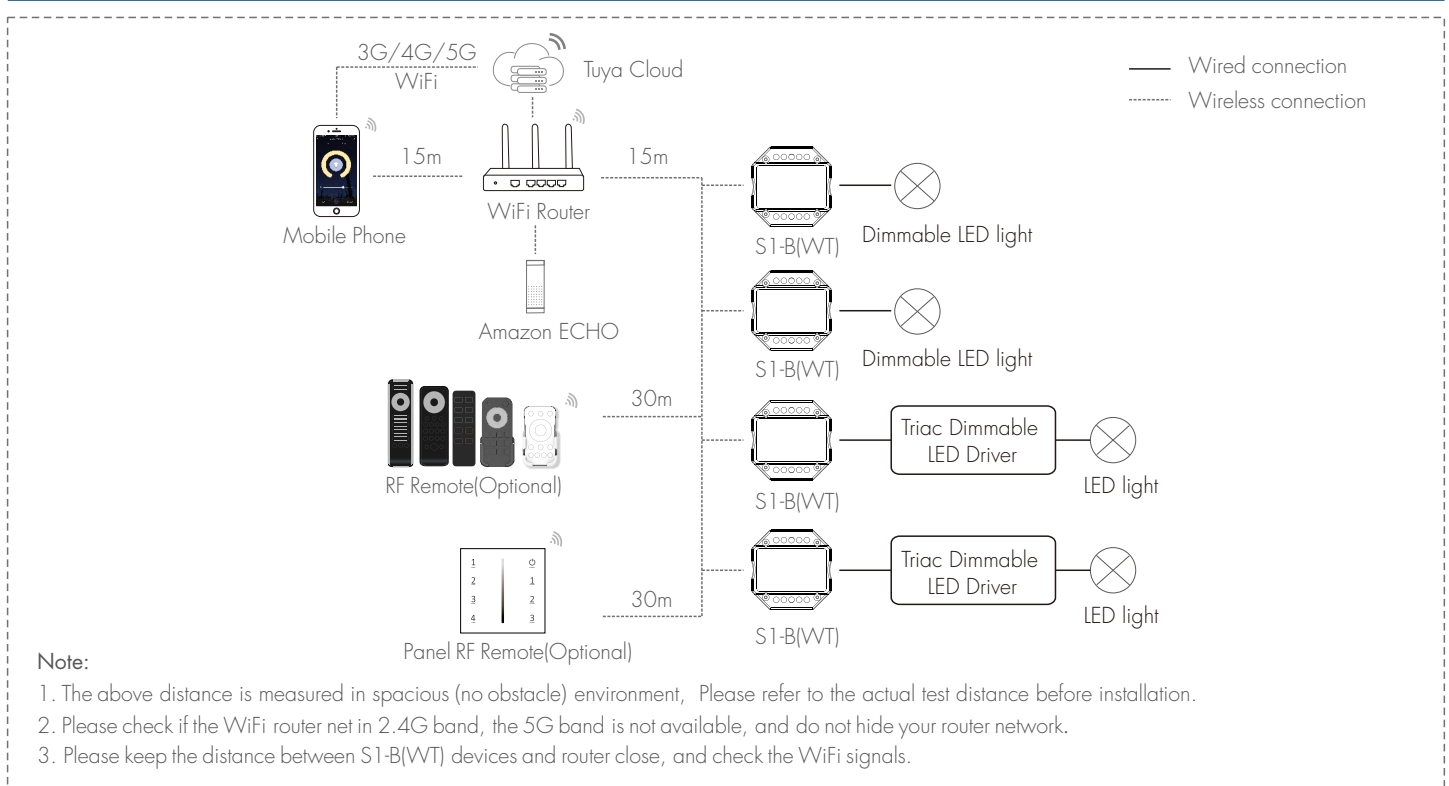

AC Push switch

DIP switch for Leading edge or trailing edge phase-cut select

Match / Min brightness set key

AC N output

AC L output

AC N input

AC L input

52.00 mm

26.00 mm

52.00 mm

Typical Wall Junction Box Mounting

System wiring

Wired connection
Wireless connection

3G/4G/5G WiFi
Tuya Cloud
Mobile Phone
15m
WiFi Router
15m
Amazon ECHO
S1-B(WT) — Dimmable LED light
S1-B(WT) — Dimmable LED light
RF Remote(Optional)
30m
S1-B(WT) — Triac Dimmable LED Driver — LED light
Panel RF Remote(Optional)
30m
S1-B(WT) — Triac Dimmable LED Driver — LED light

Note:
1. The above distance is measured in spacious (no obstacle) environment, Please refer to the actual test distance before installation.
2. Please check if the WiFi router net in 2.4G band, the 5G band is not available, and do not hide your router network.
3. Please keep the distance between S1-B(WT) devices and router close, and check the WiFi signals.
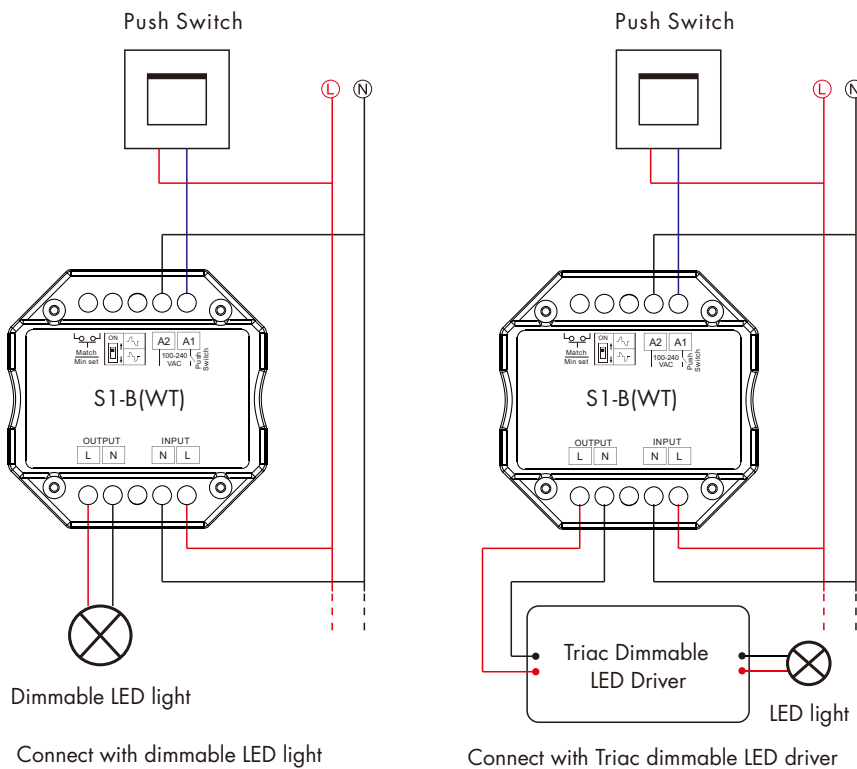
Wiring diagram

⚠ Caution:
  Please carefully ensure all wire connections and polarities are correct and secure before applying power, otherwise this controller will be damaged.

Push Switch
L N

Push Switch
L N

S1-B(WT)

OUTPUT L N   INPUT N L

S1-B(WT)

OUTPUT L N   INPUT N L

Light on/off fade time:
Switch off the power, then switch on power,
repeat again.
Immediately short press match key 3 times,
the light on/off time will change between 3s and 0.5s.

Factory default (long press Match key 20s):
Min light brightness is 5%,
on/off fade time is 0.5s.

Dimmable LED light

Triac Dimmable LED Driver — LED light

Connect with dimmable LED light

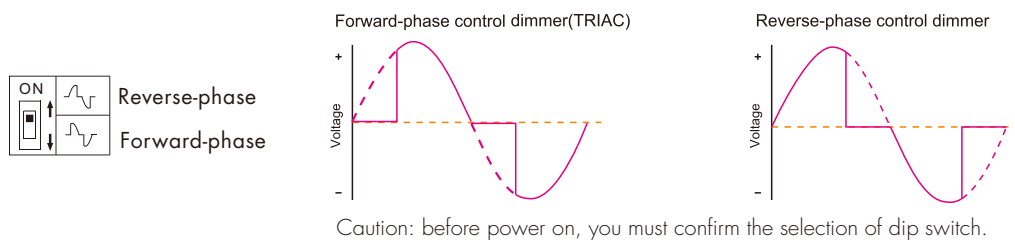Connect with Triac dimmable LED driver

Min brightness setting

Long press Min set key for 10s, the light blink 2 times, ready for min brightness set, then short press Min set key 1-6 times,
to get 6 min brightness: 5%, 10%, 15%, 20%, 25% or 30%,
the light will output the current min brightness immediately, wait 8s, quit min brightness set automatically, the light will return output 100% brightness.

Leading edge or trailing edge dimming setting

Select leading edge(forward-phase) dimmer or trailing edge(reverse-phase) dimmer according to dimmable LED light or driver.

Forward-phase control dimmer(TRIAC)

Reverse-phase control dimmer

Caution: before power on, you must confirm the selection of dip switch.

AC Push Dim Function (Optional)

● Short press:
  Turn on or off light.
● Long press (1-6s):
  Press and hold to step-less dimming, With every other long press, the light level goes to the opposite direction.
● Dimming memory:
  Light returns to the previous dimming level when switched off and on again, even at power failure.

Tuya Smart APP network connection and operation

Press and hold Match/Set key for 2s, or push twice Match/Set key fastly,
Clear previous network connection, enter Smart config mode,
the blue LED indicator flash fastly.
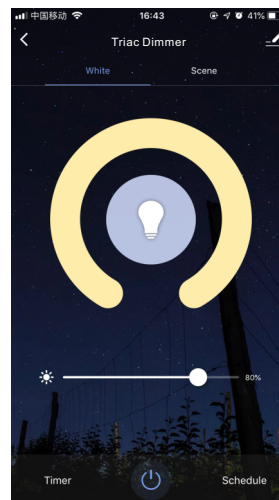
Press and hold Match/Set key for 5s:
Clear previous network connection, enter AP config mode, the blue LED indicator flash slowly.
If smart config failed, please try AP config.

If Tuya smart APP network connection succeed, the blue LED indicator will stop flash,
and in Tuya smart APP, you can find Triac dimmer device.

Tuya smart APP interface operation:
Touch brightness slide to adjust brightness.

S1-B(WT) match RF remote control (Optional)

End user can choose the suitable match/delete ways. Two options are offered for selection:

Use the S1-B(WT)'s Match key

Match:
Short press match key of S1-B(WT),
immediately press on/off key (single zone remote)
or zone key (multiple zone remote) on the remote.

Delete:
Press and hold match key of S1-B(WT) for 15s to delete all match,
The light blinks 5 times means all matched remotes were deleted.

Use Power Restart

Match:
Switch off the power of S1-B(WT), then switch on power, repeat again,
Immediately short press on/off key (single zone remote)
or zone key (multiple zone remote) 3 times on the remote.
The light blinks 3 times means match is successful.

Delete:
Switch off the power of S1-B(WT), then switch on power, repeat again,
Immediately short press on/off key (single zone remote)
or zone key (multiple zone remote) 5 times on the remote.
The light blinks 5 times means all matched remotes were deleted.

S1-B(WT) work as WiFi-RF converter to match other RF dimming LED controller or driver

End user can choose the suitable match/delete ways. Two options are offered for selection:

Use the controller's Match key

Match:
Short press match key of the controller,
immediately press on/off key on the Tuya smart APP.
The LED indicator fast flash a few times means match is successful.

Delete:
Press and hold match key of the controller for 5s,
The LED indicator fast flash a few times means match was deleted.

Use Power Restart

Match:
Switch off the power of the controller, then switch on power, repeat again,
Immediately short press on/off key 3 times on the Tuya smat APP.
The light blinks 3 times means match is successful.

Delete:
Switch off the power of the controller, then switch on power, repeat again,
Immediately short press on/off key 5 times on the Tuya smart APP.
The light blinks 5 times means match was deleted.