Y403-11-L LoRa Auto Relay Wireless I/O Module Specification



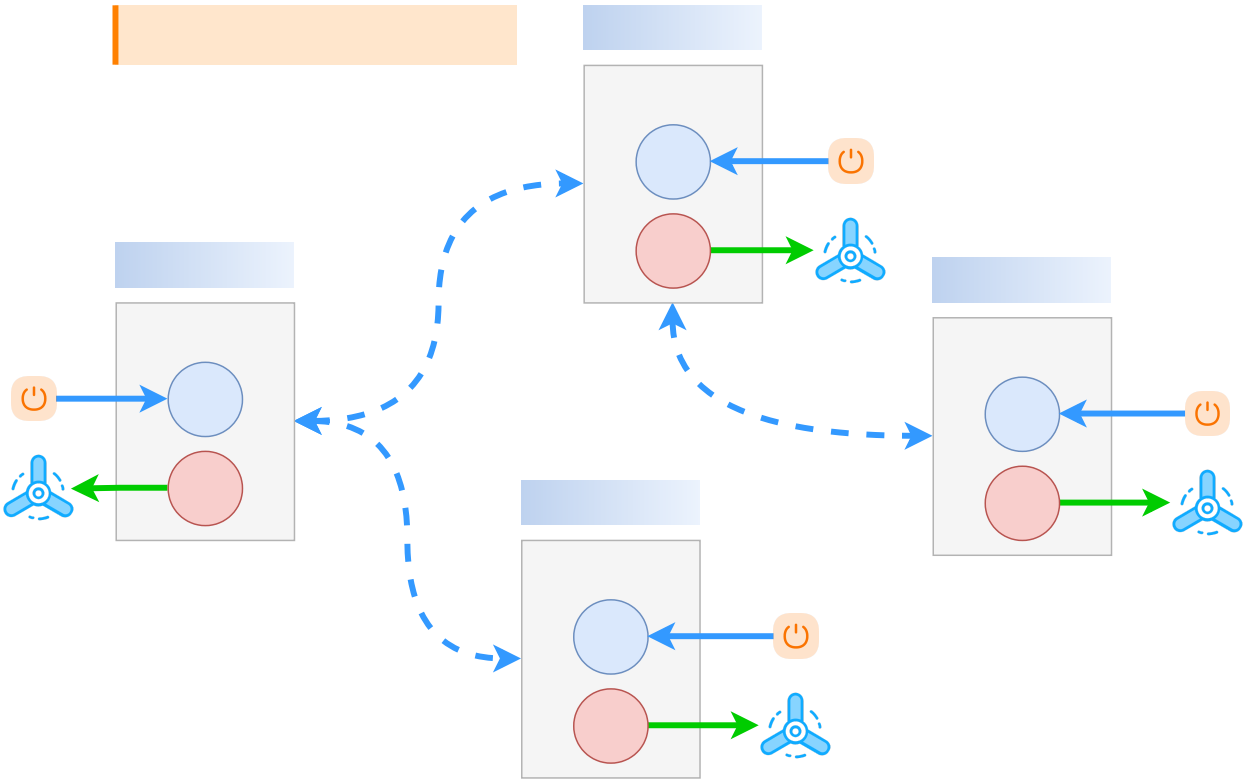
- User Manual

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1. Overview

Y403-11-L links equal-status LoRa nodes, each with 1 DI and 1 SPDT relay output. Nodes automatically choose a route and forward switching signals. Use it for coordinated auxiliary control, such as alarm annunciation or lighting, rather than a safety-rated emergency-stop or personnel-safety circuit.



Operating Logic

- When the `DI` on any node is closed, the `DO` on all nodes, including the local node, energizes
- During normal communication, the outputs on all nodes reset only after the `DI` on every node returns to open
- Auto Relay nodes select a route and forward signals to extend communication distance

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

Model Configuration

`Y403-11-L` is an Auto Relay LoRa module with 1 DI and 1 DO per node. Nodes have equal status and automatically forward signals.

For the full code and examples, see Model Naming.

Package Contents

Qty.	Item
1	Y403-11-L module
1	470 MHz magnetic-mount antenna
1	DIN rail clip
1	Quick reference guide
1	Warranty card

3. Key Features

- Passive dry-contact/NPN inputs and SPDT relay outputs
- Reverse-polarity protection
- Hardware watchdog
- 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 per hop standard; 10 km option available for selected configurations
Relay extension	Extended through node-to-node relaying
Antenna connector	SMA
Standard antenna	470 MHz magnetic-mount antenna

Electrical

Parameter	Specification
Supply voltage	9 to 36V DC
Max. power consumption	1W
Input type	Passive dry contact / NPN open-collector (no voltage input to DI)
Output type	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

Interface Summary

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

LED Indicators

LED	Function	Status
Work	System status	On after power-up
Link	Relay link status	On when the relay communication link is established
Input	Input status	On when `DI` is closed
Output	Output status	On when the relay is energized

6. Mechanical and Environmental

Mechanical Specifications

Parameter	Specification
Dimensions	88 × 37 × 59 mm
Weight	Approx. 50 g
Mounting	35 mm DIN rail

Parameter	Specification
Protection rating	IP20
Housing material	Flame-retardant plastic

7. Installation and Wiring

Use the Y403-11-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.
- Multi-hop forwarding adds wireless delay. Assess the complete relay path against the control timing requirement.

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