

## THERMOSTATS SERIES TH 160

### Description

Thermostats series TH 160 are temperature dependent single pole switches working on a principle of different dilatation of two different metals. The temperature sensitive element is the stem of the thermostat with a metal pipe.

Thermostats are made in switch off (two terminals) or switch over (three terminals) version with protective grounding terminal on the cover. The standard version is with cover of terminals to prevent accidental contact of terminals (upgrading IP rating to IP 20). If a customer demands a thermostat without the cover of the terminal they need to specify so in the order.

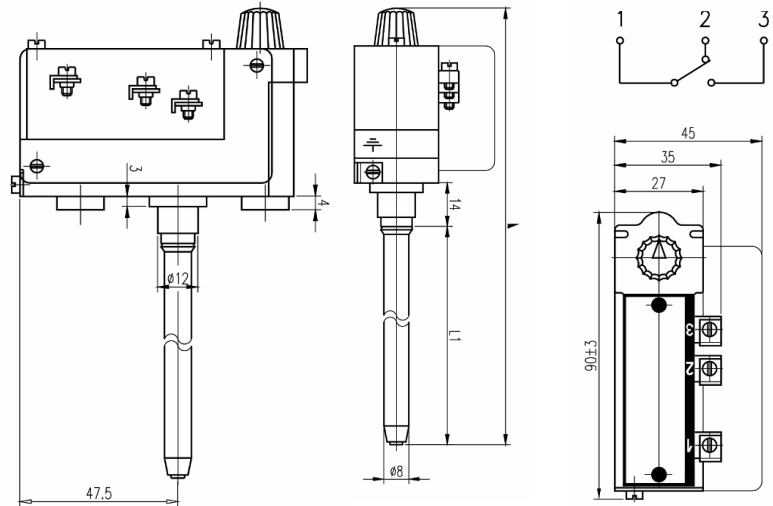
### Technical drawings

#### Fixed settings

Type	L ± 3	L <sub>1</sub> ± 3	Number of terminals
162	164	100	3
165	224	160	3

#### Adjustable

Type	L ± 3	L <sub>1</sub> ± 3	Number of terminals
160	388	315	2
160.1	388	315	2
160.2	388	315	3
163	174	100	3
164	234	160	3
166	274	200	3
167	324	250	3
167.1	324	250	3
169	388	315	2



### Technical data

Type	Control range [°C]	Switching temp. diff. [°C]	Stem length [mm]	Contacts load	Number of terminals	Max. temperature of head [°C]	Well	
							L [mm]	L <sub>1</sub> [mm]
TH 160	20 ÷ 80	2 ÷ 8	315	250V~, 15A~	2	120	324	336
TH 160.1	20 ÷ 80	2 ÷ 8	315	250V~, 15A~	2	120	324	336
TH 160.2	20 ÷ 80	2 ÷ 8	315	250V~, 15A~	3	120	324	336
TH 162	20 ÷ 160	1 ÷ 16	100	250V~, 15A~	3	120	110	122
TH 163	50 ÷ 90	6 ÷ 16	100	250V~, 15A~	3	120	110	122
TH 164	30 ÷ 160	2 ÷ 10	160	250V~, 15A~	3	120	170	182
TH 165	20 ÷ 200	1 ÷ 10	160	250V~, 15A~	3	120	170	182
TH 166	100 ÷ 200	1 ÷ 10	200	250V~, 15A~	3	120	210	222
TH 167	20 ÷ 100	1 ÷ 10	250	250V~, 15A~	3	120	260	272
TH 167.1	-10 ÷ 50	1 ÷ 10	250	250V~, 15A~	3	120	260	272
TH 169	60 ÷ 120	2 ÷ 8	315	250V~, 15A~	2	120	324	336

#### Settings accuracy

± 10% from the highest value of the nominal trip temperature indicated on the thermostat

#### Stem diameter

8 mm

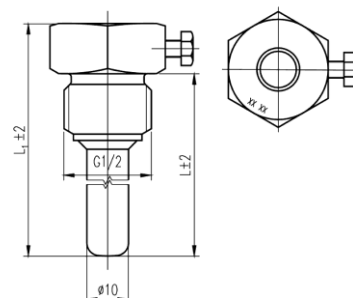
#### Weight

approx. 0,25 ÷ 0,35 kg

#### Ingress protection

IP 00

#### Well



## Installation

Installation and connection of thermostat to an electric circuit can be performed by person with qualification according to regulation no. 50/1978 §6 or worker of professional service. Follow these recommendations:

- Thermostat has grounding terminal and has to be grounded
- Thermostat had to be installed so it is not damaged during installation. Stem of thermostat must not be bended
- Installation is done by sliding into a well and fastening the screw. Orientation of the head needs to be set before fastening the screw. Rotating the head after fastening could damage the thermostat
- When using thermostat in liquids, well has to be used
- Thermostat has cover IP 00 (IP 20) therefore they need to be installed into an equipment that provides further coverage
- Thermostats need to be installed in an environment AB5, AE1, AM1, AN1, BE1 that must not contain vapours or gases of chemical substances that could damage parts of thermostat
- Thermostat switch is intended for electrical circuit with load to minimal value of effect 0.95
- Conductors need to be equipped with copper parts ČSN 37 1366

## Intended usage

Thermostats are intended to switch on electrical circuits, not as a main switch though. Thermostats are intended for alternating current. During installation, the stem needs to be placed in a way that it is not mechanically stressed and can dilate. In a liquid environment, a well needs to be used. Thermostats are intended to be used in the following devices:

- TH 160, 160.1, 160.2 and 163 for regulation and limiting temperature of water in non-flow through boilers with permanent power
- TH 167.1 for regulation of temperature for air conditioning
- TH 162, 164, 167 and 169 for regulation and limitation of temperature of electric radiators filled with a liquid
- TH 165 and 166 for regulation and temperature limiting in liquid and low pressure steam heating (not intended as safety device)

Other usage needs to be consulted with the manufacturer. After installation of TH please follow instructions in the user manual of the equipment that TH is used in.

## Effect on other products

The activity of the TH terminals causes momentary voltage fluctuations on the terminals which is superposed to the power supply wave shape.

## Storage conditions

Storage can be done in closed ventilated areas in the temperature range 0-40°C with a maximum relative humidity 80%. Storage and handling must not cause mechanical damage to the instrument. The thermostats must be handled gently, without strong shocks and impacts.

## Disposal

Dispose of TH as follows: Take the TH to a scrap yard.

## Possible minor faults and their removal

The thermostat may be repaired only by the manufacturer.

## Warranty

Provided that the thermostat is installed, wired and used in accordance with instructions in the installation and operating instructions, the manufacturer warrants the thermostat in accordance with the applicable code, unless otherwise agreed.

The manufacturer will refuse warranty repairs if the unit has been damaged:

- During transport and storage by the customer or his customers
- During installation or dismantling in the equipment of the customer of his customers
- In case of improper handling and installation in equipment other than that specified in the instructions
- If the thermostat has been exposed to an environmental other than specified in the instructions

## Warranty and post-warranty repairs

Warranty and post-warranty repairs are provided by the manufacturer. Pack the defective product and send it to following address:

### APATOR METRA s.r.o.

Havlíčková 919/24  
787 01, Šumperk  
Czech Republic

Tel.: 583 718 261  
E-mail: [prodej@metra-su.cz](mailto:prodej@metra-su.cz)  
www: [www.metra-su.cz](http://www.metra-su.cz)