

RTAE3

Industrial temperature switch, direct mounting explosion proof

RT-###.###.E00EJ

Overview

- Excellent repeatability
- Dead band adjustment for regulation
- Fix dead band for control
- Explosion proof Hazardous areas 1, 2, 21, 22



Picture similar



Technical data

Housing

Protection rating (EN 60529)	IP66
Cover	Epoxy painted, Aluminium Captive stainless steel screws
Case material	Epoxy painted, Aluminium Type RA80 Explosion-proof and flame-proof
Mounting	Wall mounting, 3 back lugs
Scale	Internal, accuracy on reading $\pm 5\%$ FS
Bulb	Stainless steel 1.4404 / AISI 316L Stainless steel 1.4435 / AISI 316L

Performance

Min. temperature range	-46°C ... +0°C
Max. temperature range	+40°C ... +120°C
Repeatability	$\pm 1\%$ FS

Temperature

Ambient temperature	-30°C ... +55°C
Storage temperature	-40°C... +40°C, Code 300 -40°C... +55°C, other codes

Temperature

Media temperature	-46 ... +120 °C, depends on the scale
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Wetted parts

Process connection material	Copper alloy
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Electrical data

Electrical connection	Via internal terminal block with metallic cable gland for $\varnothing 7$ to 12 mm
Ground connection	Via internal terminal block
Adjustment	2 external adjustment screws on top of the case for set point and deadband

Approval / Conformities

ATEX/IECEx Certificate	LCIE 03 ATEX 6231X (Type RA80) IECEx LCIE 15.0061X
ATEX/IECEx	Ex II 2 GD Ex d IIC T6 or T5 Gb Ex tb IIC T80°C or T95°C Db Further information can be found in the ATEX approval

Remarks

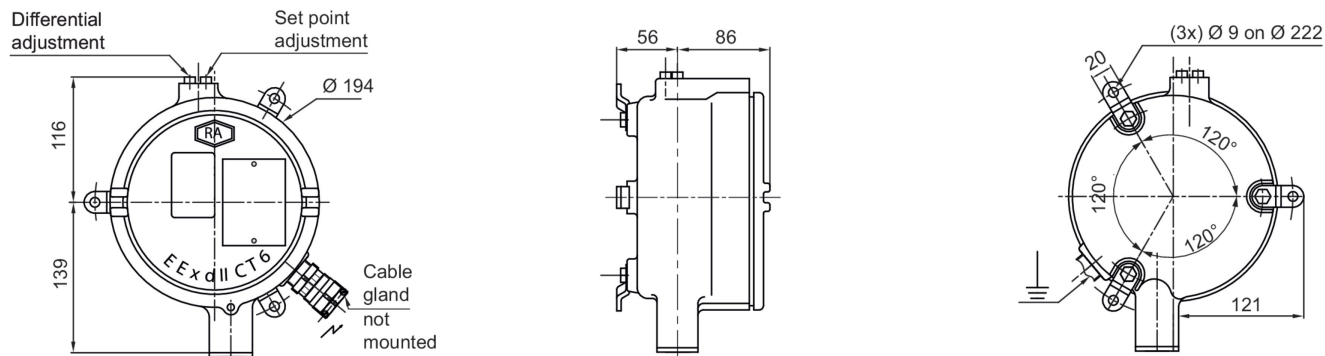
- These devices must be used as instruments that provide electrical information according to the value of the input variable. They are not intended to be used as a safety accessory. It is the responsibility of the user to check the compatibility of the device with its intended use.

RTAE3

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RT-###.###.E00EJ

Dimensional drawings (mm)

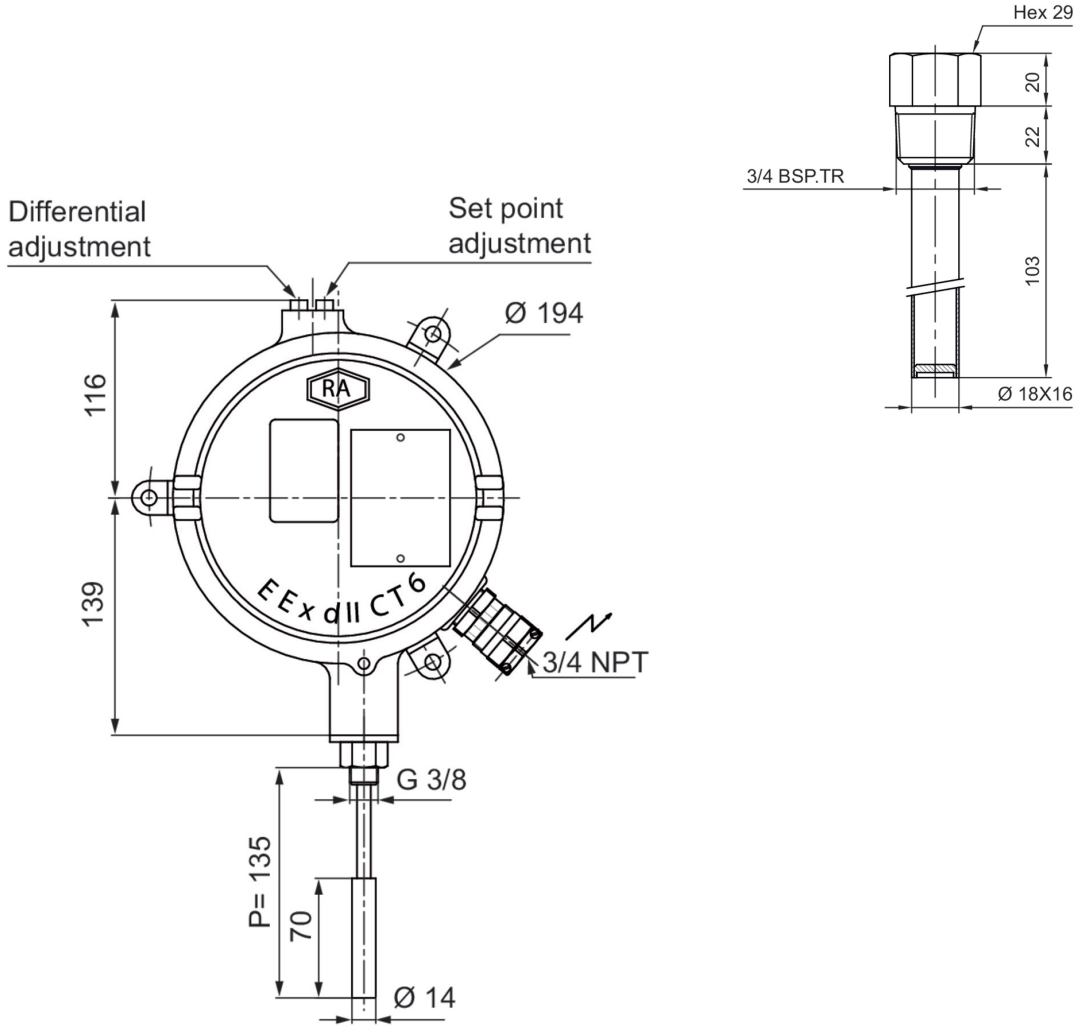


RTAE3

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RT-###.###.E00EJ

Dimensional drawings (mm)

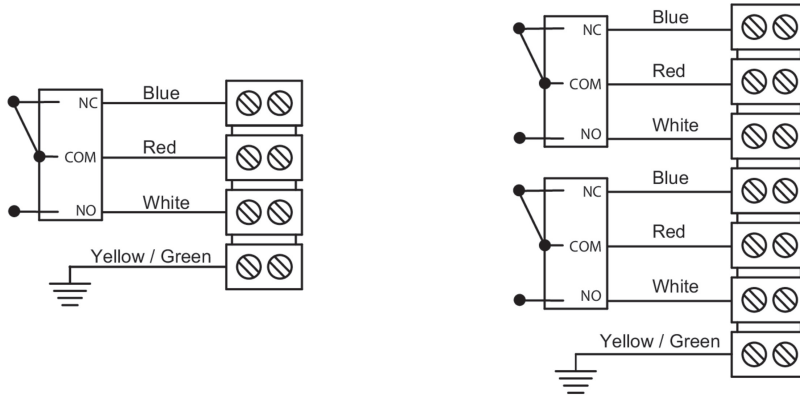


RTAE3

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RT-###.###.E00EJ

Electrical connection



1 SPDT

2 SPDT

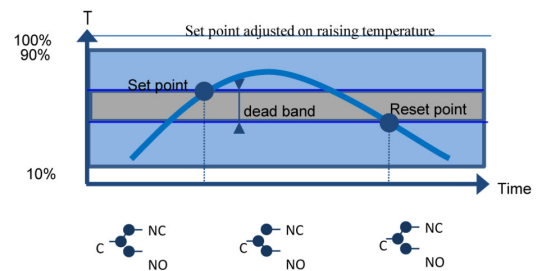
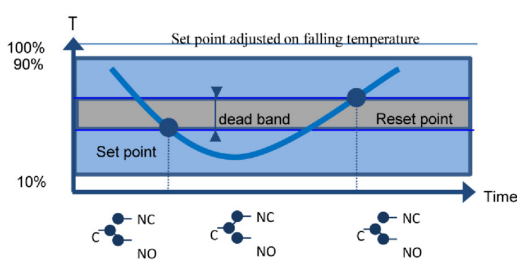
-20°C ≤ Ta ≤ +70°C	Dust IP6x	Gases
	T° surface	Class
Ta = 60°C	80°C	T6
Ta = 70°C	95°C	T5

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

Hazardous areas: zone 1, 2, 21, 22

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.

Principle

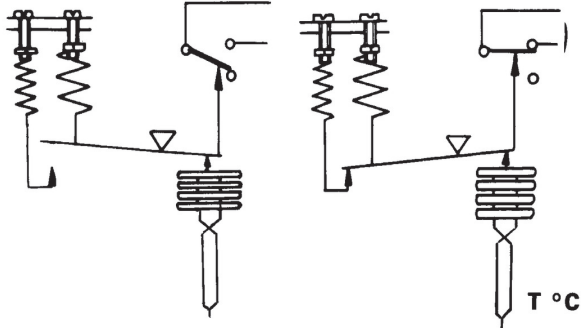


RTAE3

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RT-###.###.E00EJ

Principle



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

Set point and reset point must be between 10% and 90% of the selected scale.

Standard factory adjustment

Setpoint at 50% of the scale on falling temperature.

Customer specific factory adjustment (option SETP)

The following specifications have to be given with the order:

- Setpoint value
- Adjustment on falling or raising temperature
- Dead band value (as needed) when using an adjustable dead band switch

Adjustable ranges

Scale	T _{Max} accidental	Code	Micro-switch dead band ^{*)}							
			Adjustable dead band				Fixed dead band			
			A (B*)	M (K*)	C (W*)		E (F*)		D (V*)	
°C		10%	90%	10%	90%	10%	90%	10%	90%	
-46 ... 0	40	300	6 - 13	3 - 13	12 - 18	6 - 18	2.25	1.2	7.5	3.7
-20 ... 20	60	301	4.5 - 12	2.2 - 12	9 - 15	6 - 15	1.5	0.75	6	3
0 ... 45	60	302	6 - 13	3 - 13	10 - 18	6 - 18	2.25	1.05	7.5	3.7
40 ... 120	145	303	7.5 - 24	4.5 - 24	15 - 30	9 - 30	3	1.8	9	6
20 ... 80	100	315	7.5 - 18	4.5 - 18	13 - 22	7.5 - 22	3	1.5	9	4.5

(*) For version with 2 microswitches lower values of the dead band must be multiplied x 1.5

(1) The value of the dead band is depending on the value of the set point. This table contains the dead band values for set point adjustment at 10% and 90% of the selected scale. For adjustable dead band the lower value corresponds to the dead band spring totally released and the higher corresponds to the dead band spring fully tensed. For other set points the dead band value can be calculated by linear interpolation between the values at 10% and 90%.

RTAE3

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RT-###.###.E00EJ

Micro switch characteristics

Switch code	A (B)	M (K)	C (W)	E (F)	D (V)
Type	Standard	Gold contact	Hermetic	Ultra sensitive	Ultra sensitive Hermetic
6 Vdc	0.4 ... 10 A	10 ... 50 mA	5 mA ... 4 A	0.4 ... 1 A	0.4 ... 4 A
12 Vdc	0.4 ... 10 A	10 ... 50 mA	5 mA ... 4 A	0.4 ... 1 A	0.4 ... 4 A
24 Vdc	0.4 ... 6 A	10 ... 50 mA	5 mA ... 4 A	0.4 ... 1 A	0.4 ... 4 A
30 Vdc	0.4 ... 6 A	10 ... 50 mA	5 mA ... 3 A	0.4 ... 1 A	0.4 ... 2 A
48 Vdc	0.4 ... 6 A	10 ... 50 mA	5 mA ... 3 A	N/A	N/A
110 Vdc	0.1 ... 0.5 A	10 ... 50 mA	5 mA ... 1 A	N/A	N/A
220 Vdc	0.1 ... 0.25 A	10 ... 50 mA	5 mA ... 0.5 A	N/A	N/A
115 Vac	0.4 ... 10 A	10 ... 50 mA	50 mA ... 3 A	0.4 ... 10 A	N/A
250 Vac	0.2 ... 10 A	N/A	50 mA ... 2.5 A	0.2 ... 10 A	N/A
Dielectric rigidity between contacts and ground	2000 V	2000 V	1500 V	2000 V	1000 V

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RT-###.###.E00EJ

Ordering reference

Ordering key - Configuration possibilities see website

	RT	-	A	E	#	.	###	.	E	0	0	E	J
Product	RT												
Type of design													
industrial, copper alloy/StSt				A									
ATEX													
ATEX II 2 G D					E								
Ex d IIC T6 or T5 Gb													
Ex tb IIIC T80°C or T95°C Db													
T°amb:-20°C to +60°C (T6 or T80°C)													
or -20°C to +70°C (T5 or T95°C)													
HAZARDOUS AREA:1,2,21,22													
Type of Microswitch													
1xSPDT, Standard												A	
simultaneous												B	
1xSPDT, hermetically												C	
simultaneous												W	
1xSPDT, ultra sensitive												E	
simultaneous												F	
1xSPDT hermetic/ultra sensit.?												D	
simultaneous												V	
1 gold contact changeover switch												M	
simultaneous												K	
Temperature range													
-46 ...0°C												300	
-20 ...20°C												301	
0 ...45°C												302	
40 ...120°C												303	
20 ...80°C												315	
Type of design													
without capillary												E	
Length of capillary													
without capillary												0	
Immersion length													
135 mm													0
Bulb diameter													
14 mm													E
Process connection													
G 3/8													J

Ordering example

	RT	-	A	E	A	.	300	.	E	0	0	E	J	/	Q001
Product	RT														
Type of design															
industrial, copper alloy/StSt				A											
ATEX															
ATEX II 2 G D					E										
Ex d IIC T6 or T5 Gb															
Ex tb IIIC T80°C or T95°C Db															
T°amb:-20°C to +60°C (T6 or T80°C)															
or -20°C to +70°C (T5 or T95°C)															
HAZARDOUS AREA:1,2,21,22															

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RT-###.###.E00EJ

Ordering reference

Ordering example

RT - A E A . 300 . E 0 0 E J / Q001

Type of Microswitch

1xSPDT, Standard

A

Temperature range

-46 ...0°C

300

Type of design

without capillary

E

Length of capillary

without capillary

0

Immersion length

135 mm

0

Bulb diameter

14 mm

E

Process connection

G 3/8

J

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Certificate

Declaration of compliance with the order 2.1 according to EN 10204

Options

Set point B2605	SETP	2.1 Certificate	Q001
stainless steel label wired*	9941	2.2 Certificate	Q002
for nuclear applications	0838	3.1 Material certificate	Q003
Setpoint adjust. lead sealed	8990	3.1 Certif. setpoints adjust.	Q011