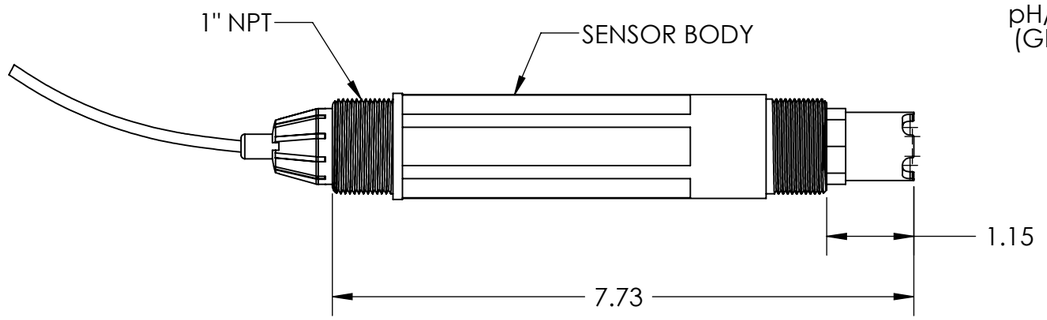
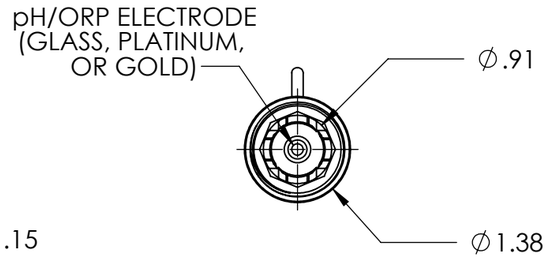
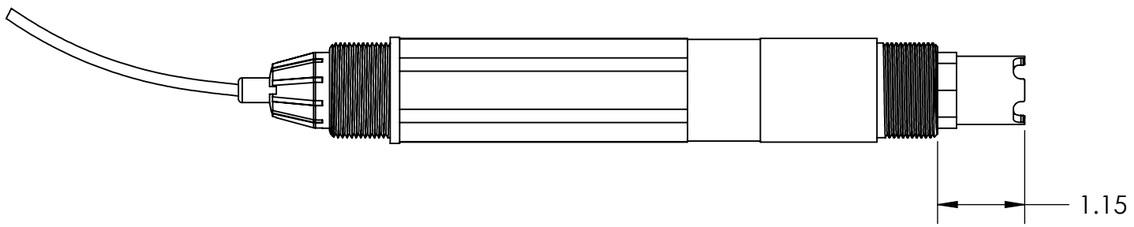


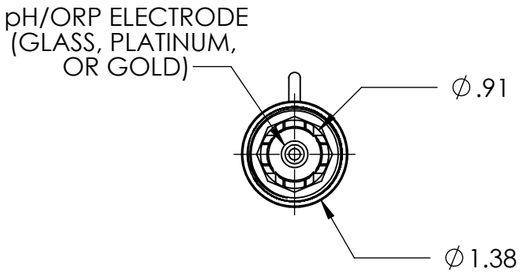
CONVERTIBLE STYLE SENSOR

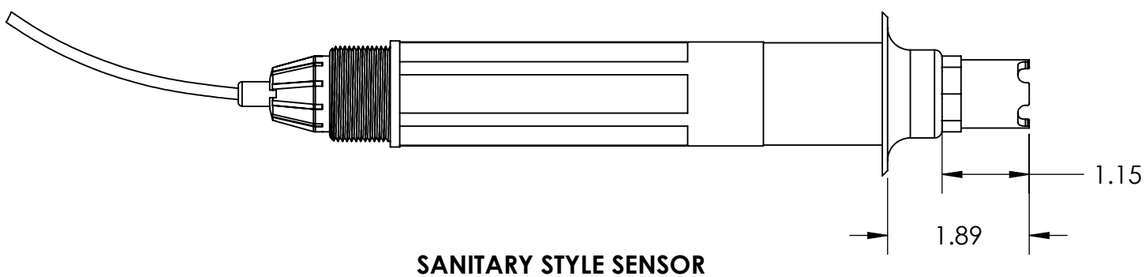


REVISION		
REV	DESCRIPTION	APPROVED

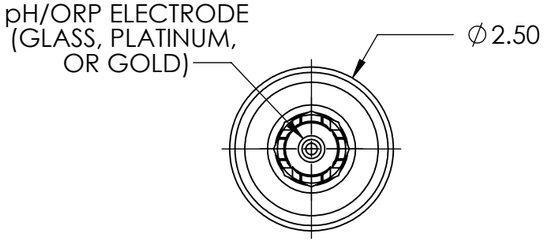


INSERTION STYLE SENSOR





SANITARY STYLE SENSOR



NOTE:
1. DIMENSIONS ARE IN INCHES

Product Type	Type of Sensor	Body Style	Mounts	Hardware used	Hach Product Number
Regenerateable Differential pH and ORP Sensors -1 inch	Digital/Analog	Convertible	Flow-Through Mount	1" Std Tee	**MH334N4NZ** (CPVC)
					MH314N4MZ (316 SS)
			Union Mount	1 1/2" Std Tee, Special union pipe adapter, Sealing	**MH536N4NZ** (CPVC)
					MH516N9Z (316 SS)
			Immersion Mount	Standard	**MH434A00B** (CPVC)
					MH414A00B (316SS)
				Handrail	**MH236B00Z** (CPVC)
		Insertion	Insertion Mount	GLI Insertion Hardwares	**MH736M4MZ** (CPVC)
					MH716M4MZ (316 SS)
		Sanitary	Sanitary Mount	2" Sanitary tee with heavy duty clamp	**MH018S8SZ** (316 SS)

MATERIAL
Material <not specified>

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
.X = ±.03
.XX = ±.01
.XXX = ±.005
ANGLES = ±.25°

INTERPRET GEOMETRIC TOLERANCING PER:
ANSI Y14.5M 1994

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
ENGINEER		

THIRD ANGLE PROJECTION

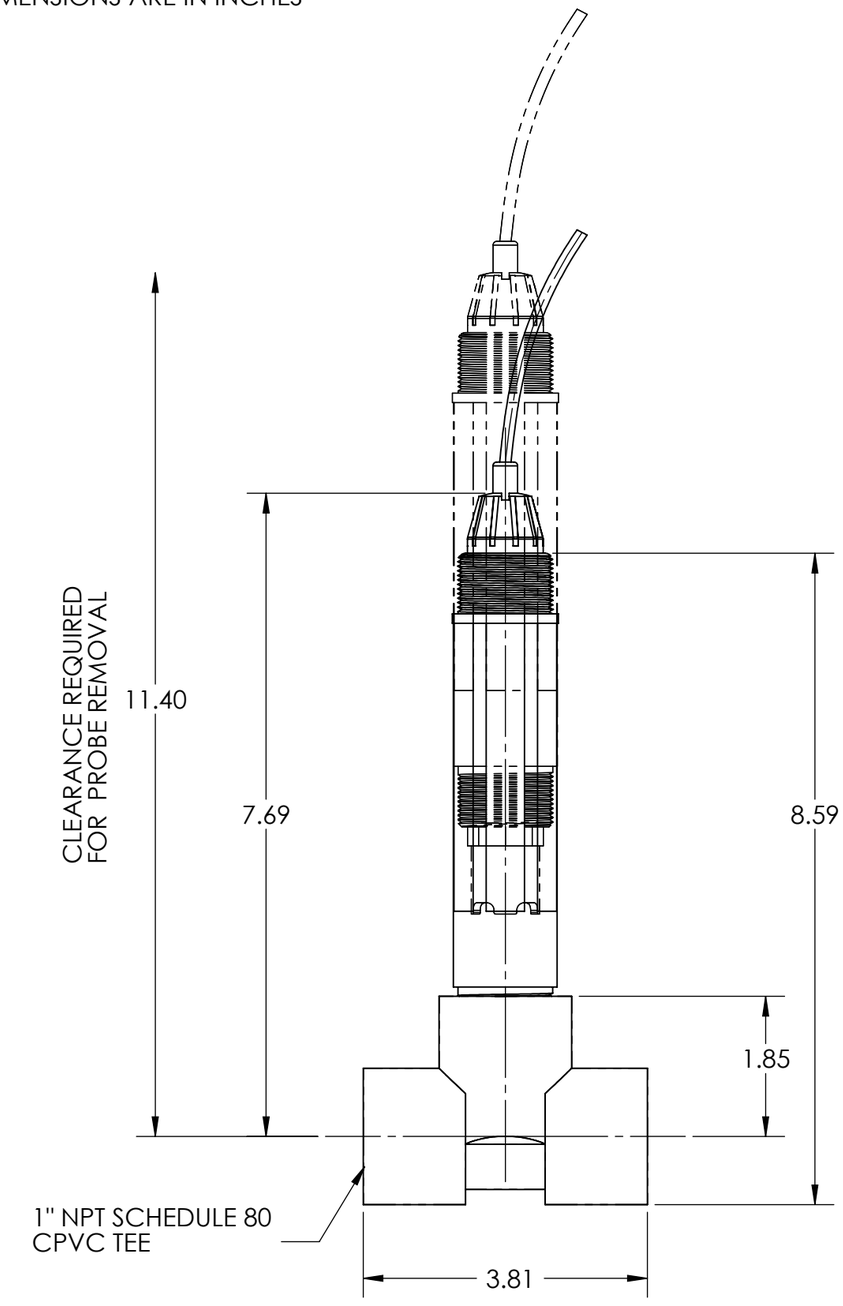
HACH COMPANY
5600 LINDBERGH DR.
LOVELAND, CO. 80539

TITLE:

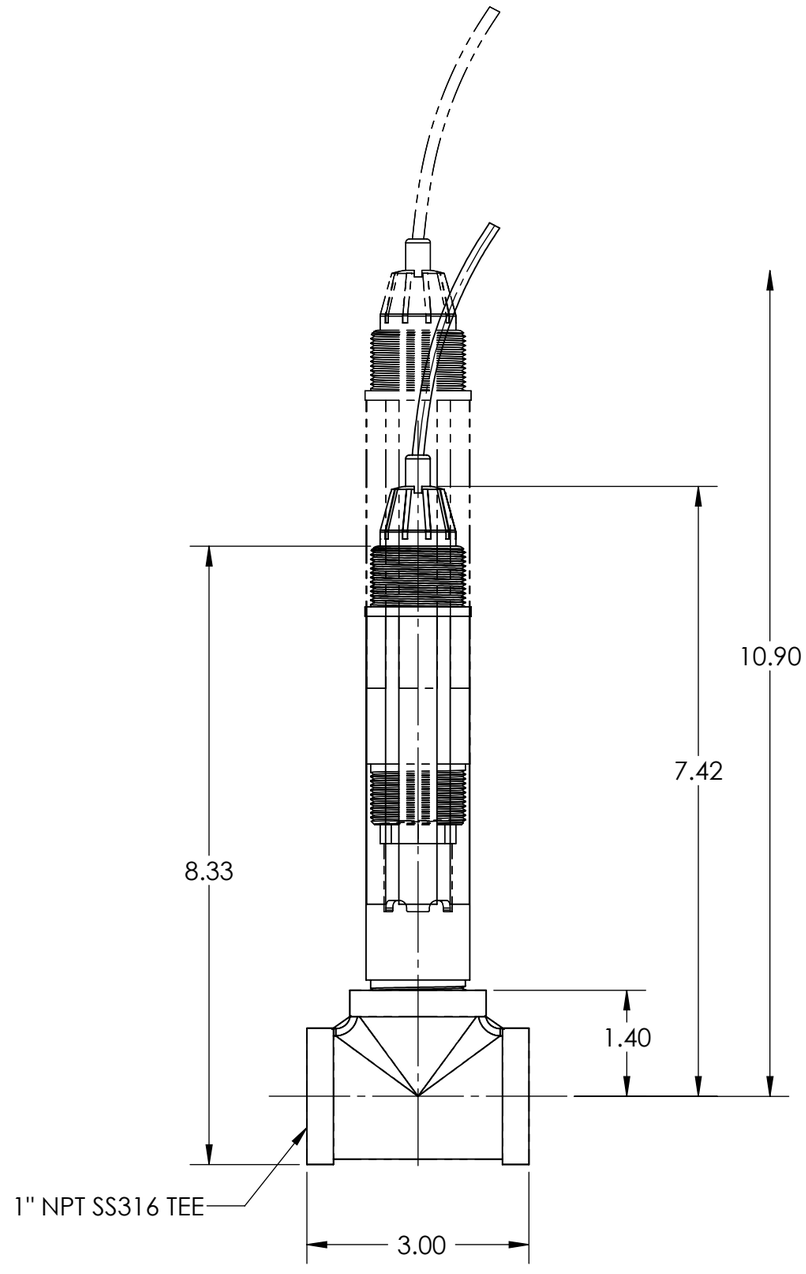
SIZE	DWG. NO.	REV
B	differential_pHandORP	

SCALE: 1:2 | WEIGHT: 0.360 | SHEET 1 OF 10

NOTE:
1. DIMENSIONS ARE IN INCHES



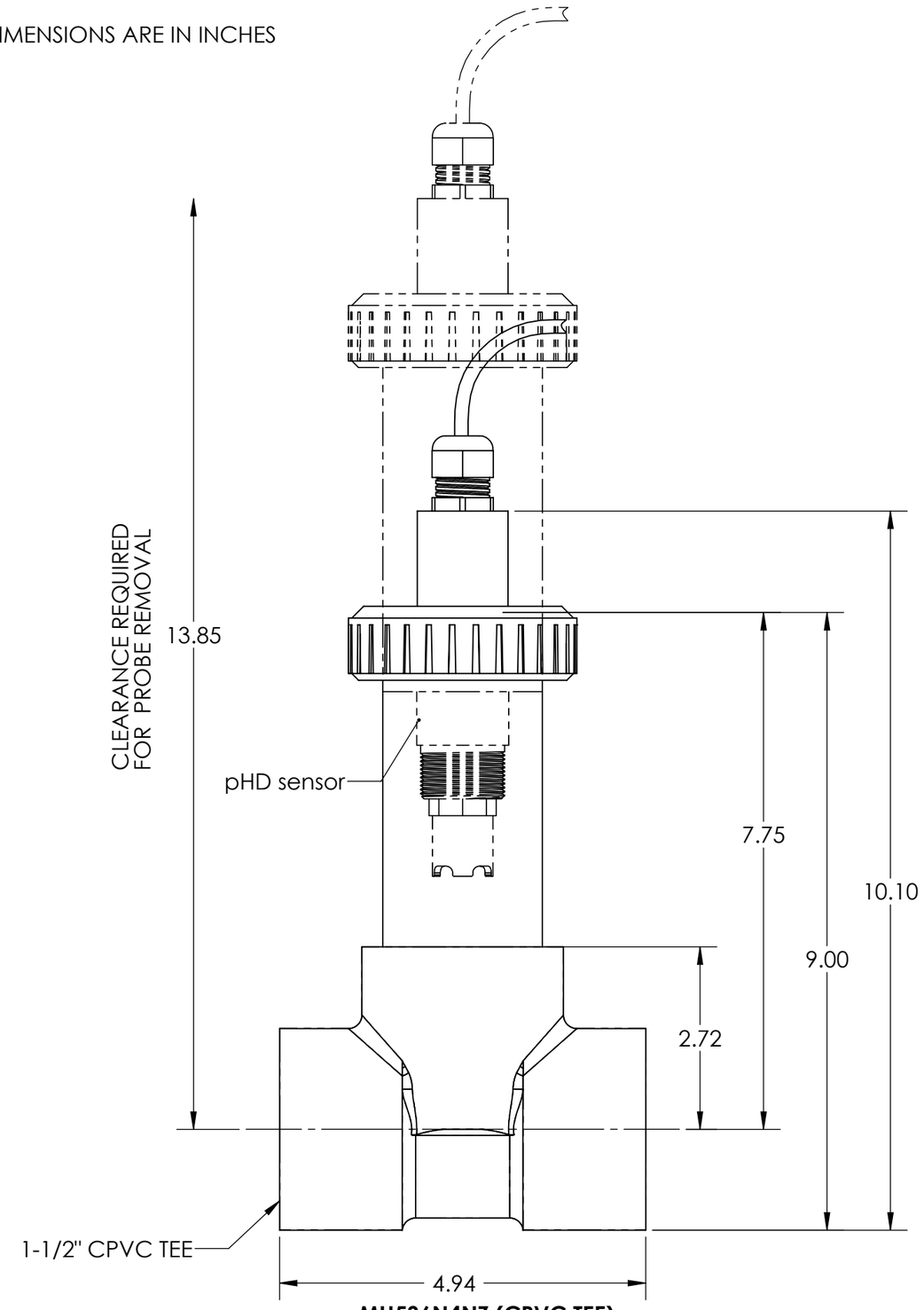
MH334N4NZ (CPVC TEE)
FLOW THROUGH MOUNT



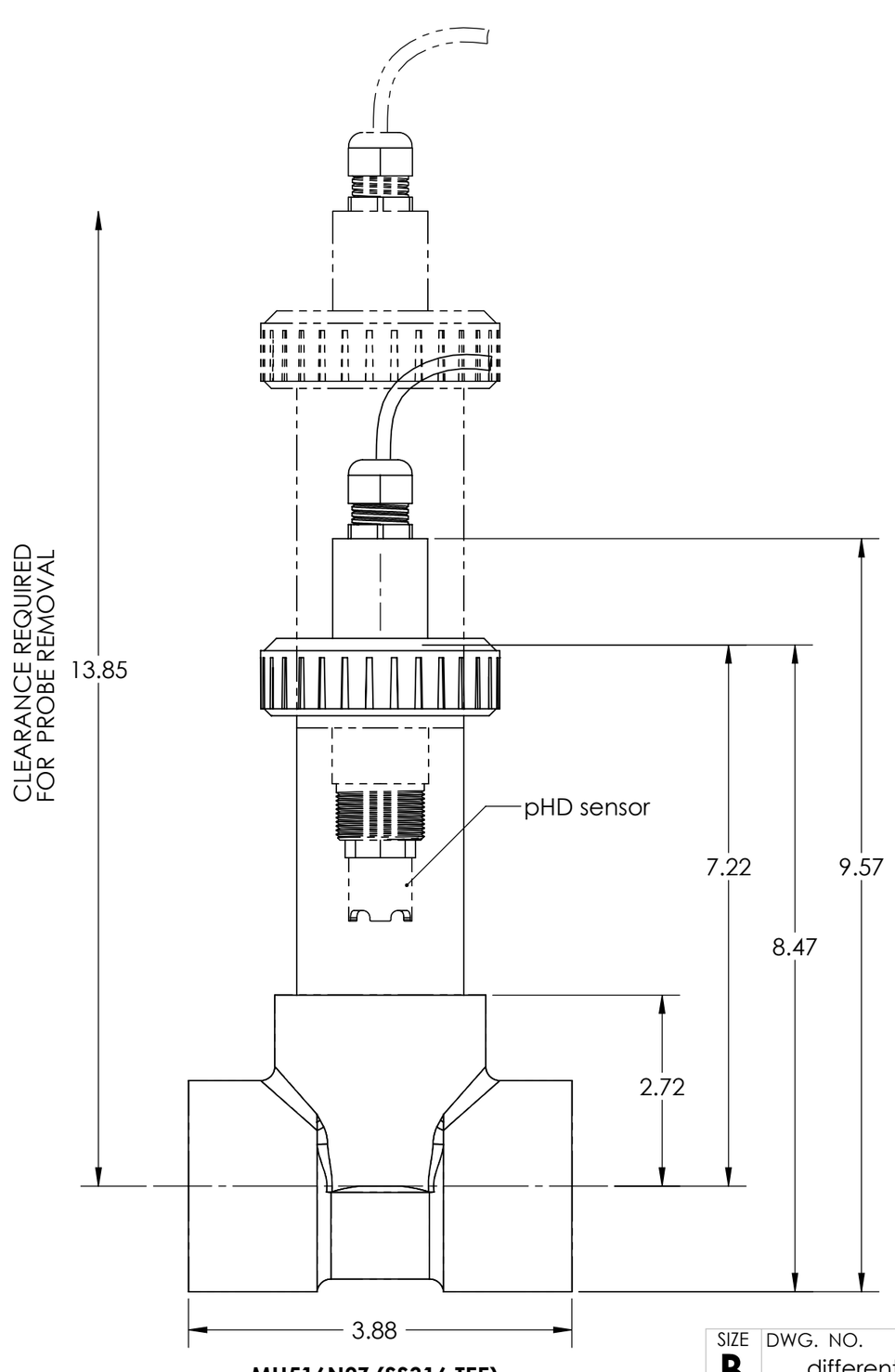
MH314N4MZ (SS316 TEE)
FLOW THROUGH MOUNT

SIZE	DWG. NO.	REV
B	differential_pHandORP	
SCALE: 1:2	WEIGHT:	SHEET 2 OF 10

NOTE:
1. DIMENSIONS ARE IN INCHES



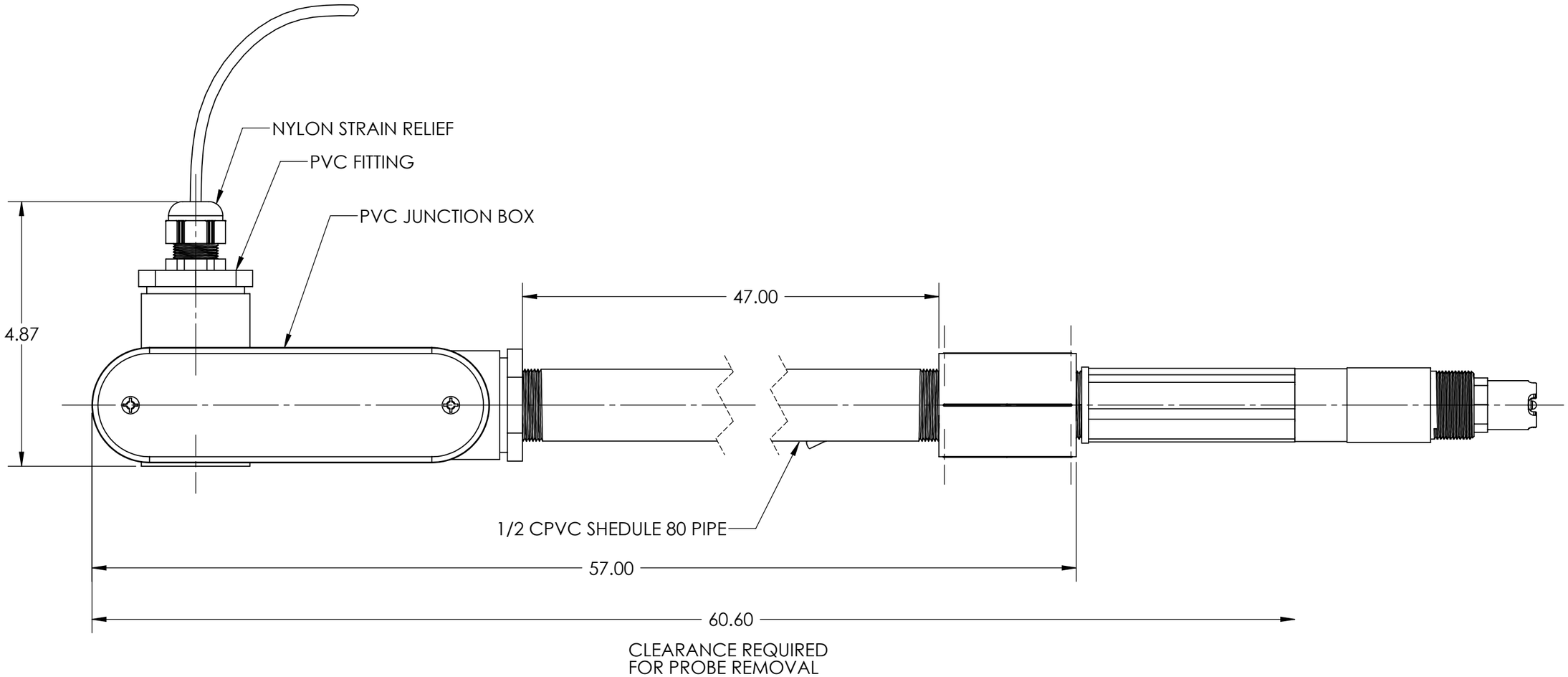
MH536N4NZ (CPVC TEE)
UNION MOUNT



MH516N9Z (SS316 TEE)
UNION MOUNT

SIZE	DWG. NO.	REV
B	differential_pHandORP	
SCALE: 1:2	WEIGHT:	SHEET 3 OF 10

NOTE:
1. DIMENSIONS ARE IN INCHES

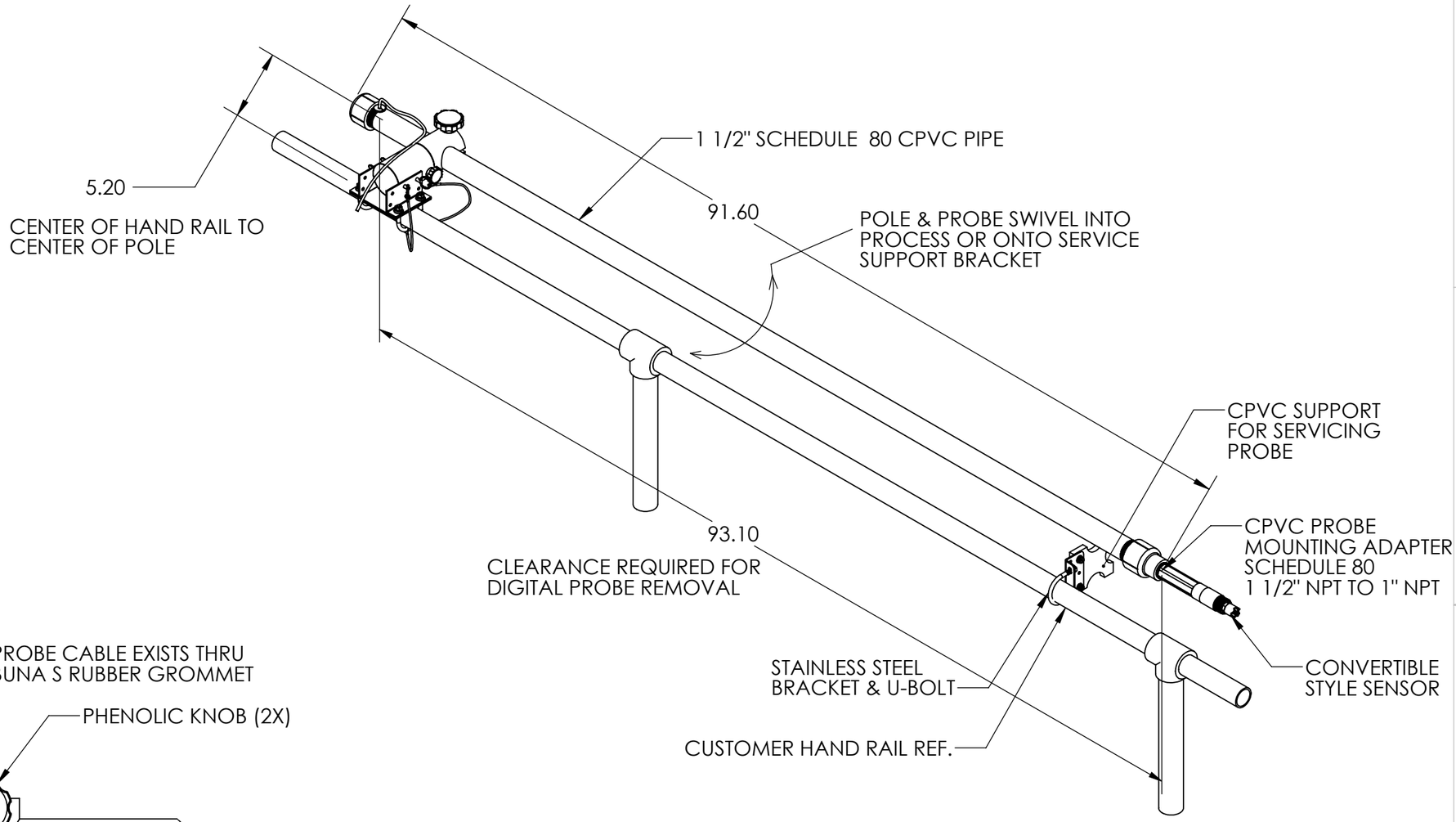


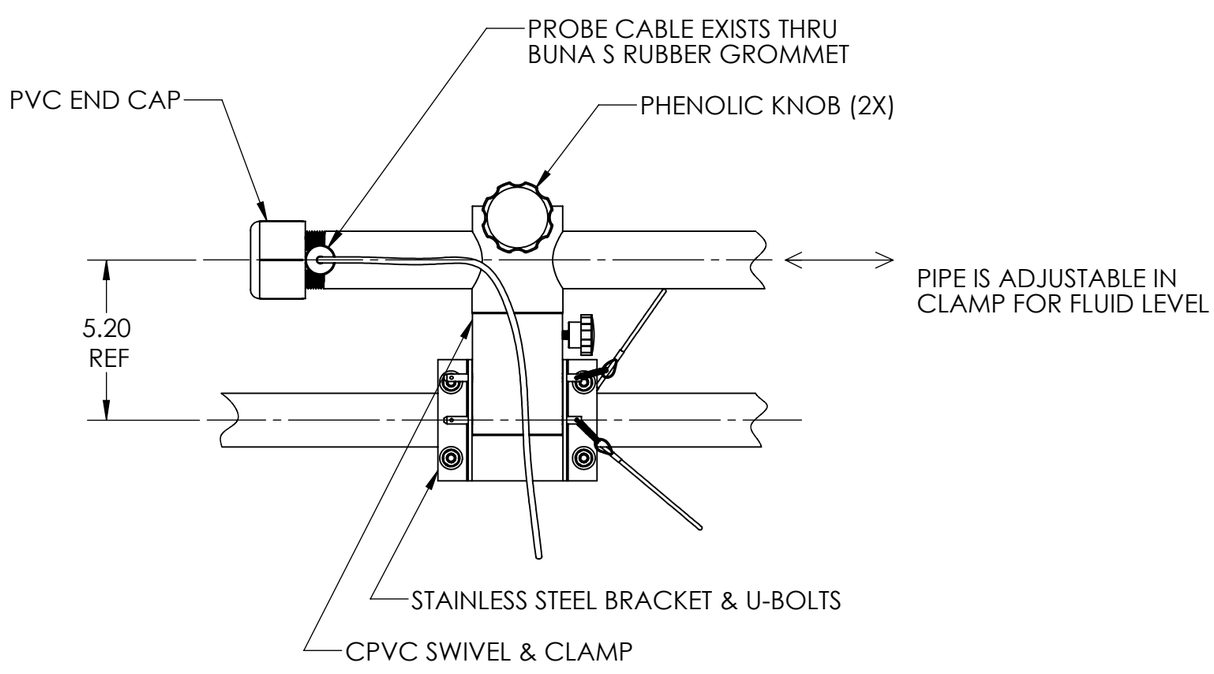
IMMERSION MOUNT - STANDARD

Immersion mount	**MH434A00B** (CPVC)
	MH414A00B (316SS)

SIZE	DWG. NO.	REV
B	differential_pHandORP	
SCALE: 1:2	WEIGHT:	SHEET 4 OF 10

NOTE:
1. DIMENSIONS ARE IN INCHES

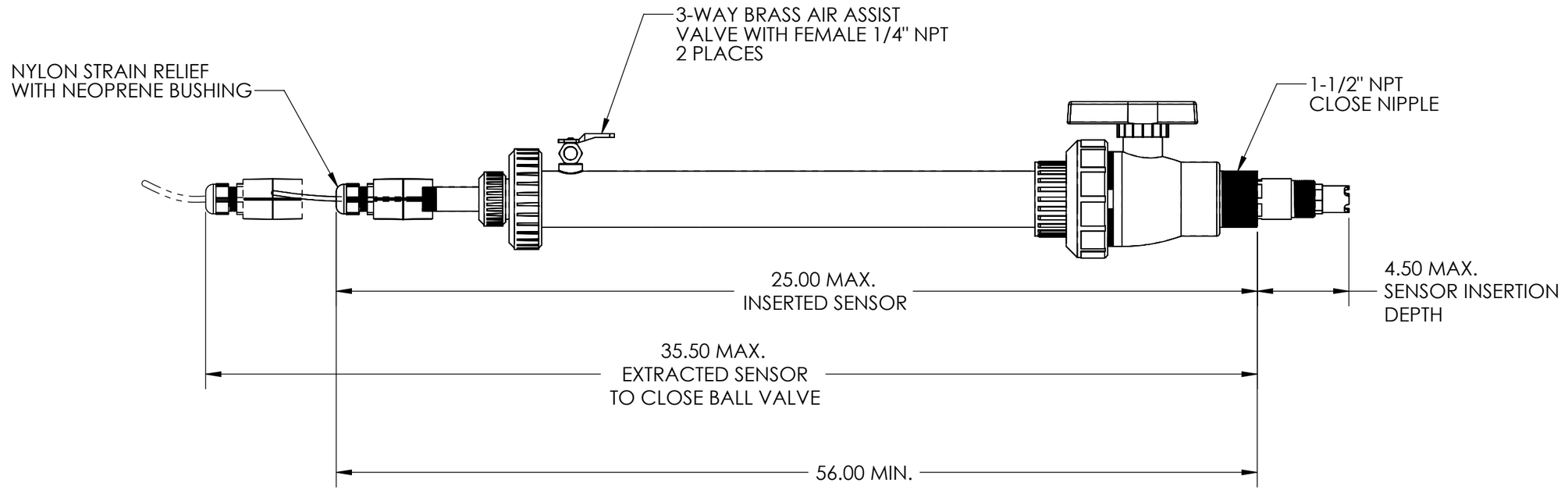




IMMERSION MOUNT - HANDRAIL

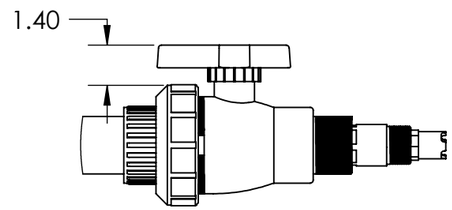
SIZE	DWG. NO.	REV
B	differential_pHandORP	
SCALE: 1:2	WEIGHT:	SHEET 5 OF 10

NOTE:
1. DIMENSIONS ARE IN INCHES
2. MAXIMUM RATED PRESSURE: 50 PSI (3.5 BAR); MAXIMUM RATED TEMPERATURE: 122°F (50°C)



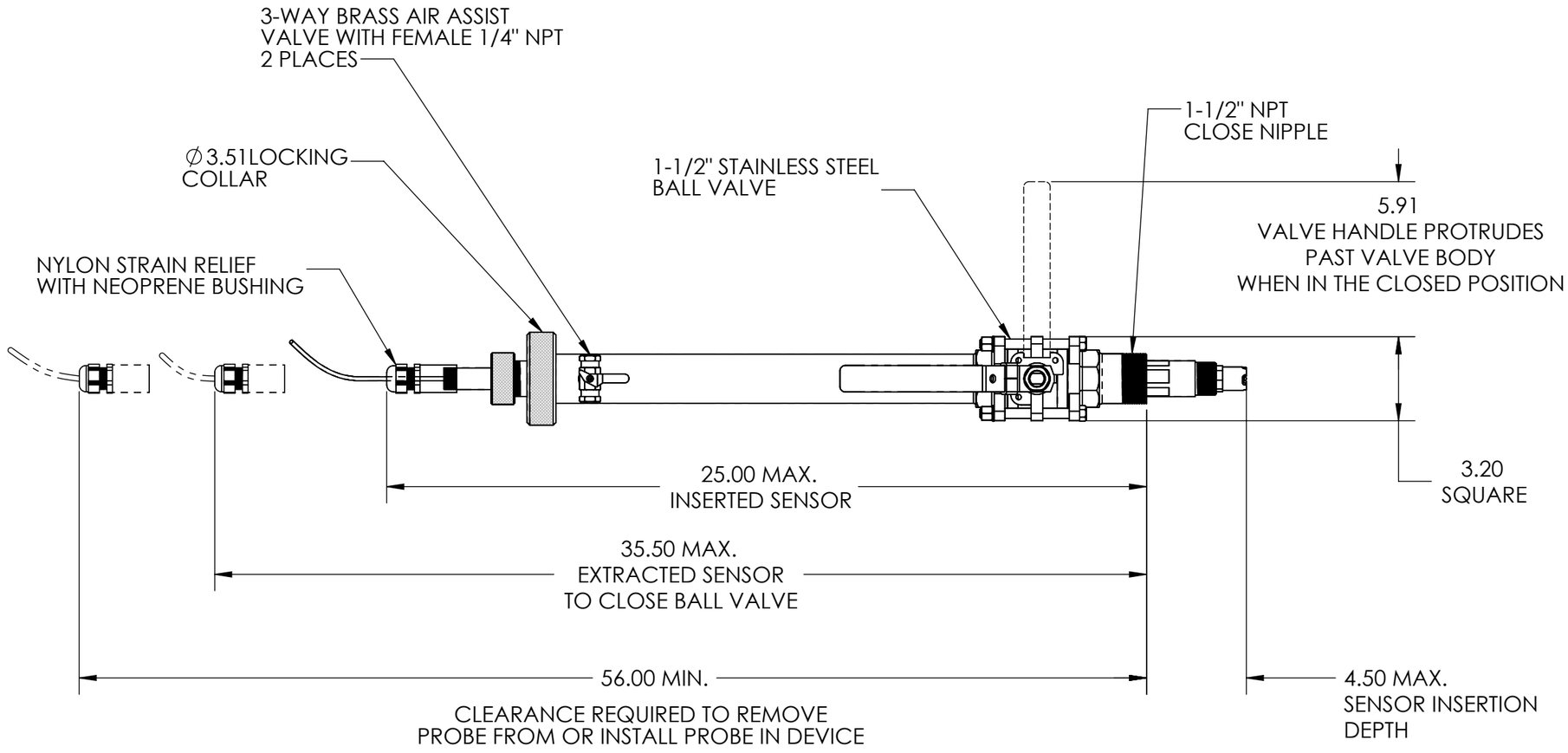
CLEARANCE REQUIRED TO REMOVE
PROBE FROM OR INSTALL PROBE IN DEVICE

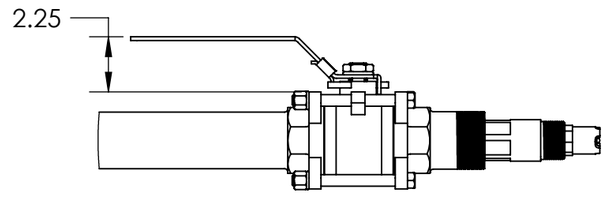
INSERTION MOUNT MH736M4MZ (CPVC)



SIZE	DWG. NO.	REV
B	differential_pHandORP	
SCALE: 1:4	WEIGHT:	SHEET 6 OF 10

NOTE:
1. DIMENSIONS ARE IN INCHES





INSERTION MOUNT MH716M4MZ (SS316)

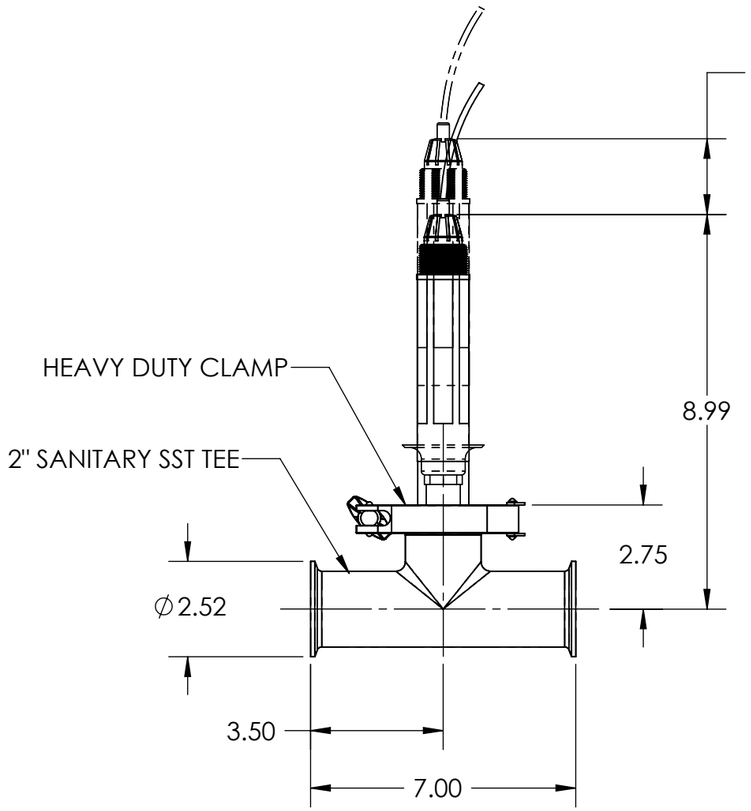
SIZE	DWG. NO.	REV
B	differential_pHandORP	
SCALE: 1:4	WEIGHT:	SHEET 7 OF 10

NOTES:
1. MATERIAL:
   TEE - 316 STAINLESS STEEL
   CLAMP - 304 STAINLESS STEEL

2. NO GASKETS PROVIDED WITH THIS KIT.
   PROBE GASKET COMES WITH PROBE.

3. CLAMP & TEE CONFORM TO PROVISIONS OF
   3-A SANITARY STANDARDS.

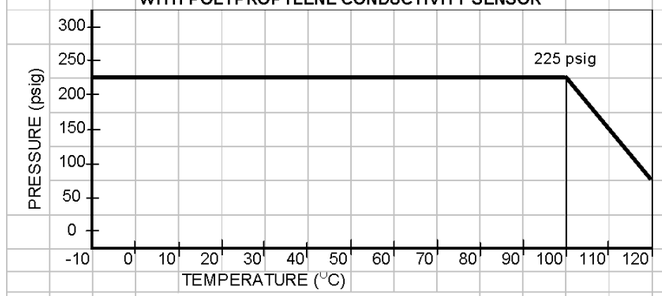
4. DIMENSIONS ARE IN INCHES



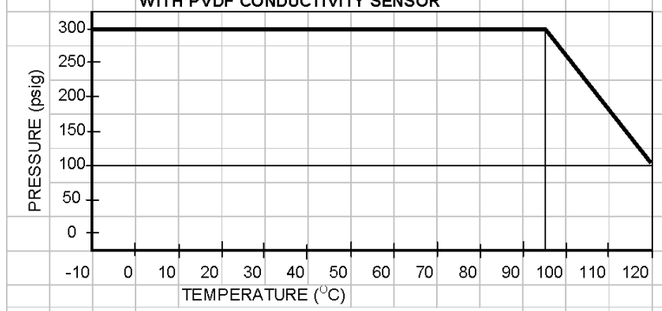
SANITARY MOUNT MH018S8SZ (SS316 TEE)

TEMPERATURE AND PRESSURE RATINGS FOR CONDUCTIVITY PROBES WITH STAINLESS STEEL SANITARY MOUNTING HARDWARE

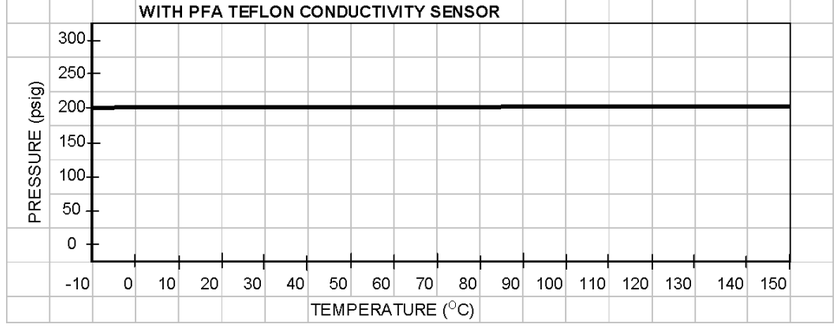
WITH POLYPROPYLENE CONDUCTIVITY SENSOR



WITH PVDF CONDUCTIVITY SENSOR



WITH PFA TEFLON CONDUCTIVITY SENSOR



SIZE	DWG. NO.	REV
B	differential_pHandORP	
SCALE: 1:4	WEIGHT:	SHEET 8 OF 10

Specifications

pH Sensors

Wetted Materials
PEEK® or Ryton® body, salt bridge of matching material with Kynar® (PVDF) junction, glass process electrode, titanium ground electrode, and Viton® O-ring seals

(pH sensor with optional HF-resistant glass process electrode has 316 stainless steel ground electrode, and perfluoroelastomer wetted O-rings; consult factory for other available wetted O-ring materials)

Operating Temperature Range
23 to 203°F (-5 to +95°C)

Pressure/Temperature Limits
(Without mounting hardware)
100 psi at 221°F (6.9 bar at 105°C)

Maximum Flow Rate
10 ft. (3m) per second

Built-in Temperature Element
NTC 300 ohm thermistor for automatic temperature compensation and analyzer temperature readout

Measuring Range
0-14 pH

Sensitivity
Less than 0.005 pH

Stability
0.03 pH per 24 hours, non-cumulative

Maximum Transmission Distance
3000 ft. (914 m)

Sensor Cable (integral)
5 conductor (plus two isolated shields) cable with XLPE (cross-linked polyethylene) jacket; rated to 302°F (150°C); 15ft. (4.5 m) standard length

ORP (Redox) Sensors

Wetted Materials
PEEK® or Ryton® body, salt bridge of matching material with Kynar® (PVDF) junction, glass supported platinum (or gold) process electrode, titanium ground electrode, and Viton® O-ring seals

Operating Temperature Range
23 to 203°F (-5 to +95°C)

Pressure/Temperature Limits
(Without mounting hardware)
100 psi at 221°F (6.9 bar at 105°C)

Maximum Flow Rate
10 ft. (3m) per second

Built-in Temperature Element
NTC 300 ohm thermistor for analyzer temperature readout only-no automatic temperature compensation necessary for ORP measurement

Measuring Range
-1500 to +1500 mV

Sensitivity
Less than 0.5 mV

Stability
2mV per 24 hours, non-cumulative

Maximum Transmission Distance
3000 ft. (914 m)

Sensor Cable (integral)
5 conductor (plus two isolated shields) cable with XLPE (cross-linked polyethylene) jacket; rated to 302°F (150°C); 15ft. (4.5 m) standard length

SIZE	DWG. NO.	REV
B	differential_pHandORP	
SCALE: 1:4	WEIGHT:	SHEET 9 OF 10

Engineering Specifications

PEEK Sensor

1. The pH or ORP sensor shall be of Differential Electrode Technique design using two electrodes to compare the process value to a stable internal reference standard buffer solution. The standard electrode shall have non-flowing and fouling-resistant characteristics.

2. The sensor shall have a hex shaped body to facilitate mounting, and shall be constructed of PEEK material for exceptional chemical resistance and mechanical strength. This material shall enable the sensor to be installed in metal fittings without leakage usually caused by heating and cooling cycles when dissimilar materials are threaded together.

3. The sensor shall have a:

   a) Convertible body style featuring 1-inch NPT threads on both ends to mount into a standard 1-inch pipe tee, into a GLI adapter pipe for union mounting with a standard 1-1/2 inch tee, or onto the end of a pipe for immersion into a vessel.

   b) Insertion body style featuring 1-inch NPT threads only on the cable end to mount into a GLI ball valve hardware assembly, enabling the sensor to be inserted into or retracted from the process without stopping the process flow.

   c) Sanitary body style featuring an integral 2-inch flange to mount into a GLI 2-inch sanitary tee. The sanitary body style sensor shall include a special cap and EDPM compound gasket for use with GLI sanitary hardware.

4. The built-in electronics of the sensor shall be completely encapsulated for protection from moisture and humidity.

5. The sensor shall have a built-in preamplifier to enable the signal to be transmitted up to 3000 ft. (914 m) with standard cabling.

6. The sensor signal shall have an integral temperature sensor to automatically compensate measured values for changes in process temperature.

7. The sensor shall include a titanium ground electrode (standard) to eliminate ground loop currents in the measuring electrodes.

8. The sensor shall be Hach Company GLI Model PDXP-series for pH measurement or GLI Model RDXP-series for ORP measurement.

Ryton Sensor

1. The pH or ORP sensor shall be of Differential Electrode Technique design using two electrodes to compare the process value to a stable internal reference standard buffer solution. The standard electrode shall have non-flowing and fouling-resistant characteristics.

2. The sensor shall have a hex shaped body to facilitate mounting, and shall be constructed of Ryton® material for exceptional chemical resistance and mechanical strength. This material shall enable the sensor to be installed in metal fittings without leakage usually caused by heating and cooling cycles when dissimilar materials are threaded together.

3. The sensor shall have a convertible body style featuring 1-inch NPT threads on both ends to mount into a standard 1-inch pipe tee, into a GLI adapter pipe for union mounting with a standard 1-1/2 inch tee, or onto the end of a pipe for immersion into a vessel.

4. The built-in electronics of the sensor shall be completely encapsulated for protection from moisture and humidity.

5. The sensor shall have a built-in preamplifier to enable the signal to be transmitted up to 3000 ft. (914 m) with standard cabling.

6. The sensor signal shall have an integral temperature sensor to automatically compensate measured values for changes in process temperature.

7. The sensor shall include a titanium ground electrode (standard) to eliminate ground loop currents in the measuring electrodes.

8. The sensor shall be Hach Company GLI Model PD1R1 for pH measurement or GLI Model RD1R5 for ORP measurement.

SIZE	DWG. NO.	REV
B	differential_pHandORP	
SCALE: 1:2	WEIGHT:	SHEET 10 OF 10