

EY-WS 500: Web server for moduWeb Vision and moduWeb500 BACnet networks



EY-WS500F005

How energy efficiency is improved

Monitor the operation of your building and recognise optimisation potential, wherever you are

Features

- Part of the SAUTER EY-modulo 5 system family
- Visualisation and operation of facilities
- Facilities operated via internet using a standard web browser
- Online notification via e-mail and text message
- Recording of historical values and alarms
- Time and calendar functions (BACnet Schedule Client)
- Visualisation either in lists, dynamic images or diagrams
- Engineering/parametrising via PC using CASE Suite
- Communication with web client via standard HTTP protocol
- Secure communication with web client via encrypted HTTPS protocol
- Communication with mail server and SMS gateway via standard SMTP
- Communication with automation devices via BACnet/IP and BACnet web services (EN ISO 16484-5)
- Integrated firewall

Technical data

Power supply		
Power supply		24 V \pm %, \pm 20%, 50...60 Hz= (EY-WS500F005, moduWeb500 hardware)
Low-voltage connector		10...35 V= \varnothing 5.5 mm external, \varnothing 2.5 mm internal
Power consumption		\leq 6.5 VA/5.5 W
Battery (buffer: RTC)		Lithium button-cell (CR2032), insertable
Serviceable life of battery		10 a
Ambient conditions		
Operating temperature		0...45 °C
Storage and transport temperature		-25...65 °C
Admissible ambient humidity		5...85% rh, no condensation
Architecture		
Watchdog	Processor	ARM Cortex A8, 600 MHz
	RAM memory	RAM, 256 MB
	Flash	128 MB (permanent memory)
	Memory expansion	SD-HC card slot \leq 32 GB
	Back-up medium	USB mass storage device, \leq 250 mA USB 2.0, type A connection
Interfaces and communication		
Ethernet network		1 \times RJ-45 connector
	10/100 BASE-T(X)	10/100 Mbit/s
	Communication protocols	BACnet/IP (DIX)
	Max. load	15 V, 10 mA
Construction		
Weight		0.8 kg
	Dimensions W x H x D	133 \times 170 \times 61 mm
	Fitting	Cabinet, DIN rail
Standards and directives		
Type of protection ¹⁾		IP20 (EN 60529)

¹⁾ Only on front with terminal cover



	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60950-1
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
	Software class	EN 60730-1 Appendix H

Overview of types

Type	Description
EY-WS500F005	moduWeb500 hardware
EY-WS505F010	moduWeb Vision software for 800 DP, 75 diagrams, 25 users
EY-WS505F011	Upgrade from EY-WS505F010 to 2500 DP, 250 diagrams, 100 users
EY-WS505F020	moduWeb Vision software for 2500 DP, 250 diagrams, 100 users
EY-WS506F100	moduWeb Vision Touch, optional, incl. various resolutions
EY-TC505F110	Touch Client software for Windows 7

Accessories

Manuals

Type	Description
7010083001	Operating manual for moduWeb Vision, German
7010083002	Operating manual for moduWeb Vision, French
7010083003	Operating manual for moduWeb Vision, English

Description of operation

The moduWeb Vision software provides web access to the automation devices in a BACnet network. The logical plant structure is recreated in the navigation tree. You can use this to gain quick access to a particular part of the plant. The plant can be operated and represented graphically in the form of dynamic images, or as a list.

Alarms and messages can be sent by e-mail or text message²⁾ and displayed in alarm lists.

moduWeb Vision enables you to configure historical recordings of values from different data points of the stations logged in. This data can be displayed individually or combined as diagrams and stored on the user device if required.

With moduWeb Vision you can easily and intuitively operate the BACnet time programmes of the connected automation stations.

Access to the individual plants and equipment systems can be controlled via the user administration.

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 regulations must also be adhered to. Changing or converting the product is not admissible.

Engineering notes

Fitting and power supply

The moduWeb500 is fitted in the cabinet using a DIN rail (EN 60715).

It can be supplied via the terminals with 24 V~ or via the circular connector with 10...35 V=. However, it must only ever be connected to one of the two voltages at any one time.

Wiring work may only be carried out when disconnected from the electricity supply.

A safety transformer as per EN 61558-2-6 must be used in the power cable.

Communication wires must be laid professionally and must comply with the provisions of standards EN 501741, -2 and -3. Communication wires must be kept at a distance from other live wires.

Local requirements regarding installation, application, access, access rights, accident prevention, safety, dismantling and disposal must be taken into account. Furthermore, installation standards EN 50178, 50310, 50110, 50274, 61140 and similar must be observed.

Special standards such as IEC/EN 61508, IEC/EN 61511, IEC/EN 611311 and -2 were not taken into account. The device may not be used if its failure constitutes a significant risk to persons or the environment.

²⁾ A UMS service is required to use this function.

The following conditions must be fulfilled:

cross-section of the wires:

- min. 0.8 mm², max. 2.5 mm² copper wire taking standards and national installation requirements into account

For further information, see the fitting instructions.

Commissioning

The switch for switching the moduWeb500 on and off is located at the top left of the device. This is not a voltage disconnecting device.

The "ON/OFF" switch (μ P power, stand-by) only switches moduWeb Vision to standby mode.

Switch-off behaviour

If the switch is set to "OFF", all applications are stopped correctly and the CPU function is switched off; the Real Time Clock (RTC) for the date and time continues to be supplied. This ensures that, when the unit is connected to the mains voltage, the battery is not used for data buffering. The moduWeb500 automatically executes a proper shut-down of the complete applications. Here it should be ensured that the station is not disconnected from the mains when the LED is still active.

Watchdog

The watchdog signal that monitors the internal process of the moduWeb500 can be taken from terminal 02. If the processor and program sequence are working correctly, the watchdog output is timed at approx. 10 Hz.

It is an open collector design with a ground connection; the following should be noted: Actuation of an external actuator, max. 15 V=, max. load of 10 mA.

As a practical application, the signal can be connected directly to a digital or universal input of an automation station and monitored using software.

Behaviour in the event of a power failure or interruption

There are different types of power failure:

- Micro-interruption
- Power failure

Micro-interruption:

Voltage interruptions that last microseconds (0...approx. 20 ms) are bridged without any shutdowns or other consequences. The system continues to run in normal mode.

Power failure:

A period of more than 20 ms without power can cause a data loss. The SD card data in particular can be affected.

The back-up battery ensures that the clock continues to operate correctly if the power supply is interrupted.

If the battery needs to be changed during the operating time, this may only be performed by trained specialist personnel.

The application data and changed user data is stored permanently in the flash memory and does not require battery buffering.

We recommend, however, that user data (CASE Engine) and the changed user data be backed up (e.g. with BACnet DM BR). This decreases the risk of data loss.

LED indicators

When the moduWeb500 is switched on (switch "ON"), 3 LEDs are used to display the different operating statuses.

The following table shows the functions of the individual LEDs.

System LED

LED name	Status	Indicator sequence	Description
STATUS	Continuous orange light	—————	moduWeb500 in startup mode
	Continuous green light	—————	moduWeb500 in operation
	Flashing green	o o o o o o o	Identification via CASE Sun "Flash"
	Flashing red	o o o o o o o	moduWeb500 being configured; restart / download active
	Rapid flashing red	oooooooooooo	Internal error

LED name	Status	Indicator sequence	Description
Ethernet LED on left	Continuous orange light	—————	Network connection present
	Off (no display)		Network connection interrupted
Ethernet LED on right	Pulsating green	◦ ◦ ◦ ◦ ◦	Ethernet (data transmission active)

Programming and parameterisation

moduWeb Vision is usually parameterised and configured by SAUTER staff or by an authorised system partner using CASE Suite.

The moduWeb500 is delivered without software. The device will not work until moduWeb Vision (EY-WS505F010 or EY-WS505F020) is installed. The software is installed as part of commissioning with CASE Sun.

The plant structure, navigation, dynamic images and diagrams are created in the engineering phase. moduWeb Vision must be configured for communication in an IP network. All settings such as IP address, subnet mask, gateway and BACnet instance number (DOI) are parameterised with CASE Sun. To help with identification in a network, the CASE Sun commissioning tool can be used to set the run/fault LED to flashing mode.

The IP settings can also be changed using the web interface.

The user program can be loaded from any point in the IP network with CASE Suite. The flashing red status LED shows that there is an active download. The data is written to a flash memory and is retained even if there is a power failure.

Initialisation

After a restart, moduWeb Vision is initialised. Here, moduWeb Vision registers the data points, alarms and notifications on the BACnet devices.

This process may take several minutes.

Correct operation of moduWeb Vision is not guaranteed until after the initialisation has been completed.

The administrator can use the web interface to prompt the device to restart.

Firmware installation and update

The moduWeb500 is delivered with a neutral version of the firmware. During commissioning, the selected firmware version and the corresponding licence must be installed. Even after it is in use, you can update the firmware or install additional software options using CASE Sun. The device uses a flashing red status LED to signal that the update is being carried out.

The firmware version installed can be retrieved using the Info button "About".

Internal clock

The moduWeb500 has a built-in Real Time Clock (RTC) for the time programmes and time stamps for historical data.

The date, time and time zone are set in the moduWeb500 when the user data is loaded.

The time and date can either be set manually using the web browser or the moduWeb500 can synchronise its internal clock with an NTP or BACnet time master (DM-TS-B and DM-UTC-B services). In addition, the device, as the BACnet time master, can synchronise the time on the connected BACnet devices to its internal time (DM-TS-A and DM-UTC-A services).

The time zone and daylight saving time are configured in the network properties (CASE Engine) of the moduWeb500.

Reset button

A button can be used to reset the device. The button is attached in such a way that it cannot be pressed inadvertently. The button has two functions:

- Press the button for less than 5 seconds:
moduWeb Vision performs a warm start. The moduWeb Vision application is shut down and the system is restarted without the power supply being interrupted.
- Press the button for longer than 5 seconds:
moduWeb Vision performs a cold start. The power supply to the main CPU is switched off and on again.

moduWeb Vision software

Technical data

I/O mix	EY-WS505F010	EY-WS505F011 EY-WS505F020
BACnet objects	800	2 500
Total number of alarm entries ³⁾ (current and historical)	1 000	1 000
Number of periodic queries	60 values/min	60 values/min
Historical data points (via spontaneous message)	400	400
Historical data points (polled)	50	50
Memory for project data	45 MB	45 MB
Data points per combined chart	1-6	1-6
Combined charts	100	100
Images	75	250
Data points per image (tested limits)	60	60
User accounts	25	100
Simultaneous user sessions	25	25
Number of touchscreen profiles (with EY-WS506F100)	10	10
Number of automation stations	50	50 / 150 ⁴⁾
Protocols		
Automation level	BACnet/IP Protocol Revision 10	BACnet/IP Protocol Revision 10
Web access	HTTP, HTTPS	HTTP, HTTPS
E-mail and text messaging	SMTP	SMTP
Time synchronisation	NTP, BACnet	NTP, BACnet
System requirements, client		
Internet Explorer	V11 or higher	V11 or higher
Adobe Flash plug-in ⁵⁾	V11	V11
Recommended screen resolution (desktop)	1280 × 1024	1280 × 1024
Minimum screen resolution for Touch option EY-WS506F100	800 × 600	800 × 600

Time programmes, calendar

The BACnet schedule client on the moduWeb500 offers the option of parametrising the local BACnet schedule and calendar objects on the connected automation station quickly and intuitively.

The time programmes and special day calendars are presented in a clear graphic.

The time programmes are processed locally in the automation station, even if there is a fault in the network communication to the moduWeb500.

Data recording

The moduWeb500 records historical data on the optional SD card and displays it in diagrams or in the form of tables. Up to four values can be displayed together on one diagram.

The historical data can be exported as a list by means of an HTTP download.

Alerting and notification

Alarms are displayed directly at the data point (plant schematic or data point list) and in alarm lists.

Alarms can be reported via e-mail or SMS. SMS can be sent via e-mail or SMPP. The e-mail-to-SMS gateway function is offered by some Internet providers or can be implemented with suitable hardware. SMPP is also offered by Internet providers.

All alarms are displayed in two separate lists in moduWeb Vision:

- "Current alarms" and
- "Historical alarms"

In total, the two alarm lists contain the last 1 000⁶⁾ alarm, error and system messages.

³⁾ 500 alarm entries for firmware versions before 1.9.5

⁴⁾ From firmware version 1.8 upwards, up to 150 automation stations are supported with the F020 licence

⁵⁾ From firmware version 1.7 upwards, the Adobe Flash plug-in is no longer required.

⁶⁾ 500 alarm entries in total for firmware versions before 1.9.5

In the “Current alarms” list, a distinction is made between two alarm types:

- Active alarms that have not yet been acknowledged.
- Alarms that are no longer active (cause resolved) but have not yet been acknowledged.

The “Historical alarms” list contains the acknowledged, inactive alarms.

The alarm lists are saved during shut-down. After a restart, all alarms are marked as historical. The registered devices are queried for current, active alarms and the alarm list is updated.

When the maximum number of entries is reached, first the historical alarms are deleted, then the current alarms.

Data backup

The visualisation project can be backed up and restored on a local computer or on USB storage media via the USB interface of the EY-WS500F005.

The historical data can also be saved on USB storage media. The USB port delivers up to 250 mA. External hard disks therefore require their own power supply.

Audit trail

All user interventions are logged with names and time stamps in the audit trail. The list can be exported as a file at any time.

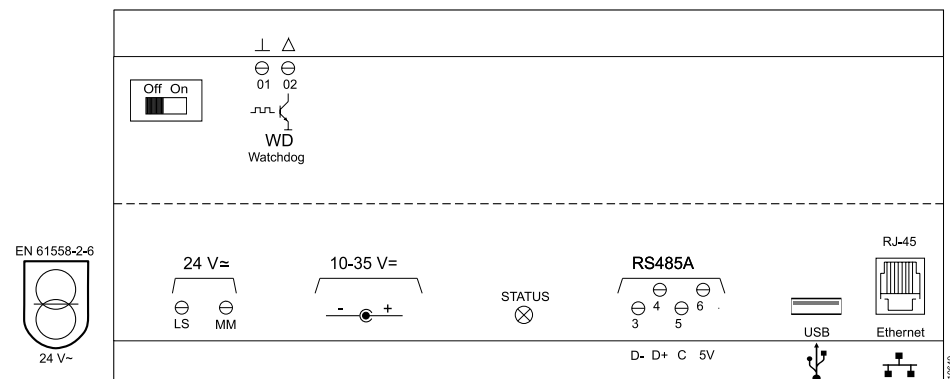
Disposal

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.

Connection diagram

EY-WS500F005



Dimension drawing

All dimensions in millimetres.

