

# SAUTER modulo 3

## Produkt och System Information

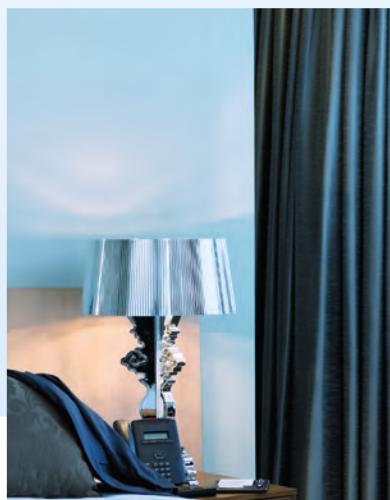
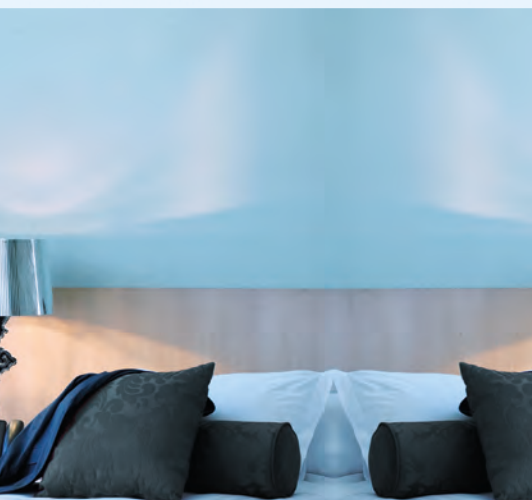




# SAUTER modulo 3

## Room automation – easy and communicative for versatile applications.

SAUTER offers the EY-modulo 3 system family for simple room automation projects. The open communication via BACnet MS/TP enables versatile HVAC applications and seamless integration into the building automation network. Programmable with SAUTER CASE Suite, it enables flexible room divisions based on individual requirements. EY-modulo 3 is ideally suited for renovation projects and migrating existing 2-wire systems to the open BACnet communication network. The controllers are designed for easy installation and operation. SAUTER EY-modulo 3 stands for a high level of planning security and reliable functionality.



## SAUTER modulo 3

### Room automation

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# SAUTER modulo 3 room automation stations

The BACnet MS/TP SAUTER ecos 3 room controllers are application-specific controllers (B-ASC) for applications such as fan coil units, chilled ceilings, chilled beams or radiators. They ensure an optimal room climate (heating, cooling, ventilation) with easy but also flexible parameterisation (2-pipe/4-pipe installations, changeover, frost protection, reheaters, and connecting presence detectors, window/door contacts, etc.). The controllers can be easily integrated into the building automation network and visualised in the building and room automation management system.

## Overview of room automation stations



Type designation	EY-RC301F015	EY-RC302F011	EY-RC311F001
Product name	ecos301	ecos302	ecos311
Function	Room controllers	Room controllers	Room controllers
Protocol	BACnet MS/TP	BACnet MS/TP	BACnet MS/TP
Power supply	24 V~/=	230 V~	230 V~
Room operating unit	1	1	1
Extension module	–	–	2
Freely configurable (EasySet)	•	•	–
Freely programmable (CASE Suite)	–	–	•
<b>Inputs/outputs</b>			
Passive inputs (DI, contact, NTC10k, potentiometer)	3	4	–
Active inputs (0...10 V, 2...10 V)	3	2	–
Universal inputs	–	–	5
Virtual inputs (AV objects)	4	4	>10
Analogue outputs (0...10 V)	3	3	3
Normally-open relay contact (2 A / 5 A)	4 / –	4 / –	– / 3
Normally-open relay contact (10 A)	1	1	1
Triac (24 V~) / MOS-FET (24 V)	–	2 / –	– / 4
Output for power supply	–	24 V~ (6 VA)	24 V~ (6 VA)
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## EY-RC 301, 302: Room controller, ecos301, 302

### Features

- Part of the SAUTER EY-modulo 3 system family (BACnet MS/TP)
- Single-room controller for an energy-optimised room climate
- BACnet room controller (B-ASC) for fan coil unit, chilled beam, chilled ceiling, radiator heater etc.
- Individual adjustment of the room climate with the ecoUnit382 room operating unit (EY-RU 382)
- Universal PI and/or binary controller sequence for all the analogue and digital input/output signals
- Optimises energy consumption thanks to presence function, window contact monitoring, demand-controlled switching of fan speeds and time-dependent setpoint specification
- Additional functions: automatic heating/cooling changeover, automatic switching on, setpoint compensation, free external cooling and other
- Mathematical functions for universal inputs: Subtraction, mean, min. and max.
- Eight freely assignable alarm conditions with a selectable status for the outputs for an alarm condition
- Time and weekly calendar function (time software)
- Integration into building management system via BACnet router (MS/TP to IP)
- Parametrisation with ecoUnit382 room operating unit
- System bus: RS-485 (BACnet MS/TP)
- Bus for operating unit: RS-485 (VCP)



EY-RC301F015

EY-RC302F011

### Technical data

#### Ambient conditions

Operating temperature	0...50 °C
Humidity without condensation	Max. 95% rh

#### Inputs / outputs

Active inputs	Analogue inputs	U/(I) 0...10 V <sub>±</sub> , 2...10 V <sub>±</sub>
	Passive inputs	Temperature sensor Resistance input Digital input, open contact
Virtual inputs	BACnet AV object	4 ×
Outputs	Triac switching outputs	0-I, PWM (24 V <sub>~</sub> , total 250 mA)
	Relay switching outputs	Normally-open contacts (250 V <sub>~</sub> /24 V <sub>±</sub> , 2 A) Normally-open contacts (250 V <sub>~</sub> , 10 A)
	Analogue outputs	3 × 0...10 V <sub>±</sub> , 2...10 V <sub>±</sub> (load ≥ 1 kΩ)

#### Interfaces and communication

Interface	Room operating unit (RBG)	1 × RS-485 for EY-RU 382 (VCP)
Communication	BACnet MS/TP	1 × RS-485 galv. isolated, 1/2 load

#### Construction

Dimensions W x H x D	147 × 115 × 57 mm
Electrical connection	Screw terminals for cables from 0.34...2.5 mm <sup>2</sup>
Power supply, bus and RBG connection	Pluggable screw terminals

#### Standards and directives

Type of protection <sup>1)</sup>	IP00 (EN 60529)
Protection class	II (IEC 60536)

<sup>1)</sup> The type of protection is IP30...IP40 (depending on the cover in the cabinet) from the front side, if installed correctly as per EN 60730-1



	Energy class	VIII = 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
	Degree of contamination	II (EN 60730-1)
	Environment class	3K3 (IEC 60721-3-3)
CE conformity according to	EMC directive	2004/108/EC
	Low-voltage directive	2006/95/EC
Product standards	Automatic electric regulating and control devices	EN 60730-1
	Special requirements for temperature-dependent control devices	EN 60730-2-9
	Electromagnetic compatibility for residential premises (type 1)	Emission:EN 60730-1 (Type 1) Immunity:EN 60730-1 (Type 1)

### Overview of types

Type	EY-RC301F015	EY-RC302F011
Power supply	24 V~ ±10%, 50/60 Hz 24 V= ±10% SELV, HD 384, Class II, 48 VA	230 V~ ±10%, 50/60 Hz
Power consumption	Max. 10 VA	Max. 13 VA
Output for power supply	–	24 V~, max. 6 VA
Number of I/Os	13	16
Passive inputs	3	4
Active inputs	3	2
Triac	–	2 (24 V~)
Relay	4 (2 A)	4 (2 A), 1 (10 A)
Weight	0.268 kg	0.55 kg

### Accessories

Type	Description
0940183005	Memory plug-in for ecos 3 controller (contains 5 pcs of 0940183001)

### Suitable products

AXT *** / AXS ***	Thermal actuators for unit valves (see product data sheets)
AXM ***	Motorised actuators for unit valves (see product data sheets)
EGT ***	External temperature sensors (active or NTC 10k) (see product data sheets)
EGT 688	Room temperature sensor (with adjuster)
EGH 102	Dew point monitor with sensor
EGT353F***	Cable temperature sensor (NTC 10k)
0450232001	Outdoor temperature sensor (NTC 10k)

## EY-RC 311: Room controller, ecos311



EY-RC311F001

### Features

- Part of the SAUTER EY-modulo 3 system family (BACnet MS/TP)
- BACnet MS/TP communication (EN ISO 16484-5)
- BACnet room controller (B-ASC) for fan coil unit, chilled beam, chilled ceiling, radiator heater, light, control of window blinds, variable volume flow control (VAV) etc.
- Individual adjustment of the setpoints via ecoUnit 3 room operating units (EY-RU 3\*\*)
- Optimisation of energy consumption using presence function, monitoring of window contacts, demand-controlled switching of fan speeds and time-dependent setpoint specification
- Freely configurable time programme (BACnet Schedule objects)
- Freely programmable with CASE Suite software (based on IEC 61131-3)
- Expandable with ecoLink I/O modules for lighting and control of window blinds

### Technical data

#### Power supply

Power supply	230 V, 200 V min., 253 V max., 50...60 Hz
Power consumption	Max. 14 VA
Dissipated power	5 W / 8 VA

#### Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-20...70 °C
Humidity	10...85% rh, no condensation

#### Inputs / outputs

Relay outputs	Type	0-I relays, normally-open contacts with shared power supply
	Load	230 V~/30 V= 2 A resistive load, total max. 5 A 230 V~; 10 A resistive load
	Switching frequency	> 3 × 10 <sup>5</sup> cycles (2 A) > 2 × 10 <sup>5</sup> cycles (10 A)
Semiconductor outputs (MOS-FET)	Type	0-I, 24 V~/=, switched to ground
	Load	0.5 A Max. peak current 1 A (< 20 ms)
Analogue outputs	Type	0...10 V / 2 mA
Universal inputs	Analogue	0...10 V
	Digital	0-I, max. 2 Hz
	Potentiometer	1...10 kΩ (for potentiometer)
	Resistance	100...2500 Ω
	Ni1000/Pt1000	-20...100 °C

#### Interfaces and communication

Interface	1 × RS-485 electrically isolated, ½ load
Protocol	BACnet MS/TP
Cable	2-wire, twisted with reference, shielded
Cable length	1000 m with bus termination

#### SAUTER Local Communication interfaces

Interface	1 × RS-485
Protocol	SIC
Cable	2x2-wire, twisted, shielded
Cable length	< 100 m with bus termination (with ROU)
	< 500 m with bus termination (without ROU)





Room operating units	Max. 1; EY-RU 31*, 34*, 1** (via 580)
I/O modules	Max. 2; EY-EM 51*, 52*

**Construction**

Dimensions W x H x D	178 × 103 × 53 mm
Weight	674 g
Fitting	DIN rail; TH35x7.5/15 EN 50022

**Standards and directives**

	Type of protection	IP00 (EN 60529) IP20 (cover with front aperture)
	Protection class	II (EN 60730-1)
	Energy class <sup>1)</sup>	I to VIII = up to 5% as per EU 811/2013, 2010/30/EU, 2009/125/EC
	Environment class	3K3 (IEC 60721)
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1 EN 61000-6-3
	Low-Voltage Directive 2014/35/EU	EN 60730-1 EN 60730-2-9

**Overview of types**

Type	Description
EY-RC311F001	ecos311 - room controller B-ASC, MS/TP, 16IO, 230 V

Overview of I/O mix	
Universal inputs	5
Relay outputs	3 (2 A)
	1 (10 A)
Digital outputs	4
Analogue outputs	3

<sup>1)</sup> 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.

## EY-RU 382: Room operating unit ecoUnit 382 for ecos301/302



EY-RU382F001

### Features

- Part of the SAUTER EY-modulo 3 system family (BACnet MS/TP)
- Room operating unit for ecos301/302 for control and for ensuring individual room comfort
- Integrated temperature sensor (NTC 10k) for room-temperature control with ecos301/302
- Display, configuration and operation of the ecos301/302 room controller as a remotely installable unit
- Room operating unit with many different functions
- Individual settings (occupancy/absence and room temperature and fan speed setpoints)
- Setting of operating modes and setpoints for controlling the installation, such as fan coil units, chilled beams, chilled ceilings, etc.
- Display of operating statuses and actual values and setpoints
- Display of inputs according to the real values (based on units such as °C/°F, %, p)
- Display and operation for configuration parameters
- Digital communication with 4-wire connection to ecos301/302
- Large, blue-lit LCD

### Technical data

#### Power supply

Power supply	From ecos 301/302 (10...30 V=, 10...26 V~)
Power consumption	Max. 0.5 VA

#### Ambient conditions

Operating temperature	0...50 °C
Humidity without condensation	Max. 95% rh

#### Parameters

Sensor	NTC 10kOhm@25°C (Type 2)
Measuring range	0...50 °C
Accuracy	0.2 K
Setpoint	Adjustable, parameterisable
Room occupancy	2 modes, LCD symbol display
Fan speeds	5 modes, LCD

#### Interfaces and communication

Communication	RS-485
Connections	Screw terminals
Power cable	4-wire, 0.34...2.5 mm <sup>2</sup>
Cable type	Shielded, twisted pairs
Cable impedance	100...120 Ω
Cable capacity	≤ 50 pF/m
Protocol	VCPP (point-to-point)

#### Construction

Dimensions W x H x D	88 × 88 × 30 mm
Fitting	Metal plate for standard recessed junction box (perforation 55 × 55 mm <sup>2</sup> )
Weight	120 g

#### Standards and directives

Type of protection	IP30 (EN 60529)
Protection class	III (EN 60730-1)
Environment class	3K5 (IEC 60721-3-3)
Degree of contamination	II (EN 60730-1)



CE conformity	EMC directive	2004/108/EG
Product standards	Automatic electric regulating and control devices	EN 60730-1
	Special requirements for temperature-dependent control devices	EN 60730-2-9
	Electromagnetic compatibility for residential premises (type 1)	Emission: EN 60730-1 (type 1) Immunity: EN 60730-1 (type 1)

### Overview of types

Type	Features
EY-RU382F001	ecoUnit382, room operating unit for ecos 3, with NTC sensor, LCD, 4 push-buttons

**Systems**

**Components**

**Services**

**Facility Services**

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