Baumer
Passion for Sensors

RTNA3 - RTAA3

Industrial temperature switch, direct mounting

BOURDON
The Original by Baumer

Main Features

- Excellent repeatability
- Dead band adjustment for regulation
- Fix dead band for control and alarm

Applications

- Power generation safety equipment

IP 66

Technical Data

Temperature range	-46 ... 0°C to 40 ... 120°C	
Temperature	Process : Ambient : Storage :	-46 ... +120°C -30 ... +55°C -40 ... +55°C
Repeatability	± 1% F.S. @ constant temperature cycle	
CE conformity	Low Voltage Directive LVD 2006/95/EC	
Protection rating	IP 66 (EN 60529)	
Process connection	RTA : RTN :	Copper alloy Stainless steel 1.4404 (316L)
Bulb	RTA : RTN :	Copper alloy Stainless steel 1.4404 (316L)
Scale	Internal. Accuracy on reading ± 5% FS	
Weight	2 kg	
Cover	Zamak blue painted Captive stainless steel screws	
Case	Black Zamak	

Mounting	Direct mounting or with wall mounting braket
Ground connection	Via internal terminal block
Electrical connection	Terminal block with plastic cable gland for Ø 7 to 10.5 mm
Electrical function	See ordering code details on page 5
Adjustment	2 external adjustment screws on top of the case for set point and dead band

Options

Customer specific set point adjustment	Code SETP
Stainless steel tag plate and wire	Code 9941
Lead seal of the adjustment screws	Code 8990
Nuclear cleanliness (RTN only)	Code 0838
Electrical connection : stainless steel connector (Souriau)	Code 2298
Mobile plug for stainless steel connector (Souriau)	Code 2249

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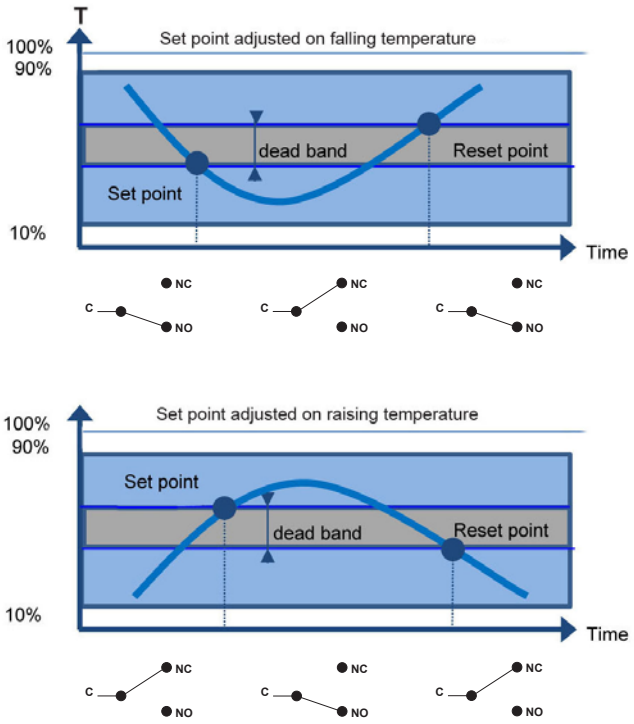
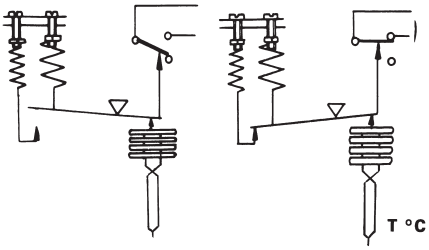
Principle



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.



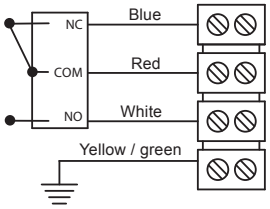
Set point and reset point must be between 10% and 90% of the selected scale.

Standard factory adjustment
Setpoint at 50% of the scale on falling temperature

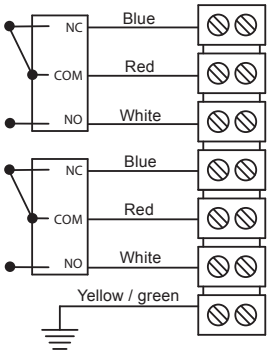
Customer specific factory adjustment (option SETP)
The following specifications have to be given with the order:
- Setpoint value
- Adjustment on falling or raising temperature
- Dead band value when using an adjustable dead band switch

Electrical connections

1 SPDT



2 SPDT



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Micro switches characteristics

Switch code	N (T)	A (B)	M (K)	C (W)	E (F)	H	D (V)	J
Type	**Tropicalized**	**Standard**	**Gold contact**	**Hermetic**	**Ultra sensitive**	**Manual reset**	**Ultra sensitive Hermetic**	**Manual reset**
6 Vdc	0.1 ... 8 A	0.4 ... 15 A	10 ... 50 mA	5 mA ... 4 A	0.4 ... 1 A	N/A	0.4 ... 4 A	N/A
12 Vdc	0.1 ... 8 A	0.4 ... 15 A	10 ... 50 mA	5 mA ... 4 A	0.4 ... 1 A	N/A	0.4 ... 4 A	N/A
24 Vdc	0.1 ... 8 A	0.4 ... 6 A	10 ... 50 mA	5 mA ... 4 A	0.4 ... 1 A	0.1 ... 8 A	0.4 ... 4 A	0.1 ... 8 A
30 Vdc	0.1 ... 8 A	0.4 ... 6 A	10 ... 50 mA	5 mA ... 3 A	0.4 ... 1 A	0.1 ... 8 A	0.4 ... 2 A	0.1 ... 8 A
48 Vdc	0.1 ... 8 A	0.4 ... 6 A	10 ... 50 mA	5 mA ... 3 A	N/A	0.1 ... 8 A	N/A	0.1 ... 8 A
110 Vdc	N/A	0.1 ... 0.5 A	10 ... 50 mA	5 mA ... 1 A	N/A	N/A	N/A	N/A
220 Vdc	N/A	0.1 ... 0.25 A	10 ... 50 mA	5 mA ... 0.5 A	N/A	N/A	N/A	N/A
115 Vac	0.1 ... 10 A	0.4 ... 15 A	10 ... 50 mA	50 mA ... 3 A	0.4 ... 10 A	0.1 ... 10 A	N/A	0.1 ... 10 A
250 Vac	0.1 ... 5 A	0.2 ... 15 A	10 ... 10 mA	50 mA ... 2.5 A	0.2 ... 10 A	0.1 ... 5 A	N/A	0.1 ... 5 A
Dielectric rigidity between contacts and ground	2000 V	2000 V	2000 V	1500 V	2000 V	2000 V	1000 V	2000 V

Adjustable ranges

Scale	T_{Max} accidential	Code	Micro-switch dead band [1]							
			Adjustable dead band				Fixed dead band			
			N (T*) A (B*) M (K*)		C (W*)		E (F*)		H D (V*) J	
°C			10%	90%	10%	90%	10%	90%	10%	90%
			°C							
-46 ... 0	40	**300**	4 - 9	2 - 9	8 - 12	4 - 12	1.5	0.8	5	2.5
-20 ... 20	60	**301**	3 - 8	1.5 - 8	6 - 12	4 - 12	1	0.5	4	2
0 ... 45	60	**302**	4 - 9	2 - 9	7 - 12	4 - 12	1.5	0.7	5	2.5
40 ... 120	145	**303**	5 - 16	3 - 16	10 - 20	6 - 20	2	1.2	6	4
20 ... 80	100	**315**	5 - 12	3 - 12	9 - 15	5 - 15	2	1	6	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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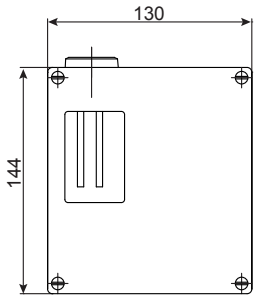
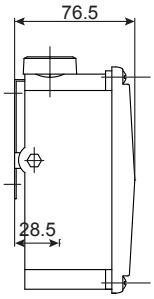
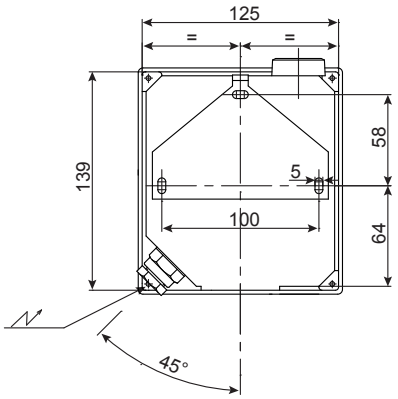
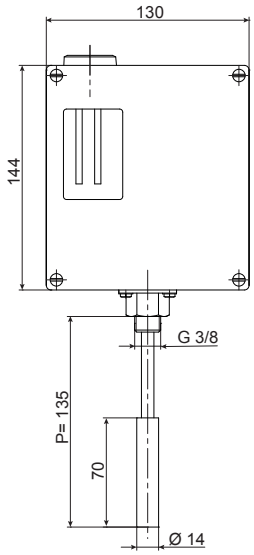
Dimensions (mm)



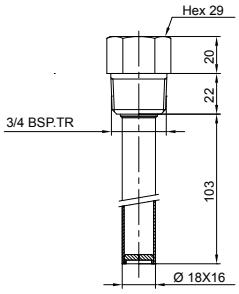






Thermowell

Thermowell for RTxx3
Stainless steel
Ordering code : 10271317



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Ordering details RTNA3 - RTAA3

RT	–	A	A	A	.	3xx	.	E	0	0	E	J	/

Model

Industrial temperature switch	RT

–

Type of the bulb

Copper alloy bulb	A
Stainless steel bulb	N

Approval

Standard version without ATEX approval	A

Type of micro switches	Deadband	
1 SPDT standard changeover switch	Adjustable	A
2 SPDT standard changeover switch	Adjustable	B
1 SPDT hermetically changeover switch	Adjustable	C
2 SPDT hermetically changeover switch	Adjustable	W
1 SPDT ultra sensitive changeover switch	Fix	E
2 SPDT ultra sensitive changeover switch	Fix	F
1 SPDT hermetically, ultra sensitive changeover switch	Fix	D
2 SPDT hermetically, ultra sensitive changeover switch	Fix	V
1 SPDT gold contact changeover switch	Adjustable	M
2 SPDT gold contact changeover switch	Adjustable	K
1 SPDT tropicalized changeover switch	Adjustable	N
2 SPDT tropicalized changeover switch	Adjustable	T
1 SPDT changeover switch, manual reset, opening on raising pressure	Fix	H
1 SPDT changeover switch, manual reset, opening on falling pressure	Fix	J

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Temperature range (°C)

-46 ... 0	300
-20 ... 20	301
0 ... 45	302
40 ... 120	303
20 ... 80	315

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Type of design

Direct mounting (TRD)	E

Capillary length

Without capillary	0

Stem length P

P=135 mm	0

Bulb diameter

Ø 14 mm	E

Process connection

G3/8	J

Options to be added behind the / (see example below) /

Ordering example with options

RT	–	A	A	A	.	300	.	E	0	0	E	J	/	SETP	_	9941

Industrial temperature switch
Copper alloy bulb
Without ATEX approval
1 SPDT standard changeover switch
Temperature range -46 ... 0 °C
TRD direct mounting
Without capillary
Immersion length P=135 mm
Bulb diameter Ø 14 mm
Process connection G3/8
Option : Customer specific set point adjustment
Option : Stainless steel tag plate and wire