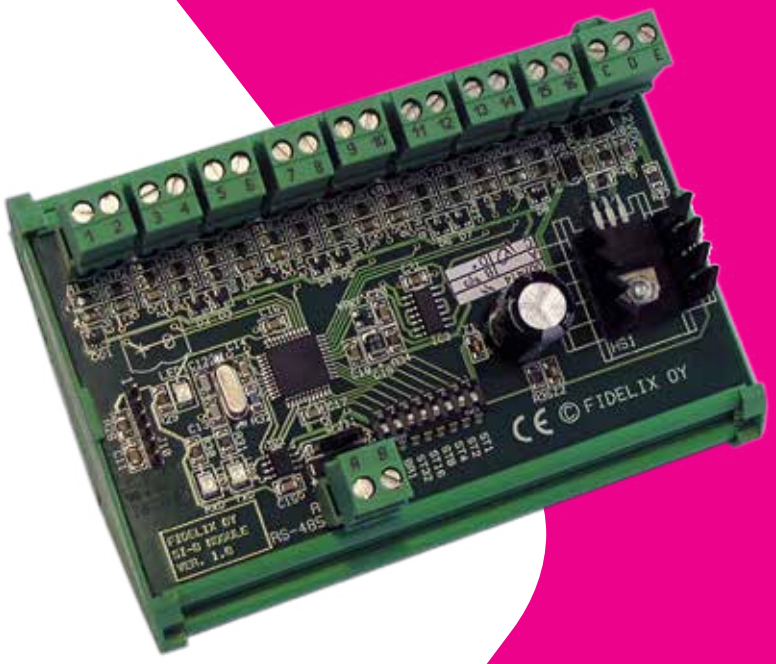
Fidelix

FX-SI-8

8 channel security module



- 8 security loops
- Sabotage detection
- Modbus RS-485
- Individually detachable connectors
- DIN-rail mounted or in an IP55 unflamable box

Controlled and secured

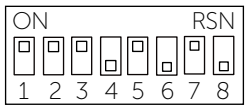
The 8 channel digital security module complies with the Federation of Finnish Insurance Companies class A regulations, and is thus the perfect device to secure your building.
Connect 8 individually programmed security loops to the SI-8 to detect burglars before the even get in. Connect several SI-8 modules to our substation, and forward alarms via SMS or email to the persons concerned.

Technical features

Size (with DIN-rail clamps):	123mm x 90mm (x 65mm height)
Operating voltage:	10-26VDC
Operating temperature:	0 to +50°C

Modbus address: The address of the SI-8 module is set by changing the position of dip-switches 1-6. Each dip-switch represents a binary value, as indicated on the module: dip-switch 1 = 1, dip-switch 2 = 2, dip-switch 3 = 4, dip-switch 4 = 8, dip-switch 5 = 16, dip-switch 6 = 32.

Example: To set the Modbus address of the module to 42, set dip-switches 2, 4 and 6 to ON, and dip-switches 1,3 and 5 to OFF



(dip-switch 2 = 2, dip-switch 4 = 8, dip-switch 6 = 32. 32+8+2 = 42)

Modbus speed: The SI-8 module communicates using the Modbus RTU protocol over a serial RS485 connection with 8 databits, no parity and 1 stop bit. To set the Modbus speed at which the module sends and receives data, set dip-switch 7 and 8 as indicated in the table on the right.

On the last module in the Modbus loop, the loop must be closed by connecting a 120 Ω resistor between the A and the B side of the RS-485 loop. This can be done using the modules own terminating resistance by closing the built-in jumper next to the Modbus connectors.

Communication speed	Dip-switch 8 (BR2)	Dip-switch 7 (BR1)
9 600 bps	OFF	OFF
19 200 bps	OFF	ON
38 400 bps	ON	OFF
57 600 bps	ON	ON

Indications: The SI-8 security module is used when analogue measurements with short response times are needed, like for instance for resistance loops in security applications. In those applications it is important to notice even short pulses. The SI-8 measures using an 8 channel multiplexed 10 bit Analogue-to-Digtital converter. Regardless of the power supply being 12 of 24 VDC, there is a 2.5V tension from the odd numbered connectors to the even numbered ones. The measured resistance can vary between 470Ω and 47kΩ. One measurement period takes 20 ms and each channel is measured every 160 ms. If two successive measurements are equal, the measurement is approved and saved. The measurements are saved in a buffer, containing the last four measurements. The oldest value in the buffer is moved to the corresponding register when this register is read through Modbus communication. This procedure ensures that all data is sent to the substation even if the communication speed is low. Should the substation somehow fail to read all data from the module and the buffer gets full, the oldest value is replaced with the new one. To notify overflow of the buffer, the highest value bit is set. This way substation can detect a failure in communication. If five successive measurements are unable to retrieve a valid signal, all the signals are passed to the buffer. This ensures that sabotage or indicator/loop malfunction will be detected immediately.