ASHCROFT®

Type V1 Fused Silicon Pressure Transducer/ Transmitter

- ***1% and 0.5% accuracy***
- ***Superior linearity and repeatability***
- ***Stainless steel all-welded/ NEMA 4X enclosure***
- ***RFI/EMI Protected***
- ***High-level outputs***
- ***Extremely high proof-and-burst pressure capability***
- ***Wide operating temperature range of –40° to +250°F***
- ***One-piece pressure diaphragm/ connection construction***
- ***Temperature and switch outputs available***

The new Ashcroft® 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 make the V Series transducer a solid choice for many applications.

PERFORMANCE CHARACTERISTICS

Standard Ranges (psi)

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

Consult factory for nonstandard and higher ranges.

Accuracy Class (F.S.):	1%	0.5%
Nonlinearity		
Terminal point*	±0.7	±0.4
Best straight line (BFSL)	±0.4	±0.25
Hysteresis	±0.1	±0.05
Nonrepeatability	±0.1	±0.05
Interchangeability	±1%	±0.5%

*Including hysteresis

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

Stability: ±0.50%, F.S./yr.

ENVIRONMENTAL CHARACTERISTICS

Temperature Limits:

Storage:	–65 to +275°F	–54 to +135°C
Operating:	–40 to +250°F	–40 to +121°C
Compensated Range:		
1%	–40/+212°F	–40/+100°C
0.5%	–4/+185°F	–20/+85°C

Thermal Coefficients: (68°F ref.) %F.S./°F

	1%	0.5%
ZERO	±0.20%	±0.015%
SPAN	±0.20%	±0.015%

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

FUNCTIONAL CHARACTERISTICS

Overpressure Limits (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*-0/10,000*	300%	750%
0/15,000*	275%	750%
0/20,000*	250%	750%

*Burst rating slightly lower for two-piece connections.

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

Position Effect: Less than 0.01% F.S.

ELECTRICAL SPECIFICATIONS

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

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

Response Time: Less than 5 ms typical

Supply Current: <10mA

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

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

Circuit to Case Insulation Resistance:
100 MΩ @ 250 Vdc

PHYSICAL CHARACTERISTICS

Enclosure: NEMA 4X, all welded

Weight: Approx. 6 oz

MATERIALS:

Case: All-welded, 300 series stainless steel

Socket/Diaphragm:
Monolithic construction, 17-4 PH stainless steel
Two-piece construction 300 series stainless steel and 17-4PH stainless steel

Standard Process Connections:
$^1/_8$ NPT male or female*
$^1/_4$ NPT male or female
$^7/_{16}$-20 male
*Two-piece process connection. Consult factory for other process connections

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TO ORDER THIS TYPE V1 TRANSDUCER/TRANSMITTER:

Select: V 1 ☐ ☐☐☐ ☐☐ ☐☐ ☐☐☐☐☐

1. Type (V1)

2. Accuracy/TC
(7) 1.0%, ±0.20%/°F **(5)** 0.50%, ±0.015%/°F

3. Pressure Connection
(M01) $^1/_8$ NPT-M **(F01)** $^1/_8$ NPT-F **(M02)** $^1/_4$ NPT-M
(F02) $^1/_4$ NPT-F **(MEK)** $^7/_{16}$-20M

4. Output Signal
(45) 0.5/4.5 Vdc **(42)** 4-20mA **(15)** 1/5 Vdc **(16)** 1/6 Vdc

5. Electrical Termination
(12) 12″ AWG wire leads **(F2)** 36″ cable, shielded, PVC sheathing **(C1)** $^1/_2$ NPT-M conduit w/36″ cable
(B4) Bendix 4-pin # PT02A-8-4P **(B6)** Bendix 6-pin # PT02A-10-6P **(HM)** Hirschman miniature

6. Pressure Ranges
(100) 100 psi **(20,000)** 20,000 psi

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