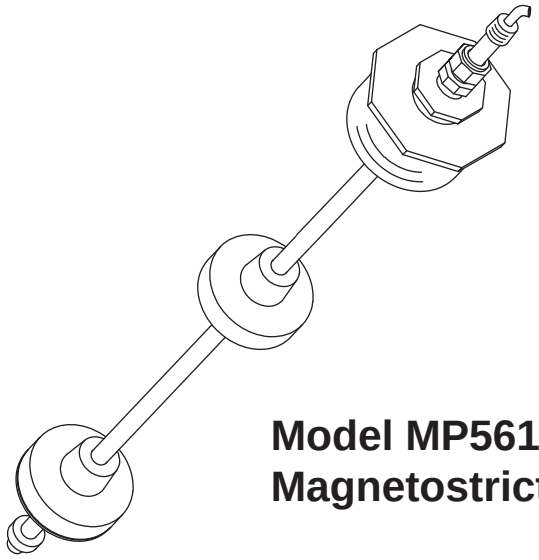
PNEUMERCATOR
Liquid Level Control Systems

MP561SC Flex Probes*
Installation Instructions



Model MP561SC
Magnetostrictive Flex Probes

For use with the following:

TMS1000 SERIES
Wireless **D**ATA **A**CQUISITION **M**ODULE (**WiDAM**) USED IN CONJUNCTION WITH WIRELESS CONSOLES
NOTE: **MP561SC** PROBES ARE **NOT COMPATIBLE** WITH WIRED CONSOLES **TMS2000** AND **TMS3000**. REFER TO MP461SC.

* *NOTE:*
BEFORE USING THIS BULLETIN, VERIFY MODEL NUMBER ON PROBE TAG IS MP561SC.

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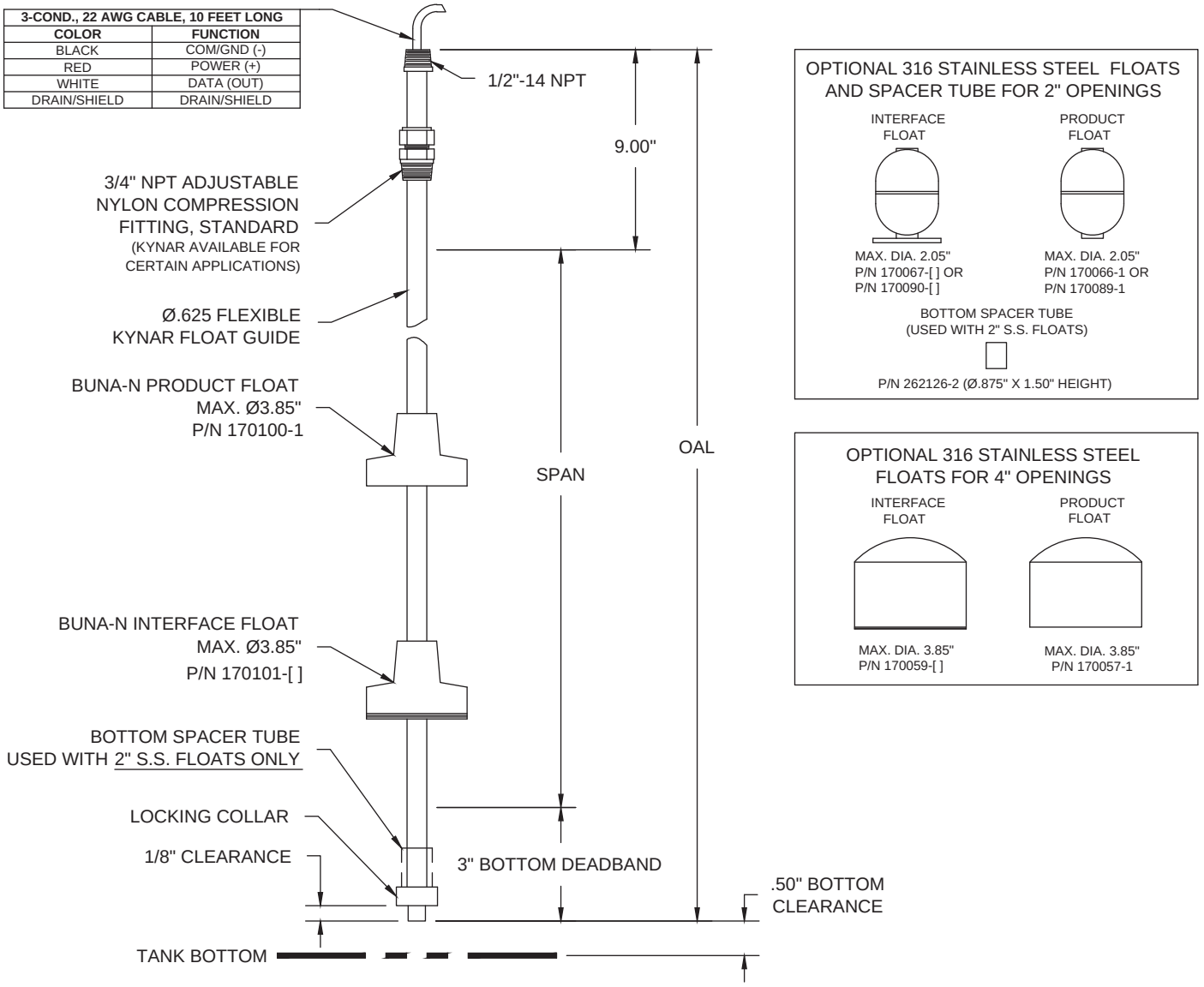
PNEUMERCATOR TECHNICAL SUPPORT
1 (800) 209-7858

PRODUCT DESCRIPTION: MP561SC level gauging probes utilize proven magnetostrictive technology for accuracy and reliability. Probes are supplied with (1) product float for product level gauging and optionally (1) interface float for bottom water gauging. Additionally the probe contains either(1) or (5) thermistors for temperature measurement.

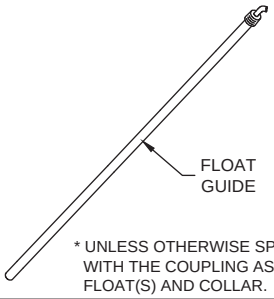
MODEL NO.	OAL (IN.) (Overall Length)	BOTTOM CLEARANCE (IN.)	BOTTOM DEADBAND DIMENSION (IN.)
MP561SC	55 - 150	.50	3.00



APPLICATIONS: The MP561SC Flex Probes are generally used for inventory management of tanks up to 12.5 feet tall where installation of a rigid probe is not possible due to a low ceiling clearance or chemical incompatibility.

UNPACKING: All probes should be visually inspected regardless of their shipping tube physical condition at delivery. Contact PNEUMERCATOR and the shipping company immediately if any of the parts (see page 3) are missing or damaged. During removal of the probe and it's associated parts from the shipping tube(s), IMPORTANT: DO NOT LIFT THE PROBE BY IT'S ELECTRICAL CABLE! DO NOT BEND THE TOP 9 OR BOTTOM 3 INCHES OF THE PROBE! DO NOT REMOVE PROBE TAG! Consult the factory if you are not sure that the parts you received are suitable for your application.

PNEUMERCATOR SUPPLIED COMPONENTS:
(NOT SHOWN TO SCALE)

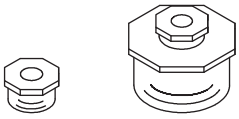


PROBE *
Overall Length (OAL) as required from table on page 2.

DO NOT BEND THE TOP 9 OR BOTTOM 3 INCHES OF THE PROBE!

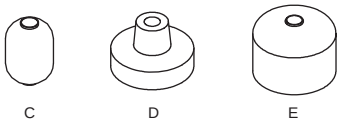
* UNLESS OTHERWISE SPECIFIED, PROBE IS SUPPLIED FULLY ASSEMBLED WITH THE COUPLING ASSEMBLY, COMPRESSION FITTING, BUSHING, FLOAT(S) AND COLLAR.

ADJUSTABLE NYLON COMPRESSION FITTING, STANDARD (KYNAR AVAILABLE FOR CERTAIN APPLICATIONS)

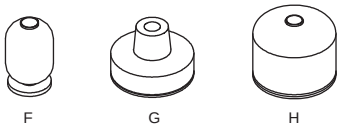


PVC BUSHING *
Either A or B supplied
A = 2" opening
B = 4" opening

* CHECK COMPATIBILITY. OPTIONAL METAL MOUNTING COMPONENTS SHOWN ABOVE (UPPER RIGHT) MAY BE USED FOR CERTAIN CHEMICAL APPLICATIONS.



PRODUCT FLOAT
Either C, D or E supplied
C = 2" opening or greater
D, E = 4" opening or greater



INTERFACE FLOAT *
Either F, G or H supplied
F = 2" opening or greater
G, H = 4" opening or greater

* IF CONFIGURED FOR DUAL FLOAT OPERATION.

BOTTOM SPACER TUBE
Used with 2" S.S. floats ONLY

LOCKING COLLAR
If collar is disassembled, reattach to probe leaving a 1/8" clearance as shown on page 2

FLEX CONDUIT ACCESSORIES

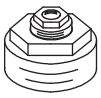
Either Flex Conduit Accessories (J, K and L) or M supplied
J = COUPLING & FLEX CONDUIT FITTING ASSEMBLY
K = 3/4" NPT FLEX CONDUIT TUBING, UP TO 10-FEET LONG
L = 3/4" NPT FLEX CONDUIT FITTING & O-RING
M = 4-HOLE CABLE SEAL BUSHING w/ (3) HOLE PLUGS (SEE PAGE 8).

NOTE:
A QUALIFIED INSTALLER, FAMILIAR WITH LOCAL WIRING CODES AND EXPLOSION HAZARD ELECTRICAL PRACTICES, MAY CONCLUDE THAT FLEX CONDUIT ACCESSORIES ARE NOT REQUIRED FOR CERTAIN INDOOR INSTALLATIONS. HOWEVER, FLEX CONDUIT MUST BE INSTALLED FOR ALL OUTDOOR INSTALLATIONS.

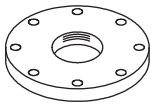
CUSTOMER SUPPLIED COMPONENTS:
(NOT SHOWN TO SCALE)

OPTIONAL METAL MOUNTING COMPONENTS

2" X 3/4" NPT BUSHING



BUSHING ASSEMBLY
Example: 4" X 2" NPT and 2" X 3/4" NPT bushings assembled for threaded openings greater than 2" NPT



MATING FLANGE
An appropriate bushing size must be used to connect the probe if the flange threaded opening is greater than 3/4" NPT.

INSTALLATION:

WARNINGS:

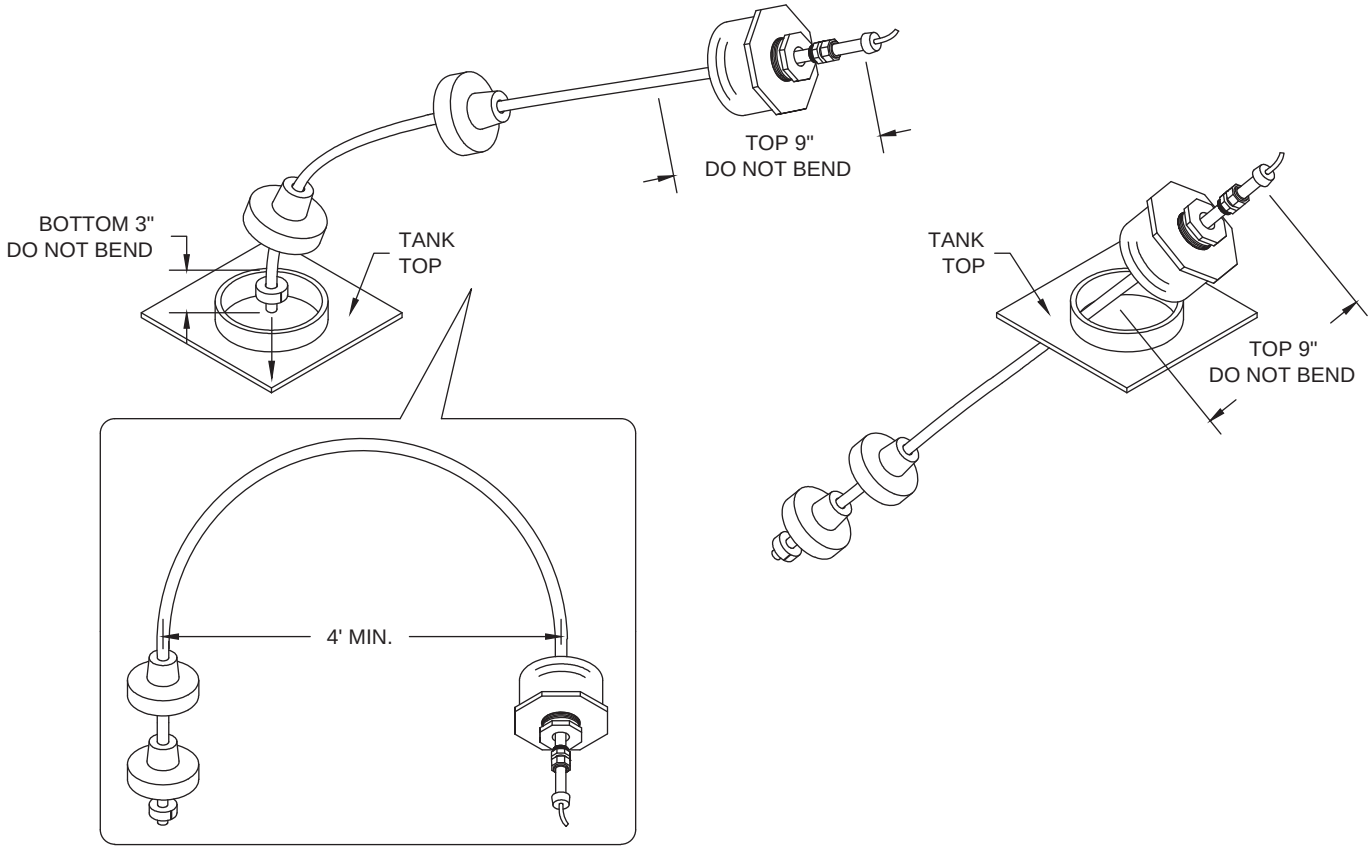
- Installation is only recommended at temperatures 30°F or above. Probe damage may occur as a result of handling at lower temperatures, voiding warranty.
- Installation must be done by a qualified person, familiar with local wiring codes and explosion hazard electrical practices.
- While handling the probe and during installation, DO NOT CUT OR MODIFY THE PROBE. DO NOT LIFT THE PROBE BY IT'S ELECTRICAL CABLE! DO NOT BEND THE TOP 9 OR BOTTOM 3 INCHES OF THE PROBE! DO NOT REMOVE PROBE TAG!
- Probe mounting location should be selected to minimize effect from turbulence. DO NOT LOCATE IN A DIRECT LINE OF INBOUND OR OUTBOUND FLOW.

1 Normally the probe is shipped fully assembled and ready for installation. However, if needed, assemble the supplied components as required before proceeding.

⚠CAUTION

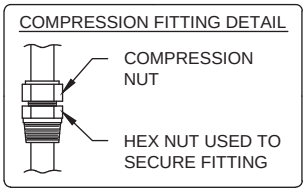
It is the INSTALLERS RESPONSIBILITY to ensure that they are adequately supported when handling the probe on top of the tank. FAILURE TO COMPLY MAY RESULT IN PERSONAL INJURY, PROPERTY LOSS AND EQUIPMENT DAMAGE.

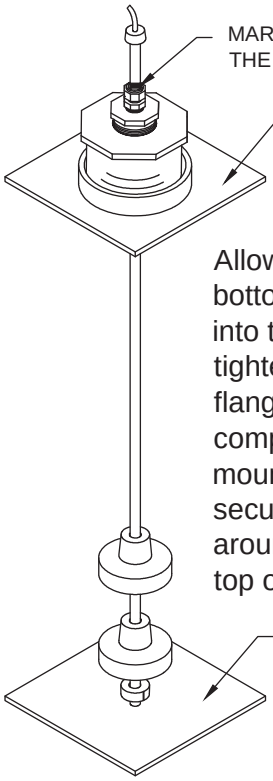
2 **INSTALL PROBE:** Loosen the compression nut (see detail on page 5) at the top of the probe, enough to slide it along the probe. Carefully feed the probe through the tank opening as shown below. THE PROBE CONTAINS ELECTRONICS. DO NOT BEND THE TOP 9 OR BOTTOM 3 INCHES OF THE PROBE! DO NOT REMOVE PROBE TAG!



INSTALLATION CONT'D:

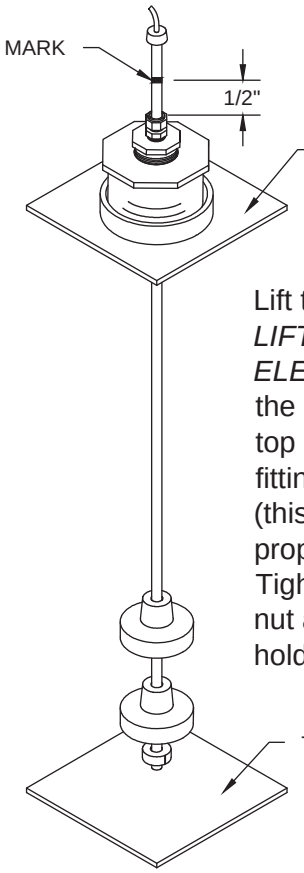
3 SECURE PROBE





Allow the probe to touch the tank bottom. Screw the mounting bushing into the tank opening. Do not over tighten. (Secure mating flange to tank flange for flange mount). Slide the compression fitting down to the mounting bushing/mating flange and secure. Do not tighten compression nut around probe yet. Mark the probe at the top of the compression fitting as shown.

4 SET BOTTOM CLEARANCE

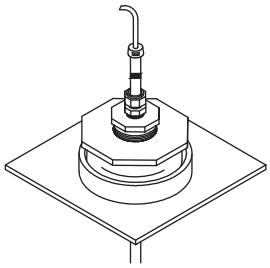


Lift the probe *(DO NOT LIFT THE PROBE BY IT'S ELECTRICAL CABLE)* until the distance between the top of the compression fitting and the mark is 1/2" (this will give you the proper bottom clearance). Tighten the compression nut around the probe to hold it at this point.

5

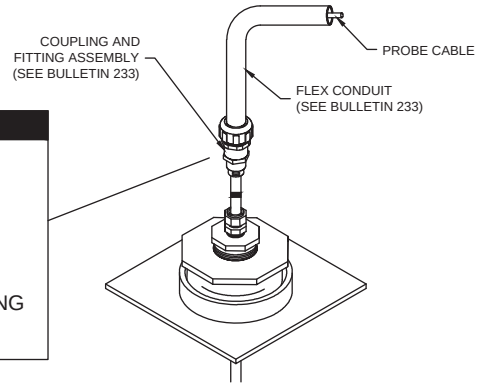
SEAL PROBE HEAD: Assemble and install flex conduit accessories per supplied bulletin 233. A qualified installer, familiar with local wiring codes and explosion hazard electrical practices, may conclude that this step is not required for certain indoor installations. However, flex conduit must be installed for all outdoor installations.

NOTE: ASSEMBLE AND INSTALL 4-HOLE CABLE SEAL BUSHING AS SHOWN ON PAGE 8 IF FLEX CONDUIT ACCESSORIES ARE NOT REQUIRED FOR WiDAM.



WARNINGS

- DO NOT ALLOW CONDUIT WEIGHT LOAD TO BE APPLIED TO PROBE.
- DO NOT BEND OR STRAIN PROBE WHEN CONNECTING CONDUIT.

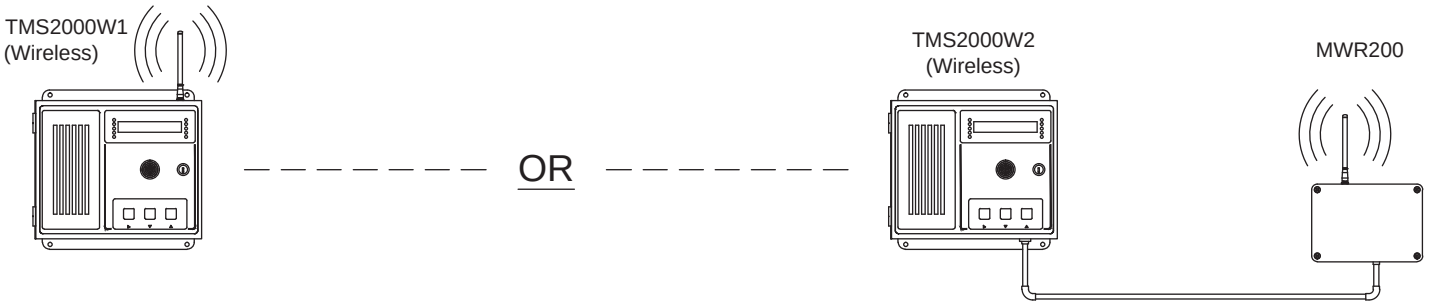


WIRING:

WiDAM SERIES GENERAL SYSTEM OVERVIEW
w/ INTERNAL WiDAM ANTENNA (see Page 7 for External WiDAM Antenna)

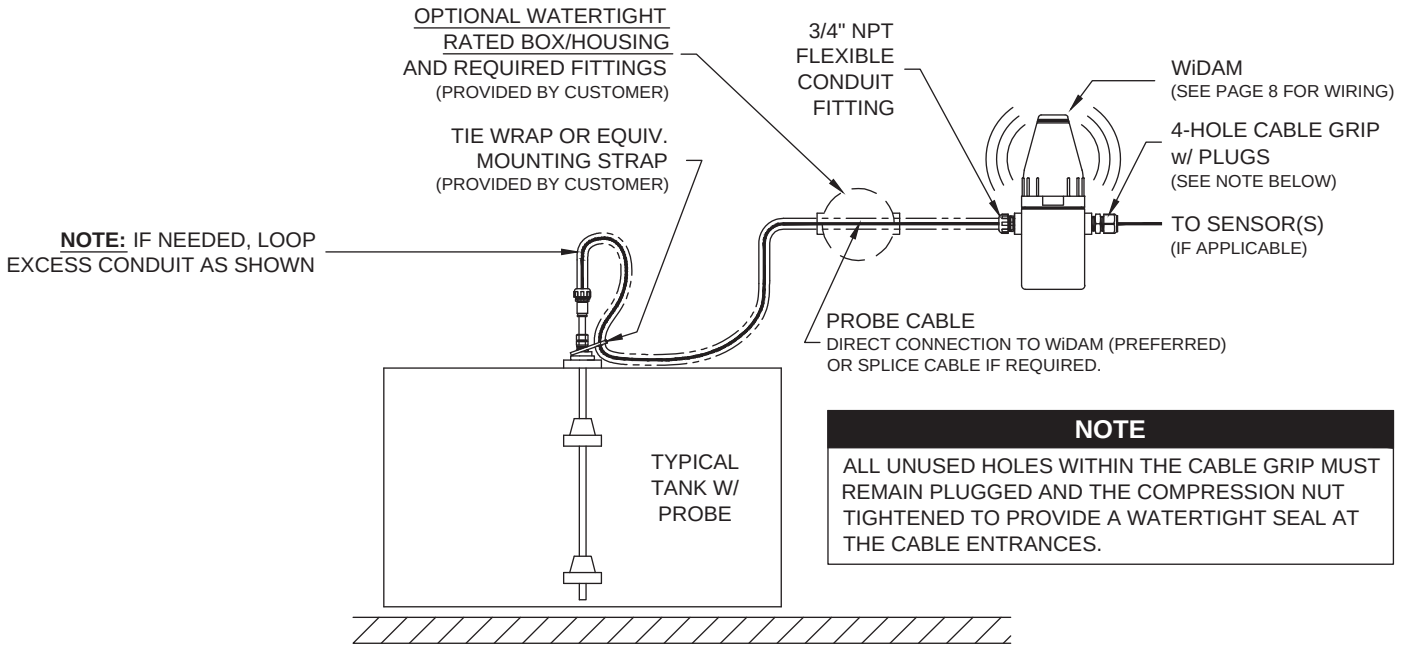
⚠ WARNING

Refer to TMS installation manual or wiring drawing 50440 for WARNINGS and CAUTIONS before proceeding. FAILURE TO COMPLY MAY RESULT IN PERSONAL INJURY, PROPERTY LOSS AND EQUIPMENT DAMAGE.



NON-HAZARDOUS AREA

HAZARDOUS AREA
CLASS I, DIVISION 1,
GROUPS C AND D
CLASS I, ZONE 0, GROUP IIB

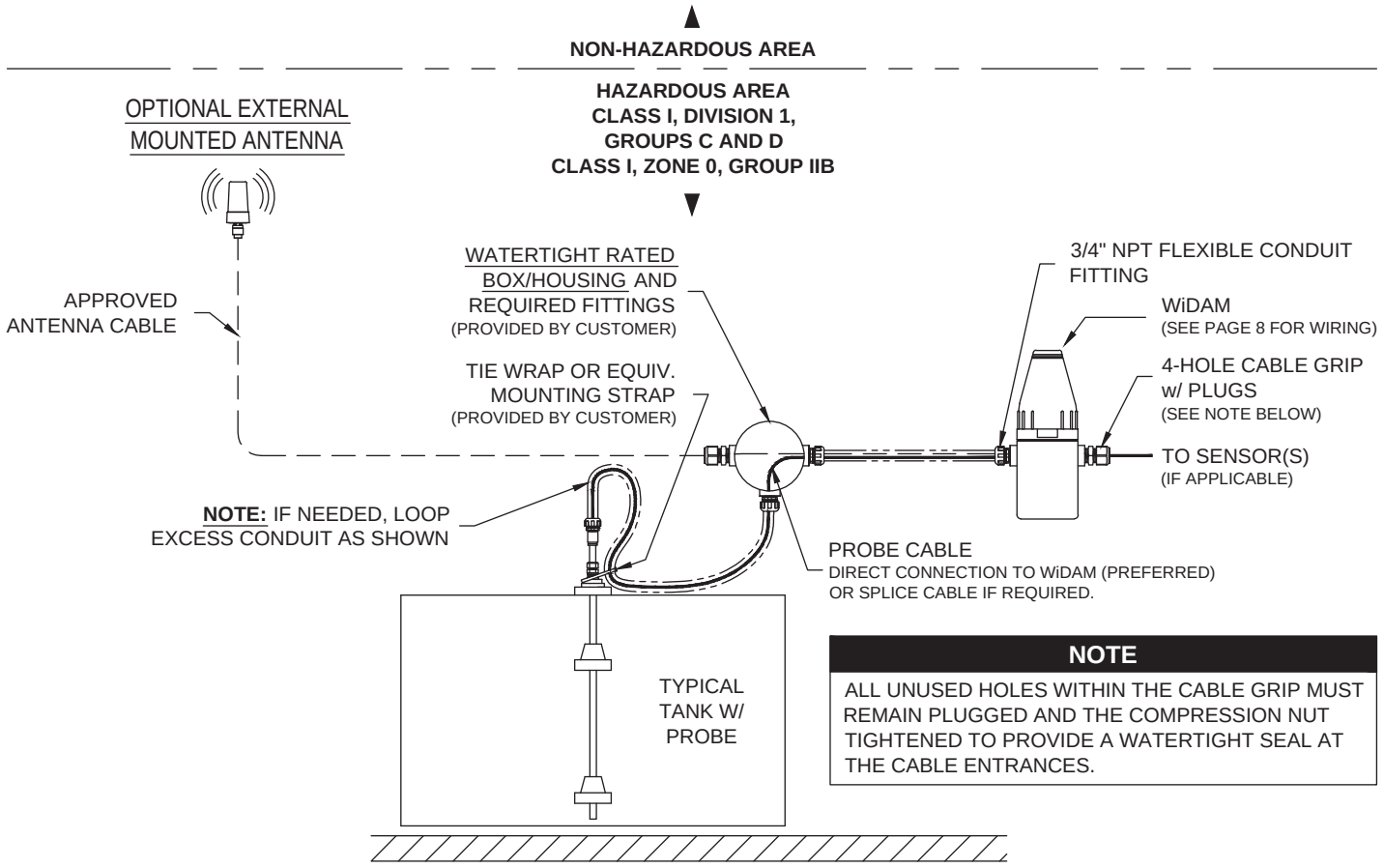


NOTE

ALL UNUSED HOLES WITHIN THE CABLE GRIP MUST REMAIN PLUGGED AND THE COMPRESSION NUT TIGHTENED TO PROVIDE A WATERTIGHT SEAL AT THE CABLE ENTRANCES.

WIRING CONT'D:

WiDAM SERIES GENERAL SYSTEM OVERVIEW CONT'D
w/ EXTERNAL WiDAM ANTENNA (see Page 6 for Internal WiDAM Antenna)

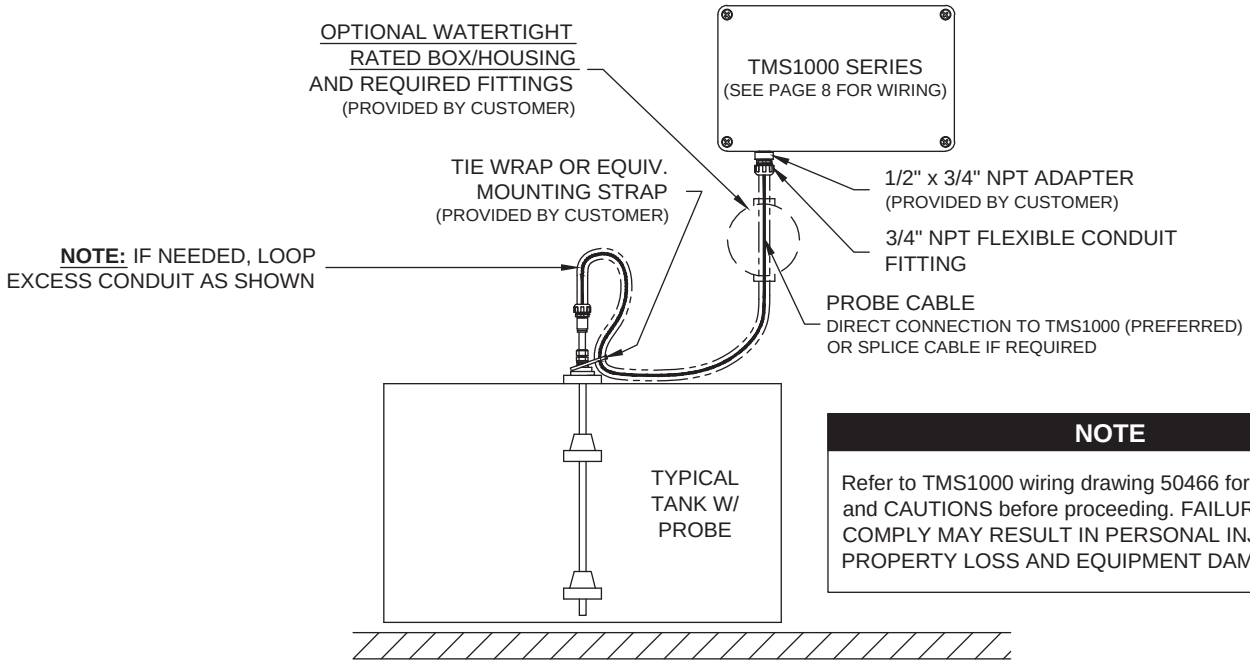


NOTE

ALL UNUSED HOLES WITHIN THE CABLE GRIP MUST REMAIN PLUGGED AND THE COMPRESSION NUT TIGHTENED TO PROVIDE A WATERTIGHT SEAL AT THE CABLE ENTRANCES.

TMS1000 SERIES GENERAL SYSTEM OVERVIEW
(SEE NOTE BELOW)

⚠ FOR NON-FUEL, NON-INTRINSICALLY SAFE APPLICATIONS



NOTE

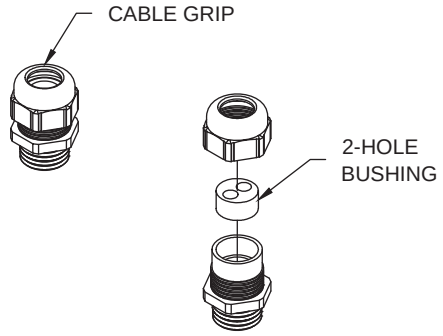
Refer to TMS1000 wiring drawing 50466 for WARNINGS and CAUTIONS before proceeding. FAILURE TO COMPLY MAY RESULT IN PERSONAL INJURY, PROPERTY LOSS AND EQUIPMENT DAMAGE.

WIRING CONT'D:

4-HOLE CABLE GRIP ASSEMBLY FOR PROBE: THESE ASSEMBLY STEPS APPLY ONLY IF YOUR WiDAM IS EQUIPPED WITH A 2-HOLE CABLE GRIP AND INSTALLATION OF FLEX CONDUIT IS NOT REQUIRED. FOLLOW STEPS 1 AND 2 BELOW.

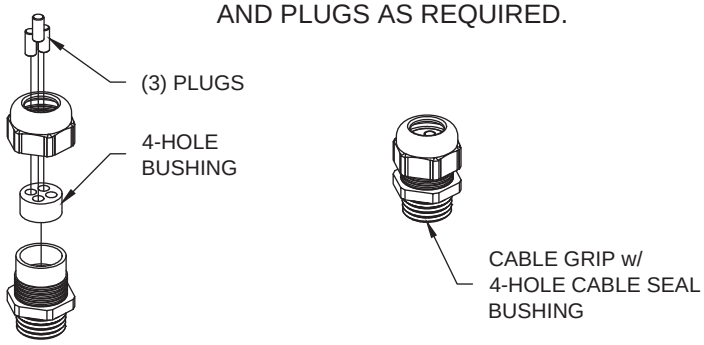
STEP 1

REMOVE STANDARD 2-HOLE BUSHING



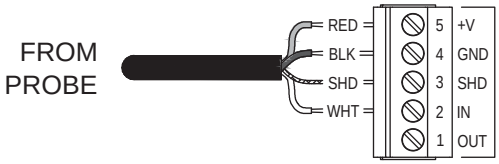
STEP 2

INSTALL 4-HOLE BUSHING
AND PLUGS AS REQUIRED.

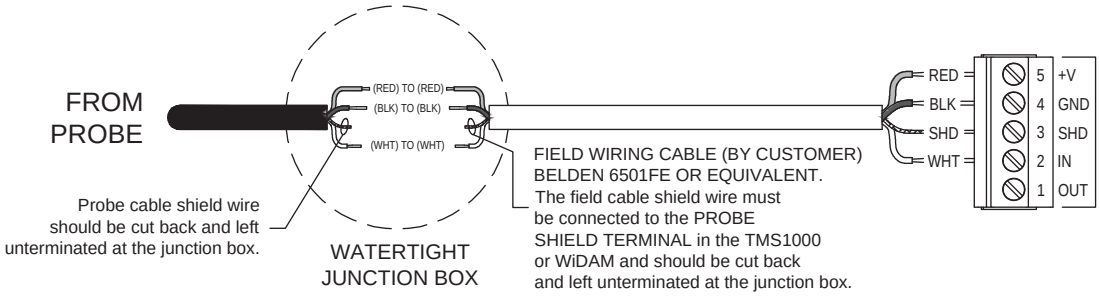


TYPICAL WIRING FOR TMS1000 AND WiDAM SERIES

PREFERRED WIRING



SPLICE PROBE CABLE AS SHOWN BELOW IF REQUIRED



PROGRAMMING: Information necessary for programming this probe can be found on the tag attached to the probe. The top section has certification information and the bottom has information needed to program the wireless TMS console to communicate with this probe. Copy the information from the tag on the probe onto this sheet and onto the tank worksheet in the TMS Operation Manual for referencing when programming the TMS. USE THE EFFECTIVE LENGTH GIVEN ON THE TAG WHEN PROGRAMMING THE SYSTEM PROBE LENGTH PARAMETER. THE "SC" ON THE PROBE TYPE IS NOT NEEDED FOR PROGRAMMING.

PROBE NAME, LOCATION OR DESCRIPTION: _____

_____

SERIAL NO. _____

P/N: MP561SC _____

Probe Type: MP561SC

Effective Length:_____

PROBE TAG EXAMPLE
(BOTTOM SECTION)