KS SANITARY PRESSURE TRANSDUCER INSTRUCTION SHEET

ASHCROFT®

⚠ 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.

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.

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.

Symptoms of fluid hammer and surge's damaging effects:

- Pressure transducer exhibits an output at zero pressure (large zero offset).
- Pressure transducer output remains constant regardless of pressure
- In severe cases, there will be no output.

FREEZING:

Prohibit freezing of media in pressure port. Unit should be drained (mount in vertical position with electrical termination upward) to prevent possible overpressure damage from frozen media.

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.

Mounting

Although the unit can withstand normal vibration without damage or significant output effects, it is always good practice to mount the transducer where there is minimum vibration. Be sure to use a gasket that does not interfere with the sanitary diaphragm. If the gasket I.D. is smaller than 1.50 inches, an offset due to clamping force will occur.

Power Supply

The supply voltage for the 1-5 and 1-6 Vdc output transducers must be within the range of 10 to 36 Vdc. The maximum supply voltage for a 4-20mA current output transducer is 36 Vdc while the minimum supply voltage is dependent upon the loop resistance of the circuit. The Load Limitation Chart shows the minimum supply voltage (V_{min}) required for a given loop resistance (R_{LOOP}).

Excitation (Ratiometric Output Only)

For proper operation a voltage within the range of 5 to 10 Vdc must be applied between the transducer's supply terminals.

Noise

For minimum noise susceptibility, avoid running the transducer's cable in a conduit that contains high current AC power cables. Where possible avoid running the cable near inductive equipment.

Shield Wiring

Connect the braided shield to the guard terminal on the reading instrument (meter, etc.) if available or to ground or to the power supply negative terminal.

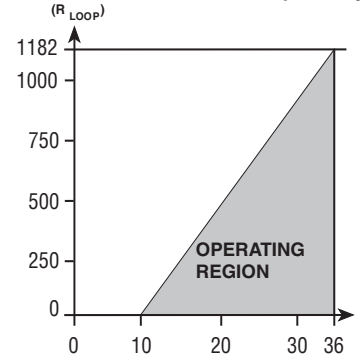
Adjustment Potentiometers

The zero and span pots are accessible through the top of the case. Loosen the four screws and separate the top carefully. The zero pot is marked with a white dot.

Vent Tube

The cable will have a clear Teflon vent tube that's required at pressure below 500 psi to provide atmospheric reference. The open end should be placed in a dry area.

Load Limitations 4-20mA Output Only



$V_{min} = 10V + (.022A \times R_L)$

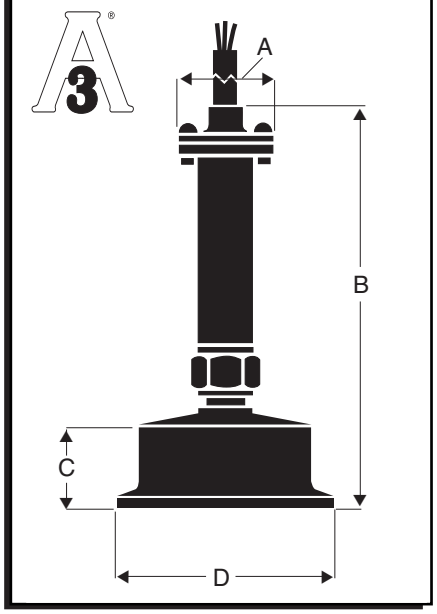
$R_L = R_S + R_W$

R_L = Loop Resistance (ohms)

R_S = Sense Resistance (ohms)

R_W = Wire Resistance (ohms)

Dimensions

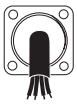


MODEL	A	B	C	D
S15	0.8	4.7	0.9	2.0
S20	0.8	4.7	0.9	2.5

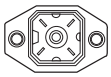
KS Sanitary Transducers – Electrical Conn.

Voltage Output Units 1-5, 1-6 Vdc

Cable Type F2
Red = + Power
White = Common
Green = Output



Cable Type C1
Red = + Power
White = Common
Green = Output



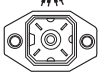
Hirschmann Type
PIN-1 = + Power
PIN-2 = Common
PIN-4 = Output

Bendix 4-Pin, 6-Pin
Pin A = + Power
Pin B = Output
Pin D = Common

Current Output Units 4-20 mA

Cable Type F2
Red = + Power
Black = – Power

Cable Type C1
Red = + Power
Black = – Power

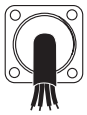


Hirschmann Type
PIN-1 = + Power
PIN-2 = – Power

Bendix 4-Pin, 6-Pin
Pin A = + Power
Pin B = – Power

Ratiometric (mV/V)

Cable Type F2
Red = + Power
White = – Power
Green = + Output
Black = – Output

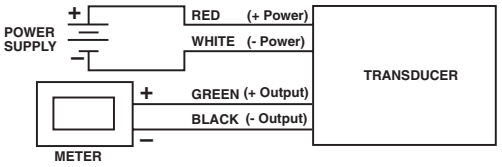


Cable Type C1
Red = + Power
White = – Power
Green = + Output
Black = – Output

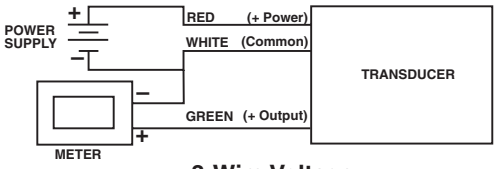
Bendix 4-Pin
Pin A = +Power
Pin B = +Output
Pin C = – Output
Pin D = – Power

Bendix 6-Pin
Pin A = +Power
Pin D = – Power
Pin B = +Output
Pin C = – Output
Pin E = Shunt Cal.
Pin F = Shunt Cal.

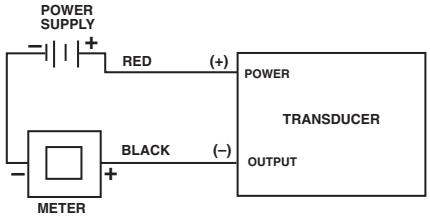
Wiring Diagrams for All Transducers



4-Wire Ratiometric (mV/V)



3-Wire Voltage



4-20 mA