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 Div. 1 Groups E,F,G
Class III Div. 1
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 (ETFEl 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: EU Type Certificate NO. DEMKO 18 ATEX 2080
ATEX STANDARDS: EN 60079-0, EN 60079-11
ATEX CLASSIFICATION: E Ex ia IIC T4 Ga (-20°C ≤ Tamb ≤ 80°C (ETFEl Cable)) (-20°C ≤ Tamb ≤ 65°C (Polyurethane Cable))
IECEx Certificate of Conformity: IECEx UL 18.0086
IECEx STANDARDS: IEC 60079-0, IEC 60079-11.
IECEx CLASSIFICATION: Ex ia IIC T4 Ga (-20°C ≤ Tamb ≤ 80°C (ETFEl Cable)) (-20°C ≤ Tamb ≤ 65°C (Polyurethane Cable))
Ex ia IIC T135°C Da (-20°C ≤ Tamb ≤ 80°C (ETFEl Cable)) (-20°C ≤ Tamb ≤ 65°C (Polyurethane Cable))
UKCA Ex: CERTIFICATE UL21UKEX2364
UKCA Ex STANDARDS: EN 60079-0, EN 60079-11
UKCA Ex CLASSIFICATION: II 1 G Ex ia IIC T4 Ga (-20°C ≤ Tamb ≤ 80°C (ETFEl Cable)) (-20°C ≤ Tamb ≤ 65°C (Polyurethane Cable))
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.
**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:

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

   Shielded cable is recommended for control loop wiring.

**CAUTION**

Do not exceed specified supply voltage ratings. Permanent damage not covered by warranty will result. This device is not designed for 120 or 240 VAC operation. Use only on 10-28 VDC.

---

**MAINTENANCE**

After final installation of the pressure transducer and its companion receiver, no routine maintenance is required. A periodic check of system calibration is suggested. The Series PBLTX transducers are not field repairable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.

---

**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 INTERNSHIALY SAFE CIRCUITS FOR THE APPLICATION, AND NOT EXCEED THE ENTITY PARAMETERS LISTED ON THIS DRAWING.

2. CAPACITANCE AND INDUCTANCE OF THE FIELD WIRING FROM THE INTERNSHIALY SAFE TRANSMITTER TO THE ASSOCIATED APPARATUS MUST BE CALCULATED AND MUST INCORPORATE THE SYSTEM CALCULATIONS AS SHOWN ON THIS DRAWING. TOTAL CAPACITANCE IS CALCULATED (BY ADJUSTING (W1) + (Q1) TO (W2) + (Q2)). (W2) IS THE CAPACITANCE OF FACTORY WIRING PROVIDED WITH THE PELIX, AND (Q2) IS THE CAPACITANCE OF FACTORY WIRING PROVIDED WITH THE PELIX AND (Q2) IS THE CAPACITANCE OF FACTORY WIRING PROVIDED WITH THE PELIX AND (Q2) IS THE INDUCTANCE OF ANY ADDITIONAL END USER CABLE THAT IS WIRSED TO THE PELIX. TOTAL INDUCTANCE IS CALCULATED (ADJUSTING (W2) + (Q2) TO (W1) + (Q1)). (W1) IS THE INDUCTANCE OF FACTORY WIRING PROVIDED WITH THE PELIX AND (Q1) IS THE INDUCTANCE OF ANY ADDITIONAL END USER CABLE THAT IS WIRSED TO THE PELIX. WHEN WIRING WITH POLYCARENE CABLES, THE CAPACITANCE (Q1) IS 0.15nF/m/cm AND INDUCTANCE (W1) IS 370μH/m/cm. WHEN WIRING WITH 100% TLENE CABLES, THE CAPACITANCE (Q1) IS 185μH/m/cm AND INDUCTANCE (W1) IS 116μH/m/cm. WHERE CABLE CAPACITANCE AND INDUCTANCE PER UNIT LENGTH ARE NOT KNOWN, THE CAPACITANCE OF 0.15nF/m/cm AND INDUCTANCE OF 370μH/m/cm MAY BE USED. PLEASE NOTE THAT THE PELIX CABLE LENGTH IS SPECIFIED WITHIN THE NOMENCLATURE; SEE FIELD *#1 FOR UNIT LENGTH AND FIELD *#8 FOR UNIT OF LENGTH. THIS LENGTH MUST BE MULTIPLIED BY THE CORRECT FACTOR (Q1) AND (W1) SPECIFIED ALONGSIDE THE CABLE FOR THE DEVICE'S CABLE TYPE.

3. THE ASSOCIATED APPARATUS MANUFACTURER'S INSTALLATION INSTRUCTIONS MUST BE FOLLOWED WHEN INSTALLING THE EQUIPMENT.

4. WARNING: ALL FIELD WIRING SHALL BE SUITABLE FOR AN AMBIENT TEMPERATURE RANGE OF -20 TO 120°C.

5. THE CABLE USED IN THIS DEVICE HAS A VENT TUBE. THEREFORE THE CABLE ATTACHED TO THE PELIX SHALL BE TERMINATED IN THE HAZARDOUS AREA.

6. NO REVISIONS TO THIS DRAWING WITHOUT PRIOR APPROVAL BY Dwyer.

7. TRANSMITTER MUST BE INSTALLED IN ACCORDANCE TO EC/EN 60079-14 OR ANY LOCAL INSTALLATION CODES/REQUIREMENTS.