

# Digital heat regulators

- Heat regulators with LED display with 3 digits, 7 segments and decimal point with relay intervention signalling LED
- Display range: -99 ÷ +999 °C (depending on the probe connected)
- Display resolution: 0.1 °C (-9.9 ÷ +99.9 °C) and 1 °C (< -9.9 °C and > +99.9 °C)
- Precision: ± 0.5 % of the full scale value ± 1 digit
- Possibility to select the type of probe (HT NTC excluded)
- Password to protect the setting
- Parameter setting with digital mode:
  - Set-point
  - Differential
  - Neutral zone
  - Output triggering timing
  - Digital input delay time and function
  - Alarm delay time
  - Probe gauging OFFSET
  - Resolution displayed
  - Temperature unit of measurement
  - Measurement display filter (updating speed)
  - Probe input type

# HT NiPt / HT NTC / HT JK

- Operating modes (regulation):
- Heating or cooling ON/OFF (with or without Neutral Zone)
  - Direct action, Reverse and Neutral Zone PWM
  - ALARM
  - Refrigeration mode
  - Special mode
- Output: 1 or 2 relays with change-over contact 8 A / 250 V AC1
  - Digital input: 1 (excluding versions HT NiPt-P7A, HT NTC-P7A, HT JK-P7A) with configurable function: external alarm, ON/OFF regulation, probe display selection, Set-point switching, Direct/Reverse switching
  - Visual and acoustic alarm signalling for: external alarm (from digital input), probe alarm (fault), minimum or maximum alarm
  - Infrared receiver with RC-5 protocol (excluding versions HT NTC-1DA, HT NTC-2DA) for remote control unit (accessory available separately for remote programming)

# Digital heat regulators

# HT NiPt / HT NTC / HT JK

HT NiPt



HT NTC



HT JK



## TECHNICAL INFORMATION

### GENERAL CHARACTERISTICS

| Model  | HT NiPt - P7A                  |   | HT NiPt - P3A   |   | HT NiPt - ..P3D   |   | HT NiPt - ..DA |  |
|--|--------------------------------|---|---|---|---|---|----------------|--|
|  | HT NTC - P7A                   |   | HT NTC - P3A  |   | HT NTC - P3D  |   | HT NTC - ..DA  |  |
|  | HT JK - P7A                    |   | HT JK - P3A   |   | HT JK - P3D   |   | HT NTC - ..DA  |  |
| Dimensions                                   | Rear-panel 72x72 mm            |   | Rear-panel 33x75 mm   |   | Rear-panel 33x75 mm   |   | 4 DIN Modular  |  |
| Power supply voltage in AC                   | A 50/60 Hz                     | V | 24 / 230  | 230   | 12 ÷ 24   | 24 / 230  |                |  |
| Power supply voltage in DC                   | V                              |   | -   | -   | 12 ÷ 24   | -   |                |  |
| Power supply voltage tolerance               | %                              |   | ± 10  | ± 15  | ± 10  | ± 10  |                |  |
| Absorption                                   | VA                             |   | 4,5   | 3   | 3   | 4,5   |                |  |
| Relay outputs (change-over contact) capacity | at 250 V AC1                   | A | 8   | 8   | 8   | 8   |                |  |
| maximum breakaway starting current           | A                              |   | 10  | 10  | 10  | 10  |                |  |
| maximum switchable power in AC               | VA                             |   | 2000  | 2000  | 2000  | 2000  |                |  |
| maximum switchable resistive load            | at 230 V                       | W | 1760  | 1760  | 1760  | 1760  |                |  |
| single-phase motor capacity                  | HP                             |   | 1/4   | 1/4   | 1/4   | 1/4   |                |  |
| maximum switchable voltage                   | V                              |   | 250   | 250   | 250   | 250   |                |  |
| Precision                                    | at ambient temperature = 23 °C |   | ± 0.5% of the full scale value ± 1 digit                    | ± 0.5% of the full scale value ± 1 digit                    | ± 0.5% of the full scale value ± 1 digit                    | ± 0.5% of the full scale value ± 1 digit                    |                |  |
| Display range                                |                                |   | -99 + 999 °C *  | -99 + 999 °C *  | -99 + 999 °C *  | -99 + 999 °C *  |                |  |
| Display resolution                           |                                |   | 0.1 °C (-9.9 ÷ +99.9 °C)<br>1 °C (< -9.9 °C and > +99.9 °C) | 0.1 °C (-9.9 ÷ +99.9 °C)<br>1 °C (< -9.9 °C and > +99.9 °C) | 0.1 °C (-9.9 ÷ +99.9 °C)<br>1 °C (< -9.9 °C and > +99.9 °C) | 0.1 °C (-9.9 ÷ +99.9 °C)<br>1 °C (< -9.9 °C and > +99.9 °C) |                |  |

\* Depending on the selected probe



## TECHNICAL INFORMATION

### GENERAL CHARACTERISTICS

| Model                                     | HT NiPt - P7A                             |  | HT NiPt - P3A                             |   | HT NiPt - ..P3D                           |   | HT NiPt - ..DA |  |
|---|---|--|---|---|---|---|----------------|--|
|   | HT NTC - P7A                              |  | HT NTC - P3A                              |   | HT NTC - P3D                              |   | HT NTC - ..DA  |  |
|   | HT JK - P7A                               |  | HT JK - P3A                               |   | HT JK - P3D                               |   | HT NTC - ..DA  |  |
| Sampling time                             | s   |  | 0.5                                       | 0.5                                       | 0.5                                       | 0.5                                       |                |  |
| Front protection degree                   | IP54                                      |  | IP54                                      | IP54                                      | IP54                                      | IP40                                      |                |  |
| Terminal protection degree                | IP20                                      |  | IP20                                      | IP20                                      | IP20                                      | IP20                                      |                |  |
| Display                                   | 3 digits LED<br>7 segments and dec. point |  | 3 digits LED<br>7 segments and dec. point | 3 digits LED<br>7 segments and dec. point | 3 digits LED<br>7 segments and dec. point | 3 digits LED<br>7 segments and dec. point |                |  |
| Probe alarm signalling buzzer             | ■   |  | ■   | ■   | ■   | ■   |                |  |
| Infrared receiver for remote control unit | ■   |  | ■   | ■   | ■   | ■ (1)                                     |                |  |
| Digital input                             | ■   |  | ■   | ■   | ■   | ■   |                |  |
| Operating temperature                     | °C  |  | 0 ÷ +50                                   | 0 ÷ +50                                   | 0 ÷ +50                                   | 0 ÷ +50                                   |                |  |
| Operating humidity                        | RH  |  | < 80%                                     | < 80%                                     | < 80%                                     | < 80%                                     |                |  |
| Storage temperature                       | °C  |  | -10 ÷ +70                                 | -10 ÷ +70                                 | -10 ÷ +70                                 | -10 ÷ +70                                 |                |  |

(1) excluding HT NTC-...DA



# HEAT REGULATION

# Digital heat regulators

Digital heat regulators to regulate the temperature both when heating and cooling in applications such as refrigeration counters, cold rooms and ambient temperature.



## THERMOREGULATORS FOR THERMO-RESISTANCES

| Code     | Model       | Version            | Power supply    | no. of relays |
|----------|-------------|--------------------|-----------------|---------------|
| VM632700 | HT NTC-1P7A | Rear-panel 72x72 * | 24/230 V AC     | 1             |
| VM633500 | HT NTC-2P7A | Rear-panel 72x72 * | 24/230 V AC     | 2             |
| VM634300 | HT NTC-1P3D | Rear-panel 33x75   | 12 ÷ 24 V AC/DC | 1             |
| VM635000 | HT NTC-1P3A | Rear-panel 33x75   | 230 V AC        | 1             |
| VE347100 | HT NTC-2P3A | Rear-panel 33x75   | 230 V AC        | 2             |
| VM636800 | HT NTC-2P3D | Rear-panel 33x75   | 12 ÷ 24 V AC/DC | 2             |
| VM637600 | HT NTC-1DA  | 4 DIN Modular **   | 24/230 V AC     | 1             |
| VM638400 | HT NTC-2DA  | 4 DIN Modular **   | 24/230 V AC     | 2             |

\* This version does not have a digital input

\*\* Infrared receiver for remote control unit not available

## REFERENCE STANDARDS

Compliance with Community Directives: 73/23/EEC mod. from 93/68/EEC (Low Voltage) 89/336/EEC mod. from 92/31/EEC and 93/68/EEC (E.M.C.) is declared with reference to the following standards: • For safety: EN 60730-2-9 • For E.M. compatibility: EN 55014-1 / EN 55014-2 / EN 61000-6-2 / EN 61000-6-4

# HT NTC

- Connectable probes:
  - NTC (10 kΩ at 25 °C)
- 2 probes inputs to measure two temperatures (one probe for the regulation and the other for the display)
- T2 temperature display indication LED (excluding Rear-panel version 33x75 mm)

! To complement the product the suitable probes must be ordered separately.

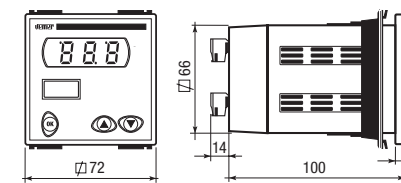
# Digital heat regulators

# HT NTC

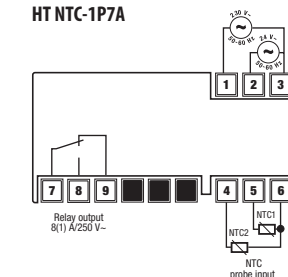
## DIMENSIONS (mm)

### Front view / Side view

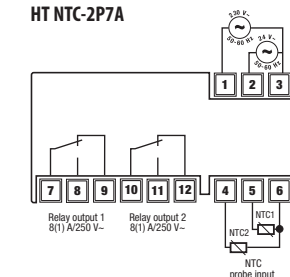
HT NTC-1P7A  
HT NTC-2P7A



HT NTC-1P7A

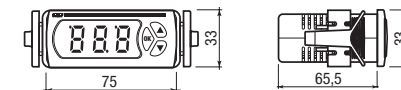


HT NTC-2P7A

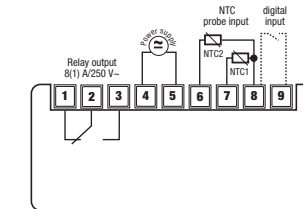


### Diagram

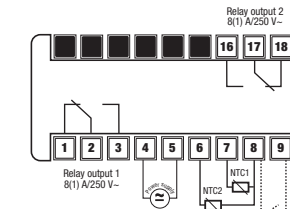
HT NTC-1P3D



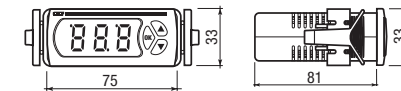
HT NTC-1P3D



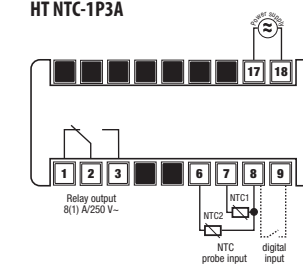
HT NTC-2P3D



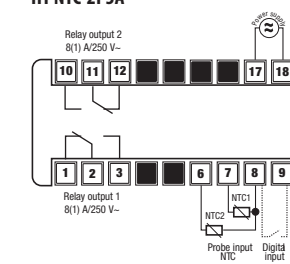
HT NTC-2P3D



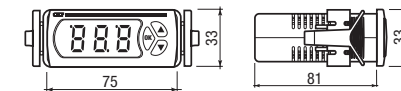
HT NTC-1P3A



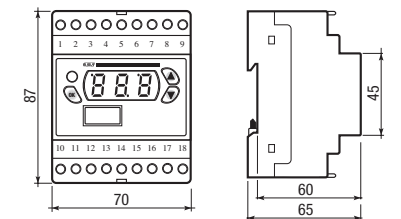
HT NTC-2P3A



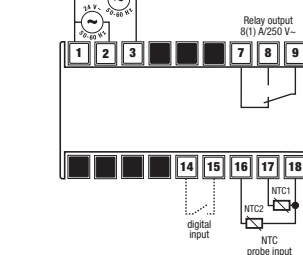
HT NTC-1P3A  
HT NTC-2P3A



HT NTC-1DA  
HT NTC-2DA



HT NTC-1DA



HT NTC-2DA

