



RT2E 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 area : Area 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 : "safety action".

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.

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)

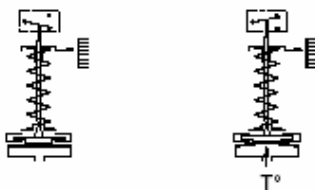
Fluids	All fluids compatible with the measuring element from -40...+350°C
Operating ambient temperature	From -30...+70°C
Storage temperature	From -50...+70°C
Reproducibility	±2% of F.S.
Minimum deadband	Depending on the type of microswitch used (see table overleaf)
Conform to CE	EN 50018, explosion-proof "d" Low voltage Directive N° 73/23/EEC modified by 93/68/CEE Directive 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
HAENNI**

made to measure



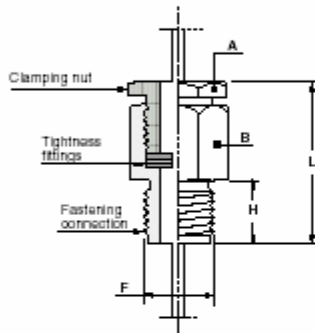
Adjustable ranges

Scale °C	Coding	Accidental max. T°C	MAXI FIXED DEADBAND						MINI-MAXI ADJUSTABLE DEADBAND			
			Standard		Standard (2xSPDT)		Gold contact	Hermetically sealed	Adjustable			
			L		U		M	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

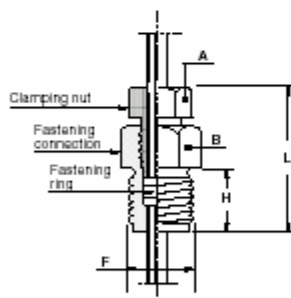
st. steel sliding male connection (TD1)



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.

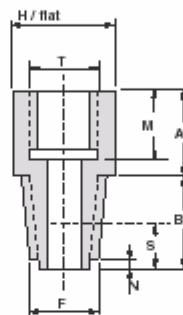
st. steel sliding male connection (TD2/3, TRDE1/2)



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.

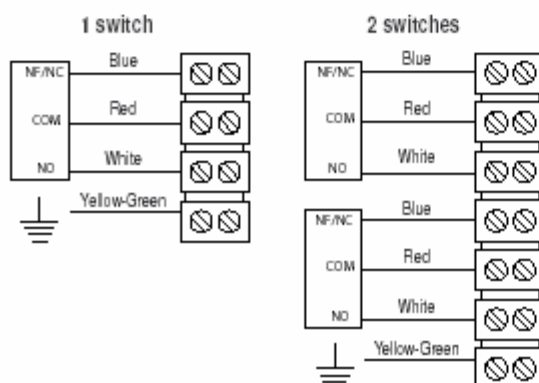
Female side is parallel tapered, tightness is ensured by means of a gasket. It corresponds to the male connection in our fastening (G 1/2).

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

Socket union dimensions				
F	1/2 BSP-Ti	1/2 NPT	3/4 BSP-Ti	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.

Regulation

Pressure of regulator type RT2E

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DO NOT OPEN - LIVE VOLTAGE

All necessary measures must be taken by the user, to avoid the calorific transfer from the fluid to the apparatus head increasing the head's temperature to such that it reaches the self-ignition temperature of the gas in which it is used.

-30°C ≤ Ta ≤ +70°C	Dust IP65	Gases
	T° surface	Class
Ta = +60°C	+80°C	T6
Ta = +70°C	+95°C	T5

The maximum dissipated power in the unit must not exceed 5W.

Dimensions (mm) - Types of transmission

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

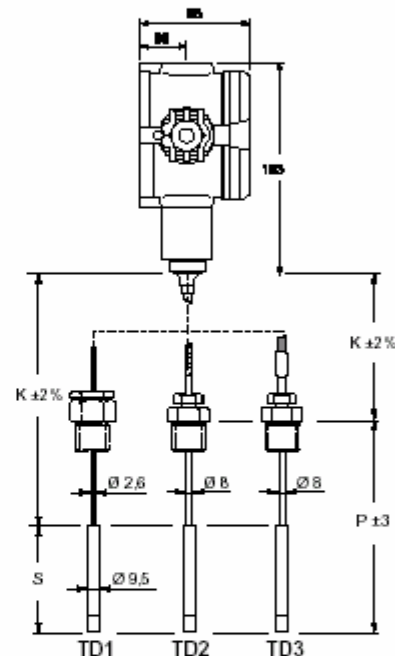
Bulb length (S) according to the capillary length (K)

	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

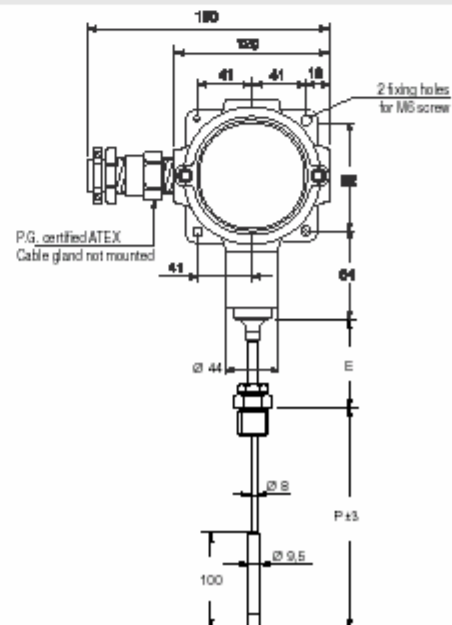
TRDE1 versions not feasible : codes 44, 46, 47
for the following stem lengths (P = 150, 250, 400 and 600 mm).

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

Uncoded options (have to be listed after the code number)

Stainless steel label
Connection on pipe 2" dia.
Adjustment of the set point
Input conduit fitting ATEX (groupe II)

Ordering Details - RT2

		RT2x x00 0xx			
Model	1' digit	R			
Temperature switch					
Type	2'...3' digit	T2			
Type of protection	4' digit	E			
Explosion-proof					
Type of microswitch	5'...7' digit	L			
Fixed deadband, standard (1xSPDT)		U			
Fixed deadband 2 x SPDT		M			
Fixed deadband, gold contact		P			
Fixed deadband, hermetically sealed ultra sensitive		R			
Adjustable deadband					
Unit of measurement	8' digit	0			
°C					
Pressure range	9'...10' digit				
See codes in table					xx

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

		xxx xxxC xx			
Type of transmission	1' digit	1			
TD1		2			
TD2		3			
TD3		A			
TRDE1		C			
TRDE2					
Capillary length K	2'...3' digit	00			
TRDE 1 and 2		01			
1 meter		02			
2 meters		03			
3 meters		04			
4 meters		05			
5 meters		06			
6 meters		07			
7 meters		08			
8 meters		09			
9 meters		10			
10 meters					
Stem length P	4'...6' digit	000			
TD1 - TD2 - TD3 without stem		150			
150 mm	} TD2 - TD3 - TRDE1 - TRDE2	250			
250 mm		400			
400 mm		600			
600 mm		***			
Out of standard* = 600 mm < P ≤ 1 m (* to be specified on order)					
Bulb dia.	7' digit				
∅ 9,5 mm				C	
Connection	8'...9' digit				
Without					00
G 1/2					03
1/2 NPT					06