Model V1 Pressure Transducer

ASHCROFT®

The Ashcroft® V1 high performance pressure transducer featuring monolithic construction and fused silicon gage technology is specifically designed to meet the demanding needs of industrial and hydraulic applications.

- *Compressor/Pump Control*
- *Fuel Management Systems*
- *Machine Tools*
- *Lift Trucks*
- *Hydraulic Stamping Presses*
- *Railroad Braking Systems*
- *Process Monitoring*
- *General Industrial*
- *Numerous Hydraulic Applications*

The Ashcroft® Model V1 premier pressure transducer utilizes fused silicon strain gage technology. This unique technology is based on a principle that results in superior linearity and repeatability performance, high proof and burst pressure tolerance, and wide operating temperature capability.

The pressure sensing element and the process connection are of a one-piece construction, with no weld joints to compromise the strength and reliability of the structure. There are no epoxies or organic materials to contribute to signal instability or drift. This robust unit is virtually unaffected by shock, vibration, mounting position, or pressure pulsation. The wide operating temperature range, all-stainless steel wetted materials, high overpressure protection and highly reliable Ashcroft electronics, makes the V1 transducer a solid choice for many applications.

ISO 9001
REGISTERED FIRM

DRESSER INSTRUMENT
TRANSDUCER OPERATIONS

BULLETIN V1

Model V1 Pressure Transducer/Transmitter

ASHCROFT®

PERFORMANCE CHARACTERISTICS

Accuracy Class (F.S.)	0.5%	1.0%
Nonlinearity		
Terminal Point*	±0.4	±0.7
B.F.S.L.	±0.25	±0.4
Hysteresis	+0.05	+0.1
Nonrepeatability	±0.05	±0.1
Interchangeability	±0.5%	±1.0%

* Including Hysteresis

Standard Ranges (psis):

0/100	0/1500	0/7500
0/200	0/2000	0/10,000
0/500	0/3000	0/15,000
0/750	0/3600	0/20,000
0/1000	0/5000	

Consult factory for nonstandard ranges

Stability: ±0.5% F.S./year

Durability: 10^8 cycles 15/115% F.S. with negligible performance change

ENVIRONMENTAL CHARACTERISTICS

Temperature:

Storage	–65/+275°F	–54/+135°C
Operating	–40/+250°F	–40/+121°C
Compensated		
0.50%	–4/+185°F	–20/+85°C
1.00%	–40/+212°F	–40/+100°C

Thermal Coefficients: (68°F ref.)

	Zero	Span
0.5%	±0.015% F.S./°F	±0.015% F.S./°F
1.0%	±0.02% F.S./°F	±0.02% F.S./°F

Humidity: No performance effects at 95% relative humidity – noncondensing

FUNCTIONAL CHARACTERISTICS

Overpressure: (F.S.)

Unit Range	**Proof**	**Burst**
0/100-0/500	300%	1500%
0/750-0/2000	300%	1000%
0/3000-0/5000	300%	750%
0/7500*	300%	750%
0/10,000*	300%	750%
0/15,000*	275%	750%
0/20,000*	250%	750%

*Burst rating slightly lower for two-piece connections, consult factory

Position Effect: Less than 0.01%F.S.

Vibration: Less than ±0.1% F.S. effect for 50-2000Hz at 5 g's in any axis

ELECTRICAL SPECIFICATIONS

Output Signal:
4-20mA (2 wire)
1-6Vdc (3 wire)
1-5Vdc (3 wire)
0.5-4.5Vdc (3 wire) (Non-ratiometric)

Power Requirements:
10-36 Vdc unregulated
All units are reverse polarity protected

Supply Current: Less than 10mA

RFI Protection: Standard
IEC 801-3 Level 4 at 20 v/m

Response Time: Less than 5ms typical

Circuit to Case Insulation Resistance:
100 MΩ @ 250Vdc

PHYSICAL CHARACTERISTICS

Process Connections:
⅛ NPT male* or female*
¼ NPT male or female
7⁄16-20 male*
*Two-piece process connection.
Consult factory for other process connections.

Enclosure: NEMA 4X, all welded, hermetically sealed

Case: All-welded 300 series stainless steel

Socket/Diaphragm:
Monolithic construction, 17-4 pH SS

Weight: Approx. 6 oz.

OPTIONAL FEATURES

Temperature output and switching option (TTL level) available – consult factory for details

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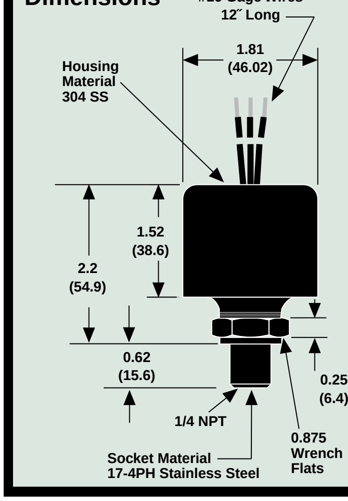
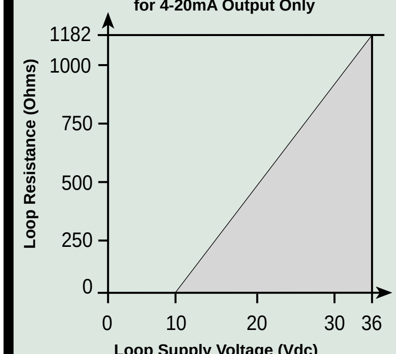
Dimensions



Loop Supply Voltage vs. Loop Resistance for 4-20mA Output Only



V_{min} = 10V + [.022A*(R_L)]
*includes a 10% safety factor
$R_L = R_S + R_W$
R_L = Loop Resistance (ohms)
R_S = Sense Resistance (ohms)
R_W = Wire Resistance (ohms)

DRESSER INSTRUMENT

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How To Order

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MODEL TYPE

ACCURACY CLASS
5 = 0.5%
7 = 1.0%

PRESSURE CONNECTION
F01 = 1/8 NPT-F
F02 = 1/4 NPT-F
M01 = 1/8 NPT-M
M02 = 1/4 NPT-M
MEK = 7/16-20-M
Pressure ranges up to and including 10,000 psi

OUTPUT
15 = 1-5 Vdc
16 = 1-6 Vdc
42 = 4-20mA
45 = 0.5-4.5 Vdc Nonratiometric

ELECTRICAL TERMINATION
12 = 12˝ 16 AWG Wire Leads
F2 = 3 ft. Cable
F4 = 6 ft. Cable
F5 = 9 ft. Cable
F6 = 12 ft. Cable
F7 = 15 ft. Cable
F8 = 20 ft. Cable
P1 = Custom Cable Length (specify length)

PRESSURE RANGES
(100) 100 psi
(10,000) 10,000 psi

X VARIATIONS
See Drawing 64A234