

Characteristics

- Glass room thermo-regulator GRT3-100 is part of a comprehensive range of glass iNELS control units for apartments, guest room management system (GRMS) and serves to regulate the temperature in the room.
- The glass room thermo-regulator is a design component of the iNELS system and is available in elegant black (GRT3-100/B) and white (GRT3-100/W) version.
- GRT3-100 thermo-regulator has a display for displaying the current room temperature and desired temperature. To adjust the required temperature, it is possible to use the touch buttons with symbols "▽" and "△".
- The GRT3-100 is equipped with 5x 5 A relay output for fan speed and valves. It is also equipped with analog-to-digital input (AIN/DIN), which can be used to connect potential-free contact or external temperature sensor TC/ TZ (for example temperature measurement of the room or floor).
- GRT3-100 is also suitable for controlling fan coils and fan speed can be easily adjusted by using the touch buttons with symbols.
- Thermo-regulator GRT3-100 also features its touch buttons whose function can be adjusted by software, for example fan coil on/off, heating/ cooling or comfort temperature for heating or cooling.
- The unit has synchronized closing and opening of the relay in the zero-voltage of the sinusoidal waveform. Sync input L against N terminal.
- Thermo-regulator is equipped with an integrated temperature sensor for ambient temperature measurement.
- Engraving of symbols is possible upon a request.
- Individual symbols can be illuminated.
- GRT3-100 are designed for mounting into wall.

Options

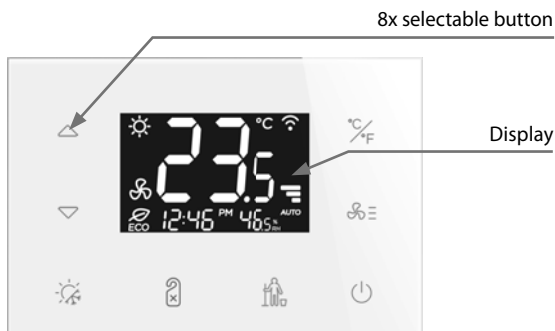
External temperature sensors:

	TC-3	TC-6	TC-12
Length:	3 m	6 m	12 m
Order code:	209970800011	209970800012	209970800013

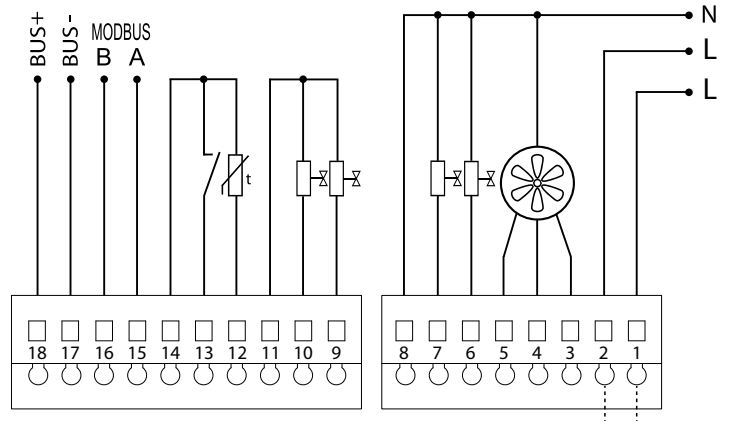


- Thermistor: NTC 12KΩ
- Protection: IP67
- Cable: 2 x 0.25 mm² with a ferrule
- Case: PVC

Description of device



Connection



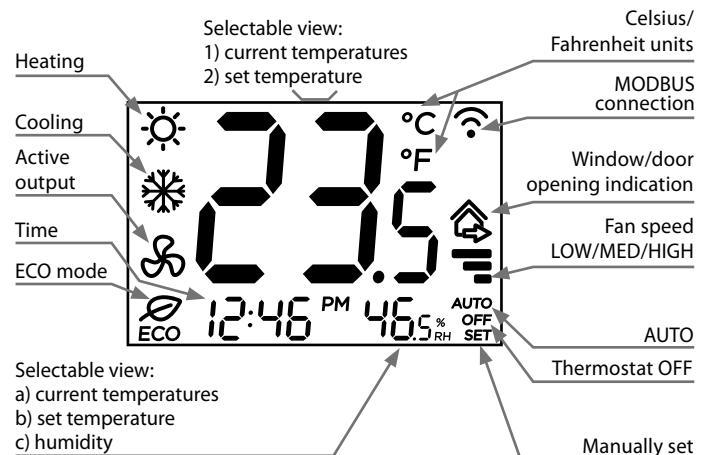
Clamp description

- | | |
|-------------|--|
| 1. L | phase wire relay* |
| 2. L | phase wire relay* |
| 3. HIGH | fan top speed |
| 4. MED | fan medium speed |
| 5. LOW | fan lowest speed |
| 6. HEAT | valve 0/1 for heating |
| 7. COOL | valve 0/1 for cooling |
| 8. N | neutral wire power supply
-synchronization (zero switching) |
| 9. 1:0-10V | 1. analog output 0-10V |
| 10. 2:0-10V | 2. analog output 0-10V |
| 11. GND | common terminal for analog output |
| 12. TIN | temperature input for external sensor |
| 13. IN | binary input for external contact |
| 14. COM | common terminal for binary input |
| 15. BUS A | Modbus A |
| 16. BUS B | Modbus B |
| 17. BUS - | BUS - |
| 18. BUS + | BUS + |

Option for an external temperature sensor TC/TZ

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|---------|-----------------------|
| 12. TIN | temperature input NTC |
|---------|-----------------------|

* The maximum load of the relay is 5 A, the maximum phase load is 10 A, the terminal is limited to 8 A - when the load is fully utilized, two conductors must be used for the L phase supply.



Technical parameters

	GRT3-100/W	GRT3-100/B
Outputs		
Relays:	5x switching / 5A / 250V AC1 / 1385VA	
Contact life:	mechanical: 10 mil. / electrical 100.000 switches	
Mains voltage detection:	yes (relay switching in zero)	
Analog Output:	2x 0-10V, 10 mA	
Inputs (external)		
Binary:	no potential-free contact, terminals IN against GND, maximum wire length 30m	
Temperature:	1x for external temperature sensor TC/TZ, terminals IN & TIN, temperature range -20 to +120 °C, accuracy ± 0.5 °C	
Sensors (internal)		
Temperature:	range 0 to +55 °C, accuracy ± 0.5 °C from the range	
Humidity:	0 - 99% RH, accuracy ± 3 °C from the range	
Lighting:	adaptive backlight control of the display and buttons	
Communications		
iNELS BUS:	BUS	
MODBUS	Configurable by IDM	
Power supply		
Supply voltage BUS:	27 V DC	
Tolerance/ rated current:	-20/+10 , max 150mA	
Control and display		
Display:	LCD (VA/TN), active area 54 x 34mm	
Buttons:	8x, capacitive, backlit	
Mechanics		
Operating temperature:	- 0 to 50 °C / max 90% RH	
Storage temperature:	- 20 to 60 °C	
Enclosure:	IP30 (mounted)	
Overvoltage category:	II.	
Pollution degree:	2	
Working position:	horizontal	
Installation:	on EU or British box with 60 mm bolt spacing	
Terminals:	min. 0.2 mm ² /max 1.5 mm ² with sleeve 18 pole, screwless (push-in)	
Dimension:	120 x 80 x 27 mm	
Weight:	230g	
Shape/edges:	sharp	
Color (glass and plastic)	White	Black
Standard:	EN 63044-1	

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.

General instructions

CONNECTION TO THE SYSTEM, INSTALLATION BUS

iNELS3 peripheral units are connected to the system through the BUS installation. Installation BUS conductors are connected to the terminal units to BUS+ and BUS- terminals, wires cannot be interchanged. For installation of BUS it is necessary to use a cable with a twisted pair of wires with a diameter of at least 0.8 mm, the recommended cable is iNELS BUS Cable, whose features best meet the requirements of the BUS installation. Bearing in mind that in terms of all the properties it is possible in most cases also use the cable JYSTY 1x2x0.8 or JYSTY 2x2x0.8, however it is not recommended as the best option. In the case of a cable with two pairs of twisted wires it is not possible to use the second pair of the other for modulated signal due to the speed of communications; it is not possible within one cable to use one pair for one segment BUS and the second pair for the second segment BUS. For installation of BUS it is vital to ensure that it is kept at a distance from the power lines of at least 30 cm and must be installed in accordance with its mechanical properties. To increase mechanical resistance of cables we recommend installation into a conduit of suitable diameter. BUS topology installation is free except for the ring, wherein each end of the bus must terminate at the terminals BUS + and BUS- peripheral unit. While maintaining all the above requirements, the maximum length of one segment of the installation BUS can reach up to 300 m. Due to the data communication and supply of units in one pair of wires, it is necessary to keep in mind the diameter of wires with regards to voltage loss on the lead and the maximum current drawn. The maximum length of the BUS applies provided that they comply with the tolerance of the supply voltage.

CAPACITY AND CENTRAL UNIT

It is possible to connect to the central unit CU3-01M/02M or miniCU CU3-07/08/09/10M independent BUSES by means of terminals BUS1+, BUS1- or 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. When connecting units which draw greater than 1A, BPS3-01M with 3A sampling can be used. 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 (for CU3-01M/02M) , which generate further BUSES. These are connected to the CU3-01M/02M unit via the system BUS EBM and you can connect a total of 8 units via EBM BUS to the central unit MI3-02M.

SUPPLYING THE SYSTEM

For supplying power to system units, it is recommended to use the power source of ELKO EP titled PSM3-30/iNELS, PSM3-60/iNELS, PSM3-100/iNELS or PS3-30/iNELS . We recommend backing up the system with backup batteries.

GENERAL INFORMATION

To operate the unit, it is necessary that the unit is connected to a central unit CU3 series, connected to the central unit of the system CU3, 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 CU3-0XM 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-.