DATASHEET

Multiple Element Spot Thermometer

Multi-Spot Thermometer

Application

Intrinsically Safe, Multiple Spot Thermometers (MSTs) of high accuracy for spot-temperature measurement in a wide range of applications.
- Common or independent Pt100 sensors with true 3- or 4 wire compensation
- Options available for extreme temperatures (cryogenic and bitumen)
- Number of elements and positions to suit customer requirements
- Suitable for use in harsh and corrosive environments
- Compatible with industry-standard level gauges
- Stainless steel or nylon sheath

MTG multi-element thermometers used in a wide range of applications including storage of hydrocarbons, LPG, LNG and Liquid Nitrogen.

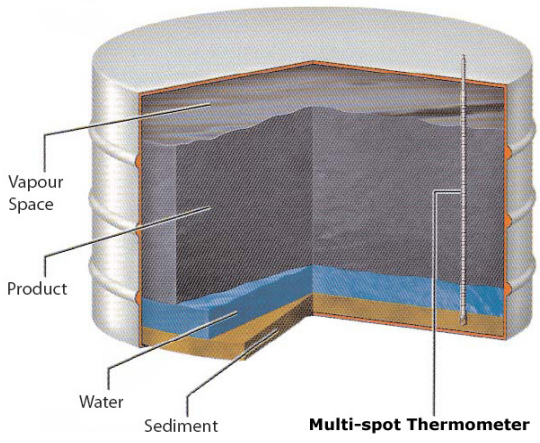
The high accuracy of the elements makes the MST an integral part of the tank gauging systems used for custody transfer and inventory control applications. The sheath, made of stainless steel or nylon, contains a number of spot elements in different positions along the length of the sheath. Used in a wide range of applications including storage of hydrocarbons.

Construction

Unless otherwise specified, Pt100 1/5DIN elements are used, but other options available include the use of copper elements (100 ohm at 25 C) and 3 x Pt33.3 ohm elements. The MSTs can also be made with Type T thermocouple elements.

The sheath, made of stainless steel or nylon, contains a number of elements set at different positions, all starting from the bottom of the sheath. The construction of the sheath and elements is such that the elements retain their dimensional properties under vibration and environmental changes which are frequently encountered in many installations.

True 3-wire compensation is possible as the element design is such that the start and finish of each element is at the bottom of the assembly, making all lead lengths equal. All elements are calibrated at 3 temperatures: high, low and mid point ‘ballast’ for extended accuracy. The maximum number of averaging elements is 12 plus, where required, a bottom spot element can be added.



SPECIFICATION

GENERAL DESCRIPTION

Multiple Element Spot Thermometer
for Measurement of temperature across a range of heights

APPLICATION

Temperature Measurement in Bulk Liquid Storage Vessels
Custody Transfer Tank Gauging

PERFORMANCE

Temperature Accuracy: +/-0.15 + 0.002 x ltlC

Temperature Measuring Ranges

Sheath Construction	Type	Wire Insulation	Temperature Range
Thick-wall Nylon 12 (Rilsan) tube	Standard Nylon	PVC throughout	-20 to +90 C
Thin-wall AISI 316 Convolute tube	Standard Stainless	PVC throughout	-20 to +90 C
	Extended Temperature stainless	PTFE internal PVC external	-50 to +120 C
	High-temperature Stainless	PTFE with high temperature elements	-50 to +200 C
	Cryogenic	PTFE	-200 to +50 C
	Bitumen	Double glass on nickel/copper wire	-20 to +280 C

MECHANICAL / PROCESS

Maximum pressure: Without thermowell : 6 bar
With thermowell : up to 450 psi

Termination: Top fitting with a 12" (305mm) long stainless steel pipe with 10" (254mm) length, 1/2" BSP thread, or to customer specification

Fittings: 1 locking ring and nut as standard
Other fittings and flanges can be supplied

Tank height: 2m to 100m

Maximum Single Element Length: 23m

ELECTRICAL

Cabling: Colour-coded sleeved wires (max 10m)
For high temps (-20 to +280oC) wires are numbered

Safety: ATEX Eexia IIC T3 (Tamb=+160 C)
Certificate number BAS No. EX97D2042X.

Resistance / Temperature Response: Platinised version Pt100 Class B ohm 100Ω@0 C

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