8500 Spot Temperature Sensor

Calculate accurate liquid volumes to API standards by integrating a spot temperature sensor into an inventory system

TEC020-20241104

Highlights

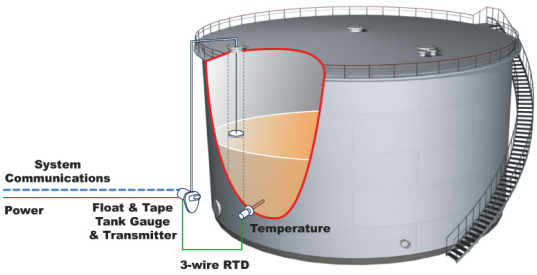
- 18" (46 cm), 24" (61 cm) 36" (91 cm), 48" (122 cm) nominal stem lengths
- 3/4" NPT, 1" NPT, 150-lb or 300-lb ANSI RF flanged sockets
- 100 Ohm DIN platinum non-inductive wound resistor
- Available with an in-head HART 5 Transmitter or an Explosion Proof HART 7 Display
- Type 316 stainless steel sockets
- 0.25" (6.4 mm) standard bulb diameter
- Explosion proof aluminum junction box with terminal strip
- Other sizes and configuration options available upon request

Application

Product temperature is used for volumetric calculation to a reference temperature and is important in the accurate calculation of liquid inventories in bulk storage tanks.

The 8500 STS connects to the 2920 Float and Tape Transmitter, NMS8x Servo Tank Gauge, and other instrumentation, to provide temperature data that is digitized at the tank for transmission to a central location, such as a refinery or a tank farm control room.

In high pressure applications, such as spheres, horizontal cylinders or bullets, flanged models for 150 psig (1 MPa) and 300 psig (2 MPa) services are available.



Construction

The socket is constructed of 316 stainless steel to resist corrosive attack in most hydrocarbon service applications. 316 stainless steel is used in the construction of the sheath and spring-loaded hex nipple. Other materials are available upon request.

Configuration

The sensors are manufactured with three lead wires that can be terminated within the conduit box or explosion proof enclosures of a variety of instruments. Since significant errors can result from erroneous temperature data, all spot temperature elements are precisely calibrated at the factory prior to shipment.

Technical Specifications

Functional

Feature	Description
Resistance bulb	Platinum (DIN 385)
Resistance	100 Ohms at 32 °F (0 °C)
RTD change / degree	0.21 Ohms per °F (0.39 Ohms per °C)
Operating range	Higher range 328 to 1100 °F (200 °C to 593 °C)
Accuracy	Complies with DIN 43760 and BS1904:1984, (IEC 751:41983) Tolerance Class B

Environmental

Feature	Description
Operating Temperature	40 °F and +185 °F (40 °C and +85 °C)
Operating Humidity	0 to 95% relative humidity, non-condensing

Physical

Feature	Description
Enclosure	Explosion proof die-cast epoxy coated aluminum rated IP65 (NEMA 4) FM / FMC Approval: Class I, Div 1, Grps A, B, C, D Class II, Div 1, Grps E,F,G
Socket material	Type 316 stainless steel
Bulb stem length	18", 24", 36", and 48" (45.7 cm, 61 cm, 91.4 cm, and 122 cm)
Bulb diameter	0.25" (6.4 mm) standard
Socket types	3/4" NPT, 1" NPT, 1-1/2" 150# or 300# ANSI R.F.

Order Codes

N8500-	8500 Spot Temperature Sensor (STS)
	Connection Type and Length
0	3/4" NPT, 18" (45.7 cm) length
1	3/4” NPT, 36" (91.4 cm) length
2	3/4” NPT, 48" (122 cm) length
3	ANSI 1-1/2” 150lb RF, 18" (45.7 cm) length
4	ANSI 1-1/2” 150lb RF, 36" (91.4 cm) length
5	ANSI 1-1/2” 150lb RF, 48" (122 cm) length
6	ANSI 1-1/2” 300lb RF, 18" (45.7 cm) length
7	ANSI 1-1/2” 300lb RF, 36" (91.4 cm) length
8	ANSI 1-1/2” 300lb RF, 48" (122 cm) length
A	3/4" NPT, 24in (61 cm) length
B	ANSI 1-1/2" 150lb RF, 24" (61 cm) length
C	ANSI 1-1/2" 300lb RF, 24" (61 cm) length
D	ANSI 2” 150lb RF, 18" (45.7 cm) length
E	ANSI 2” 150lb RF, 36" (91.4 cm) length
F	ANSI 2” 150lb RF, 48" (122 cm) length
G	ANSI 2" 150lb RF, 24" (61 cm) length
R	1” NPT, 36" (91.4 cm) length
9	Special Version
	Element Type; Communications
1	100 Ohm Platinum DIN385 Element, -328°F to 1100°F (-200°C to 593°C); N/A Communications
4	100 Ohm Platinum DIN385 Element, -328°F to 1100°F (-200°C to 593°C); in-head HART 5 Transmitter
5	100 Ohm Platinum DIN385 Element, -328°F to 1100°F (-200°C to 593°C); Explosion Proof HART 7 Display
9	Special Version

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