

# 865 Series – Very Low Differential Pressure Transducers

- ▶ For Air or Non-Conductive Gas
- ▶ 0.25 to 100 Inches in W.C.(differential)/  
±0.1 to ±50 Inches in W.C. (bidirectional)
- ▶ High Proof Pressure

The 865 Series are very low-pressure transducers for ranges as low 0.25" W.C. and feature ±1% full scale static accuracy. Primarily used in Building Energy Management, these transducers are capable of measuring pressures and flows with the accuracy necessary for proper building pressurization and air flow control. 865 Series transducers utilize an all-stainless steel micro-tig welded sensor that allows up to 10 psi overpressure (in either direction) with no damage to the unit. All sensor components have thermally matched coefficients, which promote improved temperature performance and excellent long-term stability.

## Common Specifications

Input	
Pressure Range	0.25" to 100" WC
Proof Pressure	10 psi (700 mbar)
Fatigue Life	10 psi, max. (700 mbar)
Performance	
Supply Voltage (Vs)	9-30 VDC
Accuracy	±1.0% FS (Standard); .4% & .25% versions available
Thermal Error Zero	±0.033% FS/°F (±0.06% FS/°C)
Thermal Error Span	±0.033% FS/°F (±0.06% FS/°C)
Compensated Temperatures	0°F to +150°F (-18°C to +65°C)
Operating Temperatures	0°F to +150°F (-18°C to +65°C)
Storage Temperatures	-40°F to +185°F (-40°C to +85°C)
Zero Tolerance	1% (.5% for high accuracy option)
Span Tolerance	1% (.5% for high accuracy option)
Mechanical Configuration	
Pressure Port	1/4" Fitting
Wetted Parts	Stainless Steel and Glass-Filled Polyester
Electrical Connection	Screw Terminal Strip
Enclosure	Fire Retardant Glass-Filled Polyester; Option A1 Conduit Enclosure Available
Approvals	CE
Weight	3 oz

## Individual Specifications

Voltage Output Units	
Output	0-5 VDC (see ordering chart)
Min. Load Resistance	5000 kohms
Current Output Units	
Output	4-20 mA (2 wire)
Max. Loop Resistance	(Vs-9) x 50 ohms



## Applications

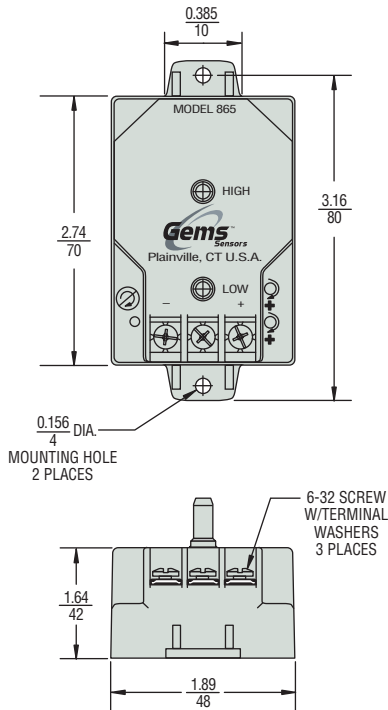
- HVAC
- Energy Management Systems
- Variable Air Volume and Fan Control (VAV)
- Environmental Pollution Control
- Static Duct and Clean Room Pressures
- Oven Pressurization and Furnace Draft Controls

## How They Operate

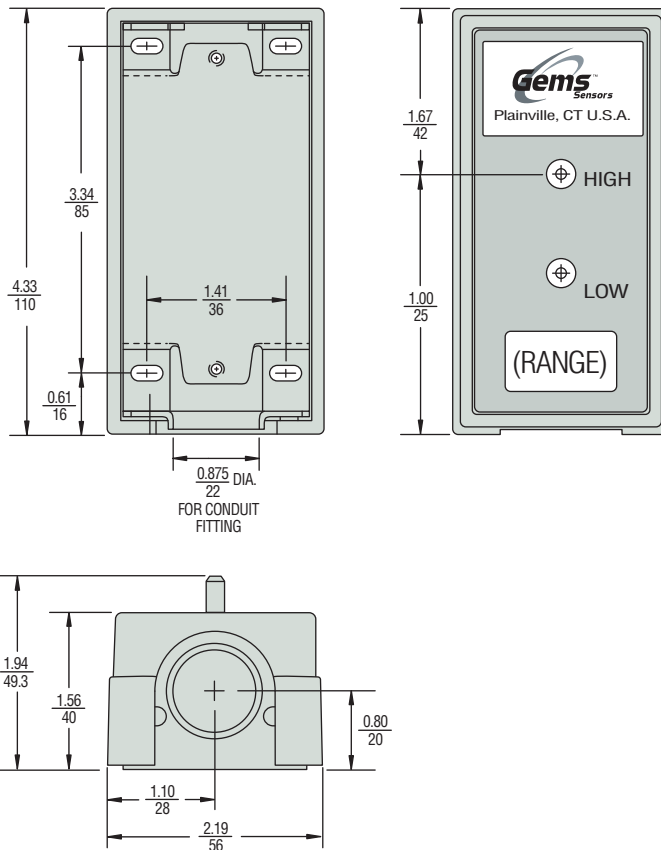
A tensioned stainless steel diaphragm and insulated stainless steel electrode, positioned close to the diaphragm, form a variable capacitor. Positive pressure moves the diaphragm toward the electrode, increasing the capacitance. A decrease in pressure moves the diaphragm away from the electrode, decreasing the capacitance. The change in capacitance is detected and converted to a linear DC electrical signal by Gems' unique electronic circuitry.

**Dimensions**

Standard 865 Series



Optional Conduit Enclosure – Code A1



**How to Order**

Use the **bold** characters from the chart below to construct a product code.

**SELECT**

Series **8651** - 865 Series

Pressure Range Code

<b>Unidirectional</b>		<b>Bidirectional</b>	
Code	Range (Inches W.C.)	Code	Range (Inches W.C.)
<b>R25WD</b>	0 to 0.25	<b>OR1WB</b>	±0.1
<b>OR5WD</b>	0 to 0.5	<b>R25WB</b>	±0.25
<b>001WD</b>	0 to 1.0	<b>OR5WB</b>	±0.5
<b>2R5WD</b>	0 to 2.5	<b>001WB</b>	±1.0
<b>005WD</b>	0 to 5.0	<b>2R5WB</b>	±2.5
<b>010WD</b>	0 to 10.0	<b>005WB</b>	±5.0
<b>025WD</b>	0 to 25.0	<b>010WB</b>	±10.0
<b>050WD</b>	0 to 50.0	<b>025WB</b>	±25.0
<b>100WD</b>	0 to 100.0	<b>050WB</b>	±50.0

Output **11** - 4-20 mA (9-30 VDC excitation)  
**2B** - 0-5 VDC (9-30 VDC excitation)

**8651 - OR5WD - 2B - T1 - C**

Accuracy  
**C** - ±1% FS (Standard)  
 Options:  
**E** - ±0.4% FS – Calibration Certificate supplied  
**F** - ±0.25% FS – Calibration Certificate supplied  
**G** - ±1% FS – Calibration Certificate supplied

Electrical Connection  
**T1** - Terminal Strip  
**A1** - Supplied with Optional 7/8" Knock-Out Hole for 1/2" Conduit Enclosure