

moduWeb500: Web server for moduWeb Vision BACnet networks

Improving your energy efficiency

Monitor the operation of your building and find out where improvements can be made – no matter where you are.

Areas of application

Visualising and operating building management systems.

Features

- Part of the SAUTER EY-modulo 5 system family
- Web-based plant operation using standard web browser
- Online alarm notification via email and SMS
- Recording of log values and alarms
- Time and calendar functions (BACnet Schedule client)
- Visualisation either in lists, dynamic images or diagrams
- Planning and parametrisation via PC using CASE Suite

Technical description

- Communication with web client using standard HTTP protocol
- Communication with mail server and SMS gateway using standard SMTP
- Communication with automation stations using BACnet/IP and BACnet web services (EN ISO 16484-5)
- Integrated firewall



Products

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

moduWeb500 hardware

Technical data

Electrical supply

Power supply F005, screw terminals	24 V AC, $\pm 20\%$, 50...60 Hz =
Low-voltage connector	10...35 V DC, \varnothing 5.5 mm outside, 2.5 mm inside
Power consumption	up to 6.5 VA / 5.5 W
Battery (RTC buffer)	CR2032, plug-in
Battery life	10 years

Interfaces, communication

Ethernet network	1x RJ-45 socket
10/100 BASE-T(X)	10/100 Mbit/s
Communication protocol	BACnet/IP (DIX)

Watchdog

Architecture	
Processor	ARM Cortex A8, 600 MHz
RAM	256 MB
Flash (non-volatile memory)	128 MB
Additional memory	SD-HC card slot up to 32 GB
Backup medium	USB mass storage device up to 250 mA

1) On front only with terminal cover.

Permitted ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...65 °C
Humidity	5...85% rh (see fitting instructions), non-condensing

Installation

Cabinet installation	on top-hat rail
Dimensions W x H x D (mm)	133 x 170 x 61
Weight	0.8 kg

Standards, directives

Protection class	IP 20 (EN 60529) ¹⁾
Protection class	III (EN 60730-1)
Environmental class	3K3 (IEC 60721)
CE conformity as per	
EMC Directive 2004/108/EC	EN 55022, EN 55024
Software class A	EN 60730-1 Annex H

Additional information

Fitting instructions	P100006978
Material and environmental declaration	MD96.005

Engineering notes

Installation and power supply

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

It can be connected 24 V~ using the terminals or to 10...35 V= using the round plug. However, only one of these power supplies may be connected at the same time.

Wiring may only be carried out with the device isolated from the power supply.

A safety transformer in accordance with EN 61558-2-6 must be fitted in the supply line.

Communication wiring must be undertaken correctly and must meet the requirements of standards EN 50174-1, -2 and -3. Communication wires must be kept at a distance from other live wires.

Local regulations on installation, use, access, access authorisation, accident prevention, safety, dismantling and disposal must be observed. Compliance with installation standards EN 50178, 50310, 50110, 50274, 61140 and similar is also required.

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. The device may only be used if it does not pose a hazard to people or the environment in the event of it failing.

The following conditions must be met:

Wire cross-section: min. 0.8 mm², max. 2.5 mm² Cu conductor
in accordance with the standards and
national installation regulations

See the fitting instructions for further information.

General mode of operation

moduWeb Vision allows web access to the automation devices in a BACnet network.

The logical plant structure is displayed in the navigation tree. You can use this to quickly locate any part of the plant. The plant can be represented graphically in dynamic images or in the form of a list.

Alarms and messages can be sent by email or SMS and shown in alarm lists.

moduWeb Vision collects log data from the connected devices, displays it in tables and diagrams, and sends them via email on request.

The moduWeb500 makes it easy and intuitive to use the BACnet time programs of the connected automation stations.

Access to the individual plants and equipment can be controlled with the user management functions.

Start-up

The on/off switch is located at the top left of the moduWeb500. It does not separate the unit from the power supply.

This on/off switch (μ P power, standby) simply puts the moduWeb Vision into standby mode.

Switching off

If the switch is turned off, all applications are stopped in a controlled manner and the function of the CPU is switched off; the real time clock (RTC) for the date and time is still powered, which means that the battery is not used for buffering data as long as mains voltage is present.

Watchdog

The watchdog signal that monitors the internal process flow of the moduWeb500 can be measured on terminal 02. The watchdog pulses at approx. 10 Hz when the processor and program sequence are working correctly.

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

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

Power failure or interruption

There are two types of interruption to the power supply:

- Micro-interruption
- Power failure

Micro-interruption

Interruptions to the power supply that only last for a few milliseconds (0...approx. 20 ms) do not have any consequences, such as switching off components. The system continues operating normally.

Power failure

An interruption of longer than 20 ms may cause the moduWeb to execute a controlled shut-down, followed by a controlled, prioritised start-up once the power is restored. The moduWeb500 executes this controlled shut-down and start-up procedure automatically.

The back-up battery ensures that the clock continues running correctly when the power is interrupted.

If the battery has to be changed during operation, this must be done by trained specialist staff.

The application data and any altered user data is stored in the Flash memory and requires no battery buffering.

However, it is advisable to safeguard user data (CASE Engine) and modified user data by means of a backup (e.g. BACnet DMBR); this helps to prevent loss of data.

LED indicators

When the moduWeb500 is put into operation (using the On switch) three LEDs signal the various operating conditions. The following table explains the function of each LED.

System LED

LED name	Condition	Indicator sequence	Description
STATUS	Continuous orange light	—————	moduWeb500 in start-up mode
	Continuous green light	—————	moduWeb500 in operation
	Flashing green	• • • • •	Identification via Case Sun “flash”
	Flashing red	• • • • •	moduWeb500 in configuration, restart / download mode
	Rapid flashing red	••••••••••	Internal error
Left Ethernet LED	Continuous orange light	—————	Network connection present
	OFF (no indication)		Network connection interrupted
Right Ethernet LED	Pulsating green	• • • •	Ethernet (data transmission active)

Programming and parametrisation

moduWeb Vision is usually parametrised and configured by SAUTER or authorised system partners using CASE Suite. The device will not work until the moduWeb Vision software (EY-WS505F010 or EY-WS505F020) is installed. The software is installed during initial installation with CASE Sun.

During the planning phase, the plant structure, the navigation, the dynamic images and the diagrams are created.

moduWeb Vision must be configured for communication in an IP network. All settings such as the IP address, subnet mask, gateway and BACnet instance number (DOI) are parametrised using CASE Sun. To help with the identification in a network, the CASE Sun start-up tool can be used to set the run/fault LED to flash 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 using CASE Suite. The status LED flashes red to indicate a download in progress. The data is stored in a flash memory and remains intact even in the event of a power failure.

Initialisation

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

This procedure can take several minutes.

moduWeb Vision cannot be correctly operated until the initialisation is completed.

The administrator can restart the device using the web interface.

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.

The moduWeb500 is supplied with a current version of the firmware. If a newer firmware version becomes available by the time it is installed and commissioned, it is possible to update the moduWeb500 directly via the network using CASE Sun. The status LED on the moduWeb500 flashes red to indicate that the update is in progress.

You can use the Info button (“About”) to check which firmware version is installed.

Internal clock

The moduWeb500 has a built-in real time clock (RTC) for the time programs and the time stamps of the log data.

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

The time and date can 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).

As a BACnet time master, the moduWeb500 can also synchronise the clocks of the connected BACnet devices to its internal time (DM-TS-A and DM-UTC-A services).

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

moduWeb Vision software

Technical data

	EY-WS505F010	EY-WS505F020 EY-WS505F011		EY-WS505F010	EY-WS505F020 EY-WS505F011
I/O mix			Protocols		
BACnet objects	800	2500	Automation level	BACnet/IP protocol version 10	BACnet/IP protocol version 10
Number of regular queries	60 values per minute	60 values per minute	Web access	HTTP, HTTPS	HTTP, HTTPS
Logged data points (per spontaneous message)	400	400	Email and SMS	SMTP	SMTP
Logged data points Polled	50	50	Time synchronisation	NTP, BACnet	NTP, BACnet
Storage for project data	45 MB	45 MB			
Data points per combined chart	1-6	1-6	Client system requirements		
Combined charts	100	100	Internet Explorer	V9 or higher	V9 or higher
Pictures	75	250	Adobe Flash plug-in	V11	V11
Data points per picture (tested limit)	60	60	Recommended screen resolution	1280 × 1024	1280 × 1024
User accounts	25	100			
Registered users	25	25			
Number of automation stations	50	50			

Time programs, calendar

The BACnet Schedule client of the moduWeb500 enables you to quickly and intuitively parametrise the local BACnet schedule and calendar objects of the connected automation stations.

The time programs and special day calendars are shown in a clear graphical display.

The time programs are processed locally in the automation stations, even when network communication with the moduWeb500 is disrupted.

Data recording

The moduWeb500 records log data on the option SD card and displays it in the form of diagrams or tables. Up to four values can be shown simultaneously in a diagram.

The log data can be exported in a list via HTTP download.

Once acknowledged, alarms that are no longer active are stored in the logged alarm list.

All actions by users are recorded in the audit trail with a name and time stamp.

Alarm notification

Alarms are shown directly on the data point and in alarm lists, and can be reported via email or SMS.

SMS text messages are sent on the internet using a mail-to-SMS gateway (standard SMTP protocol). No modem, telephone connection or GSM coverage are required.

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The notification profiles allow alarms to be reported to the correct groups of people, according to the alarm priority and plant section. SMS text messages are sent on the internet using a mail-to-SMS gateway (standard SMTP protocol). No modem, telephone connection or GSM coverage are required.

Backup

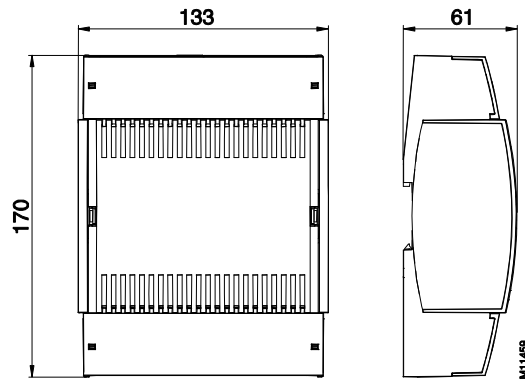
The log data can be saved on a standard USB memory device. The USB port only supplies up to 250 mA, which means that external hard drives need their own power supply.

Reset button

The device can be reset using a button. This button is mounted in a position where it cannot be inadvertently pressed. The button has two functions:

1. The button is pressed for less than 5 seconds:
The moduWeb Vision executes a warm start. The moduWeb Vision application is shut down and the system is restarted without interrupting the power supply.
2. The button is pressed for more than 5 seconds:
The moduWeb Vision executes a cold start. The power supply to the main CPU is switched off and then on again.

Dimensional drawing



Wiring diagram

EY-WS500F005

