

# 8500 Spot Temperature Bulb & Socket

## Temperature measurement for tanks and pipelines



### Applications

The Model 8500 Spot Temperature Resistance Bulb is designed to measure the temperature of liquids at a single localised area. The single element is easily installed within the socket at or near the bottom of a storage tank or in a pipeline.

Product temperature measurement allows for the calculation of temperature corrected or net liquid inventories.

### Features

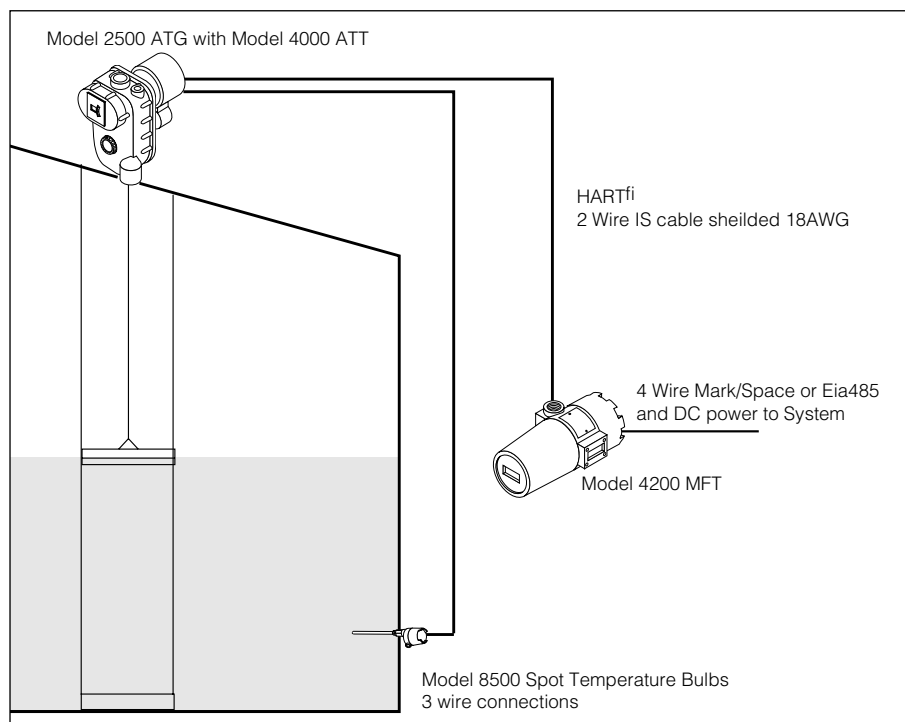
- High accuracy, rugged construction
- 46 cm (18"), 91 cm (36") and 122 cm (48") nominal stem lengths available as standard with other custom sizes and configurations available
- ¾" NPT, 150# or 300# ANSI RF flanged sockets
- 100 Ohm copper or DIN platinum temperature element
- Type 304 stainless steel sockets
- 6.4 mm 0.25"(0.25") standard bulb diameter
- Explosion proof aluminum junction box with terminal strip

## Measuring System

### Operation

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 easily connects to Endress+Hauser products, including transmitters (4000 ATT), servo gauges (NMS 53x) and other instrumentation, to provide temperature data that is digitised at the tank for transmission to a central location, such as a refinery or tank farm control room.

Systems installation  
example



## Installation

The 8500 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.

### High Pressure Applications

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.

## 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.

## Construction

The 8500 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 utilised in the construction of the sheath and hex nipple.

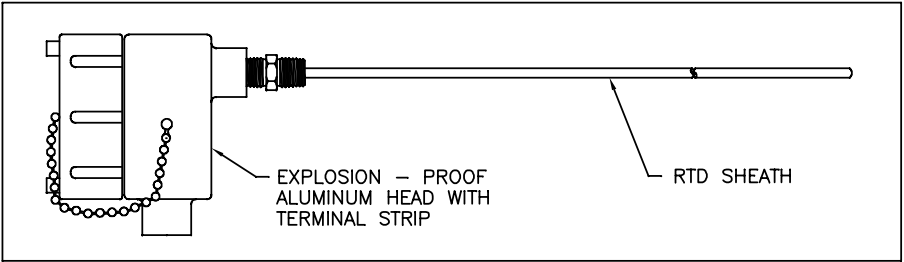
Technical Data

Manufacturer	Endress+Hauser Systems & Gauging, Atlanta, USA
Instrument designation	8500 Single Point Spot Temperature Bulb
Function	Localised temperature measurement

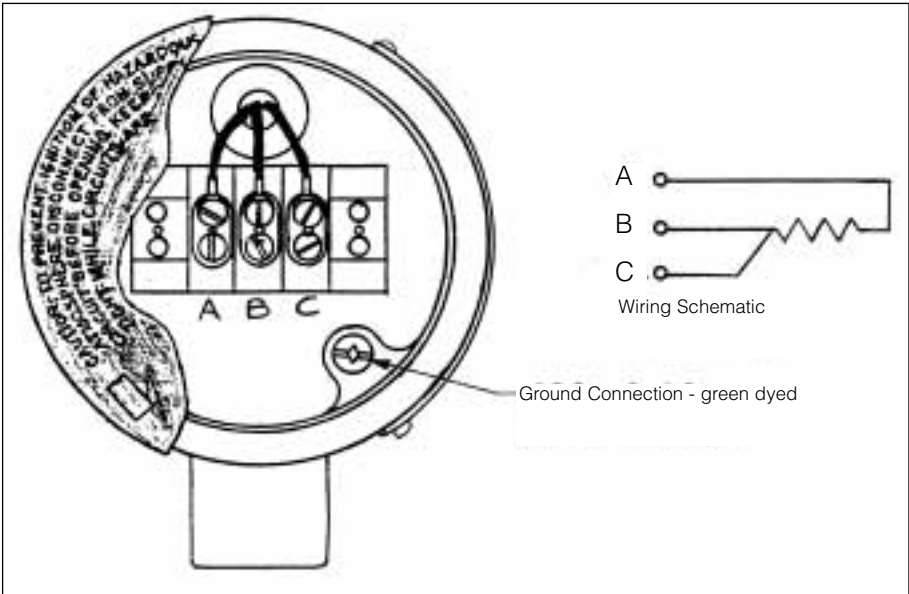
  

Bulb Stem Length	45.7 cm, 91.4 cm and 122 cm (18", 36" and 48")
Bulb Diameter	6.4 mm (0.25") standard, optional 6.9 mm (0.27")
Socket Types	3/4" NPT 1-1/2" – 150# ANSI R.F. 1-1/2" – 300# ANSI R.F.
Socket Material	Type 304 stainless steel
Resistance Bulb	Copper or platinum (DIN)
Resistance	Copper: 100 Ohms at 25 °C (77 °F) Platinum (DIN): 100 Ohms at 0 °C (32 °F )
RTD Change/Degree	Copper: 0.388 Ohms per °C (0.216 Ohms per °F) Platinum (DIN): 0.39 Ohms per °C (0.21 Ohms per °F)
Operating Range	Copper: -75 °C to 100 °C (-100 °F to 212 °F) Platinum: -198 °C to 200 °C (-325 °F to 392 °F)
Accuracy	Copper: ±15 °C (±0.25 °F) Platinum: Complies with DIN 43760 and BS1904:1984, (IEC 751:41983), Tolerance Class B

8500 assembly



8500 connection



# Product Structure

8500 Single Point Spot Bulb & Socket			
Length and Connection Type			
0	45.7 cm (18"), 3/4" NPT connection		
1	91.4 cm (36"), 3/4" NPT connection		
2	122 cm (48"), 3/4" NPT connection		
3	45.7 cm (18"), 1-1/2" – 150# ANSI R.F. flange		
4	91.4 cm (36"), 1-1/2" – 150# ANSI R.F. flange		
5	122 cm (48"), 1-1/2" – 150# ANSI R.F. flange		
6	45.7 cm (18"), 1-1/2" – 300# ANSI R.F. flange		
7	91.4 cm (36"), 1-1/2" – 300# ANSI R.F. flange		
8	122 cm (48"), 1-1/2" – 300# ANSI R.F. flange		
Element Type			
0	Copper		
1	Platinum (DIN)		
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8500 Single Point Spot Bulbs Only	
Part Number	Description
06-08636-1	100 Ohm copper, 45.7 cm (18") stem length
06-08636-2	100 Ohm copper, 91.4 cm (36") stem length
06-08636-3	100 Ohm copper, 122 cm (48") stem length
06-08636-4	DIN platinum, 45.7 cm (18") stem length
06-08636-5	DIN platinum, 91.4 cm (36") stem length
06-08636-6	DIN platinum, 122 cm (48") stem length

## Note!

If the temperature bulb is for installation in an existing socket, the socket's inside diameter should be measured.

## Locations

Endress+Hauser  
Systems & Gauging, Inc.  
2901 W. Sam Houston Pkwy. N.  
Houston, TX 77043  
USA  
Tel: +1 (832) 590-6200  
Fax: +1 (832) 590-6201

Endress+Hauser  
Systems & Gauging, Inc.  
1800 Diagonal Road  
Suite 300  
Alexandria, VA 22314  
USA  
Tel: +1 (703) 837-9202  
Fax: +1 (703) 837-9209

Endress+Hauser  
Systems & Gauging, Inc.  
500 West Central Avenue  
Suite A  
Brea, CA 92821  
USA  
Tel: +1 (714) 529-1925  
Fax: +1 (714) 529-2949

Sakura Endress Co., Ltd.  
862-1 Mitsukunugi  
Sakaigawa-mura  
Higashi-Yatsushiro-Gun  
Yamanashi Prefecture  
406-0846 Japan  
Tel: +81 (0)552-66-4964  
Fax: +81 (0)552-66-4969

## Systems & Gauging Headquarters

Endress+Hauser  
Systems & Gauging, Inc.  
5834 Peachtree Corners East  
Norcross (Atlanta), GA 30092  
USA  
Tel: +1 (770) 447-9202  
Fax: +1 (770) 662-8939  
<http://www.systems.endress.com>

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