

RT2(E) Temperature switches explosion proof

All industrial environments
 Reduced overall dimensions
 Good vibration resistance
 LCIE 02 ATEX 6219X

CE 0081

 II 2 G and D
 EEx d IIC T6 or T5

Hazardous areas : 1, 2, 21, 22

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)

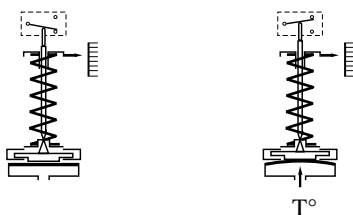
Fluids	All fluids compatible with the measuring element from -40...+350°C
Operating ambient temperature	From -30...+70°C
Storage temperature	From -40...+70°C
Reproducibility	±2% of F.S.
Minimum deadband	Depending on the type of microswitch used (see table overleaf)
Conform to CE	Low Voltage Directive DBT 73/23/CE Directive ATEX 94/9/CE (EN50014, EN50018, EN50281-1-1)
Degree of protection	IP 65, NF EN 60529
Weight	2 kg

Manufacturing

Explosion-proof housing	Epoxy painted aluminium housing
Wall mounting	2 CHC M6 x 16 screws
Earth connection	Via internal or external terminal block
Electrical connection	Via internal terminal block with P.G. certified ATEX for cable 7 to 12 mm dia
Graduated scale	Internal calibrated scale
Pressure connection	St. steel sliding male connection
Measuring element	9.5 mm dia., 1.4404 (316L) 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
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made to measure



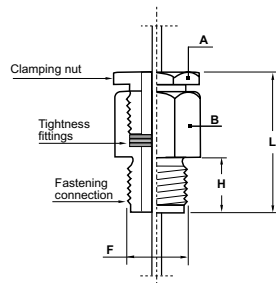
Adjustable ranges

Scale °C	Code	T°C maxi	MAXI FIXED DEADBAND					MINI-MAXI ADJUSTABLE DEADBAND				
			Standard		Standard (2xSPDT)		Gold contact	Tropicalised	Hermetically sealed	Adjustable		
			L		U		M	N	P	R		
at 10 % of scale	at 90 % of scale	at 10 % of scale	at 90 % of scale	at 10 % of scale	at 90 % of scale	at 10 % of scale	at 90 % of scale	at 10 % of scale	at 90 % of scale	at 10 % of scale	at 90 % of scale	
-46 .. 0	40	40	1	1	5	5	5	4	4 .. 7,5	2,5 .. 6,5		
-20 .. 20	41	60	1	1	5	5	4	5	2,5 .. 5,5	2 .. 6,5		
0 .. 45	42	80	1	0,5	5	2,5	3,5	3	3 .. 6	2,5 .. 7		
40 .. 120	43	145	1,5	1	7,5	5	6	6	5,5 .. 10,5	3 .. 8,5		
100 .. 180	44	190	1,5	1	7,5	5	7	5,5	6 .. 12	4 .. 7,5		
20 .. 90	45	120	2	1,5	10	7,5	11	11	6,5 .. 12,5	4 .. 8		
160 .. 250	46	290	1,5	1	7,5	5	6,5	5	6 .. 11	4 .. 11		
250 .. 350	47	360	2	1,5	10	7,5	10	7,5	8 .. 14	5 .. 15		
70 .. 150	48	175	1,5	1,5	7,5	7,5	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

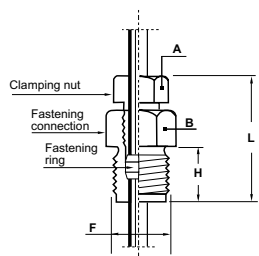
st. steel sliding male connection (TD1)



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.

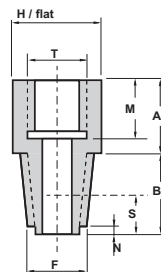
st. steel sliding male connection (TD2/3, TRDE1/2)



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.

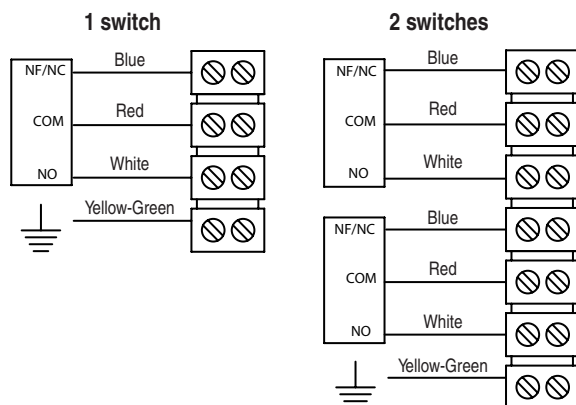
Female side is parallel tapered, tightness is ensured by means of a gasket. It corresponds to the male connection in our fastening (G 1/2).

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	Hermetically sealed 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.
U	2 contacts Fixed 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.; 0,12 A max. 28 Vdc max.

Important : Maximum power dissipation in the case must not exceed 5 W

Regulation

Pressure of regulator type RT2(E)

LCIE 02 ATEX 6219X

CE 0081



II 2 G and D
EEx d IIC T6 or T5

-20°C ≤ Ta ≤ +70°C	Dust IP65	Gases
	T° surface	Class
Ta = +60°C	80°C	T6
Ta = +70°C	95°C	T5

DO NOT OPEN - LIVE VOLTAGE

Every precaution must be taken by the user to ensure that the heat transfer by the fluid to the unit head does not raise the unit head temperature to the spontaneous ignition temperature of the gas in which it is situated.

Dimensions (mm) - Types of transmission

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

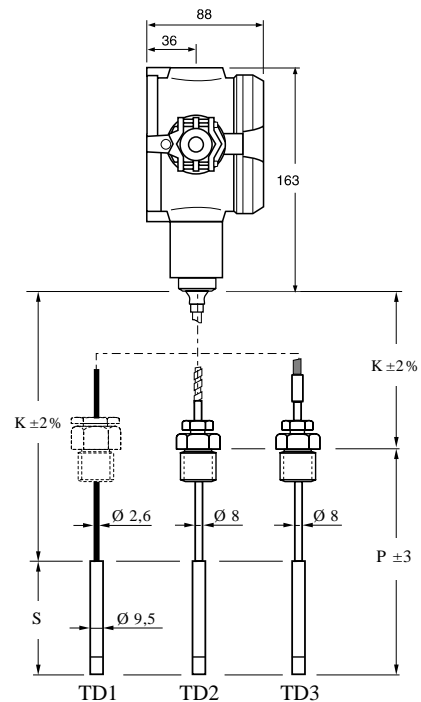
Bulb length (S) according to the transmission length (K)

	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

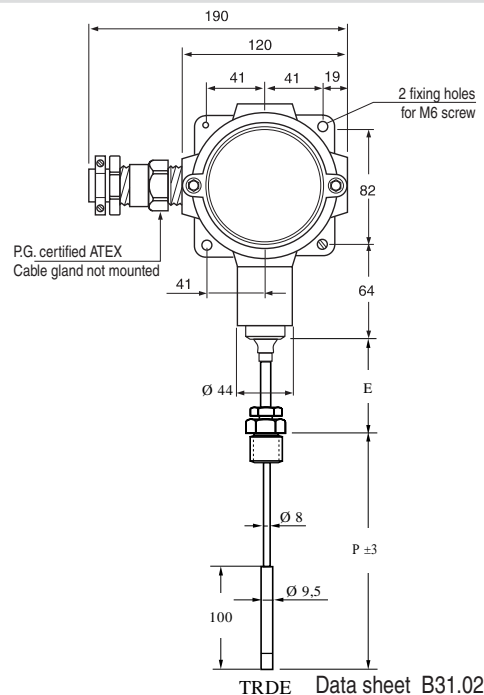
straight rigid transmission with extension E = 65 mm for fluid temperature < 120°C. Fastening by sliding male connection.

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(E)

RT2Exxxxxxxx	
Model	1' digit
Temperature switches	R
Type	2'...3' digit
T2	T2
Type of protection	4' digit
Explosion-proof	E
Microswitch	5' digit
1 standard changeover switch (1xSPDT)	L
2 SPDT changeover switches	U
1 gold contact changeover switch	M
1 hermetically changeover switch	P
1 adjustable changeover switch	R
1 tropicalized changeover switch	N
Temperature range	6'...7' digit
See codes in table	xx
Type of transmission	8' digit
TD1	1
TD2	2
TD3	3
TRDE1	C
TRDE2	D
Transmission length	9' digit
TRDE 1 or 2	0
1 meter	1
2 meters	2
3 meters	3
4 meters	4
5 meters	5
6 meters	6
7 meters	7
8 meters	8
9 meters	9
Other length	X
Stem length P	10' digit
TD1 - TD2 - TD3 without stem	0
150 mm	3
250 mm	4
400 mm	5
600 mm	6
Other length max. 1 m	X
Bulb diameter	11' digit
∅ 9,5 mm	C
Connection	12' digit
Without	0
G 1/2	3
1/2 NPT	6
Other connection	X

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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