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**⚠ WARNING! READ ⚠
BEFORE INSTALLATION**

1. GENERAL:

A failure resulting in **injury** or **damage** may be caused by excessive overpressure, excessive vibration or pressure pulsation, excessive instrument temperature, corrosion of the pressure containing parts, or other misuse. Consult Ashcroft Inc., Stratford, Connecticut, USA before installing if there are any questions or concerns.

2. OVERPRESSURE:

Pressure spikes in excess of the rated overpressure capability of the transducer may cause **irreversible electrical and/or mechanical damage** to the pressure measuring and containing elements.

3. STATIC ELECTRICAL CHARGES:

Any electrical device may be susceptible to damage when exposed to static electrical charges. To avoid damage to the transducer observe the following:

- Ground the body of the transducer BEFORE making any electrical connections.
- When disconnecting, remove the ground LAST!

Note: The shield and drain wire in the cable (if supplied) is not connected to the transducer body, and is not a suitable ground.

DESCRIPTION

The Industrial Low Pressure Differential Transducer consists of a silicon diaphragm supported between two layers of metallized glass. The Si-Glas technology combines the inherent high sensitivity of a variable capacitance transducer using a micro-machined, single crystal diaphragm which provides excellent stability and repeatability.

The transducer should be used with clean, dry air or other dry non-corrosive gases. Both unidirectional (e.g. 0/1.0 in. W.C.) and bidirectional (e.g. +/- 5.0 in. W.C.) pressure ranges are offered as well as a wide selection of output signals.

The storage temperature limits of the transducer are -40 to 210°F. The unit can operate between -20 and 185°F and is temperature compensated between 0 and 160°F.

For units with FM approval Please see schematic diagram 71B241.

MOUNTING

The unit should be mounted with #8 or #10 screws using the three mounting feet provided (see Fig. 1). Easy access to the covers may be a consideration when mounting. The transducer can be mounted in any orientation with virtually no effect on calibration. Any minor

zero pressure offsets that are encountered can be adjusted using the zero adjust potentiometer. (See the Calibration section for more details on the zeroing procedure.)

PIPING

The "high" and "low" pressure connection ports are plugged to avoid debris entering the unit. The plugs should be left in place until the tubing and fittings are connected. The two 1/4" NPT pressure connections should be sealed to the transducer housing using teflon tape. The use of a dope-type sealant should not be used since it may cause measurement errors because of outgassing.

WIRING

Voltage Output:

The IXLdp requires 12-36 VDC excitation for operation and will typically draw less than 5mA. The warm-up is typically less than 15 seconds.

Current Output without FM Approval:

The voltage required for a 4-20mA output is dependent upon the loop resistance of the circuit (see Fig. 2). The voltage required is proportional to the load (loop resistance) being driven. Figure 2 shows the minimum supply voltage (V_{min}) required for a given loop resistance. The warm-up time is typically less than 15 seconds.

Current Output with FM Approval:

IXKdps with the option FM approval must be wired using the schematic diagram, 71B241, found on page 3 of the Installation and Maintenance instructions.

The field wiring terminals can be accessed by unscrewing the four cover screws and removing the terminal block access cover (see Fig. 1). Once the cover is removed, make sure no contaminants, (e.g. water, oil, chemicals, grease, dirt, etc.), enter the inside of the enclosure. Feed the cable from the conduit through one of the conduit attachment holes into the terminal area. Connect the conduit to the conduit connection threaded hole on the side of the transducer. Attach the cable wires to the appropriate terminals. The unused connection hole should be closed with a suitable conduit plug.

The transducer should be wired with a multi-conductor shielded cable. Figures 3 and 4 show how the current and voltage output transducers should be wired. The transducer housing should be earth grounded at the ground screw using one of the cable's conductors as shown in Figures 3 and 4.

When the cover is reinstalled, make sure the gasket is seated correctly and all four screws are properly engaged and tightened.

CALIBRATION

The zero adjustment for the transducer can be accessed by unscrewing the four cover screws and removing the zero pot access cover (see Fig. 1). Once the cover is removed, make sure no contaminants, (e.g. water, oil, chemicals, grease, dirt, etc.), enter the enclosure. The zero adjustment range is approximately ±10% of span.

The offset or zero adjustment potentiometer is shown in Figure 1. A hole is provided in the fiber insulation board to access the pot adjustment screw. Before you adjust, make sure a short tube is connected from the "low" port to the "high" port of the transducer. This connection will ensure that both ports are at the same pressure. A clockwise rotation raises the output.

**DO NOT ADJUST THE SPAN
ADJUSTMENT POTENTIOMETER**

Proper span calibration requires a pressure standard three to five times more accurate than the accuracy of the transducer.

When the cover is reinstalled, make sure the gasket is seated properly and all four screws are properly engaged and tightened.

SERVICE

There are no user serviceable parts inside the transducer. Servicing should only be carried out by factory-trained personnel. Service problems encountered in the field might be mechanical or electrical in nature.

Mechanical problems might be attributed to plugged or leaking pressure lines, or faulty pressure sources.

Electrical problems might be attributed to improper wiring, bad connections (e.g. open, shorts, etc.), malfunctioning or improper power supply.

PHYSICAL

Weight: approx. 2 lbs.
NEMA 4X rated enclosure

OPTIONAL FEATURES

Variable Damping

A third potentiometer, placed to the left of the zero potentiometer, allows the user to adjust the unit's response time.

Multiple Range

By relocating the shunt jumper, the user can "re-range" the unit. The unit can be re-ranged by a 1/2, 1/3, 1/4 and a 1/5. For example, a unidirectional 5 in. W.C. unit can become a 2.5 in. W.C., 1.67 in. W.C., 1.25 in. W.C. or a 1.0 in. W.C. range.

MODEL IXLdp TRANSDUCER INSTRUCTION SHEET



Figure 1. General Dimensions (INCHES)

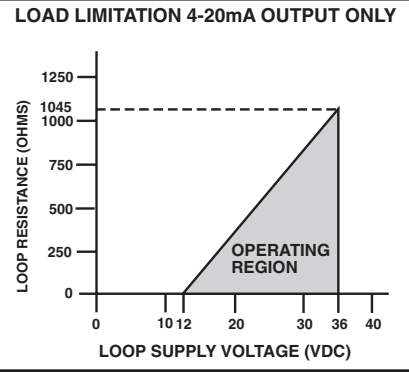
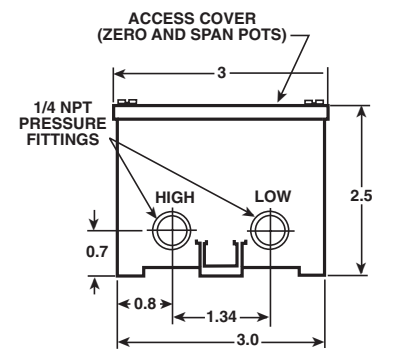
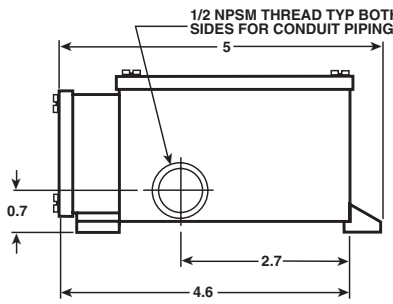
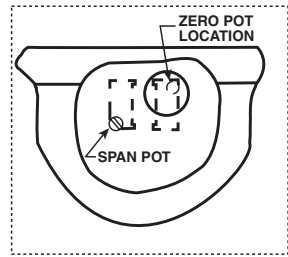
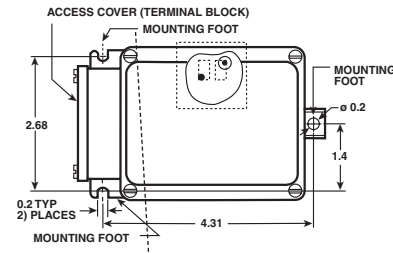


Figure 2. Loop Supply Voltage vs. Loop Resistance

$$V_{min} = 12 + (.022A \times R_L)$$

$$R_L = R_S + R_W$$

R_L = Loop Resistance (ohms)
 R_S = Sense Resistance (ohms)
 R_W = Wire Resistance (ohms)
 *INCLUDES A 10% SAFETY FACTOR

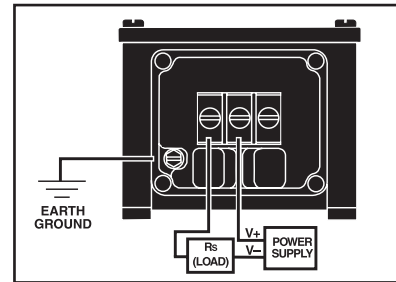


Figure 3. Current (4-20mA) Output Wiring

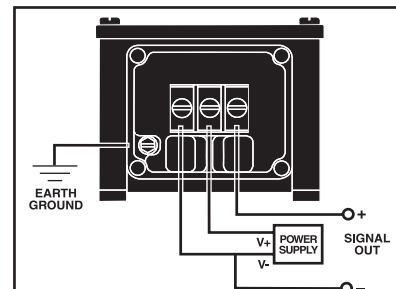


Figure 4. Voltage Output Wiring

Hazardous Area Specific Guidelines:

1. Do not open unit when energized.
2. Do not disconnect equipment unless area is known to be non-hazardous.

FM Installation Notes:
SEE DRAWING 71B241-1

Intrinsically-Safe Entity Barrier Parameters:

Definition of Entity Concept: 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 and applicable factors. In addition, the maximum unprotected capacitance and inductance of the IS apparatus, including the interconnecting wiring, must be equal or less than the capacitance and inductance which can be safely connected to the associated apparatus.

The "entity parameters" were broadened to allow IXLdp users the freedom to apply the IXLdp into a wider array of applications. Additionally, the inclusion of a "nonincendive" rating gives our customers the ability to choose an intrinsically safe barrier from any barrier manufacturer meeting the below ratings.

ASHCROFT INC.
250 EAST MAIN STREET,
STRAFORD, CT 06614

HAZARDOUS (CLASSIFIED) LOCATION

NON-HAZARDOUS (UNCLASSIFIED) LOCATION

CONTROLLED DOCUMENT
No changes permitted without prior approval by:
AGENCY: CSA
FILE/CERT#: N/A
FM
2V5A0AX

IS / I/II/III / 1 / ABCDEFG / T4 @ Ta=40°C max; Entity;
 NI / I/II/III / 2 / ABCDEFG / T4 @ Ta=40°C max; NIFW;
 Entity Parameters / Non-incendive Field Wiring Parameter;
 Vmax=30Vdc, Imax= 100mA, Pmax= W, Ci=50nF, Li=0uH

Item	Qty	Part No	Description	Material	Finish	Dwg. No.	Used On
H	6354		REDRAW IN SWORKS. DELETED SHEET 2.384. ADDED THE FM/CONT. DOC. TABLE				
G	0002246		REDRAWN IN SOLIDWORKS. REVISED FORMAT & VIEW TO DELETE REFERENCE TO DRESSER AND REPLACE WITH A SHCROFT INC.				
Rev	ECO		DESCRIPTION			BY	DATE

IMPORTANT: DIMENSIONS WITHIN OVAL AND NOTES IDENTIFIED WITH " " REQUIRE MANDATORY INSPECTION.

Third angle projection

SCHEMATIC DIAGRAM FOR TYPE IXLdp, ROHS, XFM SERIES DIFFERENTIAL PRESSURE TRANSMITTERS

FORM NO: **71B241**

SCALE: NONE | SHEET 1 OF 1

NOTE:1- MAX SAFE AREA VOLTAGE NOT TO EXCEED 250 VRMS OR VDC.
 NOTE:2- THE NONINCENDIVE FIELD WIRING CONCEPT ALLOWS THE INTERCONNECTION OF NONINCENDIVE FIELD WIRING APPARATUS WITH ASSOCIATED NONINCENDIVE FIELD APPARATUS USING ANY OF THE WIRING METHODS PERMITTED FOR NON-HAZARDOUS (UNCLASSIFIED) LOCATIONS WHEN: Uo OR Voc ≤ Vmax, Io OR Isc ≤ Imax, Ca OR Co + Ccable, Lg OR Lg ≤ Li + Lcable, P ≤ Pf.
 NOTE:3- NO REVISION WITHOUT PRIOR FACTORY MUTUAL APPROVAL.
 NOTE:4- INTRINSIC SAFETY BARRIERS MUST BE FACTORY MUTUAL APPROVED IN THIS CONFIGURATION.
 NOTE:5- ENTITY CONCEPT DEFINITION
 NOTE:6- THE ENTITY CONCEPT ALLOWS INTERCONNECTION OF INTRINSICALLY SAFE APPARATUS WITH ASSOCIATED APPARATUS WHEN THE FOLLOWING IS TRUE:
 Vmax of Li ≥ Voc, Vi or Uo;
 Imax of Pf ≥ P; or Io;
 Pmax of Pf ≥ P; or Io;
 Ca ≥ Ci + Ccable;
 La ≥ Li + Lcable;
 NOTE:7- CONNECT PER ANSI/ISA RP 12.6.
 NOTE:8- NO REVISION 1 INSTALLATIONS, THE CONFIGURATION OF ASSOCIATED APPARATUS SHALL BE FM APPROVED UNDER ENTITY CONCEPT.
 NOTE:9- THIS DRAWING 2 INSTALLATIONS USING NONINCENDIVE FIELD WIRING CONCEPTS, THE ASSOCIATED APPARATUS SHALL BE FM APPROVED UNDER THE ENTITY CONCEPT OR NONINCENDIVE FIELD WIRING CONCEPT.
 NOTE:10- WARNING - DO NOT OPEN WHEN ENERGIZED.
 NOTE:11- WARNING - DO NOT DISCONNECT EQUIPMENT UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.
 NOTE:12- WARNING - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR HAZARDOUS (UNCLASSIFIED) LOCATIONS.