WRC111

Smart Button

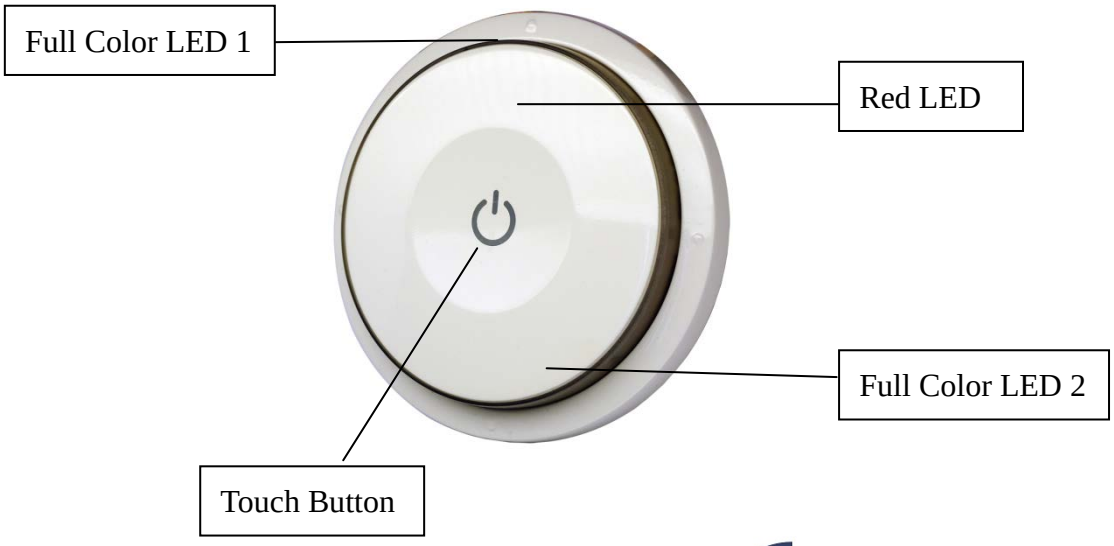

Fig. 1 Assembling

This round device is a flexible and multi functions button switch. It is able to switch the appliances on/off or activate the scenes and macros which are preset already. The rotation sensor make it possible to adjust the percentage of dimmer or thermostat. It can also work as a timer. The well designed wall bracket and magnetic back let the switch can be fixed on the wall, Plus™ enabled device and is fully compatible with any Z-Wave™ enabled network.

Note:
Please provide a 5 DVC voltage through Micro USB Port to wake the device up before the first using.
The rotation function and timer functions work only when the device is fitted upright or stick on the wall or the device will only work as an on/off switch when fitted horizontal.

LED indicators

1. LED type and locations
   There are two sets of LED embedded in the device.
   A. Set 1: Two full color LED lights round the device.
   B. Set 2: One red LED under the arrowhead on at the front side.

2. Low battery
   The device will enter low battery mode when the battery power is under 20%. The red LED flashes three times every one minute.

3. NWI Auto Inclusion
   The red LED will flash quickly for 30 seconds when device entering in NWI mode.

4. Percentage adjustment mode
   The full color LED will turn from blue to yellow then from yellow to red gradully according to the percentage from 0% to 100%.

5. Timer mode
   A. The red LED will flash once when device entering/exiting the timer mode..
   B. The full color LED will flash once every 10 seconds and the color will depend on time table (shown in Fig 3.)
   C. The full color LED will flash once with pink every 10 second when countdown from 30.
   D. The full color LED will flash with pink light every 1 second when countdown from 5.
   E. The red LED will flash 6 times with white when time's up.

Z-Wave Network Setting Up

There is a touch button on the front side. The button carry out inclusion, exclusion and reset to default.

1. Include: Pointing the arrowhead to area A first (shown in Fig. 2). Pressing the button three times within 1.5 seconds. The red LED will light up for 1 second if succeed.

2. Exclude: Pointing the arrowhead to area A first (shown in Fig. 2). Pressing the button three times within 1.5 seconds.

3. Reset to default: Pointing the arrowhead to area A first ((shown in Fig. 2)). Pressing button four times within 2 seconds and hold at fourth. The red LED will light for 3 seconds, release the button within 2 seconds while the LED go out. The LED will flash for 1 second if reset succeed, or LED will flash once

.Build-in Buzzer

1. Turn light on: Beep once.

2. Turn light off: Long beep once.

3. Timer:
   A. Beep once for setting up the timer.
   B. Long beep once for stop counting down.
   C. Beep once every ten seconds for countdown from thirty.
   D. Beep once every per second for countdown from five. Four times beep and repeat six times when time's up.

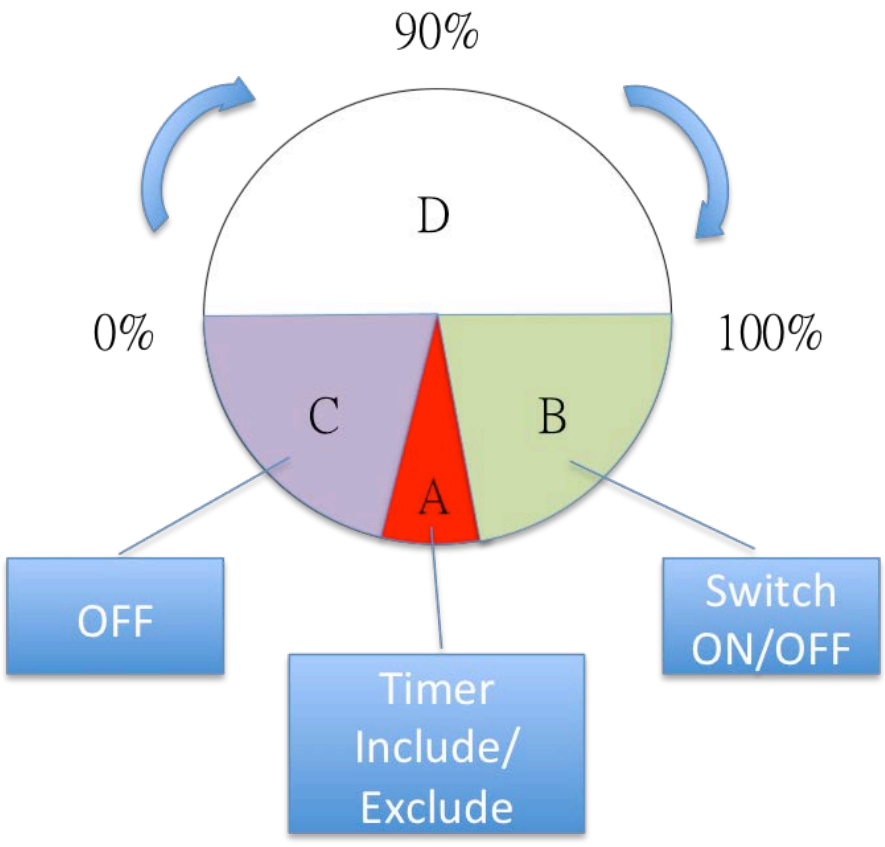

Fig. 2 Control Area

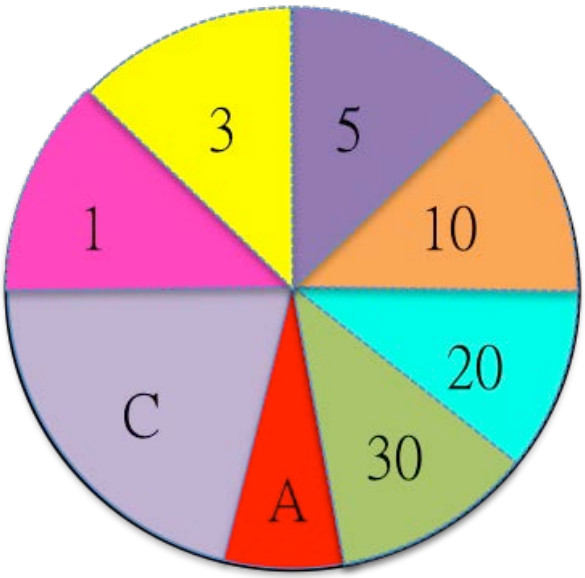

Fig. 3 Timer Table

Timer

1. Entering the timer mode:
   A. Pointing the arrowhead to area A.
   B. Pressing and hold the button about three to five seconds. The red LED will light then go out. Release the button when the light goes out and the buzzer will sound long beep once.

2. Exit the timer mode:
   A. Pointing the arrowhead to area A.
   B. Pressing and hold the button about three to five seconds. The red LED will light then go out. Release the button when the light goes out and the buzzer will sound beep twice.

3. Setting up timer: Pointing the arrowhead to the zone you want to count down (shown in Fig. 3). The countdown will begin after you pressing the button and sound beep.

Percentage Adjustment

When a dimmer or a thermostat associates with WRC111 in group 2, WRC111 is able to adjust the percentage by rotating to different angle.

1. If the lamp has already been turned on. Rotating WRC111 from 0% to 100% directly can change the percentage from 0% to 100%. The lamp will be turned off if the arrowhead is pointed to 0% or area C.
2. If the lamp state is off, rotating to the percentage you want and pressing the touch button can turn on the light.
3. The other way to turn on the light is pointing the arrowhead to area B and turn on the lamp by touching the touch button then adjust the percentage you want.

Switch On/Off

WRC111 is able to work as an On/Off state switch by pressing the touch button when pointing the arrowhead to area B or fitting horizontal.

If you switch off the lamp by rotating the arrowhead to area C, it actually adjust the percentage to 0% and you can adjust the percentage by rotating the arrowhead again without pressing the touch button.

Choosing a Suitable Location

1. Do not locate the Switch facing direct sunlight, humid or dusty place.
2. The suitable ambient temperature for the Switch is -10°C~40°C.
3. Do not locate the Switch where exists combustible substances or any source of heat, e.g. fires, radiators, boiler etc.

Z-Wave's Groups (Association Command Class Version 2)

The Switch can be set to send reports to control associated Z-Wave devices. It supports 2 association groups which every group has eight node support.

For group 1, the Switch will report event to Z-Wave Controller. Eg. Battery state

For group 2, the Switch can control ON/OFF status of lamps.

Timing Report:

Beside the event triggered could report message, the device also support the timing unsolicited report of the status.

• Battery level report: Every 6 hours report once in default.
It could be changed by setting the configuration NO. 10.

• Low battery report: When the battery level is too low, every 30 minutes will report once.

Z-WaveTM Notification

After the device adding to the network, it will wake-up once per day in default. When it wake-up it will broadcast the "Wake Up Notification" message to the network, and wake-up 10 seconds for receive the setting commands.
The wake-up interval minimum setting is 30 minutes, and maximum setting is 120 hours. And the interval step is 30 minutes.
If the user want to wake-up the device immediately, please pointing the arrowhead to area A and pressing the touch button once. The device will wake-up for 10 seconds every single time.

Z-WaveTM Message Report

When the touch button is triggered, the device will report the BASIC SET to the nodes in groups 1. The value are from 1 to 99. 1 is darkest and 99 is lightest.

No	Name	Size (Byte)	Default	Valid Values	Description
1	Basic Set OFF level	1	0xoo	0x00, 0x63	Auto reporting Z-Wave COMMAND_CLASS_BASIC value when using as a lamp switch. 0x00 means turn off. 1~100 represents the percentage of dimmer.
2	Auto Report Battery Time	1	12	1~127	The interval time for auto reporting the Battery level. 0 means turn off auto report battery. The default value is 12. The tick time can setting by the

					configuration No.20.

Firmware update over the air (OTA)

WRC111 is based on 500 series SoC and supports Firmware Update Command Class, it can receives the updated firmware image sent by controller via the Z-wave RF media. It is a helpful and convenient way to improve some function if needed.

Supported Z-Wave Command Classes

The Switch supports Command Classes including…
* COMMAND_CLASS_ZWAVEPLUS_INFO_V2
* COMMAND_CLASS_BATTERY
* COMMAND_CLASS_CENTRAL_SCENE_V1
* COMMAND_CLASS_VERSION_V2
* COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2
* COMMAND_CLASS_DEVICE_RESET_LOCALLY
* COMMAND_CLASS_ASSOCIATION_V2
* COMMAND_CLASS_WAKE_UP_V2
* COMMAND_CLASS_ASSOCIATION_GRP_INFO
* COMMAND_CLASS_POWERLEVEL
* COMMAND_CLASS_MULTI_CMD
* COMMAND_CLASS_SECURITY
* COMMAND_CLASS_MARK
* COMMAND_CLASS_BASIC
* COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2
* COMMAND_CLASS_CONFIGURATION

Security Network

The device support the security function. When the device included with a security controller, the device will auto switch to the security mode. In the security mode, the follow commands need using Security CC wrapped to communicate, otherwise it will not response.

COMMAND_CLASS_BATTERY
COMMAND_CLASS_ASSOCIATION_V2
COMMAND_CLASS_CONFIGURATION
COMMAND_CLASS_WAKE_UP_V2

Troubleshooting

Symptom	Cause of Failure	Recommendation
The switch on/off function not working and LED off	1. Battery dead 2. Wrong function mode 3. Device break	1. Charging the battery by Micro USB. 2. Pointing the arrowhead to area B and press the touch button. 3. Don't open up the Switch and send it for repair.
Can not adjust the percentage of dimmer or thermostat	1. The device may not be placed upright. 2. The device is in off state.	1. Check if the device is placed upright. 2. Rotating to the percentage you want then press touch button. Or pointing the arrowhead to area B and press the touch button to turn the lamp on then adjust the percentage.
The device can not join to Z-Wave network	1. The device may in a Z-Wave network. 2. The arrowhead points to wrong area.	1. Exclude the device then include again. 2. Pointing the arrowhead to area A then include again.
Button no response	1. The button will no response when LED is flashing.	Wait for the LED go out and try again.

Specification

Operating Voltage	3.7 V (Lithium Polymer Battery)
Low Battery Voltage	3.6 V
Battery Charge Voltage	5 VDV @ Micro USB Port
Range	Minimum 40 m in door, 100m outdoor line of sight
Operating Temperature	-10°C ~ 60°C
Frequency Range	WRC111-1: 868.40MHz; 869.85MHz(EU) / WRC111-2: 908.40MHz; 916.00MHz(USA/Canada) / WRC111-3: 922.5MHz/ 923.9MHz/ 926.3MHz (Taiwan/JP)

** Specifications are subject to change and improvement without notice.

FCC ID : RHHPSR04

Warning:

1. Plug out to disconnect from power supply; Do not plug in line.
2. Do not exceed the max rating

Disposal

	This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to
radio communications.
However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which
can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject
to the following two conditions:

(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.
FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.