AccuSense™ Model ASL

High Accuracy Low Differential Pressure Transducer

Setra's Model ASL is the highest accuracy transducer for measuring low differential pressure in the AccuSense™ product line. Its ±0.07% FS accuracy is calibrated using the "End Point Method" which improves linearity when compared to competitive transducers, which use the "Best Fit Straight Line Method" of calibration. The ASL's calibration is tamper proof by utilizing a SecureCal™ calibration key which eliminates inadvertent adjustments, while allowing authorized users to adjust the sensor's calibration coefficients for a true sensor calibration. The design of the ASL offers class leading overpressure capability and multiple pressure and electrical fittings to accommodate a wide range of applications.

High Accuracy For Demanding Applications

The Model ASL differential pressure transducer uses a resonant variable capacitance sensor. This sensor is linearized and thermally compensated through a computerized curve fitting algorithm that optimizes the sensor's linearity for maximum accuracy in demanding applications.

Robust Design & Construction for Reliable Service

The Model ASL is designed and built to withstand demanding applications. The laser welded sensor construction, designed with positive and negative overpressure stops, enables the sensor to resist overpressure conditions up to100X in all pressure ranges.

Secure and Fast Calibration & Service

The Model ASL is ideal for the Test & Measurement industry because it adheres to the stringent accuracy requirements. In order to make adjustments, the ASL utilizes the SecureCal™ calibration key, providing secure calibration. The SecureCal™ provides the ability to calibrate zero and span coefficients through a simple push button and rotary adjustment dial. The SecureCal™ also offers the option to restore factory defaults for fail-safe sensor calibration.

- **Reliable Testing Data**
- **Minimize Downtime**
- **Reduce Calibration Time**

Model ASL Features:

- High Accuracy: ±0.07% FS
- End Point Method Linearity
- High Overpressure Capability: >100X Range
- Low Thermal Error
- Excellent Stability: <0.15% FS/YR
- Calibrate Using SecureCal™ Calibration Key
- High Line Pressure Capability
- Unidirectional & Bidirectional Models Available

Applications:

- Filter Pressure
- Leak Detection Systems
- Exhaust Pressure
- Medical Instrumentation
- Part Integrity Testing
- Test Stands
- Wind Tunnels
- Industrial High Accuracy

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setra®

ORDERING INFORMATION

A S L 1 – ☐ ☐ ☐ ☐ ☐ – ☐ ☐ – ☐ – ☐ – ☐ – ☐

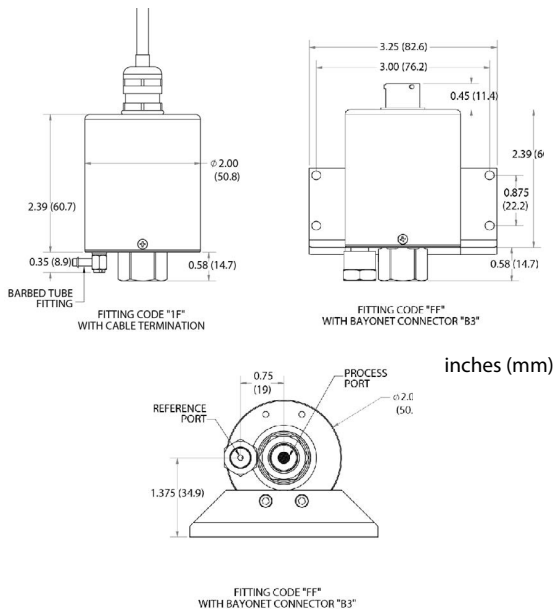| Model	Pressure Ranges[1]							Process/Reference Port		Output		Elec. Termination		Accuracy		Option	
ASL1 = Model ASL	Differential				Bidirectional/Differential			1F	1/8" NPT Female/Barb	2B	0 to 5 VDC	03	3 ft, 1m Std Cable	A	<±0.07% FS RSS	00	None, Standard
	002WD	0 to 2"W.C.	001PD	0 to 1 PSID	001WB	±1"W.C.	005MB	±5 mBar	FF	1/8" NPT Female/ 1/8" NPT Female	2C	0 to 10 VDC	B3	Std 6-Pin Male Bayonet Connect, Std Wiring			01	High Overpressure (See table below)
	2R5WD	0 to 2.5"W.C.	005MD	0 to 5 mBar	002WB	±2"W.C.	010MB	±10 mBar	1M	1/8"NPT Male/Barb	11	4 to 20 mA						
	005WD	0 to 5"W.C.	010MD	0 to 10 mBar	005WB	±5"W.C.	025MB	±25 mBar	J7	7/16-20 SAE Male/Barb								
	010WD	0 to 10"W.C.	025MD	0 to 25 mBar	015WB	±15"W.C.	050MB	±50 mBar										
	030WD	0 to 30"W.C.	050MD	0 to 50 mBar	001PB	±1 PSID												
	040WD	0 to 40"W.C.	100MD	0 to 100 mBar														

[1]Other ranges and engineering units are available (ex: Pa, kPa)

Example: Part No. ASL1001WB1F2B03A00= ASL Transducer, ±1"W.C. Pressure Range, 1/8" NPT Female Reference Port, 0 to 5 VDC Output, 3 Foot Cable, <±0.07% FS RSS Accuracy, No Option

ACCESSORIES:
See data sheet for more information on Setra's SecureCal™ Calibration Key.
6-Pin Bayonet Connector Assembly w/ Strain Relief. Order Separately: Part No. 600751

DIMENSIONS

FITTING CODE "1F" WITH CABLE TERMINATION

FITTING CODE "FF" WITH BAYONET CONNECTOR "B3"

inches (mm)

FITTING CODE "FF" WITH BAYONET CONNECTOR "B3"

OVERPRESSURE

Pressure Ranges	Burst Pressure[1]	Standard Proof Pressure[2] Option Code "00"	High Proof Pressure[2] Option Code "01"
0 to 2.5"W.C., 5 mBar	200 PSI, 15 Bar	±10 PSI, ±700 mBar	±75 PSI, ±5 Bar
0 to 5"W.C., 10 mBar	300 PSI, 20 Bar	±20 PSI, ±1 Bar	±100 PSI, ±7 Bar
0 to 10"W.C., 25 mBar	300 PSI, 20 Bar	±30 PSI, ±2 Bar	±150 PSI, ±10 Bar
0 to 30"W.C., 1 PSI, 100 mBar	300 PSI, 20 Bar	±50 PSI, ±4 Bar	±150 PSI, ±10 Bar

[1]Burst Pressure: The maximum pressure that may be applied to the positive pressure port without rupturing the diaphragm or reference pressure containment.
[2]Proof Pressure: The maximum recoverable pressure that may be applied without charging performance beyond specification: ±0.5% Zero Shift, Typical.

GENERAL SPECIFICATIONS

Performance Data

Internal Volumes	Positive Port 0.03 cu. in. Reference Port 0.75 cu. in.
Operable Line Pressure	Vacuum to 250 PSI max
Maximum Volume Change at FS	0.002 cu. in.
Long-term Stability	<0.15% FS/Year, Typical
Response time to Pressure Input (From 100% to 10% of pressure range)	<10 ms for Voltage Output <100 ms for Current Output
Line Pressure Effect	2% FS/100 PSIG
Zero Offset Positive Effect	<0.1%/G
Unit factory calibrated in vertical position (pressure port download)	

Physical Description

Electrical Terminations	6-Conductor Cable, Pigtail 6-Pin Bayonet Connector
Dimensions	See reverse side
Weight	13 oz. (360 g)
Moisture/Splash Resistance	NEMA 4X (IP65)
Pressure Fittings	See Ordering Information
Case Materials	Stainless Steel

Pressure Media

Clean, dry gases compatible with 300 series stainless steel and 17-4 pH stainless steel.

Approvals

CE, RoHS

Environmental Data

Temperature Calibrated °F (°C)	-4 to +140 (-20 to +60)
Operating Temp.[1] °F (°C)	-40 to +124 (-40 to +85)
Storage Temp. °F (°C)	-40 to +185 (-40 to +85)
Higher or lower limits available (consult factory)	

Electrical Data

Excitation Range	9 to 30VDC (5VDC & 4-20 mA output) 15 to 30VDC (10 VDC output)
Current Consumption	<23 mA (5VDC & 10VDC Versions)
Miswiring	Reverse Excitation Protection
Warm-up, Environmental	Within ±0.02% FS after 15 min warm-up time
Signal Output Ranges	0 to 5 VDC, 0 to 10 VDC (4-wire), 4-20mA (2-wire)

Accuracy Data

	Accuracy Code A
Accuracy	<±0.07% FS RSS[3]
Non-Linearity, End point	<±0.03% FS Typical
Hysteresis	<±0.03% FS Typical
Non-repeatability	<±0.02% FS Typical
Span Setting Tol.	<±0.1% FS
Zero Offset Tol.	<±0.1% FS Typical
Thermal Total Error Band	<±0.25% FS Typical <±0.5% max (-20°C to 60°C)

[1]RSS: Root Sum Square of endpoint linearity, Hysteresis and Non-repeatability at constant temperature.

US Patent # 6,789,429