

INDUSTRIAL THERMOMETER

The label *Trafag Industrial Components* extends the Trafag brand name to instruments manufactured by qualified partner companies.

Trafag Industrial Components complement the genuine Trafag product range to offer customers a complete portfolio from one single source.

The TMT702 Inert gas filled Industrial Thermometer is used in general industrial applications with extreme media temperatures from -200°C up to +700°C where an external zero setting is required.



Applications

- Liquid & gaseous mediums
- Corrosive environments
- Oil & Gas applications
- Chemical & Petrochemical

Features

- Inert gas filled expansion
- Filled versions
- Bi-metal compensation

Reference

- EN 13190

02/2018

Data sheet H20020b

Standard parameters	
Accuracy	CL 1.0 (Class 1)
Permissible ambient temperature	-40 ... +60°C with/without dampening
Storage & Transport temperature	-50 ... +70°C without liquid dampening -20 ... +60°C with liquid dampening
Over range limits	110% full scale
Stem pressure rating	25 bar (Without thermowell)
Weld joints	TIG argon arc welding
Measuring range	-200 ... 0 to 0 ... 700°C -330 ... 0 to 0 ... 1290°F

Ordering code

		TMT702 - XX - XXX - XX - XXX - XX - XXXX - XX - XX - XX - XX - XX - XXXX - XX			
1. Dial size	100 mm / 4"	04			
	125 mm / 4½"	05			
	150 mm / 6"	06			
	250 mm / 10"	10			
2. Range¹	Refer "Range Table" ²		XXX		
3. Mounting pattern	Direct, Bottom connection	B0	Lower, Back connection L0		
	Wall/Surface/Projection mounting, Bottom connection	B1	Panel/Front flange mounting, Lower Back connection L1		
	2" Pipe/Yoke mounting, Bottom connection	B2	Panel/bracket mounting, Lower Back connection L2		
	Centre Back connection	R0			
	Every Angle mounting, Centre Back connection	R1			
4. Stem diameter	6,0 mm	M60	¼" (6,35 mm) I14		
	8,0 mm	M80	9,5 mm M95		
	10 mm	M10	12 mm M12		
5. Ingress protection	IP 65	ER	IP 67 ET		
	IP 66	ES			
6. Stem length	Up to 1,500 mm		XXXX		
7. Process connection type	Fixed connection	KX	Swivel / Revolving connection BW		
	Adjustable connection	KW	Without 99		
8. Process connection¹	½" NPT (M)	14N	½" NPT (F) 04N	3/8" BSP (M) ⁶ 13B	Special ¹ ZZZ
	¼" NPT (M) ⁵	12N	M27 X 2.0 mm (M) 16M	¾" BSP (M) 15B	
	M20 X 1.5 mm (M)	14M	½" BSP (M) 14B	¾" NPT (F) 05N	
	¾" NPT (M)	15N	¼" BSP (M) ⁵ 12B	Without 099	
9. Assembly	Direct (Stem type)	B8	Remote (Capillary type) ⁴	B9	
10. Capillary	AISI 304SS	OU	AISI 316 SS	OV	
11. Armour	AISI 304 SS			OX	
	AISI 316 SS			OY	
	PVC (Ambient max. 60°C)			OZ	
12. Remote mounting length	250 mm up to 25,000 mm		XXXXX		
13. Other options	Case & Ring in AISI 316 SS (B0) ³	BA	Helium gas filled system	E9	SS tag plate, AISI 304 SS XF
	Case & Ring in AISI 316 SS (B1) ³	BB	Shatterproof safety glass	GC	SS tag plate, AISI 316 SS XG
	Case & Ring in AISI 316 SS (B2) ³	BC	Dampened movement	GM	Dial tag marking XT
	Case & Ring in AISI 316 SS (R0) ³	BG	Maximum Reading pointer ³	GW	Custom designed dial XR
	Case & Ring in AISI 316 SS (R1) ³	BH	Dampening liquid, silicon oil	OA	Dampening liquid, glycerin (65°C) EG
	Case & Ring in AISI 316 SS (L0) ³	BK	Rubber parts, Viton	RA	
	Case & Ring in AISI 316 SS (L1) ³	BL	5 - point calibration certificate	TA	
	Case & Ring in AISI 316 SS (L2) ³	BM	Material test certificate 2.2	TM	

¹ For other ranges, connections, please contact factory.

² Equivalent scales available in °F, °C/°F, °F/°C.

³ Option "Case & Ring in AISI 316 SS" is applicable for DN100 & DN150 only.

⁴ While selecting capillary, Bottom connections are supplied with wall mounting flange & Back

connection are with Panel / front flange.

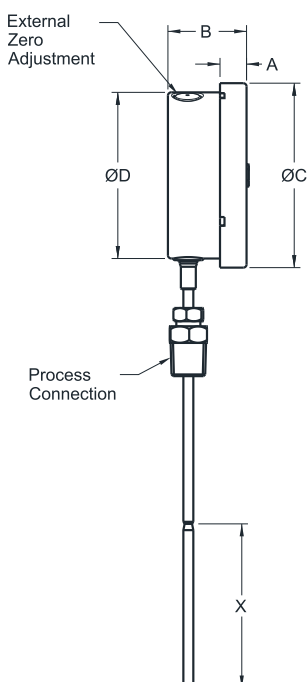
⁵ ¼" connections are available up to ¼" (6.35 mm) stem diameter only.

⁶ 3/8" connections are available up to 10 mm stem diameter only.

Specifications		
Material of construction	Sensing element	Inert Gas Filled sensor bulb
	Case & Ring material	AISI 304 SS
	Stem & Process connection material	AISI 316 SS
	Dial	Aluminum, black graduation on white background
	Pointer	Micrometer zero adjustable, aluminum, black powder coated
	Gaskets	NBR
	Window	Sheet glass
Standard specifications	Dial size	DN100 / DN125 / DN150/DN250
	Range	-200 ... 0 to 0 ... +700°C / -330 ... 0 to 0 ... +1290°F
	Mounting pattern	Direct Bottom connection
	Stem size	6,0 mm
	Ingress protection	IP 65
	Zero adjustment	External screw
	Stem length	70 mm to 2,000 mm*
	Process connection type	Adjustable connection
	Process connection	½" NPT (M) / ½" BSP (M)
	Standard specifications : dampening liquid filled, glycerin	Gaskets & Filling plugs
Dampening liquid		Glycerin 99.7% (-20°C to 65°C) [Up to range 100°C]
Window		Shatterproof safety glass
Standard specifications : dampening liquid filled, silicon	Gaskets & Filling plugs	NBR
	Dampening liquids	Silicon oil [Up to range 200°C]
	Window	Shatterproof safety glass
* Depending on range & stem diameter		

Dimensions - All dimensions are in mm

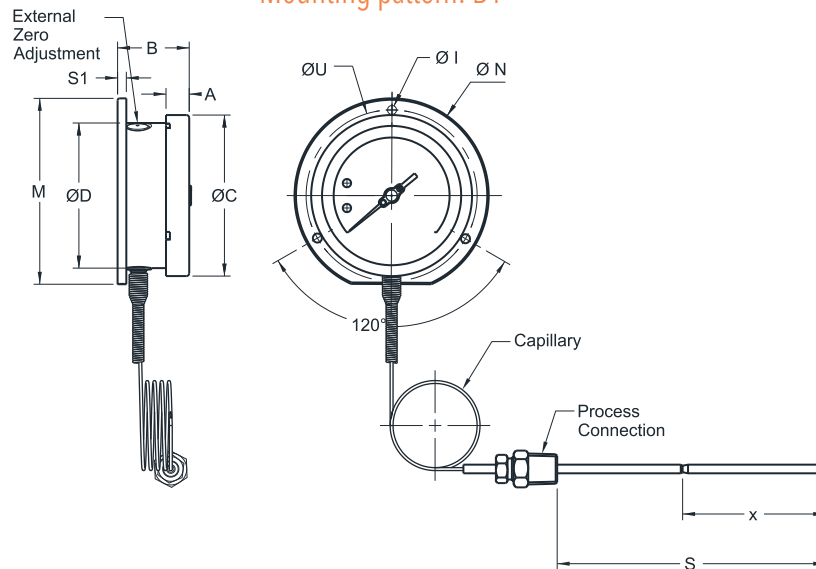
Mounting pattern: B0



DN	A	B	ØC	ØD	S	X
100	12	48	111	100	*	**
125	15	48	129	118,5	*	**
150	15	48	161	149	*	**
250	18,5	50	263	250	*	**

* As per customer requirement.
** Refer Stem length chart table.

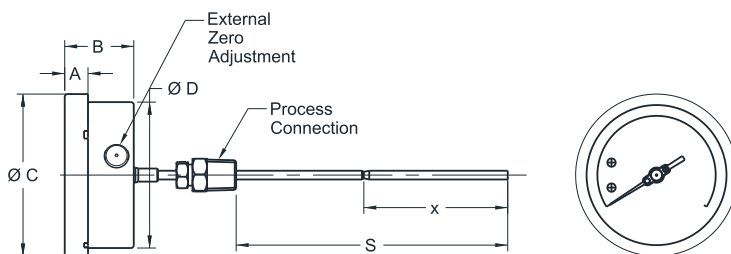
Mounting pattern: B1



DN	A	B	ØC	ØD	ØI	ØN	M	S1	ØU	S	X
100	12	52	111	100	6	134	128	6	118	*	**
125	15	50	129	118.5	6	150	143,5	4	137	*	**
150	15	52	161	149	6	186	172,4	6	168	*	**
250	18.5	51.5	263	250	7	290	286.5	1,5	276	*	**

* As per customer requirement.
 ** Refer Stem length chart table.

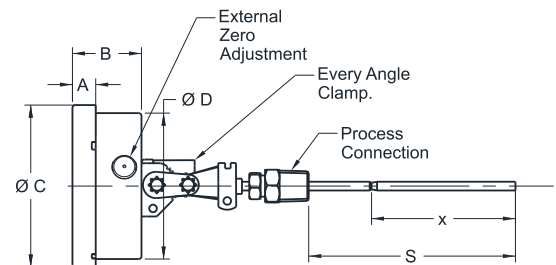
Mounting pattern: R0



DN	A	B	ØC	ØD	S	X
100	12	48	111	100	*	**
125	15	48	129	118,5	*	**
150	15	48	161	149	*	**
250	18,5	50	263	250	*	**

* As per customer requirement.
 ** Refer Stem length chart table.

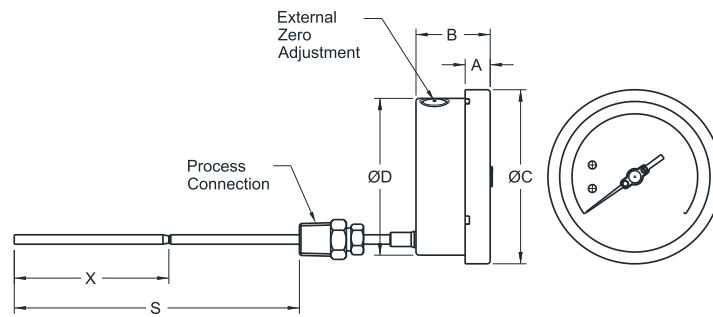
Mounting pattern: R1



DN	A	B	ØC	ØD	S	X
100	12	48	111	100	*	**
125	15	48	129	118,5	*	**
150	15	48	161	149	*	**
250	18,5	50	263	250	*	**

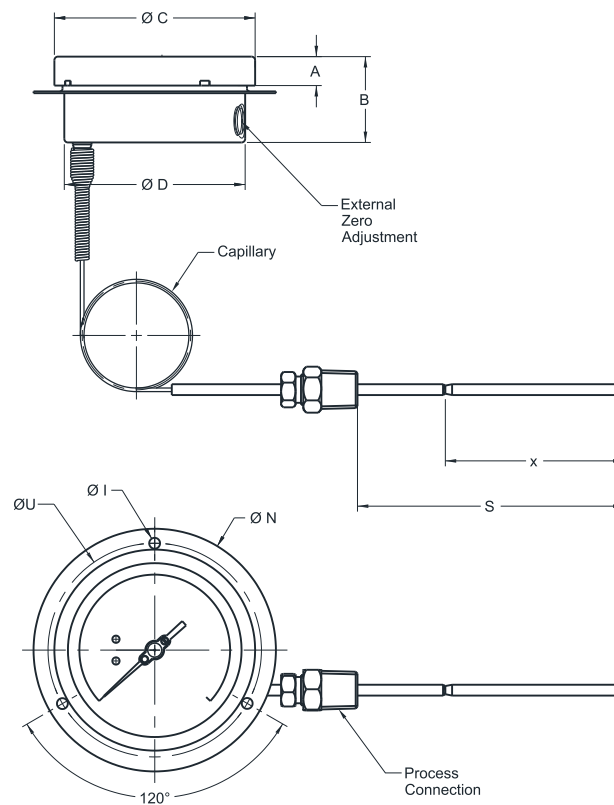
* As per customer requirement.
 ** Refer Stem length chart table.

Mounting pattern: L0



DN	A	B	ØC	ØD	S	X
100	12	48	111	100	*	**
125	15	48	129	118,5	*	**
150	15	48	161	149	*	**
250	18,5	50	263	250	*	**

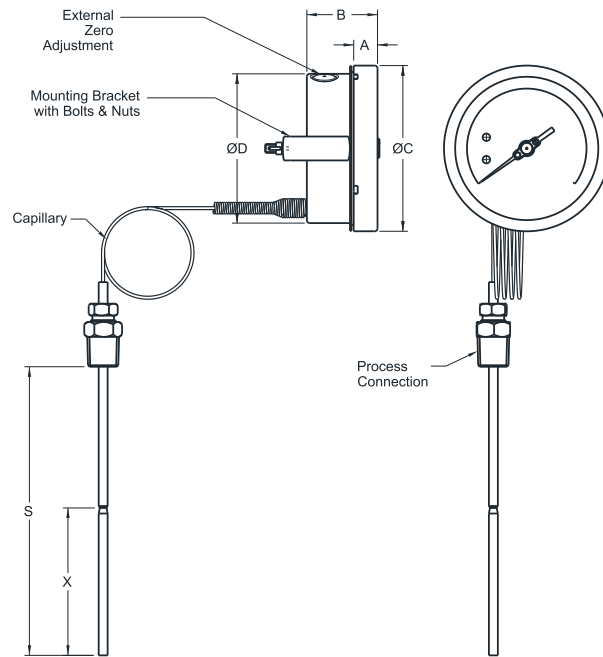
Mounting pattern: L1



DN	A	B	ØC	ØD	ØI	ØN	ØU	S	X
100	12	48	111	100	6	134	118	*	**
125	15	48	129	118,5	6	150	137	*	**
150	15	48	161	149	6	186	168	*	**
250	18,5	50	263	250	7	290	276	*	**

* As per customer requirement.
 ** Refer Stem length chart table.

Mounting pattern: L2

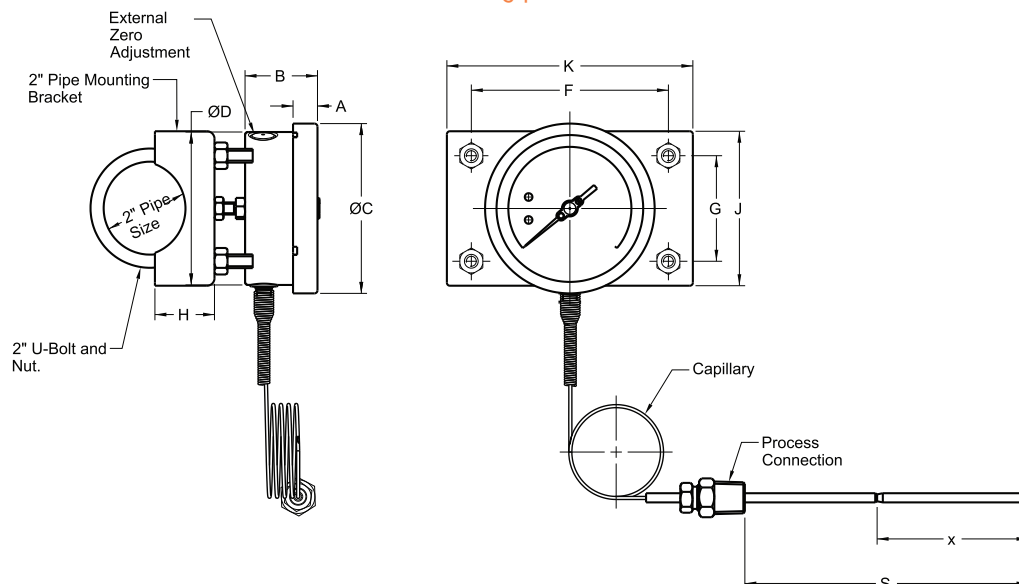


DN	A	B	ØC	ØD	J	K	V	S	X
100	12	48	111	100	72	16	108	*	**
125	15	48	129	118.5	75	15	125	*	**
150	15	48	161	149	106,5	16	158,5	*	**
250	18.5	50	263	250	180	30	270	*	**

* As per customer requirement.

** Refer Stem length chart table.

Mounting pattern: B2



DN	A	B	ØC	ØD	S	X	F	G	H	J	K
100	12	48	111	100	*	**	129	69	39	101	161
125	15	48	129	118.5	*	**	129	69	39	101	161
150	15	48	161	149	*	**	129	69	39	101	161
250	18.5	50	263	250	*	**	129	69	39	101	161

* As per customer requirement.

** Refer Stem length chart table.

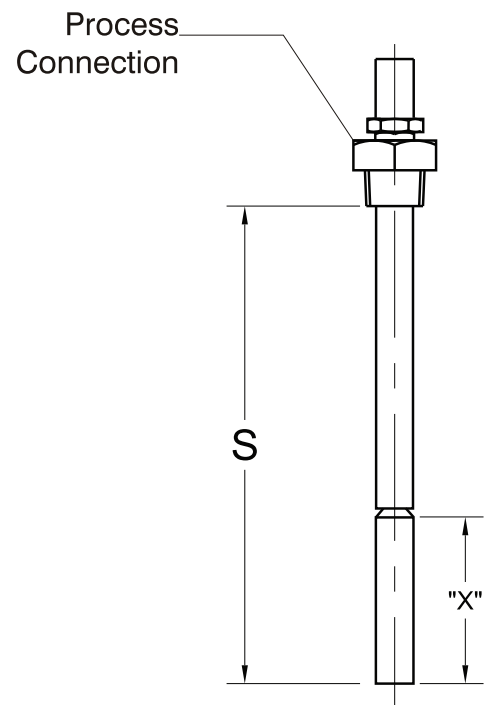
Stem length chart

Stem/Sensor Size (mm)	(x) Sensor Length (mm)	(S) Minimum stem Length (mm)
Rigid stem type Inert Gas Thermometer		
Capillary type Inert Gas Thermometer (≤ 10 m)		
6 / 1/4"	200	240
8 / 9,5	120	160
10	90	130
12/14	70	110
Capillary type Inert Gas Thermometer (> 10 m up to 25 m)		
8/9,5	170	210
10	140	180
12/14	90	130

- All length mentioned above are to be considered below thread only.
- For other reduced length, contact factory before ordering.

¹⁾ For other connections, please contact factory.

²⁾ Equivalent scales available in °F, °C/°F, °F/°C. Please contact factory for details.



Range table (°C)	Code
-20 ... +40	C01
-20 ... +60	C02
-20 ... +80	C03
-20 ... +100	C04
-20 ... +120	C05
-20 ... +180	C06
-30 ... +50	C07
-30 ... +70	C08
-40 ... +40	C09
-40 ... +60	C10

Range table (°C)	Code
-50 ... +100	C11
-100 ... +60	C12
0 ... 50	C13
0 ... 60	C14
0 ... 80	C15
0 ... 100	C16
0 ... 120	C17
0 ... 150	C18
0 ... 160	C19
0 ... 200	C20

Range table (°C)	Code
0 ... 250	C21
0 ... 300	C22
0 ... 400	C23
0 ... 500	C24
0 ... 600	C25
0 ... 650	C26
50 ... 650	C27
100 ... 600	C28
100 ... 700	C29

Additional information

Documents	Data sheet	H20020	www.trafag.com/H20020
	Instructions	H21019	www.trafag.com/H21019