

TEMPERATURE REGULATORS
SELF ACTING – NON BALANCED SINGLE SEAT
TR25/R – Reverse action for cooling systems
(Forged steel or stainless steel valves & T series thermostats)

DESCRIPTION

The TR25/R valves series are designed for temperature control of cooling systems where the valve opens when the temperature rises. They are single seated, in order to ensure an excellent tightness, and are intended to be coupled with thermostat models T.205 and T.405. The liquid filling the thermostat expands when the temperature levels of the fluid being cooled rise, opening the valve.

MAIN FEATURES

Single seated, two way, reverse action valve.
 Leakage of less than 0,05% of full Kv.

OPTIONS: Valves for heating process.

USE: Water and other compatible fluids.

AVAILABLE MODELS: TR25S/R - Forged steel body.
 TR25I/R - Forged stainless steel.

SIZES: 1/2" to 1" ; DN15 to DN 25.

CONNECTIONS: Female screwed ISO7/1 Rp (BS21) .
 Flanged EN 1092-1 or ANSI.

CONTROL MODE: Proportional.

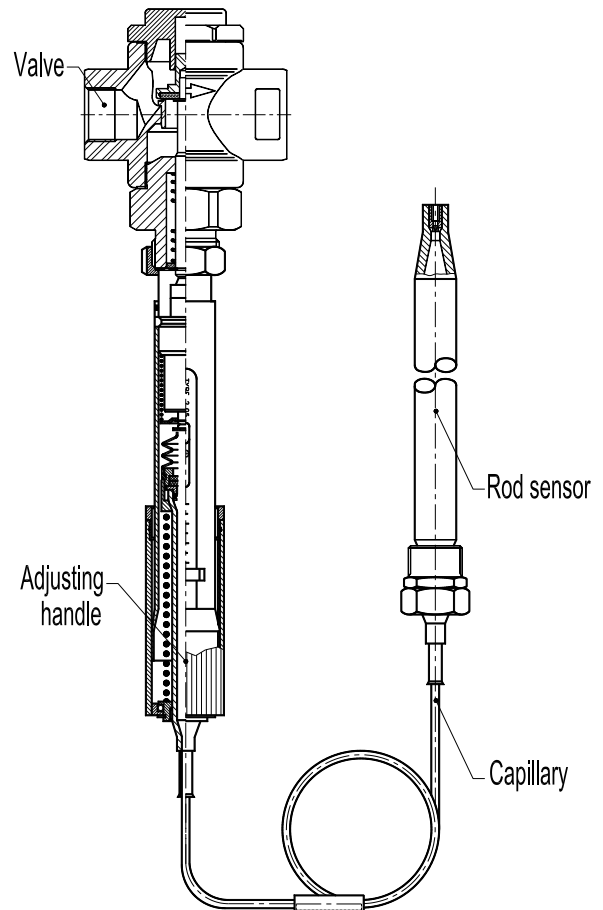
THERMOSTATS: T.202 - 200N (max. closing force).
 T.405 - 400N (max. closing force).
THERMOSTAT RANGES: T.205 - 0-60; 30-90 and 60-120 °C.
 T.405 - 0-120; 40-160 °C.

CAPILLARY LENGTHS: 3 m as standard.

HOW TO SELECT: Never size the valve according to the pipe diameter in which it has to be fitted but according to the required actual flow of steam or water. Refer to valve calculation data sheet or consult the factory.

VALVE LIMITING CONDITIONS: Body design conditions: PN40.
 40 bar at 120 °C;
 24 bar at 350 °C;
 Min. working temperature: -10 °C.

INSTALLATION: Horizontal installation, with the thermostat in the vertical position, in order to reduce wear. In case of valve temperatures up to 150 °C, the thermostat may be fitted above or below the valve.
 An "Y" strainer should be installed upstream of the valve.
 See IMI – Installation and maintenance instructions.



Sensor pocket PK

SPECIFICATIONS				
TYPE	Connection DN	Opening Ø (mm)	Kvs (m ³ /h)	Valve stroke
TR25 – 15	15	15	1,9	6
TR25 – 20/15	20	15	1,9	6,5
TR25 – 20/20	20	20	4,2	6,5
TR25 – 25/20	25	20	4,2	7

MAX. PERMISSIBLE DIF. PRESSURES		
PRESSURE (bar)	VALVE SIZE (DN)	SEAT Ø (mm)
With T.205 thermostat		
5,3	15	15
5,3	20	15
2,9	20	20
2,9	25	20
With T.405 thermostat		
15	15	15
15	20	15
9	20	20
9	25	20

PROPORTIONAL BAND

The proportional band is the temperature change required for the valve to move from fully open to fully closed. It depends on the valve stroke and on the thermostat movement per °C, and is calculated as follows:

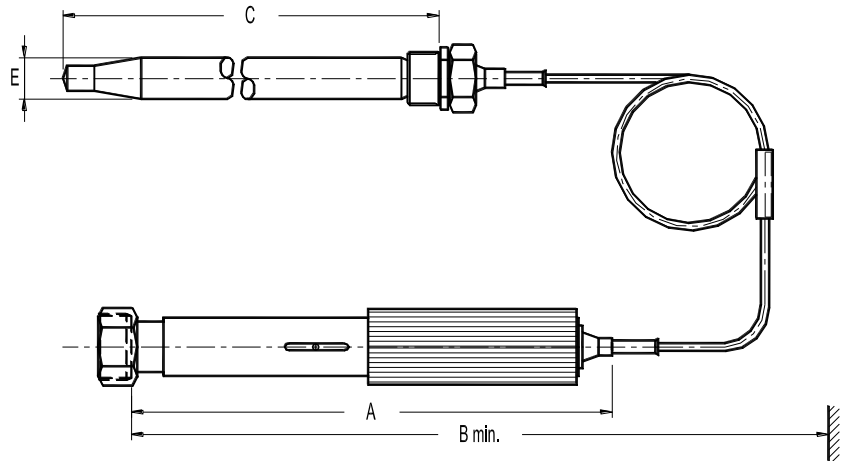
$$\text{Proportional band: } \frac{\text{Valve stroke (mm)}}{\text{Thermostat mov. (mm/°C)}}$$

Thermostat movement in mm per °C:

T.205 and T.405: 0,5 mm / °C

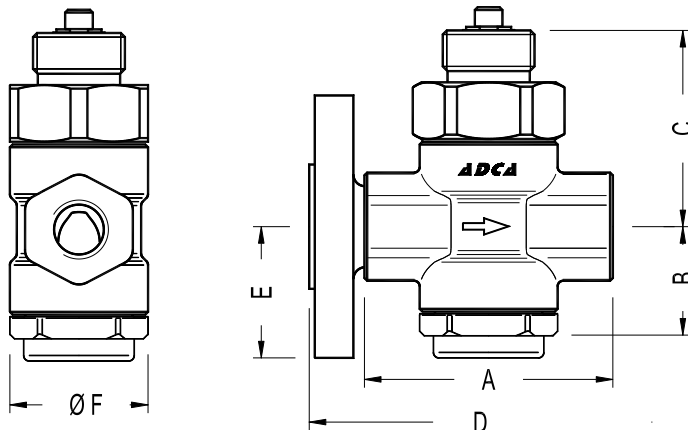
A proportional band in the range 8-13°C is suitable for most applications. A smaller proportional band is not ideal where heat load varies rapidly.

DIMENSIONS – THERMOSTAT (mm)					
TYPE	A	B	C	E	WGT. (kg)
T.205	305	405	210	22	1,8
T.405	385	525	390	22	2,6



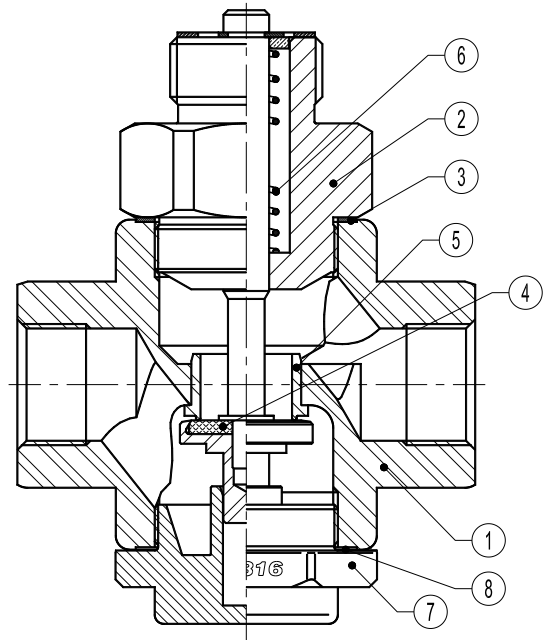
DIMENSIONS – VALVE BODY (mm)								
SIZE	THREADED					EN 1092-1 FLANGES		
	A	B	C	F	WGT. (kg)	D	E	WGT. (kg)
1/2" – DN 15	90	40	70	50	1,2	130	47,5	2,6
3/4" – DN 20	90	40	70	50	1,2	150	52,5	3,2
* 3/4" – DN 20	100	45	75	55	1,6	150	52,5	3,6
1" – DN 25	100	45	75	55	1,6	160	57,5	4,2

* TR25 – 20/20 model only.



MATERIALS			
POS. N°	DESIGNATION	MATERIAL	MATERIAL
1	Body	P250GH / 1.0460	AISI 316 / 1.4401
2	Bonnet	C45E / 1.1191	AISI 316L / 1.4404 ; AISI 303 / 1.4305
3	* Gasket	St. steel / Graphite	St. steel / Graphite
4	* Valve plug	St. steel / EPDM	St. steel / EPDM
5	Seat	AISI 316 / 1.4401	AISI 316 / 1.4401
6	* Spring	AISI 302 / 1.4300	AISI 302 / 1.4300
7	Cap	AISI 316 / 1.4401	AISI 316 / 1.4401
8	* Cap gasket	St. steel / Graphite	St. steel / Graphite

* Available spare parts.



SENSOR POCKETS PK

Sensor pockets made of stainless steel can be supplied to all TR series self-acting thermostats with rod sensors. They are used where it is impossible to empty the system or the tank.

The use of sensor pockets implies delay of heat transfer to the rod sensors and thus a longer reaction time for the controllers. This is, to some extent, counteracted by filling up the sensor pockets with paste or oil.

POCKET DIMENSIONS (mm)					
TYPE	D	H	L	S	R
PK2	25	9	218	36	1"
PK4	25	10	390	45	1 1/4"

INSTALLATION

The installation site for the sensor pocket is arbitrary when paste is applied. When using oil, the sensor pocket must point at least slightly downwards.

MATERIAL

Stainless steel 1.4436.

LIMITING CONDITIONS

40 bar at 120 °C.
24 bar at 350 °C.

