G2 & T2 PRESSURE TRANSMITTER INSTRUCTION SHEET

ASHCROFT®

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.

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:

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

WARNING! 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 Dresser Instrument, Stratford, Connecticut.

WARNING!

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.

CAUTION: 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.

Life Support Policy

Dresser's products are not authorized for use as critical components in life support devices or systems without the express written approval of the General Manager, Stratford Operations of Dresser Instrument, Dresser, Inc. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

DESCRIPTION

The Ashcroft Model G2 and T2 pressure transducers are high performance instruments intended for use in industrial applications where the process media is compatible with the 17-4PH stainless steel sensor material and the 304 SS process connection.

MECHANICAL INSTALLATION

Environmental

The G2 and T2 transducers can be stored and used within the temperature limits of -40°C to 125°C (-40°F to 257°F). Ingress protection ratings of the units are dependent on the electrical termination specified. Refer to the wiring diagrams on the reverse for the IP rating of the unit which is being installed.

Mounting

The G2 and T2 transducers require no special mounting hardware and can be mounted in any orientation with negligible position error. Although the units can withstand considerable vibration without damage or significant output effects, it is always good practice to mount the transducer where there is minimum vibration. For units with NPT type pressure fittings apply sealing tape or an equivalent sealant to the threads before installing. When installing or removing the unit apply a wrench to the hex wrench flats, located above the pressure fitting. **DO NOT** tighten by using a pipe wrench on the housing. A 27mm (1 1/16″) wrench can be used on the wrench flats of the hex. For G2 models with detachable electrical connectors a 6 point deep socket can also be used to install the unit.

Electro-Magnetic Interference

The circuitry of the G2 and T2 transducers is designed to minimize the effect of electromagnetic and radio frequency interference. To minimize susceptibility to noise, avoid running the termination wiring in a conduit which contains high current AC power cables. Where possible avoid running the termination wiring near inductive equipment.

Field Adjustments

The G2 and T2 transducers are precisely calibrated and temperature compensated at the factory to ensure long and stable performance. There are no field accessible adjustments on the G2 or T2 transducers.

ELECTRICAL INSTALLATION

Please refer to the reverse of this page for power supply requirements and for appropriate wiring protocol based on the particular output signal and electrical termination features of the unit being installed

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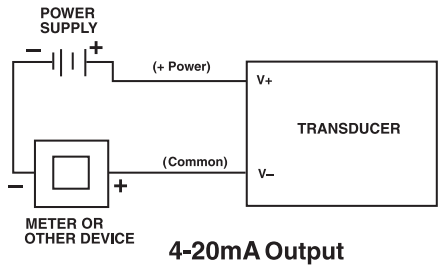
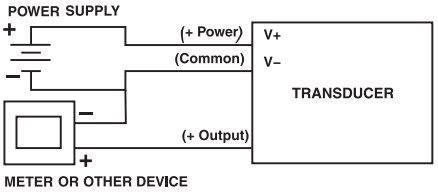
G2 & T2 ELECTRICAL INSTALLATION

Wiring Diagrams



4-20mA Output



3-Wire Voltage Output

Power Supply Requirements

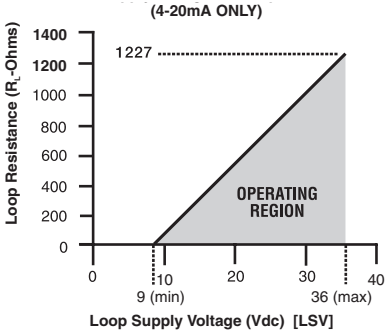
Output Signal	Min	Max
Ratiometric* (0.5V to 4.5V)	4.5Vdc	5.5Vdc
0-5Vdc	9Vdc	36Vdc
1-5Vdc	9Vdc	36Vdc
1-6Vdc	9Vdc	36Vdc
0-10V	14Vdc	36Vdc
4-20mA**	9Vdc	36Vdc

*0.5Vdc-4.5Vdc output is ratiometric to the nominal 5Vdc supply

**For transmitters with 4-20mA output signal, the minimum voltage at the terminals is 9Vdc. However, the minimum supply voltage should be calculated using the adjacent graph and formula.

Power Supply Voltage vs Loop Resistance

(4-20mA ONLY)



To determine minimum loop supply voltage:

$LSV(min)=9(V)+[.022(A)*R_L]$

Where:

LSV= Loop Supply Voltage (Vdc)

$R_L = R_S + R_W$ (ohms)

R_L = Loop Resistance (ohms)

R_S = Sense Resistance (ohms) [Measuring Instrument]

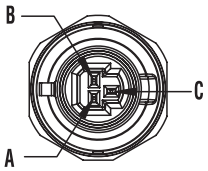
R_W = Wiring Resistance (ohms)

G2 ELECTRICAL TERMINATIONS AND WIRING

3-Pin Delphi (Packard) Metri-Pack 150 series

Mates to Optional Metri-Pack connector 12065287

Pin #	Voltage Outputs	4-20 mA Output*
A	Common	V-
B	V+	V+
C	Output	V-
IP67 Ingress rating		



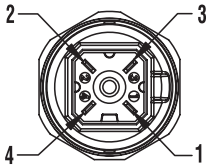
Shielded Cable, PVC Jacket, 24AWG leads

Wire Color	Voltage Output	4-20 mA Output*
Red	V+	V+
Black	Common	V-
White	Output	V-
Bare**	Shield Drain Wire	Shield Drain Wire
IP67 Ingress rating		

Hirschmann G Series

Mates to Optional Hirschmann G4W1F connector, or equal

Pin #	Voltage Output	4-20 mA Output*
1	V+	V+
2	Common	V-
3	Output	V-
4	Case Ground	Case Ground
IP65 Ingress rating		



Flying Leads 18AWG

Wire Color	Voltage Output	4-20 mA Output*
Red	V+	V+
Black	Common	V-
White	Output	V-
IP67 Ingress rating		

* Use either V- termination on G2 with 4-20mA output

T2 ELECTRICAL TERMINATIONS AND WIRING

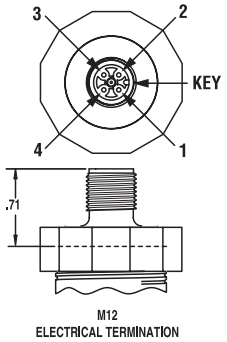
Pin #	Voltage Output	4-20mA Output
1	V+	V+
2	Output	None
3	Case Gnd.	Case Gnd.
4	Common	Common

Pin #	Voltage Output	4-20mA Output
1	V+	V+
2	Common	Common
3	Output	None
GND	Case Gnd.	Case Gnd.

Pin #	Voltage Output	4-20mA Output
A	V+	V+
B	Output	None
C	Case Gnd.	Case Gnd.
D	Common	Common

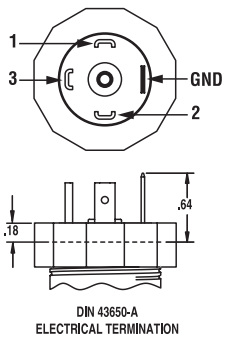
Wire Color	Voltage Output	4-20mA Output
Red	V+	V+
White	Output	None
Black	Common	Common
Green	Case Gnd.	Case Gnd.
Bare**	Drain Wire	Drain Wire

INGRESS RATING OF THE T2 FOR ALL TERMINATION TYPES IS IP65



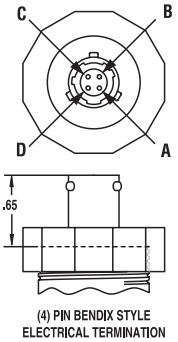
M12
ELECTRICAL TERMINATION

Mates to optional Hirschmann connector
Part 933 172-100 or equal



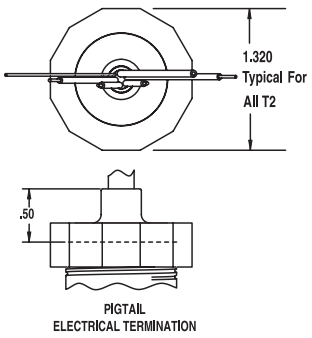
DIN 43650-A
ELECTRICAL TERMINATION

Mates to optional Hirschmann connector
GDM 3099 or equal



(4) PIN BENDIX STYLE
ELECTRICAL TERMINATION

Mates to optional Amphenol Bendix connector
PT06A-8-4-SR or equal



PIGTAIL
ELECTRICAL TERMINATION

** Where shielded wiring is being used; Connect the drain wire to the guard terminal on the read out device or measuring instrument if available. In all other cases connect to the ground of the power supply negative terminal.

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