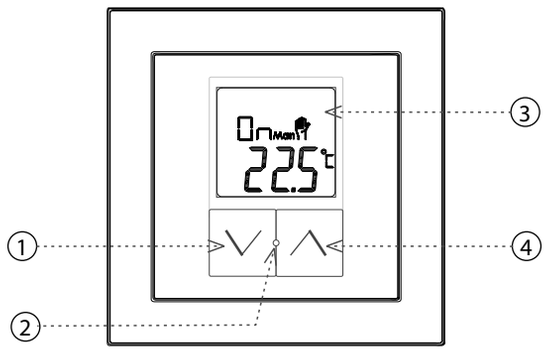
IDRT3-1

EN Digital room thermo-controller

Characteristics

- IDRT3-1 is a digital wall temperature controller used to regulate the temperature in a room.
- Using the IDRT3-1, it is possible to correct the given heating / cooling circuit within a range of ±3, ±4 or ±5 °C (optional in SW iDM3).
- The temperature controller is equipped with an integrated heat sensor used to measure the room temperature. It is also equipped with two analog digital inputs (AIN/DIN), which can be used to connect two potential free contacts or a single external temperature sensor TC/TZ (e.g. for measuring the floor temperature).
- The display shows the current temperature and after pressing one of two buttons under the display, you can control the desired temperature.
- Readability improves after pressing one of the buttons to activate the backlight.
- Heating / cooling circuit is assigned with a thermo-regulator using iDM3.
- In the case of temperature correction within ±3, ±4 or ± 5 °C, this change is valid until the next time mark within the time schedule established in iDM3.
- IDRT3 -1 in design LOGUS^{90} is intended for mounting into an installation box.

Description of device



1. Button to lower temperature
2. LED indication
3. Display
4. Button to rise temperature

General instrucions

EXAMPLE MODEL OF CONTROL, ALL FUNCTIONS ARE FULLY PROGRAMMABLE

HOW TO CONTROL THE DEVICE

Buttons ⓥ\ⓐ can be set to required temperature in a room (of the given temperature circuit) within the framework of the set correction range of ±3, ±4 or ±5 °C.

Activity of the heating circuit is indicated on the display by the ON symbol. In case red LED in a right upper corner shines, the assigned heating circuit is active and the heating source is in operation. Each heating circuit operate according to a temperature set in the iDM3 program (day and night, weekend program, etc) in the software iDM3. If the display is symbol MAN, the heating circuit constantly heats at a manually corrected temperature (correction is valid until the next time mark of the set program).

CONNECTION INTO THE SYSTEM

Connect the product to the system according to the connection diagram listed with each product. The wires of data BUS of iNELS system are connected to the terminals BUS+ (standard red wire for single-pair wiring, red and yellow for two-pair wiring) and BUS- (standard black wire for single-pair wiring, black and white for two-pair wiring), and it is not possible to change the terminals. A twisted pair of wires must be used for the data BUS with a wire diameter at least 0.8 mm. Data communications and power supply to the units are led in a single pair of wires, and you must observe the power cable size with regard to voltage loss on the wire and the maximum power draw.

CAPACITY AND CENTRAL UNIT

It is possible to connect to the central unit CU3-01M or CU3-02M two independent BUSes by means of terminals BUS1+, BUS1- and BUS2+, BUS2-. It is possible to connect to each BUS up to 32 units, so it is possible to connect directly to the central unit a total of 64 units. It is necessary to comply with the requirement of a maximum load of one BUS line - maximum up to 1000 mA current. It is the sum of the rated currents of the units connected to the BUS line, other units can be connected using the units MI3-02M, which generate further BUSes. These are connected to the CU3 unit via the system BUS EBM and you can connect a total of 8 units via EBM BUS to the central unit MI3-02M.

COMMUNICATION BUS OF THE SYSTEM

The BUS must have a cable created by a twisted pair of wires for data BUS of the system with a minimum wire diameter of 0.8 mm. A shielded cable must be used in case of installation of cables of the BUS in an environment with the possibility of electromagnetic interference (e.g. when running along power lines, near electric machines and devices, during LV passage through a distributor, etc.). We highly recommend using the cable JYSTY 2x2x0.8 for BUS. The BUS cable is installed in accordance with its mechanical properties given by the producer (into a pipe/bar, under plaster, underground, suspended, etc.) To increase the mechanical resistance of cables, we always recommend installing the cable into an electrical insulation pipe of the appropriate diameter. The total length of wires of the BUS for CU3-01M (CU3-02M), or MI3-02M, can be 1100 m (550 m for each BUS). The topology of the communications BUS is open with the exception of topology of the circuit. It is necessary to use the cable FTP CAT5e or higher for the system BUS EBM - one pair of wires is connected to the terminals EBM+ and EBM- and the second pair of wires can be curled and connected to GND terminal (just on the one side of EBM BUS). The typology of EBM system BUS is strictly linear and must be terminated at both ends with a nominal resistance value of 120 Ω. It is the installer's responsibility to follow all instructions in the manual and all installation requirements for the RS485 BUS.

SUPPLYING THE SYSTEM

For supplying power to system units, it is possible to use the power sources of ELKO EP titled PS3-100/iNELS. We recommend backing up the system with backup batteries connected to the source of PS3-100/iNELS (see sample diagram of connecting the control system).

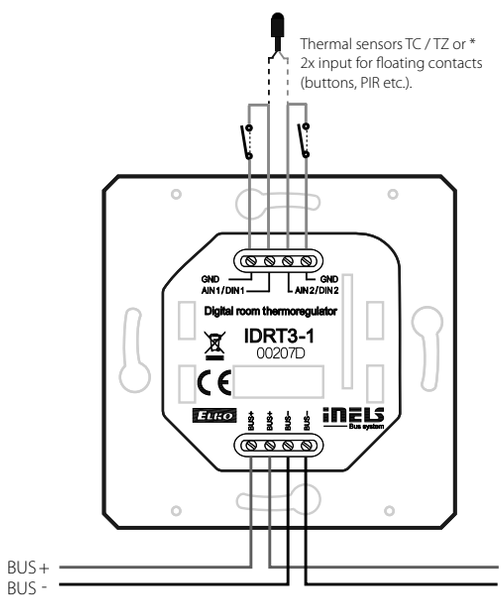
GENERAL INFORMATION

To operate the unit, it is necessary that the unit is connected to a central unit CU3 series, or to a system that already contains this unit as its expansion to include further system.

All unit parameters are set through the central unit CU3-01M in the software iDM3.

There is LED diode on the PCB for indication of supply voltage and communication with the central unit series CU3. In case that the RUN diode flashes at regular intervals, so there is standard communication between the unit and BUS. If the RUN diode lights permanently, so the unit is supplied from BUS, but there is no communication between BUS and unit. In case that RUN diode is OFF, so there is no supply voltage on the terminals BUS+ and BUS-.

Connection



* The choice is made in iDM3 for each unit separately.

Technical parameters

IDRT3-1	
Inputs	
Temperature measuring:	YES, built-in thermo sensor
Range / accuracy of temp. measuring:	0 .. +55 °C; 0.3 °C from range
Heating / cooling circuit correction:	±3, ±4 or ±5°C
Manual ontrol of heating / cooling circuit:	2x buttons
External temperature sensor:	YES, the connection between AIN1/DIN1 and AIN2/DIN2
Type external sensor:	TC/TZ
Temperature measurement range:	-20 °C .. +120 °C
Temperature measurement accuracy:	0.5°C from range
Communication	
Installation:	BUS
Display:	symbol display
Backlight:	YES
Power supply	
Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	20 mA (at 27V DC), from BUS
Connection	
Terminals:	0.5 - 1 mm^2
Operating conditions	
Operating temperature:	0 .. +50 °C
Protection degree:	IP20
Overvoltage category:	II.
Pollution degree:	2
Operation position:	vertical, downward with BUS terminal
Installation:	into installation box
Dimensions and weight	
Dimensions - plastic: - metal, glass, wood, granite:	 85.6 x 85.6 x 50 mm 94 x 94 x 50 mm
Weight:	73 g (without frame)

Warning

Before the device is installed and operated, read this instruction manual carefully and with full understanding and Installation Guide System iNELS3. The instruction manual is designated for mounting the device and for the user of such device. It has to be attached to electro-installation documentation. The instruction manual can be also found on a web site www.inels.com. Attention, danger of injury by electrical current! Mounting and connection can be done only by a professional with an adequate electrical qualification, and all has to be done while observing valid regulations. Do not touch parts of the device that are energized. Danger of life-threat! While mounting, servicing, executing any changes, and repairing it is essential to observe safety regulations, norms, directives and special regulations for working with electrical equipment. Before you start working with the device, it is essential to have all wires, connected parts, and terminals de-energized. This instruction manual contains only general directions which need to be applied in a particular installation. In the course of inspections and maintenance, always check (while de-energized) if terminals are tightened.