

RT2N Temperature switches

- All industrial environments
- Reduced overall dimensions
- Good vibration resistance
- Conforms to CE

These temperature switches maintain a constant temperature around a chosen set value. They act as regulator or monitor of an alarm or safety system when the temperature reaches a critical pre-set value.

Important

Normal operation must be between 10% and 90% of the selected scale. The deadband values in the table overleaf are defined under these conditions.

All circuits must be equipped with a safety system protecting them against excess temperature.

The length of the bulb is a function of the capillary length and temperature range (see tables).

The bulb must be totally immersed in the process fluid, or incorrect readings will result.

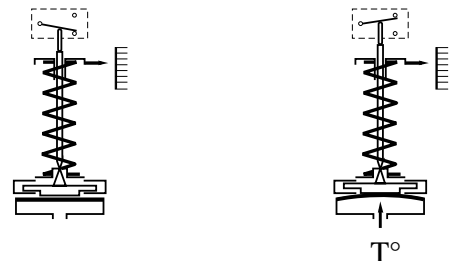


Technical Data (20°C)

Fluids	All fluids compatible with the measuring element from -40...350°C	Manufacturing	
Operating ambient temperature	From -30...70°C	Top housing	Plastic
Storage temperature	From -40...70°C	Body	Zamak plated black
Reproducibility	±2% of F.S.	Wall mounting	2 M5 screws
Conforms to CE	Low Voltage Directive DBT 73/23/CE. Pressure Directive PED 97/23/CE	Earth connection	Via internal terminal block
Minimum deadband	Depending on the type of microswitch used (see table overleaf)	Electrical connection	Via internal terminal block with P.G. 9 for cables 5.5 to 8.5 mm dia
Degree of protection	IP 65 to NF EN 60529	Graduated scale	Internal calibrated scale, (set point reading)
Weight	1.150 kg	Fastening	St. steel sliding male connection
		Measuring element	9.5 mm dia. 1.4404 (316 L) s.s. bulb (standard length = 100 mm)

Operating principle

A vapour filled sensing element actuates a microswitch by means of a piston. The set point is adjusted by means of a compressible spring installed in opposition.



**BOURDON
HAENNI**

made to measure



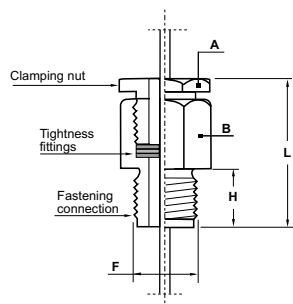
Adjustable range

Scale °C	Code	T°C maxi	MAXI FIXED DEADBAND				MINI-MAXI ADJUSTABLE DEADBAND			
			Standard		gold contact	Hermetically sealed	Tropicalized	Adjustable		
			L	P	M	N	R			
-46 .. 0	40	40	at 10 % of scale	at 90 % of scale	at 10 % of scale	at 90 % of scale	at 10 % of scale	at 90 % of scale		
-20 .. 20	41	60	1	1	5	4	4 .. 7.5	2.5 .. 6.5		
0 .. 45	42	80	1	0.5	4	5	2.5 .. 5.5	2 .. 6.5		
40 .. 120	43	145	1	1	3.5	3	3 .. 6	2.5 .. 7		
100 .. 180	44	190	1.5	1	6	6	5.5 .. 10.5	3 .. 8.5		
20 .. 90	45	120	1.5	1.5	7	5.5	6 .. 12	4 .. 7.5		
160 .. 250	46	290	2	1.5	11	11	6.5 .. 12.5	4 .. 8		
250 .. 350	47	360	1.5	1	6.5	5	6 .. 11	4 .. 11		
70 .. 150	48	175	2	1.5	10	7.5	8 .. 14	5 .. 15		
			1.5	1.5	11	8	9.5 .. 18.5	5.5 .. 10.5		

T °C max. values are for accidental temperature overranges of limited duration.

Connections and accessories

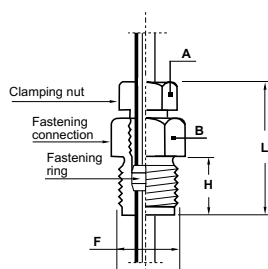
st. steel sliding male connection (TD1)



Thread and sizes		
F	G 1/2	1/2 NPT
H	18	21
L	43	46
A	27/flat	27/flat
B	27/flat	27/flat

Waterproof after tightening.

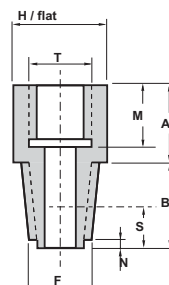
st. steel sliding male connection (TD2/3, TRDE1/2)



Thread and sizes		
F	G 1/2	1/2 NPT
H	18	21
L	36	40
A	17/flat	17/flat
B	23/flat	23/flat

Becomes revolving male connection after clamping.
When gripped on stem tight at 40 bar max.

st. steel or brass socket union



This term indicates female/male connections.

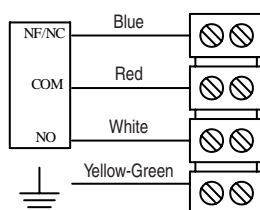
Female side is parallel tapered, tightness is ensured by means of a gasket. It corresponds to the male connection in our fastening (G 1/2).

The male part corresponds to the "customer requirement". It provides sealing according to the existing pipe connections.

Socket union dimensions				
F	1/2 BSP-Tr	1/2 NPT	3/4 BSP-Tr	3/4 NPT
T	G1/2			
B	26	26	32	32
max. dia. of the stem	14	14	16	16
H	26	26	35	35
A	20	20	20	20
M	16	16	16	16
N	5	5	5	5
S	11.4 to 15	13	12.7 to 16.3	13.5

Cable identification, current rating

Cable identification



Current rating

Microswitch type SPDT

L	Standard Fixed deadband	0.4 A min.; 10 A max. 250 Vac max.
P	Hermetic Fixed deadband	0.4 A min.; 2 A max. 30 Vdc max.
R	Adjustable deadband	0.4 A min.; 10 A max. 250 Vac max.; 220 Vdc max.
M	Gold contact Fixed deadband	10 mA min.; 50 mA max. 250 Vac max.; 220 Vdc max.
N	Tropicalized Fixed deadband	0.1 A min.; 10 A max. 250 Vdc max.; 48 Vdc max.

Dimensions (mm) - Types of transmission

Remote temperature switches with capillary TD1/TD2/TD3 and bulb 100/150/200 mm length

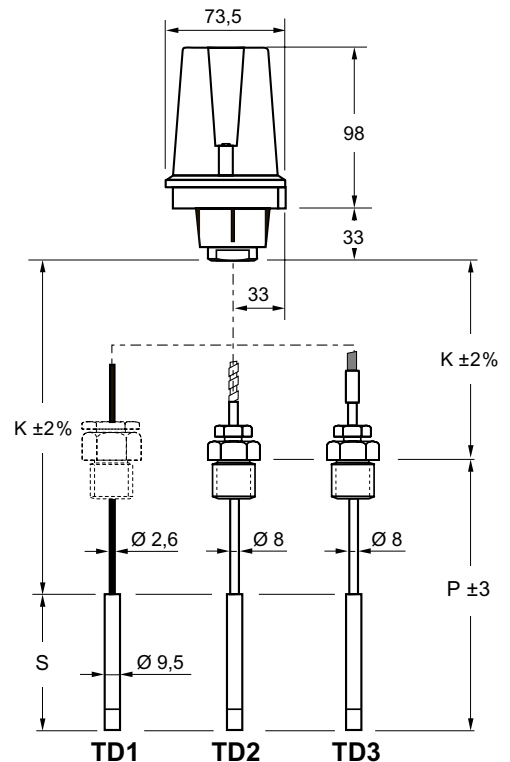
Bulb length (S) according to the transmission length (K)

	Code	40	41	42	43	44	45	46	47	48
K = 2 m .. 4 m	S mm	100	100	100	100	100	100	100	100	100
K = 5 m .. 7 m	S mm	100	150	150	100	100	150	100	100	100
K = 8 m .. 10 m	S mm	100	200	200	100	100	200	100	100	100

All versions equipped with bulb of 100 mm length and stem P = 150, 250, 400 and 600 mm are feasible.

All versions equipped with bulb of 150 or 200 mm length and stem P = 250, 400 and 600 mm are feasible (not feasible with stem P = 150 mm length).

- TD 1** : stem transmission with bare stainless steel capillary (without stem).
Option : sliding male connection.
- TD 2** : stem transmission with st. steel capillary and st. steel protection.
Without stem = without connection. With stem = connection.
- TD 3** : stem transmission with st. steel capillary and PVC coated st. steel protection.
Without stem = without connection. With stem = connection.



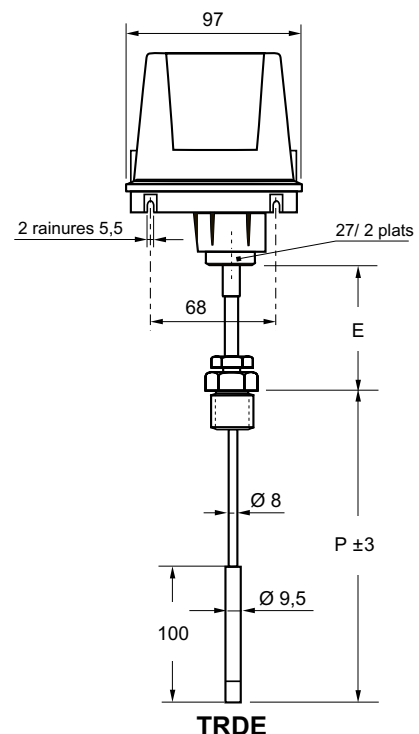
Direct mount temperature switches TRDE1/TRDE2 and bulb 100 mm length

TRDE1 versions not feasible : codes 44, 46, 47
for the following stem lengths (P = 150, 250, 400 and 600 mm).

- TRDE 1**
straight rigid transmission with extension E = 65 mm for fluid temperature < 120°C. Fastening by sliding male connection.
- TRDE 2**
straight rigid transmission with extension E = 120 mm for all temperatures. Fastening by sliding male connection.

Nota :

In all cases, the minimum immersion of the stem P will be :
- S+18 for G 1/2 connection
- S+21 for 1/2 NPT connection



Options

Stainless steel tag plate and wire **Code 9941**

Connection on pipe 2 " dia. **Code 0407**

Adjustment of the set point **Code SETP**

Ordering Details - RT2

		RT2Nxxxxxxxx						
Model	1' digit	R						
Temperature switches								
Type	2'...3' digit	T2						
T2								
Type of protection	4' digit	N						
Standard								
Microswitch	5' digit	L		M		P		N
1 standard changeover switch								
1 gold contact changeover switch								
1 hermetically changeover switch								
1 tropicalized changeover switch								
1 adjustable changeover switch								
Temperature range	6'...7' digit	xx						
See codes in table								
Type of transmission	8' digit	1		2		3		C
TD1								
TD2								
TD3								
TRDE1								
TRDE2								
Transmission length K	9' digit	0		1		2		3
TRDE 1 or 2								
1 meter								
2 meters								
3 meters								
4 meters								
5 meters								
6 meters								
7 meters								
8 meters								
9 meters								
Other length								
Stem length P	10' digit	0		3		4		5
TD1 - TD2 - TD3 without stem								
150 mm	} TD2 - TD3 - TRDE1 - TRDE2							
250 mm								
400 mm								
600 mm								
Other length max. 1 m								
Bulb diameter	11' digit	C						
∅ 9,5 mm								
Connection	12' digit	0		3		6		X
Without								
G 1/2								
1/2 NPT								
Other connection								

code	Ranges in °C		
40	-46	..	0
41	-20	..	20
42	0	..	45
43	40	..	120
44	100	..	180
45	20	..	90
46	160	..	250
47	250	..	350
48	70	..	150

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