Wireless Modbus Relay

Wireless Modbus Relay



Model number:	**WR-1**
Frequency:	ISM 868MHz (EU)
Dimensions:	93x45x27 mm

Applications

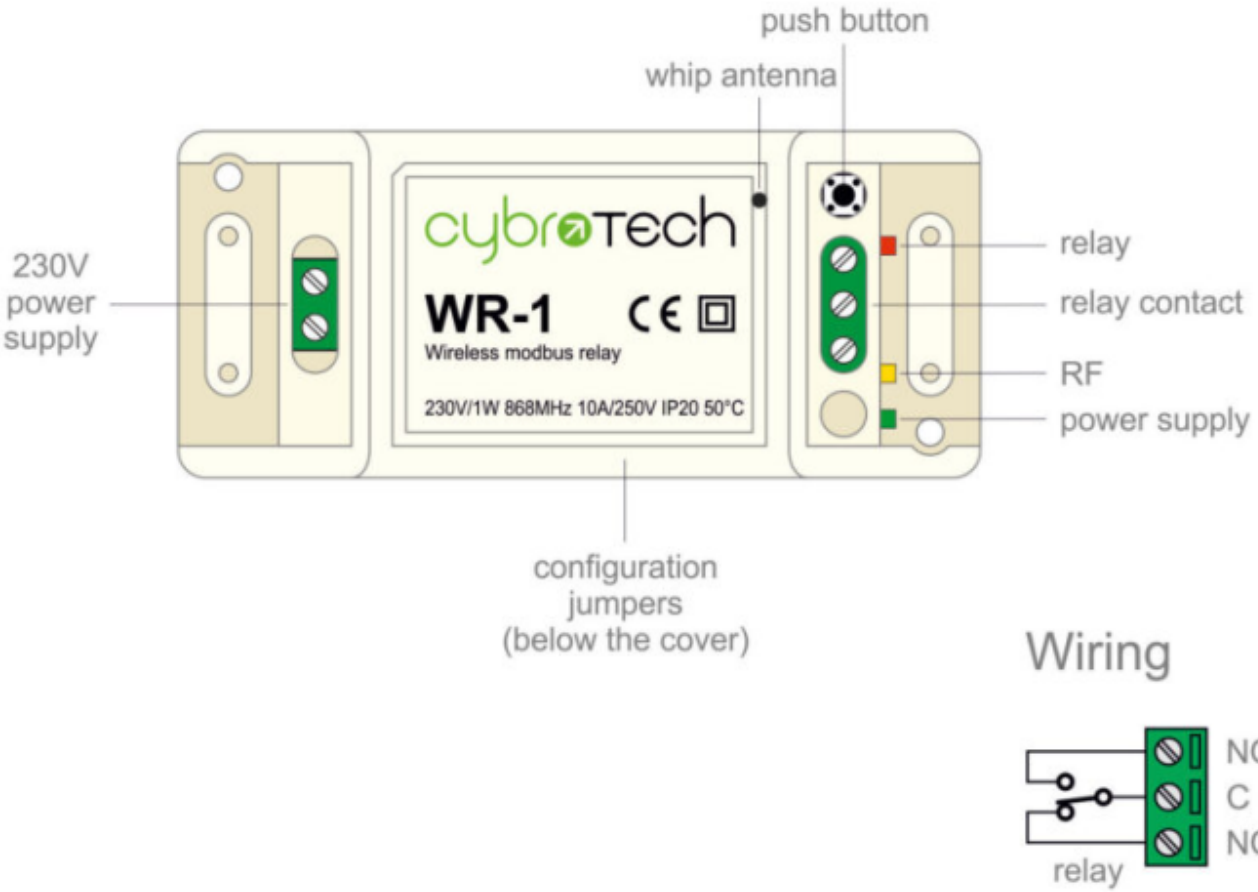
- Remote controlled relay. Act as modbus RTU slave. Optimal for long range, no hopping.

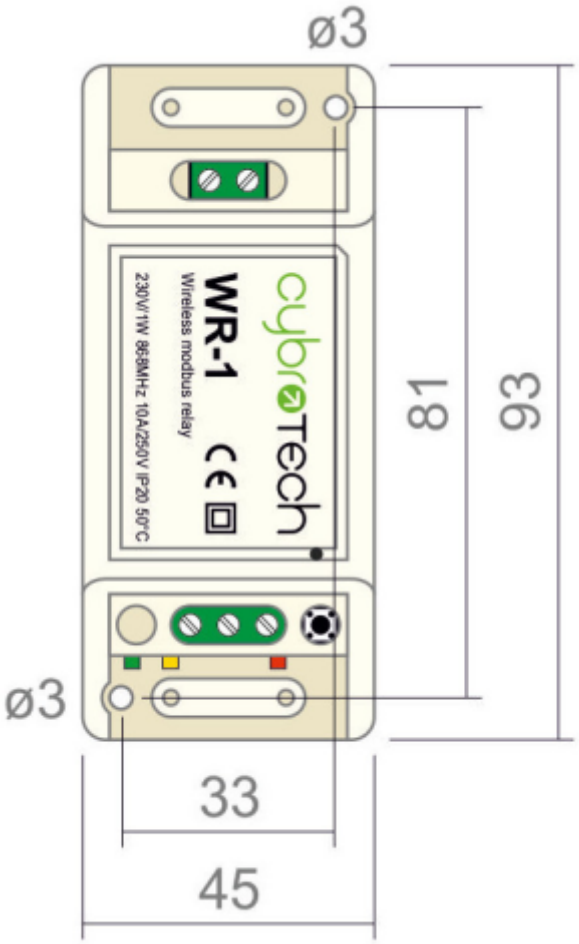
Installation and mounting

- Carefully open WR-1 module and configure serial communication with jumpers. (Default configuration is 9600bps, 8N1 with normal timeout)
- Place WR-1 module at least 10cm from other objects. Installation is not recommended inside

metal cabinets.

- Connect RS485 terminals to WR-1 RS485 terminals
  - A - A
  - B - B
  - C - GND
- Connect to 230V power supply
- Configure radio pairing





Features

- remote controlled relay
- act as modbus RTU slave
- very long range, no hopping
- up to 8 relays per network
- protected private connection
- multiple addressable groups

Technical specification

Power supply:	230V, 50/60Hz, 1W
Ingress protection:	IP20
Operating temperature:	-20..50°C
Storage temperature:	-40..85°C
Relative humidity:	0..85% n/c

Modbus

Address range:	200..207
Relay mapping	coil 1(start address 00h)
Data bits & parity	8n1

Supported functions	01 - read coil 05 - write single coil 15 - write multiple coils

Relay output

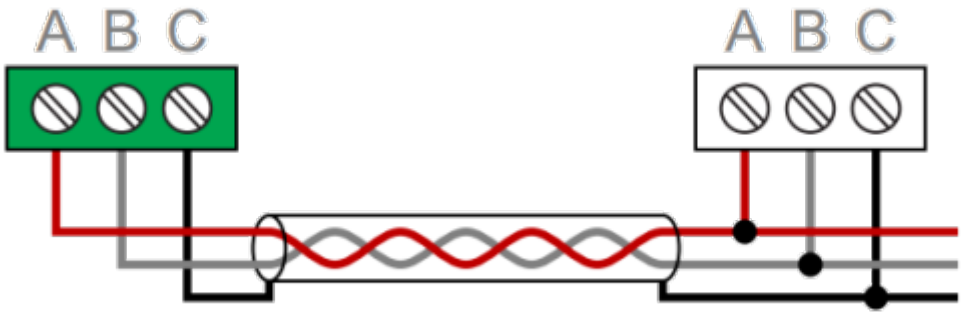
Nominal rating	10A 250Vac (NO), 3A 250Vac (NC)
(resistive)	5A 30Vdc (NO), 3A 30Vdc (NC)

Radio

Frequency band	ISM 868MHz (EU)
Subband	L 866.8MHz, 25mW, 1% utility
Modulation	fSK 38.4kbps 80kHz bandwidth
Listen before talk	yes, delay limited to 20ms
Group address	32-bit, automatically generated
Connection time	10s power-on to network ready
Message delay	5ms from tx start to relay on
Output power	25mW
Operating range	3..300m with optical visibility

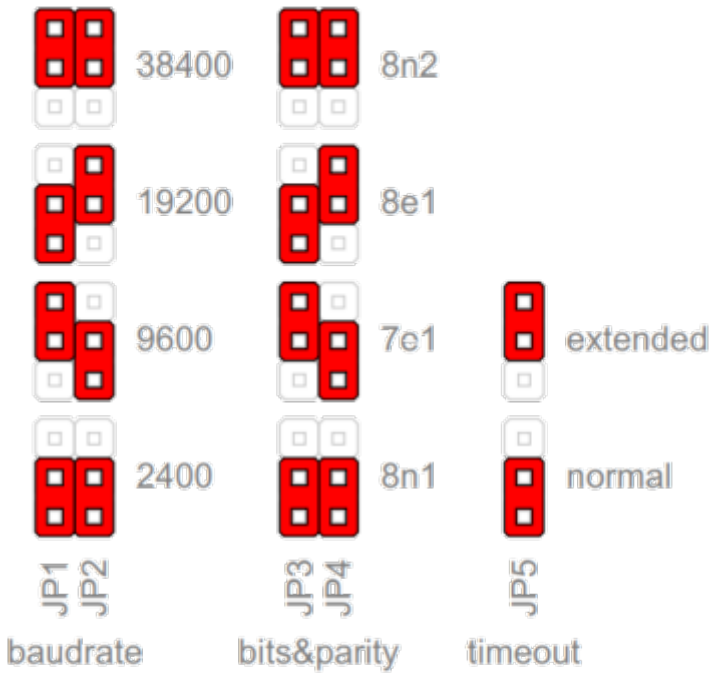
Terminals and wiring

To power sensor	**A** **B** **C**	RS485 bus
To power supply	**L** **N**	230V AC



Serial configuration and timeout

- Available baudrates 2400, 9600, 19200, 38400 bps
- Data bits and parity 8N1, 7E1, 8E1, 8N2
- Max 64 bytes per transmition
- Integrated 240 Ohm termination resistor

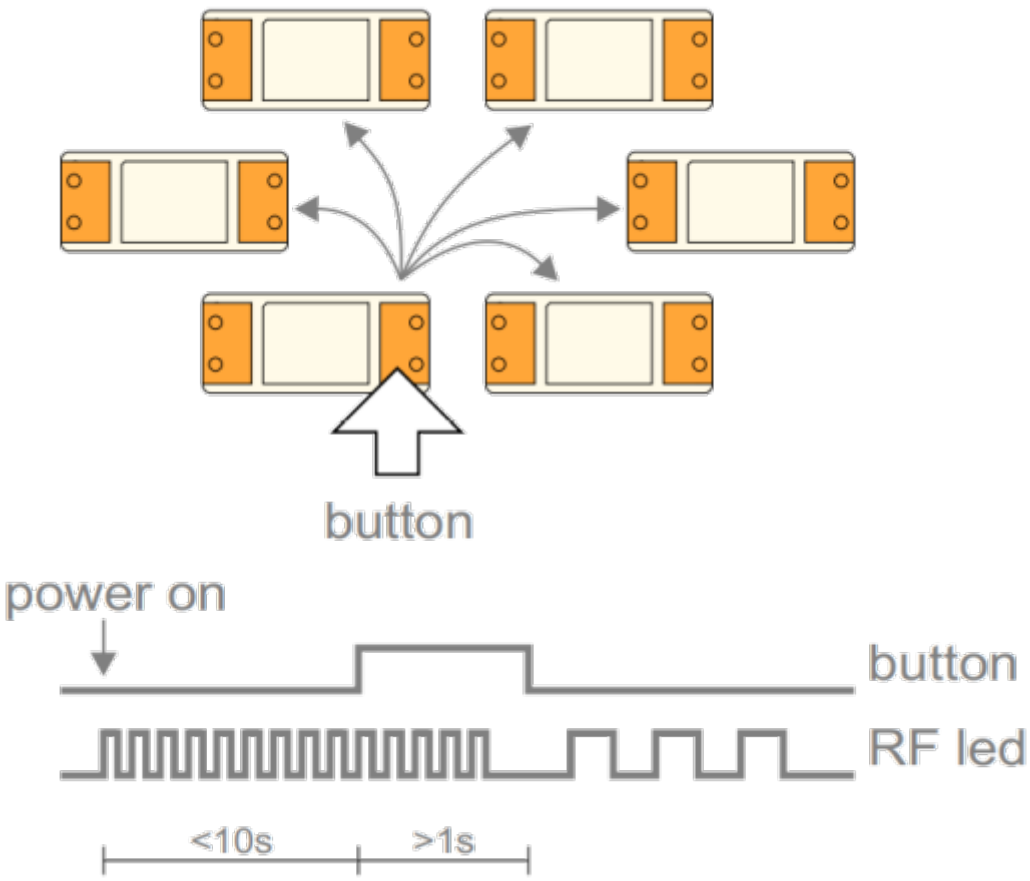


	normal	extended
2400	25ms	200ms
9600	10ms	100ms
19200	5ms	100ms
38400	5ms	100ms

Radio pairing configuration

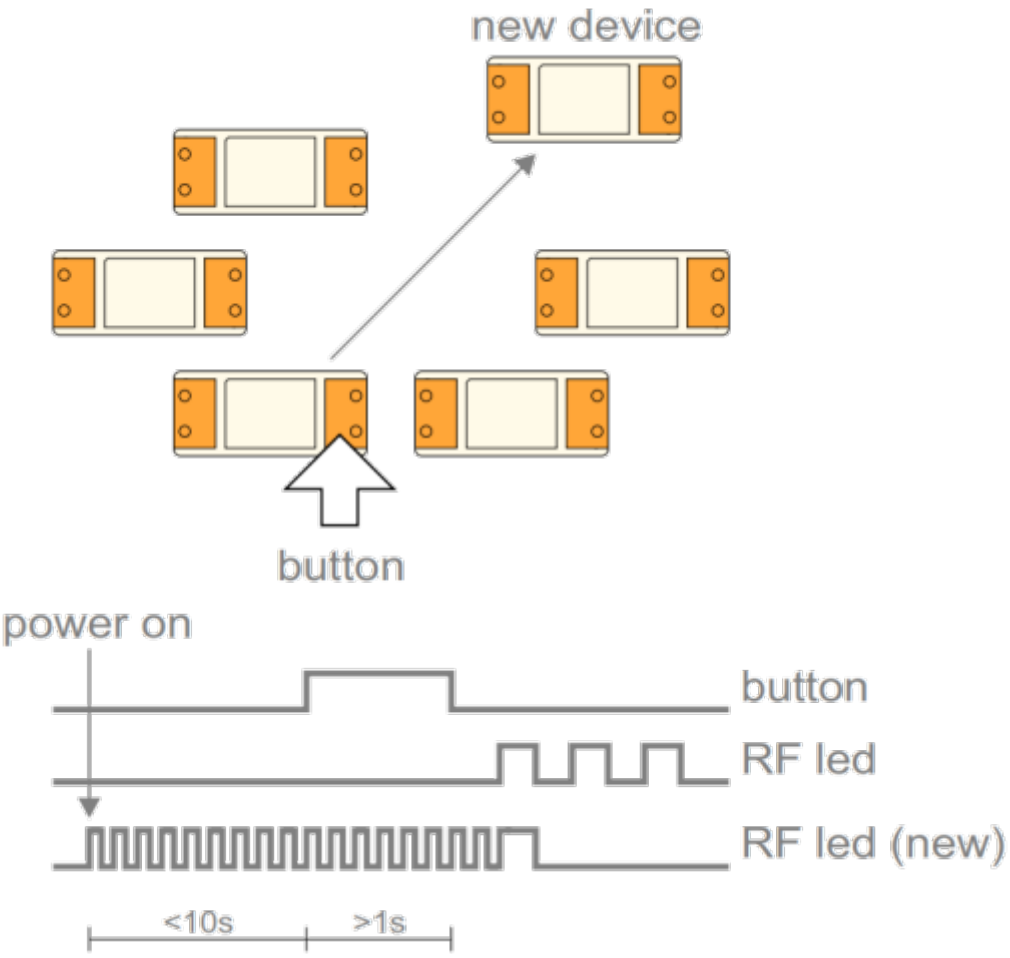
Create new secure group

```
* turn on all devices as the same time
* within 10 seconds, while RF LED is blinking, press and hold button on one of the devices
* after a second, the new address is randomly generated and sent to all devices. RF LED will blink 3 times to confirm the new address.
```

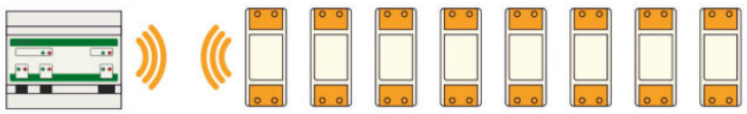


Add new device to the group

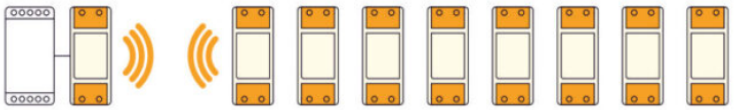
```
* turn on the device
* within 10 seconds, press and hold button on one of the existing devices
* after a second, the existing group address is sent to the new device. RF
LED will blink 3 times to confirm the address is sent.
```



Examples



Cybro-3-RFM, acting as modbus master, connected to 8 wireless relays (200..207).



Any modbus master, connected to 8 relays using WM-1 device as wireless adapter.

Connection check

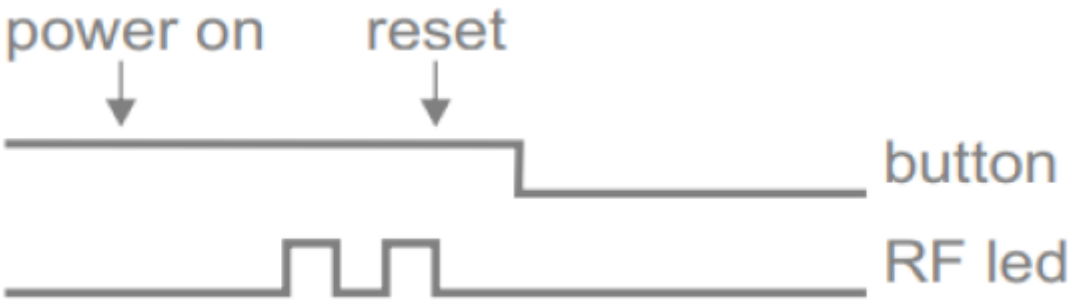
- press the button shortly

With each press of the button, the relay will switch on/off. Other devices are not affected.



Factory reset

- Hold button and turn the device ON
- RF led will blink twice. Group address is now reset to default.
- Other devices will not be affected.



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