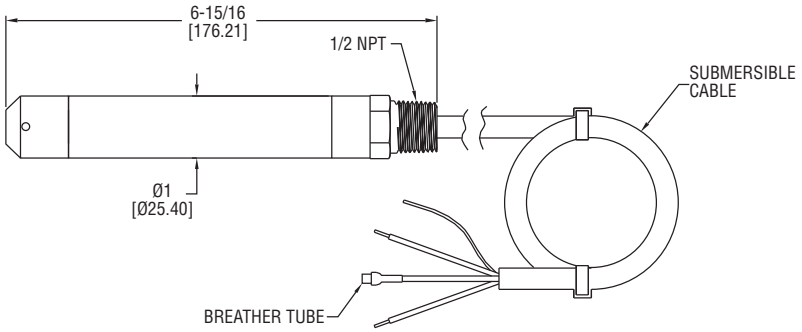
Series SBLTX Submersible Level Transducer

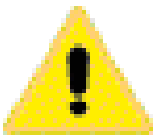
Specifications - Installation and Operating Instructions



The SBLTX Submersible Level Transducer is manufactured for years of trouble free service. The transducer consists of a piezoresistive sensing element, encased in a 316 SS housing. Bullet nose design protects diaphragm from damage. 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.

Intrinsic Safety Approval Classification
The SBLTX 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 Sixth Edition and CSA Standard No. 157-92.

For use in Hazardous (Classified) Locations:
Class I Div. 1 Groups A,B,C,D
Class II Div. 1 Groups E,F,G
Class III Div. 1
Temperature Code: T4 @ 80°C ambient
Install in accordance with control drawing 01-700797-00.



WARNING: To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
Use with approved safety barriers using entity evaluation.

Entity Parameters

Vmax	Imax	Ci	Li	Pi
28VDC	93mA	0.051_F	240_H	0.651W

SPECIFICATIONS
Service: Compatible liquids.
Wetted Materials: 316 SS, 316L SS, Buna-N; Cable: Polyurethane or ETFE; Bullet Nose: PVC.
Accuracy: ±0.25% of full scale.
Temperature Limit: 0 to 176°F (-18 to 80°C).
Compensated Temperature Range: 0 to 176°F (-18 to 80°C).
Thermal Effect: Less than ±0.02% full scale/ °F.
Pressure Limit: 2X full scale.
Power Requirement: 10 to 28 VDC.
Output Signal: 4 to 20 mA DC, 2-wire.
Response Time: 50 ms.
Max. Loop Resistance: 900 ohms.
Electrical Connections: Wire pigtail.
Mounting Orientation: Suspended in tank below level being measured.
Weight: 2.2 lb (1.0 kg).
Agency Approvals: CE, UL Intrinsically Safe to UL Standard 913. (See Intrinsic Safety Approval Classification.)
The following standards were used for CE approval:
IEC 61000-4-2: 2001
IEC 61000-4-3: 2006
IEC 61000-4-4: 2004
IEC 61000-4-5: 2005
IEC 61000-4-6: 2006
IEC 61000-4-8: 2001
CENELEC EN 55011: 2003
CENELEC EN 61326: 2003
89/336/EEC EMC Directive

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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 volt AC operation. Use only on 10 to 28 VDC.

INSTALLATION

1. Location: Select a location where the temperature of the transducer will be between 0 and 176°F (-18 to 80°C). 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 pressure connection 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. Electrical Connections

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.

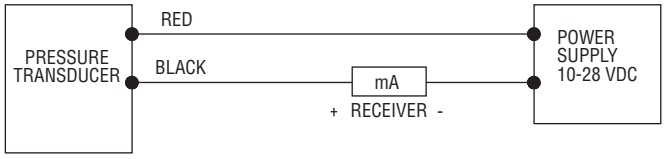
5. Wiring

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 Fig. 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:

$$RL\ Max = \frac{Vps - 10V}{20\ mA\ DC}$$

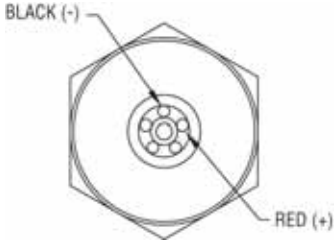
Shielded cable is recommended for control loop wiring.

Fig. A



Black wire is negative (-) and red wire is positive (+).

Fig. B



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 SBLTX transducer 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.

NOTES:

1. MAX SAFE AREA VOLTAGE NOT TO EXCEED 250 VAC.
2. NO REVISIONS WITHOUT PRIOR UNDERWRITERS LABORATORY APPROVAL.
3. (ENTITY CONCEPT DEFINITIONS)
   THE ENTITY CONCEPT ALLOWS INTERCONNECTION OF INTRINSICALLY SAFE APPARATUS TO ASSOCIATED APPARATUS NOT SPECIFICALLY EXAMINED IN SUCH COMBINATION. THE CRITERIA FOR INTERCONNECTION IS THAT THE VOLTAGE AND CURRENT WHICH INTRINSICALLY SAFE APPARATUS CAN RECEIVE AND REMAIN INTRINSICALLY SAFE, CONSIDERING FAULTS, MUST BE EQUAL TO OR GREATER THAN THE VOLTAGE (Voc) AND CURRENT (Isc) LEVELS WHICH CAN BE DELIVERED BY THE ASSOCIATED APPARATUS. CONSIDERING FAULTS AND APPLICABLE FACTORS. IN ADDITION, THE MAXIMUM UNPROTECTED CAPACITANCE AND INDUCTANCE (Ci & Li) OF THE INTRINSICALLY SAFE APPARATUS. INCLUDING INTERCONNECTING WIRING. MUST BE EQUAL TO OR LESS THAN THE CAPACITANCE AND INDUCTANCE WHICH CAN BE SAFELY CONNECTED TO ASSOCIATED APPARATUS.
4. INSTALLATION MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA 70, ARTICLE 504) AND ANSI/ISA-RP12.6.

IMPORTANT! NO REVISIONS WITHOUT PRIOR UNDERWRITERS LABORATORIES APPROVAL CAN BE IMPLEMENTED

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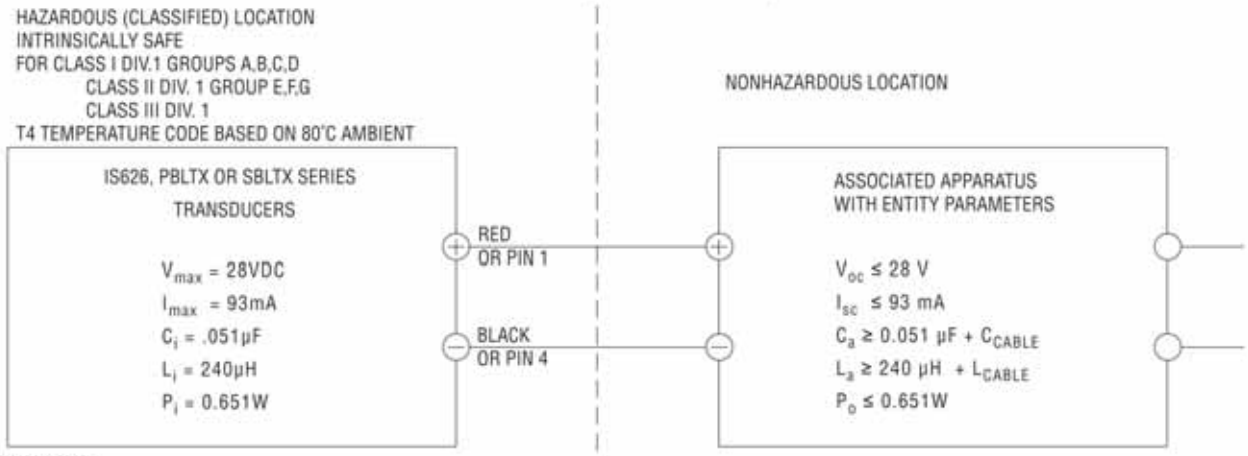

CATALOG NUMBERS:
IS626-aa-bb-cc-dd-ee-ffff
PBLTX-aaa-bbb-cccc
SBLTX-aa-bb-cccc
WHERE:
a,b,c,d,e & f = ANY LETTER OR NUMBER

CD = CRITICAL DIMENSION
STANDARD TOLERANCES UNLESS NOTED:
ALL DECIMAL DIMENSIONS ± .005
ALL ANGLES ± 1°

SCALE 1:1

NO.	CHANGES	BY/DATE
2		
1	ADDED LABELS TO PLUS & MINUS TERMINALS. ADDED Pi & Po = 0.651W TO BOXES. ECR #21141.	BRENT 1-22-07

DATE 7-14-06
DWN BY DGH
CHKD CAT
APPD SE

NAME
BULLETIN ARTWORK
INTRINSIC SAFETY
CONTROL DRAWING FOR
IS626, PBLTX & SBLTX SERIES

ACAD2002

MATERIAL

FINISH

DWYER INSTRUMENTS, INC.
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