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## Sentry Series - HT01 & HT02 Flameproof Temperature Switch

### Key Features

- SPDT & DPDT Switch Outputs
- Aluminium Epoxy Coated Weatherproof Enclosure IP66/ NEMA4X
- ATEX / IECEx Flameproof
- 316 Stainless Steel capillary and bulb.
- Field Adjustable Set-points Against a Reference Scale
- Temperature Ranges up to 350°C (660°F)
- Safety Vented Design as Standard
- Suitable for use SIL 2 safety related systems

### Series Overview

The Sentry Series offers exceptional performance and high build quality in a simple, safe and cost-effective package.

- Performance is assured by repackaging Delta's well proven sensor technologies in a new, simple, one-piece enclosure.
- Safety is maintained by a vent that prevents the enclosure becoming pressurized in the event of a sensor being damaged.
- Cost is minimised through the selection of common standard options although, as with all Delta products, a variety of optional extras are available to tailor the product to specific needs.

Other products in the series include:

- Pressure Switches: Model P0
- Differential Pressure Switches: Model D0

### Product applications

The Sentry Series is suitable for a wide range of applications in:

- Process plants
- OEM equipment

The choice of models available ensures that the Sentry Series is suitable for use in:

- Zone 1 & 21 Hazardous Areas
- SIL 2 safety related systems



### Technical Specification:

Accuracy:	Set point repeatability $\pm 1\%$ of span at 20°C / 68°F
Storage Temperature:	-40 to +60°C / -40 to +140°F
Ambient Temperature:	-25 to +60°C / -13 to +140°F
Maximum Process Temperature:	See Table 5
Enclosure classification:	IP66 / NEMA 4X / Flameproof Ex d
Switch output:	SPDT or DPDT snap action microswitch (standard) Hermetically sealed (optional)
Electrical rating:	See Table 6
Process Connection:	1/2" NPT M
Weight:	1.7kg / 3.7lb - 1.9kg / 4.2lb depending on model

### Enclosure:

<b>Flameproof</b> ATEX / IECEx approved for use in a Zone 1 & Zone 21 hazardous locations.  II 2GD	Ex d IIC T6 / T5 Ex tb IIIC T85°C / T100°C Gb IP66 T6 / T85°C (Tamb -30°C to +65°C)	<b>Code:</b> <b>H</b>
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**Models:**

T01: For applications up to 100°C (212°F), maximum working temperature 110°C (230°F).

T02: For applications up to 350°C (660°F), maximum working Temperature 360°C (680°F).

		<b>Code:</b>
<b>Temperature</b>	Rigid Stem <b>Vapour Pressure</b>	<b>T01</b>
<b>Temperature</b>	Flexible thermal system <b>Vapour Pressure</b>	<b>T02</b>

**Electrical Entry:**

	<b>Code</b>
M20 x 1.5 Internal ISO Thread	<b>0</b>
½ NPT Internal Thread	<b>2</b>

**System Materials:**

316 Stainless steel	<b>Code: 2</b>
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**Setting Ranges:**

\*Deadband figures are typical for Code 10 SPDT 15A microswitches (see Table 6) with falling set-points at mid-scale.

Deadbands for other microswitch options may differ.

Due to manufacturing tolerances the figures quoted are for guidance only.

Should the differential be critical for specific applications, our engineers should be consulted before ordering.

Availability		Range	Tmax	Deadband*	Code
T01	T02	°C	°C	°C	
✓	✓	-40 to +60	70	4	<b>H1</b>
✓	✓	10 to 100	110	4	<b>K4</b>
x	✓	50 to 120	130	4	<b>L4</b>
x	✓	120 to 220	230	4	<b>S4</b>
x	✓	150 to 270	280	5	<b>TH</b>
x	✓	230 to 350	360	6	<b>V9</b>

Availability		Range	Tmax	Deadband*	Code
T01	T02	°F	°F	°F	
✓	✓	-40 to +140	158	7	<b>HA</b>
✓	✓	50 to 212	230	7	<b>KC</b>
x	✓	120 to 250	270	7	<b>LB</b>
x	✓	250 to 430	450	7	<b>SE</b>
x	✓	300 to 518	540	9	<b>TQ</b>
x	✓	450 to 660	680	11	<b>V0</b>

**Switch Options:**

UL/CSA Rating (RESISTIVE) §SEE NOTE	IEC 947-5-1/EN 60947-5-1 RATING							Contact	Code
	Designation & Utilization Category	Rated operational current I <sub>e</sub> (A) at rated operational voltage U <sub>e</sub>	U <sub>i</sub>	U <sub>imp</sub>	VA Rating				
						Make	Break		
5 A @ 110/250V AC Light Duty for AC only	AC14 D300	0.6/0.3A @ 120/240V AC	250V	0.8kV	AC	432	72	SPDT	00
	DC13 R300	0.22/0.1A @ 125/250V DC			DC	28	28	DPDT	01
1 A @ 125V AC & §100 mA @ 30V DC gold alloy contacts for low voltage switching	1 A @ 125 VAC RESISTIVE (IEC 1058-1/EN 61058-1)							SPDT	04
								DPDT	05
15 Amp @ 125/250/ 480 V AC & 2 A @ 30V DC General purpose precision	AC14 D300	0.6/0.3A @ 120/240V AC	250V	0.8kV	AC	432	72	SPDT	10
	DC13 R300	0.22/0.1A @ 125/250V DC	250V	0.8kV	DC	28	28	DPDT	11
5 A @ 250V AC and 2 A @ 30V DC Hermetically sealed. Gold plated silver contacts.	AC14 D300	0.6/0.3A @ 120/240V AC	250V	0.5kV	AC	432	72	SPDT	H2 <sup>†</sup>
	DC13 R300	0.22/0.1A @ 125/250V DC			DC	28	28	DPDT	H3 <sup>†</sup> H6 <sup>‡</sup>

† 2 Single pole, double throw, simultaneous falling under pressure

‡ 2 Single pole, double throw, simultaneous rising under pressure

<sup>^</sup>Terminal Block supplied as standard

Note: For Low energy circuits e.g 30V and up to 100mA, we recommend using gold alloy contact switches

U<sub>i</sub> = rated insulation voltage; U<sub>imp</sub> = rated impulse to withstand voltage across contacts.

In the absence of any verification by UL/CSA the microswitch § manufacturer's rating is stated in italics and bold. If in doubt seek guidance from the factory.

**Process Connection:**

	<b>Code:</b>
½ - 14 NPT EXT: Sliding Gland	<b>J</b>

**Options & Treatments:**

	<b>Code:</b>
Stainless steel wired on tag	<b>30</b>
Applies when – no option is required and selection is made from special engineering (see Table 9)	<b>00</b>

**Probe Type and/or Special Engineering:**

If a different probe length or any other non-standard options are required, the last 4 digits will consist of a special engineering code issued by Delta.

The rigid stem version (code R216) has a sliding gland process connection for mounting via a thermowell. Material of probe is 316 stainless steel.

The flexible capillary version (code S020) comprises an armoured capillary attached to the sensing bulb. A sliding compression gland process connection is fitted to the capillary to enable various depths of thermowell to be accommodated. All parts of the thermal system are in 300 series stainless steel with the capillary and sensing bulb in 316

Probe Type	Capillary Length	Sensing Bulb Length	Bulb diameter	Code:
Rigid Stem	n/a	81mm / 3.2"	9.5mm / 3/8"	<b>R216</b>
Flexible	2m / 6.5'	81mm / 3.2"	9.5mm / 3/8"	<b>S020</b>
Please consult Delta sales engineering for special requirements				<b>TBA</b>

**Order Code:**

Switches can be configured by selecting codes representing the desired features from the tables that follow. The chart below, describes how the model code is built up. For assistance in configuring a switch that best suits your needs, please contact your local sales office.

*NOTE: Options shaded in the following tables are the most common options and are available on the quickest lead-times and at the lowest cost.*

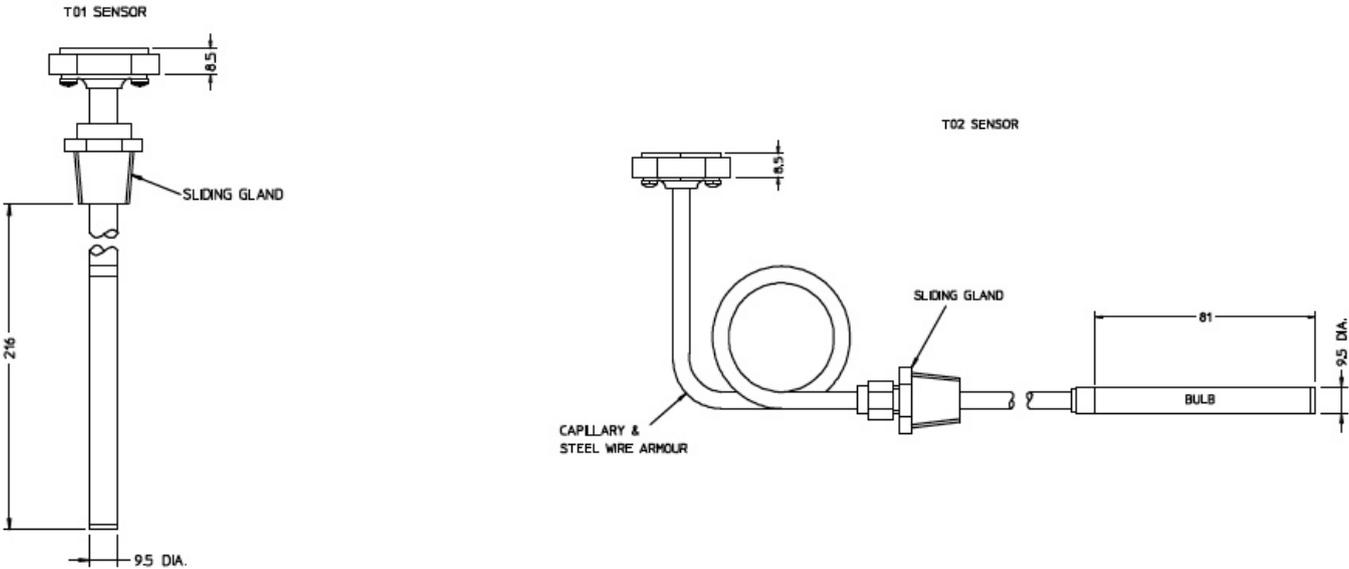
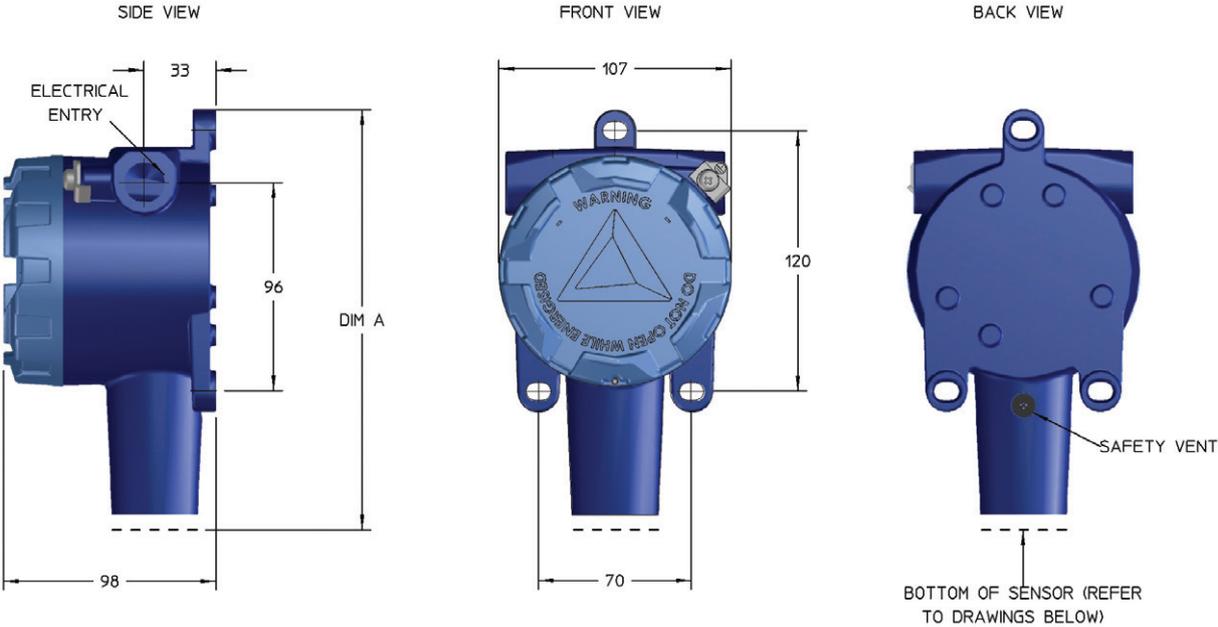
*NOTE: Only the most common options are shown in this data sheet. Should you require a feature that is not shown, please contact your local sales office for further details.*

Table 1 (Enclosure)	Table 2 (Model)	Table 3 (Electrical Entry)	Table 4 (System Materials)	Table 5 (Flange)	Table 6 (Switch)	Table 7 (Process Connection)	Table 8 (Options & Treatments)	Table 9 (Options/Treatments)	Table 10 (Probe Type/Special Engineering)

**Approvals:**

EUROPEAN		GLOBAL CERTIFICATION	
	<p><b>Low voltage Directive (LVD) 2006/95/EC.</b> Compliant to LVD</p> <p><b>Pressure Equipment Directive (PED) 97/23/EC:</b> This product has a process connection size &lt;=DN25 and is therefore categorised as sound engineering practice under Cat 3.3</p>		<p><b>IECEX Certified</b></p> <p>Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP6X (30°C ≤ Ta ≤ +65°C) Certificate No. IECEx BAS 12.0081 IEC 60079-0, IEC 60079-1, IEC 60079-31</p>
	<p><b>ATEX Directive 94/9/EC:</b></p> <p> II 2GD Ex d IIC T6 / T5 Ex tb IIIC T85°C / T100°C Gb IP66 T6 / T85°C (Tamb –30°C to +65°C)</p> <p>Certificate No. Baseefa12ATEX0121 IEC 60079-0, EN 60079-1, EN 60079-31</p>		 <p><b>Functional Safety Certified</b></p> <p>Meets the requirements of IEC 61508- 2:2010 for use in SIL 2 safety related systems</p> <p>Certificate No. Sira FSP 12015/01</p>

Dimensions:



Model	Probe Code	DIM A
T01	R216	TBD
T02	S020	TBD