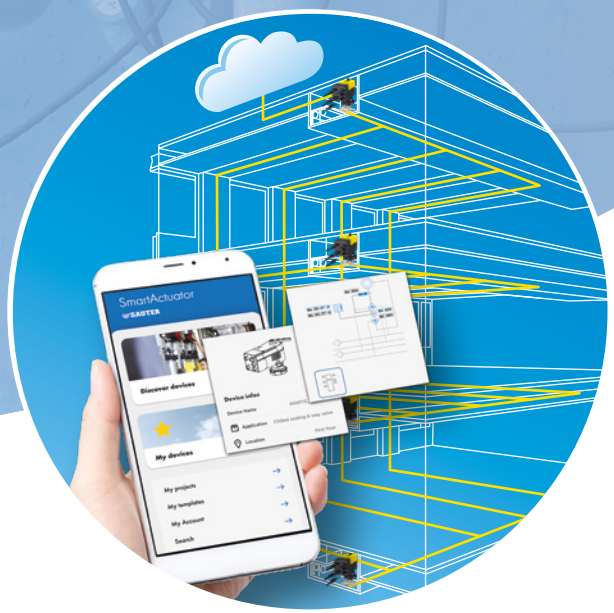
SAUTER Smart Actuator

3-in-1: Valve actuator and controller with IoT and cloud integration



SAUTER

Creating Sustainable Environments.

Smart Actuator

Intelligent energy control for state-of-the-art and refurbished buildings

Valves and actuators are key components in energy distribution. They are deployed in heating and ventilation systems as well as room automation. Time and again, traditional systems present challenges to the operators during installation. SAUTER has added the new generation of IoT-capable Smart Actuators to its tried and tested range of actuators.
The Smart Actuator facilitates the planning, installation and operation of HVAC systems in modern buildings. It supports all phases of the building life-cycle and benefits all user groups.

The most important advantages:

- Distributed intelligence: decentralised, autonomous control without cabinet and automation station
- Connector system and pre-assembled cables enable error-free, cost-reduced fitting
- Fast commissioning using a smartphone app via Bluetooth
- IoT and cloud integration
- Tested applications from the cloud for use in heating, ventilation, air conditioning and room automation
- Access to stored data and operating settings with the smartphone app
- Cloud-based monitoring enables predictive maintenance

Additional information:
www.sauter-controls.com

Advantages for all user groups

Reduced workload from planning to installation to plant monitoring

PROJECT MANAGER

"My projects run smoothly. Tested applications from the cloud and clearly defined interfaces enable digital building."

"Fitting is simple and always error-free. This saves me valuable time."

INSTALLER

FIELD SERVICE TECHNICIAN

"The operating data can be called up via the smartphone and shows what has been happening in the last few days. I don't have to climb ladders or open ceilings to perform a diagnosis."

"I can make operation settings myself. If any errors occur during a job, I am immediately notified via the app. This makes my work much easier."

FACILITY MANAGER

Simple installation and commissioning

The connector system in combination with pre-assembled cables ensures particularly fast installation. Mechanical and colour coding not only prevents wiring errors, but also results in cost savings.

The field devices required for the application can be connected directly to the actuator via two universal I/Os. The optional I/O box allows the range of applications to be extended comprehensively.

If a building automation network is already present, the Smart Actuator can be incorporated via BACnet/IP or MS/TP.

Via Bluetooth, installers, service technicians and facility managers can access the Smart Actuator's operating data, settings and controls using their smartphones. A comprehensive solution library is available in the cloud.

Solution library from the cloud

1. Precontrol of air heater groups/ static heating
2. Room temperature-based supply temperature control
3. Weather-dependent supply temp. control for heat exchangers
4. Room temperature control with 6-way ball valve
5. Pressure-dependent regulating valve (PICV)
6. Energy valve
7. Supply air temperature control

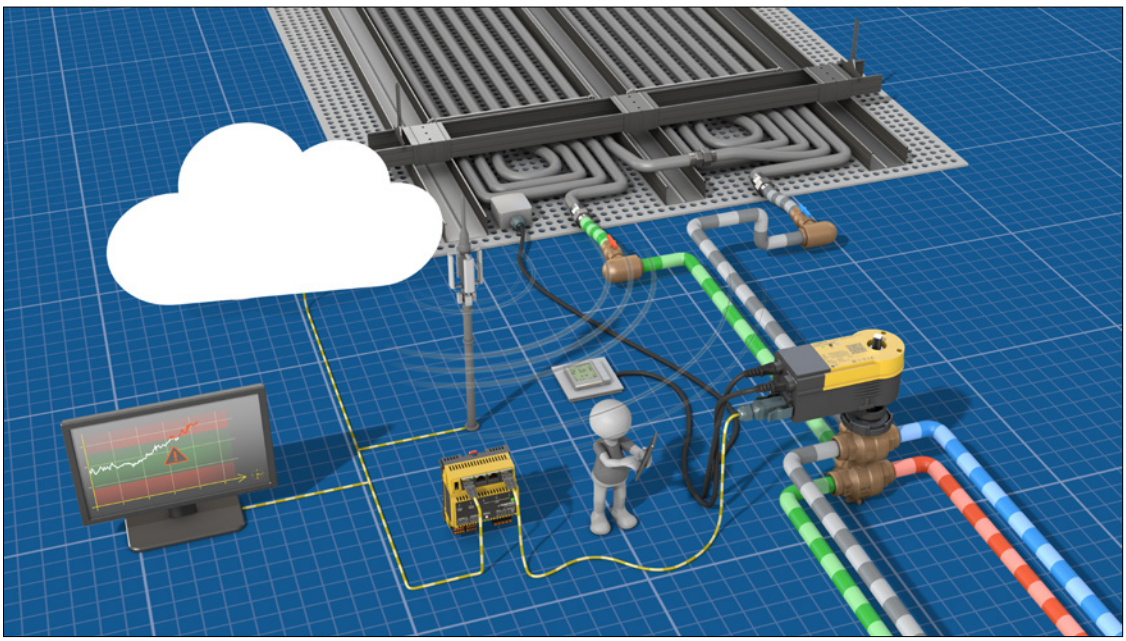
Predictive, cloud-based monitoring

The Smart Actuator prepares regular fingerprints on the status of the plant. These data records are stored in the cloud. Changes to individual parameters such as running time or power consumption are registered and analysed using an algorithm. As a result, the status of the valve and actuator is continuously monitored.

By comparing the data with reference values, it is possible to make predictive recommendations for action. Deviations and patterns of possible malfunctions can be detected early and reported. In the event of a call-out, the service technician knows in advance what needs to be done and has the necessary material with him/her.

Predictive maintenance

Predictive maintenance is based on actual use of the plants instead of predefined intervals. To optimise operation and maintenance costs, IoT devices such as the Smart Actuator collect data for analysis. In contrast to the previous reactive intervention after damage has already occurred, recommendations for action are sent before the plants fail. In this way, predictive maintenance ensures safe, reliable and energy-efficient operation.



Product overview

Smart Actuator, accessories and components

Actuator for ball valves

Actuator for globe valves

Actuator for dampers

Type	AKM115SAF232	AKM115SAF332	AVM115SAF232	AVM115SAF332	ASM115SAF232	ASM115SAF332
Torque / actuating power	8 Nm	8 Nm	500 N	500 N	10 Nm	10 Nm
Actuator stroke / angle of rotation	90°	90°	8 mm	8 mm	90°	90°
Running time	35, 60, 120 s					
Characteristic	Linear, equal percentage, square					
Number of inputs, outputs	2					
Universal input UI	0…10 V DC Ni1000 Pt1000 0/1 100…2500 Ω 0 (4)…20 mA					
Analogue output AO	0…10 V DC					
Interfaces	RS485, Wi-Fi, Bluetooth	RS485, LAN, Wi-Fi, Bluetooth	RS485, Wi-Fi, Bluetooth	RS485, LAN, Wi-Fi, Bluetooth	RS485, Wi-Fi, Bluetooth	RS485, LAN, Wi-Fi, Bluetooth
Communication	BACnet MS/TP, BACnet/IP (LAN), MQTT, BLE (Bluetooth LE), SLC*, EnOcean with accessory EY-CM 582					
Connection	Room operating units of the ecoUnit 3 series (wire connection)					

*SLC: RS485 - SAUTER Local Communication

I/O modules

Type	SAIO100F010	SAIO100F020
Number of inputs, outputs	5	
Universal input UI	0…10 V DC Ni1000 Pt1000 0/1 100…2500 Ω 0 (4)…20 mA	
Analogue output AO	0…10 V DC	
Number of relays	-	3
Load capacity	-	10A change over
Interface	RS485	
Communication	SLC*	
Connection	Room operating units of the ecoUnit 3 series (wire connection)	

Installation cable, mechanically and colour coded

Type		Cable length (m)	Plug type
053060200**	24-V power supply, open end	0.5, 1, 5, 10, 20, 30	2-pin
053060202**	24-V power supply, Y connector	3	2-pin
053060310**	I/O signals, 3-wire open end	1, 5, 10, 20, 30	3-pin
05306032005	I/O signals, cable temperature sensor Ni1000 (-35…100 °C), ready to operate	5	3-pin
05306032105	I/O signals, cable temperature sensor Pt1000 (-50…180 °C), ready to operate	5	3-pin
053060340**	RS-485, daisy chain, 3-wire open end	0.5, 1, 5, 10, 20, 30	3-pin
053060341**	RS-485, daisy chain, connection of two actuators, ready to operate	1, 5, 10, 20, 30	3-pin
053060510**	I/O signals, 3-wire open end	0.5, 1, 5, 10, 20, 30	5-pin
05306052105	I/O signals, cable temperature sensor Pt1000 (-50…180 °C), ready to operate	5	5-pin
053060530**	I/O signals, connection of actuator with I/O module SAIO100, ready to operate	0.5, 1, 10, 20, 30	5-pin
053060535**	SLC connection, 4-wire open end	0.5, 1, 5, 10, 20, 30	5-pin

Autonomous control for distributed intelligence

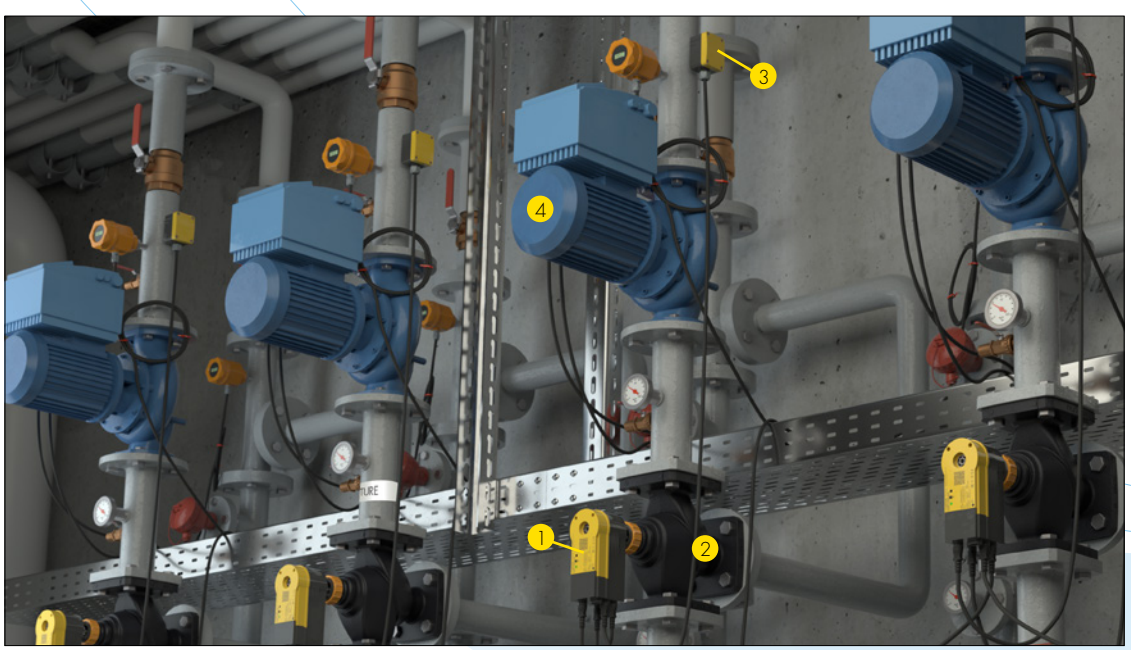
Broad range of application

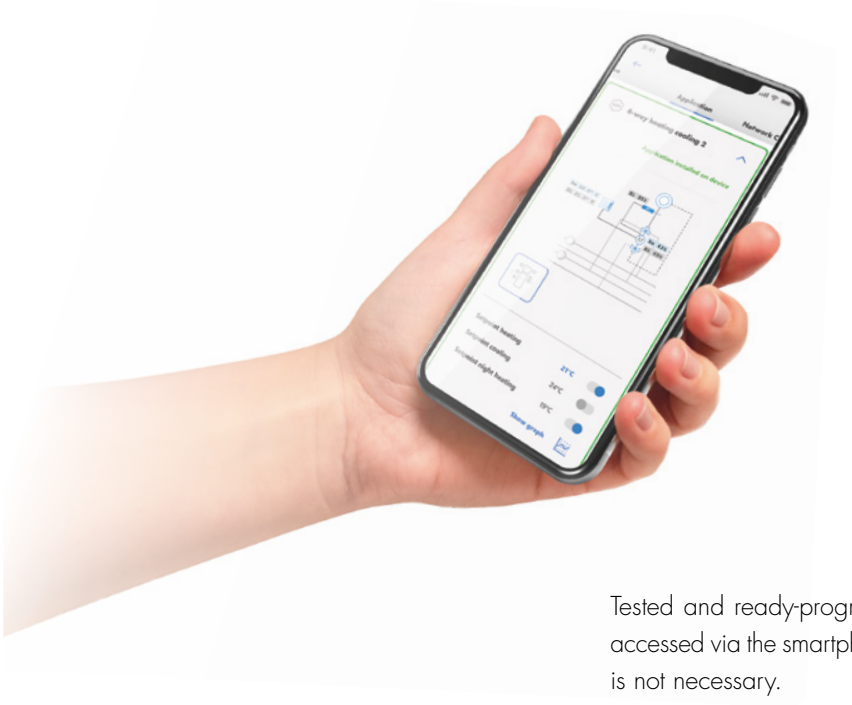
Decentrally installed, control tasks are performed autonomously by the Smart Actuator without additional control devices.

In small to medium-sized plants, this even makes it possible to completely dispense with central plant automation. However, the Smart Actuator is also suitable for use in larger plants. Here, interfaces for system integration enable semi-autonomous control within the overall system.

Example: Heating group with supply temperature control

1. Smart Actuator in daisy chain configuration
2. 3-way flanged valve BUE040
3. Supply temperature measurement with clamp-on temperature sensor EGT
4. Circulation pump

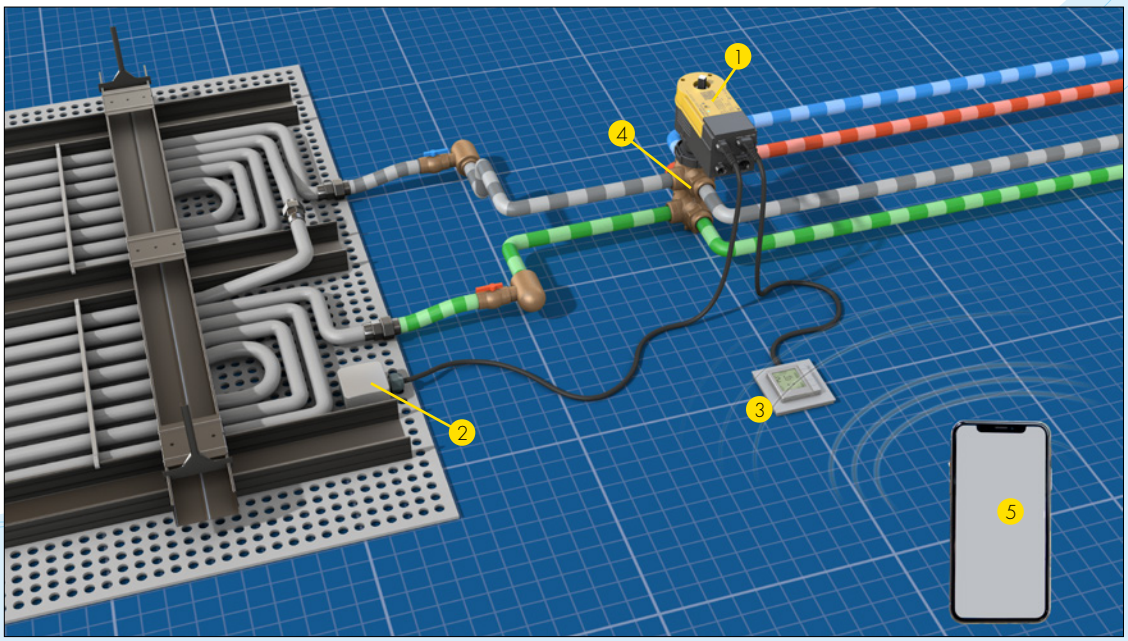




Tested and ready-programmed applications can be accessed via the smartphone app. Additional software is not necessary.

Example: Heated and chilled ceilings – without any additional single-room controllers

1. Smart Actuator
2. Dew-point sensor for avoiding condensation
3. ecoUnit355 room operating unit with actual value / setpoint display and temperature sensor
4. 6-way ball valve for switching or continuous control of heating and cooling circuits in a 4-pipe system
5. Parameterisation with a smartphone via Bluetooth



Connectivity, IoT and cloud integration

The Smart Actuator has communication interfaces for every example of use and thus integrates seamlessly into all building automation systems. Bluetooth technology enables easy commissioning and service via smartphone. The Smart Actuator also has RS-485 and WiFi interfaces for integration in building management system networks.

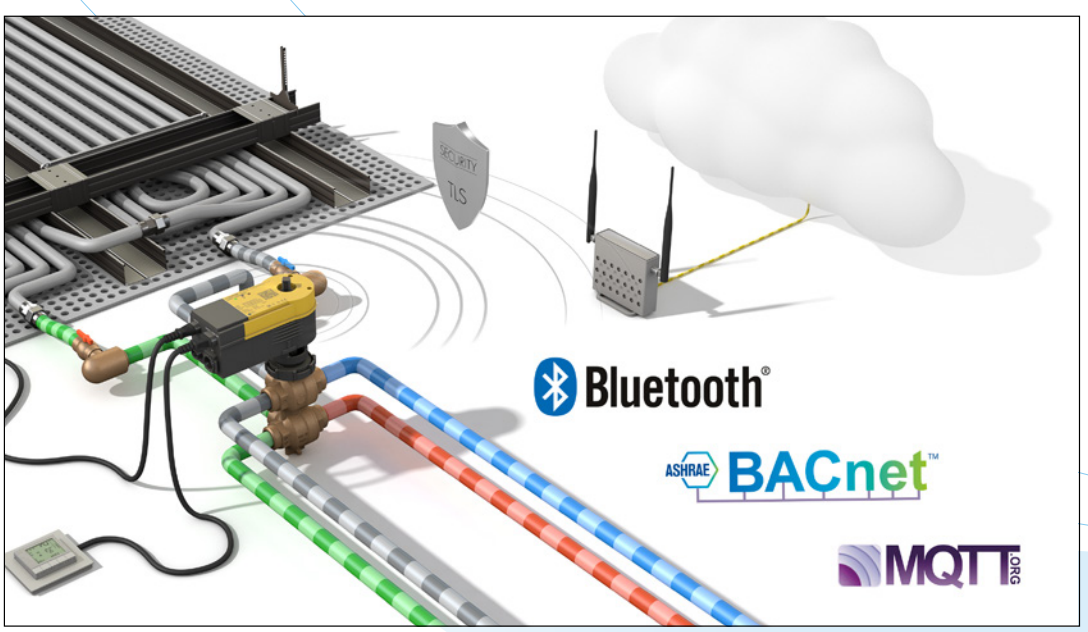
Sensors and other actuators can be connected via two universal I/Os or the optional I/O module. Communication can be via BACnet/IP or BACnet MS/TP.

The Smart Actuator is IoT- and cloud-capable. The cloud integration is performed via the integrated WiFi interface. The TLS-encrypted MQTT is a secure communication protocol in the Internet of Things.

Operators of small plants such as schools or medium-sized office buildings in particular can control and monitor their plants with a smartphone via the SAUTER Cloud.

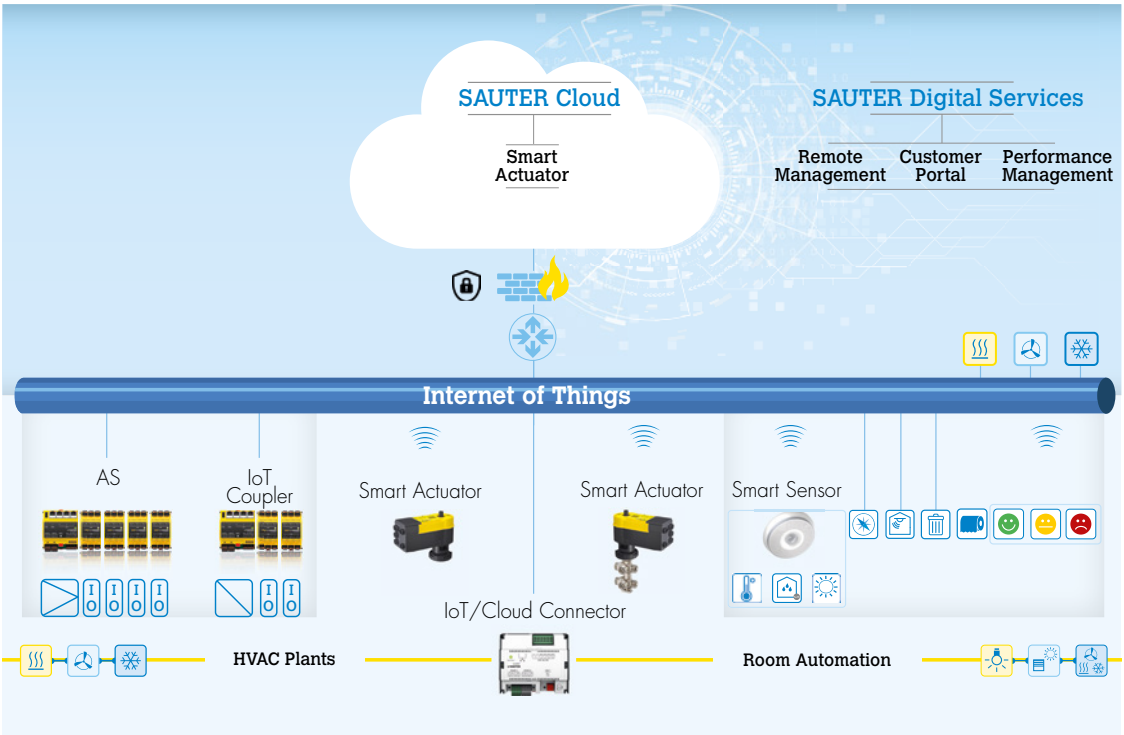
Security

- Identification and authentication
- Encrypted communication
- Role-based user administration
- Access Control Lists (ACL)
- Security patch management via SAUTER deployment server



SAUTER Digital Services

Intelligent building management from SAUTER



SAUTER Digital Services perform the function of a traditional management and operating level (MBE). Building operators can thus efficiently and easily retrieve MBE services from the cloud as required. Here SAUTER uses the cloud infrastructure of Microsoft® Azure.

Your advantages:

- Your management system is flexibly scalable
- You save on investment in your own IT infrastructure and thus reduce the associated risks
- You can access your data at any time, from anywhere, and make ongoing optimisations

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To reach us directly.

New innovation: Smart Actuator

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