



7230 HT Multivariable Digital Probe Data Sheet

Proven Magnetostrictive Sensing Performance Integrated with a Modbus or ASCII Digital Multivariable Protocol

The 7230 HT Digital Probe is a new magnetostrictive level measurement probe from Ametek APT for the up-stream oil and gas industry where multi-layer and temperature data is critical to everyday operations.

The 7230 Probe is a level measurement solution that provides both total and interface levels as well as temperature readings from up to 5 discreet positions, and can measure up to 257°F. All the data is collected by installing a single sensor through a single process connection, eliminating the need for multiple sensors and insertion points. The 7230 Series is approved as Explosion Proof (without intrinsic safety barriers) for Class I, Div. 1 and Zone 1 hazardous locations.


The 7230 is available with a choice of either Modbus RTU or ASCII communication protocols. An optional analog interface module is also available for use with the Modbus RTU output. This option allows for multivariable 4-20mA outputs.

All of this performance is enhanced by Ametek APT's patented magnetostrictive design. Magnetostrictive technology requires no calibration yet provides the highest accuracy of any of the most popular level technologies that are currently offered in today's market. The 7230 Probe is no exception, as it exceeds the high accuracy of the proven 7330 Analog STIK with an impressive accuracy of 0.01% of measured span.

Product Features

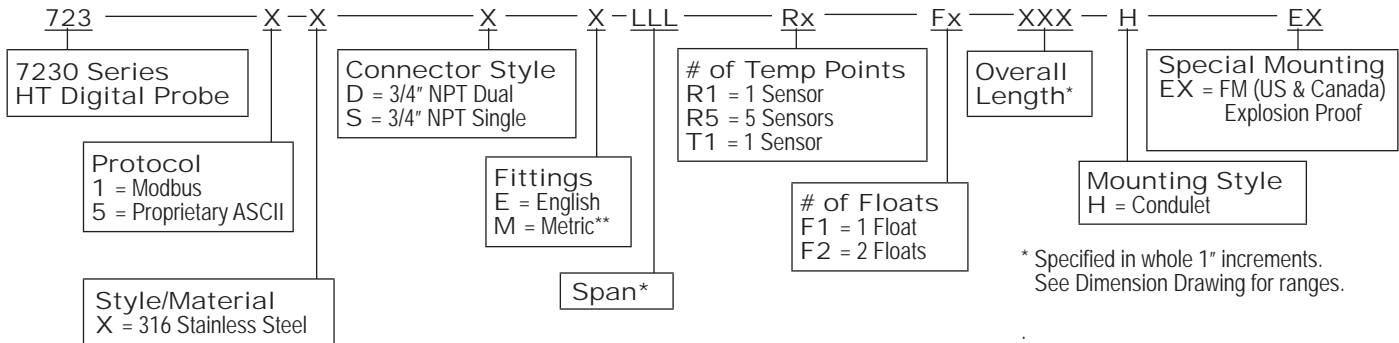
- Multivariable readings
- Modbus or ASCII Protocol
- High accuracy
- High temperature
- Reliable level measurement
- Material's electrical characteristics and densities do not affect readings
- Easy to install, no technician needed
- Mixed hydrocarbons will not cause level measurement errors
- A variety of floats are available



Specifications		
Enclosure Type	Type 4/4X IP66	Approvals
Output Signal/Protocol	Level, Interface and Temperature 7231: RS-485, Modbus RTU 7235: TTL, Proprietary	FM (US and Canada) XP Class I, Div I, Group A, B, C, D, T4 DIP Class II, III, Group E, F, G, T4
Data	7231: Signed, Long, Binary 7235: ASCII	
Range Temp.	-40°F to 257°F Process -40°F to 158°F Ambient	
Pressure Rating, Wetted Parts	316SS Probe: 1000 psi max. Floats Dependent: Consult Factory.	
Wetted Parts	316LSS	
Probe Length	Up to 24 foot, 21" to 288"	
Accuracy Resolution	0.01% of Span 7231: 0.01", 0.1 deg C 7235: 0.0001", 0.1 deg C	
Power Supply	7231: 10 to 30 VDC 40mA @ 30 VDC max. 26mA @ 24 VDC Typical 7235: 5 VDC, +/-10% Typical 3.7 VDC min. 17mA max.	
Null Zone	9.25"	
Dead Band	2.75"	

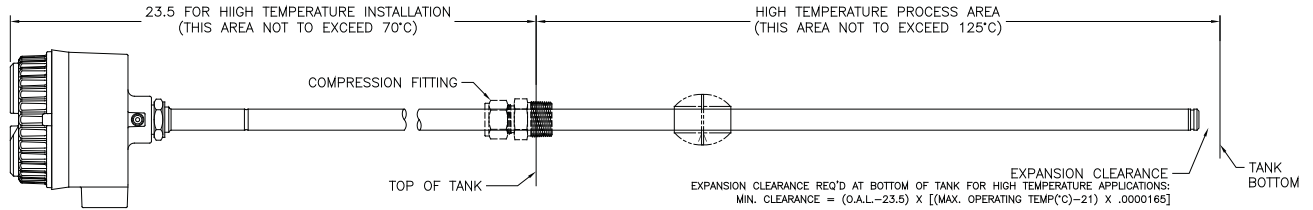
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Part Numbering

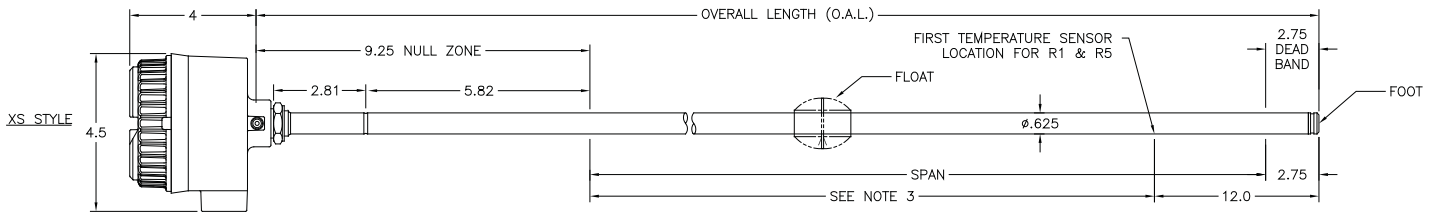


Dimension Drawing

HIGH TEMPERATURE APPLICATIONS UP TO 125°C

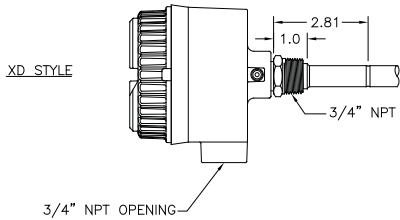


APPLICATIONS UP TO 70°C



STANDARD PROBE LENGTHS:

TEMPERATURE SENSOR TYPE	MAXIMUM O.A.L. (in)	MINIMUM TEMP. SPAN (in)	MINIMUM O.A.L. (in)		FIRST TEMPERATURE SENSOR SPACING @ 21°C	REMAINDER TEMPERATURE SENSOR SPACING @ 21°C (TEMP. SPAN-9.25"/5)
			-40°C TO 70°C	-40°C TO 125°C		
R5	288	24	41	47	12" TO PROBE FOOT	-
R1	288	10	29	33	12" TO PROBE FOOT	-
T1	288	2	21	25	4" TO PROBE FOOT	-



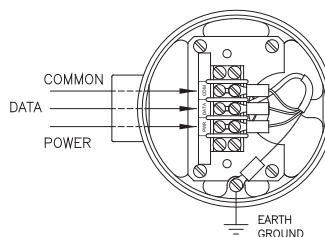
NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE FOR REFERENCE ONLY.
2. ENSURE MAGNET DOES NOT ENTER NULL ZONE AND DEAD BAND AREAS.
3. TEMPERATURE SENSORS ARE SPACED EQUALLY OVER RANGE SPECIFIED.
4. FOR FIVE TEMPERATURE SENSOR PROBES, SENSORS ARE NUMBERED R1 TO R5 WITH R1 BEING NEAREST TO FOOT OF PROBE AND R5 NEAREST TO ENCLOSURE.

Accessories	
Item	P/N
Float Kit: Level Float, 316SS, 2.05" dia., 0.54sg Float, E-clip & spacer	SD0557200
Float Kit: Interface Float, 316SS, 2.05" dia., 0.96sg Float, E-clip & spacer	SD0556800
Float Kit: Level Float, Nitrophyl 2.0" d x 3.0" h 0.40sg, E-clip & spacer	SD0548600
Float Kit: Interface Float (w/Nitro. level float), 316SS, 2.05" dia., 0.96sg, E-clip & spacer	SD0557300
Adjustable Tube Coupling: 316SS, 5/8" x 3/4" NPT	04283800
Reducing Bushing: 316SS, 2" x 3/4" NPT	04587241
Analog Interface Board: Modbus RTU to analog (4-20mA) converter	04534047

7230 Wiring Diagram

7235 Wiring



7231 Wiring

