PRECISION SENSORS

ECHOLOCITY®

Velocity Sensor

Precision Sensors is
ISO 9001:2015 and AS9100
Certified by NQA

nqa ISO 9001 QUALITY MANAGEMENT

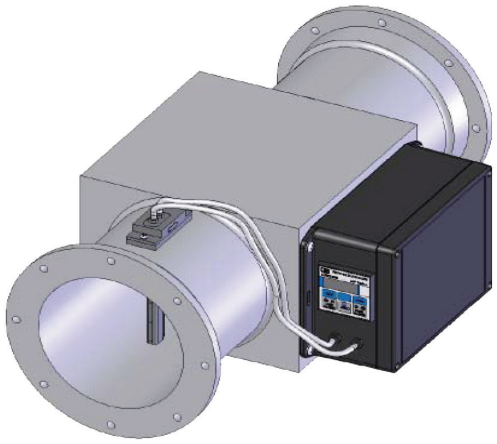
nqa AS9100 AEROSPACE & DEFENSE

RoHS compliant

ECHOLOCITY-B 01

Overview

Precision Sensors' Echolocity Velocity Sensor monitors exhaust velocities in Semi Fabs and processes allowing users to optimize flow rates to reduce operating costs, increase production yields and improve safety. Precision Sensors is now offering our proven Echoline® Low Differential Pressure sensor with a Pitot Tube Assembly for air velocity measurements. When installed into duct work, the pitot tube allows the Echoline sensor to measure static and pitot pressures within the duct. Velocity control is achieved using the pressure measurements and supplied calibration curve.



Example installation of Echoline LDP sensnor and pitot tube assembly in an exhaust duct. Installations will vary.

KEY FEATURES

- LED display of process and alarm state
- Front panel zero adjustment
- Independently-set low and high set points
- Conforms to S2 and CE
- Complies with the requirements of UL 991 and UL 508
- Option for latching or non-latching relay output with adjustable time delay
- Self-diagnostic echo circuit
- Adjustable time delay to eliminate false trips and unwanted system shut down
- Custom pitot tube options
- Velocity calibration data sheet supplied

BENEFITS

- **Reduction of Operating Expenses:** Velocity measurements allow for real time monitoring of exhaust gases. The real time data offers end users the ability to continuously adjust exhaust system velocities to reduce the cost associated with replenishing exhausted gases with conditioned air.
- **Velocity readings allow for improved system tuning**, potentially improving yield by minimizing contamination associated with condensation within duct work due to insufficient air flow.
- **Improved Safety:** Velocity measurement provides a safer more direct measurement to ensure potentially dangerous gases are exhausted from critical areas.

How to Order

Create a part description by using the system below. A factory part number will be assigned upon completion of a drawing based on the part description. When ordering, use the factory part number

The part described below is LDP 0.2WC sensor with dual barbed tube fittings, 0-10 VD ouput, 9 pin D-sub electrical connector and 4" PVC pitot tube assembly

	Type	Setting Range	Pressure Connection	Standard Features	Options	Pitot Tube Length	Pitot Tube Material	Pitot Tube Mounting Flange
EXAMPLE	VEL	0.2 WC	D	V	M05	4	PVC	NW25

Type

VEL	Echoline Low Differential Pressure

Setting Range

0.2"WC
50P
1.0"WC

Pressure Connection

D	Dual barbed tube fittings for static and impact pressure connection

Standard Features

V	0-10 VDC Output

Options

M01	Non-Latching Alarm
M05	D-Sub 9 Pin
M07	No Low Alarm
M08	No High Alarm

Pitot Tube Length

Specify length in inches: 4, 6, other

Pitot Tube Material

SS	300 series stainless steel
PVC	PVC
PFA/PTFE	PFA/PTFE

Pitot Tube Mounting Flange

RT	Rectangular
RD	Round
NW	NW25
Other	Specify Size/Configuration

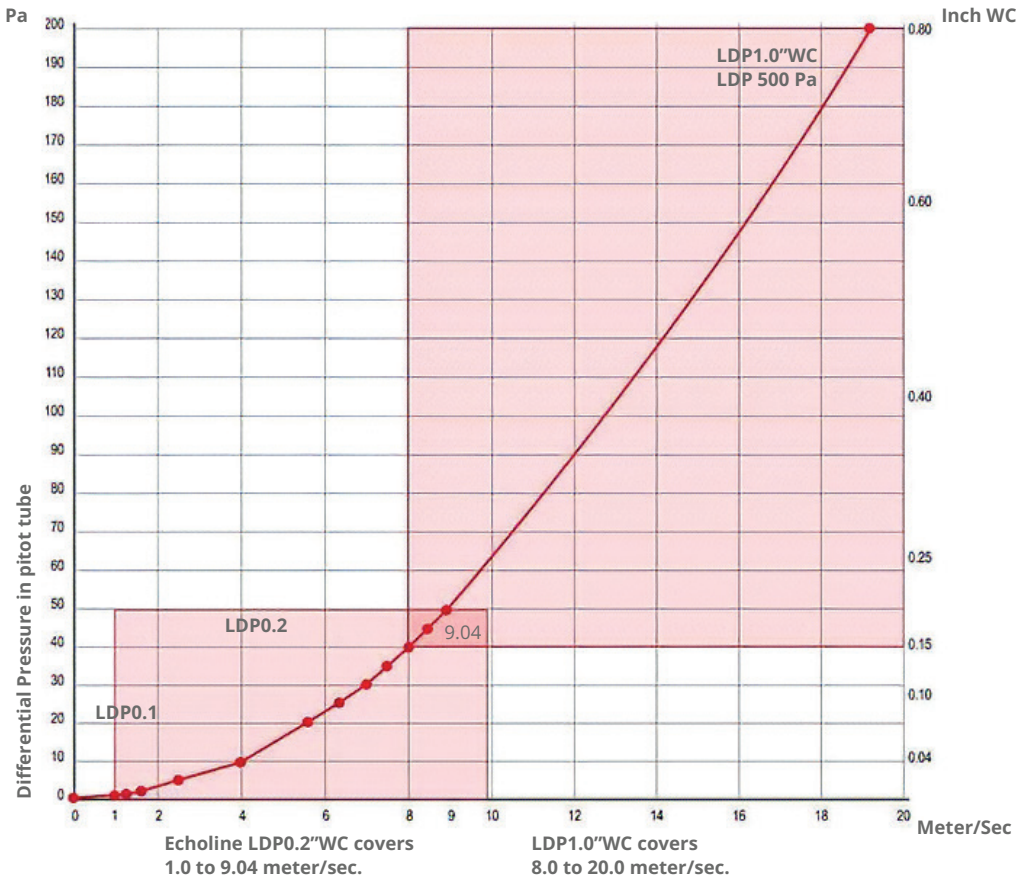
Consult Precision Sensors for custom configurations.

Specifications

Media	Clean dry air, Inert gas
Type	Field adjustable
Range	0 to 0.2”, 0 to 1”WC
Proof Pressure	± 80” WC
Burst Pressure	20 psig
Switching Response	1. 10. 20, or 30 sec.
Switching Output	1A @ 30 VDC
Input Power	16 to 24 VDC
Analog Output Option	0-10 VDC
Pitot Tube Length	Up to 6” in length, consult factory for custom configurations

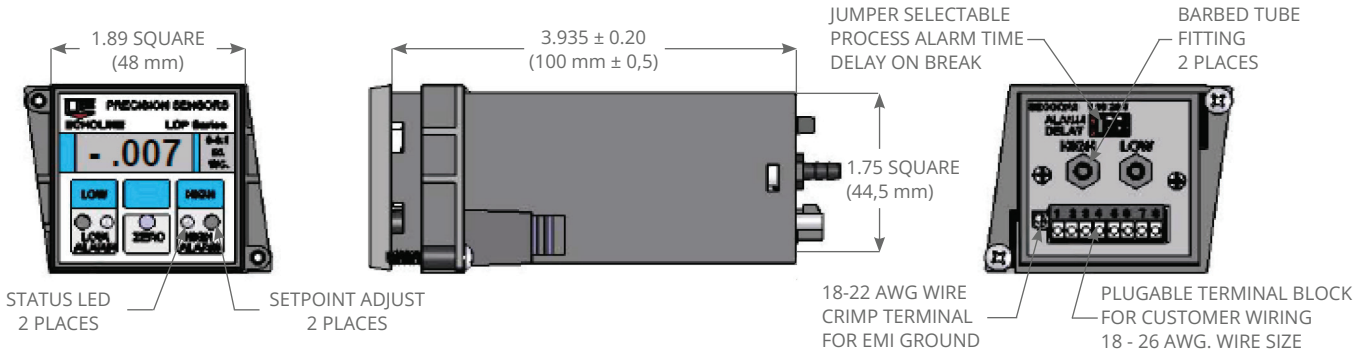
Operating Temp. Range	0 ° to 40 °C
Display Accuracy, Pressure	1% F.S., 0 ° to 40 °C
Accuracy	1% for pressure - 5% for velocity
Repeatability	0.25% for pressure - 1% for velocity
Min. Operating Life	5 Million cycles
Warranty	36 Months
Media Connections	Barbed hose fitting
Status LED	Red/Green
Pitot Tube Material	300 series Stainless Steel, PVC, PFA/ PTFE consult factory for custom configurations

Differential Pressure vs. Air Flow Velocity

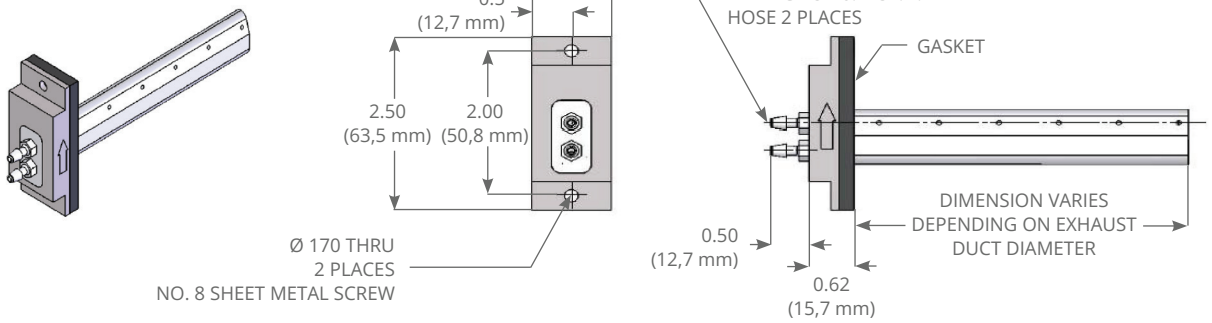


Dimensional Drawings

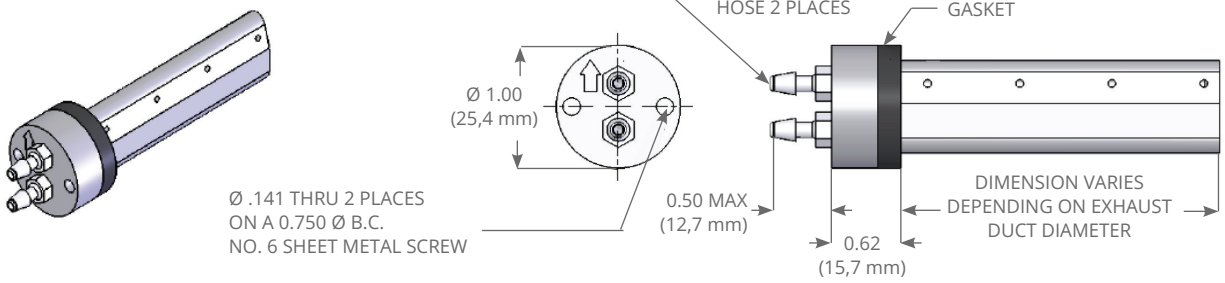
Dimensional drawings for all models may be found at www.precisionsensors.com.



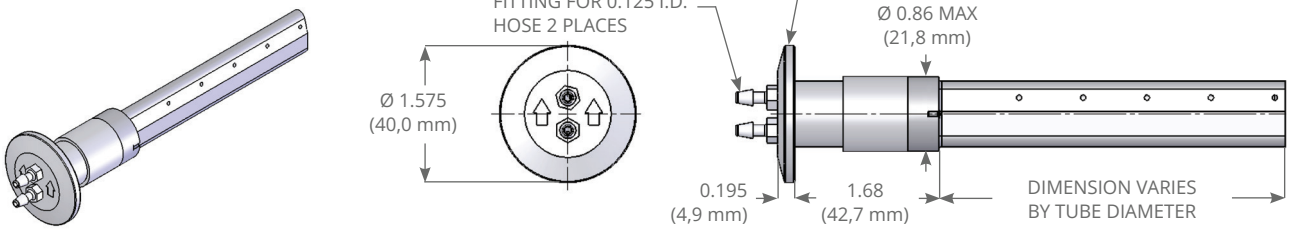
RECTANGULAR PITOT TUBE



ROUND PITOT TUBE



NW25 PITOT TUBE



Approvals & Compliance

Approvals may vary based on product configuration. Contact Precision Sensors.

Agency	Region	Classification
Environmental, Health, and Safety (EHS) guideline for semiconductor manufacturing equipment	Global	Conformance to SEMI S2
c UL us	North America	Complies with the requirements of UL 991 and UL 508
CE	Europe	Conforms to EN61326-1:1997

SEMI S2 Safety Considerations & UL 991

ECHOLINE® was created using widely accepted best practices in an AS 9100 / ISO 9001 quality environment. Components used in the design and production of ECHOLINE® have been selected for their time proven performance, availability and reliability. ECHOLINE® contains no moving parts that can wear out, or microprocessors that are susceptible to hidden software problems.

PRODUCT CONFIGURATIONS:

Pitot Tubes can be configured in different lengths and materials tomeet specific customer requirements. Custom pitot tubes options are available upon request. Please contact Precision Sensors for additional information.

VELOCITY SENSOR PACKAGE INCLUDES:

- ECHOLINE® Low Differential Pressure Sensor
- Pitot Tube Assembly
- Six meters of installation tubing
- Mounting hardware
- Velocity calibration data

OPERATION

Optional high and low limit alarms are independently set from the front panel. In normal operation, the LED display will indicate the sensed pressure and the High Limit/Low Limit LED status indicators will be green. When a preset limit is exceeded, the LED signals an alarm condition by turning red. After a selected time delay, the electromechanical relay contacts will be latch open and the LED display will flash the process pressure. Manually depressing the reset button will cause the relay contacts to close if and when the process pressure is within set limits. A non-latching relay is available.

TIME DELAY

ECHOLINE® includes an adjustable time delay to prevent intermittent tripping due to brief transient upsets. When the unit senses a pressure outside the limits, the status LED will immediately turn red, but the relay will not open for a pre-selected time delay. The time delay will reset to zero if the process pressure returns to within the limits during the transient conditions. This feature provides a degree of "fault tolerance" for exhaust flow applications. The time delay is field selectable through a jumper located on the rear of the enclosure for 1, 10, 20 or 30 seconds.

ECHO DIAGNOSTICS

The ECHO function is an internal electronic check of certain circuit parameters. In the event of an internal failure, the ECHO output relay immediately opens to communicate the fault condition and the unit display goes blank. The electromechanical output relay has isolated contacts that monitor the circuit in real time.

TERMS AND CONDITIONS OF SALE

UE is a registered trademark of United Electric Controls Company.

Precision Sensors specifications subject to change without notice.

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