

EY-AS 521: Compact automation station, modu521



EY-AS521F00*

How energy efficiency is improved

SAUTER EY-modulo 5 technology: compact, fast and universal

Features

- Part of the SAUTER EY-modulo 5 system family
- Compact automation station (AS)
- 46 inputs and outputs
- Regulation, control, monitoring and optimisation of operational systems, e.g. in HVAC engineering
- Communication: BACnet/IP (EN ISO 16484-5)
- Integrated web server
- 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
- Can be equipped with local operating and indicating units, located up to 10 m away
- Can be extended with 4 ecoLink modules
- Can be extended with 2 ecoUnit room operating units
- Alive signal output pulsed

Technical data

Power supply

Mains power supply (only EY-AS525F001)	Power supply	85...265 V~, 50...60 Hz and 24 V= ±5%
	Max. Einschaltstromspitze	3.4 A
	Power consumption	20 W max.
Extra low voltage	Power supply	24 V= ±5%
	Max. Einschaltstromspitze	25.0 A
	Power consumption	13 W max.
	Power loss	Max. 10 W
	Battery (buffer: RTC)	Type CR2032, pluggable

Inputs/Outputs

Digital inputs	8
Digital inputs/outputs open collector	8
Universal inputs	16 (Ni/Pt1000, U/I/R, DI, Poti)
Analogue outputs	8 (0...10 V/4 × 0...20 mA)
Digital outputs	6 (relay, 230 V~, 2A)

Interfaces and communication

Ethernet network	2 × RJ-45 socket
10/100 BASE-T(X) switched	10/100 Mbit/s
Communication protocols	BACnet/IP (DIX)
Local operating unit, modu840 (OP)	1 × RJ-45 socket
Operating and indicating units modu 6 (LOI)	1 × RJ-45 socket
Connected ecoLink modules/ecoUnit operating units	1 × SLC bus 4-position screw terminals
Hardware extension	Up to 4 ecoLink modules Up to 2 ecoUnit operating units

Architecture

Processor	TI OMAP 3505 Cortex A8
SDRAM (synchronous dynamic RAM)	256 MB
NAND flash (static memory)	128 MB
NOR flash	16 MB
Embedded web server	moduWeb

Function

BACnet data point objects	600 (incl. HW)
---------------------------	----------------



Dynamic objects	Time programmes	32 (Schedule)
	Trend Log	120 up to 60000 entries
	Alarms	16 (Notification Class)
	Chart (only via moduWeb)	32 (Log View)
	Active COV subscription	1500
	Structured view	64 (Structured View)
	Control	32 (Loop)
	BACnet client links	200 (Peer to Peer)
	BBMD in BDT	32
FD in FDT	32	

Ambient conditions		
Operating temperature	0...50 °C	
Storage and transport temperature	-25...70 °C	
Humidity without condensation	10...85% rh	

Construction		
Weight	1.1 kg	
Dimensions W x H x D	300 × 170 × 60 mm	
Fitting	Unit mounted on top-hat rail	

Standards and directives		
Type of protection	IP 00 (EN 60529)	
Protection class	I (EN 60730-1)	
Environment class	3K3 (IEC 60721)	
Software class A	EN 60730-1 Annexe H	
CE conformity according to	Low-voltage directive 2006/95/EC	EN 60730-1, EN60730-2-9
	EMC directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4

Overview of types		
Type	Power supply	
EY-AS521F001	85...265 V~, 24 V= ±5%	
EY-AS521F005	24 V= ±5%	

Accessories		
Type	Description	
EY-OP840F001	Local operating and display unit modu840	
EY-EM580F001	Bi-directional EnOcean wireless interface ecoMod580	
0930240511	Front frame for 4 operating/indicating units	

Manuals

Type	Description	
7010050001	Operating manual for moduWeb, German	
7010050002	Operating manual for moduWeb, French	
7010050003	Operating manual for moduWeb, English	

Type	Description
EY-LO 625	modu625 operating and indicating unit
EY-RU 3**	Room operating units, ecoUnit 3 series
EY-RU 1**	Room operating units with EnOcean wireless technology, ecoUnit1 series (via EY-EM580F001 wireless interface)
EY-EM 51*, EY-EM 520, EY-EM 521, EY-EM 526	Remote ecoLink 5 I/O modules

Description of operation

The modu521 automation station (AS) is used to regulate, control, monitor and optimise operational installations, e.g. in HVAC. modu521 is a compact AS with BACnet/IP communication and integrated web server.

Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section.

All related product documents must also be adhered to. Changing or converting the product is not admissible.

Engineering notes

Fitting and installation

The modu521 AS must be fitted in a cabinet using a top-hat rail (EN 60715).

During all installations, there must also be an external, primary isolating facility.

You must ensure that the fitting location is not in the immediate vicinity of power contactors, frequency converters or other EMC interference sources. We generally recommend fitting the AS in a separate DDC cabinet field.

Special standards such as IEC/EN 61508, IEC/EN 61511, IEC/EN 61131-1 and -2, and other similar ones, were not taken into account. Local requirements regarding installation, usage, access, access rights, accident prevention, safety, dismantling and disposal must be taken into account. Furthermore, the installation standards EN 50178, 50310, 50110, 50274, 61140 and similar must be observed.

The following wiring conditions must be fulfilled:

Conductor cross-section min. 0.8 mm², max. 2.5 mm² copper wire in accordance with the standards and national installation regulations.

Communication and plant device wiring must be separated from current-carrying and live installations.

Power supply variant F001

Two connections are available for the power supply. With the variable-voltage power supply, the device can be operated in the voltage range from 85...265 V~ and 50...60 Hz power frequency. For this, the protective earth must also be connected to the relevant terminal (protection class I).

Additionally, the station can also be supplied with 24 V DC. If both power supplies are connected, the 24 V DC operates as a quasi-redundant supply that ensures continued operation in the case of a power failure. However, this is only the case if the 24 V DC is generated from a supply independent of the mains supply, e.g. via an emergency power network.

Power supply variant F005

Here a connection for the 24 V= (PELV) power supply is available.

To avoid inadmissible compensating currents in the device, the MM conductor must not be interrupted.

Inputs/outputs

The AS has a total of 46 inputs and outputs. These provide functions for the entire range for HVACSE applications.

All inputs and outputs (apart from relays) each have their own separate ground terminal. This also makes it easier to connect the plant devices with the relevant signal type.

External ground connections must not be used. You must always ensure that the signal ground is correctly isolated or separated from current-carrying actuators.

Additional, separate connections for monitoring the operation using the alive signal and also a reference voltage output for connecting a potentiometer are available.

Alive signal (watchdog)

The alive signal can be taken directly from terminal 02. This monitors the internal process flow of the AS. When the CPU and the program procedure are operating correctly, this connection is permanently supplied at approx. 5 Hz.



Note

During the program download and the initialisation phase, the behaviour of the alive signal is not defined!

Connected to the ground as an open collector, the signal can be connected directly to a digital input (fixed) of another AS. In this way, it is monitored via the software application.

Alive signal	1
Input type	Contact, connected to ground Transistor (open collector)
Cycle frequency	Up to 5 Hz
Load	Max. 15 V=, current max. 10 mA

Digital inputs (DI fixed)

Number of inputs	8 (DI fixed)
Type of inputs	Potential-free contacts, connected to earth Opto-coupler Transistor (open collector)
Pulse counter	Up to 50 Hz
Protection against external voltage	$\pm 30\text{ V}/24\text{ V}\sim$ (without destruction)
Maximum output current	Approx. 1.3 mA, connected to ground
Scan rate of the inputs	100 ms

The binary information is connected between one of the input terminals (d0...d7) and the ground terminal. The station applies a voltage of approx. 13 V to the input terminal. If a contact is open, this corresponds to INACTIVE/bit = 0. If the contact is closed, this switches to ACTIVE/bit=1 (closer principle).

Virtually 0 V is applied here, with a current of approx. 1.3 mA. Every input can be defined individually as an alarm or a status by setting software parameters.

Pulse counters (CI with DI fixed)

At the digital inputs, counter inputs of potential-free contacts, opto-couplers or transistors with an open collector can be connected. The maximum pulse frequency may be up to 50 Hz. Pulses can be captured on the falling or rising edge, or on both edges.

Overview of pulse detection

Firmware module	BI	PC
Digital input (fixed)	3 Hz	50 Hz
Digital input (open collector channels)	3 Hz	50 Hz
Universal input	3 Hz	3 Hz

Digital inputs/outputs (open collector channels)

The modu521 has 8 open collector channels freely available. Each of these channels can be defined individually as an input (DI) or output (DO) by setting the software parameters. Here only one function is possible at any one time.

Digital inputs (open collector channels)

Number of inputs	8
Type of inputs	Potential-free contacts, connected to earth Opto-coupler Transistor (open collector)
Pulse counter	Up to 50 Hz
Protection against external voltage	$\pm 30\text{ V}/24\text{ V}\sim$ (without destruction)
Maximum output current	Approx. 1.3 mA (source), connected to ground
Scan rate of the inputs	100 ms
Power cable	Up to 30 m

The binary information is connected between one of the connection terminals od8...od15 and the ground terminal. The station applies a voltage of approx. 13 V to the input terminal. If a contact is open, this corresponds to INACTIVE/bit = 0. If the contact is closed, this switches to ACTIVE/bit=1 (closer principle).

Virtually 0 V is applied here, with a current of approx. 1.3 mA.

Every input can be defined individually as an alarm or a status by setting software parameters.

Pulse counters (CI on open collector channels)

At the digital inputs, you can also connect counter inputs of potential-free contacts, opto-couplers or transistors with an open collector. The maximum pulse frequency may be up to 50 Hz. Pulses can be captured on the falling or rising edge, or on both edges.

Digital outputs of open collector

Number of outputs	8
Type of outputs	Digital, transistor, open collector Connected to ground
Digital output	24 V=, up to 80 mA per channel (sink, with automatic protective function)

Processing cycle	100 ms
Power cable	Up to 30 m

The actuators to be connected (DC relay) are connected between one of the connection terminals od8...od15 and the ground terminal. The actuators must be supplied with an external power supply of max. 24 V \sim . The relevant signals are then connected to the ground via the transistor. Each output may be subjected to a load of max. 80 mA. Only relay models with integrated protection (flyback diode) may be used.

When connecting plant devices, you must make sure to use the correct "starting current". If the maximum current loading is exceeded, the open collector output is immediately switched off. This serves as an integrated protective function. This state can only be unlocked by resetting the relevant channel (BO object to level "0").

If it is mandatory to comply with the European Standard (EN 61000-6-2), the connecting cables for open collector outputs must not exceed 30 m in length.

Real feedbacks are only possible via additional digital inputs.

The open collector outputs adopt the defined status "0" (OFF) if there is a power failure.

Universal inputs

Number of inputs	16 (UI)
Resolution	14 bits
Processing cycle	200 ms
Type of inputs (software coding)	Ni1000 (DIN 43760) Pt1000 (IEC 751) Voltage measurement (U) Current measurement (I) channel u22/23/30/31 Potentiometer input (Pot.) Resistance (R) Digital input (DI)

Protection against external voltage

Ni/Pt/U/R/Pot/DI	± 30 V/24 V \sim (without destruction)
I (channel u22/23/30/31)	± 12 V/-0.3 V \sim (without destruction)

Measuring ranges

Voltage (U)	0 (2)...10 V, 0 (0.2)...1 V
Current (I)	0 (4)...20 mA
Potentiometer (Pot.)	0...1 (100%) with 3-wire connection (max. 100 k Ω)
Reference voltage	U _{ref} 1.23 V (terminal 68) Load max. 10 mA
Resistance (R)	200...2500 Ω
Temperature Ni1000 Pt1000	-50...150 $^{\circ}$ C -50...150 $^{\circ}$ C
Measurement current for resistor, temperature and potentiometer inputs	0.5 mA pulsed
Digital input	Potential-free contacts, connected to earth Opto-couplers, transistors (open collector) Approx. I _{out} = 1.3 mA
Pulse counter	Up to 3 Hz

Temperature measurement (Ni/Pt)

The Ni/Pt1000 sensors are connected using two wires between one of the input terminals for universal inputs (channel u16...u31) and a ground terminal. The inputs require no adjustment and can be used directly. Line resistance of 2 Ω is pre-compensated as standard. For a cable cross-section of 1.5 mm², this corresponds to a cable length of approx. 85 m. The respective line resistances can be compensated directly in the software (analogue input object) by entering the determined value.

The measurement current is pulsed so that the sensor is not heated up. The maximum measurement current is 0.5 mA.

Voltage measurement (U)

The voltage to be measured is connected between an input terminal for universal inputs (channel u16...u31) and a ground terminal. The signal must be potential-free. The measuring ranges with or without offset 0 (0,2)...1 V or 0 (2)...10 V are selected through the software. The internal resistance R_i of the input (load) is 9 M Ω .

Current measurement (I)

The current can be measured at a total of four inputs. The current to be measured is connected at one of the four input terminals for universal inputs (channel u22, u23, u30 and u31) and a ground terminal. The current signal must be potential-free.

The measuring ranges with or without offset 0 (4)...20 mA are selected via the software. The maximum input current must be limited to 30 mA. The internal resistance R_i is < 50 Ω .

Potentiometer measurement (Pot.)

The potentiometer is connected between an input terminal for universal inputs (channel u16...u31), a ground terminal and the terminal with reference voltage (U_{ref}). The principle of a voltage divider applies for this measurement.

To avoid an overload at the reference voltage source, the total resistance of all the potentiometers connected in parallel (resistance value between U_{ref} and ground) must not fall below 123 k Ω .

A resistance of the potentiometers in the range 1...100 k Ω ensures a stable measurement.

Digital outputs for relay

Number of outputs	6
Type of outputs	Relay, normally-open contacts (0-I)
Load on outputs:	24...250 V~/2 A resistive load
Variant F001	24...30 V~/2 A resistive load
Variant F005	
Switching frequency	10 ⁶ cycles

The plant device to be switched is connected directly to the relevant terminals (R40...R45). This may only be carried out when the system is disconnected from the electrical supply.

The outputs can be defined for single- or multi-layered functions. Real feedbacks are only possible by means of status reports via digital inputs.

If the power supply of the AS fails, the outputs of the relay contacts adopt the defined status "0" (OPEN).

Variant F001

The relays can be separated from each other by means of special separation measures. This allows mixed operation with both 250 V~ and SELV/PELV circuits.

The relay contacts can each be supplied with a maximum voltage of 250 V~ and loaded with 2 A.

Variant F005

The relay contacts can each be supplied with a maximum voltage of 30 V~ and loaded with 2 A.

Analogue outputs

Number of outputs	8
Type of outputs	Analogue outputs 0(2)...10 V= (a32...a39) Of which: 4x 0...20 mA (a36...a39) connected to ground as return cables
Update	200 ms
Resolution	13 bits



Note

The outputs are protected against static discharges, but not against external voltages!

The 0...10 V output voltage is provided at the output terminals (a32...a39).

The a32...a35 outputs are designed as push-pull outputs with active sink capability. Each of these outputs may be subjected to a load of 2 mA. The maximum sink capability is 4 mA in the voltage range 1...10 V. The load of the connected plant devices should be at least 5000 Ω .

The a36...a39 outputs are designed as source outputs. Along with the voltage signal 0...10 V, these outputs can also supply a current signal of 0...20 mA. However, they are not sink-capable.

A load between 450...5000 Ω should be avoided at outputs a36...a39.

There is an automatic changeover to a current signal when the load is less than 450 Ω .

Specification of the inputs and outputs

Universal input	Measuring range	Resolution	Accuracy of the measuring span plus measured value	
Ni/Pt1000	-50...150 °C	< 0.05 K	$\pm 0.5\%$	0.5%
U(0/0.2...1 V)	0.05...1.05 V	0.1 mV	$\pm 0.5\%$	0.5%
U(0/2...10 V)	0.2...10.2 V	< 1 mV	$\pm 0.5\%$	0.5%
I(0/4...20 V)	0.5...22 mA	< 0.02 mA	$\pm 1\%$	2%
R	200...2500 Ω	< 0.1 Ω	$\pm 0.2\%$	1%
Pot.	2...98%	< 0.5%	$\pm 1\%$	1%

Analogue output	Range of adjustment		Accuracy of the measuring span plus measured value
AO (0/2...10 V / 0...20 mA)	0.02...10.2 V / 1...20 mA	< 2 mV / < 0.4 mA	< 1% of the end value

Binary inputs (0-1)	Universal input (UI)	Digital input (DI)	Open collector (DI)
Switching threshold inactive "0"	> 3 V	> 4 V	> 4 V
Switching threshold active "1"	< 1.5 V	< 2.5 V	< 1.5 V
Switching hysteresis	> 0.4 V	> 0.4 V	> 0.23 V
Pulse counter	Up to 3 Hz	Up to 50 Hz	Up to 50 Hz

Alive signal	Open collector output	15 V \approx , up to 10 mA	Pulse frequency approx. 5 Hz
---------------------	-----------------------	------------------------------	------------------------------

Commissioning

The device does not have a switch for direct switching on and off. This function must be performed using an external, upstream unit (e.g. automatic circuit breaker, manual switch, etc.). If the AS is put into operation by switching on the power supply, the automatic start-up process begins. This is indicated directly by the "RUN/FAULT" LED.

All the operating modes of the AS are indicated with this LED. This can be seen in the following table:

"RUN/FAULT" LED	Indicator sequence	Mode	Description of the measuring span plus measured value
Constant yellow light	-----	Start-up	AS in start-up mode
Continuous green light	-----	In operation	AS in operation
Flashing green	••••••••	Identification	Identification via CASE Sun
Flashing red	•••••	Reset, parameter configuration	AS in configuration, restart active

Configuration/initialisation

The AS is delivered with DHCP mode (Zeroconf) as the factory setting. During the first start-up, the CASE Sun software tool is used to set the complete network addressing for BACnet/IP, as well as additional properties such as host name and location.

CASE Sun provides other functions such as the complete initialisation of the AS, the loading of an application for the hardware test, the installation of a 4th language, the activation and deactivation of the web server and the firmware update.

During the initialisation, all the saved data of the application, the time programmes and the internal trend recordings are deleted. This operation provides a completely empty memory for the first-time operation. This prevents malfunctions that may be caused by any previously loaded applications.

Firmware

The AS is delivered with a specific firmware version. This enables all the controlling and regulating functions. Before commissioning the AS, you must check the firmware version and, if necessary, perform an update.

Future firmware versions can easily be loaded directly to the station at any time via the network with CASE Sun. This enables long-term, innovative device operation.

The currently installed firmware version in the AS can be read via the optional, local modu840 operating unit or via PC/CASE Suite.

You will find all the information about the configuration, update, etc. of the AS in the CASE Sun manual (7010049001).

Reset button

When you hold down the reset button for more than 5 seconds, the AS is restarted.

Battery, data buffering

An insertable lithium button-cell battery of type CR2032 ensures that, if there is a power failure, the Real Time Clock for time programmes (scheduler/calendar) is retained. The battery voltage is monitored and is visualised by means of a separate LED.

The position of the battery (on the top left side of the device, outside the housing cover) enables it to be replaced quickly, even during operation. When inserting the battery, make sure the polarity is correct: negative terminal on the left, positive terminal on the right.



Note

Without a functioning battery, the data for the internal clock is not buffered if there is a power failure.

Technical data for the battery

Type (standard)	CR2032 lithium button-cell
Voltage	3 V
Capacity	Approx. 210 mAh
Dimensions	20 mm × 3.2 mm

Battery indicator

"Battery" LED	Mode
Continuous green light	Battery OK
Continuous red light	Battery replacement required

High storage or transportation temperatures significantly reduce the capacity of the battery. For continuous, error-free operation of the device, it is recommended that you replace the battery after 5 years at the latest.

The user parameters from CASE Engine and the user data (e.g. modified by BACnet client) are permanently stored in the flash memory and are battery-independent.

Internal clock

A Real Time Clock (RTC) is integrated in the AS for time programmes. The date, time and time zone are set in the AS when loading the user parameters.

The time, date and time zone can be set manually via the integrated web server (moduWeb) or via the BACnet browser.

The BACnet services "DM-TS-B" and "DM-UTC-B" are used to synchronise the time and date automatically if a BACnet time server is specified accordingly (e.g. novaPro Open).

The summer time setting (daylight saving) is activated in the network properties of the AS (CASE Engine) by default and includes all the ASs integrated into the same network.

modu521 can be used as the BACnet Time Master in order to synchronise the time of other BACnet devices with its own time (DM-TS-A and DM-UTC-B).

Time programmes, calendar

The BACnet functionality allows up to 32 time programmes (scheduler) and up to 16 calendar objects (calendar) to be created in the AS.

The time and calendar objects can be displayed, operated and modified using the local modu840 operating unit or the moduWeb web server.

Data recording

The moduWeb integrated web server allows you to record 32 data points. The values are recorded at intervals of one minute and automatically compressed.

Additionally up to 120 BACnet Trend Log objects (data points) can be created in each of which modu521 makes one data point available to a connected BACnet operating station. If the connection to the operating station is interrupted, these are stored locally in the modu521 temporarily and can be obtained by the station later on.

microSD card

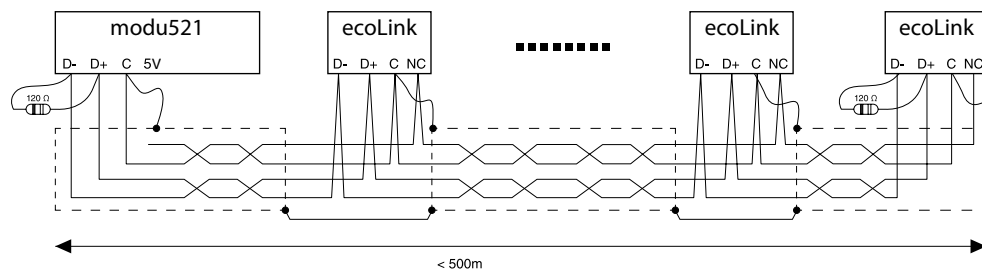
modu521 has a microSD card slot. This is intended for future function extensions and is not supported by the current firmware.

SLC extension interface

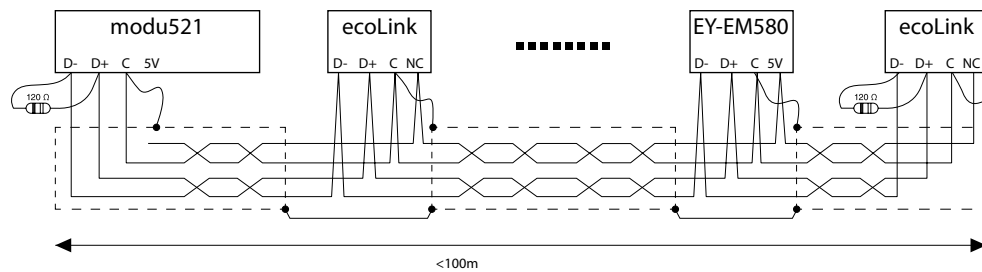
Interface	RS485 (SLC)
Number of units	Up to 4 remote I/O EY-EM5** Up to 2 ecoUnit operating units

The interface is intended for connecting ecoLink modules and ecoUnit operating units. Up to 4 ecoLink and up to 2 ecoUnit room operating units can be used as hardware extensions. A 4-core twisted cable is to be used to connect these. The max. admissible bus length depends on the cable type used and correct termination with terminating resistors (120 Ω). The bus wiring must be a line topology. Star, tree or branch topologies must not be used. Make sure the polarity is correct, as the devices do not have internal terminating resistors.

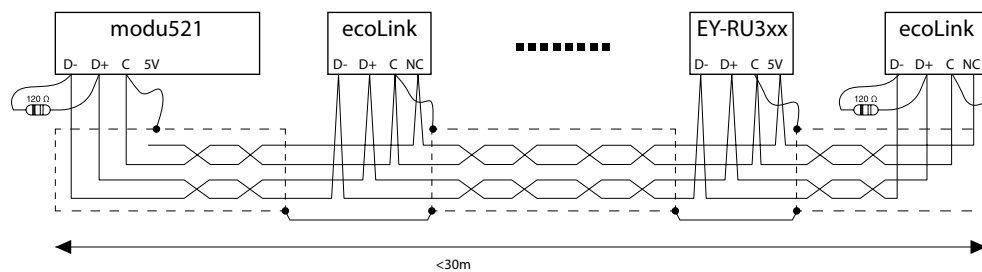
When you use Ethernet CAT-5 cables and IYST-Y cables, the possible bus length for ecoLink modules is up to 500 m.



When at least one EY-EM580 is connected, the maximum length is reduced to 100 m



When at least one ecoUnit3 is connected, the maximum length is reduced to 30 m




You will find detailed information in the data sheets for the ecoLink remote I/O modules and for the room operating units.

AUX extension interface

A physical interface is available for direct protocol connections.

The interface can only be operated with future, optional auxiliary modules. The signal cable is connected at the 6-pin double terminal block (a1...a6).

Note
 At present the auxiliary modules for the various protocols are not yet available!

Local override and indication device (LOI)

A local override and indication device (LOI) can be added to the AS via the 4-part front frame (accessory). This enables the manual activation and indication of system components.

The devices can be installed directly in the cabinet or externally (at a distance of up to 10 m). Two RJ45 sockets are available for connecting the operating units: one for the modu625 and one for the modu840. With the 0930240511 front frame, a modu840 operating panel and a modu625 can be connected.

The devices can be installed and removed during operation (hot-pluggable) without affecting the functions of the AS. The switch positions are detected and implemented by the AS directly. The function complies with standard EN ISO 16484-2:2004 for local override and indicating devices (LOIs).



Note

Before an operating unit is inserted, all gates should be set to automatic mode to avoid triggering unwanted switch actions at the outputs. When the unit is removed, all outputs are actuated with the automatic values of the AS.

Function

- In the automatic position ("A"), the switching status is specified by the AS program.
- In the manual mode position (0, I, II or 0...100%), these functions have priority over AS program operation. In each manual mode position, the status flag "overridden" is activated for assigned BACnet objects (AO, BO, MO).
- Using LED indicators: In principle, the LEDs of digital inputs show the status of the input allocation. LEDs can also be allocated using CASE programming as an indicator for functions such as collective alarm, violation of limit value, etc. Generally, the green LED is activated for status information and the red LED for alarms.
- The BACnet alarm acknowledgement function allows unacknowledged alarms to flash directly and, after they are acknowledged (but still active), to remain lit permanently.
- The LEDs of the analogue and digital outputs are activated without an additional user application (CASE Engine).

modu840 local operating unit

The operation of the AS can be expanded using the modu840 accessory.

By turning and pressing you can display all data points in plain text, thus also enabling them to be operated and set. One operating unit each can be used for one AS.

The unit is connected at the RJ45 socket indicated on the 0930240511 front frame. It can be installed directly in the cabinet or externally at a distance of up to 10 m.

You will find detailed information on operating the AS with modu840 in manual 7010035001, SAUTER EY-modulo 5 modu840 local operating unit.

moduWeb integrated web server

The AS can also be operated using the integrated web server via the standard browser. This provides you with a state-of-the-art operating, visualisation and notification concept that can be used directly via an IP network without additional software components.

You will find detailed information on the web server and its functions in manual 7010050001, SAUTER EY-modulo 5 moduWeb web operation.

Incorporating meteorological forecast data

The AS can integrate weather forecast data such as temperature (min., max.), hours of sunshine, global radiation, precipitation, relative humidity, and wind speed and direction via a constant internet connection for energy-efficient, predictive controlling. When what is known as a location ID is entered directly in the application software, the data is transferred via web services. The relevant location IDs for the local data can be obtained from SAUTER on payment of a fee.

Additional information

Fitting instructions for modu521	MV P100011793
Fitting instructions for cabinet installation kit	MV P100003733
Declaration on materials and the environment	MD92.011
Manual for moduWeb web operation	7010050001
Manual for modu840 local operating unit	7010035001
CASE Sun manual	7010049001
EY-modulo 5 description of function modules	7010034001

SAUTER BACnet PICS modu521	D100199160
PDS 92.081 local override and indication devices	
PDS 94.070...077 ecoLink remote IO modules	
PDS 94.010...055 room operating units	

Channel and terminal assignment

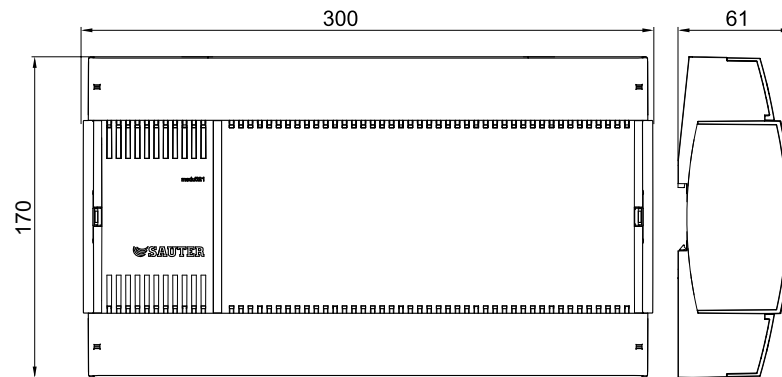
Description	Channel number	Terminals		
		Schematic	Signal	GND
modu521				
Watchdog signal	-	Alive	02	01
Digital input	0	d0	04	03
Pulse counter (CI)	1	d1	06	05
	2	d2	08	07
	3	d3	10	09
	4	d4	12	11
	5	d5	14	13
	6	d6	16	15
	7	d7	18	17
Open collector	8	od8	20	19
Digital input/output	9	od9	22	21
	10	od10	24	23
	11	od11	26	25
	12	od12	28	27
	13	od13	30	29
	14	od14	32	31
	15	od15	34	33
Universal input	16	u16	36	35
(Ni/Pt1000/U/I/R/Pot/DI)	17	u17	38	37
Current signal* channel 22, 23, 30, 31	18	u18	40	39
(terminals 48, 50, 64, 66)	19	u19	42	41
	20	u20	44	43
	21	u21	46	45
	22*	u22	48	47
	23*	u23	50	49
	24	u24	52	51
	25	u25	54	53
	26	u26	56	55
	27	u27	58	57
	28	u28	60	59
	29	u29	62	61
	30*	u30	64	63
	31*	u31	66	65
Reference voltage 1.23 V (U_{ref})			68	67
Analogue output (0...10 V)	32	a32	70	69
	33	a33	72	71
	34	a34	74	73
	35	a35	76	75
Analogue output (0...10 V / 0...20 mA)	36	a36	78	77
	37	a37	80	79
	38	a38	82	81
	39	a39	84	83
Digital output relay (0-I)	40	R40	85	86
	41	R41	87	88
	42	R42	89	90
	43	R43	91	92
	44	R44	93	94
	45	R45	95	96
AUX interface			a1/a3/a5	a2/a4/a6
RS485 SLC-Bus interface			D-/D+/C/5 V	

Disposal

When disposing of the product, observe the currently applicable local laws.

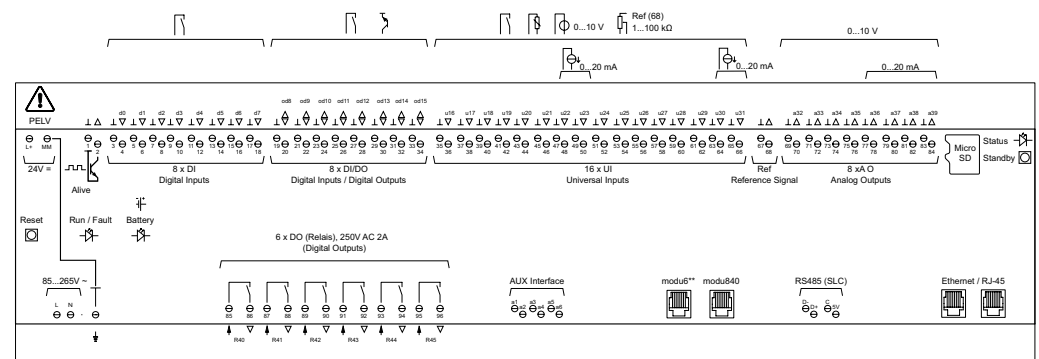
More information on materials can be found in the Declaration on materials and the environment for this product.

Dimension drawing



Connection diagram

EY-AS521F001



EY-AS521F005

