PDS 94.075 **ru Product Data Sheet** **EY-EM520...526**

ecoLink520…526: Полевой модуль входы/выходы

Как повышается энергетическая эффективность

Модульная технология для оптимальной работы приложений. Сокращение расходов на проводку.

Область применения

Регулирование, управление, мониторинг и оптимизация технических систем, как например, комнатной автоматизации HVAC. Связь подключаемых приводов со станции автоматизации

Features

- Полевой модуль входы/выходы для ecos500
- Часть семейства систем SAUTER EY-modulo 5
- Расположение до 500 метров от станции автоматизации

Техническое описание

- Напряжение питания: 230 V~
- Шина данных EIA-485, SLC протокол

Продукция

Тип	Описание
EY-EM520F001	Полевой модуль входы/выходы, 230 V~, 4 реле, NO контакты
EY-EM521F001	Полевой модуль входы/выходы, 230 V~, 2 реле, NO контакты
EY-EM526F001	Полевой модуль входы/выходы, 230 V~, 3 реле, перекидные контакты

Техническая информация

Электрическое питание

Питание	230 V~, ± 10%, 50...60 Hz
Потребляемый ток	До 35 mA (обычно: 20 mA)
	Без нагрузки на цифровые выходы
Рассеиваемая мощность	до 8 W (обычно: около. 4 W)

Допустимые условия среды

Рабочая температура	0…45 °C
Хранение и транспортировка	-25…70 °C
Влажность	10…85 % rh
	Без конденсации

Входы/выходы

Цифровые выходы	
EY-EM520, EY-EM521	Реле (0-I), NO контакты
	(с напряжением)
EY-EM526	Реле (0-I), перекидные контакты
	(без напряжения)
Нагрузка	230 V~/ 1 A или 5 A [3]
	(общая макс. 10 A)
Количество переключений	> 5 × 10^6 циклов
DIM-10 V выходы	пассивные выходы
Аналоговые/цифровые входы	0…10 V / 0-I

Установка

Размеры Д x В x Г (мм)	105 × 95 × 60
Вес (кг)	0.317

Интерфейсы, связь

Управление	через ecos500
Связь с ecos500	До 500 м (зависит от типа кабеля) [4]

Стандарты, директивы

Степень защиты		IP 00 (EN 60730) [2]
Класс защиты	EY-EM526F001	II (EN 60730-1)
	EY-EM520F001	I (EN 60730-1)
	EY-EM521F001	I (EN 60730-1)
Окружающий класс		3K3 (IEC 60721)
CE соответствие		
EMC Директива 2004/108/EC		EN 61000-6-1
		EN 61000-6-2 [1]
		EN 61000-6-3
		EN 61000-6-4
Электробезопасность 2006/95/EC		EN 60730-1

Обзор входов/выходов

	EY-EM520	EY-EM521	EY-EM526
NO реле (с напряжением)	4	2	0
Перекидные контакты (без напряжения)	0	0	3
DIM-10 V	2	2	2
0…10 V входы, цифровые входы	4	4	4

Дополнительная информация

Инструкция по монтажу	P100002346
Декларация материалов	MD 92.845
Размерный чертёж	M11463
Схема подключения EY-EM520	A10656
EY-EM521	A10657
EY-EM526	A10658

1) Для соответствия промышленному стандарту EN 61000-6-2, подсоединяемые кабели должны быть не более 30 м в длину.

2) IP20 с крышкой для клемм (аксессуар 0900240020), IP40 фронтальная защита после монтажа

3) См. раздел о цифровых выходах (реле)

4) См. раздел инженерные записи

Аксессуары

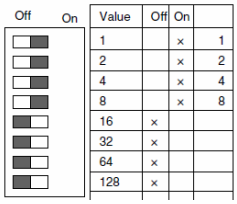
Тип	Описание
	Крышки
0900240020	Крышки для клемм

Engineering notes

The ecoLink field modules can be installed using a top-hat rail, either directly in the panel or at a suitable position in the plant. Equipment is connected via screwed terminals; this work should be performed only when the power supply is disconnected.
N.B.: On the ecoLink modules, the earth cable (MM) is connected to the technical earth (GND) and the Common (c) connection of the RS485 interface. On the EY-modulo 5 ecos, the technical earth is connected to the protected earth. Therefore, if an external 24 V~ transformer is used, one 24 V side is automatically earthed. If third-party devices are used, isolation measures may be necessary to prevent short circuits.
The maximum permitted bus length depends on the type of cable used and on correct termination with terminating resistors. For Ethernet CAT-5 cables and I-Y(St)Y cables, the maximum possible bus length is 500 m. Line topology must be used for the bus wiring. Star, tree and branch topologies are not advisable. On the ecos500 room automation station, the bus is connected at the RS485-B interface (3-wire). Ensure that the polarity is correct. The devices do not have internal terminating resistors.

Sensor cables and cables carrying mains current should not be laid side by side. When routing lines for analogue signals, e.g. 0…10 V inputs/outputs and Ni/Pt1000 inputs, provision must be made for separate ground wiring for each input and output from the ecoLink module to the respective sensor or actuator. Common ground wiring leads to measurement errors which can affect small measuring signals in particular.

Addressing and baud rate



Value	Off	On	
1		×	1
2		×	2
4		×	4
8		×	8
16	×		
32	×		
64	×		
128	×		

Up to 16 modules can be connected to one bus line. Unique addressing is required for them. An 8-switch DIP is provided for this purpose. S1: 1-8. Valid address range: 1-16.

The baud rate is set at 115 kBaud.

Installation and power supply

ecoLink field modules are compact devices which are suitable for wall mounting or installation in rows on a 35 mm top-hat rail, as per DIN 43880. The plant devices are connected via screw terminals. The following conditions must be met:

- Connection work should be performed only when the power has been disconnected.
- The unit must be protected against physical contact.
- The earthing terminals are connected internally to the earth connection (PE) (PELV power circuits).

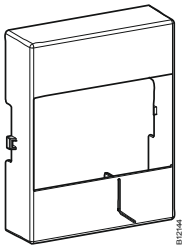
Cross-section of conductors: min. 0.8 mm² (AWG 18), max. 2.5 mm² (AWG 13), compliant with standards and national installation regulations.

Communication wiring should be professionally installed and kept apart from other current-carrying cables.

There is no compliance with special standards such as IEC/EN 61508, IEC/EN 61511, IEC/EN 61131-1 and 2 or similar standards. Local regulations on installation, application, access, access authorisations, accident prevention, safety, dismantling and disposal must be observed. Compliance is also required with installation standards EN 50178, 50310, 50110, 50274, 61140 and similar.

For further information, see the fitting instructions, P100007334.

Terminal cover



Accessory 0900240020. Used together with the ecoLink module, IP20 protection is guaranteed when the cover is in place. When mounted, IP40 protection is obtained at the front.

Technical specifications of inputs and outputs

Inputs

Four analogue inputs are available for active signals.
If the analogue inputs (0…10 V) are to be used as digital inputs, they must be wired to the 15 V external terminal. When wired in this way, the inputs are defined as digital inputs with the help of the CASE tool. These 15 V feeds are intended solely for the digital inputs.

Type of inputs:	voltage measurement (U) current measurement (I) (with ext. resistance) digital input (DI)
Protection against extraneous voltage:	
U/DI	±30 V / 24 V~ (without damage)
Resolution	10 bit
Scan rate	≤ 100 ms (analogue/digital values)
Updating rate	≤ 300 ms (EY-modulo 5 ecos)
Measuring ranges:	
Voltage (U)	0 (2)...10 V
Current (I) (via ext. R)	0 (4)...20 mA
Digital input	potential-free contacts, wired to 15 V As counter input: max. 2 Hz (min. pulse duration: 250 ms)

Voltage measurement (U)

The voltage to be measured is connected between an input terminal and an earth terminal. The signal must be potential-free. The input's internal resistance R_i (burden) is 100 kΩ.

Current measurement (I)

The current can be measured (0(4)…20 mA) via an external resistor (e.g. 500 Ω). The current to be measured is connected in parallel with the resistor to one of the input terminals and an earth terminal. The current signal must be potential-free. A dedicated earth terminal must be used for the current measurement. Otherwise, zero point shifts can cause inaccurate measurements with other measurement signals.

Digital inputs (DI)

The information (alarm/status) is connected between an input terminal and the 15 V external terminal. This usually corresponds to an INACTIVE status (bit=0) for open contacts. When the contacts are closed, it is ACTIVE (bit=1) and 15 V is applied, and the current is approx. ~0.3 mA. Each input can be individually set via software configuration as an alarm or status input.

Outputs

In the maximum configuration, six outputs are available: four relays and two analogue (DIM -10 V). The outputs are updated every 200 ms by the ecos system (EY-RC500).

Digital outputs (relays)

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The relay outputs are supplied via a common feed, which includes L, N and PE. Both N and PE are made available again at the respective relay output. The relays with output terminals 7 and 19 are designed to control lighting. These relays have an increased tolerance of start-up current. Start-up current peaks at the NO relay contacts: 80 A for a maximum of 20 ms.
The relays with output terminals 1 and 2 are designed to control window blinds.

Number of outputs	max. 4 (DO)
Type of outputs	relays, normally open contacts (0-I)
Load on outputs:	
Relays, terminals 7/19	230 V~, 5 A
Relays, terminals 1/2	230 V~, 1 A
Switching frequency	10^6 cycles
Switching voltage	24…250 V

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The relays (change-over contacts) are designed to control lighting. These relays have an increased tolerance of start-up current. Start-up current peaks at the NO relay contacts: 80 A for a maximum of 20 ms.

Number of outputs	3 (DO)
Type of outputs	relays, change-over contacts (0-I)
Load for outputs	230 V~, 5 A
Switching frequency	10^6 cycles
Switching voltage	24…250 V

Real feedback signals can be implemented only via the digital inputs (BACnet COMMAND-FAILURE).

Analogue outputs

Number of outputs	2 (AO)
Type of outputs	DIM-10 V passive (opto-coupler)
Update time	200 ms
Settling time	1 s
Resolution	10 bit

This output is intended for electronic ballasts with an active voltage input (0…10 V). The DIM output is electrically isolated (opto-coupler); no active voltage is provided at the output terminals. The sink capacity (external voltage progression) for the approved electronic ballasts is linear to the internal specification (0…100% corresponds to 0…10 V).
Only one ballast should be connected to each DIM output. If several ballasts are connected in parallel, they will influence each other.

Approved electronic ballasts

The following electronic ballasts have been verified:

Make	Type
OSRAM	Quicktronic Intelligent: QTi/-T/E 1×18-57 DIM
Philips	HF-R 1 26-42 PL-T/C EII
Vossloh Schwabe	ELXd 142.806

LED display

Status	Description
LED off	Device not in operation
Green, lit continuously	Device in operation
Green, flashing	Device has communication with ecos500 but is not addressed
Red, lit continuously	Device is not ready for operation (no programme loaded)
Red, flashing	Device has no communication with ecos500
Red, pulsating	Internal device error
Orange, lit continuously	Power-up phase, configuration

Start-up behaviour/monitoring functions

Communication between ecos500 and the ecoLink modules is monitored. If communication fails, the data points are marked with 'unreliable' status in the ecos500. Similarly, if internal device errors occur, corresponding data points are mapped via the 'reliability' property.

There are the following operating behaviours:

a) ecos500 operational, ecoLink module power-up.
If the ecos500 recognises an ecoLink power-up, communication with this module starts immediately. The following actions are executed:

- The module parameters are loaded (e.g. timer communication monitoring:) default value = 10 s, timer command delay (OFF to ON): default = 200 ms).
- If status changes (e.g. ON/OFF commands) have occurred in the ecos500 during the period when the ecoLink module was offline, OFF commands are executed immediately and ON commands are executed after 200 ms in the ecoLink module.

b) ecos500 and ecoLink module power-up.
ecos500 and ecoLink have different power-up behaviours. The 'power-up timer' parameter in the ecoLink (default value = 1 s) sets the waiting time for the ecoLink before it starts communication monitoring. This enables its start-up behaviour to be synchronised with the ecos500. This parameter can be set individually for each ecoLink module (range: 1…254 s) using Sauter's CASE Suite software. The outputs are retained until the power-up timer has expired, similar to when the device has no power applied (safety mode).

c) ecoLink operational, ecos500 power-up.
If a power-up occurs on the ecos500 and the ecoLink module is in safety mode (i.e. the power-up timer has expired), the first valid communication values are accepted immediately, and OFF to ON command transitions are switched to active only after the timer command delay has expired.

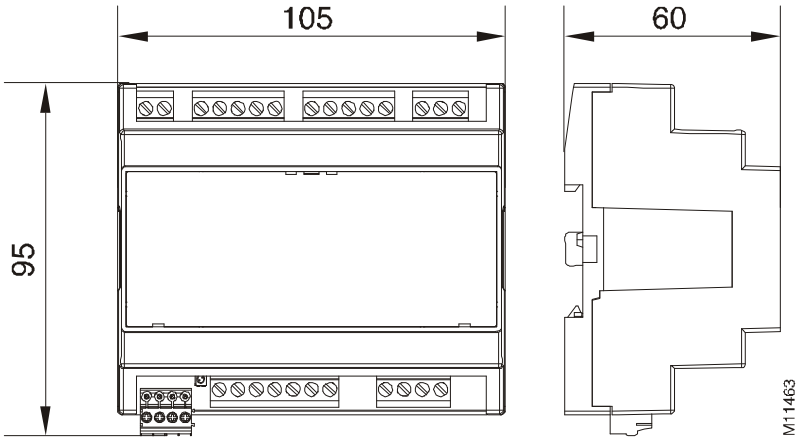
Integration of ecoLink modules via CASE Suite

The ecoLink modules are engineered using CASE Suite. Depending on whether the ecos500 is designed with one, two or four segments, device addresses 1-16 are shown in a table. For a multiple-segment ecos500, the device addresses are mirror-inverted. An ecoLink module can then be assigned to these addresses in each case. Data points are then defined and assigned to the relevant modules with their channel connections. This enables direct mapping of the inputs/outputs on BACnet data points.

ecos500 device addresses

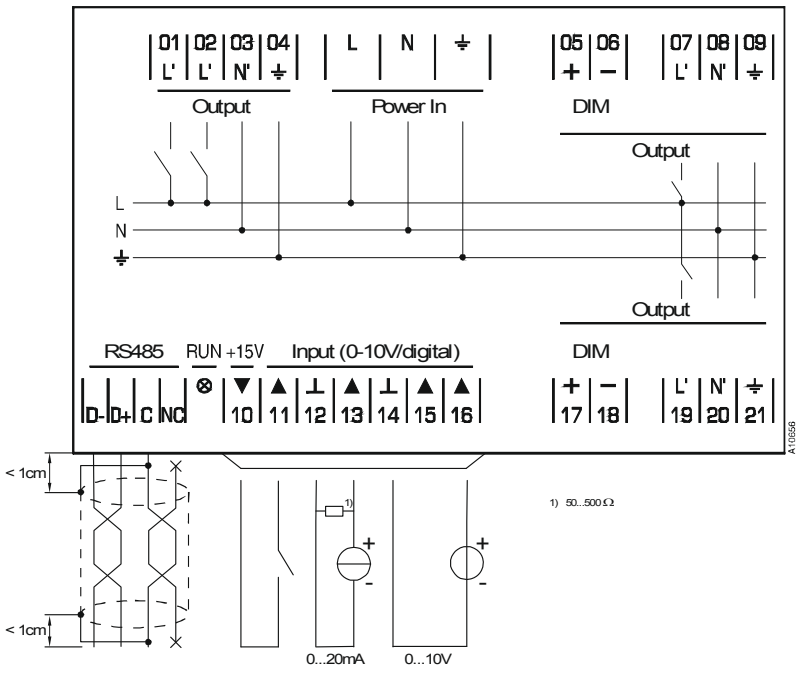
1 segment	2 segments	4 segments
1		
2	1=9	
3	2=10	
4	3=11	1=5=9=13
5	4=12	2=6=10=14
6	5=13	3=7=11=15
7	6=14	4=8=12=16
8	7=15	
9	8=16	
…		
16		

Dimension drawing



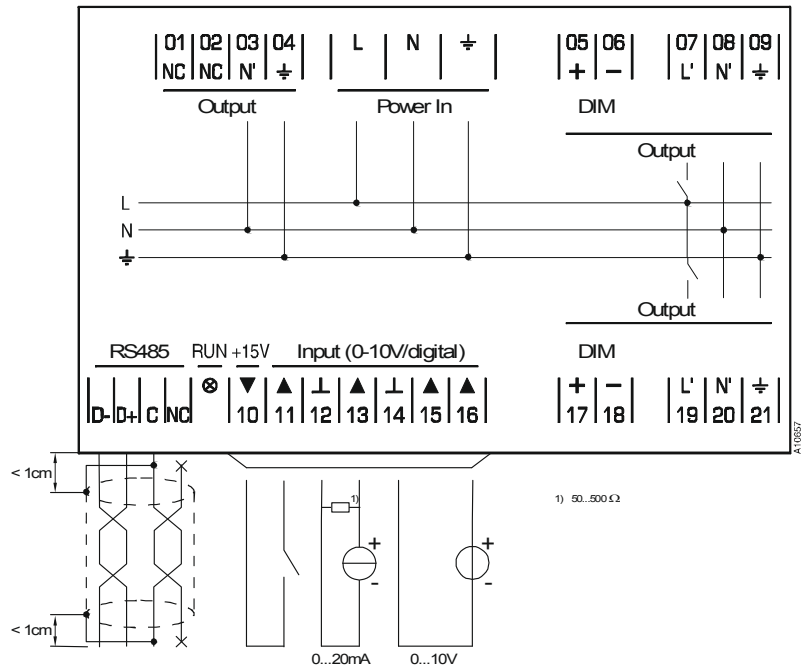
Wiring diagram

EY-EM520



Wiring diagram (continued)

EY-EM21



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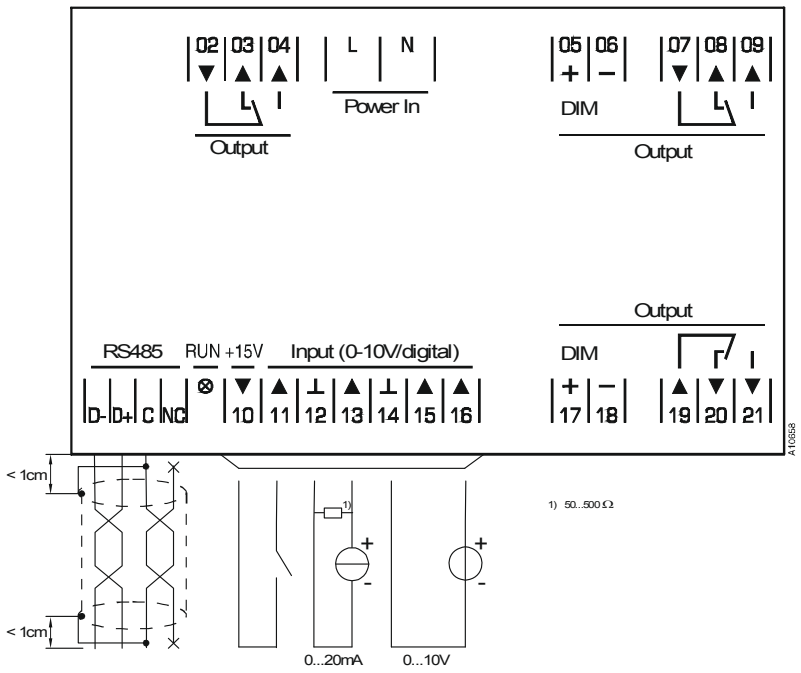

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