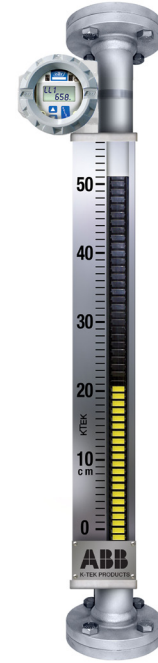


AT200

External Mount Magnetostrictive Level Transmitter

High accuracy
liquid level and interface
level detection
K-TEK Level Products

Measurement made easy



Features

- Certified SIL 2/3 Capable IEC 61508*
- Designed to Mount Externally to K-TEK KM26 or other Magnetic Level Gauge
- High Accuracy: .01% of Full Scale
- Superior Piezo Ceramic Sensor (Patent # 5,473,245)
- Local Indication with LCD Display
- Never Requires Re-Calibration: Set It & Forget It
- Dual Compartment Housing with Separate Field Terminal Compartment
- Loop Powered to 50' (15.24M) Probe Length
- Total and/or Interface Level Measurement
- Temperature Range: -320 to 800° F (-195.5 to 426.6°C) with options
- Field Replaceable / Upgradable Electronics Module
- Built In RFI / EMI Filter
- Digital Communications

* Transmitters equipped with 4-20mA/HART module option only

Options

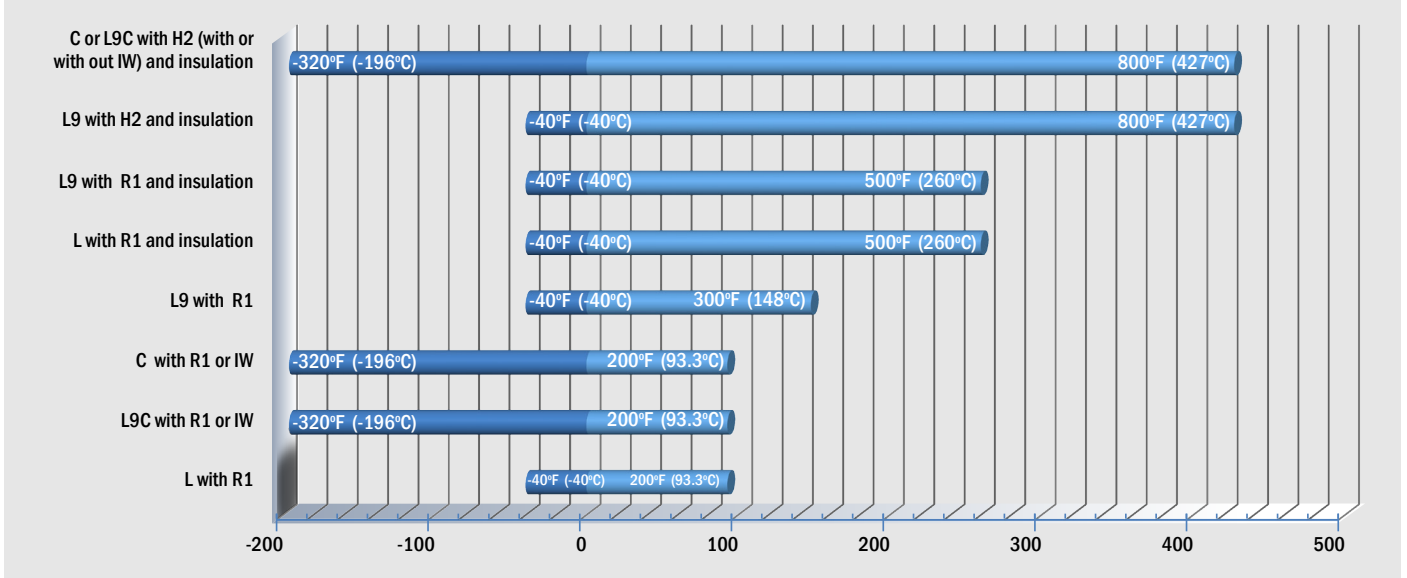
- Two Level Indications
- FOUNDATION Fieldbus Output
- Glass Viewing Window
- 316 Stainless Steel Enclosure
- 20 Point Strapping Table

Specifications		
Electronic transmitter:		
Repeatability	0.005% of Full Scale or +/- 0.015" (0.381mm), whichever is greater	
Non-linearity	0.01% of Full Scale or +/- 0.035" (0.889), whichever is greater	
Measuring accuracy	0.01% of Full Scale or +/- 0.050" (1.27mm), whichever is greater ¹	
Supply voltage	13.5 to 36 Vdc - 4-20mA HART loop powered	
	9 to 32 Vdc - FOUNDATION Fieldbus	
Output/Communications	4-20 mA HART	
	- Certified SIL 2/3 Capable IEC 61508 - NE43	
	FOUNDATION Fieldbus	
	- ITK 5.1.0 Compliant - 5 AI and 1 PID blocks - 15.8 mA Quiescent Current Draw - LAS Capable	
Power consumption	4-20mA	at 36.0 Vdc - 3.6mA 0.13 watts; 21mA 0.76 watts at 13.5 Vdc - 3.6mA 0.046 watts; 21mA 0.28 watts
	HART mode (4.0mA)	at 36.0 Vdc 0.144 watts at 13.5 Vdc 0.054 watts
	FOUNDATION Fieldbus	0.5 watts maximum
Maximum line resistance	4-20mA	at 36.0 Vdc and 21mA, 1740 ohms* *Maximum with HART communication is 700 ohms at 13.5 Vdc and 21mA, 645 ohms
	HART mode (4.0mA)	< 650 to 700 ohms
	FOUNDATION Fieldbus	43.6 ohms/km @ 20°C
Reverse polarity protection	Diode in series with loop	
Update rate	10 measurements per second	
Damping	Field Adjustable, Range: 0.1 to 36 seconds	
Alarm output	NE43, Jumper Selectable Upscale (21 mA) or Downscale (3.6 mA)	
Ambient temperature	-40 to 170°F (-40 to 76.6°C) Ambient ²	
Humidity	0 to 100% RH, Non-Condensing	
Linearization	20 Point Strapping Table Available	
Enclosure	Dual Compartment	
Enclosure material	Cast Low Copper Aluminum with Polyester Powder Coat or 316 Stainless Steel	
Electrical connection	1/2" FNPT, M20 Adapter and Bus Connectors Available	
Ingress protection	IP66, NEMA 4X	
Sensor tube:		
Material	316L Stainless Steel	
Standard probe length	1 to 50 feet (304.8mm to 15.24m); 90 degree probes 1 to 25 feet (304.8mm to 7.62m)	
Mounting	Stainless Steel Clamps for KM26 Magnetic Level Gauge Chamber Included; Optional Vibration Isolation Mounts	

¹ Measurement accuracy is recorded at factory ambient conditions (75°F +/-10°) using a calibration magnet. Accuracy may be further influenced by other factors such as float hysteresis, installation, process conditions and ambient conditions.

² Some agency approvals may differ.

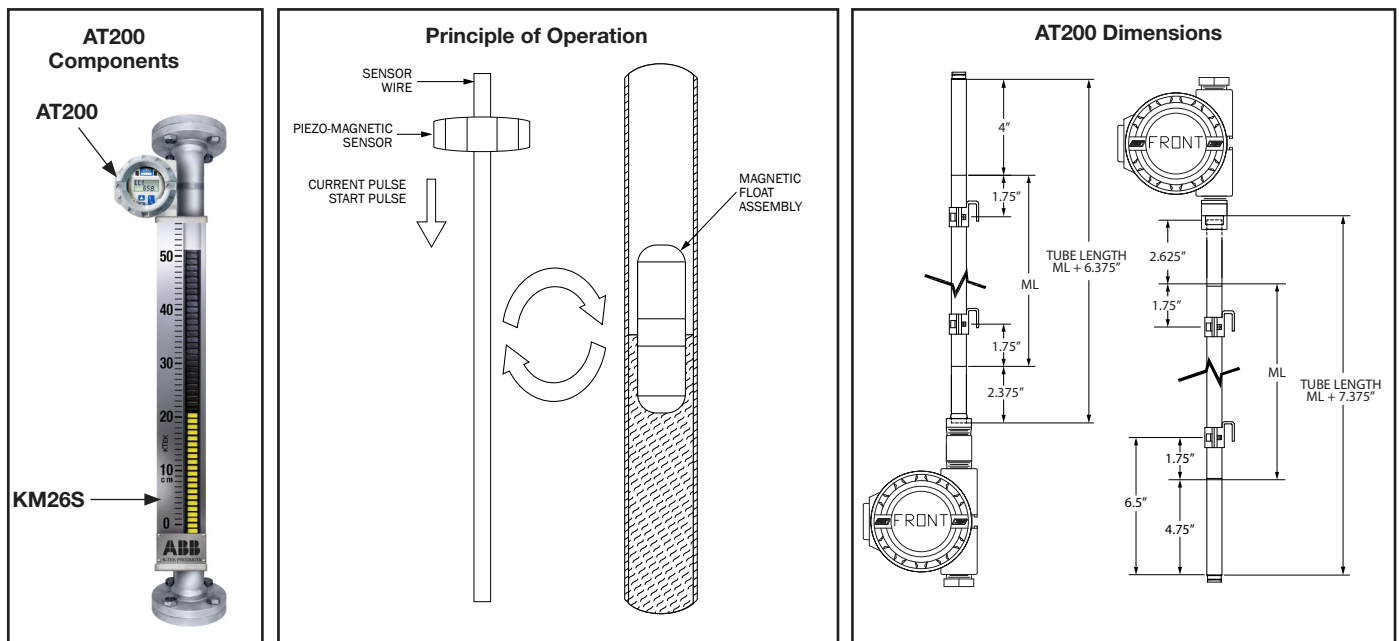
PROBE SELECTION CHART



- Notes:**
1. If ambient temperatures are also below 32°F (0°C), then an "L" transmitter selection can be used
 2. The IW sensor is preferred for cryogenic insulated chambers. To use this option, chamber top must be dome or flat cap
 3. Cryogenic insulation recommended at these process temperatures
 4. Maximum probe length on L9 and L9C probes is 25ft

PRINCIPLE OF OPERATION:

The AT200 is based upon the magnetostrictive principle. The sensing tube contains a wire which is pulsed at fixed time intervals creating a magnetic field around the wire. The interaction of the magnetic field around the wire and the magnetic float causes a torsional stress wave to be induced on the wire. This torsional wave propagates along the wire at a known velocity, from the position of the magnetic float and toward both ends of the wire. A patented piezo ceramic sensing element placed in the transmitter assembly converts the received mechanical torsion into an electrical return pulse. The microprocessor based electronics measures the elapsed time between the start and return pulses and converts it into a position measurement which is proportional to the level of the float.



Base Model						
AT200 External Mount Magnetostrictive Transmitter	AT200.	xx(x)	x(xx)	x	xx	xxx(xx)
Mounting						
Bottom Connected Electronic Housing	B					
Bottom Connected Electronic Housing with Window Cover	BW					
Top Connected Electronic Housing	T					
Top Connected Electronic Housing with Window Cover	TW					
Transmitter Configuration						
Standard Local Transmitter Housing			L			
Note: Process temperatures up to 200°F (93.3°C) with no insulation. With insulation pad or chamber insulation, 500°F (260°C)						
Transmitter Housing Mounted to Extended Sensing Tube with 90°, 3 in. Radius Bend			L9			
Note: 25ft maximum probe length						
Offset Transmitter with Vapor Seal for Service Below Ambient			C			
Offset Transmitter with Vapor Seal for Service Below Ambient Freezing with Tee and Extension			L9C			
Note: 25ft maximum probe length						
Transmitter Housing						
Standard Dual Compartment Aluminum Housing					A	
Dual Compartment 316 Stainless Steel Housing					S	
Probe Type						
Standard Rigid Probe, 5/8" OD						R1
High Temperature Probe, Process Temperatures above 500°F (260°C)						H2
Insulation Well, Allows Insertion and Removal of the Probe when Mounted to Cryogenic Insulated Level Gauge						IW
Note: This is the preferred mounting configuration for cryogenic service if there is no flange on the top of the KM26.						
Electronic module						
4-20mA HART						
One Level, LCD Indicator, 4-20 mA HART Output						M4A
Two Levels, LCD Indicator, 4-20 mA HART Output						M4B
One Level, LCD Indicator, 4-20 mA HART Output, 20 point Strapping Table						M4AS
Two Levels, LCD Indicator, 4-20 mA HART Output, 20 point Strapping Table						M4BS
FOUNDATION Fieldbus						
One Level, LCD Indicator, FOUNDATION Fieldbus Output						M4AF
Two Levels, LCD Indicator, FOUNDATION Fieldbus Output						M4BF

Model codes continue and option codes start on the following page.

Base Model Continued			
AT200 External Mount Magnetostrictive Transmitter	AT200.xx(x).x(xx)x.xx.xxx(xx).	x(x)	xx(x)
Second 4-20mA Analog Output (for two level outputs)			
None		X	
RI100 Secondary Remote Output and LCD Indicator (HART only), Requires Additional 4-20mA Loop		RI	
Notes: 1. Output selectable between PV, SV and TV of transmitter 2. Housing material same as primary transmitter housing 3. Explosion proof and flame proof approvals only			
Agency Approvals			
No Approvals			X
Factory Mutual, Explosion Proof, Intrinsically Safe			FM
Canadian Standards Association, Explosion Proof, Intrinsically Safe			CSA
ATEX / IECEx Flameproof Housing			CEX
ATEX / IECEx Intrinsically Safe			CEI
International Electromechanical Commission Flameproof housing			IEX
International Electromechanical Commission Intrinsically Safe			IEI
NEPSI, Intrinsically Safe (Shanghai factory production only)			C1
NEPSI, Intrinsically Safe (Shanghai factory production only)			C2
EAC, Intrinsically Safe			G1
EAC, Flameproof housing			G2

Measuring Length on AT200

Measuring Length (ML)

Inches

xxx IN

Millimeters

xxxxx MM

AT200 External Mount Magnetostrictive Transmitter Additional Option Codes

Accessories

Valve Position Transmitter Option (required for positioning applications)

VP

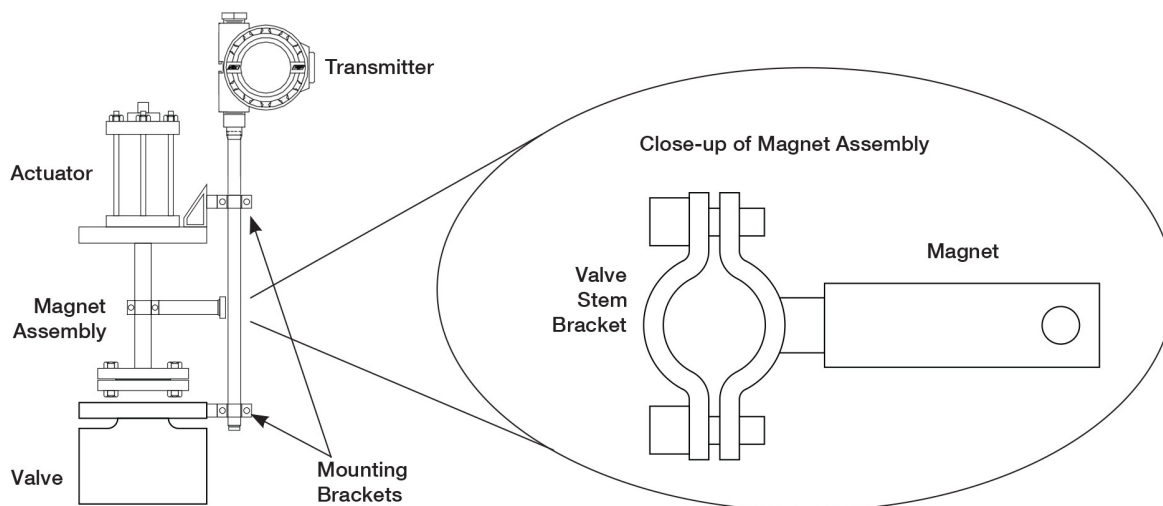
Custom mounting bracket assembly for attaching transmitter assembly to valve. Valve actuator dimensions, size and type must be supplied with order

Valve Positioning Magnet Assembly with Valve Stem Bracket (required for positioning applications).

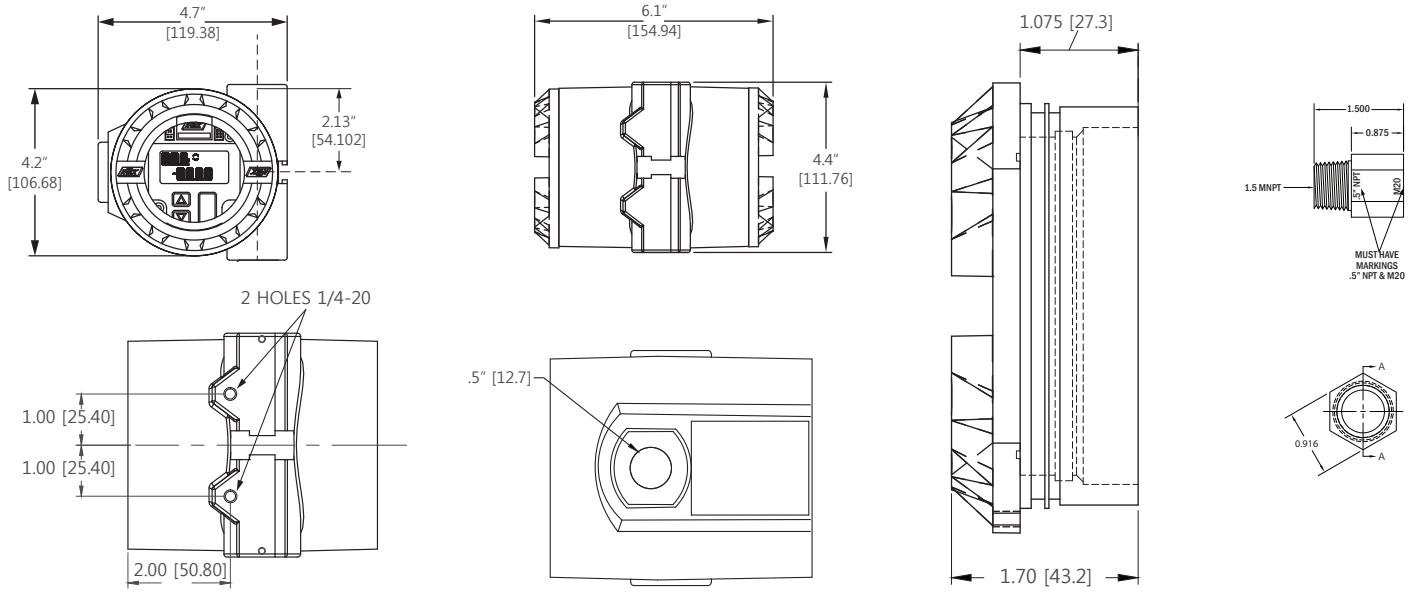
MGT

Custom valve positioning magnet assembly with valve stem bracket. Valve type, size, actuator type, & size, valve stem OD and stroke length must be supplied with order.

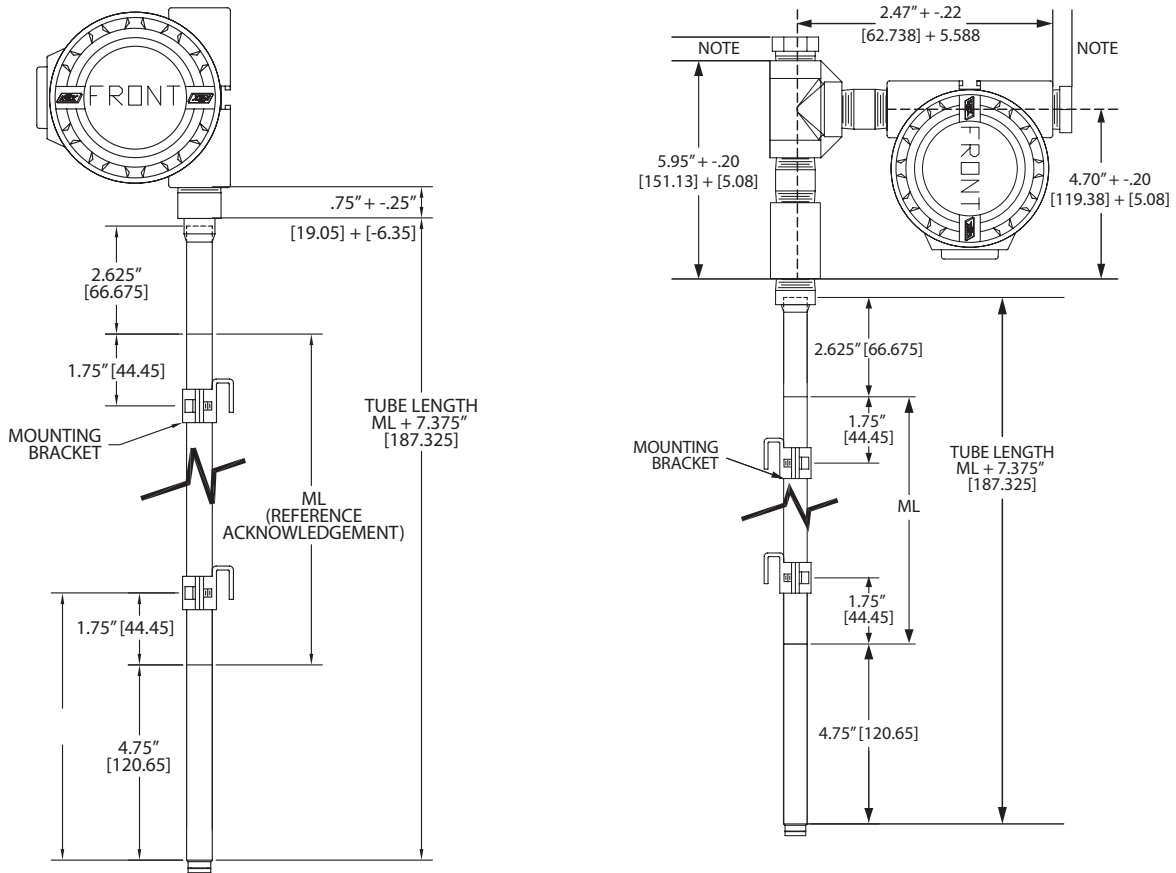
Example: Installation: AT200 Valve Position Transmitter and Hydraulic Control Valve



Enclosures

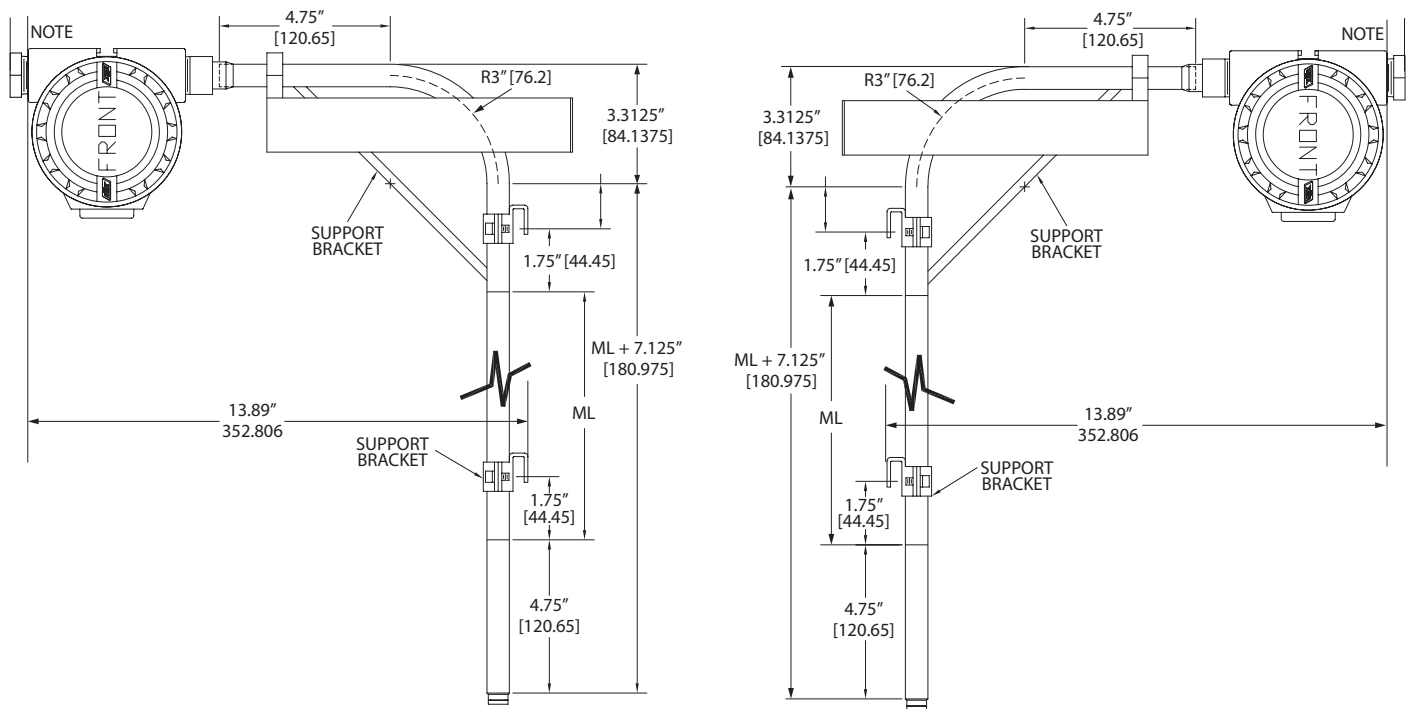


Top Mount - Local



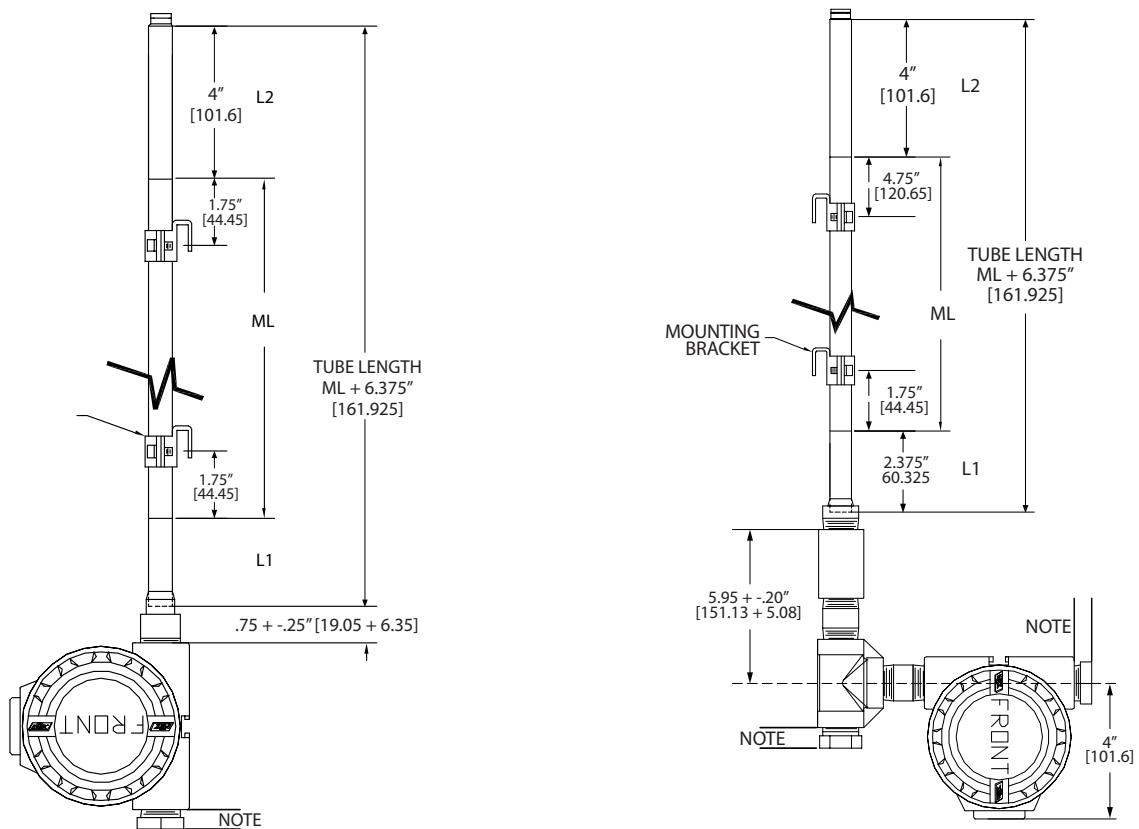
NOTE: N1, N2, N3 Approvals Require Additional .75" for plug.

Top Mount - L9 Extension (also w/H2 wire)



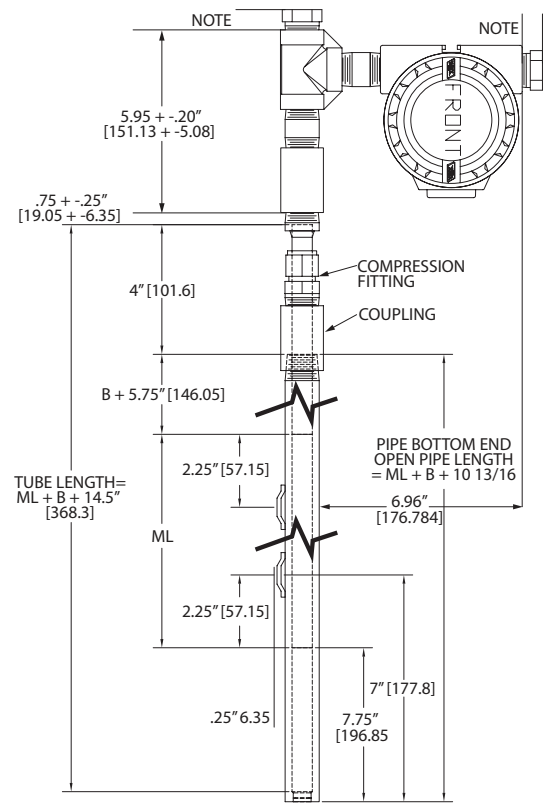
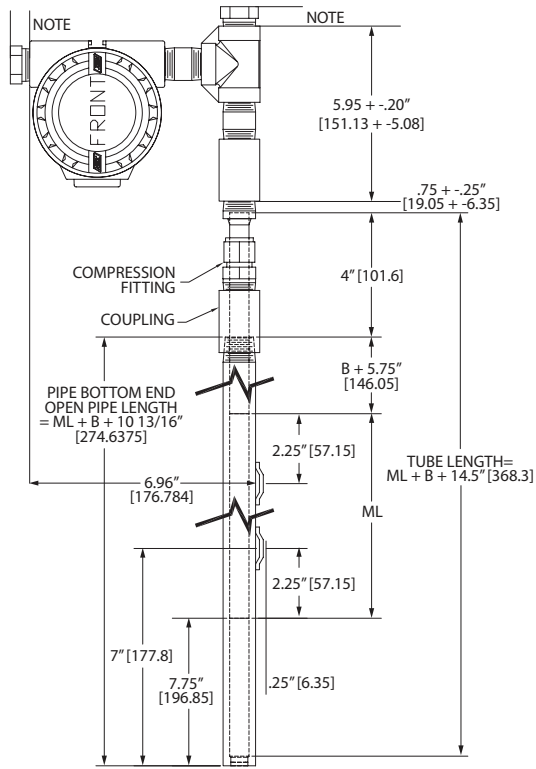
NOTE: N1, N2, N3 Approvals Require Additional .75" for plug.

Bottom Mount - Local



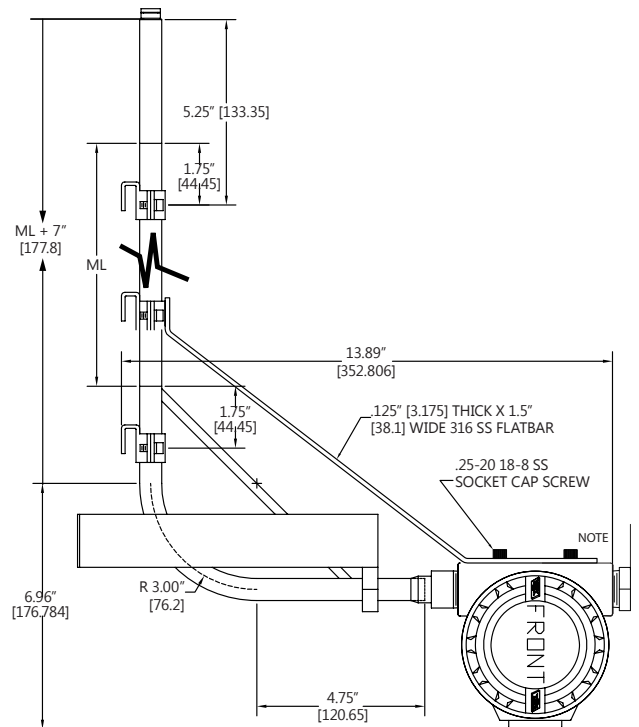
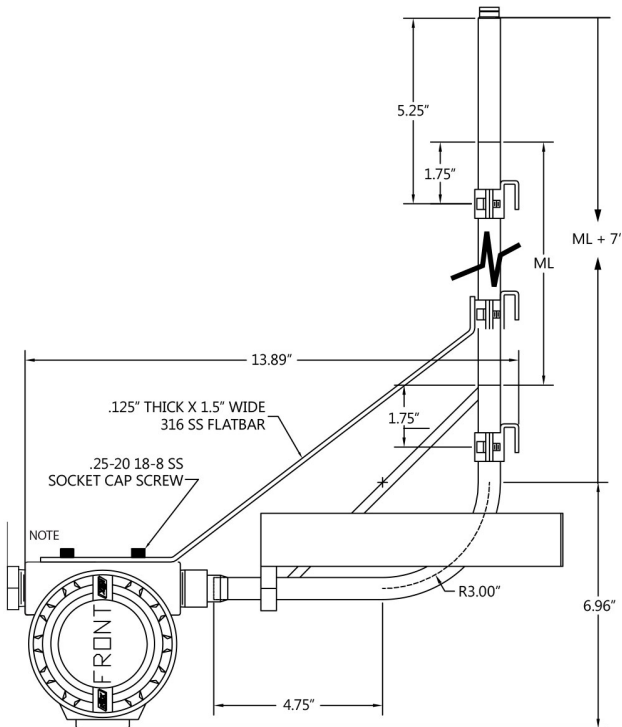
NOTE: N1, N2, N3 Approvals Require Additional .75" for plug.

Top Mount w/cryogenic w/insertion well



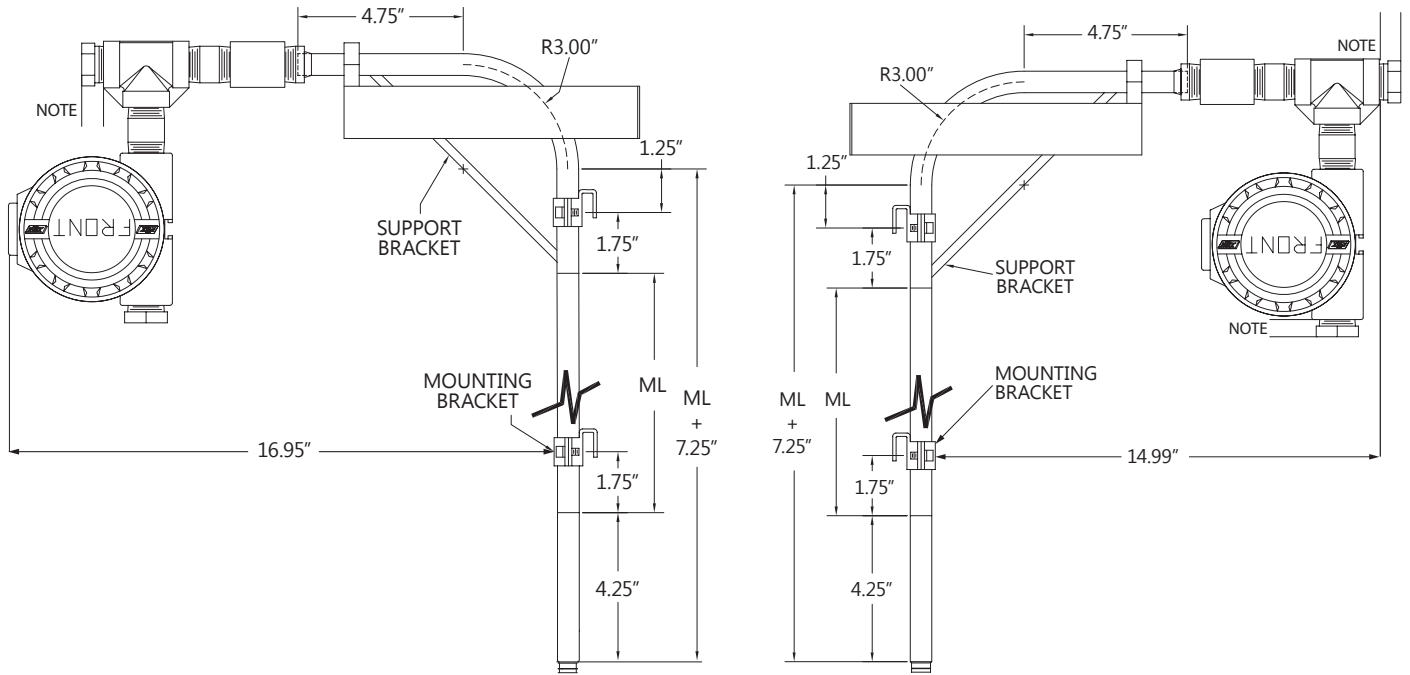
NOTE: N1, N2, N3 Approvals Require Additional .75" for plug.

Bottom Mount - L9 Extension (also w/H2 wire)



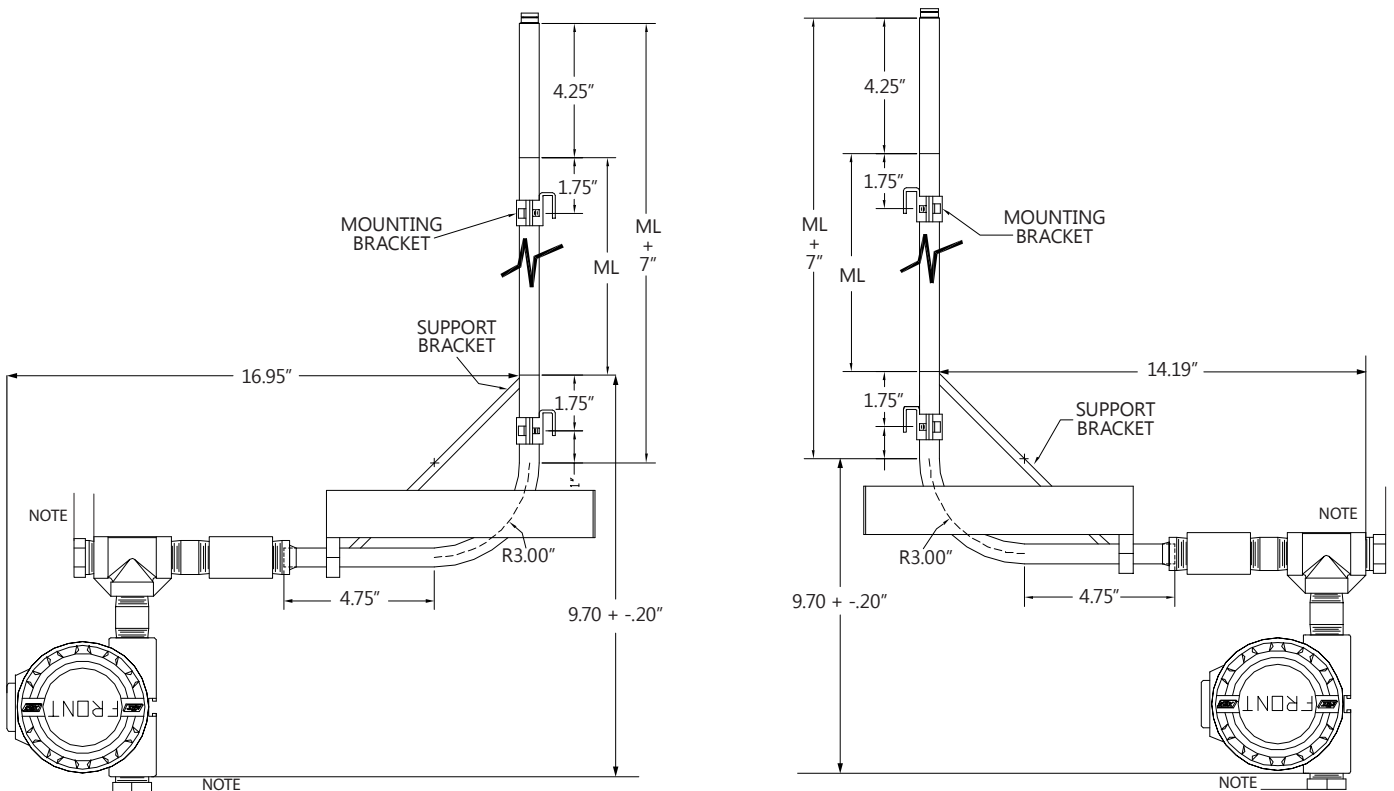
NOTE: N1, N2, N3 Approvals Require Additional .75" for plug.

Top Mount w/cryogenic L9C extension



NOTE: N1, N2, N3 Approvals Require Additional .75" for plug.

Bottom Mount w/cryogenic L9C extension



Note N1, N2 N3 Approvals Require Additional .75" for plug.

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