

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
- The facilities are operated via the 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/parameterising via PC using CASE Suite
- Communication to the 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~, ±20%, 50...60 Hz= (EY-WS500F005, moduWeb500 hardware)
Low-voltage connector		10...35 V= Ø 5.5 mm external, Ø 2.5 mm internal
Power consumption		≤ 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	RAM, 256 MB
	Flash	128 MB (permanent memory)
	Memory expansion	SD-HC card slot ≤ 32 GB
	Back-up medium	USB mass storage device, ≤ 250 mA USB 2.0, type A connection
Interfaces and communication		
Ethernet network		1 × RJ-45 socket
	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 × 170 × 61 mm
	Fitting	panel, top-hat rail
Standards and directives		
Type of protection ¹⁾		IP 20 (EN 60529)

¹⁾ Only on front with terminal cover



	Protection class	III (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60950-1
CE conformity as per	EMC directive 2004/108/EC	EN 55022, EN 55024
	Software class A	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

moduWeb Vision 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 SMS and displayed in alarm lists.

moduWeb Vision collects the historical data of the connected devices, presents them in diagrams and tables and sends them by e-mail if desired.

Using moduWeb500, you can operate the BACnet time programmes for the connected automation stations (AS) easily and intuitively.

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

Engineering notes

Fitting and power supply

The moduWeb500 must be assembled using a top-hat rail (EN 60715) in the cabinet.

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 must only be carried out when disconnected from the electricity supply.

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

Communication wires must be laid professionally and must obey the provisions of the standards EN 50174-1, -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, the installation standards EN 50178, 50310, 50110, 50274, 61140 and similar must be observed.

The requirements of standards such as IEC/EN 61508, IEC/EN 61511, IEC/EN 61131-1 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.

The following conditions must be fulfilled:

cross-section of the wire:

- 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 on the top left of the moduWeb500. This is not a voltage isolating facility.

The "ON/OFF" switch (μ P power, stand-by) is merely used to set moduWeb Vision to the stand-by 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, ensuring that the data-buffering battery is not affected by the mains voltage.

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 = load of 10 mA.

As a practical application, the signal can be connected directly to a digital or universal input of an AS 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:

An interruption of over 20 ms can cause the moduWeb to shut down correctly and to prompt switching back on correctly according to priority when the grid voltage returns. The moduWeb500 performs this correct shutdown and start-up automatically.

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 are stored permanently in the flash memory and do 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 individual LEDs.

System LED

LED name	Status	Indicator sequence	Description
STATUS	Constant 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 in configuration, restart / download mode
	Rapid flashing red	oooooooooooo	Internal error
Left Ethernet LED	Constant orange light	—————	Network connection present
	Off (no display)		Network connection interrupted
Right Ethernet LED	Pulsating green	o o o o o	Ethernet (data transmission active)

Programming and parameterisation

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

moduWeb500 is delivered without software. The device will not work until the moduWeb Vision soft-

ware (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 project 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 notification on the BACnet devices.

This process may take several minutes.

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

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

Firmware installation/update

moduWeb500 is delivered with a neutral version of the firmware. When it is set up, 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. moduWeb500 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 ("Via").

Internal clock

moduWeb500 has a Real Time Clock (RTC) installed 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 moduWeb500, 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 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.

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.

moduWeb Vision software

Technical data

	EY-WS505F010	EY-WS505F011 EY-WS505F020
I/O mix		
BACnet objects	800	2500
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
Registered users	25	25
Number of AS	50	50
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	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 moduWeb500 offers the option of parameterising the local BACnet schedule and calendar objects on the connected AS quickly and intuitively.

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

The time programmes are processed locally in the AS, even in the event of interference in the network communication to moduWeb500.

Data recording

moduWeb500 records historical data on the optional SD card and displays this in diagrams or in tabular form. 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.

After acknowledgement, alarms that are no longer active are stored in the historical alarm list.

All changes made by a user are logged in the audit trail with the name and time stamp.

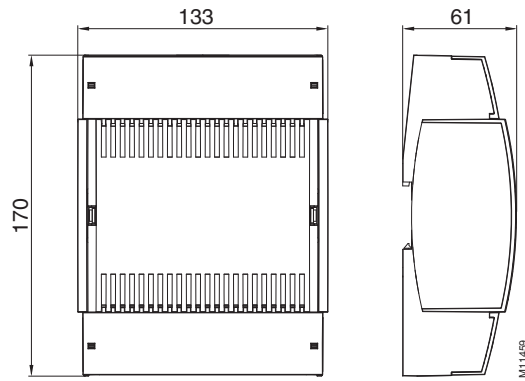
Notification

Alarms are displayed directly at the data point and in alarm lists and can be registered by e-mail or text message. Text messages are sent via the Internet using a mail-to-SMS gateway (standard SMTP protocol). No modem, telephone connection or GSM coverage is required.

Data backup

The historical data can be saved on a standard USB memory stick. The USB port provides up to 250 mA, which is why external hard disks require their own supply.

Dimension drawing



Connection diagram

EY-WS500F005

