TEMPERATURE CONTROLLERS

1/32 DIN µP BASED CONTROLLERS

- ***Miniature 48x24 mm format with only 95 mm depth***
- ***High precision and complete programming via keyboard***
- ***PID action with AT autotuning and ADT autoadaptive functions***
- ***Complete loop diagnostic from sensor to actuator***

THS SERIES

The **THS** series temperature controllers offer, in the miniature 48x24 mm housing with only 95 mm depth, all the performances typically available in the larger formats.
The input can be configured to suit seven different thermocouples, like the J and K types, and integral or decimal Pt100 resistance temperature detector scales. The control action can be selected as direct or reverse, on/off or PID, with the possibility of manually or automatically setting the parameters by means of the AT initial autotuning and the ADT autoadaptive function. The alarm output can be programmed with 16 different intervention modes; while the exclusive LFA diagnostic function can detect faults along the entire regulation loop, for example sensor short-circuit or heating resistance breaking. Temperature controller programming can be obtained through the front panel, composed of a keyboard and a 4 digit display indicating the process temperature and other parameters when recalled.

DATASENSOR
value through detection

TECHNICAL DATA

Power supply: ..... 10-30 Vdc vers., reverse polarity protection
100-240 Vac vers.
Consumption: ..... 5 VA max.
Sensor input: ..... selectable between E, J, K, L, R, S, T, thermocouples and Pt100Ω/0°C RTDs
Measurement scale: ..... selectable in °C or °F degrees with lower and upper limits, *refer to table 1*
Precision: ..... thermocouple measurement ±0,5% f.s.
RTD measurement ±0,4% f.s.
temperature drift 0,02% f.s./°C of amb. temp.
setting and indication ±1 digit
Data updating: ..... input, output and indication every 500 ms
Data retention: ..... non volatile eeprom memory
Keyboard correction indication: ..... from -99,9 to +99,9 °C/°F
1st point control action: ..... on/off or PID selection, maximum or minimum, with AT initial autotuning and ADT permanent autoadaptive functions
Proportional band: ..... 20°C (sel. from 1 to 999 °C/°F)
Integral time: ..... 120 sec. (sel. from 0 to 960 sec.)
Derivative time: ..... 30 sec. (sel. from 0 to 240 sec.)
Cycle time: ..... 12 sec. (sel. from 1 to 120 sec.)
On/off hysteresis: ..... ±1 °C (sel. from ±0,1 to ±99,9° C/°F)
1st point output type: ..... relay SPST 250 Vac 5 A version
trans. PNP 10-30 Vdc, 20 mA version with short-circuit protection
2nd point alarm action: ..... selectable alarm setting from -999 to +999 °C/°F respect to 1st point, or fixed point setting on selected scale, *refer to table 2*
2nd point output type: ..... relay SPST 250 Vac, 5 A
Auxiliary functions: ..... LFA Loop Failure Alert diagnostic function, digital filter with an average of 10 measures, SW program LOCK with 3 levels
Setting: ..... PROG, SET, UP, DOWN push-buttons
Indicators: ..... 4 digit green display (7mm height), yellow ON1 LED, red ON2 LED
Connection: ..... terminal block with 8 screw contacts
Electrical protection: ..... class 1
Mechanical protection: ..... IP54 - front panel
IP20 - housing and contacts
Housing material: ..... ABS
Weight: ..... 80 g max.
Operating temperature: ..... -10 **...** +55°C
Storage temperature: ..... -20 **...** +65°C
Reference standard: ..... EN 61010-1
Certifications: ..... CE

TABLES

Sensor	*°C scale*	*°F scale*
TR ent.	- 150 ... 450	- 200 ... 850
TR dec.	- 99,9 ... 450	-99,9 ... 850
TC - E	0 ... 600	0 ... 1100
TC - J	- 50 ... 760	- 50 ... 1400
TC - K	- 100 ... 1250	- 150 ... 2300
TC - L	- 50 ... 760	- 50 ... 1400
TC - S	0 ... 1700	30 ... 3000
TC - R	0 ... 1700	30 ... 3000
TC - T	- 100 ... 400	- 150 ... 750

Table 1: **°C/°F SCALE**

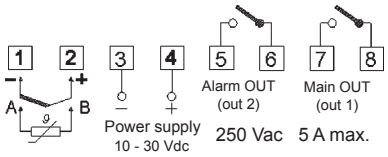
Alarm	*Fixed pt*	*Function*
AL20	FP20	deactivated
AL21	FP21	minimum
AL22	FP22	maximum
AL23	FP23	neutral zone on
AL24	FP24	neutral zone off
AL25	FP25	minimum*
AL26	FP26	maximum*
AL27	FP27	neutral zone on*
AL28	FP28	neutral zone off*

**stand-by: first intervention inhibition*

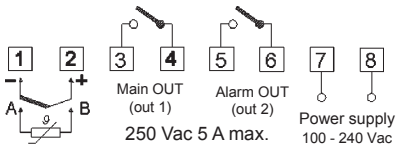
Table 2: **ALARM FUNCTIONS**

CONNECTIONS

RELAY OUTPUT

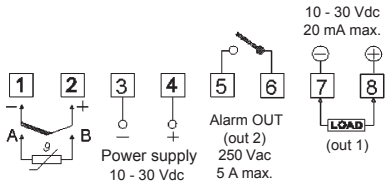


THS-00

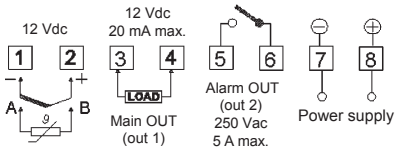


THS-10

TRANSISTOR OUTPUT

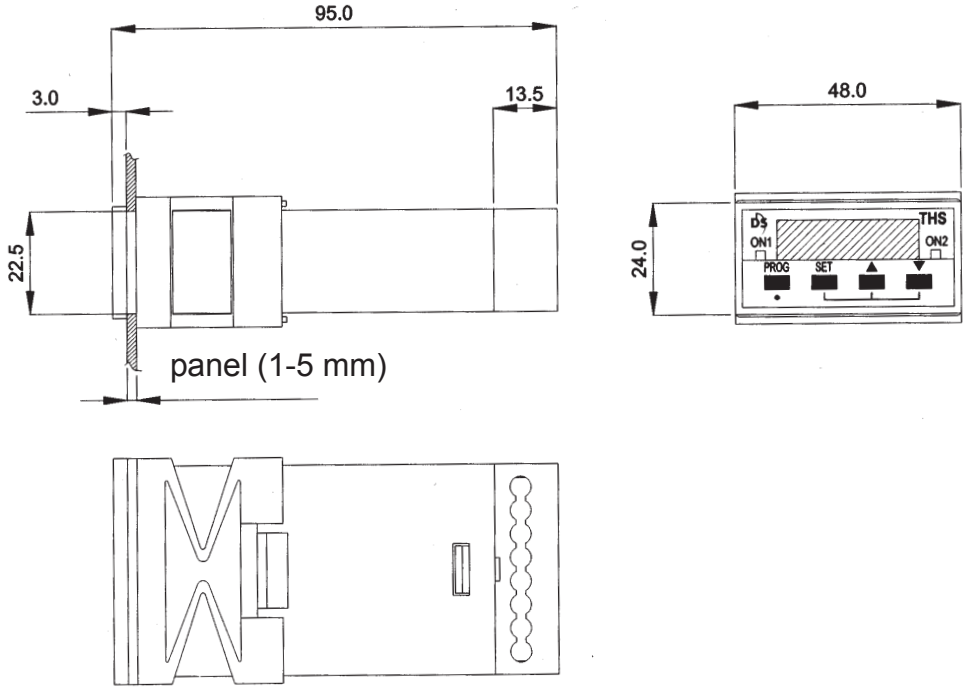


THS-01



THS-11

DIMENSIONS



Panel cutout: 22 x 45 mm

mm

MODELS

MODEL	POWER SUPPLY	MAIN OUTPUT	CODE N°
THS-00	10 ... 30 Vdc	relay	959351000
THS-01	10 ... 30 Vdc	transistor	959351010
THS-10	100 ... 240 Vac	relay	959351020
THS-11	100 ... 240 Vac	transistor	959351030

TEMPERATURE CONTROLLERS

Distributed by:

HEADQUARTERS

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