

Low Pressure Sensor resources and comparison

1. <http://www.coleparmer.com/buy/product/45114-very-low-differential-transducer-0-100-water-0-5-vdc-output.html> **\$172.00 USD/EACH**



Specifications	
Product Type	Differential Pressure Transducer
Media compatibility	non-conducting air or gas
Accuracy	±1.0% full-scale
Output	0 to 5 VDC
Range	0 to 100" H ₂ O
Process connection	1/4" barb
Electrical connections	3-wire
Power	24 VDC
CE Compliance	Yes
Brand	Cole-Parmer
Manufacturer number	2651 100WD 2B T1 C CP1

2. <http://sensing.honeywell.com/honeywell-sensing-pressure-force-flow-rangeguide-008081-15-en.pdf>

Sensing element design consists of four piezoresistors galvanized with a thin, chemically etched silicon diaphragm that produces a proportional electrical output. Potential applications include dialysis equipment, HVAC devices, data storage, industrial machinery, and more.



Series	TruStability® HSC	TruStability® SSC
Signal conditioning	amplified	unamplified
Pressure range	±2.5 mbar to ±40 mbar [±1 inH ₂ O to ±30 inH ₂ O]	±2.5 mbar to ±40 mbar [±1 inH ₂ O to ±30 inH ₂ O]
Device type	differential, gage	differential, gage
Output	analog (Vdc), digital (I ² C or SPI)	analog (Vdc), digital (I ² C or SPI)
Calibrated	yes	yes
Temperature comp.	yes	yes
Total error band	±1 %FSS to ±3 %FSS depending on pressure range	±2 %FSS to ±5 %FSS depending on pressure range
Accuracy	±0.25 %FSS BFSL	±0.25 %FSS BFSL
Mounting options	DIP, SIP, SMT	DIP, SIP, SMT
Operating temperature range	0 °C to 50 °C [32 °F to 122 °F] (compensated)	-20 °C to 85 °C [-4 °F to 185 °F] (compensated)
Measurements (H x W x D)	varies by package style	varies by package style
Approvals	RoHS, WEEE	RoHS, WEEE
Features	Industry-leading long-term stability, total error band, accuracy and flexibility; high burst pressures and working pressure ranges; excellent repeatability	Industry-leading long-term stability, total error band, accuracy and flexibility; high burst pressures and working pressure ranges; excellent repeatability

HoneyWell cont'd.

http://sensing.honeywell.com/product%20page?pr_id=141752

Product Specifications	
Measurement Type	Gage
Output	Digital SPI
Signal Conditioning	Amplified
Pressure Range	0 psi to 1 psi
Overpressure	10 psi
Supply Voltage	3.3 Vdc
Supply Current	1.6 mA typ.
Temperature Compensation	Yes
Output Calibration	Yes
Response Time	1 ms max.
Port Style	AN: single axial barbed port
Package Type	DIP
Total Error (% Full Scale)	±2%
Accuracy (Best Fit Straight Line)	±0.25%
Shock	MIL-STD-202F, Method 213B, Condition F
Vibration	MIL-STD-202F, Curve AK (20.7 g random)
Operating Temperature	-40 °C to 85 °C [-40 °F to 185 °F]
Compensated Temperature Range	-20 °C to 85 °C [-4 °F to 185 °F]
Storage Temperature	-40 °C to 85 °C [-40 °F to 185 °F]
Media Compatibility	Dry gases only
Comment	No special options
Transfer Function	10% to 90% Vsupply
Availability	Global
Series Name	TruStability® SSC

Price? Must get quote from sales rep.

They have other sensors with these operating ranges, response times, and accuracies that vary by Voltage outputs and other parameters.

3. http://www.bdsensors.de/fileadmin/user_upload/Download/Datenblaetter_datasheets/DB_DM

[K351_E.pdf](#)

German

Prices?

Very large variety of sensors that will achieve what we need them to very low errors ~.35% FS

4. Omega - 1 psi ranges around \$300.00

5. <http://www.dwyer-inst.com/Product/Pressure/SinglePressure/Transmitters/Series673/Ordering>



**Series 673
Pressure Transmitter**

±0.25% Full Span Accuracy, 4-20 mA Signal, Ranges to 1000 psi



Product Specifications

Service: Non-combustible liquid, gas, or vapor.

Wetted Materials: 17-4 PH Stainless Steel.

Accuracy: RSS* (at constant temperature) ±0.25%. Non-linearity (BSFL) ±0.22% FS; Hysteresis 0.10% FS; Non-repeatability 0.05% FS.

Temperature Limits: -40 to 185°F (-40 to 85°C).

Compensated Temperature Range: -40 to 176°F (-40 to 80°C).

Pressure Limits: 2X full scale range.

Thermal Effects: Zero Shift: ±2.0% FS/100°F (±1.8% FS/50°C); Span Shift: ±1.5% FS/100°F (±1.3% FS/50°C); Warm-up Shift: ±0.1% FS total.

Stability: 0.5% FS/year.

Response Time: 5 ms.

Power Requirements: 9-30 VDC.

Output: 4-20 mA**, 2-wire.

Zero and Span Adjustment: Fixed.

Loop Resistance: 0 to 800 Ω.

Shock: 200 g.

Vibration: 20 g.

Electrical Connections: 2 ft (61 cm) multiconductor cable. Conduit Models: 1/4"-18 (22.3 mm) knockout.

Enclosure: Stainless Steel and Valox.

Weight: 2.3 oz (65 g).

Agency Approvals: CE.

*RSS of non-linearity, hysteresis, and non-repeatability.

**Zero output factory set to within ±0.16 mA; Span (full scale) output factory set to within ±0.16 mA.

\$149 - 0-1psi

6. http://www.sensorteknics.com/cms/upload/datasheets/DS_Standard-CTE-CTU7000_E_11507.pdf

0-70 mbar and 0-100mbar (0-71 cm H2O and 0-101 cm H2O)

call for price

large # of connection variations

±0.2%FSO

Comparison of Low Pressure Transducers

Manufacturer	Operating Range	Accuracy	Connection Variations (#)	Output Signal Variations (#)	long term stability	max response time	Price
BD	0-40,60,100 cmH2O	≤ ± 0.35 % FSO	3 (All 1/2 ")	3	≤ ± 0.1 % FSO / year at reference conditions	380 msec	Inquire
Dwyer	0-1psi	RSS* (at constant temperature) ±0.25%	1/4' NPT	1	0.5% FS/year	5ms	\$149.00
Sensor Technics	0-10,25,70,100 mbar	±0.2%FSO	17	5	0.5% FS/year	35 ms for 0-25mbar or less; all other 5ms	Inquire
Honeywell	0-1psi	±0.2%FSO	1	1	Not Available	1 ms	Inquire
Cole-Parmer	0-254 cmH2O	±1.0%FSO	1	1	Not Available	Not Available	\$172.00
omega	0-1 psi						\$300+
	1psi ~ 70 cm H2O						
	1mbar ~ 1.01 cm H2O						