

8500 Spot Temperature Sensor

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



Highlights

- 18" (46 cm), 24" (61 cm) 36" (91 cm), 48" (122 cm) nominal stem lengths
- 3/4" (19 mm) NPT, 150 lb or 300 lb ANSI RF flanged sockets
- 100 Ohm DIN platinum non-inductive wound resistor
- RTD head transmitters available with 4-20mA, HART, Profibus or Foundation FieldBus communications protocols*
- 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 are available

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 connects to the Varec 2910 or 2920 Float and Tape Transmitter, 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.

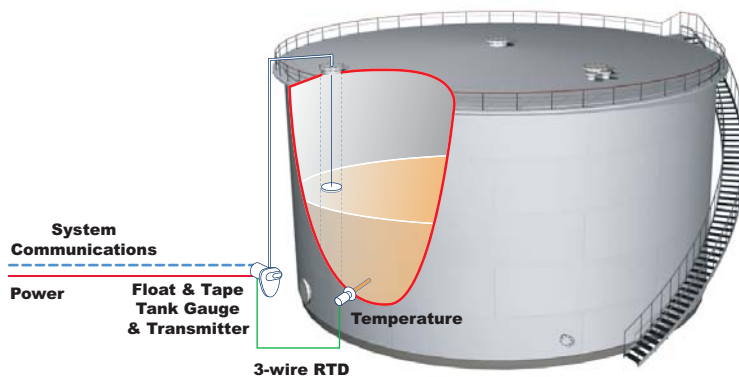


Construction

For resistance to corrosive attack in most hydrocarbon service applications, the socket is constructed of 316 stainless steel. 316 stainless steel is utilized in the construction of the sheath and spring-loaded 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.



Example Tank Gauging System

Installation Guidelines

The 8500 STS 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.

* Contact Varec for availability

Technical Specifications

Functional

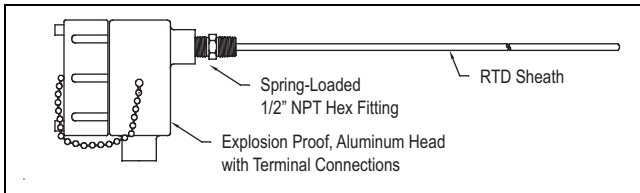
Resistance bulb	Platinum (DIN 385)
Resistance	100 Ohms at 32 °F (0 °C)
RTD change/degree	0.21 Ohms per °F (0.39 Ohms per °C)
Operating range	-60 to 600 °F (-51 to 315 °C) Higher range -328 to 1100 °F (-200 to 593 °C) available upon request
Accuracy	Complies with DIN 43760 and BS1904:1984, (IEC 751:41983) Tolerance Class B

Environmental

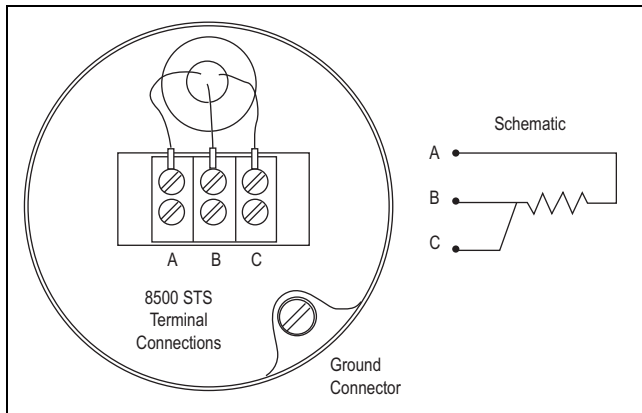
Operating temperature	-40 °F and +185 °F (-40 °C and +85 °C)
Operating humidity	0 to 95% relative humidity, non-condensing

Physical

Enclosure	Explosion proof die-cast epoxy coated aluminium 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	¾" NPT, 1-½" 150# or 300# ANSI R.F.



8500 STS Assembly



8500 STS connection

Spare Parts

Spot Temperature Bulb	
06-013241-18	18" Platinum, DIN 385
06-013241-24	24" Platinum, DIN 385
06-013241-36	36" Platinum, DIN 385
06-013241-48	48" Platinum, DIN 385
Thermowell for Spot Temperature Bulb	
06-013242-118	¾" NPT x 18" Thermowell
06-013242-124	¾" NPT x 24" Thermowell
06-013242-136	¾" NPT x 36" Thermowell
06-013242-148	¾" NPT x 48" Thermowell
06-013242-218	1.5"-150lb x 18" Thermowell
06-013242-224	1.5"-150lb x 24" Thermowell
06-013242-236	1.5"-150lb x 36" Thermowell
06-013242-248	1.5"-150lb x 48" Thermowell
06-013242-318	1.5"-300lb x 18" Thermowell
06-013242-324	1.5"-300lb x 24" Thermowell
06-013242-336	1.5"-300lb x 36" Thermowell
06-013242-348	1.5"-300lb x 48" Thermowell

Order Codes

Connection Type and Length	
0	¾" NPT", 18" (45.7 cm) length
1	¾" NPT", 36" (91.4 cm) length
2	¾" 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	¾" NPT, 24" (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
9	Special Version (Contact Factory)
Element Type	
1	100 Ohm Platinum (DIN 385), -60 to 600 °F
9	Special Version (Contact Factory)
N8500 -	Complete product designation

