

# modulo 6 System

Integrated building automation

# modulo 6 sets new standards in building automation

SAUTER modulo 6 combines tried and tested building technology with the latest digitalisation trends.

Modern building automation must integrate different data sources and process large amounts of data while at the same time being simple to operate. It must be possible to plan projects and put them into operation quickly and easily. The modulo 6 system meets these requirements and integrates seamlessly with the Internet of Things (IoT). It uses the latest cloud technologies while meeting stringent security requirements.

In times of fast-moving technological trends, high availability of system components is expected. Modernisation of existing systems and efficient commissioning without interrupting operations make a significant contribution towards protecting investments.



## Advantages at a glance:

- Flexible modular concept
- Security requirements of market and authorities implemented
- Standardised solution library
- Embedded web server
- Protection of investment

# Everything combined in a stable and safe overall system

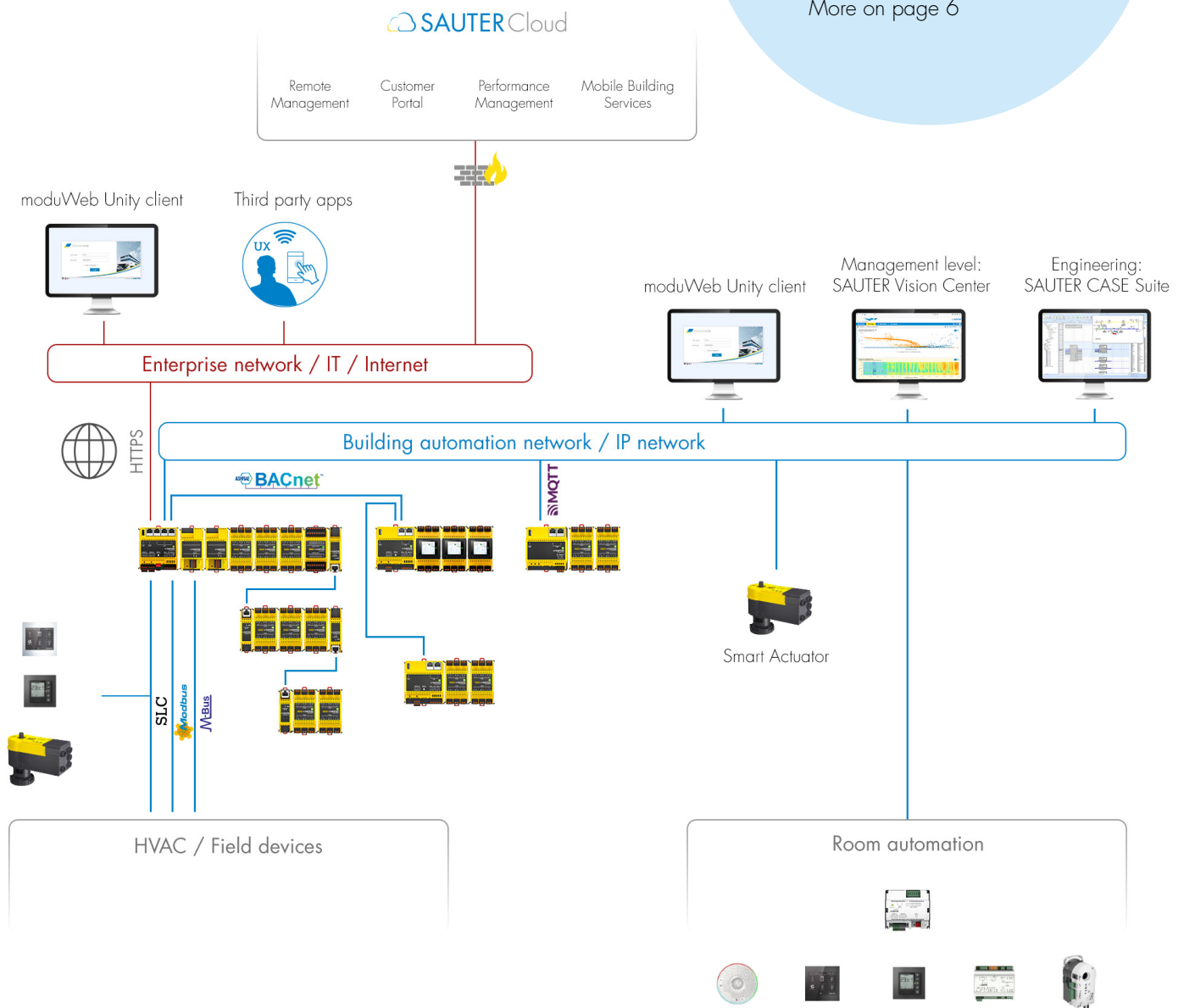
Thanks to native support for BACnet, the modulo 6 solution integrates seamlessly into the overall system. The modular design of the modulo 6 components and the wide range of I/O modules, COM modules and stations provide maximum flexibility for the realisation of building automation projects.

IoT protocols such as MQTT and RESTful API extend the scope of functions and enable IoT components to be implemented and modulo 6 to be incorporated into IT solutions such as reservation systems, ERP systems and information channels, for example for weather forecasts.

Selected **cybersecurity** features:

- BACnet Secure Connect
- On-board firewall
- Network separation IT/OT
- Protected access to the web server

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# Integration from the field level to the IoT and cloud



modulo 6 integrates all communication protocols for heating, ventilation, air conditioning, lighting, blinds and energy. The open communication standard BACnet (Building Automation Control Network) is the backbone of SAUTER building automation and

the interface which our automation stations use to communicate. All modulo 6 automation stations are BTL-certified and ensure interoperability and compatibility with other BACnet devices.



Plugin modules for extending the modulo 6 automation stations support the Modbus and M-Bus communication protocols. Systems such as chillers and air conditioning units can be connected using Modbus.



The M-Bus module for reading electrical and heat meters provides data for energy optimisation and billing.



modulo 6 brings together heating, ventilation and air conditioning into a single system. The analysis of operating and usage data in the cloud allows continuous optimisation and forms the basis for sustainably economical operation.

The automation station can optionally communicate simultaneously with the traditional BACnet building network and with IoT devices using the MQTT protocol on a secure, encrypted connection.

## RESTful API

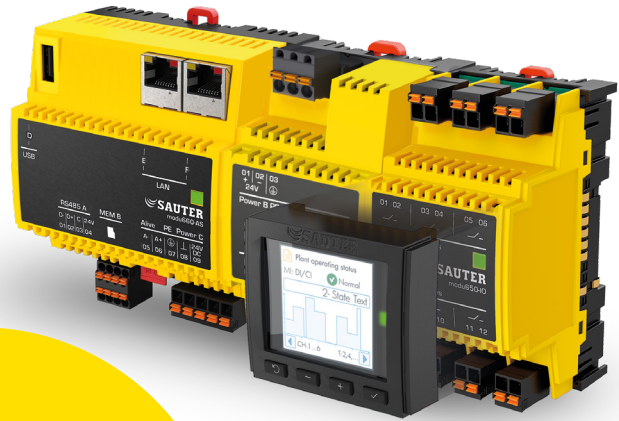
The integrated moduWeb Unity web server is particularly suited to small and medium-sized installations. In addition, a standard RESTful API can be enabled so that gateway functionality is also possible.

The API allows access to BACnet objects and various BACnet-relevant information of the automation station.

# Operation options

## Local operating interface LOI

The universal local LOI, featuring a high-resolution graphic colour display, allows for both viewing and operation. The LOI for priority operation (as per ISO 16484-2) is plugged into an I/O module and immediately shows all the relevant data of the module in real time. The compact device is operated using 4 buttons. The I/O signals are displayed graphically and numerically. The small display can also map and show the course of analogue and digital signals over time.



- Compatible with all modulo 6 I/O modules
- Live view of measured values, output signals and object status
- Overriding of output signals
- Customisable labelling of channels for user-friendly identification



## Mobile app

The ease of use of modulo 6 allows processes that are as efficient as they are reliable. You can connect your smartphone or tablet via Bluetooth. The free app allows quick access to all relevant measured values, control variables and system parameters directly via Bluetooth.

- BYOD – operation with user's own smartphone
- Easy commissioning
- Access to values and system parameters
- Signal control
- Protected access



# Security by Design

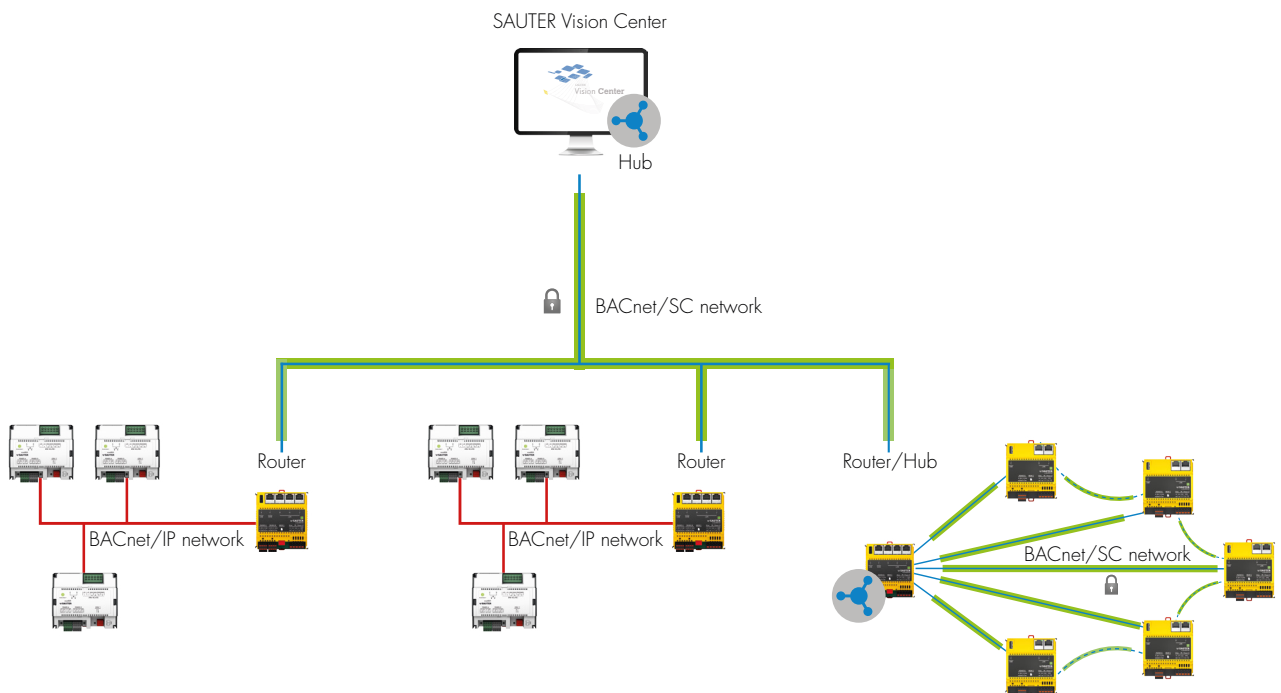
Integrating IoT devices and intelligent systems makes modern building automation systems more efficient, but also more vulnerable to cyber attacks. In line with the **Defence in Depth** security concept, SAUTER incorporates multiple security solutions to protect your building automation from threats.

Defence in Depth ensures that security measures are implemented at different levels, such as network, software, hardware and physical access. This minimises the risk of security breaches and ensures the protection of sensitive data and systems that are essential to the operation and security of buildings.

## 1. BACnet Secure Connect (BACnet/SC)

BACnet Secure Connect, the new BACnet connection, is based on TLS 1.3 and allows an encrypted communication between devices. Customers get a private building automation network where they can control certificate issuance and access, or hand it

over to SAUTER. BACnet/SC is ideal for enterprise IT. Seamless integration into the existing infrastructure is facilitated by the SAUTER modu630-RT BACnet router.



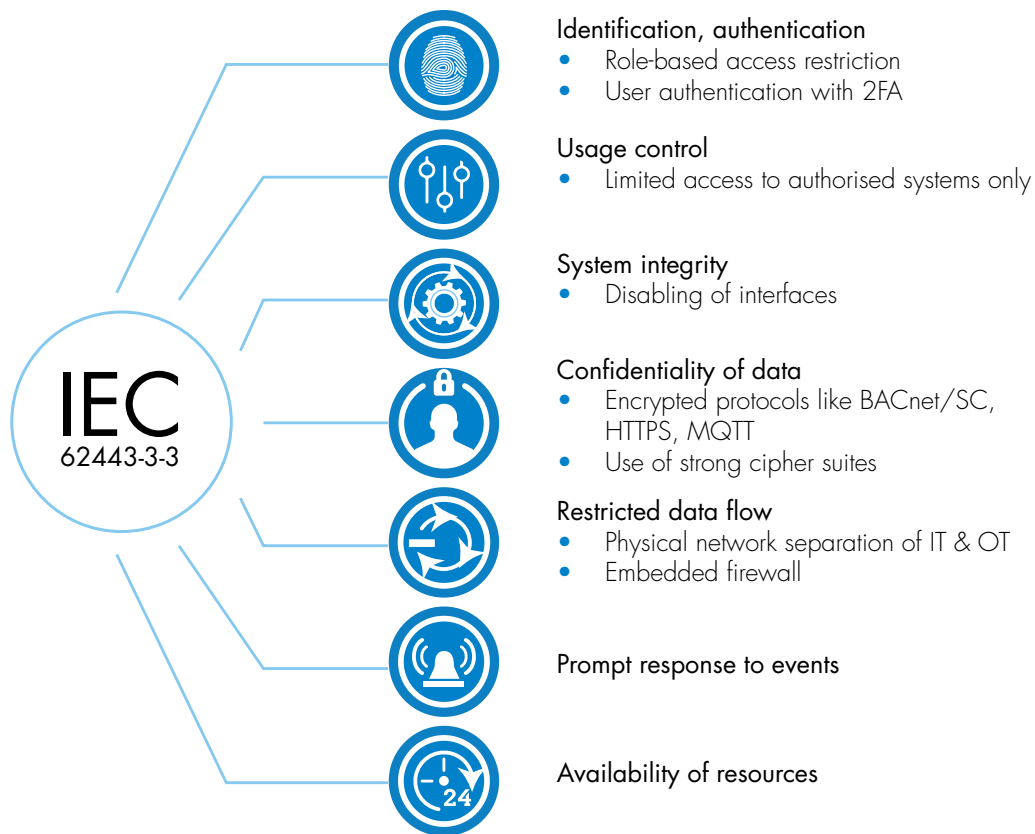
**BACnet/SC scenario: Headquarters for building management of multiple properties with BACnet/IP**  
SAUTER Vision Center can take on the role of the primary hub. This is the central element of the network and configures and controls the communication of the encrypted BACnet objects. The modu630-RT BACnet router can be used both as a BACnet/SC primary hub and as a BACnet/SC failover hub. Additional scenarios can be found online:



## 2. Safety measures related to IEC 62443

This international standard, focused on cybersecurity for industrial automation and control systems (IACS), provides guidelines for securing systems by addressing both technical and process-related risks. The standard emphasizes a risk-based approach. It categorises security levels based on potential threats

and defines requirements for secure product development and integration. The standard is in line with various official directives, such as the EU General Data Protection Regulation (GDPR), the NIS and NIS-2 guidelines, the Cyber Resilience Act (CRA), UK's PSTI and the Swiss Data Protection Act, to name a few.



The 7 fundamental requirements for the system area according to IEC 62443-3-3

## 3. Network access control (NAC)

The NAC functionality according to IEEE 802.1X / RADIUS requires authentication of devices and users to ensure that only authorised entities have access

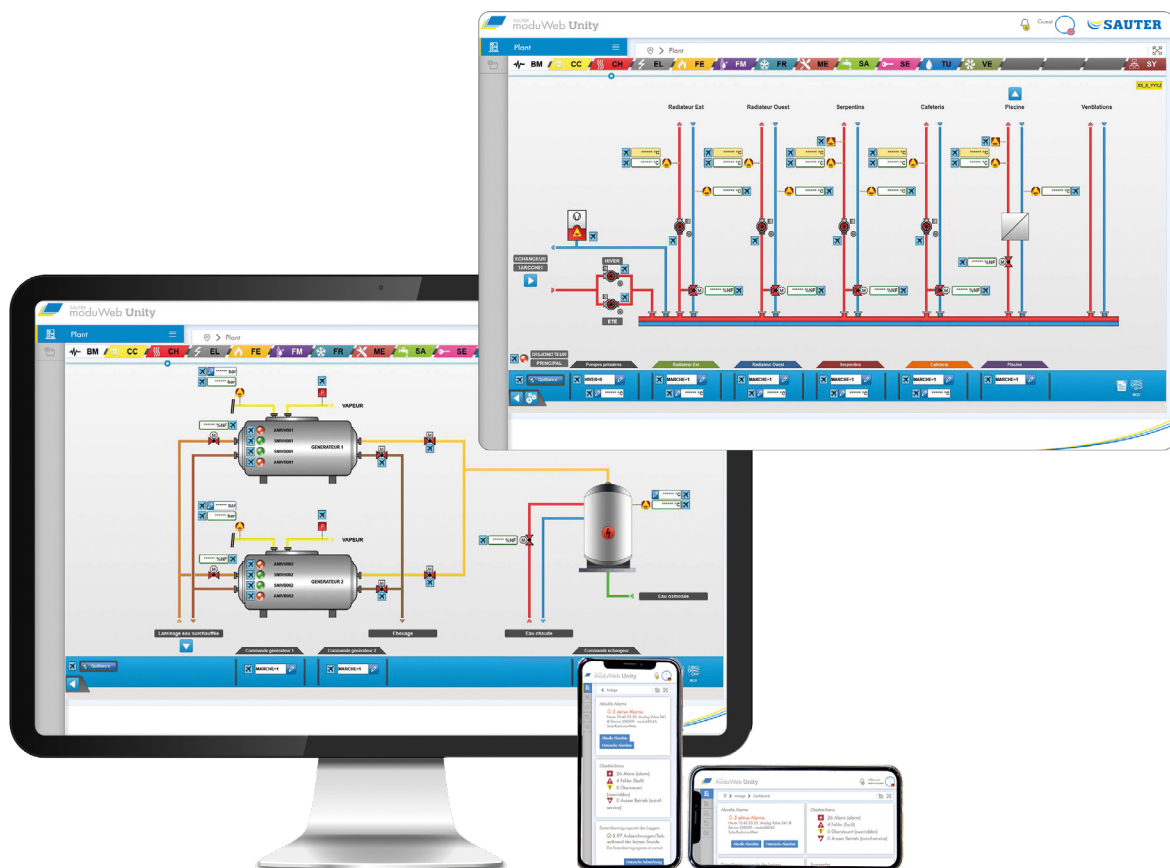
to network resources. It also ensures the traceability of device and user actions for complete monitoring and control.

# moduWeb Unity, the embedded web visualisation

The integrated web server functionality allows for installation, system visualisation, operation and optimisation as well as remote access to all administrative tasks from any location, in accordance with building technical standards. Intuitive, flexible and budget-friendly.

The moduWeb Unity graphical user interface makes it possible to display and operate entire buildings, zones, individual rooms and technical systems. The structured representation of BACnet objects and self-explanatory graphical calendar, time programmes and trend logs allow building technicians to carry out their daily tasks easily and efficiently. The functions contribute to compliance with the factors proposed in EN 52120 regarding building automation and control systems (BACS).

As a BACnet client, moduWeb Unity can query and display BACnet objects from other stations. This provides a local building management solution for small and medium-sized installations.





# Customisable functionality

## Standard functions

### Engineering

Integration, operation and administration of a large number of BACnet stations as well as simple configuration of the system visualisation.

### Visualisation

Structured, tabular overview of objects as well as dynamic 2D and 3D system graphics.

### Notification

Consolidated alarm lists of BACnet objects including acknowledgement. Users can be specifically notified of critical alarms by e-mail, SMS or chat.

### Logging

User activities are traceable, recording options for subsequent data analysis and backup are available.

### System management

Network settings, certificate management and storage, HDA and user administration all in one.

### IT security

Compliance with IT security requirements of IEC 62443, such as secure HTTPS communication, access control list, firewall, auto-logout, account lockout after repeated incorrect entry, PNAC etc.

## Additional functions

### Reports

Schedulable automated reporting based on customisable templates. The output is a CSV file which is sent by email or to an SFTP server.

### RESTful API

moduWeb Unity can be accessed directly as a web server as well as optionally via the API interface (RESTful web services), for example to integrate cloud solutions.

### Touch panel operation

Support for the SAUTER Touchpanel client application, which is operated on panel PCs.



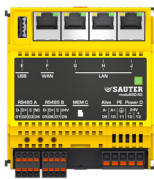
Find out more  
on our website!



# Product overview

The modulo 6 range enables you to combine heating, ventilation, air conditioning and energy systems in one system. modulo 6 is backward compatible in terms of program and network technology and will be available for a long time to come. This allows existing systems to be upgraded in budget-friendly stages.

The modular concept offers flexible configuration and tailor-made performance. The modules have plugin spring-type terminals and can be lined up in front of each other. A total of up to 24 modules (I/O and COM) are possible.



Automation station  
modu680-AS

- » B-BC (Building Controller)
- » BACnet/IP, BACnet/SC
- » Up to 1,600 I/O objects
- » Up to 24 modules, 5 COM
- » Expandable storage capacity with microSD card, USB
- » Bluetooth BLE 4.0
- » SLC, Modbus
- » 3 x LAN connection (switch)
- » 1 x WAN connection
- » Web server: commissioning & operation



Automation station  
modu660-AS

- » B-BC (Building Controller)
- » BACnet/IP, BACnet/SC
- » Up to 800 I/O objects
- » Up to 24 modules, 5 COM
- » Expandable storage capacity with microSD card, USB
- » Bluetooth BLE 4.0
- » SLC
- » 2 x LAN connection (switch)
- » Web server: commissioning & operation (option)



BACnet router, BACnet/SC hub  
modu630-RT

- » B-RTR (BACnet router)
- » B-SCHUB (BACnet SC hub)
- » B-BBMD (BACnet Broadcast Manager)
- » Up to 100 nodes



Connection module  
modu612-LC

- » 24 VDC power supply
- » 2 x LAN connection (switch)
- » Remote installation via IP network
- » Up to 24 I/O modules, 5 COM



Connection module  
modu601-LC

- » 24 VDC power supply
- » Decoupled priority operation



Connection module  
modu602-LC

- » Up to 2 per station
- » Allows modules to be mounted on different DIN rails in the cabinet



I/O module  
modu630-IO

- » 16 digital inputs (DI/CI)



I/O module  
modu631-IO

- » 8 digital inputs (DI/CI)
- » 8 universal inputs (U,R,T)



I/O module  
modu650-IO

- » 6 digital outputs (relays, DO)



I/O module  
modu670-IO

- » 8 digital inputs (DI/CI)
- » 8 digital input/outputs (DIO)



I/O module  
modu671-IO

- » 8 digital inputs (DI/CI)
- » 8 analogue outputs (U)



I/O module  
modu672-IO

- » 4 universal inputs (U,I,R,T,Pot)
- » 4 digital outputs (DO)
- » 4 analogue outputs (U,I)



COM-Modul  
modu620-CM

- » Integration of Modbus devices in an RS-485 segment (line)
- » Up to 31 unit loads (UL)
- » Up to 247 Modbus devices (RTU/ASCII)



COM-Modul  
modu630-CM

- » Integration of M-Bus meters
- » Up to 80 unit loads (UL)
- » Up to 256 M-bus devices



Operating unit (LOI)  
modu600-LO

- » Universal operation and indicator unit
- » Signal and status display
- » Signal labelling
- » Overriding of output signals

## The standards in building automation:

- Flexible modular concept
- Security requirements of market and authorities implemented
- Standardised solution library
- Embedded web server
- Protection of investment



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