Model AXD

Industrial Pressure Transducer

Features

- High accuracy sensor
- High overpressure ratings
- IP67 rated design
- Non-oil filled design
- Wide temperature range -40°C to 125°C
- Long-term stability: <0.5%/Year
- Exceptional EMI/RFI
- Small footprint 1" diameter
- Rugged design withstands high shock & vibration
- NIST traceable calibration
- Wide operating voltage 9 VDC to 30 VDC
- Reverse Excitation Protection
- CE & RoHS compliant
- 17-4 or 316L stainless steel

Applications

- Fuel cell OEMs
- Industrial OEM equipment
- CNG/LNG applications
- Hydraulic systems
- Compressor control
- HVAC/R equipment

1 YEAR WARRANTY USA Made RoHS CE

The Accusense Model AXD pressure sensor is designed for Industrial and OEM customers who require high performance, reliability and versatility at an affordable price. It offers exceptional ±0.25% FS accuracy for pressure ranges as low as 1 PSI up to 10,000 PSI to meet a multitude of demanding applications. The Model AXD features all stainless steel wetted materials 17-4PHSS when ordered as "AXD1" or 316LSS when ordered as "AXDH". AXD also offers many pressure and electrical connections to satisfy challenging installation requirements. The AXD features an optional patented overpressure stop to protect the transducer against unexpected spikes or in high pulsation applications.

Trusted reliability

The Model AXD is designed and built to withstand demanding applications. The industrial non-oil filled construction, with optional positive overpressure stop, enables sensor to recover from overpressure conditions up to 10X rated range with burst pressure ratings up to 100x. The AXD's capacitive technology offers worry free operation vs. oil-filled designs, which have a high cost of failure if oil leaks into the application and contaminates costly equipment.

High performance at an affordable price

The Model AXD's capacitive sensor design offers test & measurement grade accuracy at a low price point. The sensor comes standard with ±0.25% FS accuracy in ranges from 1 PSI to 10,000 PSI, exceeding most competitive products. The unit offers expanded performance through thermal compensation, bringing the TEB to 1.5% FS.

Flexibility for many applications

The Model AXD offers many pressure and electrical fittings, covering many installation configurations. This minimizes additional engineering time to accommodate the sensor, allowing for earlier project completion and quicker time to market.

Specifications

Performance data

Accuracy RSS[1]	±0.25% FS
Response time	5 millisecond
Long term stability	±0.5% FS/yr

Thermal effects

	AXD1	AXDH
Compensated Range	-4 to +176°F (-20 to +80°C)	-4 to +176°F (-20 to +80°C)
Zero Shift (code "F")	±2% FS/100°F (± 1.8% FS/50°C)	±3%/100°F(±2.7%FS/ 50°C)
Span Shift (Range >50 PSI)	±1% FS/100°F (±1.4% FS/50°C)	±2%FS/100°F (±1.8%FS/ 50°C)
(Range ≤50 PSI)	±1.5% FS/100°F (±2% FS/50°C)	±2%FS/100°F (±1.8%FS/ 50°C)

Physical description

Pressure fittings		See ordering information
Vent (gauge units)		Through cable or termination
Electrical connection		See ordering information
Environmental rating		
Elec. Termination code	P1 (gauge) P1 (sealed)	IP66/NEMA4X "xx" cable, M4, A1 IP67/NEMA6
Case material		304 stainless steel
Wetted materials	AXD 1 AXD H	17-4PHSS, 17-7PHSS 316L stainless steel
Weight (approx.)		5 oz

Pressure media

Gases or liquids compatible with 17-4 PH[2] or 316L stainless steel.

[1]RSS of Non-Linearity (BFSL), Non-Repeatability and Hysteresis at 70°F
[2]Hydrogen not recommended for use with 17-4 PH stainless steel. Use 316L SS version.
[3]High temperature limit of the cable is 185°F (85°C)
[4]Shift in output reading <0.05 psi/g typical; pressure port axis only
[5]Mil-Std. 202, Method 213B, Cond. C
[6]Mil-Std. 202, Method 204, Cond. C

Environmental data

Operating[3] temperature	-40 to +257°F (-40 to +125°C)
Storage temperature	-40 to +257°F (-40 to +125°C)
Acceleration	10g Maximum[4]
Shock[5]	200g Operating
Vibration[6]	20g 50-2000 Hz

Electrical data (voltage)

Excitation	Code "24" Code "45" Code "2E"	9 to 30 VDC (5VDC) 4.8-8.1 VDC 13.5-30 VDC Reverse excitation protected
Power consumption		<0.15 watts (approx. 5mA @24VDC)
Output[7]		See ordering information[8]
Output impedance		100 ohms
Circuit		3-wire (Exc, Out, Com)

Electrical data (current)

Circuit	2-Wire
Output[9]	4 to 20 mA[10]
External load	0 to 800 ohms
Min. supply voltage (VDC)	9 +0.02 x (Resistance of receiver plus line)
Max. supply voltage (VDC)	30 + 0.004 x (Resistance of receiver plus line)

Certifications

CE, EMC Directive (2014/30/EU), EN/IEC 61326-1,
& EN/IEC 61326-2-3:2012 Industrial

[7]Calibrated into a 50K ohm load, operable into a 5000 ohm load or greater
[8]Zero output factory set to w/in ±25mV. Span (FS) output factory set to w/in ±50mV.
[9]Calibrated at factory with a 24VDC loop supply voltage and 250ohm load.
[10]Zero output factory set to w/in ±0.08mA. Span (FS) output factory set to w/in ±0.16mA.

Specifications subject to change without notice.

Overpressure capability

	Standard				High overpressure option			
	AXD1 (17-4SS)		AXDH (316LSS)		AXD1 (17-4SS)		AXDH (316LSS)	
Full Scale Range (PSI)	**Proof Pressure (PSI)**	**Burst Pressure (PSI)**	**Proof Pressure (PSI)**	**Burst Pressure (PSI)**	**High Proof Pressure (PSI)**	**High Burst Pressure (PSI)**	**High Proof Pressure (PSI)**	**High Burst Pressure (PSI)**
1	2	250	N/A	N/A	N/A	N/A	N/A	N/A
2	4	250	N/A	N/A	N/A	N/A	N/A	N/A
5	10	250	N/A	N/A	N/A	N/A	N/A	N/A
10	20	500	N/A	N/A	N/A	N/A	N/A	N/A
15	30	500	N/A	N/A	N/A	N/A	N/A	N/A
25	50	500	40	300	300	3,000	100	2500
50	100	750	75	500	800	5,000	150	4000
100	200	1,000	150	750	1,000	5,000	300	4000
250	500	2,000	350	1500	2,000	8,000	750	4000
500	1,000	3,000	700	2000	2,500	10,000	1000	4000
1,000	2,000	5,000	1300	3000	4,000	10,000	2000	5000
3,000	4,500	7,500	N/A	N/A	N/A	N/A	N/A	N/A
5,000	7,500	10,000	N/A	N/A	N/A	N/A	N/A	N/A
10,000	12,500	20,000	N/A	N/A	N/A	N/A	N/A	N/A
-14.7 (Vacuum)	15	500	10	N/A	N/A	N/A	N/A	N/A

Note: Setra quality standards are based on ANSI-Z540-1. The calibration of this product is NIST traceable.

Ordering information

Example part number: AXDH025PGJ711P1FNN;
Model AXD with 316L Stainless Steel Wetted Materials, 0 to 25 PSIG, Gauge pressure, 7/16" SAE Ext. fitting, 4 to 20 mA output, 3 Pin Packard, ±0.25% FS Accuracy, No Options.

A	X	D															
[1]			[2]					[3]	[4]		[5]		[6]		[7]	[8]	

[1]

Model	
AXD1	17-4 SS
AXDH	316L SS

[2]

Pressure range					
Range code	PSI	Range code	BAR	Range code	mBar
001P[4]	0 to 1	***001B***[4]	1	***040M***[4]	40
002P[4]	0 to 2	***002B***	2	***070M***[4]	70
005P[4]	0 to 5	***003B***	3	***150M***[4]	150
010P[4]	0 to 10	***007B***	7	***700M***[4]	700
015P[4]	0 to 15	***010B***	10		
025P	0 to 25	***020B***	20		
050P	0 to 50	***035B***	35		
100P	0 to 100	***070B***	70		
250P	0 to 250	***140B***[4]	140		
500P	0 to 500	***250B***[4]	250		
10CP	0 to 1,000	***400B***[4]	400		
30CP[4]	0 to 3,000	***700B***[4]	700		
50CP[4]	0 to 5,000				
10KP[4]	0 to 10,000				
Z01P[4]	0 to -14.7				

[3]

Pressure type	
G	Gauge
C	Compound
S	Sealed gauge
V	Vacuum gauge

[4]

Pressure fitting[1,3]	
2M	1/4" NPT Ext.
1M	1/8" NPT Ext.
J7	7/16" SAE Ext.
L4[4]	1/4" Int. SAE w/ Schrader

[5]

Output[5]	
11	4 to 20 mA
24	0.5 - 5.5 VDC
2E	0.5 to 10.5 VDC (13.5 VDC Exc. Min)
45	0.5 to 4.5 VDC (5 VDC Exc.)

[6]

Elec. termination	
02[6]	2 ft/0.5m Cable
06[6]	6 ft/2m Cable
12[6]	12 ft/4m Cable
25[6]	25 ft/8m Cable
P1	3 Pin Packard
M4	M12, 4 Pin
A1	1/2" NPT Conduit

[7]

Accuracy	
F	±0.25% FS

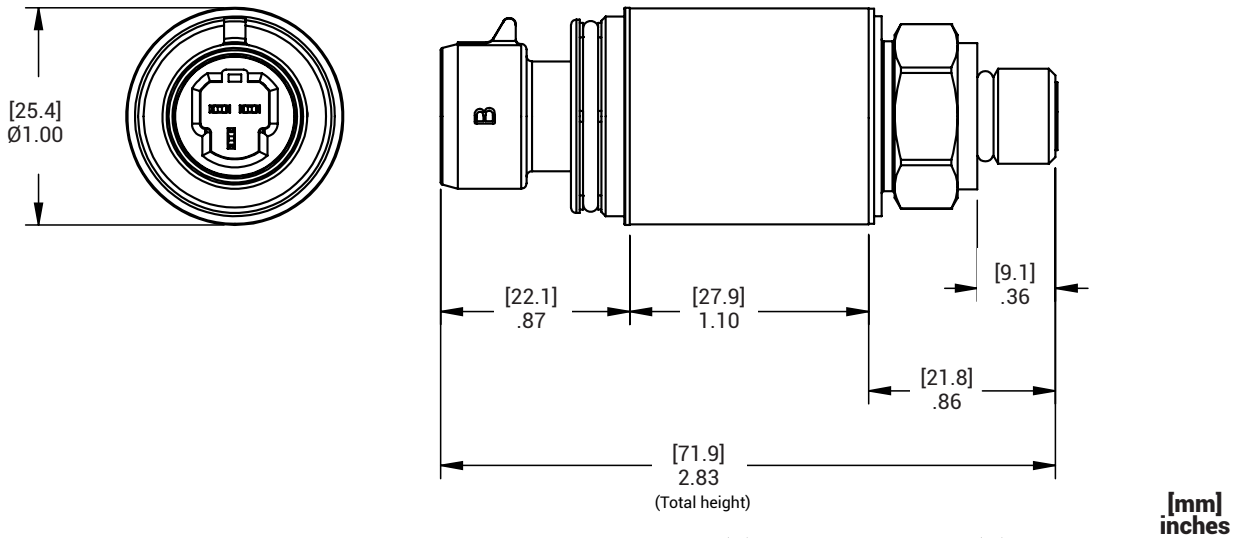
[8]

Options[2]	
NN	None
C	11 point cal cert
H[7]	High overpressure option
R[8]	Pressure restrictor
Y	Clean for oxygen

[1]Units higher than 5k PSI are only available with a 1/4" NPT male fitting
[2]Both boxes must filled in alphabetical order:
- If No options: N + N
- If 1 option: Option Code + N
- If 2 options: Option Code + Option Code

[3]Consult Setra for other pressure fittings
[4]Not available with AXDH (316L SS)
[5]Consult Setra for other available outputs
[6]High temperature limit of the cable is 185°F (85°C)
[7]High overpressure option available for ranges 25 to 1000 psi
[8]Pressure restrictor option available on pressure fitting codes "2M", "1M" only

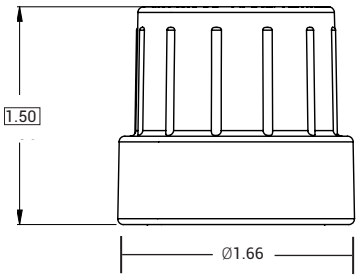
Dimension example:

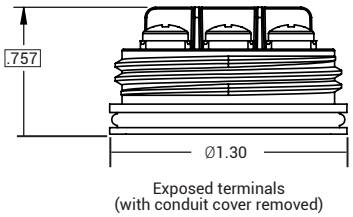


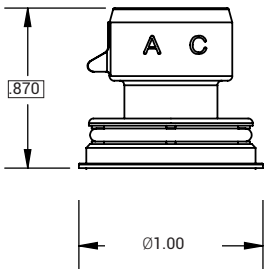
[mm]
inches

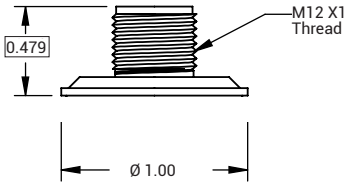
*Shown with 7/16" SAE Ext. fitting (J7) and 3 Pin Packard termination (P1).

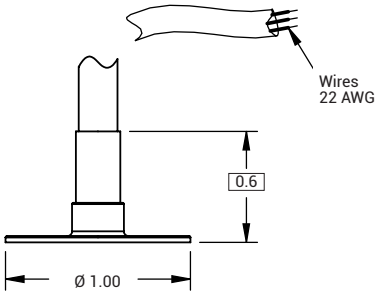
Electrical termination dimensions











Elec. Term: Code:

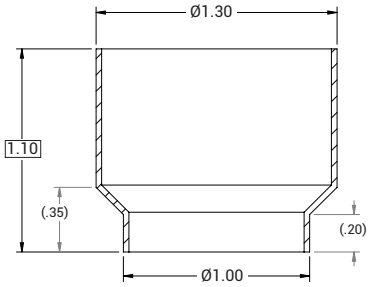
1/2" Male conduit w/ terminal strip ("A1")

Packard connector, 3 pin ("P1")

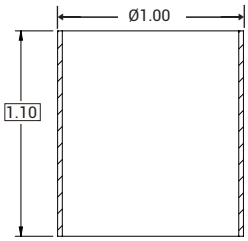
M12 connector ("M4")

Cable xx Ft. ("xx") (e.g."02")

Housing dimensions

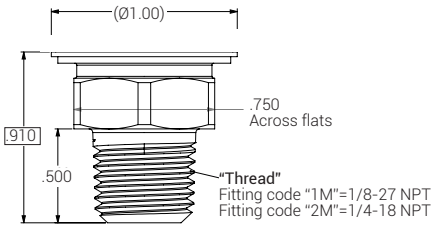


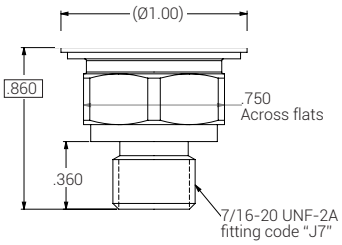
Funnel housing
(only "A1" electrical termination)

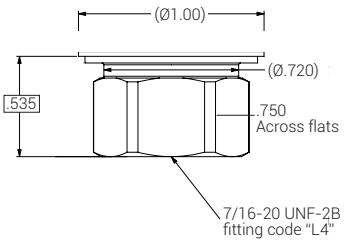


Cylinder housing

Fitting connection dimensions







Fitting:
Code:
Torque:

Male NPT ("1M,2M") 2-3 TFFT*

7/16-20 SAE, Male ("J7") 13.3 to 14.75 lb-ft (18-20 Nm)

1/4 SAE, Female, 45 deg. Schrader ("L4") 13.3 to 14.75 lb-ft (18-20 Nm)

Total height= Electrical termination height + Housing height + Fitting connection height

(dimensions boxed above)

**Turns from finger tight*