

RT2Y Temperature switches intrinsically safe

All industrial environments

Reduced overall dimensions

Good vibration resistance

LCIE 03 ATEX 6160X

CE 0081



I M 1
EEx ia I



II 1 G and D
EEx ia IIC T6 or T5



II 2 D

Hazardous areas : 0,1, 2, 20, 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)

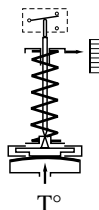
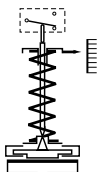
Fluids	All fluids compatible with the measuring element from -40...350°C
Operating ambient temperature	From -30...70°C
Storage temperature	From -40...70°C
Reproducibility	±2% of F.S.
Minimum deadband	Depending on the type of microswitch used (see table overleaf)
Conform to CE	Low Voltage Directive DBT 73/23/CE ATEX Directive 94/9/CE (EN50014, EN50020, EN50281-1-1)
Degree of protection	IP 65, EN 60529
Weight	2 kg

Manufacturing

Housing	Plastic PA6, blue
Body	ZAMAK plated black
Wall mounting	2 CL M5 screws
Earth connection	Via internal terminal block
Electrical connection	Via internal terminal block with P.E. 9 for cables 5.5 to 8.5 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.



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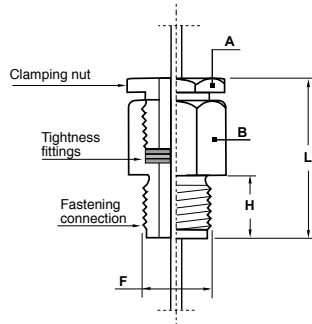
Adjustable ranges

Scale °C	Coding	Accidental max. T°C	MAXI FIXED DEADBAND			
			Gold contact		Tropicalized	
			M At 10 % of scale	N At 90 % of scale	S At 10 % of scale	
-46 .. 0	40	40	5	4	2,3	2
-20 .. 20	41	60	4	5	2,3	2
0 .. 45	42	80	3,5	3	2,3	1
40 .. 120	43	145	6	6	3,4	2
100 .. 180	44	190	7	5,5	3,4	2
20 .. 90	45	120	11	11	4,6	3
160 .. 250	46	290	6,5	5	3,4	2
250 .. 350	47	360	10	7,5	4,6	3
70 .. 150	48	175	11	8	3,4	3

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

Connections and accessories

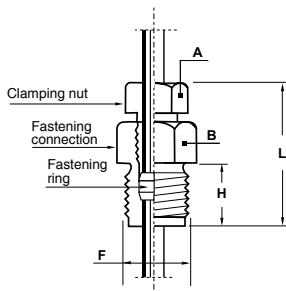
st. steel sliding male connection (TD1)



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.

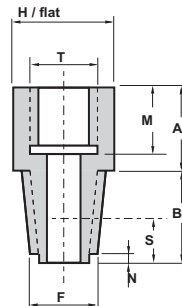
st. steel sliding male connection (TD2/3, TRDE1/2)



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.

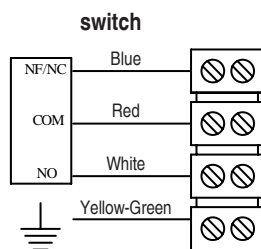
Female side is parallel tapered, tightness is ensured by means of a gasket. It corresponds to the male connection in our fastening (G 1/2).

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

M	Gold Contact Fixed deadband	10 mA min.; 50 mA max. 28 Vdc max.
N	Tropicalized Fixed deadband	0.1 A min.; 0,12 A max. 28 Vdc max.
S	Fixed Low Deadband, Gold Contact Fixed deadband	10 mA min.; 50 mA max. 28 Vdc max.

Regulation

Temperature of regulator type RT2(Y)
LCIE 03 ATEX 6160X

CE 0081



I M 1
EEx ia I



II 1 G and D
EEx ia IIC T6 or T5



II 2 D

Use without safety barrier certified for zone 21 or 22

Dust IP6X	Gases
T° surface	Class
60°C	Ambient T° -30°C ... 55°C (T6)
75°C	Ambient T° -30°C ... 70°C (T5)

The installation must be in accordance to U_{max} and I_{max}

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.

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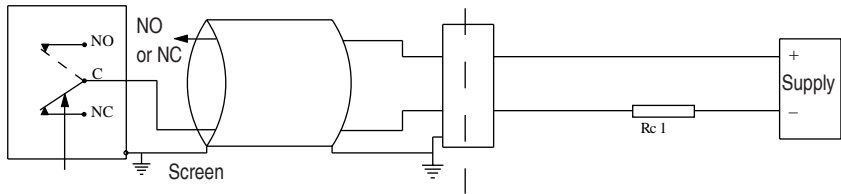
Modifications reserved

Data sheet B31.04

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Installation requirements

Hazardous area
Area 0, 1, 2, 20, 21, 22



$$U_{\max} = 28 \text{ Vdc}$$

$$I_{\max} = 120 \text{ mA}$$

$$P = 0.8 \text{ W}$$

$$C_a > C_i + C_{\text{cable}}; L_a > L_i + L_{\text{cable}}$$

$$C_i = \text{Negligible}; L_i = \text{Negligible}$$

Don't forget the barrier's resistors in the determination of R_{c1} .

In area 0 or 20, the loop calculation of the association temperature switches with safety barrier must be approved by notified organism.

Dimensions (mm) - Types of transmission

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

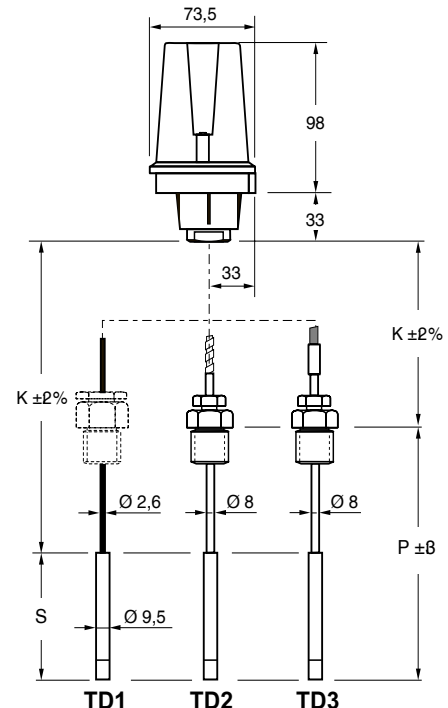
Bulb length (S) according to the transmission length (K)

	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.



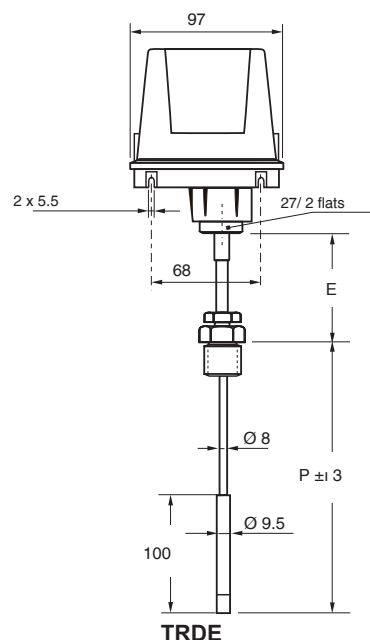
TRDE1 versions not available : codes **44, 46, 47**
for the following stem lengths (**P = 150, 250, 400** and **600 mm**).

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 - RT2Y

		RT2Yxxxxxxxx									
Model	1' digit										
Temperature switches		R									
Type	2'...3' digit										
T2			T2								
Type of protection	4' digit										
Intrinsically safe				Y							
Microswitch	5' digit										
1 gold contact changeover switch					M						
1 tropicalized changeover switch						N					
1 gold contact changeover switch, fixed low deadband							S				
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 K	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	
10 meters										A	
Stem length P	10' digit										
TD1 - TD2 - TD3 without stem											0
150 mm	} TD2 - TD3 - TRDE1 - TRDE2										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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