



DATASHEET

Averaging Multiple Resistance Thermometers

Averaging MRT



Application

Intrinsically Safe, Multiple Resistance Thermometers (MRTs) of high accuracy for true averaging temperature measurement in a wide range of applications.

- Stable element design that can not sag and alter average weighting
- Suitable for use in harsh and corrosive environments
- True-averaging copper or platinised copper elements
- Compatible with industry-standard level gauges
- Element resistance is 100 ohm at 25oC or 0oC
- Essential for custody transfer applications
- Stainless steel or nylon sheath

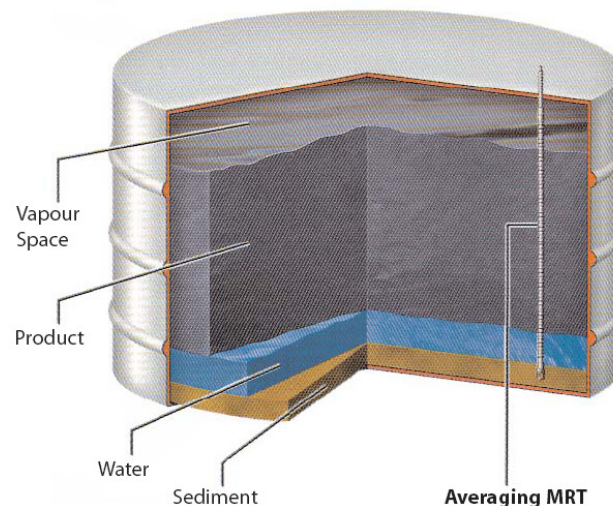
Used in a wide range of applications including storage of hydrocarbons.

The high accuracy of the elements make the MRT an integral part of tank gauging systems used for custody transfer and inventory control applications.

Construction

The sheath, made of stainless steel or nylon, contains a number of elements of different lengths 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 Thermometer for True Average Temperature Measurement																				
APPLICATION	Temperature Measurement in Bulk Liquid Storage Vessels Custody Transfer Tank Gauging																				
PERFORMANCE	Temperature Accuracy Temperature Measuring Ranges	+/- 0.15 + 0.002 x ltl C																			
		<table border="1"> <thead> <tr> <th>Sheath Construction</th> <th>Type</th> <th>Wire Insulation</th> <th>Temperature Range</th> </tr> </thead> <tbody> <tr> <td>Thick-wall Nylon 12 (Rilsan) tube</td> <td>Standard Nylon</td> <td>PVC throughout</td> <td>-20 to +90 C</td> </tr> <tr> <td rowspan="3">Thin-wall stainless PVC external AISI 316 Convolute tube</td> <td>Standard Stainless</td> <td>PVC throughout</td> <td>-20 to +90 C</td> </tr> <tr> <td>Extended Temperature stainless</td> <td>PTFE internal PVC external</td> <td>-50 to +120 C</td> </tr> <tr> <td>High-temperature Stainless</td> <td>PTFE with high temperature elements</td> <td>-50 to +200 C</td> </tr> </tbody> </table>	Sheath Construction	Type	Wire Insulation	Temperature Range	Thick-wall Nylon 12 (Rilsan) tube	Standard Nylon	PVC throughout	-20 to +90 C	Thin-wall stainless PVC external 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	
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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)																			
	Safety	ATEX Eexia IIC T3 (Tamb=+160 C) Certificate number BAS No. EX97D2042X.																			
	Resistance / Temperature Response	Copper version Rt = 90.48 + 0.3809t 100Ω@25 C Platinised version Pt100 Class B ohm 100Ω@0 C																			



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