FdxCompact AI-8-C

8 channel analogue input module

- Screwless installation with click-on DIN-rail communication bus and power connectors
- Push-in spring connectors for cables
- Individually detachable terminal blocks per channel

Connect and measure

The 8 channel analogue input module is used to read input signals from active and passive sensors.

Its 8 individually configurable channels can read data from resistive sensors, current loops, voltage messages, and digital indications.

Poll the module from a serial Modbus master FX-controller to get reliable, accurate, precise and fast readings from your field equipment.

Technical features

Dimensions & Weight **134mm x 78mm (x 19 mm thick), 90gr**
Recommended power supply **< 25 mA @ 24VDC (+/- 10%)**
Supported sensor types **Resistive (NTC, PT, Ni, ...), 0(4)-20mA, 0(2)-10V**
Operating temperature **0 to +40°C**
Communication **Modbus RTU (RS485) at speeds up to 57600 bps**

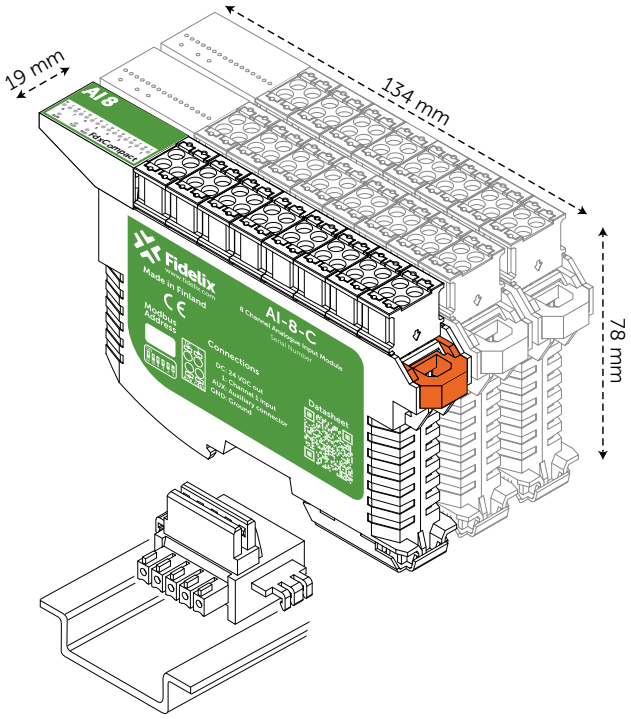
Power and communication: Power and the communication bus are connected to the AI-8-C module by clicking it onto the connector, which in its turn clicks onto the DIN rail. The FdxCompact controllers provide both natively, or you can use the connectors from the Fdx-Terminal-C set.
The middle connector is internally connected to the 0 VDC IN.

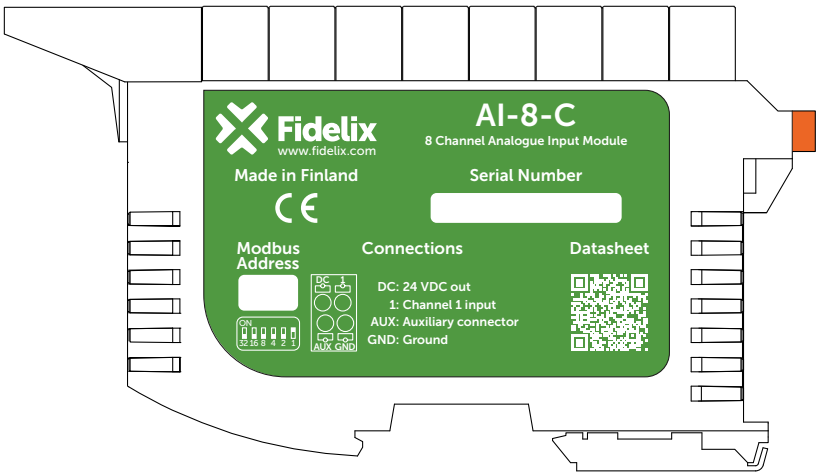
Modbus address: The address of the AI-8-C module can be set from 1 to 63 by changing the position of dip-switches 1-6. Each dip-switch represents a binary value, as indicated on the module (ST1...ST32).

DIP 1 (32)	DIP 2 (16)	DIP 3 (8)	DIP 4 (4)	DIP 5 (2)	DIP 6 (1)	Modbus address
0	0	0	0	0	1	1
0	0	0	0	1	0	2
0	0	0	0	1	1	3
...	...	...	...	...	...	...
1	0	1	0	1	0	42
...	...	...	...	...	...	...
1	1	1	1	1	1	63

Modbus communication: Use no parity, 8 data bits and 1 stop bit, and the AI-8-C module will auto-detect the communication speed of the bus (9600, 19200, 38400 or 57600 bps).

Modbus loop termination: On the last module, the Modbus loop must be closed by connecting a 120 Ω resistor between the A- and the B-side of the RS-485 loop.
Use the terminal that is delivered with your FdxCompact controller, or from the Fdx-Terminal-C set.





Measurement types: Supported sensor types are: resistive sensors (NTC, PT1000, Ni1000, ...), 0(4)-20mA, 0(2)-10V and digital inputs. The current for resistive sensors is 0.58 mA at 1 kΩ and 0.22 mA at 10 kΩ.
In the measurement point programming on an FX-controller, the type of measurement is selected in the conversion table used for the measurement point, or by using a digital point.

LEDs: The type of measurement will be shown on the module's label; per channel there are 2 LEDs, labelled "U" and "I" for voltage and current. If neither are lit, the AI-8-C module measures the resistance, which is also how the input is used as digital indication.

Measurement values: The analogue to digital conversion is done with an accuracy of 20 bits. In the point programming on an FX-controller, each value from the module is represented as a value between 0 and 100 000. Then, the right conversion table is selected to interpret these values.

Connecting measurements: Connect incoming signals from active sensors to the numbered connectors (channel IN). To measure resistance, connect between the numbered connector and the GND (ground).

DC and GND connectors: The ground and 24 VDC supplied through the bottom from the connectors inside the DIN-rail are also available at each terminal block through the DC and GND labelled connectors

AUX connectors: The auxiliary connectors (AUX) are a galvanically isolated loop, all connected to each other. These connectors can be used to send for instance an external AC supply voltage to your sensors.

Power consumption: The module is to be powered with 24 VDC and consumes 15 mA. It is therefore recommended to use a power supply providing at least 20 mA.

Firmware compatibility: The module is supported by firmware for FX-controllers from version 12 upwards. This firmware is compatible with the FX-2030, FX-2030A and the FX-3000-C.