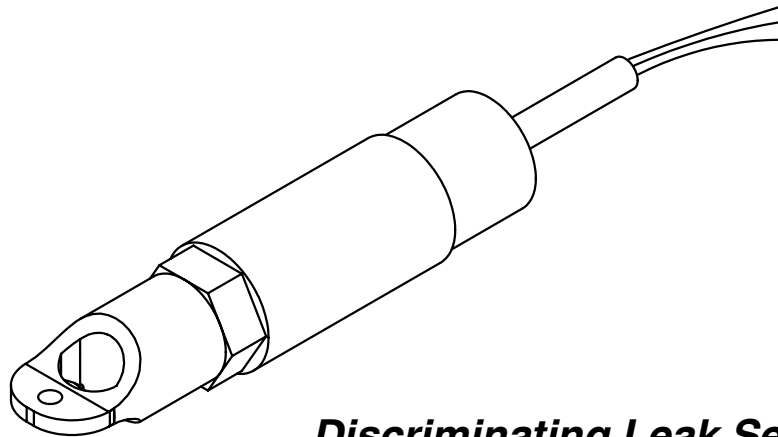


TMS Series ES825-200F/XF Leak Sensors Installation Instructions

Sensor Model

- ES825-200F
 ES825-200XF (Extended Temperature)



***Discriminating Leak Sensor
w/Supervised Wiring and
Fault Detection, 24 VDC***

**For use with the
following consoles:**

| | |
|--|----------------|
| LC2000 | TMS2000 |
| TMS3000 | |
| <small>NOTE: ES825-200 SERIES SENSORS ARE NOT COMPATIBLE WITH Wireless DATA ACQUISITION MODULE (WiDAM) USED IN CONJUNCTION WITH WIRELESS CONSOLES. REFER TO THE ES825-400 SERIES.</small> | |

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 PNEUMERCATOR TECHNICAL SUPPORT
 1 (800) 209-7858

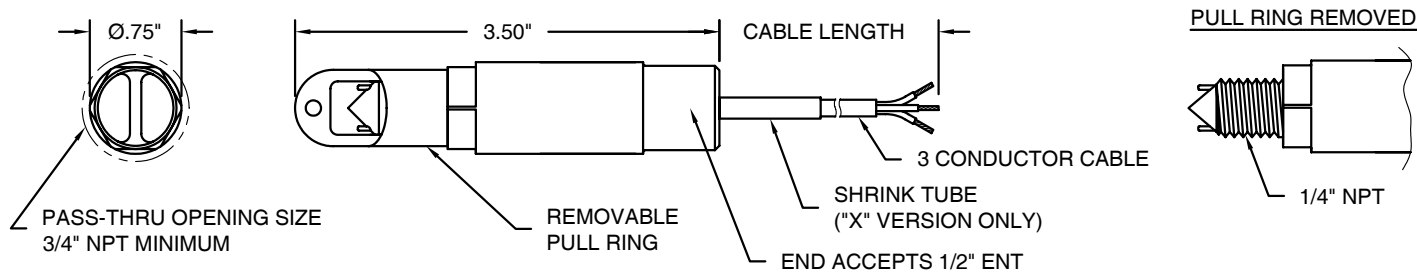
PRODUCT DESCRIPTION: Model ES825-200F is a solid-state, electronic, product distinguishing leak sensor utilizing both electro-optical and conductivity technologies to detect and differentiate between hydrocarbon-based liquids and water in secondary containment applications. The "X" version includes all the features of the standard ES825-200F, with operation over an extended temperature range. The sensors contain no moving parts, are unaffected by vapors, and due to their compact size are ideal for interstitial spaces. When connected with a LC2000 or TMS series controller, they support Pneumercator's FAULT-DETECT supervised wiring technology, which automatically detects sensor or field wiring faults.

APPLICATIONS: Sensors can be installed for leak detection in containment, manway and piping sumps, dry annular space in double-wall tanks, dispenser pans or turbine enclosures.

SPECIFICATIONS:

| MODEL NO. | WETTED MATERIALS | OPERATING TEMP. | CABLE | TECHNOLOGY |
|---------------|--|-------------------------------------|---|---|
| ES825-200F * | POLYSULFONE, PVC, EPOXY & 316 SS | -4°F TO +176°F (-20°C TO +80°C) | 22 AWG, 3-CONDUCTOR, PVC JACKET, 25' LONG | ELECTRO-OPTIC & CONDUCTIVITY, NO MOVING PARTS |
| ES825-200XF * | POLYSULFONE, 316 SS PTFE (TEFLON®) & EPOXY | -40°F TO +176°F (-40°C TO +80°C) | 22 AWG, 3-CONDUCTOR, PTFE (TEFLON®), 20' LONG | |

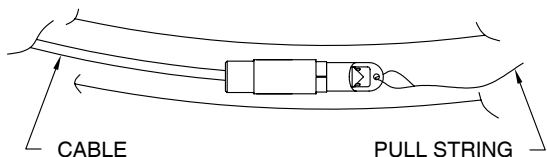
* Approved for UL Class I, Div 1, Groups C and D hazardous locations when used in conjunction with the TMS series controllers.



INSTALLATION: Sensor may be suspended by its cable, placed on the containment or sump floor, or thru-wall mounted via a 1/4" FNPT opening. Two methods are available when installing in a dry annular space. The first uses a fish tape and pull string, the second uses a section of 1/2" ENT Flex Conduit attached to the sensor. Pneumercator recommends that sensor should be installed in an area where there is MINIMAL exposure to ambient light.

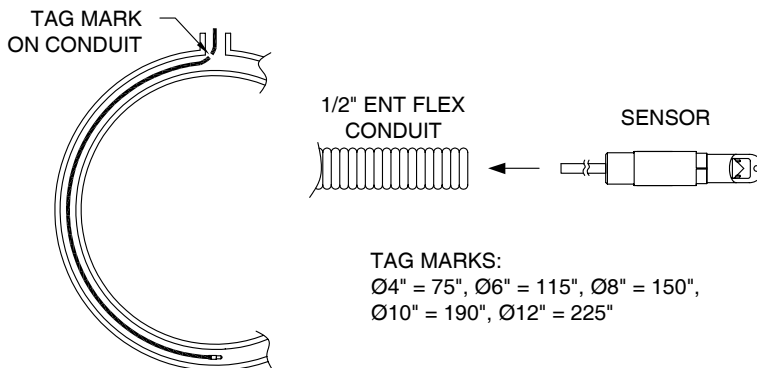
METHOD 1

1. If tank has an existing pull string, skip steps 2 & 5.
2. Insert Fish Tape through annular space.
3. Attach Pull String to sensor.
4. Tag pull string and cable each 16 feet (for tank diameter up to 10 feet) from sensor.
5. Attach fish tape to pull string.
6. Pull sensor through annulus.
7. Match tag mark on cable and pull string.
8. Sensor now positioned on the bottom centerline of tank.



METHOD 2

1. Pull sensor cable through Flex Conduit and insert sensor's back end.
2. Tag conduit at the distance for your tank dia.
3. Feed sensor through annulus.
4. Stop when tag mark is at the top of annulus.
5. Sensor now positioned on the bottom centerline of tank.

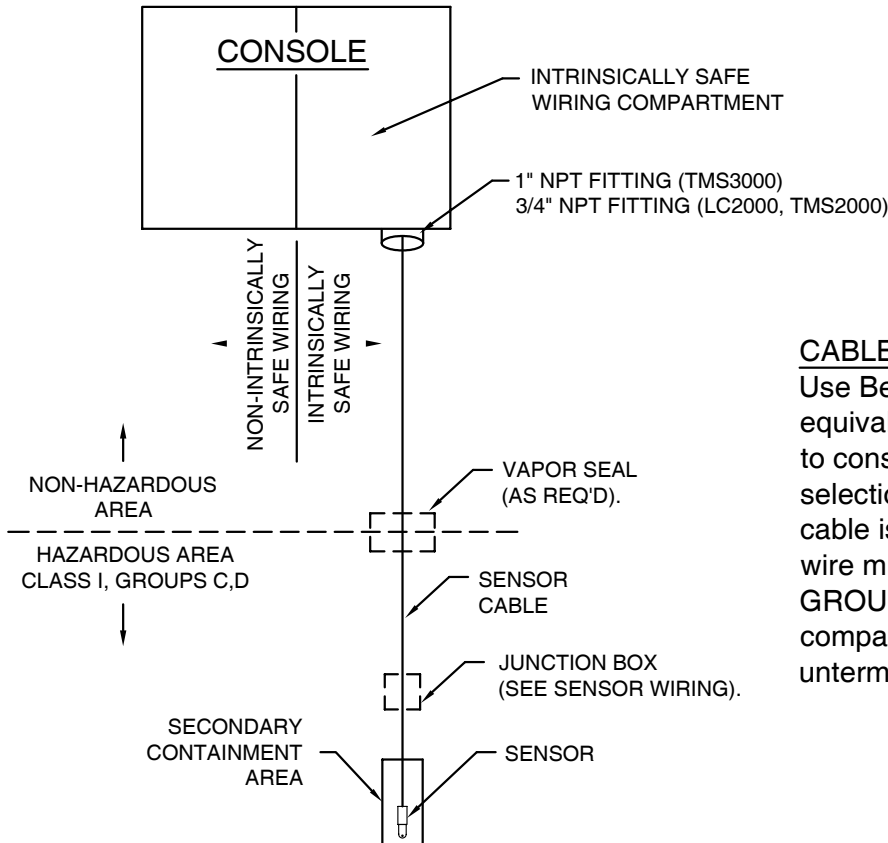


TAG MARKS:
 Ø4" = 75", Ø6" = 115", Ø8" = 150",
 Ø10" = 190", Ø12" = 225"

WIRING:

⚠ WARNING

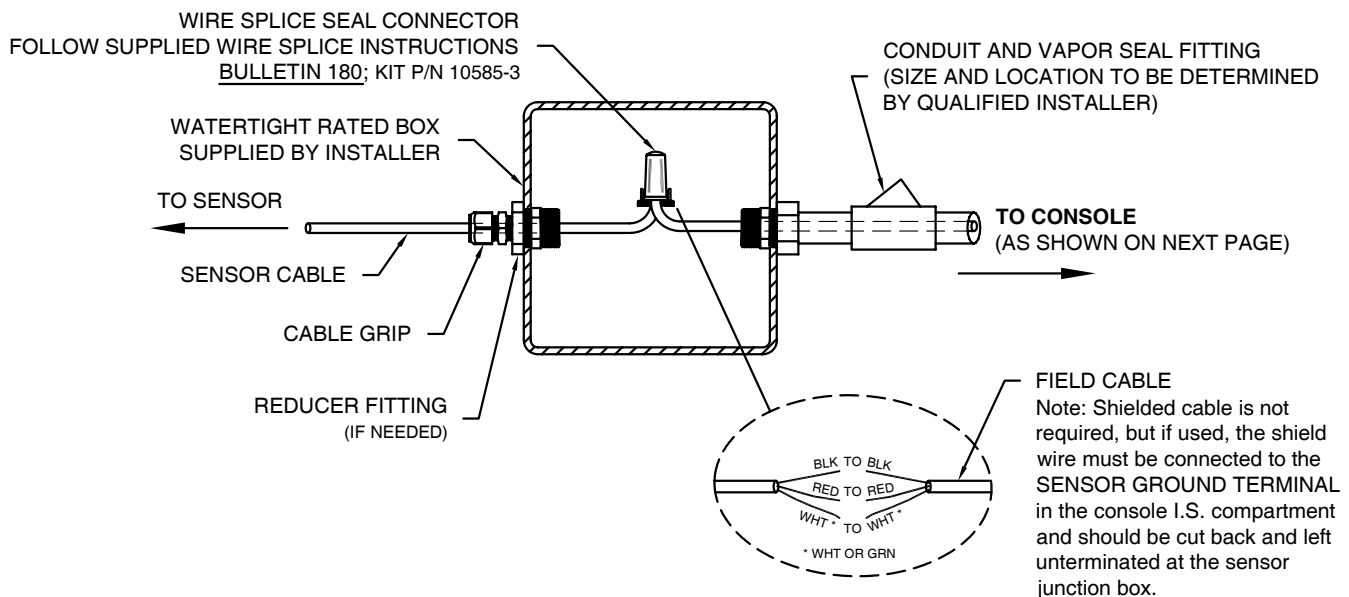
Refer to console installation manual for WARNINGS and CAUTIONS before proceeding. FAILURE TO COMPLY MAY RESULT IN PERSONAL INJURY, PROPERTY LOSS AND EQUIPMENT DAMAGE.



CABLE SELECTION:

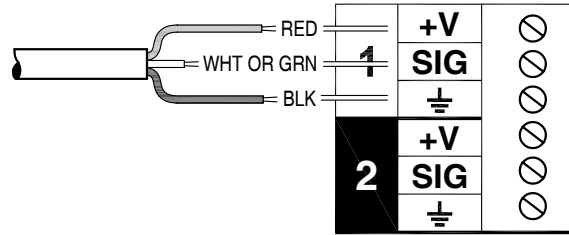
Use Belden 8443, or Alpha 1173C or any equivalent 3-conductor, 22 AWG cable, refer to console installation manual for more cable selection and limitation information. Shielded cable is not required, but if used, the shield wire must be connected to the **SENSOR GROUND TERMINAL** in the console I.S. compartment and should be cut back and left unterminated at the sensor junction box.

TYPICAL WIRING FOR SENSOR



WIRING CONT'D:

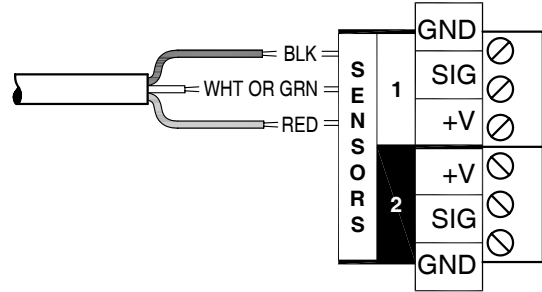
LC2000 SENSOR INPUT WIRING



TMS2000 SENSOR INPUT WIRING



TMS3000 SENSOR INPUT WIRING



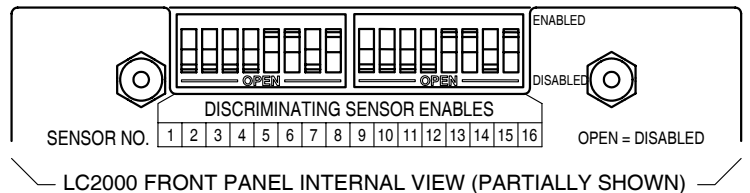
NOTE THE REVERSE ORDERING OF SENSOR 1 & 2 INPUTS ON 4-PROBE/8-SENSOR CARD

LC2000 PROGRAMMING: Configure the LC2000 to activate the installed monitoring sensors. Programming can be accomplished from the LC2000 front panel. In addition, the Discrimination Sensor Enables Dip Switches MUST be ENABLED where applicable.

MODEL ES825-200F
ES825-200XF

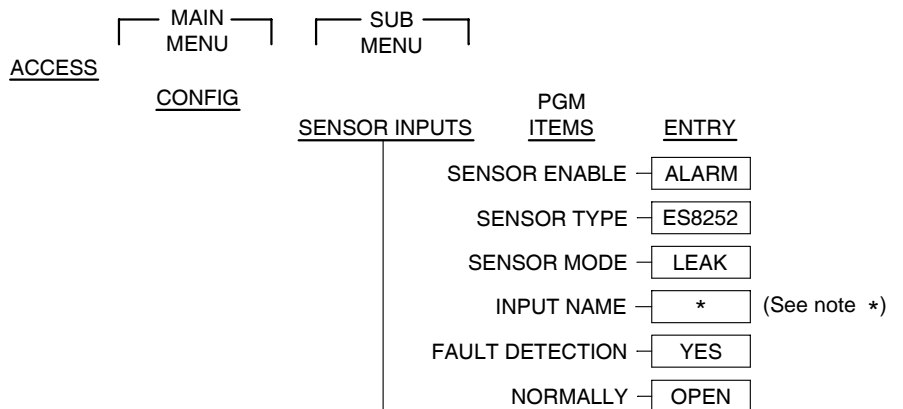
ENABLE THE CORRESPONDING DIP SWITCH FOR EACH DISCRIMINATING ES825-200 SERIES SENSOR

| PROGRAM Mode LED Indicators | |
|-----------------------------|--|
| SENSOR | OFF = DISABLED, ON (2 Fast Blinks) = ALARM, ON (3 Slow Blinks) = RELAY |
| NO/NC | OFF = NC, ON = NO |
| FAULT DETECT | OFF = DISABLED, ON = ENABLED |



TMS PROGRAMMING: Configure the TMS to activate the installed monitoring sensors. Programming can be accomplished either from the TMS front panel, or via TMSCOMM through the TMS serial port or modem. Programming is as follows for both Model TMS2000 and Model TMS3000.

MODEL ES825-200F
ES825-200XF



NOTE:

* = Select Name From List