

ION8-1325

Technical Data Sheet · October 2026 · Rev. 1.0

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



Slot layout (schematic view)



Quick specification

Model code	ION8-1325
Total channels	22
Signal terminals	32
Wireless	Bluetooth LE 5
Local access	Built-in web interface

Product description

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).

Capabilities

- Bluetooth LE 5; adaptive channel selection and adaptive transmit power
- Built-in web interface for monitoring, configuration and commissioning
- Communicates only with a paired partner (wrong-machine protection)
- Model-protected software update package

Model data

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

Typical use in wire & cable

- Isolated loadcell measurement for wire tension and load monitoring
- Length and speed monitoring with an encoder, product and pulse counting
- PULSE/DIRECTION command to an external step drive
- Collecting machine data with digital and analog signals in one unit

Module sections

DI8 – 8-channel digital input module code digit: 1

In this model: 1 (slot A).

Capabilities

- 8 digital inputs
- 2 quadrature encoder inputs + 2 pulse counters
- Software pulse counter and frequency reading on every input
- Encoder and counter functions share the module's inputs; they do not add channels. An enabled function takes the related inputs out of general-purpose use.

Channel functions

Signal	Function
DI0 – DI1	Encoder 0 (A/B)
DI2 – DI3	Encoder 1 (A/B)
DI4	Pulse counter 0
DI5	Pulse counter 1
DI6 – DI7	General DI; optional counter clear function

The encoder inputs have no Z/index input. Software counting and frequency reading (DI0 – DI7) is a separate layer from the encoder/counter functions above and does not affect the raw input state.

Electrical data

Parameter	Value
Input type	PNP (24 V DC)
Minimum input voltage for logic 1	15 V
Input isolation	2500 V
Maximum pulse counter frequency	100 kHz
Maximum encoder (A/B) frequency	2 kHz (A/B; 8 kHz count with ×4 decoding)
Software counter / frequency reading upper limit	100 Hz

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

DO8 — 8-channel digital output module code digit: 2

In this model: 1 (slot C).

Capabilities

- 8 digital outputs
- 4 PWM channels with adjustable frequency and duty cycle (DO16 – DO19); each channel is enabled independently
- Pulse/direction output: one PWM channel as PULSE and a separate output as DIRECTION can drive a compatible external step drive; the DIRECTION output is selected from DO20 – DO23 (default DO20)
- The PWM channels are part of the module's 8 outputs; they are not additional outputs.

Electrical data

Parameter	Value
Output type	Sourcing (PNP, high side)
Maximum continuous current per channel	100 mA
Output protection	Overcurrent and overtemperature protected
PWM frequency range	100–20000 Hz
Pulse/direction maximum pulse frequency	10 kHz

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

AI4 — 4-channel analog input module code digit: 3

In this model: 1 (slot B).

Capabilities

- 4 analog inputs
- Signal chain monitored and set from the web interface: filter, gain, scaling
- Per-unit calibration

Electrical data

Parameter	Value
Input range	0–10 V

Settings in the web interface

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

LC2 — 2-channel isolated loadcell module code digit: 5

In this model: 1 (slot D).

Capabilities

- 2 isolated loadcell input channels
- For weighing and wire tension monitoring applications

Electrical data

Parameter	Value
Loadcell excitation voltage	3,3 V
Supported loadcell sensitivity	± 3.9 / ± 7.8 / ± 15.6 mV/V (selectable gain; ± 12.9 / ± 25.8 / ± 51.6 mV at 3.3 V excitation)
Resolution	24 bit
Measurement rate	10 / 80 SPS
Channel isolation voltage	2500 V

Settings in the web interface

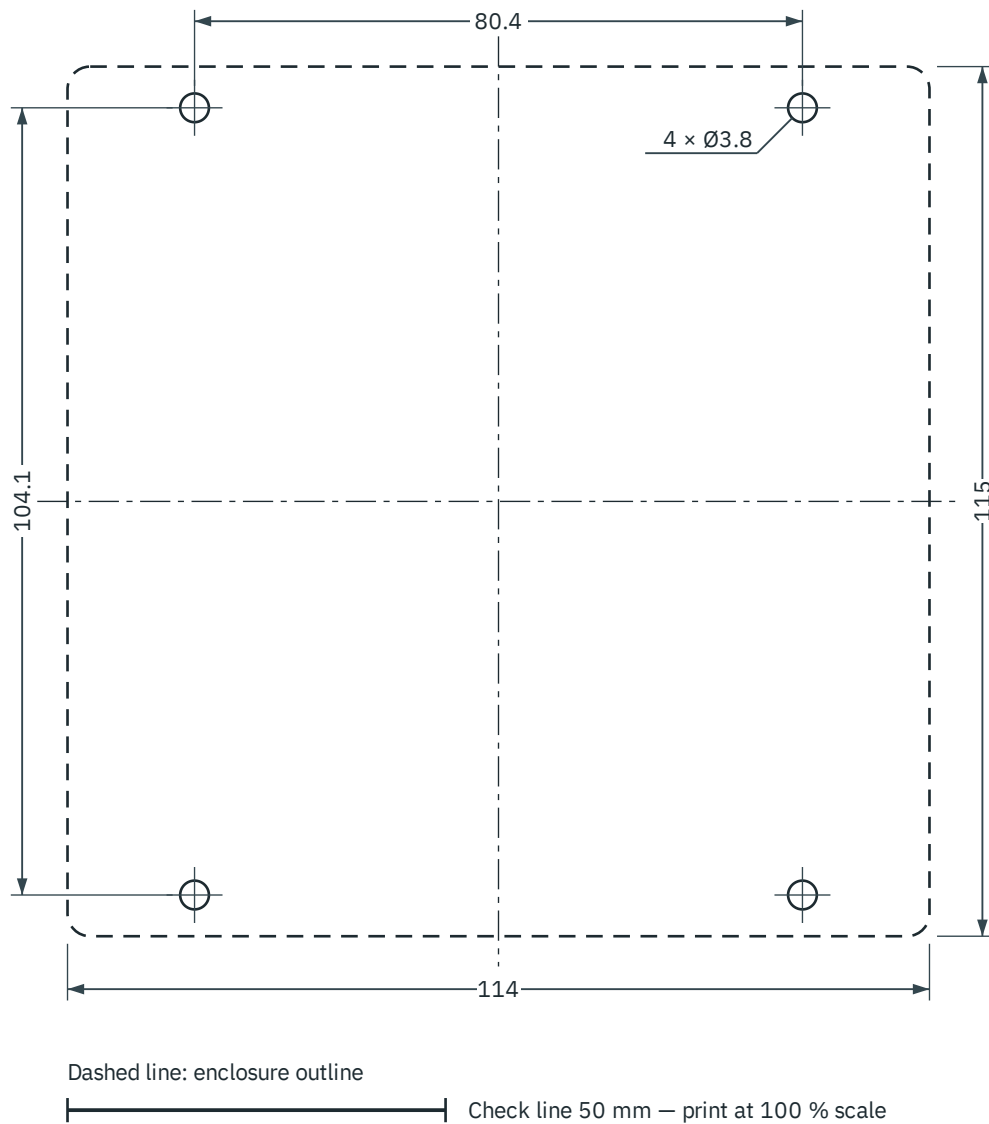
- Live monitoring of channel values
- On the **Load Cell Config** page: zero value, divisor (scale) and filter setting per channel; settings are retained once saved

General technical data

Parameter	Value
Supply voltage	24 V DC nominal (10–30 V DC)
Current consumption	min. 50 mA · typ. 80 mA · max. 120 mA (24 V DC)
Enclosure	Enclosed housing; dust resistant, not protected against water
Dimensions (W × L × H)	115 × 114 × 45 mm (excluding mounting tabs and antenna connectors)
Weight	250 g
Input-to-output latency (mirroring)	typical ~33 ms (Range mode) · ~27–29 ms (Balanced, Fast, Very fast modes)

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.

Connection modes

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

Mirroring — Between two ION8 units, no PLC

The local inputs of one ION8 are passed to the matching outputs of the paired ION8; no PLC is needed to carry signals between two points of a machine.



PLC through ION8 EB — 8 remote stations on one bridge

ION8 EB passes the data of the remote ION8 stations to the PLC: Siemens S7 PUT/GET, Modbus TCP, EtherNet/IP and OPC UA; Modbus RTU master (up to 8 devices) or slave over RS485.



ETH2BLE — Carry an existing Ethernet and RS485 line wirelessly

A transparent point-to-point Ethernet + RS485 tunnel between two ION8 EB units; existing PLC communication is carried as it is over a wireless link instead of a cable.



Need	Mode
Carry signals between two machine points	Mirroring
Connect remote I/O to a PLC / SCADA	ION8 EB
Carry an existing Ethernet or RS485 line wirelessly	ETH2BLE

ION8 EB is a separate product with its own documents: its supply voltage is given below; see the ION8 EB Installation Guide for protocol and address details.

ION8 EB supply voltage **10–30 V DC**

Ordering and contact

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

- State the **ION8-ABCD** model code when ordering.
- Other ABCD combinations are available on request.

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