

SELF-ACTING UNBALANCED TEMPERATURE REGULATOR

MODEL TC1-S

TEMPERATURE REGULATING VALVE FOR NON-HAZARDOUS LIQUIDS AND GASES

Features

Unbalanced self-acting single seat globe valve type temperature regulator. Suitable for steam heating of liquids, air and non-hazardous gases.

- Self-acting design simplifies installation by eliminating the need for power supply and instrument signal lines.
- 2. No external energy required, allowing for ease of installation in remote areas or potentially flammable atmospheres.
- 3. Robust design minimizes maintenance.
- 4. Reliable long-life spring mechanism protects the sensor from overheat damage.
- 5. Wide set point range and simple set point adjustment provide easy operation.



Specifications

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Model	TC1-S		
Size	1/2"	3/4"	1"
Kvs Value (DIN)	3.6	5.7	7.2
Cv Value (UK)	3.5	5.5	7.0
Cv Value (US)	4.2	6.7	8.4
Maximum Allowable Differential Pressure (bar)	14		
Leakage Rate	< 0.05% of Cv (Kvs) value		
Connection	Screwed		
Maximum Operating Pressure (barg) PMO	14		
Maximum Operating Temperature (°C) TMO	200		
Suitable for Use with:	Steam		

THERMOSTAT

Model	TC-A
Suitable for Immersion in*	Liquids Compatible with Sensor Material
Set Point Range*	20 °C to 120 °C
Maximum Temperature at Sensor	Set Point Value + 100 °C
Ambient Temperature Limits at Adjustment Head	- 40 °C to 80 °C
Capillary Tube Length* (m)	3

*Other options available, see overleaf for details

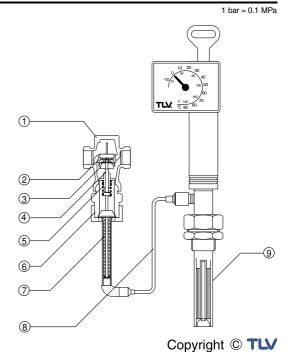
PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 14
Maximum Allowable Temperature (°C) TMA: 200



To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

No.	Description	Material	DIN	ASTM/AISI*
1	Body	Red Brass	-	B505 C83600
2	Seat	Stainless Steel	1.4104	ı
3	Plug	Stainless Steel	1.4305	ı
4	Plug Stem	Stainless Steel	1.4301	AISI304
(5)	Spring	Stainless Steel	-	1
6	Plug Stem Housing	Brass	2.0375	B16 C36000
7	Operating Element	Nickel-plated Brass	-	-
8	Capillary Tube	Nickel-plated Copper	-	-
9	Sensor	Nickel-plated Bronze	-	-

^{*}Equivalent materials



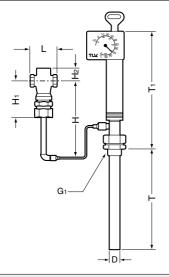


Consulting & Engineering Service

Dimensions

• TC1-S

Screwed



TC1-S Screwed*

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Size (G)	L	Н	H ₁	H ₂	Weight (kg)
1/2"	65				0.9
3/4"	75	372	82	30	1
1″	90				1.1

^{*} DIN/ISO 228

Thermostat**

(mm)

φD	Т	T ₁	G ₁	Weight (kg)
25	290	310	1 inch	3.2

^{**} Standard model shown, other options available

Capacities (kg/h)

For a pressure drop of $10\%\ P_1$ across the valve: (Coil and steam trap installed following regulator)

P ₁ (barg)	1/2"	3/4"	1″
1	36	58	73
2	63	100	126
3	89	141	178
4	114	182	229
5	140	222	281
6	166	263	332
7	192	304	384
8	217	344	435
9	243	385	486
10	268	425	537
11	294	466	589
12	320	506	640
13	345	547	691
14	371	587	742

For a pressure drop of 50% P₁ across the valve: (Direct steam injection system installed following regulator)

P ₁ (barg)	1/2"	3/4"	1″
1	102	161	204
2	153	242	306
3	204	323	408
4	255	404	511
5	306	485	613
6	357	566	715
7	408	647	817
8	460	728	920
9	511	809	1022
10	562	890	1124
11	613	971	1226
12	664	1052	1329
13	715	1133	1431
14	766	1214	1533

1 bar = 0.1 MPa

Options

ITEM	OPTIONS		
Thermostat (Model)	Suitable for immersion in liquid with separate set point adjustment (TC-B) Suitable for immersion in air or gas with set point adjustment at sensor (TC-C) Suitable for immersion in air or gas with separate set point adjustment (TC-D) All models available in stainless steel construction		
Set Point Range	50 °C to 150 °C		
Capillary Tube Length	5 m	10 m	
Capillary Tube Material	Stainless steel construction		

Kakogawa, Japan



