Y402-41-L LoRa One-to-Four Wireless I/O Module System Specification

Y402-41-L Master	Y402-41-L Slave
	

- User Manual

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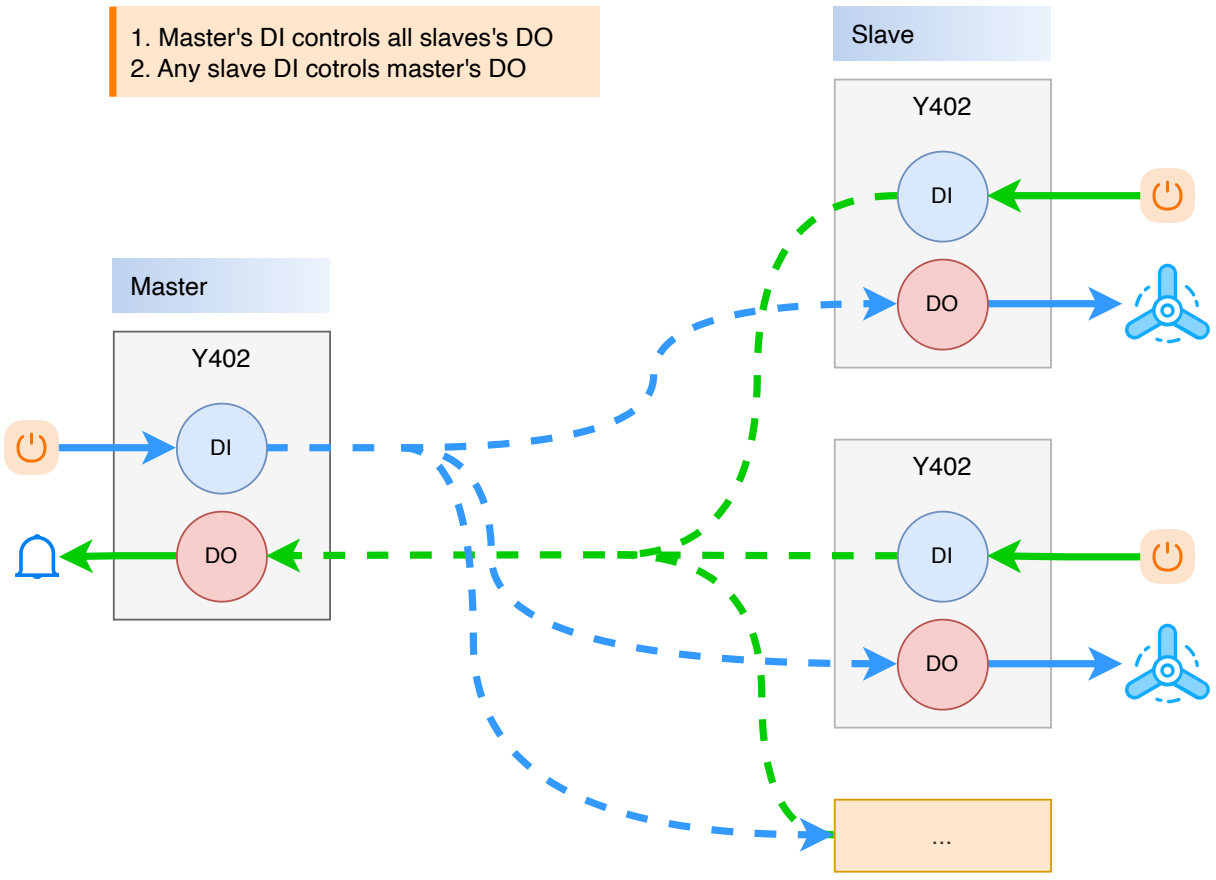
1. Overview

Y402-41-L links a 4DI/4DO master with up to four 1DI/1DO slaves over LoRa. Each one-channel slave exchanges signals with one assigned master channel.



Operating Logic

- **Master to slave**: when master `DI1` to `DI4` is closed, the `DO` on the slave assigned to that channel energizes
- **Slave to master**: when a slave `DI` is closed, the corresponding `DO1` to `DO4` on the master energizes
- The corresponding master and slave outputs reset when the associated input returns to open
- Four independent channels provide bidirectional transmission between the master and assigned one-channel slaves

Channel Mapping

Master channel	Assigned slave	Master-to-slave	Slave-to-master
Channel 1	One 1DI/1DO slave	Master `DI1` → slave `DO`	Slave `DI` → master `DO1`
Channel 2	One 1DI/1DO slave	Master `DI2` → slave `DO`	Slave `DI` → master `DO2`
Channel 3	One 1DI/1DO slave	Master `DI3` → slave `DO`	Slave `DI` → master `DO3`
Channel 4	One 1DI/1DO slave	Master `DI4` → slave `DO`	Slave `DI` → master `DO4`

Communication Loss

If wireless communication is lost, the receiver retains the last relay output states for approximately 80 seconds. If communication has not recovered by then, the relay outputs automatically reset to the de-energized (OFF) state. The normally open (`NO` – `COM`) contacts open.

2. Ordering Information

System Components

Device	Model	Role	Channels
Master	Y402-41-L	Central control unit	4DI/4DO
Slave	Y402-41-L	Remote terminal unit	1DI/1DO

System configuration:

- Basic system: 1 master + 1 slave (factory paired)

- Expanded system: 1 master + up to 4 slaves, with each slave assigned to one master channel

Model Configuration

`Y402-41-L` is a one-to-many LoRa system. The first digit, `4`, specifies 4 DI and 4 DO on the master; the second digit, `1`, specifies 1 DI and 1 DO on each slave.

For the full code and examples, see Model Naming.

Package Contents

Qty.	Item
1	Y402-41-L master module
1	Y402-41-L slave module
2	470 MHz magnetic-mount antennas
2	DIN rail clips
1	Quick reference guide
1	Warranty card

3. Key Features

- Passive dry-contact/NPN inputs and SPDT relay outputs
- Reverse-polarity protection
- Private LoRa communication without a SIM card or Internet gateway

4. Technical Specifications

Wireless

Parameter	Specification
Frequency band	398 to 525 MHz
Communication mode	Half-duplex
Communication range	Up to 5 km standard; 10 km option available for selected configurations
Antenna connector	SMA
Standard antenna	470 MHz magnetic-mount antenna

Electrical

Parameter	Specification
Supply voltage	9 to 36V DC
Max. power consumption	1.5W (master) / 0.8W (slave)
Master inputs	4 x passive dry contact / NPN open-collector (no voltage input to DI)
Master outputs	4 x SPDT relay
Slave input	1 x passive dry contact / NPN open-collector (no voltage input to DI)
Slave output	1 x SPDT relay
Output rating	AC 277V 5A / DC 28V 5A
Operating temperature	-20 to +85 degC
Operating humidity	10% to 90% RH, non-condensing

5. Interfaces and Indicators

Master Interfaces

Interface	Description
Antenna	SMA connector for LoRa antenna
Power	DC 9 to 36V input with reverse-polarity protection
Input	4 x passive switch inputs (`DI1` to `DI4` + `COM`)
Output	4 x relay outputs (`NO` + `COM` + `NC`)

Slave Interfaces

Interface	Description
Antenna	SMA connector for LoRa antenna
Power	DC 9 to 36V input with reverse-polarity protection
Input	1 x passive switch input (`DI` + `COM`)
Output	1 x relay output (`NO` + `COM` + `NC`)

LED Indicators

Device	LED	Function	Status
Master	Power	System status	On after power-up
Master	Link 1 to 4	Channel link status	On when the corresponding channel link is established
Master	Input 1 to 4	Input status	On when the corresponding `DI` is closed

Device	LED	Function	Status
Master	Output 1 to 4	Output status	On when the corresponding relay is energized
Slave	Power	System status	On after power-up
Slave	Link	Channel link status	On when the wireless link is established
Slave	Input	Input status	On when `DI` is closed
Slave	Output	Output status	On when the relay is energized

6. Mechanical and Environmental

Mechanical Specifications

Parameter	Master	Slave
Dimensions	88 × 72 × 59 mm	88 × 37 × 59 mm
Weight	Approx. 50 g	Approx. 50 g
Mounting	35 mm DIN rail	35 mm DIN rail
Protection rating	IP20	IP20
Housing material	Flame-retardant plastic	Flame-retardant plastic

7. Installation and Wiring

Use the Y402-41-L user manual for power, input, and relay wiring, pairing or replacement, and commissioning.

DI accepts dry contacts or NPN open-collector signals, not voltage inputs. Relay contacts require an external load supply. Select the load and protection against the

electrical ratings above.

8. Important Notes

- Range figures assume an open-area installation. The 10 km option requires the specified configuration and antenna; obstructions, interference, and antenna placement affect the installed link.
- The half-duplex wireless link is unsuitable for guaranteed timing or as the sole emergency-stop/personnel-safety path.
- Use one master per system. Each master channel serves one assigned one-channel slave, up to four slaves in total.

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