/0.25 F

BETA PRESSURE & TEMPERATURE SWITCHES

BETA AIR RELAY

Pressure & Temperature Switches

The temperature operated AIR RELAY

Specially designed for:

- Snap acting pneumatic control.
- Control of pneumatic motors / valves.
- Offshore & Onshore.
- Zone 0 applications.

SYSTEM CERTIFICATION ISO 9001 SGS

THE REAL SNAP-ACTING AIR RELAY

Rexida SIL

Rometec s.r.l.
Via Alessandro Minuziano, 87-89 , 00128 Roma
Tel. 065061635 – Fax 065061542
Sito web: www.rometec.it – email: info@rometec.it

CERTIFIED ISO 9001:2015 COMPANY

Rometec srl - www.rometec.it - info@rometec.it - Rometec srl - www.rometec.it - info@rometec.it

Reg. Soc. Tribunale RM 9229/91 - Cap. soc. 46'482,00 €

TEMPERATURE SWITCHES

1 ENCLOSURES

C1 - P504H - S1N - V2 - SA - B - X1

ENCLOSURE CODE	CLASSIFICATION/ MATERIAL	AIR RELAY CONNECTION	TYPE OF SENSOR			
			Pressure	Vacuum	Differential	Temperature
C1 [1]	Weathertight (IP65) Aluminium	4x external 1/4"NPT (F) connection in **Brass**	√	√	√	√
C8	Weathertight (IP65) SS 316	4x external 1/4"NPT (F) connection in **SS 316**	√	√	√	√

[1] Is powder coated acc. SP025, dry film thickness aprox. 70 microns finnish hamertone silver/grey high gloss. Due to the nature of hammertone finnish some color difference might be visible and cannot be avoided. This has no effect on the integrity of the enclosure protection.

2 RANGES

C1 - **T548H** - D00 - S0 - SA - Y - X2

RANGE CODE	ADJUSTABLE RANGE		MAX. DEADBAND [3]		MAX. TEMPERATURE		PROOF TEMPERATURE		MAX. PROCESS PRESSURE	
T 528 H	--35 / +40	**°C**	15	**°C**	+125	**°C**	+200	**°C**	175	**bar**
T 548 H	0 / +95	**°C**			+200	**°C**	+250	**°C**		
T 568 H [1]	+60 / +180	**°C**			+300	**°C**	+350	**°C**		
T 588 H [2]	+160 / +300	**°C**	15.5	**°C**	+400	**°C**	+450	**°C**		

[1] In case process temperature > 140 °C, Direct mount sensing bulb is not recommended.

[2] Not in combination with Direct mount sensing bulb.

3 SENSOR BULBS

C1 - T548H - **D00** - S0 - SA - Y - X2

PROCESS CONNECTION	SENSOR CODE	TYPE OF TEMPERATURE SENSING BULB	
1/2" NPT (M)	**D00**	Direct mount. [1]	128 mm length
	D02		225 mm length
	C02	Capillary mount.	2 m. capillary length
	C03		3 m capillary length
	C05		5 m. capillary length
	C10		10 m. capillary length
	CXX		Special capillary length [2]

Note: All SS 316 stainless steel sensor, capillary (SS 304 armored) and compression fitting.

[1] Not in combination with range T588H (+160/+300 ˚C), not recommended with T568H in case of process temperature >140 ˚C.

[2] Length of capillary should be specified, consult your BETA Switch Representative. (Max 15 m.)

** Thermowells available, see page 12.

TEMPERATURE SWITCHES

4 DIAPHRAGM / O-RINGS

C1 - P504H - S1N - **V2** - SA - B - X1

DIAPHRAGM/ O-RING CODE	DIAPHRAGM [5]	O-RING	USE [1]	DEADBAND MULTIPLIER
B1	Buna-N	Buna-N	Standard water / oil (-30°C to +80°C).	1.0
E6	EPDM	EPDM	Some hydraulic fluids.	1.0
K5	Kalrez	Kalrez	Highly corrosive fluids.	1.5
M1	Monel	Buna-N	Seawater.	2.0
M2		Viton-A [4]	High temperature NOT below -10°C. [6]	
M4		PTFE [3]	Corrosive acids.	
M5		Kalrez	Highly corrosive and permeative acids.	
N3	Neoprene	Neoprene	When required.	1.0
P1	PTFE (Polyimide coated with PTFE)	Buna-N	Oil / air / water.	1.5
P2		Viton-A [4]	High temperature NOT below -10°C. [6]	
P4		PTFE [3]	Corrosive acids.	
P5		Kalrez	Corrosive acids.	
S1	SS 316	Buna-N	Permeative gases.	2.0
S2		Viton-A [4]	High temperature NOT below -10°C [6]	
S3		Neoprene	Permeative refrigerant gases.	
S4		PTFE [3]	Corrosive acids.	
S5		Kalrez	Highly corrosive and permeative acids.	
S6		EPDM	Steam.	
T1	Tantalum	Viton-A [4]	Highly corrosive and permeativr gases and non-acid liquids. Select O-ring as required.	2.0
T2		Buna-N		
T3		Neoprene		
T4		PTFE [3]		
T5		Kalrez		
V2	Viton-A	Viton-A [4]	High temperature NOT below -10°C. [6]	1.5
S0	SS 316 Welded diaphragm	None [2]	Highly permeative gases.	3.0
M0	Monel Welded diaphragm			

[1] Wetted parts are suggested for use on the service indicated. However they do not constitute a guarantee against corrosive or permeation since processes vary from plant to plant.
Empirical experience by users should be the final guide. The diaphragm / O-Ring combinations are for process temperatures of -30°C to +80°C, unless otherwise indicated.
For process temperatures beyond these limits please contact your BETA Switch Representative.

[2] Only for 1/4" & 1/2" process connections. Not available on vacuum switches. For other sizes and materials, consult your BETA Switch Representative.

[3] PTFE O-Ring not suitable for vacuum switches or vacuum conditions.
(Wetted internal spring of Co-Cr-Ni alloy, comparable with Elgiloy).

[4] For process temperature > 100 °C, consult your BETA Switch Representative.

[5] Other diaphragm materials like Hastelloy available, consult your BETA Switch Representative.

[6] High temperature refers to max. 140 °C at process connection.

Note:
Wetted parts are not guaranteed against corrosion or permeation since processes vary from plant and concentration of harmful fluids, gasses or solids vary from time to time in a given process.
Empirical experience by users should be the final guide and alternate materials based on this are generally available.

TEMPERATURE SWITCHES

5 SWITCHING ELEMENTS

C1 - P504H - S1N - V2 - **SA** - B - X1

For the BETA Pressure (Vacuum or Temperature) switches the Air Relay is available in two configurations:

Type **"SA"** for Normally Closed (N.C.) operations

This Air Relay opens a pneumatic circuit
when the process pressure (or temperature)
exceeds the set point (Actuated).
It shuts-off the pneumatic circuit at decreasing
pressure (or temperature).
(De-actuated)

(Fig. 1)

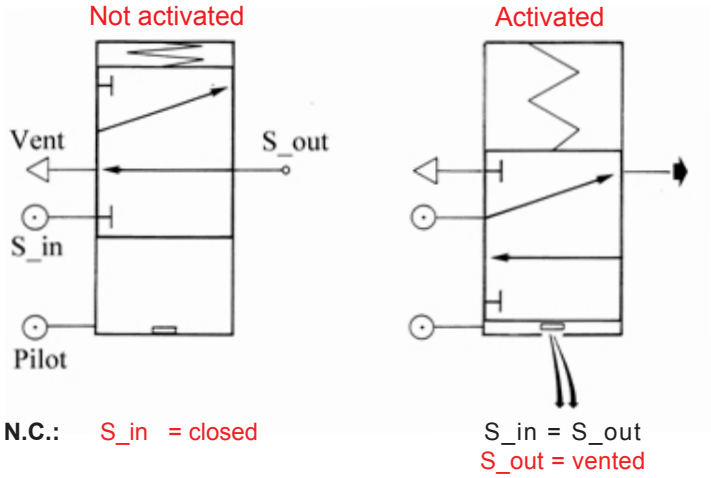


Fig. 1: **Air Relay SA**, Schematic N.C.

Type **"SB"** for Normally Open (N.O.) operations

This Air Relay shuts-off a pneumatic circuit
when the process pressure (or temperature)
exceeds the set point.
It opens the pneumatic circuit at decreasing
pressure (or temperature).

(Fig. 2)

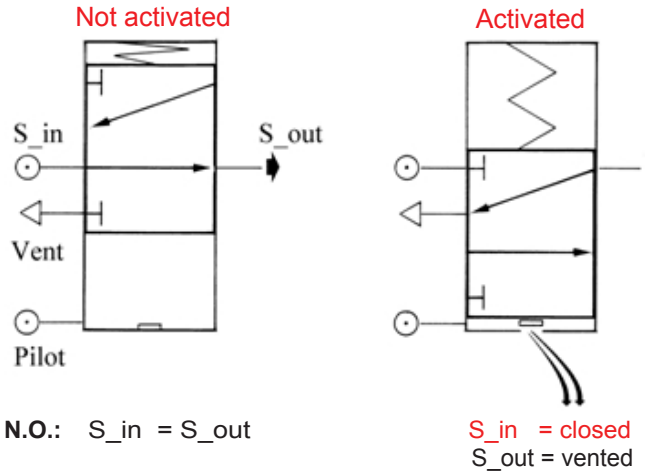


Fig. 2: **Air Relay SB**, Schematic N.O.

GENERAL SPECIFICATIONS: AIR RELAY / SA / SB

- Pilot supply pressure : 2 to 7.0 bar
- Pilot air consumption : less then 1 l/ min. at 2 bar supply
- Signal in pressure : up to 7.0 bar **maximum.**
- Media for Pilot supply and Signal in supply : clean, dry air or inert gas
- Signal flow capacity : max. 20 l/min. at 2 bar

IMPORTANT:

The signal pressure should NOT be lower then the pilot supply pressure.
Changing the signal or pilot pressure will result in a change in the adjustable range and the dead band.
Consult your BETA Representative.

AIR RELAY SWITCHES

TEMPERATURE SWITCHES

6 OPTIONS

C1 - T548H - D00 - S0 - SA - **Y** - X2

OPTION CODE	DESCRIPTION
S	Stainless steel Tag key ringed to enclosure. Tag has 2 lines (16 characters per line).
V	Fungicidal varnish coating (internal).
Y	Epoxy coating of enclosure and sensorbody (external).

Tag no. space on nameplates __ added free of charge

Standard nameplate C - Series : 2 lines with 16 characters or spaces
+ 1 line with 14 characters or spaces

7 SPECIALS

C1 - T548H - D00 - S0 - SA - Y - **X2**

We can incorporate numerous specials to meet your requirements.
These special requirements are indicated by the letter "**X**" in the model code or at the end of the model number, followed by a figure showing the number of specials.

Example:

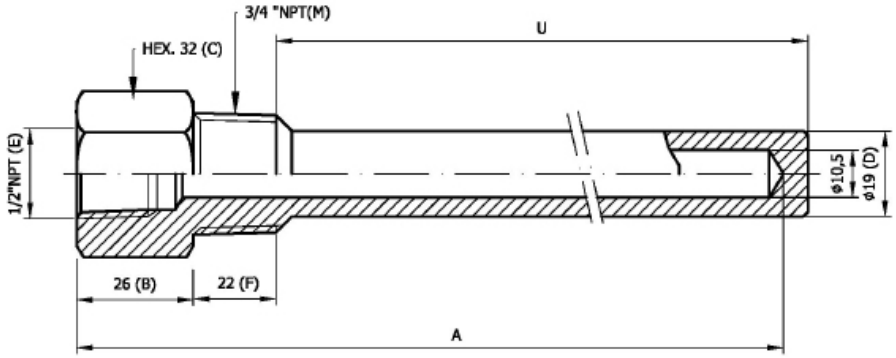
"X1" at the end of model reference means one special.

"X2" at the end of model reference means two specials have been incorporated.

Details of each special must always be specified completely on enquiries and orders.

ACCESSORIES

Thermowell (SS 316)



Standard BETA Thermowell

CODE	INSERTION LENGTH U (MM)	INSERTION ELEMENT LENGHT A (MM)	FIT TO BETA TEMP. SENSING BULB
TW 11	115	155	D00, C02, C03
TW 15	155	195	C02, C03, C05
TW 19	190	228	D02, C02, C03, C05

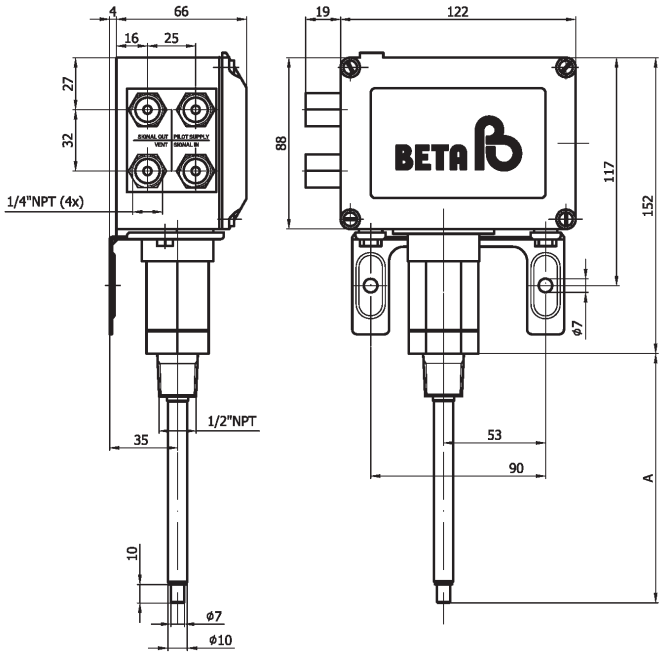
NOTES:

1. BETA Thermowells to be ordered as separate item. Do not include Thermowell code into the switch code.
2. Special Thermowell possible. Consult your BETA Switch Representive.

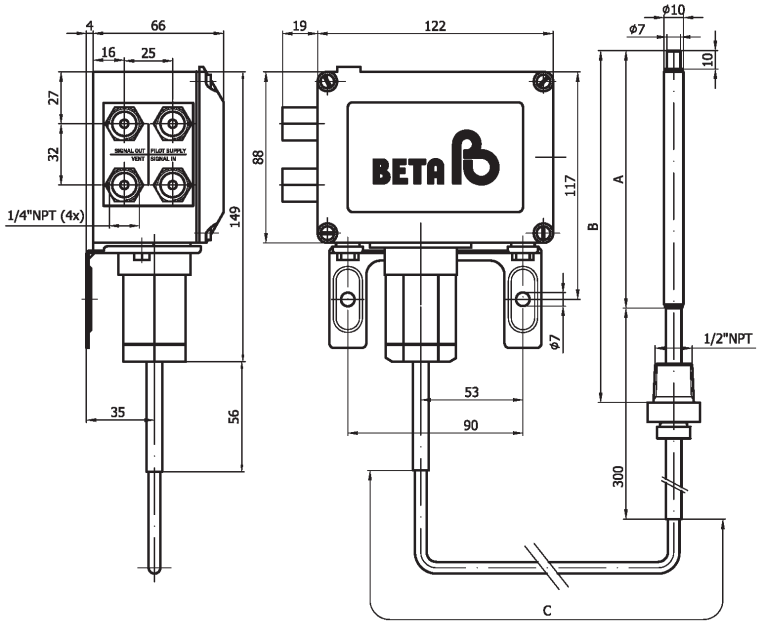
AIR RELAY SWITCHES

DIMENSIONS

"C"- Series: Temperature "T..H / D"



"C"- Series: Temperature "T..H-C"



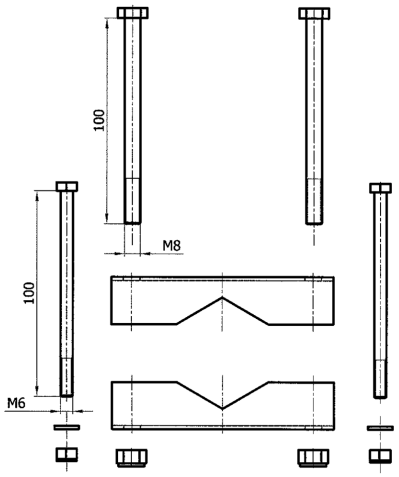
BETA AIR RELAY SWITCHES FOR HAZARDOUS AREA

The "BETA Switch", well known as a safety instrument, adds an extra dimension to industrial safety by having area approval by ATEX.

- Worldwide agency approvals.
- "User Friendly" Modifications – Standard features incorporated for your safety.
- Very wide rangeability with 100% accuracy over the full range –
  Fewer switches required to meet customers specifications / requirements / needs.
- Only 3 process wetted parts.
- Very high overrange pressures – No setpoint shift or damage to sensor.
- No maintenance.
- Wetted parts to NACE standard available.

AIR RELAY SWITCHES

2” Pipe mount bracket (SS 304)



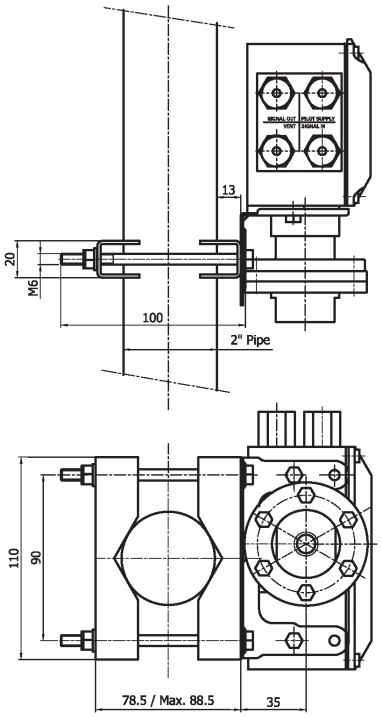
Contents :
2 x bolts M6 x 100 mm + washer + nut
Size +/- 1,5 mm / Material SS 304

Disclaimer :
This pipe mount bracket is solely intended for use in combination with BETA Pressure & Temperature Switches.

Foundation vibrations, as well as process vibrations, can disturb the proper functioning of the mounted instrument, the use of this bracket does not prevent or diminishes such occurrence.

2” Pipemount Set (SS 304) Configuration Examples

“C.” Series Enclosure on 2” Pipe



Dimensions given here are for 1/4” and 1/2” (F) process connections: For “H”-sensor with 1/2” (F) add 4 mm on “A” dimension.
Sizes in mm, tolerances ± 1,5 mm.