Wireless Modbus Relay

Wireless Modbus Relay

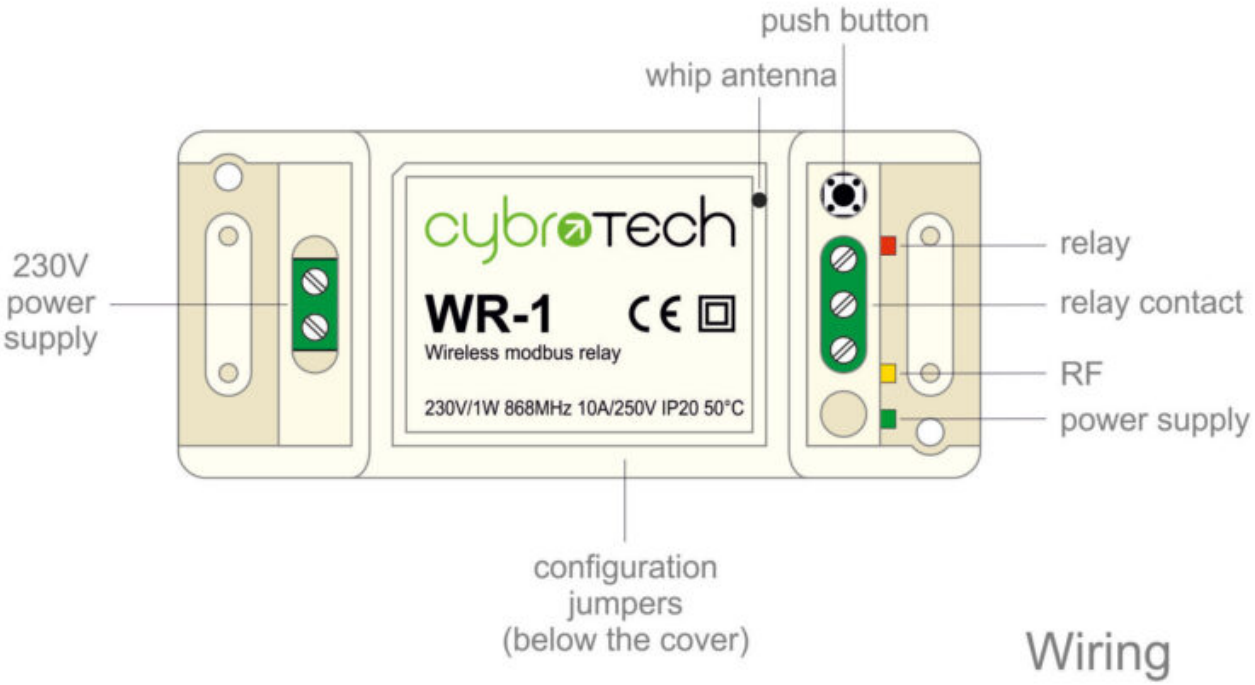
Model number:	**WR-1**
Frequency:	ISM 868MHz (EU)
Dimensions:	93x45x27 mm

Applications

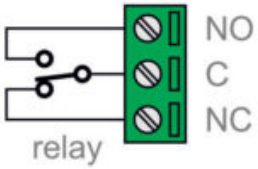
- Remote controlled relay. Act as modbus RTU slave. Optimal for long range, no hopping.

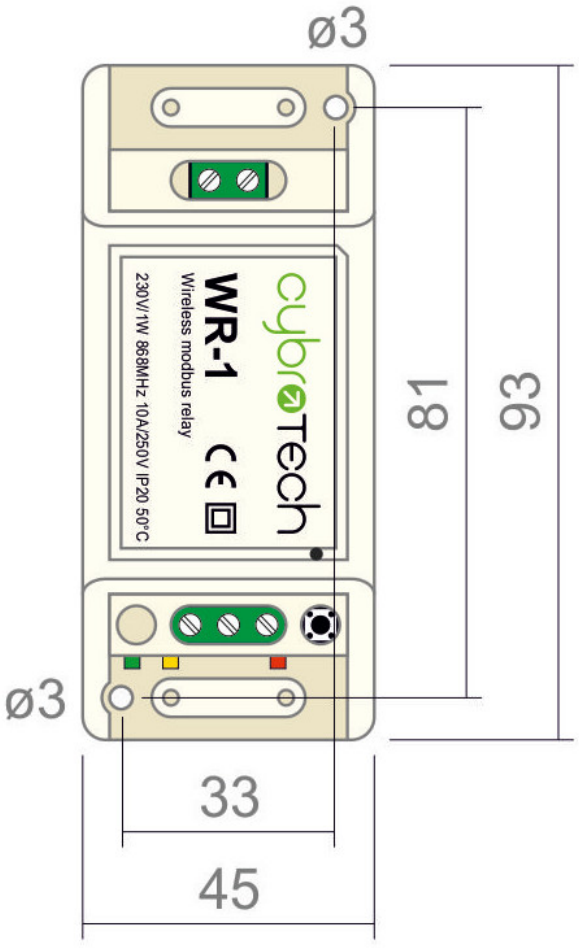
Installation and mounting

- 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


push button
whip antenna
230V
power
supply
cybroTech
WR-1
Wireless modbus relay
230V/1W 868MHz 10A/250V IP20 50°C
relay
relay contact
RF
power supply
configuration
jumpers
(below the cover)

Wiring


NO
C
NC
relay


ø3
cybroTech
WR-1
Wireless modbus relay
230V/1W 868MHz 10A/250V IP20 50°C
81
93
ø3
33
45

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

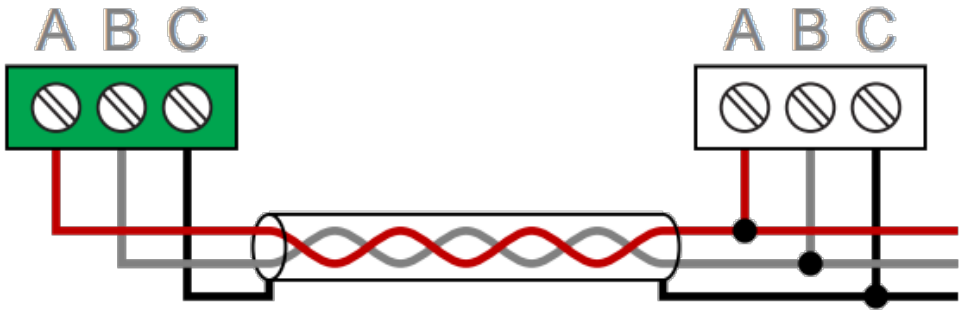
Nominal rating	10A 250Vac (NO), 3A 250Vac (NC)
(resistive)	5A 30Vdc (NO), 3A 30Vdc (NC)

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

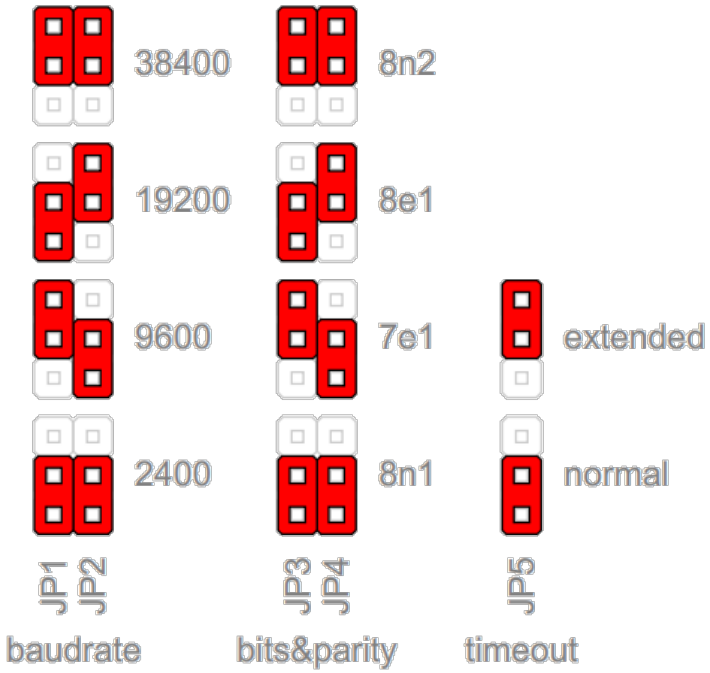
Terminals and wiring

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



Modbus address setting

Change is applied right away, no reset needed.

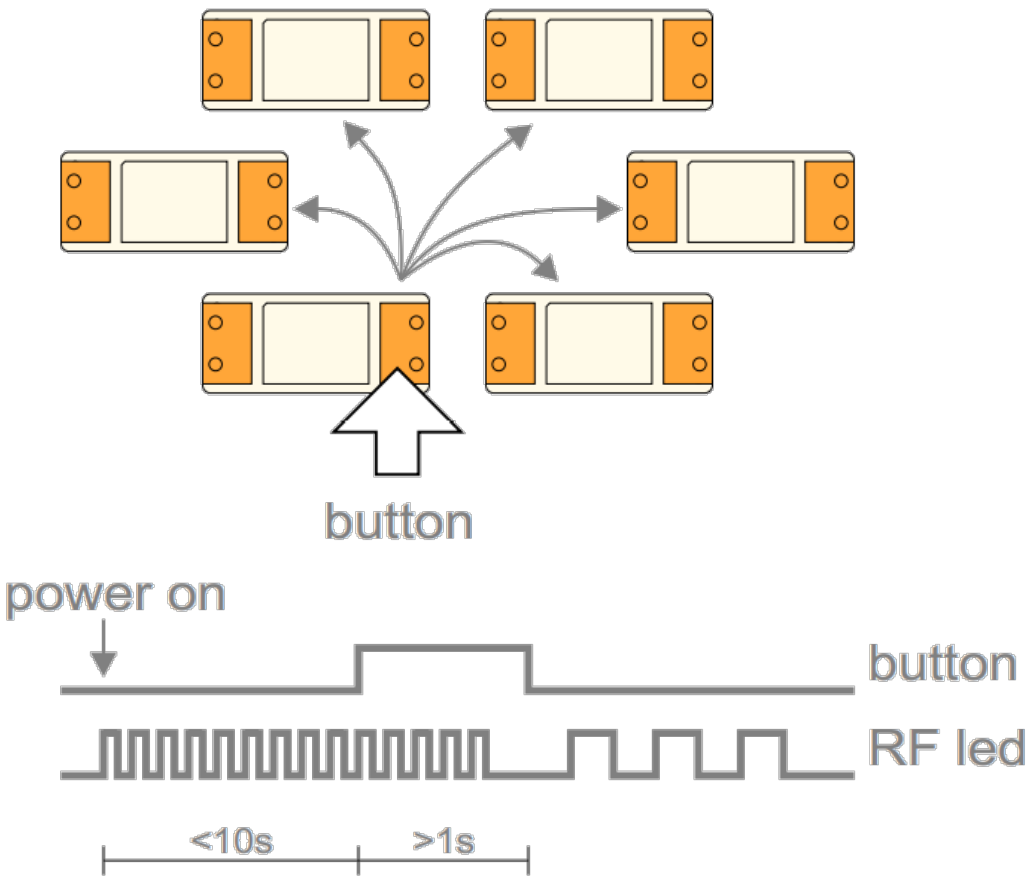


	normal	extended
2400	25ms	200ms
9600	10ms	100ms
19200	5ms	100ms
38400	5ms	100ms

Radio pairing configuration

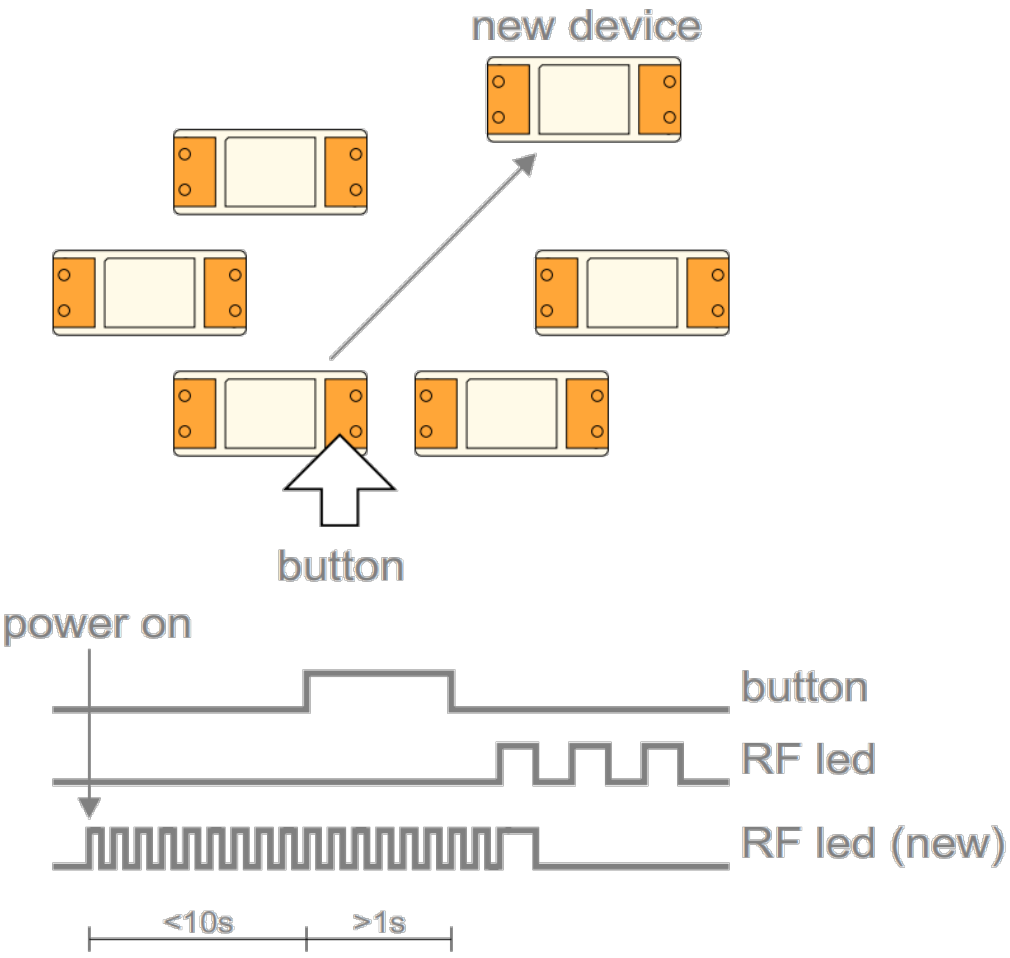
Create new secure group

```
* 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.
```

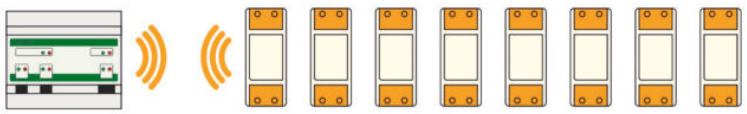


Add new device to the group

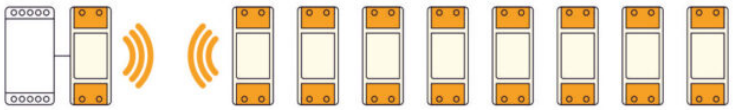
```
* turn on the device
* within 10 seconds, press and hold button on one of the existing devices
* after a second, the existing group address is sent to the new device. RF LED will blink 3 times to confirm the address is sent.
```



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.