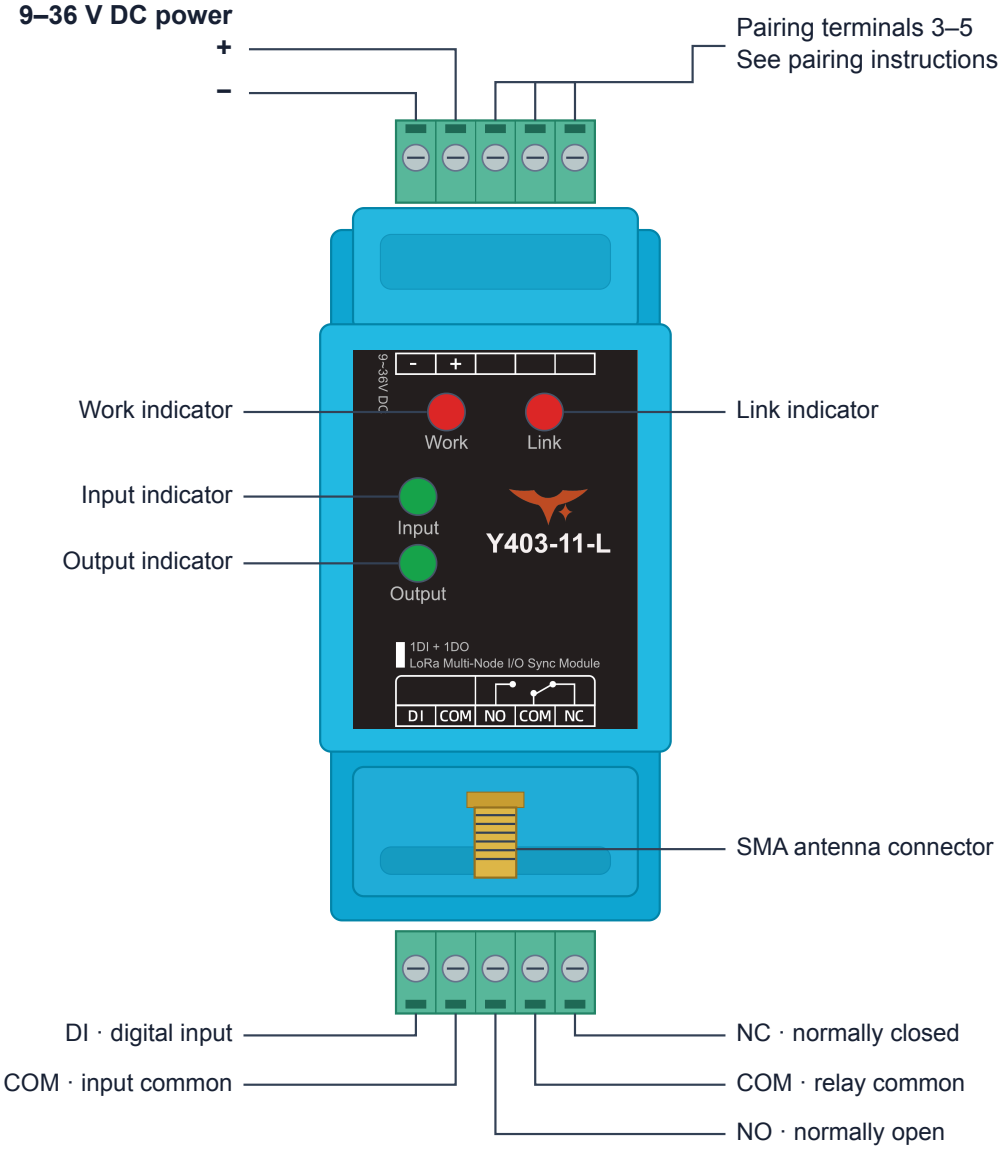
Y403-11-L Auto Relay Wireless I/O Module User Manual



Product Introduction

Applicable model: Y403-11-L.

Y403 links equal-status LoRa nodes, each with 1 DI and 1 relay DO. An input at any node controls the outputs on every linked node. Nodes forward signals to extend the communication path. No gateway or Internet connection is required.

Use the linked model specifications for dimensions and technical ratings, and the Selection Guide for model comparison.

Operating Logic

Channel Mapping



Y403 uses equal-status nodes in an Auto Relay network. When the `DI` on any node closes, the `DO` on all nodes energizes, including the local node. During normal communication, the outputs reset only after every node input returns to open. Nodes automatically relay signals to extend the practical communication path.

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. This timeout is separate from the normal input-following logic.

Installation and Wiring

The cover shows Y403-11-L. Identify terminals from the device markings and the applicable model specification. Input `COM` and relay `COM` serve different circuits.

Power Wiring

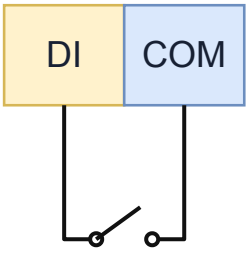
Disconnect module and load power before wiring. Connect each module's marked power + and – to a regulated 9–36 V DC supply. Check polarity before power-up.

Antenna Installation

1. Connect the supplied matching antenna before power-up and tighten the SMA connector by hand.
2. Mount the antenna vertically, about 2 m above ground where possible, clear of metal structures and outside metal cabinets.
3. Mount the module on a 35 mm DIN rail inside a suitable enclosure. Leave space for wiring and ventilation. Check each planned relay path when positioning Y403 nodes.

Input Wiring

Connect a dry contact between `DI` and input `COM`. For an NPN open-collector output, connect its collector to `DI` and emitter or 0 V reference to input `COM`. Power the sensor separately according to its rating.



No voltage input on DI

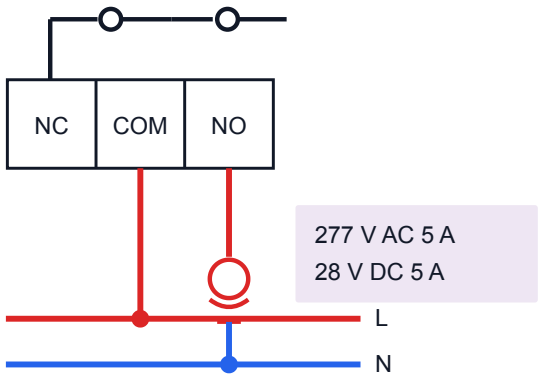
Do not connect sensor power or a voltage-output signal directly to `DI`. Use an intermediate relay for PNP or other powered outputs, and connect only its dry contact to `DI` and `COM`.

Output Wiring

When the relay energizes, `NO–COM` closes and `NC–COM` opens.

The relay contacts supply no voltage. Wire the external load supply and load in series through relay `COM` and `NO` for normally open operation. Fit overcurrent protection and surge suppression for the load.

Small Loads

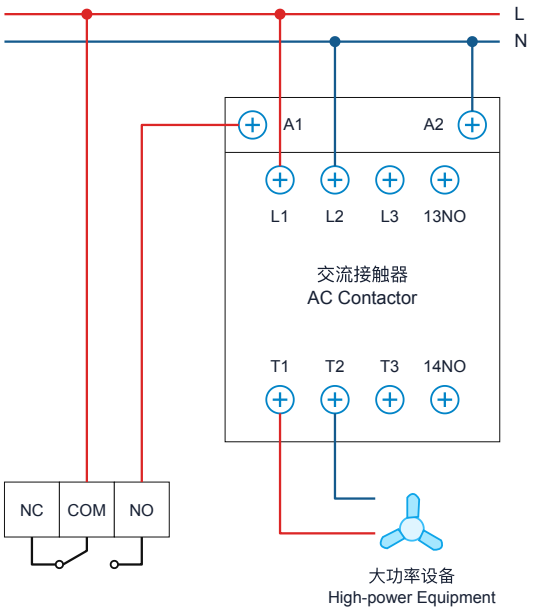


Keep a directly switched resistive load within both contact limits: 5 A at 277 V AC or 5 A at 28 V DC. Use a suitably rated external contactor or power relay for high-power or inductive loads; the module relay switches its coil.

Contactor-Controlled Loads

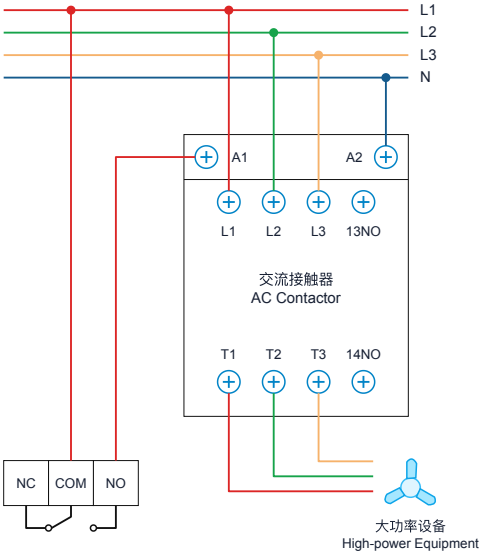
Large Loads

The contactor switches the equipment load; the module switches the contactor coil.



Three-Phase Equipment

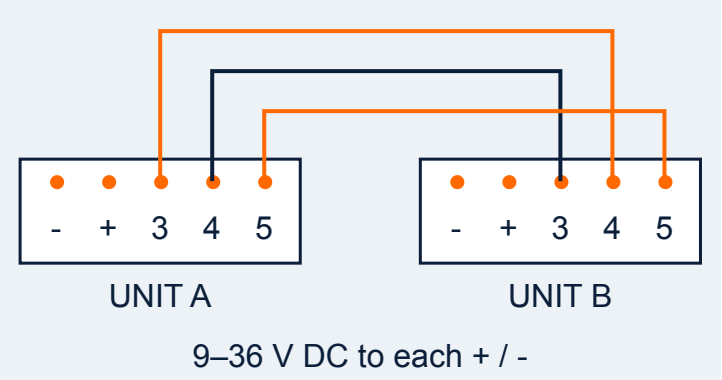
Use a three-phase contactor to switch the motor circuit.



Pairing and Configuration

To add or replace a node, use an existing network node and the new or replacement Y403-11-L node. Pair them with the three-wire procedure. Nodes have equal status.

1. Power off both units and isolate the loads.
2. Connect the temporary pairing wires between the two units: position 3 to 4, position 4 to 3, and position 5 to 5. The positions are shown in the pairing diagram; confirm the physical terminal markings on the device.
3. Connect each unit to its 9–36 V DC supply, observing polarity.
4. Power on and wait for both link indicators to remain on.
5. Power off, remove the temporary pairing wires, then power on and test the wireless control logic.



Commissioning

Initial Setup

Before applying power, check the model, channel assignments, pairing, antennas, power polarity, and signal/load wiring. Keep control loads isolated during the functional checks.

LED Indicators

LED	Status
Work / Power	On after power-up

LED	Status
Link	On when the wireless link is established
Input	On when the corresponding DI is closed
Output	On when the corresponding relay is energized

Functional Checks

1. Isolate the control loads, connect antennas, and power the linked nodes.
2. Close DI on one node and confirm that DO energizes on every node, including that local node.
3. Close DI on a second node, then open the first node DI. During normal communication, all outputs must remain energized while any node DI remains closed.
4. Open every node DI and confirm that all outputs reset. Repeat the trigger test from each installed node.
5. Check communication at every final node location and along the intended relay path. With loads isolated, verify the communication-loss reset before connecting control loads.

Troubleshooting

Symptom	Checks
No wireless link	Check power at each unit, antenna connections and placement, and the supplied pairing or completed pairing procedure.
Input indicator does not turn on	Check the dry contact or NPN open-collector connection between DI and COM. Do not apply a voltage signal to DI.
Relay action does not match the expected input	Check DI on every linked node, including the local node. During normal communication, all outputs reset only when every DI is open.
Relay operates but the load does not	Check NO/COM/NC selection, the external load supply, wiring, protection devices, and load ratings. Relay contacts do not supply voltage.

Symptom	Checks
Intermittent communication or timeout reset	Check antenna clearance, obstructions, interference, and power at the final locations. Isolate control loads while checking the communication-loss behavior.

Safety Notes

- Use a certified power supply and confirm polarity before power-up.
- Do not install the device in explosive, high-humidity, corrosive, or heavily dusty environments.
- Do not exceed the relay contact rating.
- Do not use the wireless link as the only protection path for emergency stop, personnel safety, or other hard real-time safety functions.
- High-voltage AC wiring must be performed by qualified personnel.

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