

RTAY3

Industrial temperature switch, direct mounting with intrinsic safety

RT-###.###.E00EJ

Overview

- Excellent repeatability
- Dead band adjustment for regulation
- Fix dead band for control
- Intrinsic safety Hazardous area 0, 1, 2



Picture similar



Technical data

Housing

| | |
|------------------------------|--|
| Protection rating (EN 60529) | IP66 |
| Cover | Blue painted, zamak Captive stainless steel screws |
| Case material | Black painted, zamak |
| Mounting | Direct mounting Wall mounting bracket |
| 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 |
| Media temperature | -46 ... +120 °C, depends on the scale |

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.

Wetted parts

| | |
|-----------------------------|--------------|
| Process connection material | Copper alloy |
|-----------------------------|--------------|

Electrical data

| | |
|-----------------------|---|
| Electrical connection | Via internal terminal block with plastic cable gland for $\varnothing 7$ to 10.5 mm |
| Ground connection | Via internal terminal block |
| Adjustment | 2 external adjustment screws on top of the case for set point and deadband |

Weight

| | |
|--------------------|--------|
| Temperature switch | 2000 g |
|--------------------|--------|

Approval / Conformities

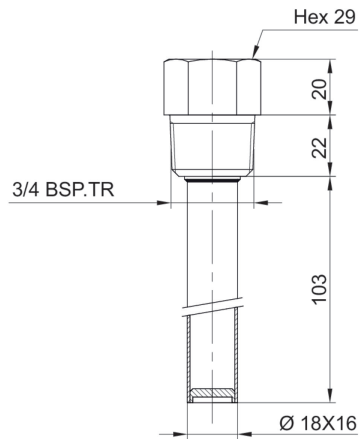
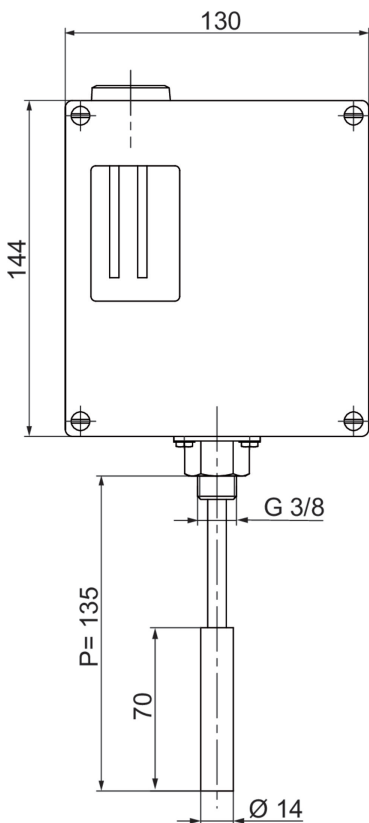
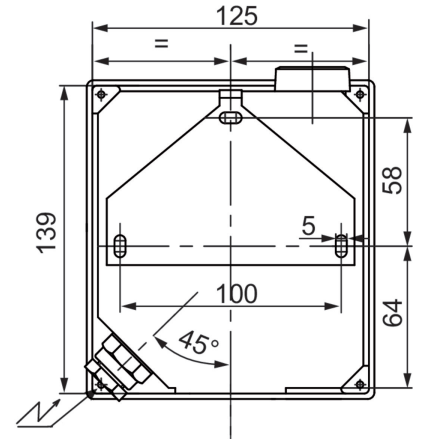
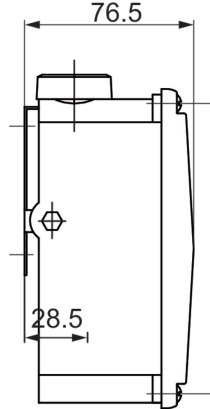
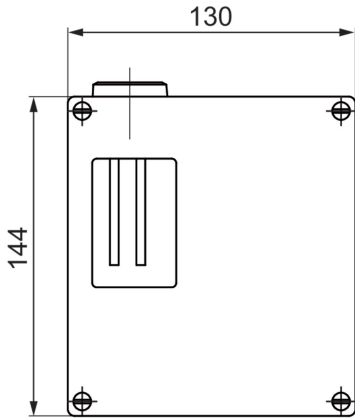
| | |
|------------------------|--|
| ATEX/IECEx Certificate | LCIE 03 ATEX 6123X IECEx LCIE 15.0060X |
| ATEX/IECEx | Ex I M1 Ex ia I Ma Ex II 1 G Ex ia IIC T6 or T5 Ga Further information can be found in the ATEX approval |

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Dimensional drawings (mm)

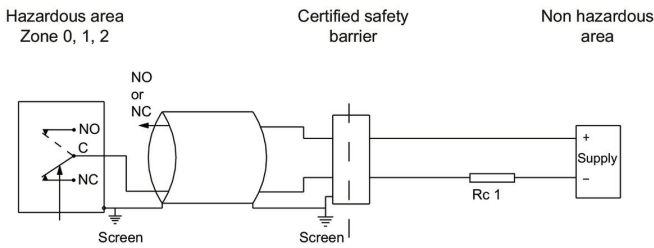
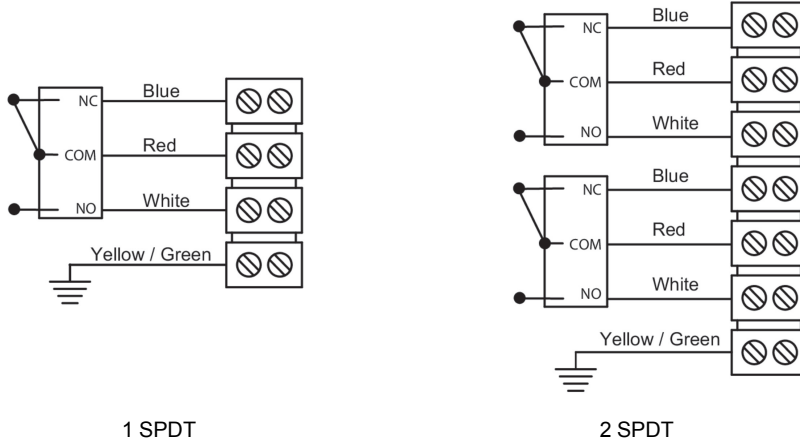


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Electrical connection

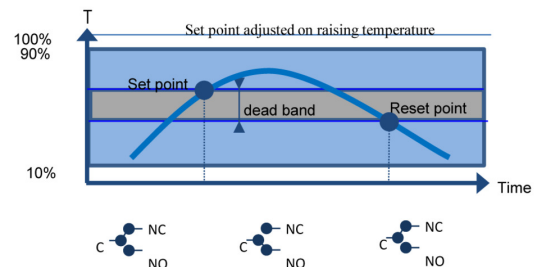
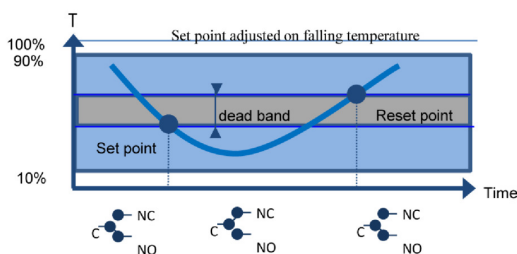


For max. ambient temperature according to temperature classes T5 and T6 refer to technical data.

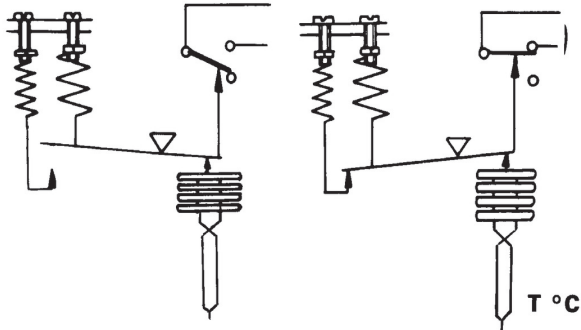
The installation must be made in an intrinsically safe circuit whose certified electrical safety parameters do not exceed any of the values U_i , I_i and P_i given in the electrical data.

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



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 ⁽¹⁾ | | | | | |
|------------|-------------------------|------|---------------------------------------|---------|---------|--------|-----------------|-----|
| | | | Adjustable dead band | | | | Fixed dead band | |
| | | | M (K*) | | C (W*) | | S | |
| | | | 10% | 90% | 10% | 90% | 10% | 90% |
| °C | °C | | °C | | | | | |
| -46 ... 0 | 40 | 300 | 4 - 9 | 2 - 9 | 8 - 12 | 4 - 12 | 3 | 2.5 |
| -20 ... 20 | 60 | 301 | 3 - 8 | 1.5 - 8 | 6 - 12 | 4 - 12 | 2.5 | 1.5 |
| 0 ... 45 | 60 | 302 | 4 - 9 | 2 - 9 | 7 - 12 | 4 - 12 | 3 | 2 |
| 40 ... 120 | 145 | 303 | 5 - 16 | 3 - 16 | 10 - 20 | 6 - 20 | 4 | 3.5 |
| 20 ... 80 | 100 | 315 | 5 - 12 | 3 - 12 | 9 - 15 | 5 - 15 | 4 | 3 |

(*) 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%.

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Micro switch characteristics

| Switch code | M (K) | C (W) | S |
|---|--------------|---------------|-----------------------------|
| Type | Gold contact | Hermetic | Ultrasensitive Gold contact |
| 6 Vdc | 10 ... 50 mA | 5 ... 120 mA | 10 ... 50 mA |
| 12 Vdc | 10 ... 50 mA | 10 ... 120 mA | 10 ... 50 mA |
| 24 Vdc | 10 ... 50 mA | 10 ... 120 mA | 10 ... 50 mA |
| 30 Vdc | N/A | N/A | N/A |
| 48 Vdc | N/A | N/A | N/A |
| 110 Vdc | N/A | N/A | N/A |
| 220 Vdc | N/A | N/A | N/A |
| 115 Vac | N/A | N/A | N/A |
| 250 Vac | N/A | N/A | N/A |
| Dielectric rigidity between contacts and ground | 2000 V | 1500 V | 2000 V |

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Ordering reference

Ordering key - Configuration possibilities see website

| | RT | - | A | Y | # | . | ### | . | E | 0 | 0 | E | J |
|----------------------------------|----|---|---|---|---|---|-----|---|---|---|---|-----|---|
| Product | RT | | | | | | | | | | | | |
| Type of design | | | A | | | | | | | | | | |
| ATEX | | | | Y | | | | | | | | | |
| ATEX I M1 | | | | | | | | | | | | | |
| Ex ia I Ma | | | | | | | | | | | | | |
| ATEX II 1 G | | | | | | | | | | | | | |
| Ex ia IIC T6 or T5 Ga | | | | | | | | | | | | | |
| HAZARDOUS AREA: 0,1,2 | | | | | | | | | | | | | |
| Type of Microswitch | | | | | | | | | | | | | |
| 1xSPDT, hermetically | | | | | | | | | | | | C | |
| simultaneous | | | | | | | | | | | | W | |
| 1 gold contact changeover switch | | | | | | | | | | | | M | |
| simultaneous | | | | | | | | | | | | K | |
| 1xSPDT, gold, ultra sensitive | | | | | | | | | | | | S | |
| 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 | | | | | | | | | | | | | E |
| without capillary | | | | | | | | | | | | | |
| Length of capillary | | | | | | | | | | | | | 0 |
| without capillary | | | | | | | | | | | | | |
| Immersion length | | | | | | | | | | | | | 0 |
| 135 mm | | | | | | | | | | | | | |
| Bulb diameter | | | | | | | | | | | | | E |
| 14 mm | | | | | | | | | | | | | |
| Process connection | | | | | | | | | | | | | J |
| G 3/8 | | | | | | | | | | | | | |

Ordering example

| | RT | - | A | Y | C | . | 300 | . | E | 0 | 0 | E | J | / | Q001 |
|----------------------------|----|---|---|---|---|---|-----|---|---|---|---|---|---|---|------|
| Product | RT | | | | | | | | | | | | | | |
| Type of design | | | A | | | | | | | | | | | | |
| ATEX | | | | Y | | | | | | | | | | | |
| ATEX I M1 | | | | | | | | | | | | | | | |
| Ex ia I Ma | | | | | | | | | | | | | | | |
| ATEX II 1 G | | | | | | | | | | | | | | | |
| Ex ia IIC T6 or T5 Ga | | | | | | | | | | | | | | | |
| HAZARDOUS AREA: 0,1,2 | | | | | | | | | | | | | | | |
| Type of Microswitch | | | | | C | | | | | | | | | | |
| 1xSPDT, hermetically | | | | | | | | | | | | | | | |
| Temperature range | | | | | | | 300 | | | | | | | | |
| -46 ...0°C | | | | | | | | | | | | | | | |
| Type of design | | | | | | | | | | | | | E | | |
| without capillary | | | | | | | | | | | | | | | |

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Ordering reference

Ordering example

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

Length of capillary

without capillary

0

Immersion length

135 mm

0

Bulb diameter

14 mm

E

Process connection

G 3/8

J

/

Certificate

Declaration of compliance with the order 2.1 according to EN 10204

Options

| | | | |
|------------------------------|------|-------------------------------|------|
| Set point B2605 | SETP | Souriau mobile plug | 2249 |
| stainless steel label wired* | 9941 | 2.1 Certificate | Q001 |
| Setpoint adjust. lead sealed | 8990 | 2.2 Certificate | Q002 |
| for nuclear applications | 0838 | 3.1 Material certificate | Q003 |
| Souriau connection | 2298 | 3.1 Certif. setpoints adjust. | Q011 |