

## 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 between Thermocouples, Thermo-resistances and Linear sensors
- Password to protect the setting
- Parameters 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

## FHT / FHT NTC

- 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 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
  - Analog output: 0 ÷ 10 V, 4 ÷ 20 mA, 0 ÷ 20mA
  - Output for the optoisolated RS 485 serial communication (MODBUS communication protocol)
  - Infrared receiver with RC-5 protocol (excluding version FHT NTC-2DA) for Remote control unit (accessory available separately for remote programming)

## Digital heat regulators

### FHT



### FHT NTC



## TECHNICAL INFORMATION

### GENERAL CHARACTERISTICS

Model	FHT - ..P3D		FHT - ..DA	
	FHT NTC -2P3D		FHT NTC -2DA	
Dimensions	Rear-panel 33x75 mm		4 DIN Modular	
Power supply voltage in AC	A 50/60 Hz	V	12 ÷ 24	24 / 230
Power supply voltage in DC		V	12 ÷ 24	-
Power supply voltage tolerance		%	± 10	± 10
Absorption		VA	3	4.5
Relay outputs				
capacity with change-over contact	at 250 V AC1	A	8	8
maximum breakaway starting current		A	10	10
maximum switchable power in AC		VA	2000	2000
maximum switchable resistive load	at 230 V	W	1760	1760
single-phase motor capacity		HP	1/4	1/4
maximum switchable voltage		V	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
Display range			-99 + 999 °C*	-99 + 999 °C*
Display resolution			0.1 °C (-9.9 ÷ +99.9 °C) 1 °C (< -9.9 °C and > +99.9 °C)	0.1 °C (-9.9 ÷ +99.9 °C) 1 °C (< -9.9 °C and > +99.9 °C)
Sampling time		s	0.5	0.5

\* Depending on the selected probe

## HEAT REGULATION

## TECHNICAL INFORMATION

### GENERAL CHARACTERISTICS

Model	FHT - ..P3D		FHT - ..DA	
	FHT NTC -2P3D		FHT NTC -2DA	
Front protection degree	IP54		IP40	
Terminals protection degree	IP20		IP20	
Display	3 digits LED 7 segments and dec. point		3 digits LED 7 segments and dec. point	
Active probes power supply	in DC	V	9 (max30 mA) (1)	9 (max30 mA) (1)
Probe alarm signalling buzzer			■	■
Infrared receiver for remote control unit			■	■ (2)
Digital input			■	■
Analog output			■ (1)	■ (1)
Serial interface output			■	■
Operating temperature		°C	0 ÷ +50	0 ÷ +50
Operating humidity		RH	< 80%	< 80%
Storage temperature		°C	-10 ÷ +70	-10 ÷ +70

(1) excluding FHT NTC-... (2) excluding FHT NTC-2DA

### 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



- Connectable probes:
    - Ni 100
    - Pt 100\*
    - J (Fe-CuNi)
    - K (NiCr-Ni)
    - L (Fe-CuNi)
    - R (Pt13Rh-Pt)
    - S (Pt10Rh-Pt)
    - T (Cu-CuNi)
    - E (NiCr-CuNi)
    - N (NiCrSi-NiSi)
    - Linear sensors (output 0-20 mA, 4-20 mA, 0-1 V)\*\*
  - Probes inputs: 1
  - Analog output (0-20 mA, 4-20 mA, 0-10 V)
  - RS 485 serial output with MODBUS communication protocol
- \* Pt 100 Probes with 2 or 3 wires  
 \*\*The active probe can be powered directly by the regulator, 9 V DC available (max 30 mA)

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

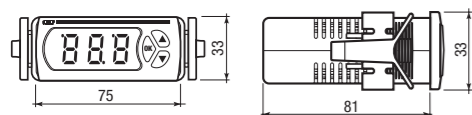


## THERMOREGULATORS FOR THERMO-RESISTANCES, THERMOCOUPLES AND LINEAR SENSORS

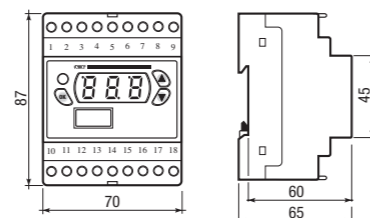
### DIMENSIONS (mm)

#### Front view / Side view

FHT-1P3D  
FHT-2P3D



FHT-1DA  
FHT-2DA



Code	Model	Version	Power supply	no. of relays
VM666500	FHT-1P3D	Rear-panel 33x75	12 ÷ 24 V AC/DC	1
VM667300	FHT-2P3D	Rear-panel 33x75	12 ÷ 24 V AC/DC	2
VM669900	FHT-1DA	4 DIN Modular	24/230 V AC	1
VM670700	FHT-2DA	4 DIN Modular	24/230 V AC	2

### CONNECTION DIAGRAM

