STC65 RS485 Modbus

EnOcean receiver/transmitter with RS485 Modbus interface

thermokon®
Sensortechnik GmbH

Data Sheet

Subject to technical alteration
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Modbus

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

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

Application

Bidirectional gateway with interface RS485, Modbus protocol, IP42-enclosure. For evaluation of up to 32 EasySens sensors or wireless switches. Transmission of field-programmed telegrams to 32 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) general

Basic information about EasySens® radio 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 Modbus, RTU or ASCII, half-duplex, baud rate 9.600, 19.200, 38.400 or 57.600, parity none (2 stopbits), even or odd (1 stopbit)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	902 MHz
Antenna	external transmit- / receive antenna
Data transmission	bidirectional
Power supply	15..24 V = (±10%) or 24 V ~ (±10%)
Power consumption	typ. 0,6 W (24 V =) | 1,5 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=0.31in.
Connectional electrical	terminal block, max. 15AWG
Ambient condition	-4..+140 °F, max. 85% rH non-condensing
Weight without antenna	3.88oz.
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 902 MHz receiving antenna is necessary, which is included in 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 7.09in. x 7.09in metal plate (material: galvanized sheet steel, see accessories).

If possible the antenna should be mounted with a distance of > 4in. from the ceiling and from a wall. The distance to other transmitters (e.g. GSM / DECT / wireless LAN / EnOcean sender) should be minimum 1.6ft.

The antenna should be vertically aligned downwards. The antenna cable should be wired in an electric conduit. A crushing of cable shall be absolutely avoided. The minimal bend radius of the extension cable is 2in.

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

Configuration
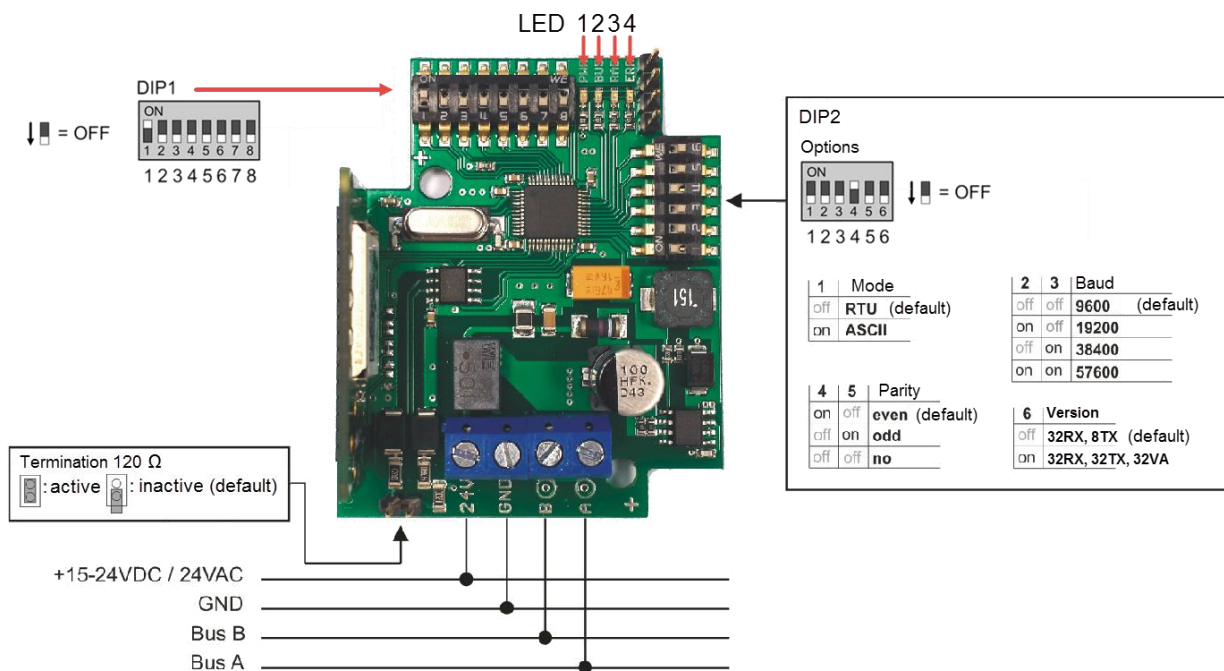
DIP 1

DIP 1.1	DIP 1.2	DIP 1.3	DIP 1.4	DIP 1.5	DIP 1.6	DIP 1.7	DIP 1.8	Address
ON	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	1 (default)
OFF	**ON**	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	2
ON	**ON**	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	3
…	…	…	…	…	…	…	…	…
ON	**ON**	**ON**	**ON**	*OFF*	*OFF*	*OFF*	*OFF*	15
…	…	…	…	…	…	…	…	…
ON	**ON**	**ON**	*OFF*	**ON**	**ON**	**ON**	**ON**	247

LED

	Designation	Description
LED 1	PWR	Power supply OK LED permanently ON → compatibility mode ON (DIP 2.6 = OFF | 32RX, 8TX) LED flashes → compatibility mode OFF (DIP 2.6 = ON | 32RX, 32TX, 32VA)
LED 2	BUS	Indicator RS485 traffic
LED 3	RAD	Indicator EnOcean traffic
LED 4	ERR	Indicator for error notification

When using ASCII mode, the parity must be set to EVEN or ODD. „No Parity" (no) is not available in ASCII mode.

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

http://www.thermokon.de/download-archive/EasySens%20-%20Empf%C3%A4nger/Gateways/
STC65-RS485%20MODBUS/Software/STC65-RS485_Modbus.zip

Installation

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 (in.)
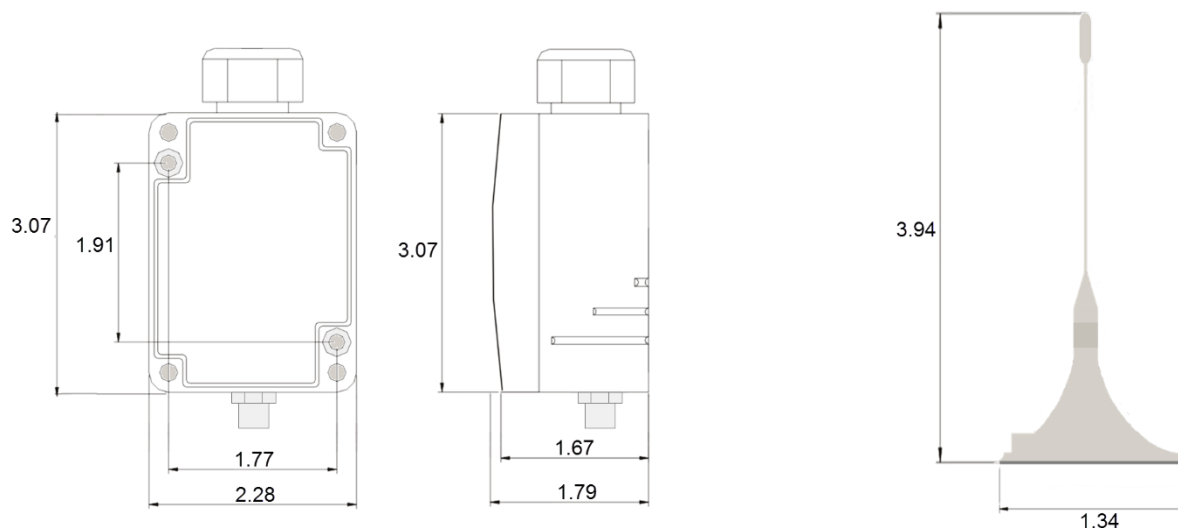
Accessories

Antenna extension 33ft.	Item No. 257206
Antenna extension 66ft.	Item No. 257213
Antenna holder form L, 7.09 x 7.09in.	Item No. 255097
Rawl plugs and screws	Item No. 102209