

OPTIONAL SENDING TEMPERATURE VALUES TO A CONTROLLER

If during consecutive measurements temperature does not change by more than 0,3 °C, then the sensor optionally sends the temperature value to a controller.

Updating temperature value in a mobile application:

- 1 After sending temperature value by RCK-01 sensor
 - each time if the currently measured temperature differs from the previous one by the hysteresis value $\pm 0,3$ °C
 - after 20 subsequent measurements even though there were no temperature by value higher than 0,3°C
- 2 Each time after pressing PROG push button which is placed on the front of the RCT-01 sensor.

SIGNALLING OF BATTERY DISCHARGE

Information on battery status is sent to a mobile application by means of STATUS LED in a sensor as well as in a mobile application.

- In case of STATUS LED battery discharge is indicated by a repeated, quick blinks of LED diode during transmission.
- In case of a mobile application battery status is indicated by two icons:



COOPERATION AND OPERATION RANGE

Due to a cooperation with EFC-01/02 controllers, the operation range in the open area is around 200 m.

CAUTION! The range specified applies to device operation in the open area, it means an ideal condition. In case there are any obstacles between the range of a transmitter and a receiver, the following approximate range loss may occur: brick: 10 ÷ 40%, wood, gypsum: 5 ÷ 20%, concrete: 40 ÷ 80%, metal: 90 ÷ 100%, glass: 10 ÷ 20%. Overhead and underground power lines and GSM transmitters placed in a close distance from the devices have also a negative influence on the operating range.

RADIO TEMPERATURE SENSOR

RCT-01

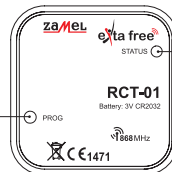
TECHNICAL DATA

Nominal supply voltage:	3 V DC
Battery type:	CR2032
Battery life:	5 ÷ 7 years
Transmission:	radio 868,32 MHz
Transmission way:	unidirectional
Operating range:	up to 200 m in the open area
Signalling of transmission / battery discharge:	red LED
Temperature operating range:	-10 ÷ +55 °C
Direct cooperation with system receivers:	no
Functionality with EFC-01:	sending information to a mobile device + logic functions
Functionality with EFC-02:	sending information to a mobile device
Temperature measuring range:	-20 to +50 °C
Temperature measuring resolution:	0,1 °C
Temperature measuring accuracy:	$\pm 0,5$ °C
Casing protection degree:	IP20 (PN-EN 60529)
Protection class:	III
Dimensions:	47,5 x 47,5 x 13 mm
Weight:	0,02 kg
Reference standard:	PN-ETSI EN 300 220-1, PN-ETSI EN 300 220-2

APPEARANCE

Adding a sensor to a controller

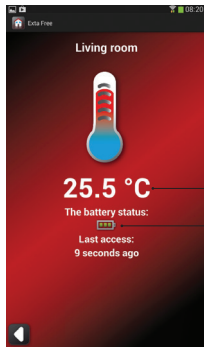
Sending temperature value to a controller



Signalling of transmission

DESCRIPTION

RCT-01 is a universal wireless temperature sensor battery operated. Communication protocol is in accordance with exta free system. The sensor is dedicated to cooperate only with system receivers (EFC-01 or EFC-02). In case of cooperation with EFC-02, only temperature value visualization is seen in a mobile application. Whereas in case of cooperation with EFC-01, the measured temperature value can be additionally used in the control process of e.g. heating system or air conditioning. The sensor has small dimensions and is designed to be mounted in junction boxes. Additionally it can be mounted on surfaces (mounting by means of a double-sided tape or assembly adhesives).



Presentation of RCT-01 sensor in a mobile application

Current temperature value

Battery status in a sensor



Battery charged



Battery discharged

FEATURES

- dedicated to cooperate only with system controllers (EFC-01 and EFC-02)
- unidirectional wireless transmission
- designed to send information regarding temperature to mobile devices (in cooperation with EFC-01 and EFC-02) or additionally to control (only for EFC-01)
- small casing dimensions allow for mounting in junction boxes (flush mounting)
- implemented solutions decreasing battery usage
- temperature value measuring in the range of -20 to + 50°C
- temperature measuring accuracy not lower than ± 1 °C ($\pm 0,5$ °C in the range from 0 to +50 °C, ± 1 °C in other ranges)
- battery powered (1 x CR2032)

ADDING RCT-01 SENSOR TO A CONTROLLER (EFC-01 OR EFC-02)

- 1 Activate extafree application in a mobile device.
- 2 Enter the SENSORS tab in the application and add "Temperature sensor" from the menu.
- 3 The controller is in the waiting mode for a temperature sensor. In this case press PROG push button, which is in placed in the front of the RCT-01 sensor.
- 4 The controller will, after receiving a signal properly from a sensor, issue a message if the new sensor shall be saved in a controller. It must be confirmed by "Yes" ("Tak") push button.
- 5 After the new sensor was properly saved in a controller, current temperature value must be shown next to it. If 0,0 °C value is displayed, PROG push button must be pressed again to update the data.

DELETING RCT-01 SENSOR FROM A CONTROLLER (EFC-01 OR EFC-02)

In order to delete a selected sensor from a controller, enter its editing option and choose "Delete a sensor" option. The sensor will be permanently deleted from the system.

CONFIGURATION PARAMETERS – DEFAULT VALUES

Configuration parameters are strictly adjusted by a manufacturer in order to ensure optimal battery life. They were selected by taking into account the sensor's dynamic, its application and mounting.

The parameters cannot be reprogrammed by means of EFC-01 / 02 controllers.

An interval between following temperature measuring: 300 s (5 minutes)

Hysteresis: $\pm 0,3$ °C

TEMPERATURE VALUES SENT TO A CONTROLLER

Currently measured temperature value is sent to a controller, if it differs from the previous one by the hysteresis value it means the condition has been fulfilled:

$$T_a \geq T_{pop} + 0,3 \text{ °C}$$

$$T_a \leq T_{pop} - 0,3 \text{ °C}$$

It means:

T_a – currently measured temperature value

T_{pop} – temperature value from a previous measuring