EYE 200: DDC single-room controller, ecos200

EYE200F001

How energy efficiency is improved

Individual unitary control, fan coil units, chilled-ceiling control etc.

Features

- Part of the SAUTER EY-modulo 2 system family
- Individual unitary control, fan coil units, chilled-ceiling control etc.
- Individual adjustment of the room climate via room operating units of the EY-RU 2** series
- Optimisation of energy consumption using presence function, monitoring of window contacts, demand-controlled switching of fan speeds and time-dependent setpoint specification
- Time and calendar function
- Recording in historical data base (HDB)
- Integration into the building management system via novaNet data interface
- Programming/parameterisation via PC using CASE Suite software (based on IEC 61131-3)
- novaNet system bus (2-wire)

Technical data

Power supply		
	Power supply	230 V~, ±10%, 50/60 Hz
	Power consumption	≤ 14 VA, incl. 6 VA external
	Dissipated power	≤ 14 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	−25...45 °C
	Humidity	≤ 85% rh, no condensation
Inputs/outputs		
Inputs	Operating unit	EY-RU 2**
	Temperature sensor	1, Ni1000
	Digital inputs	2, 0-I
Outputs	Triac switching outputs	2, 0-I-II (24 V~, 1 A)
	Relay switching outputs	3 normally-open contacts 250 V~, 2 A, 1 normally-open contact 250 V~, 10 A (only with type EYE200F002)
	Analogue	2, 0...10 V (load ≥ 1 kΩ)
Construction		
	Dimensions W x H x D	178 × 103 × 53 mm
	Weight	0.7 kg
Standards and directives		
	Type of protection	IP10 (EN 60529)
	Protection class	I (EN 60730-1)
	Energy class[1)]	I to VIII = up to 5 % as per EU 811/2013, 2010/30/EU, 2009/125/EC
	Environment class	3K3 (IEC 60721)
	Software class	EN 60730-1 Appendix H
CE conformity according to	EMC Directive 2014/30/EU[2)]	EN 61000-6-1, EN 61000-6-2, EN 610000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730

1) *When the automation station is being used as a temperature controller, most temperature controller classes can be fulfilled according to EU Directive 2010/30/EU, Regulation 811/2013. For information on the exact temperature class, please refer to the system integrator's user program.*

2) *EN 61000-6-2: In order to meet the European Standard, the power cables for the digital inputs (DI), analogue inputs and outputs (AI/AO) and the counter inputs (CI) must not exceed 30 metres in length*

Overview of types	
Type	Description
EYE200F001	3 relays
EYE200F002	4 relays

Description of operation

The ecos200 DDC unitary controller enables energy-optimised room control and therefore ensures minimum energy consumption.

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

The station is powered with 230 V~.
The unit must be protected from contact.
The maximum power of the L_s is 6 VA.
The ecos200 unitary controller can be mounted using a top-hat rail (EN 60715).
The ground terminals are connected to the earth connector (PE). (24 V~ PELV)
The plant devices are connected using screw terminals.
The following conditions must be met:

Wire cross-section	Min. 0.8 mm² (AWG 18), max. 2.5 mm² (AWG 13) taking standards into account
novaNet	With twisted power cable, max. expansion 200 nF / 300 Ω Load 0.3 nF/device
Digital inputs, counters	Potential-free contacts, opto-coupler, transistors (open collector) Open: > 3.5 V, closed: < 1 V
Digital outputs	250 V~ / 2(2) A on the relay contacts (fan 3-speed) 250 V~ / 10(10) A on the relay contacts (electrical reheater) 24 V~ / 1 A on the Triacs
Analogue outputs	No external voltage! 0...10 V=, < 10 mA

- When the power supply is being connected, the protective earth absolutely must be connected with the terminal provided.
- The communication wiring must be carried out correctly, must be separated from the power-carrying wiring, and must adhere to the specifications of standards EN 50174-1, EN 50174-2 and EN 50174-3.
- Special standards such as IEC/EN 61508, IEC/EN 61511, IEC/EN 61131-1, IEC/EN 61131-2 and similar were not taken into account.
- Local standards 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.
- For further information, see the fitting instructions.

Important information

ecos200

Has 128 MFAs and can store 2x1792 entries in the HDB.

Time

The time is frozen if the power is interrupted. The internal clock is not buffered. Therefore, it is necessary to synchronise the time once a day.

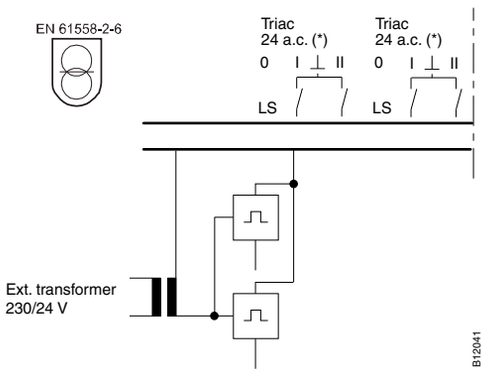
Sizing of the internal transformer

The internal transformer is designed for a maximum load of 6 VA on all the Triac outputs.
(1 AXT 111 thermal actuator).

Parallel operation of multiple thermal actuators

Supplying power to the actuators via external transformers. Triac load max. 1 A

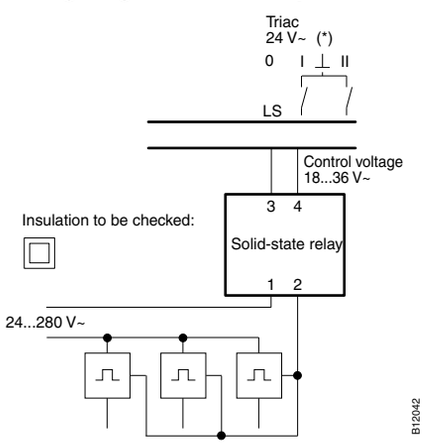
Wiring diagram: External transformer



Supplying power to the actuators via semiconductor relay. (The number of actuators is limited by the output of the semiconductor relay.) Semiconductor relays can be ordered from stock at SRF.

Examples:	24 to 280 V~, 8 A without heat sink at 230 V~, control voltage 18...36 V~
	24 to 280 V~, 16 A without heat sink at 230 V~, control voltage 18...36 V~

Wiring diagram: Parallel operation



Constant actuators for unit valves with AXS positioner.
The 0...10 V output of the ecos200 can control up to 15 AXS.

		EYE200F001		EYE200F002	
MFA	**Address type**	**HDB**	**Terminals**	**HDB**	**Terminals**
04	Ni1000 temperature measurement (measuring range: -10…95 °C)	*	11-⊥	*	11-⊥
09	Ni1000 temperature measurement (operating unit) (measuring range: -10…95 °C)	*	3-2-⊥	*	3-2-⊥
10	Potentiometer measurement (operating unit) (basic setting: ±2°)	*	3-2-⊥	*	3-2-⊥
20	Analogue output 0 (2)...10 V=	*	4-⊥	*	4-⊥
21	Analogue output 0 (2)...10 V=	*	5-⊥	*	5-⊥
32	Digital output 0-I-II (Triacs 24 V~, 1A)	*	LS-17-18	*	LS-17-18
33	Digital output 0-I-II (Triacs 24 V~, 1A)	*	LS-14-15	*	LS-14-15
34	Digital output 0-I (relays 250 V~, 10A)	-	-	*	19-20
35	Digital output 0-I-II-III (relays 250 V~, 2A)	*	21-22-23-24	*	21-22-23-24
40	Operating feedback MFA 56 (0-I-II)	*	Internal	*	Internal
41	Operating feedback MFA 57-1 (0-I-II-III)	*	Internal	*	Internal
42	Rotating circuit from MFA 56 0-I-II-0…	*	Internal	*	Internal
43	Rotating circuit from MFA 57 0-III-II-I-0…	*	Internal	*	Internal
50	Quantity counter // up to MFA 52	*	7-⊥	*	7-⊥

		EYE200F001		EYE200F002	
MFA	Address type	HDB	Terminals	HDB	Terminals
51	Quantity counter // up to MFA 53		9-⊥		9-⊥
52	Contacts input	*	7-⊥	*	7-⊥
53	Contacts input	*	9-⊥		9-⊥
56	Contacts input button 0-I-II (operating unit)	-	3-2-⊥	-	3-2-⊥
57	Contacts input button 0-I-II-III (operating unit)	-	3-2-⊥	-	3-2-⊥

EYE200F001 and EYE200F002 with the application “fan coil unit system – 4-pipe”

Key figures for the application

Mode	Control accuracy
Heating	Approx. 0.2 K
Cooling	Approx. 0.3 K

The application is implementet with the following devices:

Type	Quantity	Description
EYE200F001	1	DDC unitary controller, 3 or 4 relays
EY-RU246F001	1	ecos 2 operating unit, LCD, NTC sensor, dXs setpoint adjuster, 6 buttons
AXS215SF122	2	Continuous actuator for unit valves with stroke indicator
VCL025F200	2	2-way regulating valve (linear)

EYE200F001 and EYE200F002 with the application “chilled-ceiling system”

Key figures for the application

Mode	Control accuracy
Cooling	Approx. 0.1 K

The application is implementet with the following devices:

Type	Quantity	Description
EYE200F001	1	DDC intelligent unitary controller, 3 or 4 relays
EY-RU246F001	1	ecos 2 operating unit, LCD, NTC sensor, dXs setpoint adjuster, 6 buttons
AXS215SF122	1	Continuous actuator for unit valves with stroke indicator
VCL025F200	1	2-way regulating valve (linear)

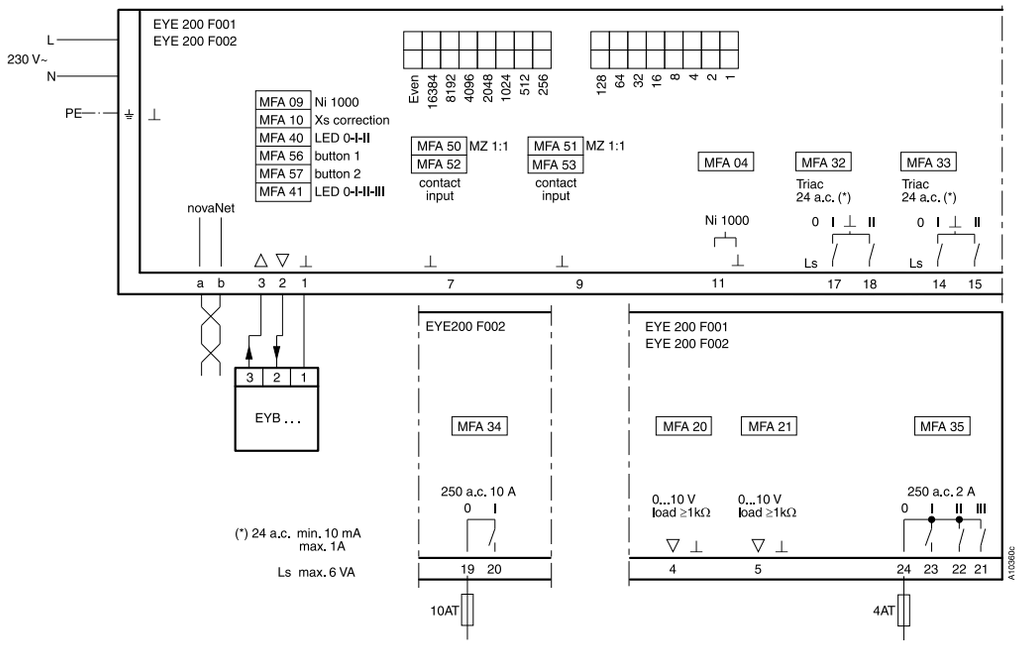
Additional information

Fitting instructions	MV 505907
Declaration on materials and the environment	MD 94.200

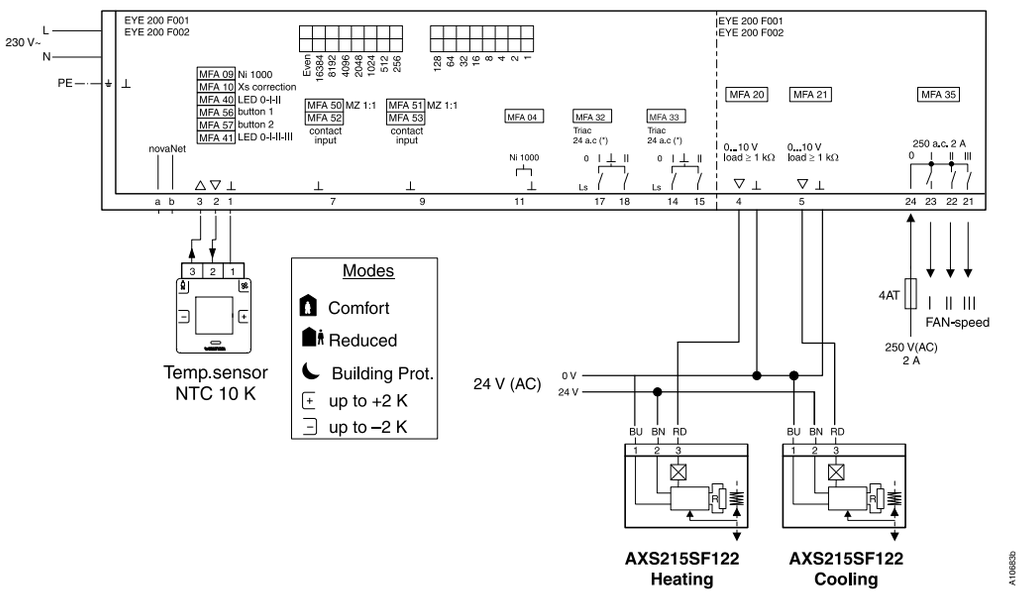
Disposal

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.

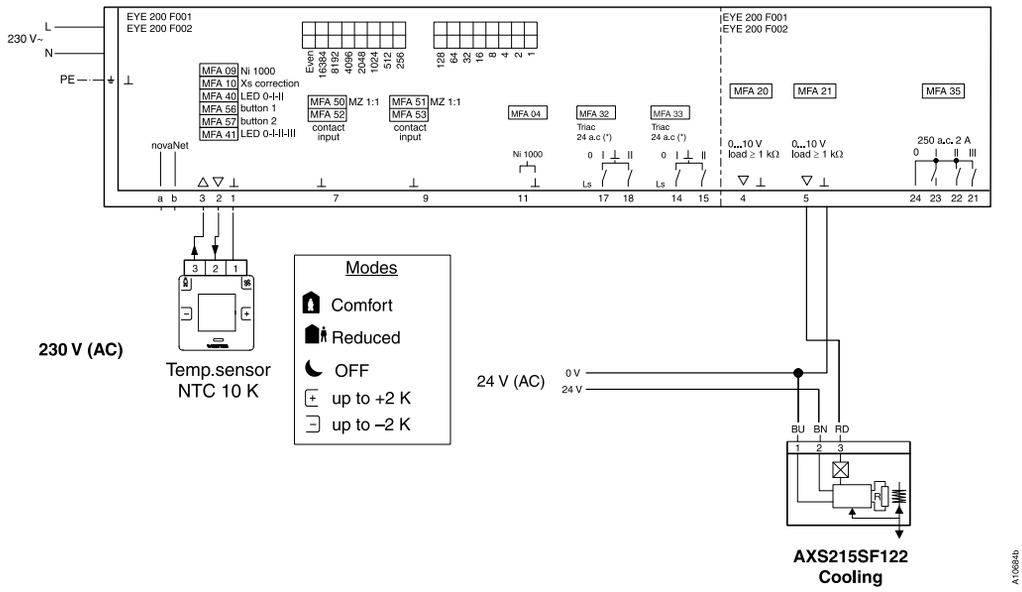
Connection diagram



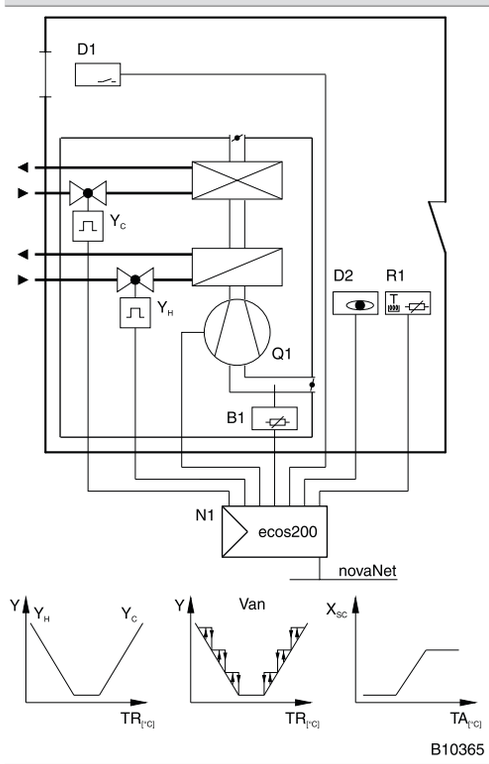
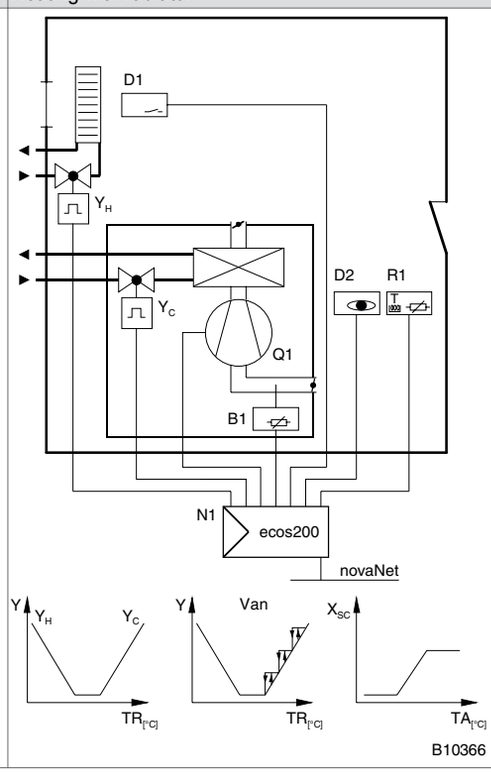
Connection diagram for EYE200F001 and EYE200F002 – “fan coil unit system – 4-pipe”



Connection diagram for EYE200F001 and EYE200F002 – “chilled-ceiling system”

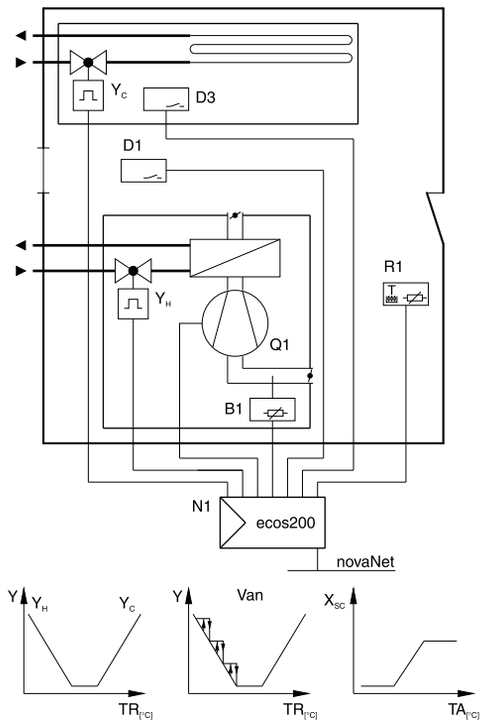


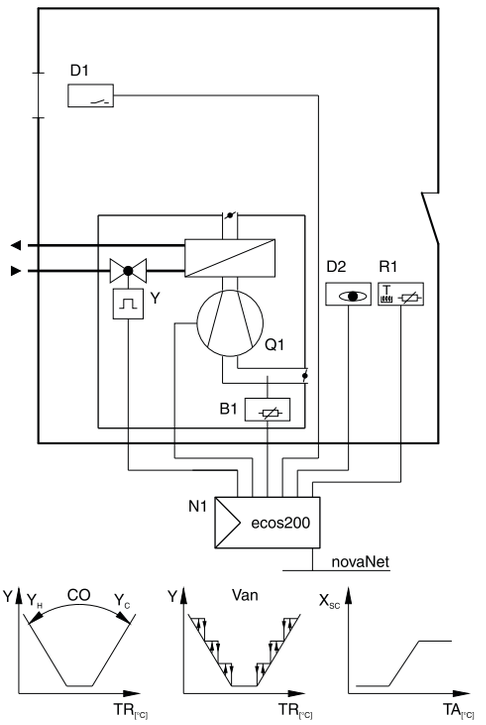
Connection examples

Fan coil temperature controller with 4-pipe system	Fan coil temperature controller with 4-pipe system Heating with radiator
	
B10365	B10366

Connection examples

Chilled-ceiling control Heating via fan coil unit	Fan coil temperature controller with 2-pipe system Heating / cooling via change-over contact

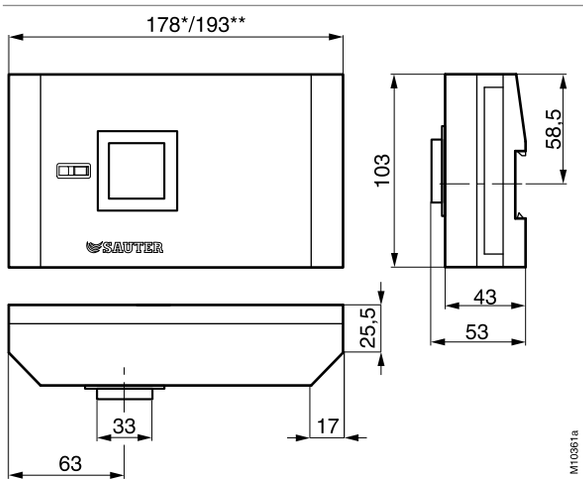




Key

B1	Temperature sensor for duct fitting	N1	Controller	Y	Heating/cooling valve
D1	Window contacts	Q1	Fan	Y_C	Cooling valve
D2	Occupancy detector	R1	Room operating unit	Y_H	Heating valve
D3	Dew-point monitor				

Dimension drawing



*EYE200F001, EYE200F002

**EYE200F901, EYE200F902
(with plug-in connectors)

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