

**WWW.INFOPULSAS.LT /  
sales@infopulsas.lt**

➤ Product catalogue

# Building management solutions



# We are the forward-thinkers of smart building automation

At Fidelix we are committed to helping our customers create more profitable business operations with efficient and need-oriented solutions. Our experience as a market leading master system integrator in Finland gives us the expertise to provide our customers with the best possible solutions. We also strive to promote responsible and ecologically sustainable building management.

We are proud to be a pioneer in the industry, encouraging and cultivating innovation. Our deep-rooted attitude of entrepreneurship and efficiency is reflected in all our operations. We are dedicated to sustainable development and offer optimisation services for energy and other resources. By building a greener future, we are creating future jobs and a better tomorrow.

***That is smart. That is Fidelix.***

## **Improved productivity**

By digitalising a building's technical systems with a user-oriented approach, Fidelix's smart building automation and machine learning can help to significantly improve productivity while also providing optimal conditions for profitable and sustainable property ownership.

## **Full freedom with open standards**

We strive to provide our customers with freedom of choice, by basing our systems on open standards. Our product development team in Vantaa, Finland, is dedicated to creating smart, reliable, and scalable technologies that can meet the needs of today and tomorrow in the field of building automation. We are committed to staying ahead of the curve and providing our customers with the best solutions for their needs.

## **More sustainable profitability**

By leveraging Fidelix's smart solutions, building maintenance can unlock tremendous savings potential while simultaneously improving the indoor climate of buildings. Our solutions enable demand-side response and optimise the resource consumption of buildings, allowing you to get the most out of your building's energy usage.





Smart building automation is a powerful tool for improving the wellbeing inside a building. By ensuring that a building is in optimal condition, occupants can enjoy a greater sense of comfort and satisfaction. This type of technology can help to create a healthier and more productive environment, leading to happier and more productive people.

### **Fidelix is making buildings smart**

Fidelix is revolutionising the way we think about buildings. Our cutting-edge technology solutions are designed to optimise energy costs, indoor climate, and operational costs, while providing a comfortable and safe environment for over one million people in the Nordics. Our products are rigorously tested and proven to work in even the most extreme climates, making us the go-to choice for smart building solutions.

### **Fidelix is designed around users**

The system is designed for ease of use and maximum benefit. Its secure remote operation portal works on any web browser, eliminating the need for additional hardware or software investments. Data can be sent to multiple recipients as needed, always on schedule.



# Fidelix connects different systems to a single, easy-to-manage entity

Fidelix provides a comprehensive solution for managing a variety of renovation and new construction projects. Our systems have been used in over 31 000 projects of all sizes, from residential and office buildings to hospitals, schools, hotels, warehouses, care homes, parking facilities and shopping centres. With our single, easy-to-manage entity, we can tailor each project to meet your specific needs.

For years, we have been dedicated to creating products that seamlessly integrate with those from various manufacturers. Our efforts have been successful, resulting in a product range that is compatible with hundreds of manufacturers and has been proven reliable in the field.

Our Fidelix building automation system unifies building technology components such as sensors, meters, actuators, controllers and safety systems into a single, user-friendly platform. Built on open standards, it provides an efficient way to combine most other systems and devices into a unified whole.

## Fidelix is comprehensively energy-efficient

- 1** Our customer-centric approach has led to the development of an open and widely compatible system. It features intelligent solutions and a user-friendly interface, as well as standardised technology.
- 2** Our purpose-built solutions enable efficient maintenance and monitoring of technical building services, such as heating, cooling, ventilation, and lighting. The system also provides accurate, flexible, and illustrative utilisation and consumption reports, allowing any problems and irregularities to be detected in time.
- 3** A well-functioning building automation system can improve energy efficiency without compromising on the indoor climate and can lead to significant savings.



Residential and office buildings



Hospitals, care homes



Hotels



Warehouses



Shopping centers



Sports & entertainment



Parking facilities



Schools



## “TURNING TORSO” IN MALMÖ

Completed in 2005 | 190m tall  
27 500m<sup>2</sup> floor surface | 54 floors above ground  
9 segments of 5-story pentagon shaped blocks  
39 FX-controllers managing HVAC, lighting, elevators, fire detectors, etc. in one easy-to-manage system

In 2015, the building's energy use was optimised with Fidelix's software. The optimisation achieved an energy savings of 16% compared to the average consumption of 2010–2014.



Indoor climate



Energy



User experience



Building automation



Vacancy rate



Lighting



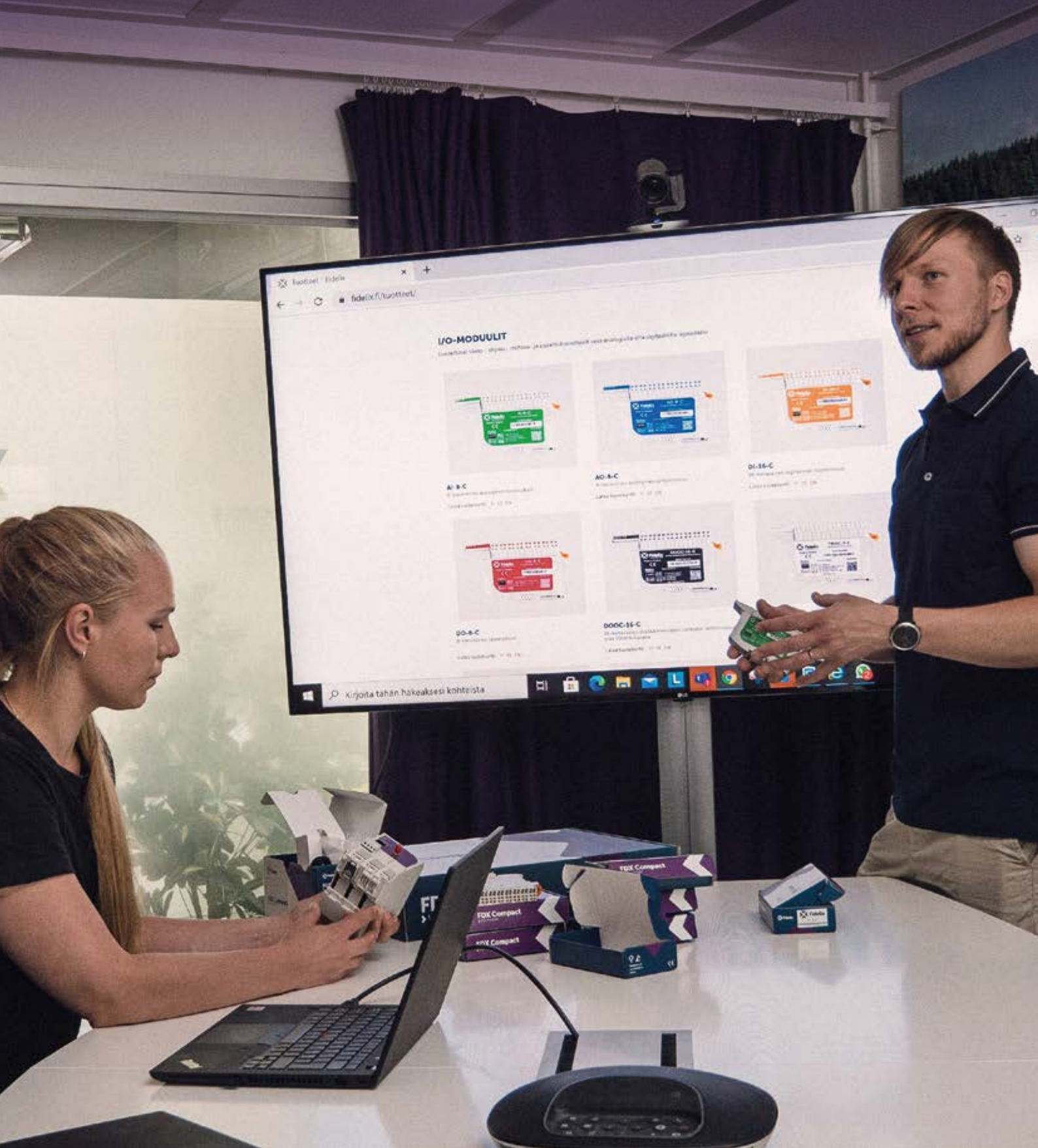
Waste management





## ➤ **FdxCompact product series**

The cornerstone of our smart BMS.  
A full product family with exceptional  
ease of installation and setup.



## ➤ FdxCompact controllers

### FX-3000-C & FX-3000-X



FX-controllers are ideal for classic BMS projects, such as HVAC and other indoor climate control processes, as well as retrofit, metering, fire damper controls, stand-alone AHU's, OEM-applications and other special applications.

- 2000 data points (FX-3000-C)
- 4-port router with WiFi and built-in NAT possibilities
- 10 configurable communication ports (Modbus, M-Bus, or BACnet. IP or serial.)
- Tosibox Readiness: secured remote connection
- Built-in webserver, history logging, user mangement, trending, weather forecast anticipation, etc.

**100%**  
freely  
programmable!



## ➤ FdxCompact FX-RS485-C

### Serial ports extension module for FX-3000



The RS-485 extension module makes connecting different types of equipment from different manufacturers, on different communication protocols and/or settings a piece of cake. Connect it to your FX-3000 controller, set the parameters, and you're ready to communicate.

- 2 RS-485 serial ports
- Easy end-termination connection
- Ports are individually configurable (on the FX-3000 controller)
- Indicator LEDs for port activation and communication



## ➤ multiLINK

### Serial to IP converter and bridging module



Up to  
**3 serial  
ports**

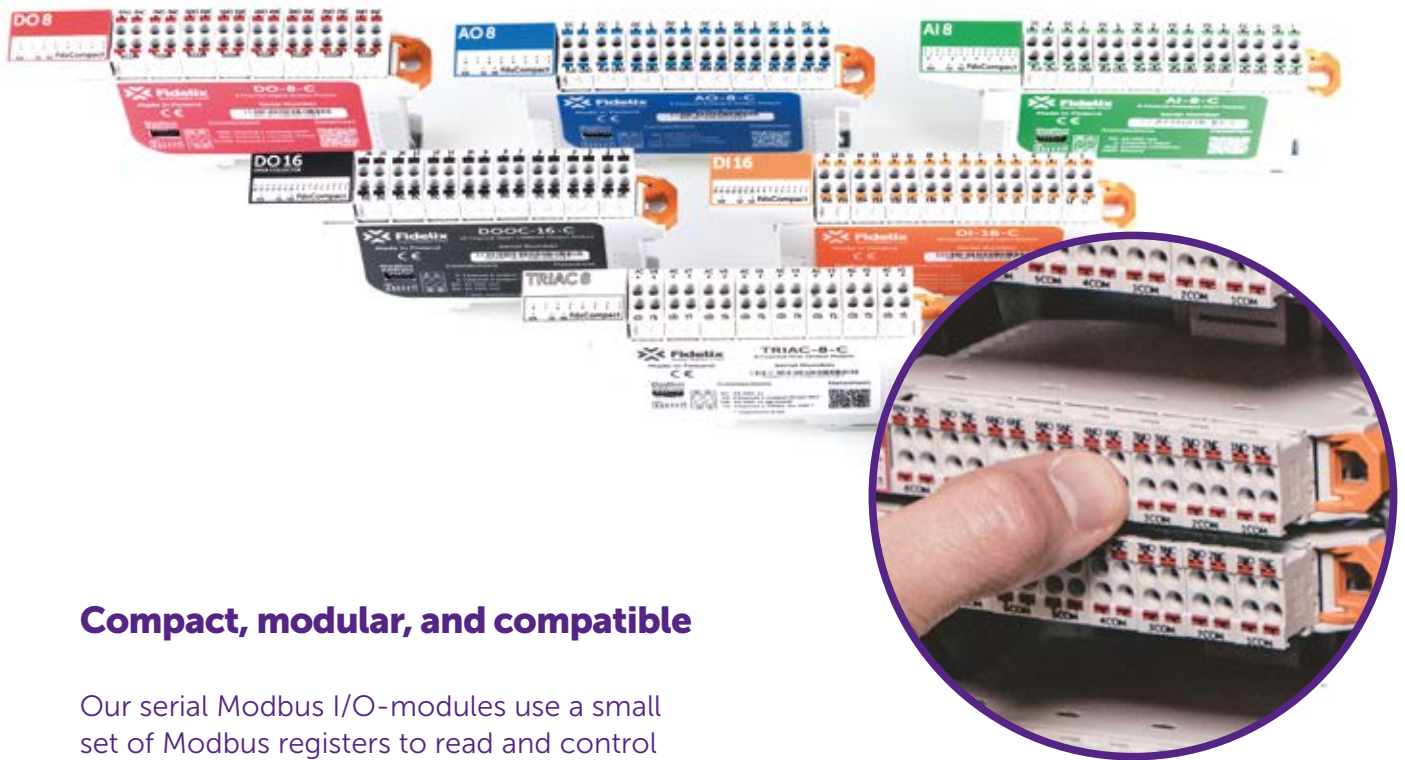
The multiLINK offers an easy way to connect serial devices, through an IP-network, to our FX-controllers, or to any other controller.

- Modbus RS-485 over IP (TCP or UDP bridging)
- Modbus RS-485 standalone master
- Serial M-Bus over IP (bridging)
- Serial M-Bus standalone master
- Optional web interface (freely configurable)





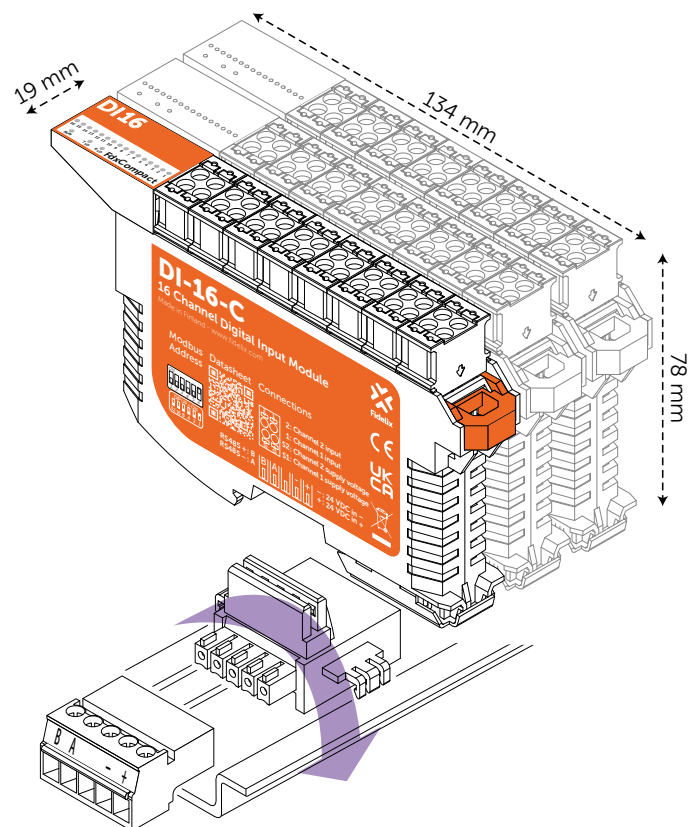
# ➤ FdxCompact I/O-modules



## Compact, modular, and compatible

Our serial Modbus I/O-modules use a small set of Modbus registers to read and control connected field devices. That way, each and every PLC can communicate with our modules quickly and easily.

- Operating voltage: 24 VDC
- Indicator LEDs for power, bus communication, and each channel individually
- Communication speed automatically detected from the bus
- Push-in spring cage connectors for cables
- Detachable terminal blocks
- Screwless installation with click-on T-bus DIN-rail connectors
- Power supply and communication bus through T-bus DIN-rail connectors





# ► FdxCompact VISIO

## Touchscreen interface for FX-controller

- Full HD display, running Android with multi-touch support
- Ethernet or Wi-Fi connection
- User friendly built-in application to connect to the web interface of FX-controllers
- Power supply: 750 mA @ 24 VDC



### 10.1" version VISIO-10-X



1280 x 800 px

### 15.6" version VISIO-15-X



1920 x 1080 px

# ➤ **FX-SPIDER controller**

## Plug and play



- All-in-one box with power supply, FX-controller PLC, 40 I/O's, and (optional) touch screen
- Ready to be hung on the wall with pre-drilled metal mounting ribbons
- Fully compatible with, and offering all features and extension possibilities of the FX-3000 controller (see three pages back)
- Ideal for smaller projects, narrow technical rooms, or OEM-applications
- Fully freely programmable BMS controller

- 8 digital inputs
- 16 configurable, universal inputs (analogue or digital)
- 8 relays (6A @ 230V)
- 8 analogue outputs (0..10V)
- 1 WAN + 1 LAN port (RJ45) + WiFi router with NAT and firewall
- Tosibox Readiness: secured remote connection
- 9 configurable communication ports (Modbus, M-Bus, or BACnet. IP or serial.)
- 2000 data points
- With or without VISIO display

Alternatively, we can prepare a configurable application with customised interface to fit your specific requirements:

- Ice-rink snow melting pit
- Fire dampers in 15 configurable zones
- Grease separators in the canopies of industrial kitchens
- Hottub center
- Air handling unit (factory-configurable on the GUI!)
- Gas detection
- Home automation (and security) for luxury villa's
- ...







# Stand-alone application, OEM or process controller

Our Genius is more a solution than it is a standard product. Some examples of the (many) different versions we currently make, are on this page, but feel free to request or design your own, personalised variant!



With two RS-485 connections, the Genius controller can connect to other (third party) equipment, and offer information and control to a supervisory (BMS) system via Modbus at the same time. Additionally, our EasyLink can offer an IoT connection (see 3 pages further).

- District heating
- Air handling unit
- Laminar flow
- Hot tub
- Adiabatic cooling ventilation
- Fan coil unit
- Drain water pumping station
- Grease separator
- Industrial laundry machines
- Canopy
- Swimming pool ventilation



# ➤ multi-24

## Room or process controller



The multi-24 is a powerful PLC with 24 built-in I/O's, allowing it to be programmed with IEC-61131-3 industrial automation language for fast and reliable control of any process. With execution times as low as 40

milliseconds, it can even be used for dimming lights. Commonly, it is used as a room controller in hotels, offices, hospitals, and apartments, with or without the multiDISPLAY, to control ventilation and temperature.



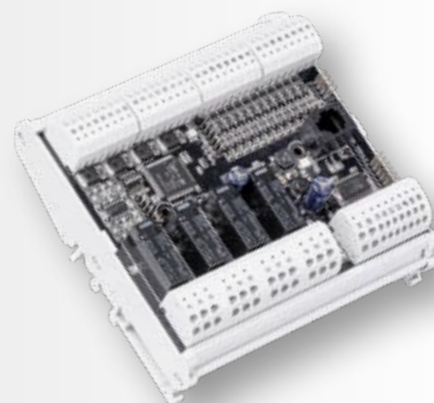
### Applications

- (Fresh) Air Handling Units
- Fan Coil Units
- Fire dampers
- Hot tubs
- Laminar flow cabinets
- Drain water pumping stations
- Cellphone network tower sheds
- ...

### I/O's & communication

- 4 relays (6A @ 230V)
- 4 analogue outputs 0..10V
- 4 analogue TRIAC outputs (PWM-NPN)
- 12 individually configurable, universal inputs (analogue or digital)
- 1000 freely configurable Modbus holding registers

- 100% freely programmable (directly via USB-RS232 cable or via Modbus over RS485 when already installed)
- With closed encasing, in IP55 installation box (with optional power supply), or open with DIN-rail clamps
- Stand-alone, or as part of a larger (BMS)system
- Ideal to combine with our multiDISPLAY (right page)
- 2 serial Modbus RS485 ports (1 slave, 1 master) (e.g. slave to the BMS, master to our multiDISPLAY)



### Extensions

- EnOcean
- RS-232 for SMS modem
- 3-way DI-port splitter
- EasyLink IoT module (requires EasyGate server)
- Sheer endless extension possibilities through Modbus...

### Features and possibilities

- Conversion tables
- PID's
- Timers
- Triggers
- Startup sequence
- Setpoint value saving
- Input parameter value verification
- Modbus-triggered actions
- Alarms
- Conditional controls
- and more



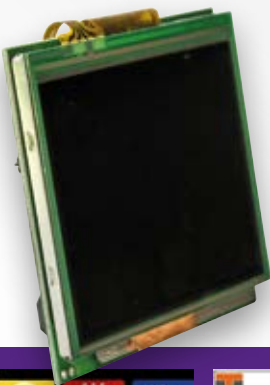
# multiDISPLAY

## Room panel touch screen



### Want to integrate our multiDISPLAY into YOUR hardware ?

At Fidelix, we offer a variety of brackets, holders, and encasements to ensure your project's success. Plus, if you prefer, we can deliver the display without any of these. We're committed to being true partners and celebrating each other's successes!



The multiDISPLAY is a 3.5" touch screen that can be used to visualise and control the processes or algorithms running in any Modbus PLC.

It is compatible with Fidelix multi-24, FX-3000 controllers, and other brands. The multiDISPLAY can be programmed to show what you need, and where you need it. It can be used to control ventilation, heating, and curtains in hotel rooms, show overpressure in operation rooms, visualise gas levels in laboratories with auditory and visual alarms when a selectable threshold is surpassed, or as a thermostat in apartment buildings. Displaying Multi possibilities!

- 100% freely programmable (literally EVERY pixel!)
- Modbus RTU communication (RS-485)
- Selectable Modbus client or server mode
- 250 variables or data points
- Integrated temperature sensor (NTC10)
- 5 built-in time schedules
- Multiple linkable pages (optionally password protected)
- Sounds for notifications or alarms

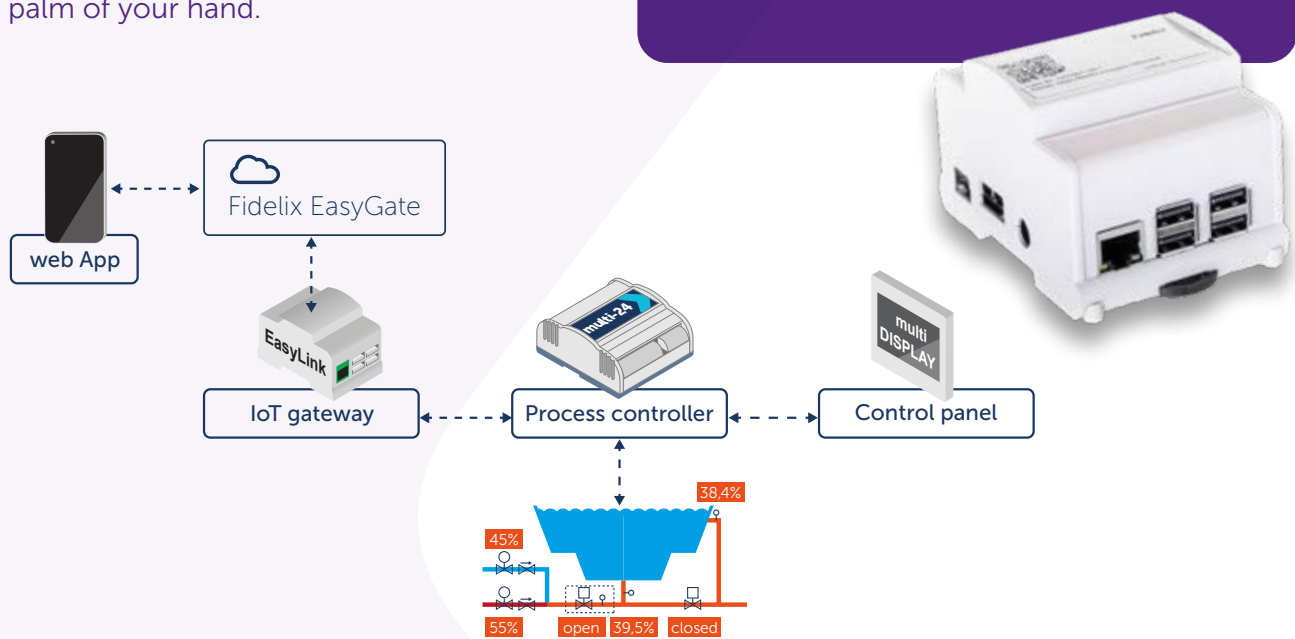


# ➤ EasyLink IoT module

The Fidelix EasyLink makes it easy to connect Modbus, M-Bus and EnOcean devices to the Fidelix EasyGate cloud service via Ethernet or 3G/4G. Installation is a breeze - simply plug in and scan the QR code to access the dynamic, mobile-friendly UI. Our multi-24 process controller module allows you to create a powerful, customisable IoT setup that fits in the palm of your hand.

## Stand-alone process

- QR-code for activation and consultation
- End user: basic control and visualisation
- Installer: parameters, configuration, and remote update



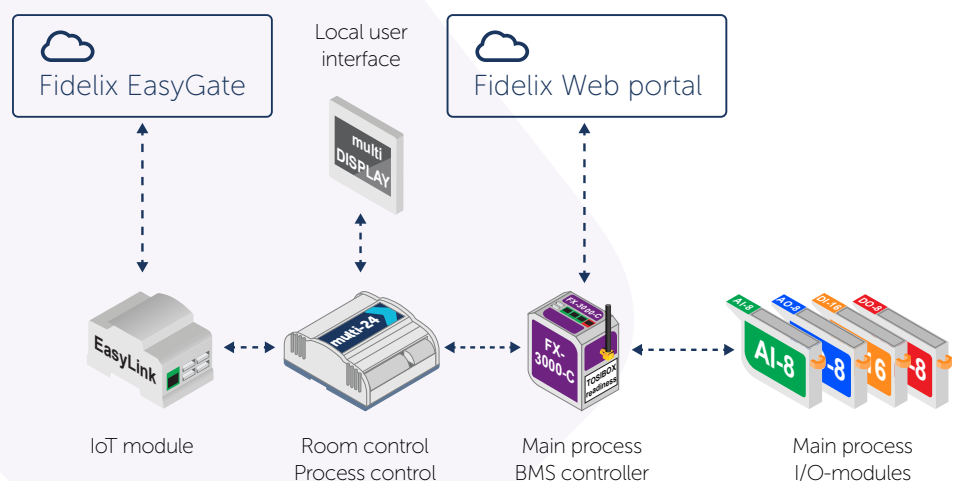
## Discrete data for:

- System Integrator
- Service Provider
- Third party API
- Energy invoicing
- Maintenance company
- End user

- **EasyGate IoT platform for end users**
- **Fidelix Web Portal for BMS installers**

## Whole building data for:

- System Integrator
- Service Provider
- Third party API
- Energy invoicing
- Maintenance company





# Wireless M-BUS

## Sensors, gateway and repeaters



Wireless sensors are the perfect solution for renovation projects or any situation requiring extensive measurements. Our sensors (temperature, CO2, VOC, relative humidity, radon, PIR, etc.) are easy to install and connect to the receiver and boast a battery life of over 10 years.

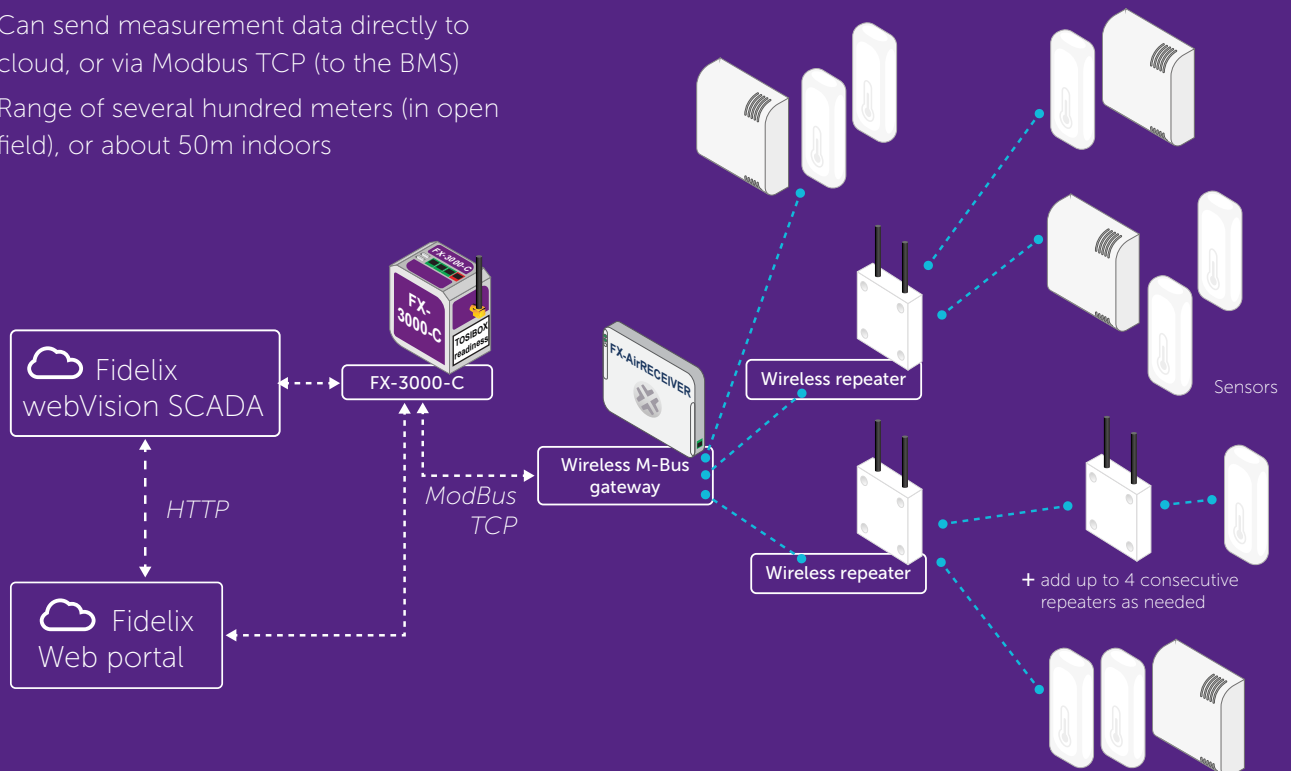


### wM-Bus sensors

- IP-class up to 66
- Up to 4 temperature probes
- Different combined sensors (TE, RH, VOC, CO<sub>2</sub>, ...)
- Repeaters with or without antenna's
- ...

### FX-AirRECEIVER wireless gateway

- Connect up to 512 wireless devices
- 128-bit AES encryption
- 868 MHz (wireless M-Bus) communication
- Can send measurement data directly to cloud, or via Modbus TCP (to the BMS)
- Range of several hundred meters (in open field), or about 50m indoors



FX-3000-C PLC  
Programmable controller  
(max 2000 data points)



FX-AirRECEIVER  
Maximum 512 WMBUS  
sensors (meters) with  
AES128 encryption



FX-wM-BUS Repeaters  
IP67 enclosure  
AES128 encryption

Our system has outdoor antennas for longer range and all accessories needed.

# ➤ Classic I/O-modules

AI-8, AO-8, DO-8, DI-16 and COMBI-36



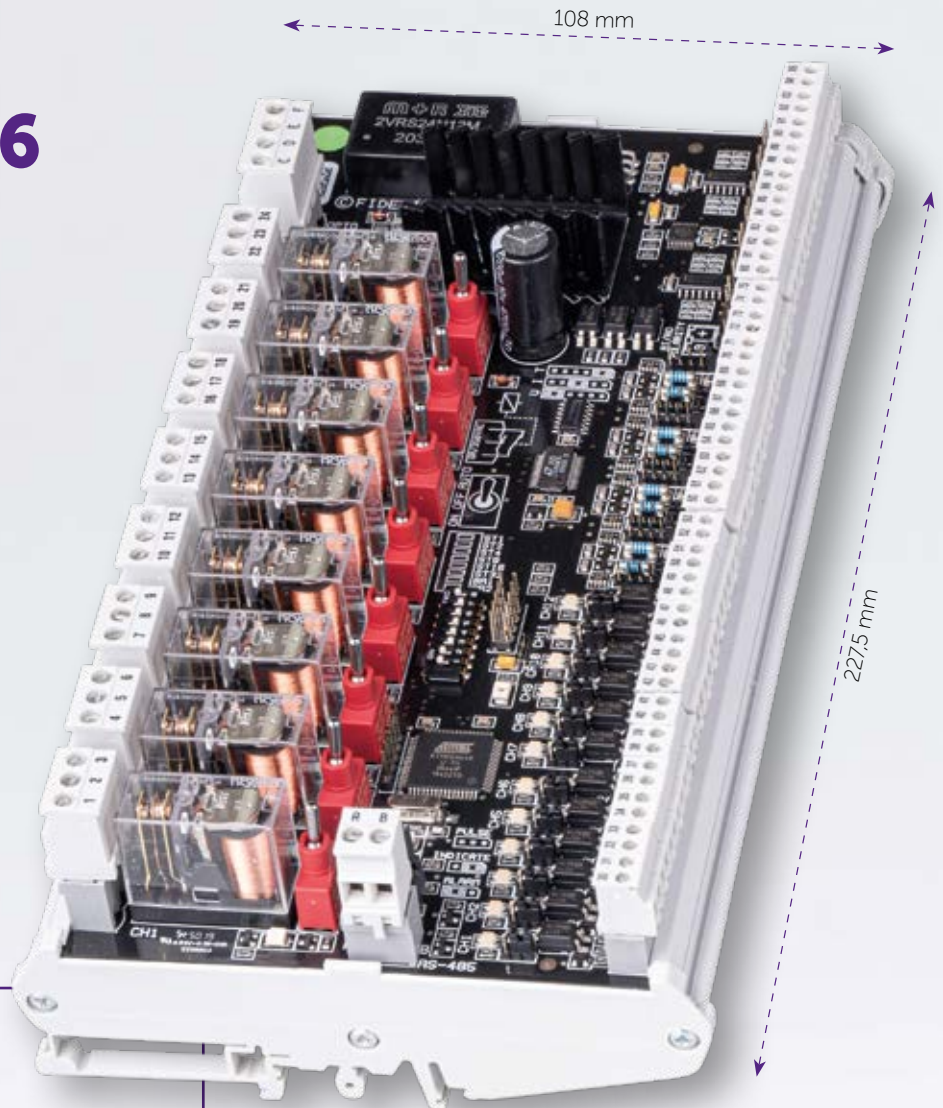
Our classic I/O-modules are robust, versatile, easy to use, and a little bit bigger than our FdxCompact modules.

They feature 230V relays (max 6A) with manual override, screw terminals, and can be configured with jumpers and DIP-switches.

## ➤ COMBI-36

### 36 I/O's:

- 12 digital inputs
- 8 digital outputs
- 8 analogue inputs
- 8 analogue outputs



FdxCompact I/O-modules are configured using Modbus Holding registers, automatically detecting the bus speed, and featuring spring-cage push-in connectors. The Modbus register structure of the FdxCompact I/O-modules is only extended compared to the Classic ones, allowing for a mix-and-match configuration.





# Our smart, versatile, and open system for complete control of building technology

## Fidelix system architecture

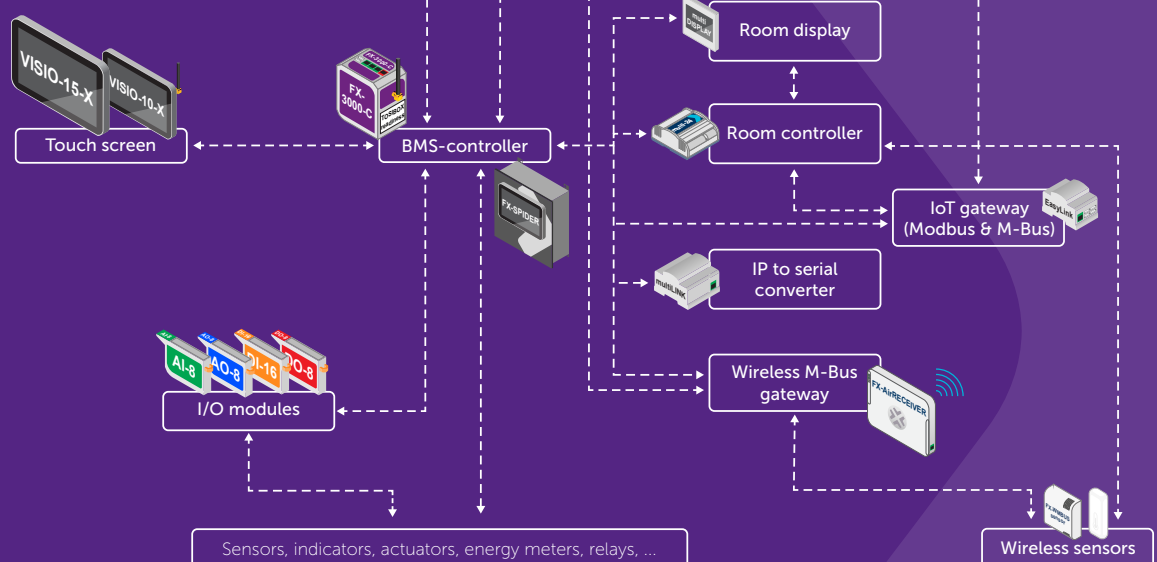
### Management

webservices API  
REST API



### Control

Modbus TCP  
Modbus RS-485  
BACnet IP  
BACnet MS-TP  
M-Bus  
wM-Bus



### Field

Modbus TCP  
Modbus RS-485  
BACnet IP  
BACnet MS-TP  
M-Bus  
wM-BUS

### Scada server

- Alarm Management
- Historical trending
- Logs and reporting
- User profile and role management
- Report Generation
- Email notification
- Automatic Monitoring
- Scheduling
- Trending

### Cloud Services

- Consumptions
- Indoor condition
- Process KPIs
- Measurements
- Building data
- 3rd party BMS
- Weather data
- Energy (EDI)
- IoT sensors

# ➤ Fidelix helps customers reach their target

Tripla, Helsinki, Finland

## **Fidelix supplies flexible building automation in Tripla**



Hotel in Antwerp, Belgium

## **Hotel in Antwerp got a made-to-measure HVAC installation and maintenance**



Villa project in Palm island, Dubai, UAE

## **Fidelix's partner in the Middle East**



Clarion hotel Airport, Oslo, Norway

## **Total BMS makeover for Clarion Oslo Airport**





# ► Fidelix is head of its own family, and again part of a larger family



## About Assemblin

Assemblin is an end-to-end installation and service partner with operations in Sweden, Norway and Finland. We design, install and maintain technical systems for air, water and energy. Our vision is to create smart and sustainable installations that make buildings work and people feel comfortable. We do this through close local collaboration supported by a strong organisation. We have annual sales of approximately 1.1 B€ and 6 700 dedicated employees at more than 100 locations in the Nordic region (2022). Read more at [assemblin.com](https://assemblin.com).



## About the Fidelix Group

A group of solution-focused units that were all born to find solutions for the challenges that the harsh Nordic climate poses to buildings.

Joined together, these agile and action-oriented units have also turned their attention to solving larger global challenges.



By developing technologies and services to optimise the buildings' use of resources, Fidelix Group is helping to reduce the carbon footprint while making buildings more enjoyable and healthier for the end-users.

Driven by entrepreneurial attitude, each individual in the Fidelix Group is making it possible to find new ways to create smarter buildings for a healthier future. For all of us.



## Fidelix is making buildings smart

Our profound technological expertise is evident in our solutions, which effectively optimise buildings' energy costs, indoor climate, and overall cost of operations. Our products undergo rigorous development, testing, and daily operation in the challenging and harsh climate conditions of the Nordics, thereby positively impacting the wellbeing of over one million people.



TRIPLA, HELSINKI, FINLAND



[www.fidelix.com](http://www.fidelix.com)