STC65-RS485 EVC

EnOcean receiver/transmitter with RS485 EVC interface

thermokon®
Sensortechnik GmbH

Datasheet

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enocean®alliance
No Wires. No Batteries. No Limits.

))))(((Smart**ACK**

Application

Bidirectional gateway with serial interface RS485 and IP42-enclosure. For connection of up to 64 EasySens sensors or wireless switches to different controllers with RS485 interface. Transmission of field-programmed telegrams to 127 addresses. Incl. ext. receiving antenna (2,5 m).

Security Advice – Caution

⚠️

The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with
- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

Notes on Disposal

As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

Information about EasySens® (radio) / airConfig general usage

Basic information about EasySens® radio and about general usage of our airConfig software, please download from the following link

http://www.thermokon.de/ftp/info/Information_Radio_airConfig_en.pdf

Information about Smart Acknowledge (SmartACK)

This bi-directional communication mechanism also allows the building system to send back data to a sensor, i.e. to overwrite SR06LCD´s set point. Smart Acknowledge requires that both communication devices do support the Smart Acknowledge mechanism.

Repeaters are not supported, they delay in the telegram transmission. Sensor and gateway must communicate directly with each other.

Additional Information of the used EEP´s with Smart ACK can be found using the following link:

http://www.thermokon.de/download-archive/Kataloge_Preise_Infos/Allg.%20Dokumente/Informationen/SmartACK-Info_en.pdf

Technical Data

Network technology	RS485 EVC, RTU, half-duplex, baud rate 9.600, 19.200, 38.400 or 115.200, parity none (2 stopbits), even or odd (1 stopbit)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Antenna	external transmit- / receive antenna
Data transmission	bidirectional
Receive channels	filter-mode: 64 (Rx), gateway-mode: ∞ (Rx)
Transmit channels	filter-mode: 128 (Tx), gateway-mode: 128 (Tx)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%)
Power consumption	typ. 0,8 W (24 V =) | 2 VA (24 V ~)
Enclosure	PA6.6, cover PC, transparent with quick lock screws
Protection	IP42 according to EN 60529
Cable entry	M20 for cable max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Weight without antenna	110 g
Delivery content	external transmit- / receive antenna
Notes	up to 15 devices with Smart Acknowledge (SmartACK)
	magnetic antenna holder required for better radio range

Mounting Advices

The module enclosure is prepared for direct wall mounting. For the operation a separate external 868 MHz receiving antenna is necessary, which is included in the shipment as a standard.

- The antenna should be mounted at metallic objects, e.g. at an air tube behind a false ceiling or at an 180 mmx180 mm metal plate (material: galvanized sheet steel, see accessories).

- In rooms the antenna should be at least 10 cm away from the ceiling.

- The antenna should be vertically aligned downwards.

- Minimal distance to the wall: 10 cm.

- Distance to other transmitters (e.g. GSM/ DECT/ wireless LAN/ EnOcean sender): at least 0,5 m.

- The antenna cable shall be wired in an electric conduit.

- A crushing of cable shall be absolutely avoided.

- The minimal bend radius of the extension cable is 50 mm.

- As for the cable laying the use of an active pull-up device should be avoided, so to avoid any damages on the sheathing respectively on the connectors.

Connection Plan / Configuration
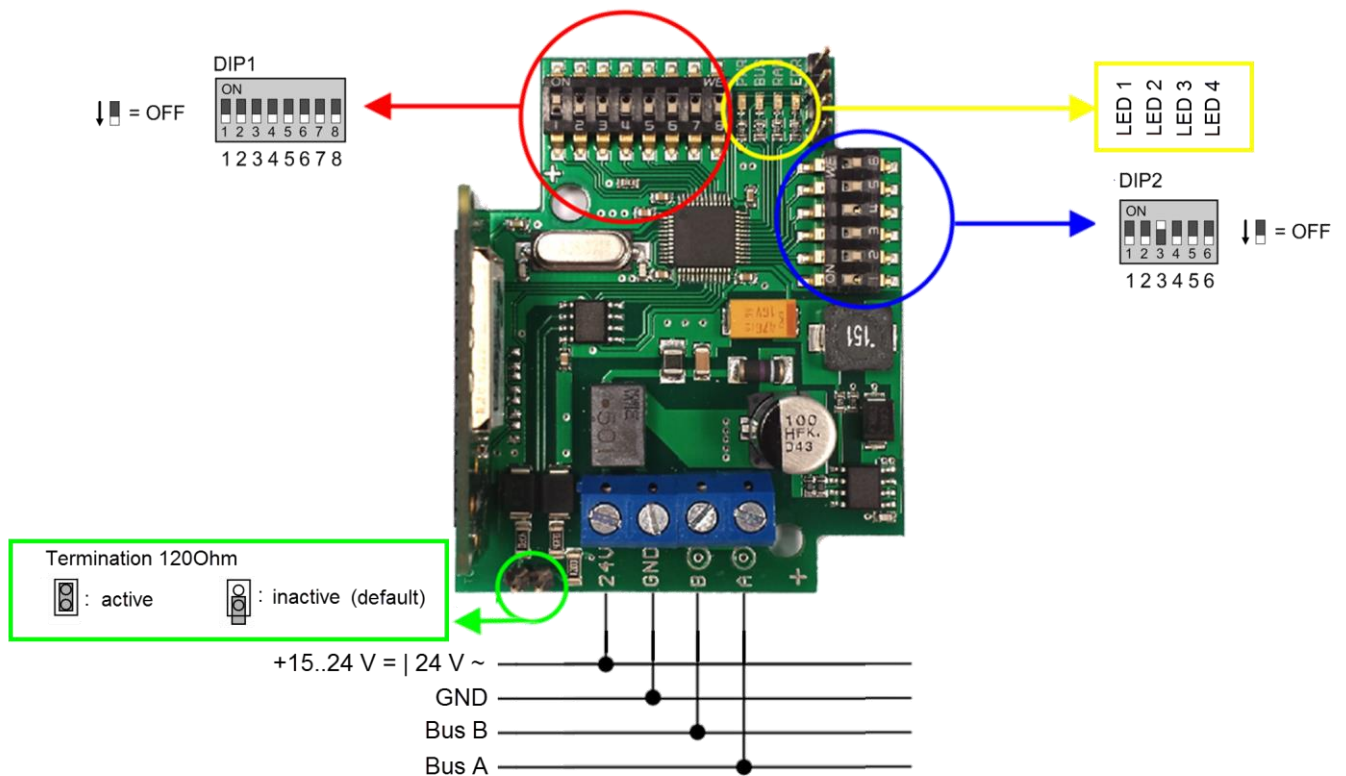
Device address and baud rate

DIP 1

DIP 1.1	DIP 1.2	DIP 1.3	DIP 1.4	DIP 1.5	DIP 1.6	Address		DIP 1.7	DIP 1.8	Baud	
OFF	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	**0***		*OFF*	*OFF*	**9600***	
ON	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	**1**		**ON**	*OFF*	**19200**	
OFF	**ON**	*OFF*	*OFF*	*OFF*	*OFF*	**2**		*OFF*	**ON**	**38400**	
…	…	…	…	…	…	…		**ON**	**ON**	**115200**	
ON	**ON**	**ON**	**ON**	**ON**	**ON**	**63**		-	-	-	

*factory default

Options

DIP 2

DIP 2.1	DIP 2.2	→ Parity	DIP 2.3	→ Compatibility mode	DIP 2.4	DIP 2.5	DIP 2.6	
ON	*OFF*	**odd**	**ON**	**ON***	not used	not used	not used	
OFF	**ON**	**no**	*OFF*	**OFF**	not used	not used	not used	
OFF	*OFF*	**even***	-	-	-	-	-	

*factory default

LED

	Designation	Description
LED 1	PWR	Power supply OK
LED 2	BUS	Indicator for RS485 traffic
LED 3	RAD	Indicator of EnOcean traffic
LED 4	ERR	Indicator for error notification

When changing-over dip switch 2.3, the compatibility mode is activated. Thanks to this mode, old STC devices can be easily replaced. Thus, the bus communication is adapted to the previous firmware version 2.0.0 so that no VLD/MSC telegrams, SMACK and various commands are not available. The responses to the commands correspond to the old software status, as well.

For a proper configuration of the STC65-RS485 EVC with the configuration software, the device must be in compatibility mode.

The configuration software and more information about the parameter of the STC65-RS485 EVC, please download from the following link.

www.thermokon.de/download-archive/EasySens%20-%20Empf%C3%A4nger/Gateways/STC65-RS485%20EVC/Software/STC65-RS485_EVC.zip

Commissioning

Radio sensors send time or event controlled telegrams to the receiver. The receiver verifies the incoming telegrams and output them directly via their interface. Each telegram allows a precise allocation and consists of the format: type of the telegram, data, sender-ID 32bit.

In order to assure a correct evaluation of the measuring values by the receiver, it is necessary to have the devices learned by the receiver. This is done automatically by means of a "learn button" at the sensor or manually by input of the 32bit sensor ID and a special "learning procedure" between sender and receiver. The respective details are described in the corresponding software documentation of the receiver.

*depending on the respective receiver type

Dimensions (mm)
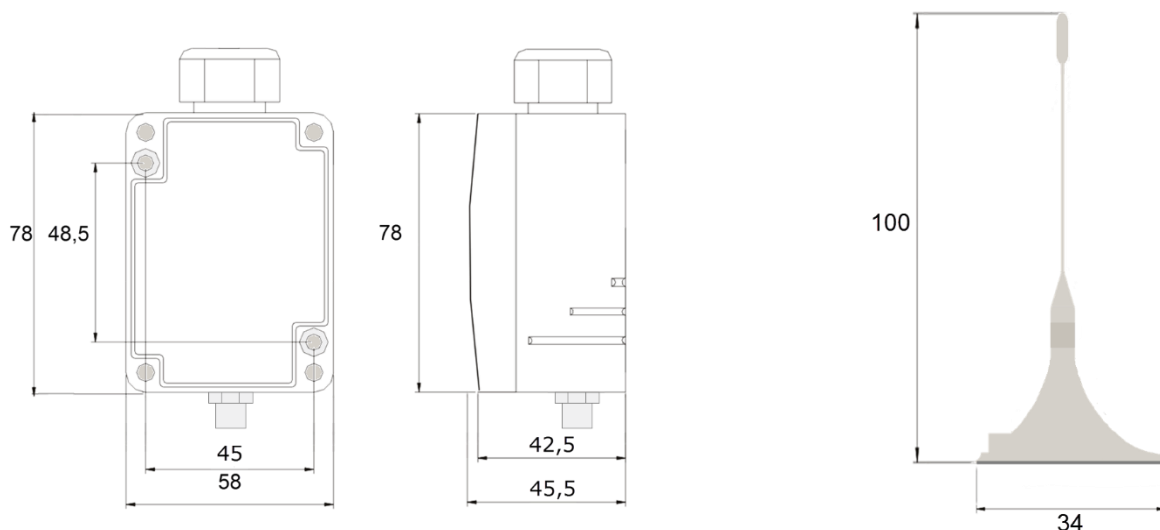
Accessories (optional)

Antenna extension 10 m	Item No. 257206
Antenna extension 20 m	Item No. 257213
Antenna holder form L, 180x180 mm	Item No. 255097
Rawl plugs and screws	Item No. 102209