

EY-AM 300: novaNet BACnet application master, moduNet300



EY-AM300F001

How energy efficiency is improved

Open communication for interoperable operation of the entire optimised plant.

Features

- Part of the SAUTER EY-modulo 2 system family
- BACnet application master for novaNet
- To integrate novaNet stations (EY3600, EY-modulo 2) in BACnet/IP systems (EY-modulo 5)
- Automatic generation of BACnet I/O objects from defined stations based on novaNet
- Special features such as loop objects and intrinsic reporting for I/O objects
- Objects that can be generated dynamically, such as time programmes and calendars for optimised, time-controlled plant operation
- Trend Log objects that can be generated dynamically to analyse the plant
- Event Enrollment objects that can be generated dynamically for individual notification
- BACnet/IP network integration with BBMD and/or FD functionality
- Communication: BACnet/IP (EN ISO 16484-5)
- Communication with two-wire novaNet system bus as novaNet PC
- Six LEDs for status, link, activity, speed, novaNet send, power

Technical data

Power supply

Power consumption	10 VA
Power loss	5 W

Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...70 °C
Humidity	10...85% rh, no condensation

Operation

Number of dynamic objects	Number of BACnet objects	≤ 1000 (Total)
	Time programmes	≤ 100 (Schedule)
	Calendar	≤ 40 (Calendar)
	Historical data	≤ 50 (Trend Log)
	Data files log	≤ 10000 (Log Buffer)
	Notification objects	≤ 16 (Notification Class)
	Event reporting objects	≤ 100 (Event Enrollment)
	Number of BACnet client links	≤ 100 (Peer-to-Peer Links)
	Number of BBMDs in BDT	≤ 16
	Number of FDs in FDT	≤ 16

Interfaces and communication

COM interface	2 × DB-9 plugs (male, DTE)
COM 1	RS-232 parameterising, configuration
COM 2	RS-232
novaNet interface	RJ-11 socket (6/6), 2 × a/b terminals
BACnet interface	RJ-45 Ethernet socket
10/100 Base Tx	Auto-sensing
Communication protocols	BACnet/IP, novaNet

Construction

Dimensions W x H x D	244 × 120 × 73 mm
----------------------	-------------------

Standards and directives

Type of protection	IP 00 (EN 60529)
Protection class	I
Environment class	3K3 (IEC 60721)
Over-voltage categories	II
Software	A (EN 60730)



CE conformity as per	EMC directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2
	Low-voltage directive 2006/95/EC	EN 60950-1

Overview of types

Type	Power supply	Weight
EY-AM300F001	24 V~, ±20%, 50/60 Hz, 24 V= (18...30 V=)	0.6 kg
EY-AM300F002	230 V~, ±10%, 50/60 Hz	1 kg

Accessories

Manuals

Type	Description
7001007001	Operating manual, German
7001007002	Operating manual, French
7001007003	Operating manual, English

Connecting cables

Type	Description
0367842002	Ethernet RJ-45 to RJ-45: 1.5 m
0367842003	Ethernet RJ-45 to RJ-45: 2.9 m
0367842004	Ethernet RJ-45 to RJ-45: 6.0 m
0367862001	novaNet RJ-11 to RJ-11: 1.5 m
0367862002	novaNet RJ-11 to RJ-11: 2.9 m
0367862003	novaNet RJ-11 to RJ-11: 6.0 m

General information

Type	Description
0900240001	Terminal cover (240 mm), pack of 2

Additional information

Fitting instructions	P100002334
Declaration on materials and the environment	MD96.010
Product documentation	HB7001007
	PICS7010011

Description of operation

The moduNet300 novaNet BACnet application master is used for the integration and migration of EY 3600 and EY-modulo 2 plants into BACnet/IP systems and into the EY-modulo 5 system family on the automation level. Expansion of BACnet functionality such as persistent Trend Log, external scheduling, BBMD and FD.

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

The application master is licensed with BACstacTM and is labelled with a licence sticker. The second licence sticker supplied can be stored in the project folder or in the subsidiary/NSO for archiving and licence backup purposes.

The moduNet300 device is intended for fitting on a top-hat rail (EN 60715) in a cabinet of a plant. The device can be used for TN-S network systems, and also in TT or IT network systems when the local requirements are observed. Here the ground connection must be permanent, low-resistance and have a low leakage current. Ethernet, novaNet and Com are SELV/PELV electrical circuits and must not be connected to ELV or TNV networks.

Connection may only be performed when the system is disconnected from the electrical supply. When device type EY-AM300F001 is connected to a 24 V power supply, an external, primary fuse with a strength of 2 A (time-lag type) must also be connected upstream. The ground terminals are connected internally to the earth connection (PELV electrical circuits). When the power supply is being connected, the protective earth absolutely must be connected with the terminal screw provided (protection class I).

The communication wiring must be carried out correctly and in accordance with standards EN 50174-1, -2 and -3. Communication wires must be kept separate from other live wires. Special standards such as IEC/EN 61508, IEC/EN 61511, IEC/EN 61131-1 and -2 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.

At the top left of the application master there is a switch (μ P-Power, "OFF/ON"). This is not a mains isolating facility - the switch only isolates the secondary circuit of the switch-mode power supply. During installation, there must also be an isolating facility (e.g. a mains switch).

The connection to the novaNet system bus and the automation stations (AS) is performed via the twisted 2-wire power cables of a novaNet network. The Ethernet connection is via an RJ-45 Ethernet socket. The communication is via the BACnet/IP data communication protocol.

The configuration of the IP address and other parameters are performed using one of the software tools of the SAUTER CASE Suite, the "BACnet Server Configurator". For more information, see manual 7001007.

The moduNet300 novaNet BACnet application master integrates the "BACnet Server/Client" functionality into the SAUTER AS (nova, modu) and room automation stations (ecos) of the SAUTER EY-modulo 2 series and the EY3600 system. With the moduNet300, the novaNet network becomes a BACnet/IP system. The novaNet AS addresses of the stations and controllers may be between 1 and 4194. However, no more than 100 novaNet stations per moduNet300 may be integrated. Every moduNet300 in the novaNet has a novaNet PC address.

The addresses used in the AS (MFA: machine fine addresses) are converted to "BACnet objects" for an engineered house address (data points), during which the management and updating of the corresponding BACnet object list is performed automatically. This does not involve any additional generation work for creating BACnet I/O objects for the integration of the BACnet functionality on the novaNet automation level. For these BACnet objects, an EDE file (Engineering Data Exchange) is created automatically.

Using the scheduler that is also implemented (daily and weekly calendar) and the related BACnet objects "Schedule and Calendar", it is possible to process local BACnet time programmes and thus also control process quantities for the connected automation stations time-dependently.

Historical data can also be managed with dynamically created Trend Log objects for BACnet systems on the application master. This data is permanently stored on the device.

For the alarms and event notifications, a notification class and event enrolment objects are supported. The processing capacity for "BACnet objects" per moduNet300 application master is 1000 objects in total.

Up to 100 objects can be parameterised as a BACnet client connection (peer-to-peer link).

The BACnet objects (data points) can be transferred by BACnet clients by means of either cyclical polling or the COV (Change Of Value subscription) mechanism of the BACnet application master.

Additional BACnet specifications are defined according to a separate BACnet PICS (Protocol Implementation Conformance Statement). See document "SAUTER BACnet PICS" 7010011 003.

LED indicators for moduNet300 (Ethernet/application)

Status	OFF	Application could not be correctly initialised
	Red	BACnet device offline; no novaNet connection; memory capacity utilisation in limit range
	Red	Flashing ¼ second pulse: BACnet communication error
	Red (SOS)	Flashing 3 short, 3 long: Defective device (factory repair/remhost)
	Green	Flashing: novaNet communication
Speed	Green	Data transmission speed is detected automatically: LED dark: 10 Mbit/s LED bright: 100 Mbit/s
Link	Green	Physical connection exists (link)
Act	Green	Transmission of BACnet protocol (activity)
Send	Green	Sending of a novaNet telegram (novaNet Send – Tx)
Power	Green	Device ON; power supply OK

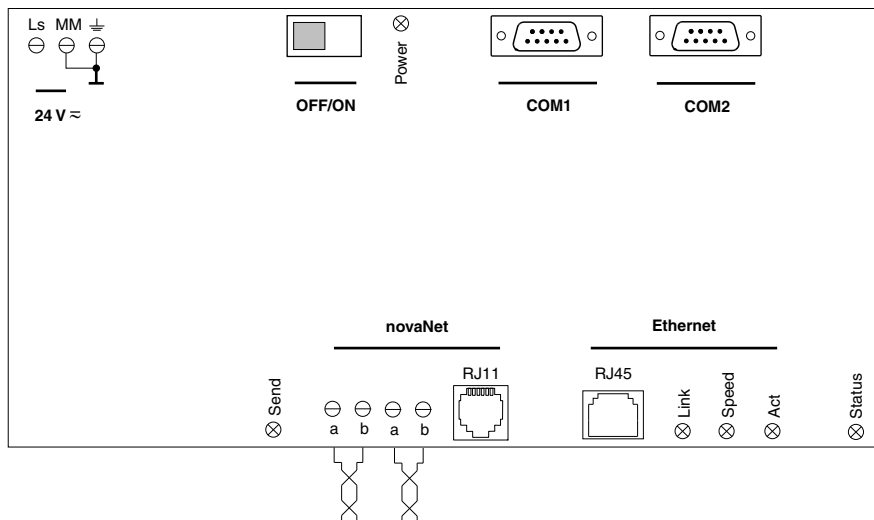
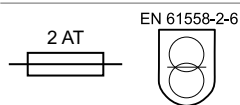
Disposal

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

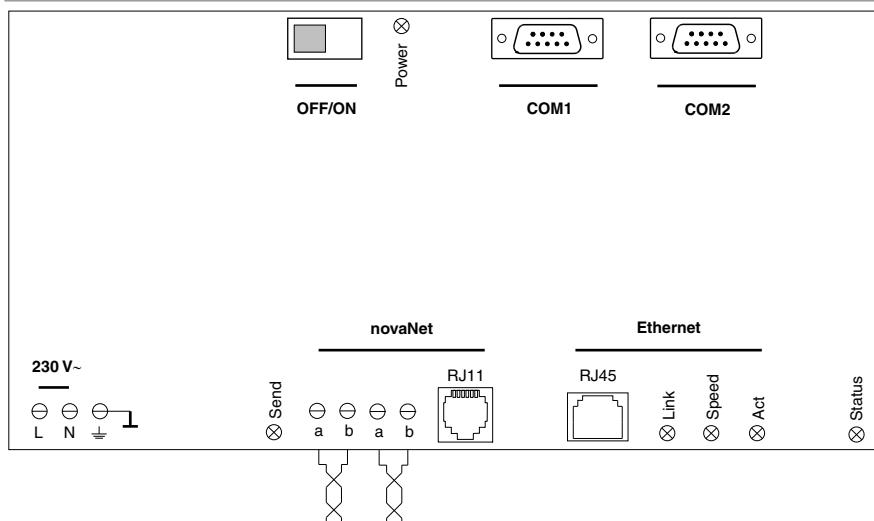
More information on materials can be found in the Declaration on materials and the environment for this product.

Connection diagram

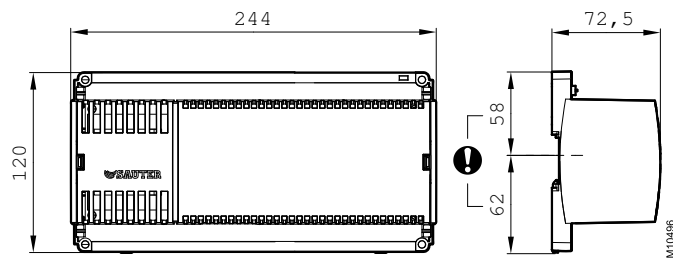
EY-AM300F001

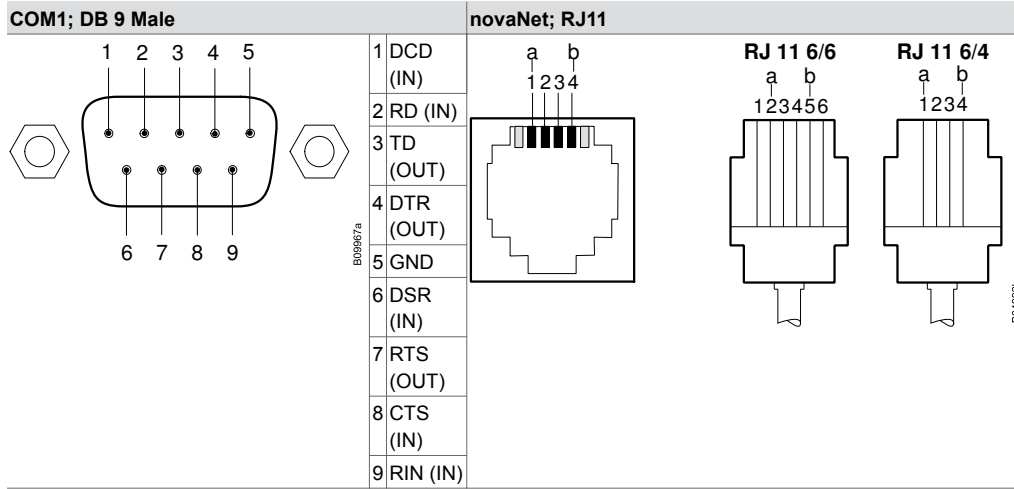


EY-AM300F002



Dimension drawing





Fr. Sauter AG
 Im Surinam 55
 CH-4016 Basel
 Tel. +41 61 - 695 55 55
 www.sauter-controls.com