

Barksdale

Installation And Maintenance Instructions

425X SERIES PRESSURE TRANSDUCER

Calibration Reference Conditions

Ambient Temperature:	75°F
Relative Humidity:	40 to 60%
Barometric Pressure:	29.92 in. Hg.


Performance Characteristics

Accuracy (LH&R):	± 0.25%, Best Straight Line (BSL) @ 75°F
Long Term Stability:	Will repeat within ± 0.25% FSO of original calibration curve for 1 year
Proof Pressure:	2 times rated pressure range, or 13,000 psi, whichever is less
Vibration:	15 g's, 10 to 2000 Hz (MIL-STD-202, M204, Cond. B)
Shock:	50 g's, 11 ms (MIL-STD-202, M213, Cond. G)
Wetted Material:	316 and 17- 4 PH stainless steel.

Pressure Cavity Volume: 0.075 inches maximum

CALIBRATION



All models are tested to meet or exceed the published specifications. The calibration and testing were done using instrumentation and standards traceable to the National Institute of Standards and Technology (NIST). Also tested in accordance with MIL-STD-45662A.

50YN UL and c-UL Listed Pressure Transducer
for use in Hazardous Locations
C  **US** Class I, Div. I, Groups A, B, C & D,
LISTED Class II, Groups E, F & G.

CURRENT OUTPUT MODEL 425X

Excitation:	12 to 30 VDC
Output:	4 to 20 mA
Zero Output:	4 mA, ± .2% of FSO @ 75°F
Full Scale Output:	16 mA, ± .4% @ 75°F
Protection:	Reverse polarity protected
Loop Resistance:	See loop resistance chart on back page
Temperature Range:	Compensated: 30° to 160°F (0° to 71°C) Operating: -40° to 185°F (-40° to 85°C)
Temperature Error:	±1.0% of FSO max over compensated range
Weight:	16 oz (500 grams)
Wiring:	Red = +Excite Black = -Excite Drain = Case Ground

Consult Sales Drawing & EN/IEC 6100-4 for appropriate Electromagnetic Compatibility (EMC) requirements.

  II 2 G D
Ex db IIC 91°C (T5) Gb
Ex tb IIIC T100°C Db IP66
-40°C ≤ Tamb ≤ +85°C
DEMKO 04 ATEX 0334369X
IECEX UL 13.0036X

For Canadian installations a secondary conduit seal is not required for all pressure ranges up to 6,000psi, which are single seal compliant to ANSI/ISA-12.27.01-2003. The operational temperature range on the primary process seal of these is -40°C to +71°C. All other installations, including the 7,500psi & 10,000psi pressure range models, require an appropriate conduit connector and/or stopping box certified as Flameproof "db", Dust Ignition Protection "tb" and IP66 rated. System design considerations, installation instructions, and all local and national safety requirements must be observed by qualified personnel and carefully followed in accordance with the regulations for conformity to EN IEC 60079-14 and 60079-17

WARNING! READ BEFORE INSTALLATION

Fluid hammer and surges can destroy any pressure transducer and must always be avoided. A pressure snubber should be installed to eliminate the damaging hammer effects. Fluid hammer occurs when a liquid flow is suddenly stopped, as with quick closing solenoid valves. Surges occur when flow is suddenly begun, as when a pump is turned on at full power or a valve is quickly opened.

Barksdale pressure transducers having a pressure range 2,000 psi and higher have a built in pressure surge protection in the input port. The design is such that an orifice is made an integral part of the pressure port. Designed with the upstream side of the orifice as a sharp corner, it acts as a very effective protection. Other orifice devices can be installed upstream of the pressure transducer in the piping system for extra protection where the system engineer requires it.

Liquid surges are particularly damaging to pressure transducers if the pipe is originally empty. To avoid damaging surges, fluid lines should remain full (if possible), pumps should be brought up to power slowly, and valves opened slowly. To avoid damage from both fluid hammer and surges, a surge chamber should be installed, and a pressure snubber should be installed on every transducer.

Symptoms of fluid hammer and surge's damaging effects:

1. Pressure transducer exhibits an output at zero pressure (large zero offset). If zero offset is less than 10% FS, user can usually re-zero meter, install proper snubber and continue monitoring pressures.
2. Pressure transducer output remains constant regardless of pressure.
3. In severe cases, there will be no output.

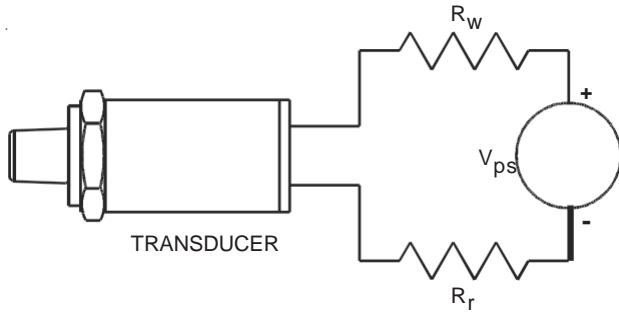
TORQUE REQUIREMENTS:

Apply pipe compound sparingly to male pipe threads only. Avoid pipe strain on Transducer housing by properly supporting and aligning piping. Apply wrench to the hex flats of fittings only, then tighten the connection. Adequate support of piping and proper mounting of the pressure transducer should be made to avoid excessive shock and vibration.

TORQUE TO 125 - 150 pound inches.

CAUTION: For steam service, install a condensate loop (pigtail or steam siphon tube) between the steam line and the pressure transducer.

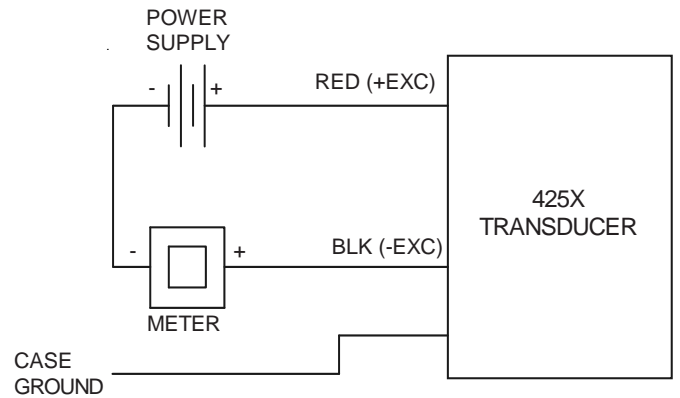
TYPICAL APPLICATION SCHEMATIC FOR 425X TRANSDUCER



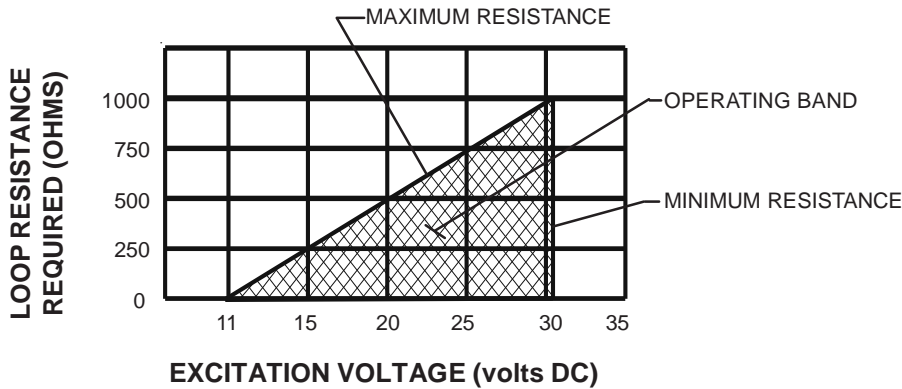
$R_t = R_w + R_r =$ Required total loop resistance
 $R_w =$ External wiring resistance (wire + resistor)
 $R_r =$ Internal resistance of user's receiver
 $V_{ps} =$ System power supply voltage
 $R_t = 50(V_{ps} - 12)$ maximum
 $R_t = 50(V_{ps} - 30)$ minimum
 NOTE: R_t must not exceed 1000 ohms.

WIRING

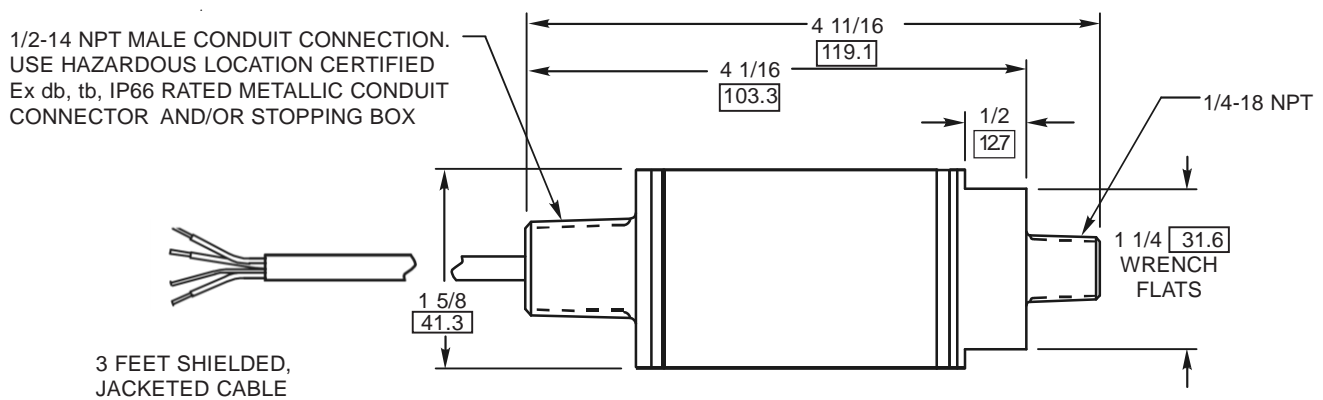
CURRENT OUTPUT



LOOP RESISTANCE CHART



DIMENSIONS



RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to Barksdale, Inc.
 Customer Service Department.
 Call 323-589-6181, FAX: 323-589-3463

BEFORE RETURNING ANY PRODUCT(S) TO BARKSDALE, YOU
 MUST OBTAIN A RETURNED MERCHANDISE AUTHORIZATION
 FROM OUR CUSTOMER SERVICE DEPARTMENT (IN ORDER TO
 AVOID PROCESSING DELAYS).

FOR WARRANTY RETURNS, please have the following information
 available BEFORE contacting Barksdale:

1. P.O. number under which the product was PURCHASED.
2. Model number of the product under warranty.
3. Repair instructions and/or specific problems you are having with the product.
4. Application information.

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