

SAUTER modulo 6

Produkt och System Information



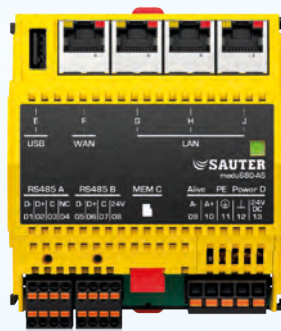
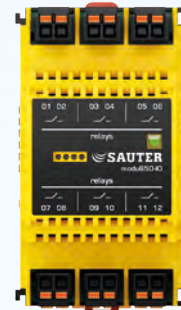
SAUTER modulo 6

The future of building management systems in the age of the Internet of Things (IoT) demands reliable, very fast processing of large data quantities using devices of very small dimensions. modulo 6 provides unequalled performance in terms of data points per automation station, memory space and processing speed – all of this while taking up minimum space in the control panel.

modulo 6 can be operated intuitively! It connects via Bluetooth to a smartphone or tablet. As an alternative to smartphone operation, modulo 6 also has a local operating unit (LOI) with a high-resolution graphical colour display. The LOI is compatible with all the available I/O modules and offers priority operation independently of the automation station as per EN ISO 16484-2.

modulo 6 speaks the languages of the intelligent buildings of the future! modulo 6 knows the specialised communication protocols of the systems for heating, ventilation, air conditioning, lighting and energy.

The new world of the "Internet of Things" (IOT) removes barriers to communication. This is why modulo 6 connects with the cloud and with IoTs just as naturally and securely as with the existing plants for heating, ventilation, and air conditioning.



SAUTER modulo 6

HVAC automation

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SAUTER modulo 6 automation stations

SAUTER modulo 6 automation stations regulate, control, monitor and optimise the energy efficiency in HVAC installations. The installation network is based on BACnet/IP – the communication protocol for networked building intelligence.

Overview of automation stations



Type designation	EY6AS80	EY6AS60
Product name	modu680-AS	modu660-AS
Power supply	24 V=	24 V=
WAN network interfaces	1	–
LAN network interfaces	3 (switch)	2 (switch)
SIC/RS-485 interfaces	1	1
Modbus/RS-485 interfaces	1	–
I/O and COM extension modules	Max. 24 (of which 6 are COM modules)	Max. 24 (of which 6 are COM modules)
BACnet profile	B-BC	B-BC
Data points	Max. 1600 I/O	Max. 800 I/O
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EY6AS80: Modular BACnet automation station and web server, modu680-AS

Features

- Part of the SAUTER modulo 6 system family
- Modular automation station, expandable with I/O modules and communication modules
- Regulation, control, monitoring and optimisation of operational systems, e.g. in HVAC engineering
- Locally expandable with up to 24 modules via iSEB interface
- Locally expandable with ecoLink I/O modules and ASV actuators via SLC interface
- Expandable via IP network with modu612-LC
- RS-485 interface for field bus integration (Modbus RTU/ASCII)
- Four RJ45 connections for two separate IP networks (OT/IT; Operational/Information Technology). Three connections switched for daisy chain
- BACnet/IP communication (EN ISO 16484-5)
- REST API interface
- BACnet profile B-BC
- AMEV profile AS-B
- Integrated web server for local commissioning, visualisation and operation
- User administration for identification, authentication and access control
- Encryption of communication with TLS 1.2
- Bluetooth interface for mobile commissioning and maintenance
- Programming/parameterisation via PC using CASE Suite (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Predictive control based on meteorological forecast data
- Data recording on removable media (microSD card)
- User administration and user identification (web server)
- Alive signal output pulsed



EY6AS80

Technical data

Power supply

Power supply	24 V= ± 10%
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Parameters

Connection	5-pin spring terminal, pluggable, 0.5...2.5 mm ² , at least 8 mm
Battery (buffer: RTC/SRAM)	CR2032, pluggable

Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Function

BACnet data point objects	1600 DP (HW or SW-I/O)
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Architecture

Processor	ARM 8, 1 GHz
RAM (memory)	512 MB (DDR3)
Flash	512 MB
Embedded web server	moduWeb Unity
Application data	Via CASE Engine
Operating system	Embedded Linux



	Processes	Supports separated processes with different cycle times and independent booting	
	Cycle time	Adjustable via process, at least 100 ms	
Interfaces and communication			
Ethernet network #1	Ethernet network	1 × RJ45 connector	
	10/100 BASE-T(X)	10/100 Mbit/s	
Ethernet network #2	Ethernet network	3 × RJ45 connector	
	10/100 BASE-T(X) switched	10/100 Mbit/s	
	Communication protocols	BACnet/IP (DIX)	
Connection, I/O and COM modules	Use	1 × integrated iSEB interface for up to 12 modules, expandable with modu602-LC for up to 24 modules	
RS-485-A connection	Communication protocol	Modbus RTU/ASCII, BACnet / MS/TP (expected to be available from 2020)	
	Use	Modbus master, BACnet / MS/TP router (expected to be available from 2020)	
	Connection	Spring-type terminal, pluggable 0.2...1.5 mm ² stiff/flexible	
	Line	4-wire, twisted, shielded	
	Termination/Pull-Up/Pull-Down	Switchable via software	
RS-485-B connection	Communication protocol	SLC master	
	Use	ecoLink, ASV, ecoUnit, FCCP200	
	Participant	Max. 10 ecoLink modules and 6 ecoUnit modules, max. 14 ASV	
	Power supply	24 V = ± 5%, max. 1.5 W, protected against short circuit, can be switched on and off	
	Connection	Spring-type terminal, pluggable 0.2...1.5 mm ² stiff/flexible	
	Line	4-wire, twisted, shielded	
	Cable length	Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessary	
	Termination/Pull-Up/Pull-Down	Switchable via software	
	Bluetooth	Version	BLE 4.0
		Radiation	6 mW
USB	Version	2.0, type A	
	Current consumption	Max. 500 mA	
SD memory expansion	Type	microSD (SLC technology recommended)	
Construction			
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715 Rail housing as per DIN 43880	
	Dimensions W x H x D	87.5 × 97 × 54 mm	
Standards and directives			
	Type of protection ¹⁾	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out	
	Protection class	I (EN 60730-1)	
	Environment class	3K3 (IEC 60721)	
	Software class	A (EN 60730-1, Appendix H)	
	Energy class	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC	
	BACnet profile	B-BC (nach ISO 16484-5)	
	AMEV profile	AS-B	

¹⁾ IP30 only frontal with terminal cover

CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1
	RoHS Directive 2011/65/EU	EN 50581
	RED Directive 2014/53/EU	EN 300 328 V2.1.1

Accessories

Plug-in I/O modules

Type	Description
EY6IO30F001	modu630-IO 16 x DI/CI inputs I/O module
EY6IO70F001	modu670-IO 8 x DI/CI/DO(OC) + 8 x DI/CI I/O module
EY6IO31F001	modu631-IO 8 x UI(DI/CI/AI) + 8 x DI/CI I/O module
EY6IO71F001	modu671-IO 8 x AO + 8 x DI/CI I/O module
EY6IO50F001	modu650-IO 6 x relay (2A) outputs I/O module
EY6IO72F001	modu672-IO 4 x UO(DO/AO) + 4 x UI(DI/CI/AI) I/O module (from 2020)

Plug-in communication modules (COM)

Type	Description
EY6CM30F031	modu630-CM M-Bus communication module
EY6CM60F061	modu660-CM SMI communication module
EY6CM50F051	modu650-CM DALI communication module
EY6CM40F041	modu640-CM KNX-TP communication module
EY6CM20F011	modu620-CM Modbus-RTU (RS-485) communication module
EY6CM20F021	modu620-CM BACnet / MS/TP (RS-485) communication module

Connection modules

Type	Description
EY6LC12F011	modu612-LC IP coupler for I/O modules with web server
EY6LC01F001	modu601-LC module for separated I/O module supply
EY6LC02F001	modu602-LC coupling kit I/O modules in cabinet



EY6AS60

EY6AS60: Modular BACnet automation station, modu660-AS

Features

- Part of the SAUTER modulo 6 system family
- Modular automation station, expandable with I/O modules and communication modules
- Regulation, control, monitoring and optimisation of operational systems, e.g. in HVAC engineering
- Locally expandable with up to 24 modules via iSEB interface
- Locally expandable with ecolink I/O modules and ASV actuators via SLC interface
- Two RJ45 connections switched for daisy chain
- BACnet/IP communication (EN ISO 16484-5)
- REST API interface
- BACnet profile B-BC
- AMEV profile AS-B
- Integrated web server for local commissioning, expandable with visualisation
- User administration for identification, authentication and access control
- Encryption of communication with TLS 1.2
- Bluetooth interface for mobile commissioning and maintenance
- Programming/parameterisation via PC using CASE Suite (based on IEC 61131-3)
- Control libraries
- Time and calendar function
- Predictive control based on meteorological forecast data
- Data recording on removable media (microSD card)
- User administration and user identification (web server)
- Alive signal output pulsed

Technical data

Power supply

Power supply	24 V = ± 10%
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Parameters

Connection	5-pin spring terminal, pluggable, 0.5...2.5 mm ² , at least 8 mm
Battery (buffer: RTC/SRAM)	CR2032, pluggable

Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Function

BACnet data point objects	800 DP (HW or SW-IO)
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Architecture

Processor	ARM 8, 1 GHz
Embedded web server	moduWeb Unity
Application data	Via CASE Engine
Operating system	Embedded Linux
Processes	Supports separated processes with different cycle times and independent booting
Cycle time	Adjustable via process, at least 100 ms



Interfaces and communication

Ethernet network	Ethernet network	2 × RJ45 socket, switched
	10/100 BASE-T(X) switched	10/100 Mbit/s
	Communication protocols	BACnet/IP (DIX)
RS-485 connection	Communication protocol	SLC master
	Use	ecoLink, ASV, ecoUnit, FCCP200
	Participant	Max. 8 ecoLink modules and 8 ecoUnit modules, max. 12 ASV
	Power supply	24 V = ± 5%, max. 1.5 W, protected against short circuit, can be switched on and off
	Connection	Spring-type terminal, pluggable 0.2...1.5 mm ² stiff/flexible
	Line	4-wire, twisted, shielded
	Cable length	Max. 100 m (30 m) with ecoUnit, up to 500 m, bus termination necessary
	Termination/Pull-Up/Pull-Down	Switchable via software
Bluetooth	Version	BLE 4.0
	Radiation	6 mW
USB	Version	2.0, type A
	Current consumption	Max. 500 mA

Construction

Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
Dimensions W × H × D	87.5 × 97 × 54 mm

Standards and directives

	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
	Energy class	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
	BACnet profile	B-BC (nach ISO 16484-5)
	AMEV profile	AS-B
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1
	RoHS Directive 2011/65/EU	EN 50581
	RED Directive 2014/53/EU	EN 300 328 V2.1.1

Accessories**Plug-in I/O modules**

Type	Description
EY6IO30F001	modu630-IO 16 × DI/CI inputs I/O module
EY6IO31F001	modu631-IO 8 × UI(DI/CI/AI) + 8 × DI/CI I/O module
EY6IO50F001	modu650-IO 6 × relay (2A) outputs I/O module
EY6IO70F001	modu670-IO 8 × DI/CI/DO(OC) + 8 × DI/CI I/O module
EY6IO71F001	modu671-IO 8 × AO + 8 × DI/CI I/O module
EY6IO72F001	modu672-IO 4 × UO(DO/AO) + 4 × UI(DI/CI/AI) I/O module (from 2020)

Plug-in communication modules (COM)

Type	Description
EY6CM20F011	modu620-CM Modbus-RTU (RS-485) communication module
EY6CM20F021	modu620-CM BACnet / MS/TP (RS-485) communication module
EY6CM30F031	modu630-CM M-Bus communication module
EY6CM40F041	modu640-CM KNX-TP communication module

Type	Description
EY6CM50F051	modu650-CM DALI communication module
EY6CM60F061	modu660-CM SMI communication module
Connection modules	
Type	Description
EY6LC01F001	modu601-LC module for separated I/O module supply
EY6LC02F001	modu602-LC coupling kit I/O modules in cabinet
EY6LC12F011	modu612-LC IP coupler for I/O modules with web server

SAUTER modulo 6 connection modules

The SAUTER modulo 6 connection modules offer more flexibility in the control panel installation (modu602-LC) and more freedom for a decentralised topology (modu612-LC). The modu601-LC ensures the functionality of the I/O modules if the operation of the automation station is interrupted.

Overview of connection modules



Type designation	EY6LC01F001	EY6LC02F001	EY6LC12F011
Product name	modu601-LC	modu602-LC	modu612-LC
Power supply	24 V=	–	24 V=
IP network interfaces	–	–	2 (switch)
I/O and COM extension modules	–	–	Max. 24 (of which 6 are COM modules)
Cloud Connector	–	–	MQTT
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EY6 LC01

EY6 LC01: Module for separated I/O module supply, modu601-LC

Features

- Part of the SAUTER modulo 6 system family
- Enables the separate supply of automation station and I/O modules
- Power supply of I/O modules and connected LOI units (Local Override and Indication Device)
- LOI manual operation and security setting remain if there is a functional interruption at the station, e.g. during a firmware update
- Enables simple wiring tests of the I/O modules without the station, together with modu600-LO on the I/O modules

Technical data

Power supply		
	Power supply	24 V= ± 10%
Parameters		
	Connection	Spring terminal, pluggable, 3-pin, 0.5...2.5 mm ² , at least 10 mm
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Interfaces and communication		
	Connection, I/O and COM modules	7-pin spring contacts, left and right
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715 Rail housing as per DIN 43880
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1



EY6LC02: Coupling kit for I/O modules in cabinet, modu602-LC

Features

- Part of the SAUTER modulo 6 system family
- Arrangement of I/O modules in up to three rows for space-optimised cabinet installation
- Minimum space requirement of the transmitter and receiver modules (1.5 HP)
- Up to twelve I/O modules per row
- Up to two modu602-LC per station



EY6LC02

Technical data

Power supply		
Power supply		From AS or LC via I/O bus
Parameters		
Connection		Spring terminal, pluggable, 3-pin, 0.5...2.5 mm ² , at least 10 mm
Max. number per station		2
Ambient conditions		
Operating temperature		0...45 °C
Storage and transport temperature		-25...70 °C
Admissible ambient humidity		10...90% rh, no condensation
Interfaces and communication		
Connection		RJ45 connector
Baud rate		115200 baud
Cable type		RJ45 Cat 6 or Cat 5e
Connection, I/O and COM modules		Transmitter: 7-pin spring contacts, only left Receiver: 7-pin spring contacts, only right
Construction		
Fitting		On DIN rail 35 x 7.5/15 as per EN 60715 Rail housing as per DIN 43880
Dimensions W x H x D		26.25 x 97 x 54 mm
Standards and directives		
Type of protection		IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
Protection class		I (EN 60730-1)
Environment class		3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4





EY6LC12

EY6LC12: IP coupler for I/O modules with web server, modu612-LC

Features

- Part of the SAUTER modulo 6 system family
- Remote operation of COM and I/O modules for modulo 6 automation stations via IP network
- Locally expandable with up to 24 modules via iSEB interface
- Two RJ45 connections switched for daisy chain
- MQTT communication
- Integrated web server for local commissioning
- Bluetooth interface for mobile commissioning and maintenance
- User administration and user identification (web server)

Technical data

Power supply

Power supply	24 V= ± 10%
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Parameters

Connection	5-pin spring terminal, pluggable, 0.5...2.5 mm ² , at least 8 mm
Battery (buffer: RTC/SRAM)	CR2032, pluggable

Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Architecture

Processor	ARM 8, 1 GHz
Embedded web server	moduWeb Unity
Operating system	Embedded Linux

Interfaces and communication

Ethernet network	Ethernet network	2 × RJ45 socket, switched
	10/100 BASE-T(X) switched	10/100 Mbit/s

Construction

Dimensions W x H x D	87.5 × 97 × 54 mm
Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880

Standards and directives

Type of protection	IP00 (EN 60529), connections and terminals
	IP30 (EN 60529), front in DIN cut-out
Protection class	I (EN 60730-1)
Environment class	3K3 (IEC 60721)
Software class	A (EN 60730-1, Appendix H)
Energy class	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC

CE conformity according to

EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1
RoHS Directive 2011/65/EU	EN 50581
RED Directive 2014/53/EU	EN 300 328 V2.1.1



Accessories

Plug-in I/O modules

Type	Description
EY6IO30F001	modu630-IO 16 x DI/CI inputs I/O module
EY6IO31F001	modu631-IO 8 x UI(DI/CI/AI) + 8 x DI/CI I/O module
EY6IO50F001	modu650-IO 6 x relay (2A) outputs I/O module
EY6IO70F001	modu670-IO 8 x DI/CI/DO(OC) + 8 x DI/CI I/O module
EY6IO71F001	modu671-IO 8 x AO + 8 x DI/CI I/O module
EY6IO72F001	modu672-IO 4 x UO(DO/AO) + 4 x UI(DI/CI/AI) I/O module (from 2020)

Plug-in communication modules (COM)

Type	Description
EY6CM20F011	modu620-CM Modbus-RTU (RS-485) communication module
EY6CM20F021	modu620-CM BACnet / MS/TP (RS-485) communication module
EY6CM30F031	modu630-CM M-Bus communication module
EY6CM40F041	modu640-CM KNX-TP communication module
EY6CM50F051	modu650-CM DALI communication module
EY6CM60F061	modu660-CM SMI communication module

Connection modules

Type	Description
EY6LC01F001	modu601-LC module for separated I/O module supply
EY6LC02F001	modu602-LC coupling kit I/O modules in cabinet

SAUTER modulo 6 I/O modules

SAUTER I/O modules are compatible with the modulo 6 series and are used to capture digital and analogue signals in HVAC installations. They control devices such as contactors, relays and valve actuators.

Overview of I/O modules



Type designation	EY6IO30F001	EY6IO31F001	EY6IO50F001
Product name	modu630	modu631	modu650
Power supply	From AS modulo 6	From AS modulo 6	From AS modulo 6
Inputs/outputs			
Digital inputs	16	8	–
Universal inputs	–	8	–
Optional operating elements	modu600-LO	modu600-LO	modu600-LO
Digital outputs	–	–	6
Analogue outputs	–	–	–
Universal outputs	–	–	–
Digital inputs/outputs	–	–	–
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Type designation	EY6IO70F001	EY6IO71F001	EY6IO72F001
Product name	modu670	modu671	modu672
Power supply	From AS modulo 6	From AS modulo 6	From AS modulo 6
Inputs/outputs			
Digital inputs	8	8	–
Universal inputs	–	–	4
Optional operating elements	modu600-LO	modu600-LO	modu600-LO
Digital outputs	–	–	–
Analogue outputs	–	8	–
Universal outputs	–	–	4
Digital inputs/outputs	8	–	–
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EY6IO30: 16 x DI/CI inputs I/O module, modu630-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Receiving digital inputs (alarm/status or pulse counter up to 50 Hz) in operational systems, e.g. in HVAC engineering
- 16 digital inputs
- Power supply from automation station (modu6**-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)



EY6IO30F001

Technical data

Power supply

Power supply	From AS or LC via I/O bus
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Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Inputs/outputs

Digital inputs (DI/CI)	Number of inputs	16
	Pulse counter	≤ 50 Hz

Interfaces and communication

Connection LOI	4-pin
Connection, I/O bus	7-pin, spring contact
Connection terminals	4 x 8-pin spring-loaded plug-in connectors

Construction

Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
Dimensions W x H x D	52.5 x 97 x 54 mm

Standards and directives

Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
Protection class	I (EN 60730-1)
Environment class	3K3 (IEC 60721)

CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

Overview of types

Type	Features
EY6IO30F001	16 x DI/CI inputs I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules





EY6IO31F001

EY6IO31: 8 x UI (DI/CI/AI) and 8 x DI/CI I/O module, modu631-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Receiving digital inputs (alarm/status) and analogue inputs (Ni/Pt1000, U) in operational systems, e.g. in HVAC engineering
- Eight digital inputs and eight universal inputs
- Power supply from automation station (modu6**-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	8
	Pulse counter	≤ 50 Hz
Universal inputs (UI)	Number of inputs	8
	Analogue	0...10 V, Ni1000, Pt1000, R
	Digital	DI/CI (≤ 50 Hz)
Interfaces and communication		
	Connection LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connectors
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

Overview of types

Type	Features
EY6IO31F001	8 x UI(DI/CI/AI) and 8 x DI/CI I/O module



Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules



EY6IO50F001

EY6IO50: 6 x relay (2A) outputs I/O module, modu650-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Activation of displays in operational systems, such as HVAC engineering
- Activation of actuators such as contactors or valve actuators, in operational systems
- Six digital outputs (relay)
- Power supply from automation station (modu6** -AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-IO)

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Inputs/outputs		
Digital outputs (DO)	Number of outputs	6
	Type of outputs	Relay (0-1), normally-open contact, galvanically isolated
	Load	24...250 V~, 2 A
	Switching frequency, mechanical	300,000 cycles for 2 A
Interfaces and communication		
	Connection LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	6 x 2-pin spring-loaded plug-in connectors
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
CE conformity according to	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

Overview of types

Type	Features
EY6IO50F001	6 x relay (2A) outputs I/O module

Accessories

Type	Description
EY6LO0F001	Local operating and indicating unit for I/O modules



EY6IO70: 8 x DI/CI/DO (OC) and 8 x DI/CI I/O module, modu670-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Activation of actuators, such as relays, in operational systems, e.g. in HVAC engineering
- Activation of displays in operational systems
- Receiving digital inputs (alarm/status) in operational systems
- Eight digital inputs and eight digital inputs/outputs
- Power supply from automation station (modu6**-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)



EY6IO70F001

Technical data

Power supply

Power supply	From AS or LC via I/O bus
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Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Inputs/outputs

Digital inputs (DI/CI)	Number of inputs	8
	Pulse counter	≤ 50 Hz
Digital inputs/outputs (DIO)	Number of inputs/outputs	8
	Type of inputs/outputs	Open collector, normally-open contacts (0-1), outputs switched with respect to ground (any arrangement)
	Power supply for DO	External, positive ≤ 24 V=
	Load	0...100 mA
	Power supply for DI	Internal, ~ 13 V
	Impulszähler (CI)	≤ 50 Hz

Interfaces and communication

Connection LOI	4-pin
Connection, I/O bus	7-pin, spring contact
Connection terminals	4 x 8-pin spring-loaded plug-in connectors

Construction

Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
Dimensions W x H x D	52.5 x 97 x 54 mm

Standards and directives

	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1



Overview of types

Type	Features
EY6IO70F001	8 x DI/CI/DO(OC) and 8 x DI/CI I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules

EY6IO71: 8 x AO and 8 x DI/CI I/O module, modu671-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Activation with a standard signal (0...10 V) in operational systems, such as HVAC engineering
- Receiving digital inputs (alarm/status) in operational systems
- Eight digital inputs and eight analogue outputs
- Power supply from automation station (modu6**-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)



EY6IO71F001

Technical data

Power supply		
	Power supply	From AS or LC via I/O bus
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	8
	Pulse counter	≤ 50 Hz
Analogue outputs (AO)	AO-Analogeingänge	8 x 0...10 V
	Load	≤ 2 mA
Interfaces and communication		
	Connection LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connectors
Construction		
	Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W x H x D	52.5 x 97 x 54 mm
Standards and directives		
	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1

Overview of types

Type	Features
EY6IO71F001	8 x AO and 8 x DI/CI I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules





EY6IO72F001

EY6IO72: 4 x UO(DO/AO) and 4 x UI(DI/CI/AI) I/O module, modu672-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu612-LC link coupler
- Activation with a standard signal (0...10 V, 0...20 mA) in operational systems, such as HVAC engineering
- Receiving digital inputs (alarm/status) and analogue inputs (Ni/Pt1000, U/I/R/Pot) in operational systems
- Four universal inputs and four universal outputs
- Power supply from automation station (modu6*-AS), link coupler (modu612-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)

Technical data

Power supply

Power supply	From AS or LC via I/O bus
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Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Inputs/outputs

Universal inputs (UI)	UI Universal Inputs	4
	Analogue	0...10 V, 0...20 mA, R, Ni1000, Pt1000
	Digital	DI/CI (≤ 50 Hz)
Universal outputs (UO)	UO-Universalausgänge	4 x 0...10 V, 0...20 mA
	Load	≤ 20 mA
	Load ≥ 5 kΩ	Output 0...10 V / 2...10 V
	Load ≤ 400 kΩ	Output 0...20 mA / 4...20 mA
	Admissible load voltage	< 2 V (0(4)...20 mA)

Interfaces and communication

Connection LOI	4-pin
Connection, I/O bus	7-pin, spring contact
Connection terminals	4 x 8-pin spring-loaded plug-in connectors

Construction

Fitting	On DIN rail 35 x 7.5/15 as per EN 60715
Dimensions W x H x D	52.5 x 97 x 54 mm

Standards and directives

	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	I (EN 60730-1)
CE conformity according to	Environment class	3K3 (IEC 60721)
	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-9, EN 60950-1



Overview of types

Type	Features
EY6IO72F001	4 x UO(DO/AO) and 4 x UI(DI/CI/AI) I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules

SAUTER modulo 6 operating unit

The SAUTER modulo 6 operating unit allows you to display the current status of the inputs and to directly override the outputs of the automation station (AS) and the I/O modules – local priority operation as per EN ISO 16484-2.

Overview of operating unit



Type designation	EY6LO00F001
Product name	modu600-LO
Power supply	From I/O module
Device	Operating device with 4 push-buttons
Function	Visualisation, operation
Display	Display of analogue, digital and multi-state signals
Use	Universally for I/O modules
Further information	Page 28

EY6L000: Operating and indicating unit for I/O modules, modu600-LO

Features

- Part of the SAUTER modulo 6 system family
- Pluggable element for direct operation and visualisation of displays for the modu6** I/O modules
- Display of values and statuses of the inputs and outputs on an LCD colour display
- Detailed display of the individual inputs and outputs including labelling, type, status and graphics
- Automatic detection of the current I/O module configuration and manual operation via web and security mode
- Simple 4-button operation
- LED indicator of I/O module modu6**-IO
- Manual operation of outputs (according to EN ISO 16484-2:2004 "Local override and indication devices")
- Ready for use without parameterising



EY6L000F001

Technical data

Power supply

Power supply	From I/O module modu6**-IO
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Parameters

Factory setting	All switches set to "A" (Auto)
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Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Indicators, display, operation

Resolution	240 x 240 pixels, colour LCD display
Operation	Four buttons: back (level/info view), backwards (step), forwards (step), confirm

Interfaces and communication

Connection	4-pin, spring contacts
Protocol	SLC

Standards and directives

	Type of protection	IP30 (EN 60529)
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6L000F001	modu600-LO, operating and indicating unit for I/O modules



SAUTER modulo 6 communication modules

SAUTER communication modules enable third-party systems to be integrated on the automation level. Field-bus protocols, based on EIA-232 or EIA-485, such as Modbus/RTU and M-Bus, can be integrated directly on the automation station. The data is mapped in BACnet objects and is visible on the BACnet/IP network.

Overview of communication modules



Type designation	EY6CM20F011	EY6CM20F021	EY6CM30F031
Product name	modu620-CM		modu630-CM
Interfaces	RS-485		RS-232, M-Bus
Protocol	Modbus RTU / ASCII	BACnet / MS/TP	M-Bus
Further information	Page 30		Page 32



Type designation	EY6CM40F041	EY6CM50F051	EY6CM60F061
Product name	modu640-CM	modu650-CM	modu660-CM
Interfaces	KNX-TP1	DALI	SMI / SMI LoVo
Protocol	KNX	DALI	SMI
Further information	Page 34	Page 35	Page 37

EY6CM20: Modbus-RTU (RS-485) communication module, modu620-CM

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu680-AS and modu660-AS automation stations or modu612-LC link coupler
- Up to six COM modules per automation station
- Connection to non-SAUTER systems (PLC, chillers, meters etc.)
- RS-485 half duplex, electrically isolated interface for Modbus/RTU, Modbus/ASCII
- Galvanic isolation up to 300 V
- Configurable RS-485 network resistors (software)
- Baud rate 600...115200 bit/s
- Modbus master with up to four Modbus communication profiles
- Integrated tunnelling function for commissioning and monitoring with serial Modbus master tools



EY6CM20F01

Technical data

Power supply		
Power supply		From AS or LC via I/O bus
Power consumption		≤ 200 mA
Dissipated power		≤ 0.66 W
Bus power supply		No
Ambient conditions		
Operating temperature		0...45 °C
Storage and transport temperature		-25...70 °C
Admissible ambient humidity		10...90% rh, no condensation
Architecture		
Number of data points		Up to 600 Modbus data points
Interfaces and communication		
Communication protocol		Modbus/RTU and Modbus/ASCII Master as per V1.02 2-wire (2W)
Bus physics		½ unit load; electrically isolated up to 300 V; integrated RS-485 network resistors (LT, PU, PD) configurable via software
Bus speed		600...115,200 bit/s Parity bit, stop bit, Rx/Tx bus timing
Connection		Pluggable spring-type terminals 2 × 5-pin 0.2...1.5 mm ² rigid/flexible
Cable		3-/4-wire (D+/D-/COM reference), shielded, up to 1000 m
Use		Modbus master, integration of Modbus slaves in an RS-485 segment (line)
Participant		Up to 31 unit loads
Functions		600 Modbus channels for BACnet I/O/V objects for up to 247 Modbus devices; FC01-06, 15, 16, 22; unicast and broadcast; access optimisation
Construction		
Fitting		On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
Dimensions W x H x D		52.5 × 97 × 54 mm



Standards and directives

	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6CM20F011	modu620-CM Modbus-RTU (RS-485) communication module
EY6CM20F021	modu620-CM BACnet / MS/TP (RS-485) communication module

EY6CM30: M-Bus communication module, modu630-CM

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu680-AS and modu660-AS automation stations or modu612-LC link coupler
- Up to six COM modules per automation station
- M-Bus master
- Connection to M-Bus meter networks for the integration of heat meters, electricity meters etc.
- 2-wire M-Bus network electrically isolated
- 2-wire RS-232 connection for point-to-point communication
- Up to 80 meters and 256 values
- Modbus master with up to four Modbus communication profiles
- Integrated tunnelling function for commissioning and monitoring on the modulo 6 stations



EY6CM30F031

Technical data

Power supply

Power supply	From AS or LC via I/O bus
Power consumption	≤ 200 mA
Dissipated power	≤ 0.66 W
Bus power supply	24 V=, 0.56 A, 10 W

Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Architecture

Protocol processor	NXP microcontroller LPC111U67
COM port	UART
Memory	No
Number of data points	256 M-Bus data points

Interfaces and communication

Communication protocol	M-Bus (EN 13757)
Power consumption	10 W
Bus physics	Electrically isolated up to 300 V
Bus speed	300...38400 bit/s
Connection	Pluggable spring-type terminals 5-pin M-Bus: M+, M-, COM RS-232: RS-232+, RS-232-
Cable	J-Y(ST)Y 4 × 0.5 mm ² LiYY 2 × 1.5 mm ²
Use	M-Bus master, integration of meters (slaves)
Participant	Up to 80 meters on M-Bus 1 level converter on RS-232
Functions	I/O up to 256 data points

Construction

Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
Dimensions W x H x D	52.5 × 97 × 54 mm



Standards and directives

	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6CM30F031	M-Bus communication module

EY6CM40: KNX-TP communication module, modu640-CM

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu680-AS and modu660-AS automation stations or modu612-LC link coupler
- Up to six COM modules per automation station
- Connection of KNX operating devices, e.g. sensors and actuators
- Integrated KNX tunnelling function (KNX/IP) for the commissioning of KNX with ETS



EY6CM40F041

Technical data

Power supply

Power supply	From AS or LC via I/O bus
Power consumption	≤ 200 mA
Dissipated power	≤ 0.66 W
Bus power supply	24 V=, 0.56 A, 10 W

Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Interfaces and communication

Communication protocol	KNX/TP1 (ISO/IEC 14543)
Power consumption	KNX bus max. 6 mA
Bus speed	9600 bit/s
Connection	KNX bus terminal x4 0.6...0.8 mm rigid lines
Cable	KNX cable, 2-wire, twisted
Use	KNX actuators and KNX sensors
Participant	Up to 64 KNX devices, depending on the external KNX power supply
Functions	256 KNX group addresses for BACnet I/O objects (256 channels)

Construction

Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
Dimensions W × H × D	52.5 × 97 × 54 mm

Standards and directives

	Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6CM40F041	KNX-TP communication module





EY6CM50F051

EY6CM50: DALI communication module, modu650-CM

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu680-AS and modu660-AS automation stations or modu612-LC link coupler
- Up to six COM modules per automation station
- DALI interface with DALI bus power supply for connecting DALI ballasts (EB) and DALI sensors
- Web-based commissioning tool for DALI networks on the modulo 6 stations
- DALI single application master (and multi-master) functionality
- Integrated DALI bus power supply as per IEC 62386-101 and -103

Technical data

Power supply

Power supply	From AS or LC via I/O bus
Power consumption	≤ 200 mA
Dissipated power	≤ 0.66 W
Bus power supply	24 V _± , 2.7 W

Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Interfaces and communication

Communication protocol	DALI (IEC 62386101/-103)
Power consumption	DALI bus max. 2 mA (only when operating with external power supply)
Bus speed	9600 bit/s
Connection	Pluggable spring-type terminals 4-pin 2 × DA+, 2 × DA- 0.2...2.5 mm ² rigid/flexible
Cable	2-wire, NYM, up to 300 m
Use	DALI ballasts (IEC 62386-102) DALI sensors (see list)
Participant	Up to 64 DALI ballasts and 64 DALI sensors (depending on type and bus power supply)
Functions	256 DALI functions for BACnet I/O objects (256 channels) with addressable 64 DALI short addresses and 16 group addresses

Construction

Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
Dimensions W x H x D	52.5 × 97 × 54 mm

Standards and directives

Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
Protection class	III (EN 60730-1)
Environment class	3K3 (IEC 60721)
Software class	A (EN 60730-1, Appendix H)

CE conformity according to

EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
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Overview of types

Type	Features
EY6CM50F051	DALI communication module



EY6CM60F061

EY6CM60: SMI communication module, modu660-CM

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu680-AS and modu660-AS automation stations or modu612-LC link coupler
- Up to six COM modules per automation station
- SMI interface (SMI/SMI LoVo) for activating SMI motors for sunshading (window blinds, roller shutters)
- Integrated tunnelling function for commissioning with SMI-easyMonitor on the modulo 6 stations

Technical data

Power supply

Power supply	From AS or LC via I/O bus
Power consumption	≤ 200 mA
Dissipated power	≤ 0.66 W
Bus power supply	24 V=, 0.7 W

Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Admissible ambient humidity	10...90% rh, no condensation

Interfaces and communication

Communication protocol	SMI master (SMI standard V2.3.2)
Bus speed	1200 bit/s
Connection	Pluggable spring-type terminals 4-pin 2 × I+, 2 × I- 0.2...2.5 mm ² rigid/flexible
Cable	2-wire, NYM, up to 350 m
Use	SMI actuators, SMI (230 V) or SMI LoVo (see list)
Participant	Up to 16 SMI motors
Functions	128 SMI functions for BACnet I/O objects (128 channels) for up to 16 single and group addresses each

Construction

Fitting	On DIN rail 35 × 7.5/15 as per EN 60715 Rail housing as per DIN 43880
Dimensions W x H x D	52.5 × 97 × 54 mm

Standards and directives

Type of protection	IP00 (EN 60529), connections and terminals IP30 (EN 60529), front in DIN cut-out
Protection class	III (EN 60730-1)
Environment class	3K3 (IEC 60721)
Software class	A (EN 60730-1, Appendix H)
CE conformity according to	EMC Directive 2014/30/EU EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types

Type	Features
EY6CM60F061	SMI communication module



Systems

Components

Services

Facility Services

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