

8500 Spot Temperature Sensor

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



Installation Guidelines

The 8500 STS may be used in a variety of storage tanks and is generally installed in the first course of the tank shell, about three feet (1 m) above the bottom of the tank. It may be used in fixed roof or floating roof tanks as long as it is below the pin height at which the floating roof rests.

Construction

The 8500 STS is designed to meet the high quality and long life required by the storage tank industry. For resistance to corrosive attack in most hydrocarbon service applications, the socket is constructed of 304 stainless steel. 316 stainless steel is utilized in the construction of the sheath and hex nipple.

Configuration

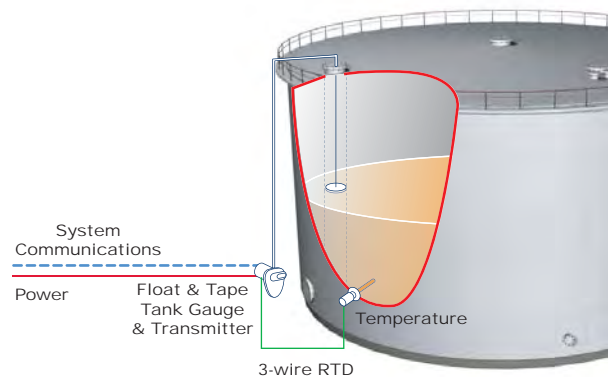
The sensors are manufactured with three lead wires that can be terminated within the conduit box or explosion proof enclosures of a variety of instruments. Since significant errors can result from erroneous temperature data, all spot temperature elements are precisely calibrated at the factory prior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

Application

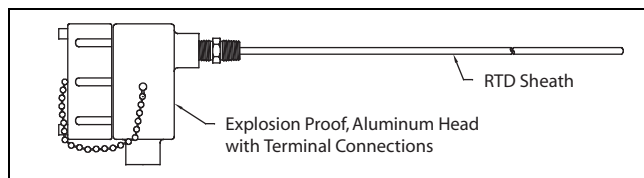
Product temperature is used for volumetric calculation to a reference temperature and is of significant importance in the accurate calculation of liquid inventories in bulk storage tanks.

The 8500 STS easily connects to Varec products, including float & tape transmitters (2910 Float and Tape Transmitter, 4000 Advanced Technology Transmitter), servo tank gauges (6005 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 tank farm control room.

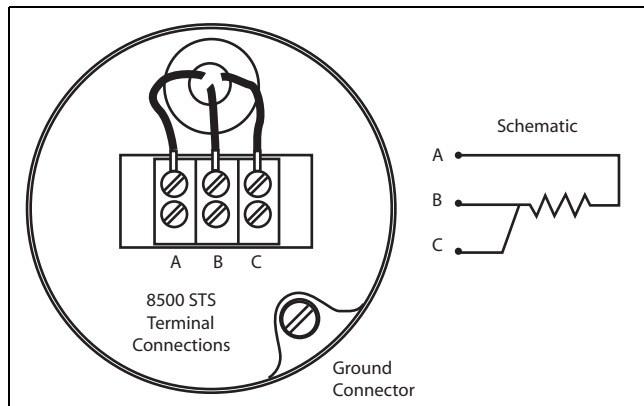
In high pressure applications, such as spheres, horizontal cylinders or bullets, flanged models for 150 psig (1 MPa) and 300 psig (2 MPa) service are available



Technical Specifications



8500 STS Assembly



8500 STS connection

Functional

Resistance bulb	Platinum (DIN)
Resistance	Platinum (DIN): 100 Ohms at 32 °F (0 °C)
RTD change/degree	Platinum (DIN): 0.21 Ohms per °F (0.39 Ohms per °C)
Operating range	Platinum: -325 °F to 392 °F (-198 °C to 200 °C)

Environmental

Operating temperature	-40 °F and +185 °F (-40 °C and +85 °C)
Operating humidity	0 to 95% relative humidity non-condensing

Performance

Accuracy	Platinum: Complies with DIN 43760 and BS1904:1984, (IEC 751:41983), Tolerance Class B
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Physical

Enclosure	Explosion proof die-cast epoxy coated aluminium Rated IP65 (NEMA 4)
Socket material	Type 304 stainless steel
Bulb stem length	18", 36" and 48" (45.7 cm, 91.4 cm and 122 cm)
Bulb diameter	0.25" (6.4 mm) standard
Socket types	3/4" NPT 1-1/2" - 150# or 300# ANSI R.F.

Spare Parts

Spot Temperature Bulb (to 392 °F)	
06-08636-4	18" Platinum, DIN
06-08636-5	36" Platinum, DIN
06-08636-6	48" Platinum, DIN
Thermowell for Spot Temperature Bulb (to 392 °F)	
02-08654-1	Thermowell: 3/4" NPT, 18"; 316SS tip, shank, and hex fitting
02-08654-2	Thermowell: 3/4" NPT, 36"; 316SS tip, shank, and hex fitting
02-08654-3	Thermowell: 3/4" NPT, 48"; 316SS tip, shank, and hex fitting

Order Codes

Connection Type and Length	
0	3/4 NPT, 18in (45.7 cm) length
1	3/4 NPT, 36in (91.4 cm) length
2	3/4 NPT, 48 in (122 cm) length
3	ANSI 1-1/2 150lb RF, 18in (45.7 cm) length
4	ANSI 1-1/2 150lb RF, 36in (91.4 cm) length
5	ANSI 1-1/2 150lb RF, 48in (122 cm) length
6	ANSI 1-1/2 300lb RF, 18in (45.7 cm) length
7	ANSI 1-1/2 300lb RF, 36in (91.4 cm) length
8	ANSI 1-1/2 300lb RF, 48in (122 cm) length
Element Type	
3	100 Ohm Platinum (DIN) Element to 392 F
N8500 -	Complete product designation

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