INTIEL
THE ELECTRONICS ON YOUR SIDE

Thermoregulator for a Motor Actuator Control

INT092F

User's Manual

9, Str. Peter Beron
8200, Pomoprie, Bulgaria
www.intiel.com

tel.: 0596/33366
Email: offise.intiel@gmail.com
info@intiel.com

Instructions for safe handling:

- Before installation to check the integrity of the device and accession to it wires.
- If damaged any of the above can not be installed to removing the fault.
- Assembly and disassembly of the device to be performed by qualified staff who has familiarized herself with the product manual.
- Install the dry and ventilated place away from heat sources and flammable gases and liquids.
- Make sure the mains voltage corresponds to the voltage on the rating plate of the device.
- Use power consumers consistent with the output power of the unit.
- In case of malfunction of the device immediately disconnect the unit and seek authorized service for troubleshooting.
- In case of fire, use powder extinguisher.
- In order to protect the environment do not dispose of electric tools, accessories and their packaging marked with the sign  crossed out bin with household waste.

Packaging content:
- Controller
- User Manual (warranty card)
- Temperature sensor type: Pt1000 - 1 pcs.

I. Application

The Thermoregulator INT0092F is designed to control the movement speed and direction of two positional motor actuators and proportional actuators (0-10V) in accordance with the temperature of the thermo sensitive element. It is applicable for a control of mixed valves or air-flow dampers.

II. Elements location

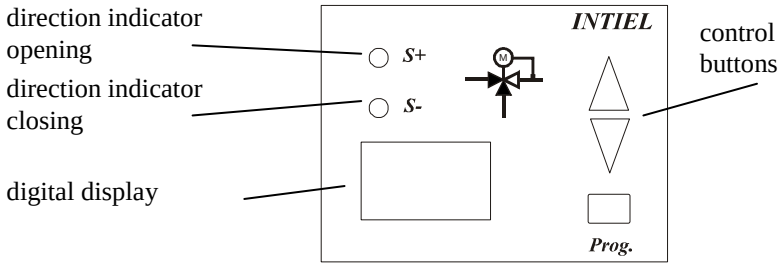
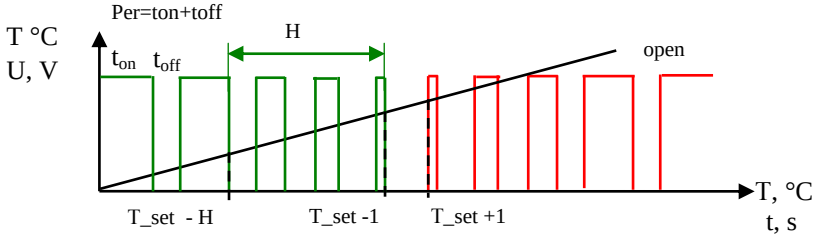


Figure.1

III. Operation

Two-position actuators: / three point-regulation /

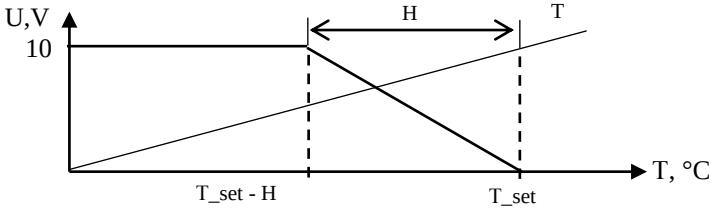
The Thermoregulator compares the assigned temperature level with the current temperature of the thermo sensor and changes the movement of the actuator in relation to the polarity difference. As a result of the movement the Regulator decreases that temperature difference. The difference size defines proportionally the movement speed of the actuator. If difference higher than the value of the hysteresis **"H"** the actuator movement speed is at its maximal level. As much as the real (current) temperature is getting closer to the assigned one the movement speed decreases until it reaches its minimal level. The actuator is moved by an impulse in a step mode with intervals determined by the value of **"Per"**. In fact the regulation is provided by changing the duration of the operation impulse and the pause of the each step.



Proportional actuators / 0 – 10V /

The thermostat compared set temperature with the actual temperature of temperature sensor and modify control voltage (0-10V) to the difference so that the size of the difference to decrease.

The size of the difference determines the proportional voltage (0-10V). In difference higher than the value of the hysteresis **"H"** signal is maximum (10V), thereby approximating the actual temperature to the set temperatur signal is minimizes (0V).



When the actual temperature is lower than the set, there is a green light S + and voltage to the actuator comes out of the terminal S +. With buttons ▲ or ▼ choose menu **"Ctr",** press the button **"Prog"** - the indicator flashes. By continuously pressing the button ▲ is forced S + shine constantly and check the actuator stroke in a direction that causes the increase of the actual temperature. If the actuator moves in the direction opposite to the anticipated, the wires are exchanged on terminals S + and S-.

After establishing the correct direction of travel of the actuator button ▲ or ▼ is held down to worked off full move.

Failure of the temperature measuring input, digital display is indication:"Lo" or "Hi"

IV. Programming

With buttons "▲" and "▼" is selected parameter for change by pressing button "▉" to enter the programming mode.

With each pressing on one of the two buttons "▲" or "▼" setpoint changes by one unit, while holding down starts automatically changes direction corresponding to the button.

Setting temperature - with the buttons "▲" and "▼" scrolling indication on the display until it shows the current temperature again press the button "▉", the display start flashes. By pressing the buttons "▲" and "▼" increases or decreases the set temperature (1 to 90 ° C). To memorize the value necessary to press button "▉".

Hysteresis - with the buttons "▲" and "▼" scrolling indication on the display until the display symbol **"H**", again press the button" ▉ ", the display start flashes. By pressing the buttons "▲" and "▼" to increase or reduce the degree of hysteresis in range (1 to 40)°C. To memorize the value necessary to press button "▉".

Period of work - with the buttons "▲" and "▼" scrolling indication on the display until the display symbol **"Per**", again press the button" ▉ ", the display start flashes. By pressing the buttons "▲" and "▼" to increase or reduce the period, range of period is (15 to 180 sec.). To memorize the value necessary to press button "▉".

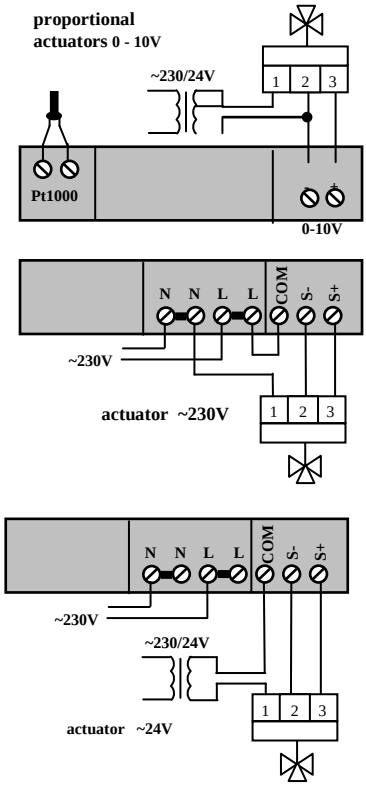
Changing operating modes - changes the characteristics of the output. With buttons "▲" and "▼" scrolling indication on the display until the show symbol **"r-H / C"**, again press the button "**▉**", Display shows the current assignment of output and start flashes.

By pressing the buttons "▲" and "▼" can be selected between **"H" (heating)** or **"C" (cooling).**

To memorize the value necessary to press button "**▉**".

Checking the direction of movement - with the buttons "▲" and "▼" scrolling indication on the display until the display symbol "Ctr, again press the button" **▉** ", the display start flashes. With a continuos pressing buttons "▲" or "▼" is forced the actuator to move in the direction S + or S-. To check out of the need to press a button "**▉**".

V. Technical data and wiring diagram



Power supply voltage	~230V/50Hz
Two-position actuators:	~230V/50VA
or	~24V/5VA

Analog output	0 -10V/22kΩ
Hysteresis	1° – 40°C
Sensor	Pt1000 (-50° to +250°C)
Measuring range	from -30° to +300°C
Range of regulation	from 1° to +90°C
Indication	3 three digit
Unit of measuremen	1°C
Humidity environment	0 - 80%
Protection level	IP 20

VI. Warranty

The warranty period is 24 months following the purchase date of the unit or its installation by an authorized Engineering Company, but not exceeding 28 months after the production date. The warranty is extended to the malfunctions that occur during the warranty period and are result of the production reasons or defective used parts.

The warranty does not relate to malfunctions corresponding to not-qualified installation, activities directed to the product body interference, not regular storage or transport.

The repairs during the warranty period can be done after correct filling of the manufacturer warranty card

Warranty Card

Manufacturer: *INTIEL*	
Product type	Thermoregulator for a Motor Actuator Control
Production number	type: INT0092F
Production date	
Dealer confirmation	
Purchase date	
Invoice number	
Dealer's name, address and stamp	
Seller's name and signature	