Y401-22-L LoRa Wireless I/O Module Specification



- User Manual

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1. Overview

Y401-22-L is a point-to-point LoRa pair with 2 DI and 2 SPDT relay outputs per device. The factory-paired devices exchange two matching input/output channels independently.



Operating Logic

- Device A `DI` closed → the corresponding `DO` on Device B energizes
- Device A `DI` open → the corresponding `DO` on Device B resets
- Bidirectional operation: the same logic applies from Device B to Device A

Channel Mapping

Device A	Device B
Channel 1 input	Channel 1 output
Channel 2 input	Channel 2 output

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

`Y401-22-L` is a one-to-one LoRa pair. The two digits, `22`, specify the digital I/O count on the two sides: each device has 2 DI and 2 DO.

For the full code and examples, see Model Naming.

Package Contents

Qty.	Item
2	Y401-22-L modules (Device A and Device B)
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
- 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 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
Input channels	2 x passive dry contact / NPN open-collector (no voltage input to DI)
Output channels	2 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

Interface Summary

Interface	Description
Antenna	SMA connector for LoRa antenna
Power	DC 9 to 36V input with reverse-polarity protection
Input	2 x passive switch input (`DI` + `COM`)
Output	2 x relay output (`NO` + `COM` + `NC`)

LED Indicators

LED	Function	Status
Power	System status	On after power-up
Link	Link status	On when the wireless link is established
Input 1 / 2	Input status	On when the corresponding `DI` is closed
Output 1 / 2	Output status	On when the corresponding relay is energized

6. Mechanical and Environmental

Mechanical Specifications

Parameter	Specification
Dimensions	88 × 72 × 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 Y401-22-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.
- Independent channels describe input-to-output mapping; they do not establish galvanic isolation between channels.

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