

ION8-1325

Installation and Commissioning Guide · October 2026 · Rev. 1.0

Wireless remote I/O unit: 8 DI + 8 DO + 4 AI + 2 LC



Slot layout (schematic view)

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1 Safety

About this guide

This guide is for field and commissioning personnel. It describes mounting, power, terminal wiring, web interface access, pairing and first verification in step order.

Electrical values and limits are not repeated in this guide; see the model datasheet.

- Installation, wiring and maintenance must be done only by authorised, trained personnel.
- Fit and remove terminals with the supply off; verify with a measurement that the circuit is de-energised before removing.
- Check the supply polarity before energising.
- This device alone is not sufficient for emergency stop or other safety functions; provide machine safety independently of the wireless link.
- For commands carried over the wireless link, also provide the safe state and timeout supervision on loss of communication in the PLC program.

2 Product and model

ION8 is a family of wireless remote I/O that collects sensor, encoder and control signals on wire and cable processing machines without running cables, and passes them on to the PLC. The same enclosure is used in every model; models differ only in their slot modules.

The model code has the form **ION8-ABCD**; the four digits show the module in slots A, B, C, D (1 = 8 DI, 2 = 8 DO, 3 = 4 AI, 4 = 4 AO, 5 = 2 isolated loadcell, 0 = empty).

Model code **ION8-1325**
Total channels **22**
Signal terminals **32**

Slot	Module	Channels	Terminal
A	DI DI8 — 8-channel digital input module	8	A1 – A8
B	AI AI4 — 4-channel analog input module	4	B1 – B8
C	DO DO8 — 8-channel digital output module	8	C1 – C8
D	LC LC2 — 2-channel isolated loadcell module	2	D1 – D8

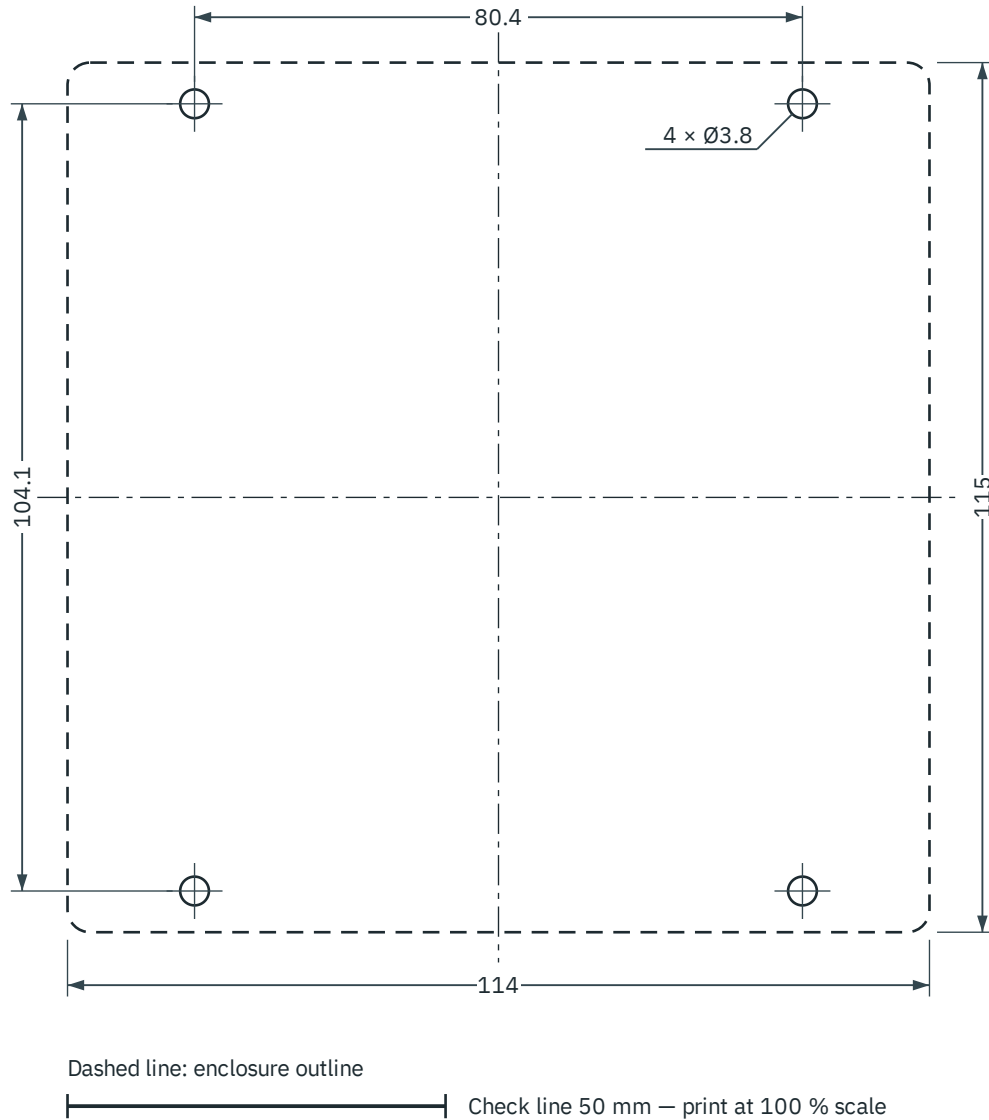
See the model datasheet for electrical values and limits.

3 Enclosure and mounting

- Fix the device inside the panel with screw mounting.
- Keep a reasonable distance from noise sources such as VFDs and welding equipment.
- Leave service access to the terminals and cables; secure cables so that they are not subject to strain and vibration.
- Enclosure dimensions: 115 × 114 × 45 mm (W × L × H; excluding mounting tabs and antenna connectors). In the panel, allow extra room for cables and antennas.
- Mounting holes: 4 × Ø3.8 mm, centre to centre 80.4 × 104.1 mm (dimensioned 1:1 template below).
- Weight: 250 g.

Mounting hole template (1:1)

Mounting hole template — scale 1:1, dimensions in mm



Print the page without scaling (100 %) and verify the 50 mm check line with a ruler; then fix the template to the mounting surface and mark the hole centres. Dimensions in mm.

4 Power connection

1. Keep the supply switched off.
2. Connect the supply wires to the + / 0 V / GND (panel earth) terminals marked on the device.
3. Connect the field signals to blocks A / B / C / D according to the tables in the “Terminal layout” section.
4. Check polarity and look for loose terminals.
5. Switch the supply on.

Caution: a weak or fluctuating supply makes the device restart. The power-up counter and reset reason in the web interface help diagnosis.

See the value table in the datasheet for the supply voltage range and current consumption.

5 Terminal layout and field wiring

Numbering rule

- The terminal blocks are arranged on the device from left to right as **A → B → C → D**; the block letter is the slot letter.
- In every block, terminal 1 is at the top left; terminals are numbered from 1 (A1, A2, ...).
- The terminal blocks are pluggable.
- If the printed label on the device and a table in this document disagree, **the printed label governs**.

Terminal assignment tables of this model

The order below is read from the marking on the enclosure; each terminal row is listed **from left to right** when viewed facing it. Signal names are spelled as on the enclosure.

Lower terminal row – power, RS485, digital inputs, analog inputs

Pos.	Group (enclosure marking)	Terminal
1	POWER	+24V
2	POWER	0V
3	RS485	A1
4	RS485	B1
5	RS485	A2
6	RS485	B2
7	no marking	+10V
8	no marking	0V
9	digital inputs	DI0
10	digital inputs	DI1
11	digital inputs	DI2
12	digital inputs	DI3
13	digital inputs	DI4
14	digital inputs	DI5
15	digital inputs	DI6
16	digital inputs	DI7
17	analog inputs	AI4
18	analog inputs	0V
19	analog inputs	AI5
20	analog inputs	0V
21	analog inputs	AI6
22	analog inputs	0V
23	analog inputs	AI7
24	analog inputs	0V

Upper terminal row — load cells, digital outputs

Pos.	Group (enclosure marking)	Terminal
1	Load Cells	Ext-
2	Load Cells	Ext+
3	Load Cells	Lc7+
4	Load Cells	Lc7-
5	Load Cells	Lc6-
6	Load Cells	Lc6+
7	Load Cells	Ext+
8	Load Cells	Ext-
9	digital outputs	Do23
10	digital outputs	Do22
11	digital outputs	Do21
12	digital outputs	Do20
13	digital outputs	Do19
14	digital outputs	Do18
15	digital outputs	Do17
16	digital outputs	Do16

Module connections

DI8 — 8-channel digital input module — Slot A

Connection notes

- If you use an encoder, connect the A/B lines to the related DI terminals; prefer shielded cable and ground the shield at a single point in the panel.
- When an encoder or counter is enabled, the related inputs cannot be used as general DI; fix the plan before commissioning.
- See the value table (datasheet) for the input type and voltage levels.

Settings in the web interface

- Live state of the inputs
- Enabling encoder 0/1 and pulse counter 0/1 functions
- Software counter and frequency channels: value, rate and status
- Rising-edge lockout (filter) setting
- Timeout (stale) time setting for the frequency value

Commissioning test

- Trigger an input; check that the state appears in the web interface and (if used) on the PLC side.

DO8 — 8-channel digital output module — Slot C

Connection notes

- Loads in the relay, valve or lamp class are targeted; see the value table (datasheet) for load type and limits.
- When connecting an external step drive, verify the drive's input requirements and timing separately in the application.

Settings in the web interface

- Driving outputs manually (commissioning test)
- PWM channel enable, frequency and duty cycle setting
- Selecting the pulse/direction sources
- Live monitoring of the output state

Commissioning test

- Drive an output from the web interface; check that the field load operates.

AI4 – 4-channel analog input module – Slot B

Connection notes

- See the value table (datasheet) for the input range and wiring; the process measurement is verified by field calibration.

Settings in the web interface

- Live monitoring of channel values
- Filter, gain and scaling setting
- Calibration

Commissioning test

- Apply a known signal to the input; check that the value in the web interface matches the expected value.

LC2 – 2-channel isolated loadcell module – Slot D

Settings in the web interface

- Live monitoring of channel values
- On the **Load Cell Config** page: zero value, divisor (scale) and filter setting per channel; settings are retained once saved

6 Web interface access and first setup

Local access point (first setup)

1. Switch on the supply and wait for start-up to finish.
2. In the wireless network list of your computer or phone, find the device's access point and connect with the password in the table.
3. Open the address from the table in a browser.
4. Check the software build signature and the live connection indicator in the page header; if the device stops responding, the indicator must change to “no connection”.

Parameter	Value
Default password	Supplied with the device
Address (access point)	http://192.168.4.1

To join a plant network, select the network mode “AP + STA” on the **Device Info** page, enter the network name and password, save and restart the device. The access point password has 8 – 63 characters. The local name is changed on the same page: a–z, 0–9 and “-” are allowed, the name cannot start or end with “-”, 1 – 32 characters; a name that breaks the rule is not saved, and if left empty the factory name is used.

Web interface cards

Card / section	What it is for
General / live terminals	Channel verification; visual confirmation of wiring
DI / events / encoder	Inputs, encoder and counters
DO / PWM	Outputs and PWM
AI	Analog reading, filter, scaling
Loadcell	Isolated loadcell channel values
Wireless / pairing	Partner selection, link state, signal class
System	Version, uptime, power-up counter, reset reason, operating mode
Software update	Loading an authorised package

First setup

1. Change the default password at the first login.
2. Decide the device's operating mode and the partner it will be paired with (see Connection modes and pairing).
3. Check that live data arrives in the web interface cards of the modules.

7 Connection modes and pairing

ION8 is used in three ways; the choice depends on where the signal has to go.

Pairing with the middle button (family standard)

1. While the device is running, press the middle button, hold it for at least **3 seconds** and release it; the pairing window opens.
2. While the window is open, a running light is shown on the signal indicator. The window closes by itself after **3 minutes**.
3. When pairing is established, the indicator blinks for 5 seconds and then shows the signal level.
4. Pairing can also be started and removed from the pairing section of the **Device Info** page in the web interface; the same section shows the partner device, the operating mode and the signal level.
5. During operation, holding the middle button never triggers a factory reset, however long it is held.

Signal indicator

Indication	Meaning
Running light	Pairing window open
Blinking for 5 seconds	Pairing established
Whole indicator blinking	“Find me”: this unit was identified from the interface
All four LEDs slowly fade in and out together (“breathing”)	No pairing, or the link is lost
1 – 4 steps lit	Link up; wireless signal level

Mirroring (two ION8 units)



PLC through ION8 EB



1. Power the ION8 units. Press **Pairing Mode** in the ION8 EB web interface; the mode closes by itself after 5 minutes for safety.
2. See the ION8 units in the scanned devices list with model, software version and signal strength; select only your own unit.
3. Use **Assign to Slot** to choose a free slot from 0–7; the slot number determines the PLC addresses.
4. Press **Find** to see which physical unit is in which slot; the unit's LEDs blink. Use **Delete** to remove a pairing.
5. Follow the ION8 EB Installation Guide for tag selection, address map and PLC-side settings.

ION8 EB supply voltage **10–30 V DC**

ETH2BLE



ETH2BLE is an operating mode of ION8 EB. Pairing between two ION8 EB units, mode selection and RS485 settings are described in the ION8 EB Installation Guide; the ION8 remote I/O unit is not used in this mode.

8 Software update and maintenance

Software update

1. Use only the authorised package for this model; a package for a wrong model is not accepted.
2. Load the package from the software update card in the web interface; provide uninterrupted power during the update.
3. When finished, check that the build signature shows the new date.
4. On critical lines, prepare a fallback procedure and a rollback plan.

Maintenance

- Periodically check visually that terminal connections are tight and cable insulation is intact.
- Switch off the supply and verify that the circuit is de-energised before fitting or removing terminals and tightening cables.

Factory reset (family standard)

1. Switch off the supply.
2. Press the middle button, switch the supply on while holding it and keep it pressed for **10 seconds** without interruption.
3. During the first 7 seconds the indicator fills step by step; between 7 and 10 seconds it blinks fast. Releasing the button before 10 seconds cancels the operation.
4. The device settings return to factory values; set up network, pairing and operating mode again.

Timeout settings

- The access point broadcast time is set in seconds on the **Device Info** page; **0** = the access point never switches off.

9 Troubleshooting

Symptom	Check
Access point not visible	Supply, wireless placement, start-up wait time; reset
Access point password forgotten	Factory reset with the middle button: password back to factory value, calibration kept; then set up again
Local name (.local) does not open	Are device and computer on the same network; name resolution and firewall; try the access point address
Web interface shows “no connection”	The indicator works correctly: the device is not responding. Check supply and network connection
Pairing cannot be established	Operating mode of both units, pairing screen open, distance, correct partner; delete the pairing and pair again
Both units Master, or both Slave	Mirroring does not work; change the mode of one unit
Input state is not reflected	Wiring, input level (value table), whether an encoder/counter function has taken the input
Output does not operate	Safe state (is the partner link up), load, polarity
Analog input value wrong	Wiring, filter/gain/scaling setting, calibration
Loadcell value wrong or missing	Wiring according to the terminal assignment, calibration
Restarts frequently	Supply quality; power-up counter and reset reason record in the web interface

10 Commissioning checklist

- ☐ Panel mounting and earthing done
- ☐ Supply polarity correct
- ☐ Wiring checked against the terminal tables (compared with the printed label)
- ☐ Web interface opened via the access point or local name
- ☐ Build signature and live connection indicator checked
- ☐ Default password changed
- ☐ Operating mode selected correctly; pairing or EB connection done
- ☐ DI smoke test
- ☐ DO smoke test
- ☐ AI smoke test
- ☐ LC smoke test
- ☐ Link-cut and safe-state test done
- ☐ Software update procedure recorded (if needed)

11 Contact

Ionía is the manufacturer of the ION8 family. Contact us for model selection, the ABCD code and a configuration that fits your application.

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This document describes the product. Product features may change without notice.