PDS 92.016 | en Product Data Sheet | EY-AS525

modu525: Modular automation station with BACnet/IP and web server

How energy efficiency is improved

SAUTER EY-modulo 5 technology: modular, fast and universal.

Areas of application

Regulation, control, monitoring and optimisation of technical installations, e.g. HVAC

Features

- Modular automation station
- Extensible by 8 I/O modules for up to 154 inputs/outputs in total
- Extensible with communication modules for integrated non-Sauter systems
- Part of the SAUTER EY-modulo system family
- Communication: BACnet/IP (EN ISO 16484-5)
- Integrated web server
- Programming/parameterisation via PC with CASE Suite (based on IEC 61131-3)
- Control engineering libraries
- Time and calendar function
- Data recording
- Can be equipped with local override and indication (LOI) devices, at distances of up to 10 m

Technical description

- 8 digital inputs (alarm/status)
- 8 universal inputs (Ni/Pt1000, U/I/R, DI)
- 4 analogue outputs (0...10 V)
- 6 digital outputs (relays, 24...250 V~, 2 A)
- 1 watchdog output, pulsed

Products

Type	Description
EY-AS525F001	Modular automation station with 230 V~ BACnet/IP and web server
EY-AS525F005	Modular automation station with 24 V~/= BACnet/IP and web server

Technical data

Electrical supply	
Power supply (F001)	230 V~, ±10%, 50...60 Hz
Power consumption	up to 13 VA/5 W (excl. accessories)
Dissipated power	up to 5 W (excl. accessories)
Power supply (F005)	24 V=, ±10%
	24 V~, ±20%, 50…60 Hz
Power consumption	up to 30 VA / 5 W (excl. accessories)
Battery (buffer: RTC/SRAM)	CR2032, plug-in

Interfaces, communication	
Ethernet network	1× RJ-45 socket
10/100 BASE-T(X)	10/100 Mbit/s
Communication protocol	BACnet/IP (DIX)
Local override unit, modu840 (LOP)	1× integrated interface
Override and indication devices	
modu6.. (LOI)	1× integrated interface
Connection, I/O/COM module	1× integrated I/O bus connector for a
	maximum of 8 modules
Hardware extension	up to 8 I/O modules
Integration of non-Sauter systems	one or two COM modules

Architecture	
Processor	32 bit, 400 MHz
SDRAM (operational memory)	32 MB
SRAM (static memory)	1 MB
Flash	16 MB
Embedded web server	moduWeb
User data	via CASE Engine

Function	Quantity
BACnet data point objects	512 (incl. HW)
Dynamic objects	
Time programmes	64 (Schedule)
Calendar	16 (Calendar)
Historical data	100 (Trend Log)
	up to 30,000 entries

Function (continuation)	
Alerting	16 (Notification Class)
Chart (only via moduWeb)	32 (Log View)
active COV subscriptions	1500
Structured view	128 (Structured View)
Control	32 (Loop)
BACnet client links	200 (peer to peer)
BBMD in BDT	32
FD in FDT	32

Permitted ambient conditions	
Operating temperature	0…45 °C
Storage and transport temperature	–25…70 °C
Humidity	10…85% rh
	no condensation

Installation	
Fitting	on top-hat rail
Dimensions W × H × D (mm)	160 × 170 × 115
Weight (kg)	0.8

Technical data (continuation)

Standards, guidelines and directives

Degree of protection	IP 20 (EN 60529) [1]
Protection class	I (EN 60730-1)
Environmental class	3K3 (IEC 60721)
CE conformity as per	
Electrical safety	EN 60730-1
2006/95/EC	EN 60730-2-9, EN 60950-1
Software class A	EN 60950-1 Annexe H
EMC Directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2
	EN 61000-6-3, EN 61000-6-4

1) Only on front side with terminal cover, blanking piece for LOI and transparent cover.

Additional information

Fitting instructions	MV 506062
Material declaration	MD 92.016
Dimension drawing	M10485
Wiring diagram (F001)	A10483
Wiring diagram (F005)	A10586

Accessories

Type	Description
	Plug-in I/O modules
EY-IO530F001	DI universal and digital inputs (8 UI/8 DI)
EY-IO550F001	Digital outputs (6 DO, relays)
EY-IO551F001	Digital outputs (16 DO, open collector)
EY-IO570F001	Universal inputs and analogue outputs (8 UI / 4 AO)
	Plug-in communication modules (COM)
EY-CM710F010	Integration of non-Sauter systems with EIA-232 for Modbus/RTU-Master
EY-CM710F020	Integration of non-Sauter systems with EIA-232 for M-Bus
EY-CM720F010	Integration of non-Sauter systems with EIA-485 for Modbus/RTU-Master
EY-CM721F010	Integration of non-Sauter systems with EIA-232 and EIA-485 for Modbus/RTU-Master
EY-CM721F020	Integration of non-Sauter systems with EIA-232 and EIA-485 for M-Bus
EY-CM731F020	Integration of non-Sauter systems with EIA-232 for M-Bus
	Local override and indication devices (LOI)
EY-LO625F001	Override/indicating, 6 switches Auto-0-I, 4 LEDs alarm/status, 4 setpoint adjusters (A-0…100%), 8 LEDs alarm/status
EY-LO630F001	Indicating, alarm/status, 16 LEDs, bi-colour
EY-LO650F001	Override/indicating, 6 switches Auto-0-I, 4 LEDs alarm/status
EY-LO650F002	Override/indicating, 3 switches Auto-0-I-II, 4 LEDs alarm/status
EY-LO670F001	Override/indicating, 4 setpoint adjusters (A-0…100%), 8 LEDs for alarm/status
	Local operating panel (LOP)
EY-OP840F001	Local operating and indicating unit modu840
0929360005	Relay PCB (2× pluggable electronic PCB with 3 relays including connection terminals)

Engineering notes

Installation and power supply

The modu525 automation station is installed inside a motor control centre by means of a top-hat rail (EN 60715). The EY-AS525F001 requires a power supply of 230 V a.c., while the EY-AS525F005 can use either 24 V d.c. or a.c. The installation must have an additional external primary separator. Connection work must be carried out only when there is no power (dead). The earthing terminals are internally connected to the earth connection (PE) (PELV power circuits). All devices are connected via screwed terminals. When connecting the power supply, it is essential to connect the earth to the appropriate connection terminal (protection class I).

Communication wiring must be carried out correctly and meet the requirements of standards EN 50174-1, -2 and -3. Communication wiring must be kept at a distance to other current-carrying wiring.

No account has been taken of special standards such as IEC/EN 61508, IEC/EN 61511, IEC/EN 61131-1 and 2 or similar standards. Local regulations on installation, application, access, access authorisations, accident prevention, safety, dismantling and disposal must be observed. Compliance is also required with installation standards EN 50178, 50310, 50110, 50274, 61140 and similar.

The following conditions must be met:

Cross-section of conductors: min. 0.8 mm², max. 2.5 mm², Cu conductors in compliance with the standards and national installation directives

For further information, consult the fitting instructions.

Inputs/outputs

As a basic unit, the automation station has 26 inputs/outputs providing the following functions:

Universal inputs

Number of inputs	8 (UI)
Type of inputs	Ni1000 (DIN 43760)
(software coding)	Pt1000 (IEC 751)
	Voltage measurement (U)
	Current measurement (I) only on channel u12, u13!
	Potentiometer input (Pot)
	Resistance (R)
	Digital input (DI fixed)

Protection against extraneous voltage

Ni/Pt/U/R/Pot/DI	±30 V/24 V~ (without destruction)
I (channel u12, u13)	+12 V/–0.3 V (without destruction)

Scan rate

Channels u12, u16	100 ms
Channels u13, u14, u15, u17, u18, u19	500 ms

Resolution 14 bit

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-line connection (0…2.5 kΩ)
Reference	U_{ref} 1.23 V (terminal nos. 37, 38) >1 kΩ, max. load 10 mA
Resistance (R)	200...2,500 Ω
Temperature Ni1000	–50...+150 °C
Pt1000	–50...+150 °C
Digital input	Potential-free contacts, wired to earth
	Opto-coupler, transistor (open collector)
	approx. I_{out} = 1.2 mA
Pulse counter	up to 3 Hz

Temperature measurement (Ni/Pt)

The Ni/Pt1000 sensors are connected using the two-wire method between one of the input terminals for universal inputs (channel u12...u19) and an earth terminal. The inputs do not require calibration and can be used directly; a corresponding line resistance of 2 Ω is pre-compensated as standard. With the corresponding line resistance of 2 Ω (cable cross-section: 1.5 mm²), the connection cable may be a maximum of 85 m in length. Greater line resistances can be compensated using the software. The measuring voltage is pulsed so that the sensor does not heat up (I_{Meas} approx. 0.3 mA).

Voltage measurement (U)

The voltage to be measured is connected between one of the input terminals for universal input (channel u12...u19) and an earth terminal. The signal must be potential-free. The two measurement ranges with or without offset 0 (0.2)...1 V and 0 (2)...10 V are selected by means of the software. The input's internal resistance R_i (burden) is 9 MΩ.

Current measurement (I)

The current can only be measured on two inputs. The voltage to be measured is connected between one of the two input terminals for universal input (channel u12, u13) and an earth terminal. The current signal must be potential-free. The measurement ranges with or without offset 0 (4)...20 mA are selected by means of the software. The maximum input current must be restricted to 50 mA. The internal resistance R_i is < 50 Ω.

Potentiometer measurement (Pot)

The potentiometer is connected between one of the input terminals for universal inputs (channel u12...u19), an earth terminal and the terminal U_{ref} (reference voltage). So as not to overload the reference outputs, the lowest potentiometer value should be at least 1 kΩ.

The reference output is not short-circuit-proof. The upper value of 2.5 kΩ is predefined to guarantee stable, interference-free measurement.

Digital inputs (DI with UI)

The AS also acquires binary information via the universal inputs. The information (alarm/status) is connected between an input terminal and earth (u12...u19). The station applies a voltage of approx. 13 V to the terminal. This usually corresponds to INACTIVE (bit=0) for an open contact. When a contact is closed it is ACTIVE (bit=1) and 0 V are applied, whereby the current flow equates to approx. 1 mA. Brief temporary changes of at least 20 ms are buffered between the station's polling enquiries and are then processed in the next cycle.

Each input can be defined via software configuration as an alarm or status input.

Digital inputs can be displayed on a local indicating unit (e.g. modu630).

Digital inputs (DI fixed)

Number of inputs	8 (DI fixed)
Type of inputs	Potential-free contacts, wired to earth
	Opto-coupler
	Transistor (open collector)
Pulse counter	up to 50 Hz (100 ms scan rate)
Protection against extraneous voltage	±30 V/24 V~ (without destruction)
Maximum output current	approx. 1.2 mA to earth
Scan rate	100 ms

Binary information is connected between one of the input terminals (d4...d11) and earth. The station applies a voltage of approx. 13 V to the terminal. In normal cases (NORMAL) this corresponds to INACTIVE (bit=0) for an open contact. When a contact is closed, it is ACTIVE (bit=1) and 0 V is applied, whereby the current flow equates to approx. 1.2 mA.

Brief temporary changes of at least 20 ms are buffered between the station's polling enquiries and are then processed in the next cycle.

Each input can be defined via software configuration as an alarm or status input.

Digital inputs can be displayed on a local indicating unit (e.g. modu630).

Pulse counter (CI with DI)

Counter inputs for potential-free contacts, opto-couplers or transistors with an open collector can be connected to the digital inputs. The maximum pulse frequency may reach 50 Hz. To ensure that switched contacts are registered correctly, provision is made for a de-bounce time of 5 ms. Pulses can be detected on falling, rising or both edges; the minimum pulse time should be 4 times the de-bounce time.

Digital outputs

Number of outputs	6 (DO)
Type of outputs	Relays, normally-open contacts (0-I)
Load for outputs	24...250 V~, 2 A resistive load
Switching frequency	10^6 cycles

The relevant actuator is connected directly to the relay terminals (R20…R25).

Outputs can be defined for single or multi-level functions. Real feedback signals can be implemented only via the digital inputs (BACnet COMMAND-FAILURE).

Each of the relay outputs can be supplied individually with maximum voltage of 250 V~ and loaded with 2 A. Equipment is connected using screwed terminals; this work must be carried out only when the unit is disconnected from the power supply.

Special protective measures enable relays to be separated safely from each other. This allows mixed operation with 250 V~ and SELV/PELV circuits, without causing reciprocal faults.

Contact relay outputs adopt the defined condition '0' (open) if:
- the power supply/communication on the I/O bus is interrupted
- the power supply to the automation station is interrupted

The relays are integrated in two pluggable boards with connection terminals, so can be easily replaced.

Analogue outputs

Number of outputs	4 (AO)
Type of outputs	4× 0(2)...10 V
Load	up to 2 mA
Updating	100 ms
Resolution	13 bit

The output voltage is provided on one of the output terminals (a0...a3) and an earth terminal. The outputs are designed as push-pull outputs with active sink capability. A load of 2 mA can be applied to each output. The sum of all outputs should not exceed 20 mA, not even briefly.

The outputs are protected against static discharges, but not against the presence of extraneous voltage.

Watchdog

The watchdog signal that monitors the automation station's internal process flow can be measured at terminal 01. The watchdog output is pulsed with approx. 10 Hz when the processor and program flow are working correctly.

Please note the following in relation to the design as an open collector wired to earth: control of an external actuator max. 15 V= load 10 mA.

The signal can be connected as a practical application directly to the digital or universal input of a second automation station and monitored via software.

Technical specifications of inputs and outputs

Universal input	**Measuring range**	**Resolution**	**Accuracy** of measuring span plus measurement value	
Ni/Pt1000	–50…+150 °C	< 0.05 K	±0.5%	0.5%
U (0/0.2...1 V)	0.02...1.1 V	< 0.1 mV	±0.5%	0.5%
U (0/2...10 V)	0.15...10.2 V	< 1 mV	±0.5%	0.5%
I (0/4...20 mA)	0.02...22 mA	< 0.02 mA	±1%	2%
R	200...2,500 Ω	< 0.1 Ω	±0.2%	1%
Pot (> 1 kΩ)	1…100%	< 0.5%	±1%	1%

Analogue output	**Correcting range**		**Pitch error**	
AO (0/2…10 V)	0.01...10.2 V	< 2 mV	1%	1%

Binary input (0-I)	Universal input (UI)	Digital input (DI fixed)	
Switching threshold, active	> 3 V	> 4 V	
Switching threshold, inactive	< 1.5 V	< 2.5 V	
Switching hysteresis	> 0.4 V	> 0.4 V	
Pulse counter	up to 3 Hz	up to 50 Hz	
Watchdog	**Open collector output**	15 V= up to 10 mA	Pulse frequency approx. 10 Hz

General functional description

The automation station is based fully on BACnet/IP communication. The automation station has an integrated web server for handling extensive operations, direct data point visualisation, alarm notification and forwarding and creating time profiles (scheduler).

Note:
All details of web server operation are explained in the document 'Web Operation modu525' (user manual 7010050001). Details on the automation station's BACnet functionality can be referenced from the PICS documentation.

Putting into service

The switch for switching the automation station on and off is located at the top left of the automation station ('On-Off'). It does not separate the unit from the power supply. The switch merely separates the secondary circuit of the power supply unit that supplies the base station, the I/O modules and the operating units.

LED displays

When the automation station is activated (switched on), there are four LEDs that indicate various operating conditions.
The following table explains the function of each LED.

System LED

LED name	Condition	Indicator sequence	Description
RUN/FAULT	yellow, lit continuously	————————	Automation station in start-up mode
	green, lit continuously	————————	Automation station in operation
	green flashing	••••••••••••••••••	Identification via CASE Sun
	red flashing	• • • • • •	Automation station in configuration, restart/download mode
	alternating green - red - off	•• •• •• ••	Lamp test active (display type has priority)
	red flashing	••••••••••••••••••	Internal error
I/O bus[1)] (no name)			
	green, lit continuously	————————	I/O operations OK
	green pulsating	• • • •	No user program (CASE Engine)
	red, lit continuously	————————	I/O functionality error (I/O module's electronics)
	red flashing	••••••••••••••••••	AS in config., restart/downl. mode, no IO bus communication
	red pulsating	• • • •	Incorrect module
	alternating green - red - off	•• •• •• ••	Lamp test active (display type has priority)
LNK	yellow, lit continuously red, lit continuously	————————	Automation station in start-up mode
	green, lit continuously	————————	Network connection present
	off		Network connection interrupted
ACT	yellow pulsating	• • • •	Ethernet (data transmission active)

1) The I/O bus LED is located between two housing fins at the top right

Programming and parameterisation

The complete user program (Engine Plan) and the various parameterisations (BACnet objects, images for moduWEB, etc.) are produced using CASE Suite. Up to 512 BACnet data points including input and output hardware can be used.

Every automation station must be configured for communicating in an Ethernet network. All settings such as IP address, subnet mask, gateway and instance number (DOI) are parameterised using CASE Suite. Automatic configuration via DHCP server is also possible.

The Run/Fault LED can be set to flash mode using the CASE Sun commissioning tool to identify the automation station within a network.

The modu525 automation station contains a fast operating program. It reads all the inputs, processes the parameterised modules, updates the outputs and effects the necessary communication with other automation stations or at management level (PC).

The user program can be loaded from any point in the IP network using CASE Suite. An active download is signalled by means of flashing red LEDs. Data is written to a Flash memory and remains intact even in the event of a power failure!

Inputs and outputs can be parameterised via the user program and are free for utilisation in control and activation tasks.

Initialisation

The automation station can be initialised with CASE Suite prior to executing the download.

Firmware update

The automation station is supplied together with a current version of the firmware. If a new firmware version becomes available during the time prior to installation and commissioning, it is possible to update the automation station directly using CASE Suite via the network. An active update is signalled by means of flashing red LEDs.

The firmware version in the automation station can be read out using the modu840 local override unit or via PC/CASE Suite.

It is essential to check the firmware version prior to commissioning an automation station and to execute an update where indicated.

Internal clock

A real-time clock (RTC) for the time programmes is integrated in the automation station. Date, time and time zone are set in the automation station when the user data is loaded.

It is possible to set the date, time and time zone via the integrated web server (moduWeb) or via BACnet browser.

The BACnet services 'DM-TS-B' and 'DM-UTC-B' are synchronised automatically when provided with appropriate input from a BACnet time server (e.g. novaPro Open).

The automatic change-over from summertime to wintertime (daylight saving) is activated by default in the automation station's network properties (CASE Engine) and includes all the automation stations located in the same network.

Time programmes, calendar

BACnet functionality allows for up to 64 time programmes (scheduler) and 16 calendar objects (calendar) to be created in the automation station.

Time and calendar objects can be displayed, operated and edited using the modu840 local override unit or the moduWeb web server.

Data recording

BACnet functionality allows for up to 100 Trendlog objects (data points) to be created. Recording can be defined as either periodical (time interval) or threshold-orientated (COV).

Data points can be recorded periodically (time interval = 1 minute) and independently of trend objects by means of the moduWeb web server.

Battery, data buffering

A plug-in lithium button cell battery ensures that the real-time clock for time programmes (Scheduler/Calendar) and data such as counters, adaptive control algorithms and historical data (trendlog) are maintained in the memory (SRAM).

N.B.: The automation station switches to a so called storage mode after approximately one week without power; i.e. data buffering per battery is deactivated and data may be lost as a result! The automation station does not monitor the battery voltage.

Technical data

Type (Standard)	CR2032 lithium button-cell
Nominal voltage	3 V
Capacity	210 mAh
Dimensions	20 mm × 3.2 mm

If it becomes necessary to change the battery during the operating period, this must be done by trained specialist staff only!

User data from CASE Engine and modified user data (e.g. modified via BACnet client) are stored permanently in the Flash memory and do not require battery buffering.

However, it is recommended to safeguard user data (CASE Engin e) and modified user data by means of a backup (e.g. BACnet DM-BR); this will increase safety against loss of data.

Behaviour in the event of a power failure

Power failures are differentiated as follows:

Micro-interruptions
Interruptions measuring micro-seconds (0…999 µs) are bridged without any deactivation or other consequences. The plant maintains normal operations.

Normal interruptions
The AS handles interruptions measured in seconds or minutes as controlled deactivation and controlled reactivation according to priority when the power supply is resumed. The automation station implements controlled deactivation and reactivation automatically.

The following applies for BACnet objects:

- The 'Notification Class Recipient List' remains intact and the clients continue to receive event and alarm information automatically without having to log in again.
- The COV subscriptions to other stations are re-registered automatically.
- Connections between automation stations (AS-AS) are updated (re-subscription).

When mains power is restored, the automation station will check the data consistency and launch communication automatically.

Switch-off behaviour

The 'On-Off' switch (µP-Power, Standby) merely separates the secondary circuit of the power unit that supplies the automation station and I/O modules with their operating units internally with power. When the automation station is switched off, all applications are stopped in a controlled manner and the CPU function is deactivated; the static RAM and Real Time Clock (RTC) for date and time are operated separately by the primary circuit so that the battery is not used for data buffering as long as a power supply is present.

Extension options

Additional I/O modules and communication modules can be used to extend the base station. These modules are installed directly to the right of the automation station or connected via the I/O bus plug.

The maximum number is limited to **8 modules** to ensure the sum of all connected devices does not exceed the modu525 automation station current load of 1100 mA.

Summary of modules/current consumption

A module generally consists of two components: the baseplate, in which the I/O bus system and connection terminals are integrated, and the actual I/O module electronics. The automation station detects whether an I/O module is plugged into the I/O bus; I/O modules are assigned to the automation station by means of CASE Suite.

One or two COM modules (modu721, 731) or only one COM module (modu710, 720) can be used per automation station. These must be assigned to position 1 or positions 1 and 2.

N.B.:
Modules should be added to, or removed from, the AS only when the automation station's power supply is switched off.

Current consumption

Type	Description	Max. current consumption
	I/O modules *	**direct on automation station**
EY-IO530F001	modu530: 8 UI/8 DI	40 mA
EY-IO550F001	modu550: 6 DO (relays)	100 mA
EY-IO551F001	modu551: 16 DO (OC)	20 mA
EY-IO570F001	modu570: 8 UI/4 AO	50 mA
	Local override and indication devices	
EY-LO625F001	modu625: 6 DO (Auto-0-I) override/indicating, 4 AO setpoint adjuster	40 mA
EY-LO630F001	modu630: 16 DI LED indicators	20 mA
EY-LO650F001	modu650: 6 DO (Auto-0-I) override/indicating	20 mA
EY-LO650F002	modu650: 3 DO (Auto-0-I-II) override/indicating	20 mA
EY-LO670F001	modu670: 4 AO setpoint adjuster	20 mA
	Communication modules	
EY-CM710F…	modu710: non-Sauter system integration with EIA-232	(see PDS 97.016)
EY-CM720F…	modu720: non-Sauter system integration with EIA-485	(see PDS 97.011)
EY-CM721F…	modu721: non-Sauter system integration with EIA-232 and EIA-485	(see PDS 97.012)
EY-CM731F…	modu731: non-Sauter system integration with M-Bus and EIA-485	(see PDS 97.021)
	Local override device	
EY-OP840F001	modu840: local override device	50 mA
	Accessories for override and indication devices and operating devices (for remote fitting)	
0930240511	Front frame, 4-fold	
0930240540	Adaptor for EY-LO6..	
0930240541	Adaptor for EY-OP840	

*) Details and functions relating to I/O modules can be found in the corresponding PDS.

Local override and indication devices (LOI)

The automation station can be supplemented with a local override and indication device (LOI) to enable manual control and indication of plant components. The unit can be installed and removed during ongoing operations (hot-plug capable) without impeding any functions of the automation station. The automation station detects and implements switch positions directly. The function complies with the EN ISO 16484-2:2004 standard relating to local priority override and indication devices.

By using the four-fold front frame (available as an accessory), it is also possible to use the override and indication devices at distances of up to 10 m.

N.B.:
Switch positions should be set to automatic prior to installing a unit to ensure no unintentional switching operations are triggered on the outputs. When the unit is removed all outputs are operated using the automatic values of the automation station.

In keeping with the applicable standard, the local override and indication devices allow the restricted operation of plant components without involving the automation station intended for the application.

Outputs that are in manual mode may temporarily change condition during a user program download.

Function

- The switching condition is defined by the automation station when set to automatic ('A').
- These functions (0, I, II or 0...100%) have priority over the automation station's programme when set to manual operation. The status flag 'overridden' is activated for assigned BACnet objects (AO, BO, MO) at every position of manual operation.
- Use of LED displays:
  In general, the LEDs for digital inputs indicate the condition of input occupancy. However, LEDs can also be assigned via CASE programming to display functions such as collective alarm, limit value transgression, etc. In general, a green LED can be continuously activated to display status information and a red LED to display an alarm.
- The BACnet alarm acknowledgement function enables unacknowledged alarms to be indicated by a flashing LED, and acknowledged alarms that are still active by a continuously illuminated LED.
- Analogue and digital outputs are controllable without a user application (CASE Engine).

The functionality of local override and indication devices is described below.

Overview of functions

EY-LO625F001	Double unit, can be used to operate and indicated the data points from the modu525 automation station (from hardware index C)		
	4 LEDs	LED indicators, bi-colour green/red (freely configurable for Event/Alarm/Status)	
	6 switches with LED indicators	Stufe Auto-0-I Signalisierung green	
	8 LED	LED indicators, bi-colour green/red (freely configurable for Event/Alarm/Status)	
	4 slide switches with LED indicators	Setpoint adjuster 0…100%, yellow indicates manual operation	
EY-LO630F001	Single unit for indicating I/O modu530, 531, 532, 533 or automation station modu525 data points		
	16 LEDs	LED indicators, bi-colour green/red (freely configurable for Event/Alarm)	
EY-LO650F001	Single unit for override and indicating I/O modu550 or automation station modu525 data points		
	4 LEDs	LED indicators, bi-colour green/red (freely configurable for Event/Alarm)	
	6 switches with	Level Auto-0-I indicating green	
	LED indicators	Yellow indicates manual operation	
EY-LO650F002	Single unit for override and indicating I/O modu550 or automation station modu525 data points		
	4 LEDs	LED indicators, bi-colour green/red (freely configurable for Event/Alarm)	
	3 switches with	Level Auto-0-I-II indicating green	
	LED indicators	Yellow indicates manual operation	
EY-LO670F001	Single unit for override and indicating I/O modu570, 572 or automation station modu525 data points		
	8 LEDs	LED indicators, bi-colour green/red (freely configurable for Event/Alarm)	
	4 slide switches with	Setpoint adjuster 0…100%, yellow indicates manual operation	
	LED indicators	LED indicator, red, (freely configurable for event/alarm)	

Detailed information and functions of LED control options can be referenced from PDS 92.081 EY-LO6…

Labelling concept

Local override and indication devices are labelled with function-specific symbols or numbers. This information may be supplemented by inserting a customised paper label behind the transparent cover on the front side. These labels are normally inscribed using text generated from within CASE Suite and are printed out on normal DIN A4 paper using generic printers.

modu840 local operating panel

The automation station can be operated via the modu840 accessory, which is connected to the front of the housing.

Data points are shown in clear text by means of turn-and-press, so they can also be operated or altered if required. The panel can be used only for one automation station.

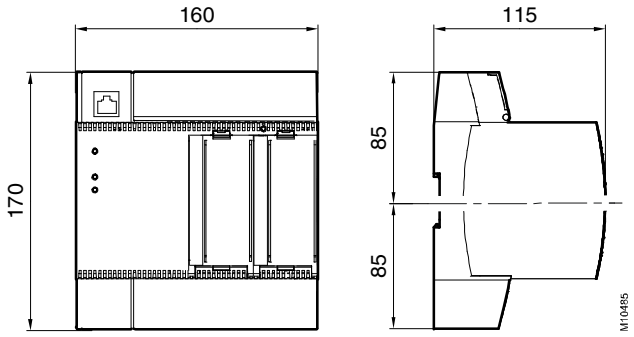
Simultaneous operation of modu840 and override and indication devices is possible only by adding the four-fold front frame (available as an accessory). This can be fitted either in the cabinet itself or externally (at a distance of up to 10 m).

Local operating panel

Channel and terminal occupancy

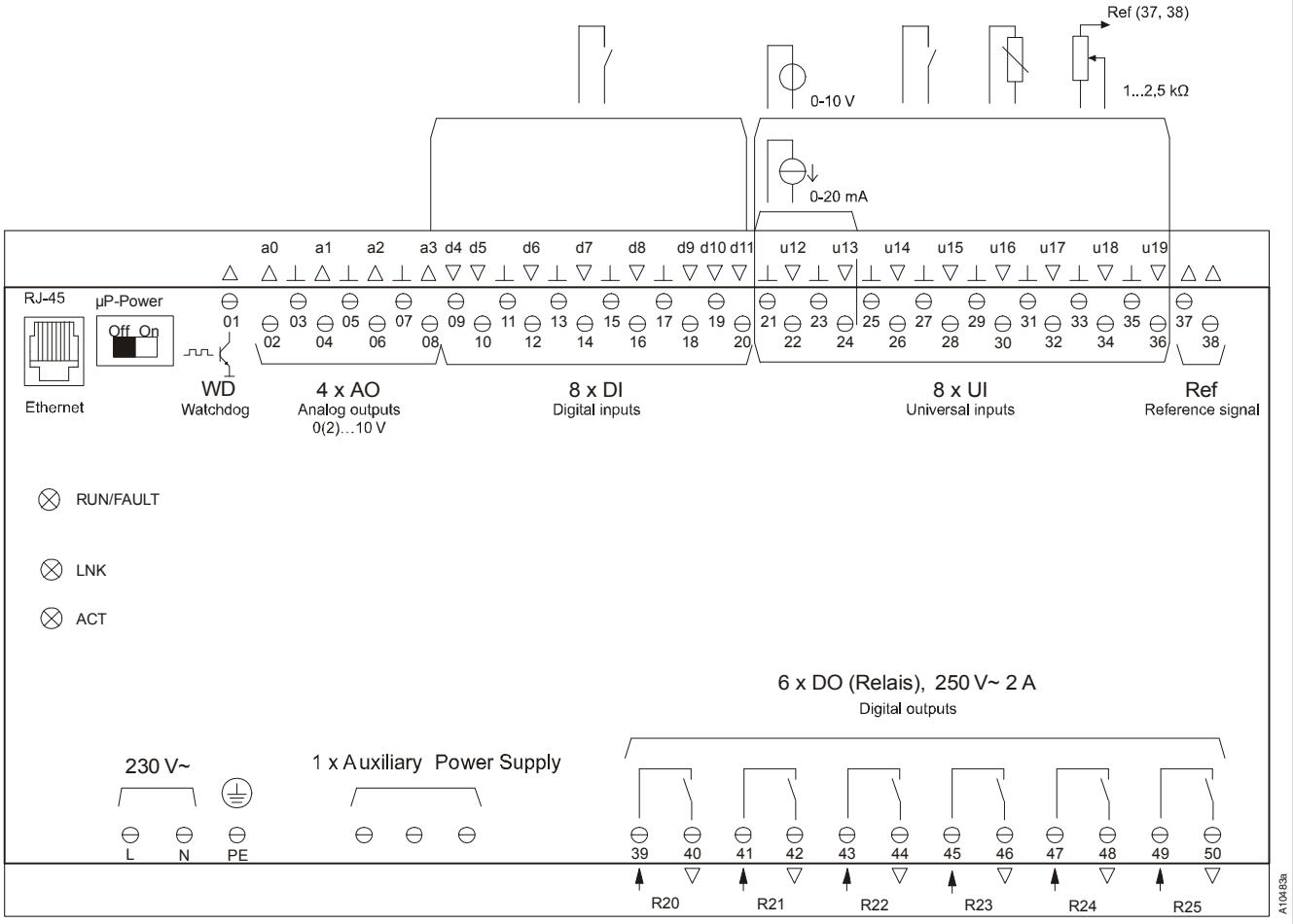
Description			**Terminals**	
modu525	**Channel**	**Wiring diagram**	**Signal**	**GND**
Watchdog output (pulsating OC)		WD	1	
Analogue output (0…10V)	0	a0	2	3
	1	a1	4	5
	2	a2	6	7
	3	a3	8	
Digital input	4	d4	9	
Pulse counter (CI)	5	d5	10	11
	6	d6	12	13
	7	d7	14	15
	8	d8	16	17
	9	d9	18	
	10	d10	19	
	11	d11	20	
Universal input	12	u12	22	21
(Ni/Pt1000/U/I/R/Pot/DI)	13	u13	24	23
	14	u14	26	25
Current signal only on channel 12, 13 or terminals 22, 24	15	u15	28	27
	16	u16	30	29
	17	u17	32	31
	18	u18	34	33
	19	u19	36	35
Reference voltage 1.23 V			37	
			38	
			In	Out
Digital output (relay 0-I)	20	R20	39	40
	21	R21	41	42
	22	R22	43	44
	23	R23	45	46
	24	R24	47	48
	25	R25	49	50

Dimension drawing



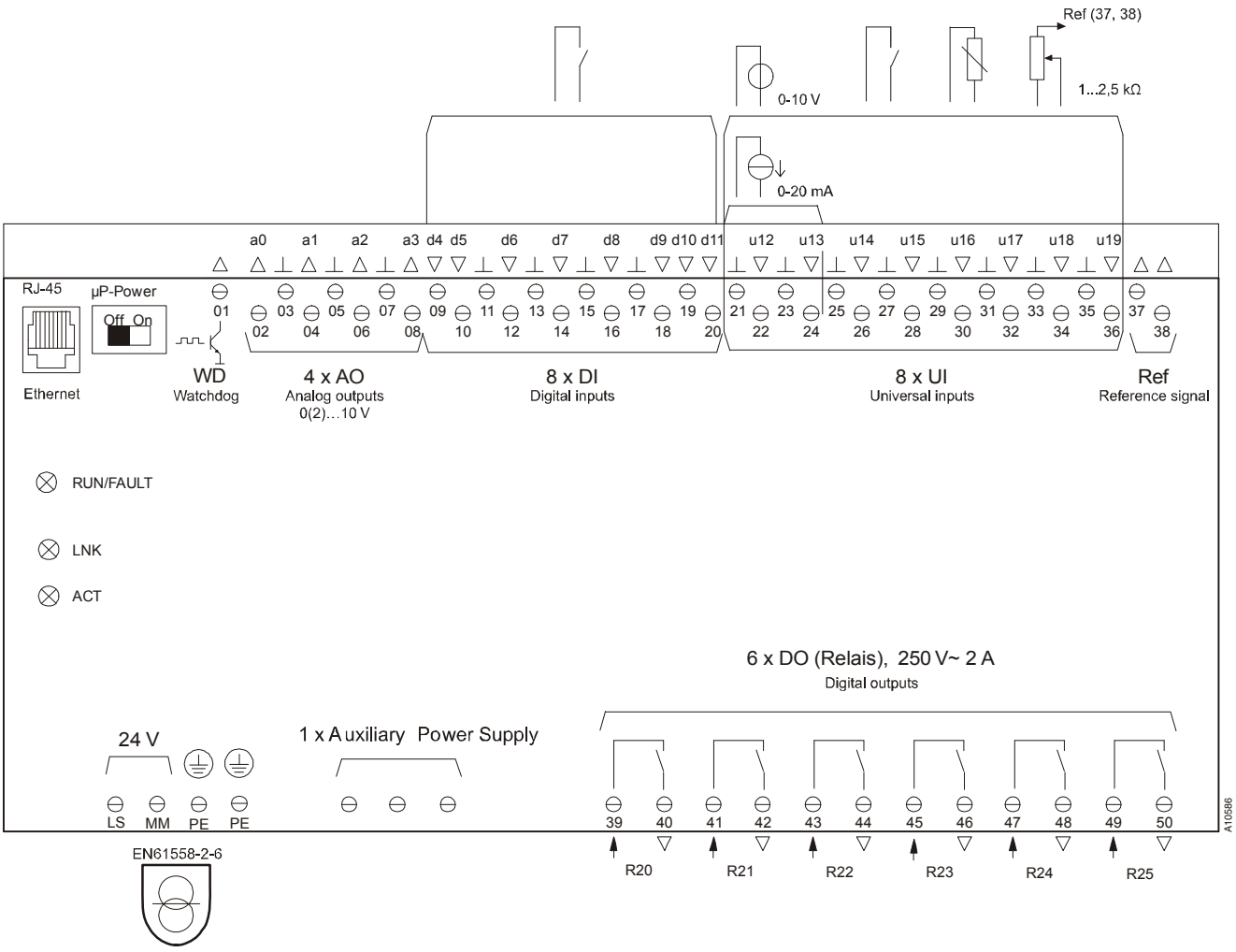
Wiring diagram

EY-AS525F001



Wiring diagram

EY-AS525F005



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