The Series PBLTX Submersible Level Transducer is manufactured for years of trouble free service in the harshest applications. The PBLTX measures the height of liquid above its position in the tank referenced to atmospheric pressure. The transducer consists of a piezoresistive sensing element, encased in a 316 SS housing. Perfect for wastewater and slurry applications with features to protect the unit from these demanding applications. Large diameter 316 SS diaphragm seal is non-clogging and damage resistant to floating solids. Comes equipped with a 270-pound tensile strength, shielded, vented cable. Ventilation tube in the cable automatically compensates for changes in atmospheric pressure above the tank. The vent is protected with a maintenance free filter eliminating particulate or water droplets from entering the transducer.

Intrinsic Safety Approval Classification

The PBLTX is UL listed for use in Hazardous (Classified) Locations. The protection method is by Intrinsic Safety, “ia”. It was investigated by UL under UL Standard 913 8th Edition, CAN/CSA C22.2 No. 60079-0:15 and CAN/CSA C22.2 No. 60079-11:14.

Hazardous (Classified) Location Intrinsically Safe For:
Class I, Div. 1, Groups A,B,C,D; Class II, Groups E,F,G; Class III
Class I Zone 0 AEx ia IIC T4 Ga
Zone 20 AEx ia IIC T135°C Da
Ex ia IIC T4 Ga
Ex ia IIC T135°C Da
Ta = -20°C to 80°C (ETF E Cable)
Ta = -20°C to 65°C (Polyurethane Cable)
Install in accordance with Control Drawing 001833-44.
See Control Drawing 001833-44 for Entity Parameters.

ATEX Certified for: II 1 G Ex ia IIC T4 Ga / II 1 D Ex ia IIC T135°C Da (-20°C ≤ Tamb ≤ 80°C ETF E cable) (-20°C ≤ Tamb ≤ 65°C Polyurethane cable)
ATEX EU-Type Certificate: DEMKO 18 ATEX 2080
ATEX Standards: EN IEC 60079-0, EN 60079-11
IECEX Certified for: Ex ia IIC T4 Ga / Ex ia IIC T135°C Da (-20°C ≤ Tamb ≤ 80°C ETF E cable) (-20°C ≤ Tamb ≤ 85°C Polyurethane cable)
IECEX Certificate of Conformity: IECEx UL 18.0086
IECEX Standards: IEC 60079-0, IEC 60079-11
UKCA Ex Certified for: II 1 G Ex ia IIC T4 Ga / II 1 D Ex ia IIC T135°C Da (-20°C ≤ Tamb ≤ 80°C ETF E cable) (-20°C ≤ Tamb ≤ 85°C Polyurethane cable)
UKCA Ex Certificate: UL21UKEX2364
UKCA Ex Standards: EN IEC 60079-0, EN 60079-11
Install in accordance with Control Drawing 001833-47.
See Control Drawing 001833-47 for Entity Parameters.

WARNING

Use with approved safety barriers using entity evaluation.

SPECIFICATIONS

Service: Compatible liquids.
Wetted Materials: Body: 316 SS, 316L SS; Cable: Polyether polyurethane or ETFE; Seals: Fluoroelastomer.
Accuracy: ±0.25% FS.
Temperature Limit: ETFE cable equipped -4 to 176°F (-20 to 80°C); Polyurethane cable equipped -4 to 149°F (-20 to 65°C).
Compensated Temperature Range: -4 to 176°F (-20 to 80°C).
Thermal Effect: Less than ±.02%/ FS/°F.
Pressure Limit: 2X FS.
Power Requirement: 10-28 VDC.
Output Signal: 4-20 mA DC, 2-wire.
Response Time: 50 msec.
Max. Loop Resistance: 900 Ω.
Electrical Connection: Wire pigtail.
Mounting Orientation: Suspended in tank below level being measured. Can be placed on the bottom of the tank on its side.
Weight: 3.8 lb (1.7 kg) to 4.3 lb (2.0 kg).
Compliance: CE, UKCA. See Intrinsic Safety Approval Classification.

Note: References to ATEX apply to UKCA Ex.
INSTALLATION

1. **Location:** Select a location where the temperature of the transducer will be between -4 and 176°F (-20 to 80°C) for ETFE cable or -4 and 149°F (-20 to 65°C) for polyurethane cable. Distance from the receiver is limited only by total loop resistance.

2. **Position:** The transducer is not position sensitive. However all standard models are originally calibrated with the unit in a position with the diaphragm downward. Although they can be used at other angles, for best accuracy it is recommended that units be installed in the position calibrated at the factory.

3. **Mounting:** The transducer can be mounted via several methods. It can be suspended from the electrical cable, it can be placed resting on the bottom of the tank in either horizontal or vertical orientation, or it can be attached to a pipe or hang wire by the 1/2˝ NPT male connection on the top of the housing.

4. **Wire Length:** The maximum length of wire connecting the transducer and receiver is a function of wire size and receiver resistance. Wiring should not contribute more than 10% of the receiver resistance to total loop resistance. For extremely long runs (over 1000 feet), choose receivers with higher resistance to minimize the size and cost of connecting leads. Where wiring length is under 100 feet, wire as small as 22 AWG can be used.

5. **Wiring:** An external power supply delivering 10-28 VDC with minimum current capability of 40 mA DC (per transducer) is required to power the control loop. See Figure A for connection of the power supply, transducer and receiver. The range of appropriate receiver load resistance (RL) for the DC power supply voltage available is expressed by the formula:

\[
RL_{\text{Max}} = \frac{V_{ps} - 10}{20} \text{ mA DC}
\]

Shielded cable is recommended for control loop wiring.

**Figure A**

Black wire is negative [-] and red wire is positive [+] in Figure B.

**Figure B**
NOTES:
1. SELECTED ASSOCIATED APPARATUS MUST BE THIRD PARTY LISTED AS PROVIDING INTRINSICALLY SAFE CIRCUITS FOR THE APPLICATION.
   AND NOT EXCEED THE ENTITY PARAMETERS LISTED ON THIS DRAWING.
2. CAPACITANCE AND INDUCTANCE OF THE F.O.L. WIRING FROM THE INTRINSICALLY SAFE TRANSMITTER TO THE ASSOCIATED APPARATUS
   SHALL BE CALCULATED AND MUST NO LONGER THAN AS SHOWN IN THIS DRAWING. TOTAL CAPACITANCE IS
   CALCULATED BY ADDING (C07) (C2500pF) AND (C3000pF) TO C, WHERE (C3000pF) IS THE CAPACITANCE OF FACTORY WIRING
   PROVIDING THE PELTIX AND (C2500pF) IS CAPACITANCE OF ANY ADDITIONAL END USER CABLE THAT IS WED TO THE PELTIX. TOTAL
   INDUCTANCE IS CALCULATED BY ADDING (L07) (1.25uH) AND (L3000uH) TO L, WHERE (L3000uH) IS THE INDUCTANCE OF FACTORY
   WIRING PROVIDED WITH THE PELTIX AND (L07) IS THE INDUCTANCE OF ANY ADDITIONAL END USER CABLE THAT IS WED TO THE
   PELTIX. WHEN WED WITH POLYURETHANE CABLES, THE CAPACITANCE (C3000pF) IS 344pF/FT (38pF/M) AND INDUCTANCE
   (L3000uH) IS 3440uH/FT (10.5mH/M). WHEN WED WITH SPI CABLES, THE CAPACITANCE (C3000pF) IS 1650pF/FT (15.6pF/M) AND
   INDUCTANCE (L3000uH) IS 344mH/FT (1.156mH/M). WHERE CABLE CAPACITANCE AND INDUCTANCE PER UNIT LENGTH ARE NOT
   KNOWN, THE CAPACITANCE OF 500pF/FT (0.56pF/M) AND INDUCTANCE OF 0.5uH/FT (1.5uH/M) MAY BE USED. PLEASE NOTE THAT
   THE PELTIX CABLE LENGTH IS SPECIFIED WITHIN THE NOMENCLATURE. SET FW04a* FOR LENGTH AND FW04b* FOR UNIT OF LENGTH.
   THIS LENGTH WILL NEED TO BE MULTIPLIED BY THE CORRECT PARAMETER (C3000pF) AND (L3000uH) SPECIFIED ABOVE, BASED ON
   THE CABLE SPECIFIED. SEE NOMENCLATURE ITEM FW04* FOR THE DEVICE'S CABLE TYPE.
3. THE ASSOCIATED APPARATUS MANUFACTURERS INSTALLATION INSTRUCTIONS MUST BE FOLLOWED WHEN INSTALLING THE UNIT.
4. WARNING - ALL FIELD WIRING SHALL BE SUITABLE FOR AN AMBIENT TEMPERATURE RANGE OF -20 TO 20C.
5. THE CABLE USED IN THIS DEVICE HAS A VENT TUBE. THEREFORE THE CABLE ATTACHED TO THE PELTIX SHALL BE TERMINATED IN
   THE NON-HAZARDOUS AREA.
6. NO REVISIONS TO THIS DRAWING WITHOUT PRIOR APPROVAL BY Dwyer.
7. TRANSMITTER MUST BE INSTALLED IN ACCORDANCE TO BC/EN 60079-14 OR ANY LOCAL INSTALLATION CODE/REQUIREMENTS.