

# Mid-West<sup>®</sup> Instrument

## “Diaphragm Type”

### Differential Pressure Gauge, Switch, or Transmitter Model’s 140 & 142

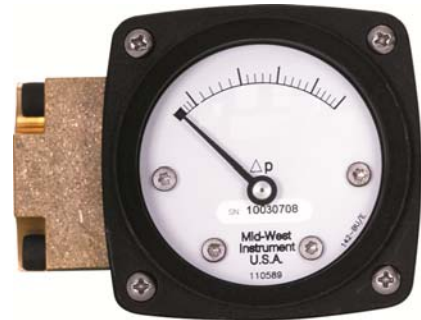


## FOR SEA WATER APPLICATIONS

Ideally suited for use on Sea Water or salt Water applications.



Model 142  
with 2-1/2" Dial



**Features:**

- Total separation of high and low pressures by a Convuluted Elastomer Diaphragm.
- Over range protection to full rated working pressure.
- Body Materials: Aluminum/Bronze, or Monel
- Monel Spring & Internal metal parts
- 1/4" FNPT FNPT Process Connection (std)
- Sensor magnetically coupled to the indicating pointer and optional switches.
- Weather-resistant construction standard.
- Shatter resistant acrylic lens.
- Variety of Dial type and Sizes: 2-1/2", 3-1/2" & 4-1/2"
- DP Ranges available in: Inches H<sub>2</sub>O, PSID, bar, and Kpa
- Temperature Limits: -40°F(-40°C) to +200°F(+93°C)

*“A World Leader  
in Differential Pressure Gauges,  
Switches & Transmitters*



Model 142  
with 2-1/2" Dial  
& 4-20mA Transmitter



Model 142 0-100" H<sub>2</sub>O  
with 4-1/2" Dial

Model	Accuracy	Available ΔP Ranges	Max. Line Pressure PSIG	Optional Switches
142 ±3/2/3%		0-100" H <sub>2</sub> O, 0-5 PSID, 0-10 PSID 0-15 PSID, 0-20 PSID	1000	1 or 2 Switches or 4-20 mA Transmitter
140	±3/2/3%	0-25 PSID, 0-30 PSID, 0-40 PSID 0-75 PSID, 0-100 PSID	1000	1 or 2 Switches or 4-20 mA Transmitter

# “Diaphragm Type” Differential Pressure Gauge Switch & Transmitter Options Model’s 140 & 142



**Model 142 available with “AA” switch option**

(1) Reed switch located inside NEMA 4x enclosure with 7 position terminal strip. An opening at rear of enclosure accepts ½” flexible weather-proof or conduit connector (supplied by customer).

**Model 142 available with “BA” switch option**

(2) Reed switches located inside NEMA 4x enclosure with 7 position terminal strip. An opening at rear of enclosure accepts ½” flexible weather-proof or conduit connector (supplied by customer).

**Model 142 “Delta Meters”** are available with either one or two hermetically sealed reed switches for either high alarm, low alarm, or both and a 4-20mA transmitter depending on model. The switches are Single Pole Double Throw (SPDT) or Single Pole Single Throw (SPST) with adjustable set points. Switches can be set to activate/deactivate on rising or falling pressure.

**Model 142** standard switch enclosure is non-corrosive molded plastic that is oil tight, dust tight, and water tight per NEMA 4X/IP66. External access to the switch adjustment is provided. 4-20 mA Transmitter enclosures is Aluminum that is oil tight, dust tight, and water tight per NEMA 4X/IP66 as well. An external zero pin is available for simple remote zeroing. Switch leads are 24”, 18 Awg, and are color coded where applicable.



**Model 142 shown with “TT” transmitter option.**

4-20 mA Transmitter in NEMA 4X/IP66 Aluminum Enclosure. 7 position terminal strip and opening at rear of enclosure accepts ½” flexible weather-proof or conduit connector (supplied by customer).

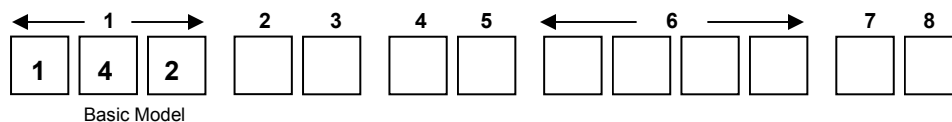
Model Type	142 SPDT	142 SPST NO	142 Transmitter 4-20mA
Power	3 W	25 W	4-20 mA Loop Power
Max Current	0.25 Amps	0.5 Amps	8-28 VDC Loop Powered 2-Wire interface
Max Voltage VAC/VDC	125 VAC/VDC	230 VAC/VDC	1000 Ohm max Loop resistance at 28 vdc
Setting Full Scale	15-95% 15-9	5%	20-100%
Hysteresis (Max / Norm)	10% / 5% (FS)	15% / 8% (FS)	N/A
Repeatability	1% F.S.	1% F.S.	1% F.S.
Connections	(3) 24" Leads 22 AWG	(2) 24" Leads 22 AWG	Terminal Strip

### Standard Model Specifications: 142-NA-00-00

1000 PSIG Working Pressure, Aluminum/Bronze body, Monel Internal Metal Parts,  
Ceramic Magnets, Buna-N Diaphragm and Seals, Teflon Guide Bushings, 1/4" FNPT Back Connections,  
2-1/2" round dial, Engineered Plastic Case with Shatter Resistant Acrylic Lens  
Accuracy  $\pm 3/2/3\%$  Full Scale (Ascending)

**Ranges Model 142: 0-100" H<sub>2</sub>O, 0-5, 0-10, 0-15, and 0-20 PSID**

**Ranges Model 140: 0-25, 0-30, 0-40, 0-75 and 0-100 PSID**



Basic Model

Range: \_\_\_\_\_

**Mid-West Instrument**  
1-800-648-5778



<b>2</b>	<b>Material</b>
<b>M</b>	Monel Body / Monel Internal Metal Parts & Teflon Guide Bushings
<b>N</b>	Aluminum/Bronze Body / Monel Internal Metal Parts & Teflon Guide Bushings
<b>Z</b>	Special ( <i>Un-coded Options</i> )
<b>3</b>	<b>Dial Size &amp; Type</b>
<b>A</b>	2-1/2" Round Uni-Directional Dial w/Engineered Plastic Housing Assembly
<b>C</b>	4-1/2" Round Uni-Directional Dial w/Engineered Plastic Housing Assembly
<b>E</b>	3-1/2" Round Uni-Directional Dial w/Anodized Aluminum Housing Dial Case
<b>G</b>	4-1/2" Round Uni-Directional Dial w/Anodized Aluminum Housing Dial Case
<b>T</b>	Non-Indicating DP Switch Only
<b>Z</b>	Special ( <i>Un-coded Options</i> )
<b>4</b>	<b>Seal Materials</b>
<b>0</b>	Buna-N ( <i>Standard</i> )
<b>1</b>	Viton®-A Registered Trademark of Dupont
<b>5</b>	Ethylene Propylene
<b>9</b>	Special ( <i>Un-coded Options</i> )
<b>5</b>	<b>Process Connections</b>
<b>0</b>	1/4" FNPT Back Connections ( <i>Standard</i> )
<b>2</b>	Dual 1/4" FNPT Top & Bottom Connections ( <i>Non-Electrical Option Units Only</i> )
<b>3</b>	1/4" FNPT Bottom Connections
<b>4</b>	7/16"-20 straight thread O-Ring ( <i>Back Connections only</i> )
<b>9</b>	Special ( <i>Un-coded Options</i> )

## Standard Model Specifications – continued Model 142

6	Additional Options
<b>O</b>	NONE
<b>A</b>	Reversed High / Low Process Connections. (Not available with transmitter options T)
<b>E</b>	Two (2) 1/4-20 Mounting Holes
<b>F</b>	Carbon Steel 2" Pipe Mounting Kit (Not available with reverse port switch option)
<b>G</b>	Stainless Steel 2" Pipe Mounting Kit (Not available with reverse port switch option)
<b>L</b>	Liquid Fill (4-1/2" available with "G" option Aluminum Dial Case only) (not available with shatterproof lens)
<b>M</b>	Maximum Indicator Follower Pointer (not available with Liquid fill option) (not available with shatterproof lens)
<b>S</b>	Shatter Proof Glass Lens (Available only with option "G" 4-1/2" Aluminum Dial Case) (not available with liquid fill)
<b>T</b>	Oxygen Cleaning
<b>U</b>	Stainless Steel Tag with S.S. Wire
<b>V</b>	Stainless Steel Tag and S.S. Screw (Contact factory on switch options)
<b>W</b>	Wall Mount Kit (Not available with back connections)
<b>Z</b>	Special ( <i>Un-coded Options</i> )
<b>NOTE: Not All Options Available in Combination with other Options</b>	
7	Electrical Configurations
<b>O</b>	None
<b>A</b>	One (1) Reed Switch in NEMA 4X/IP66 Enclosure
<b>B</b>	Two (2) Reed Switches in NEMA 4X/IP66 Enclosure
<b>T</b>	4-20 mA Transmitter in NEMA-4X/IP66 aluminum enclosure (3)
<b>Z</b>	Special ( <i>Un-coded Options</i> )
(3) Contact factory for tank level or flow applications with transmitter configuration	
8	Electrical Specifications (For Resistive Loads)
<b>A</b>	SPDT 3W, 0.25 Amp, 125 VAC/VDC (standard) (Switch adjustable range of 15-95%)
<b>B</b>	SPST, 25W, 0.5 Amp., 230 VAC/VDC (Normally Open) (Switch adjustable range of 15-95%)
<b>T</b>	4-20 mA Transmitter (8-28 VDC Loop Power) (± 2% Accuracy from 20-100% of scale, Ascending)
<b>Z</b>	Special ( <i>Unc-oded Options</i> )

Factory preset switches at no charge (Specify Setting)

**MID-WEST INSTRUMENT** has been serving a variety of industries (Power, Chemical, Petro-Chemical, HVAC, Water Filtration etc...) for over 50 years. Over 2,000,000 DP Gauges have been produced bearing the Mid-West name or private branded for our OEM customers!

Mid-West understands that in today's demanding environment, flexibility, quick response time and the ability to ship most of our product line in 2 weeks or less is essential to our customers. Standard configurations can be customized and modified to suit our customer's needs for ease of installation or retrofit.

If you are in need of additional information please visit our web site at [www.midwestinstrument.com](http://www.midwestinstrument.com) or contact us toll free at **1-800-648-5778** and one of our knowledgeable sales coordinators will be happy to assist you.

# Mid-West<sup>®</sup> Instrument

## “Diaphragm Type” Model 240

### “Hazardous Locations”

## Indicating / Non-Indicating Differential Pressure Switch or Transmitter



- A low cost Diaphragm type differential pressure switch for use in measuring or controlling the pressure drop cross filters, strainers, separators, valves and pumps.
- Working Pressure 1,500 PSIG (275 bar)
- Over-range protection to maximum pressure.
- Aluminum or 316 Stainless Steel wetted pressure containing body assembly.
- Wetted Internals – 316 Stainless Steel and Ceramic moving components.
- Weather resistant gauge construction standard.
- Dial Size: 4-1/2” with Shatter resistant acrylic lens.
- Five Year Limited Warranty

- Field wireable terminal strip interface.
- Up to 10A 120/240 VAC switching with DPDT Relay outputs.
- Hermetically Sealed Switch Outputs up to 3 Amps in SPST configuration and up to 1 Amp in SPDT configuration
- SPST outputs available in Normally Open or Normally Closed configurations
- Up to (2) independent adjustable switch points.
- 4-20 mA Transmitter with 8-28 Vdc loop power
- 1/2” Conduit interface
- CSA & UL Certified to US and Canadian standards.
- CSA & UL Certified:
  - Class I, Division 1 / Groups B, C & D
  - Class II, Division 1 / Groups E, F & G
  - Class I, Division 2 / Groups A, B, C & D
  - Class II, Division 2 / Groups F & G
- Certified for ATEX / IECEx
  - Ex d IIB + H2 Ex tb IIIC, IP65
  - Division 2 Units are NEMA 4X

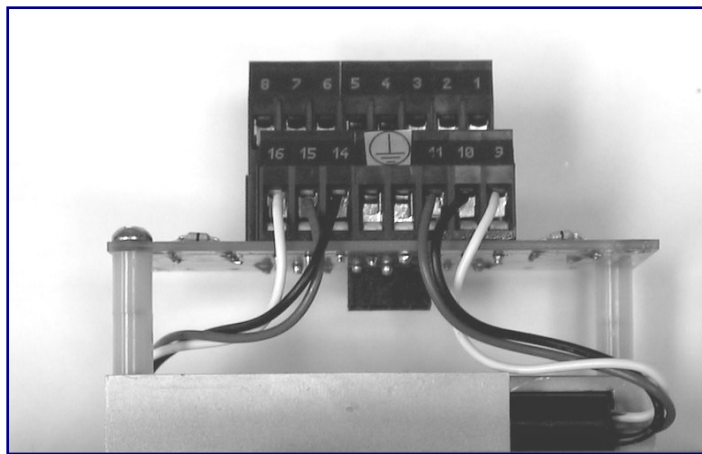


Model	Body Material	Accuracy	Min. ΔP Range	Max. ΔP Range	MWP PSIG (Bar)	Switch Options
240	Aluminum & 316L S.S.	±3/2/3%	0-20” H2O (0-50 mbar bar)	0-100 PSID (0-7 bar)	1,500 (100)	1 or 2 switches or 4-20mA Transmitter

# “Diaphragm Type” Differential Pressure Gauge Switch Options Model 240

The switching components are housed under a copper free Aluminum cover the combination of the gauge body and the cover make up the flame-proof seal. Electrical interface to the internal field wire terminal strip is via ½” NPT industry standard conduit connection located through the gauge body.

The hazardous environment indicating differential pressure switch is available with one or two hermetically sealed reed switches with optional one or two DPDT relay outputs. Each switch is independently adjustable within a defined percentage of the full scale range of the gauge and is available in SPDT and SPST (normally open or normally closed) for various load power ratings. The switches can be set to activate or deactivate on rising or falling differential pressure. If the optional relay output is specified, an input operating voltage must also be specified.



## OUTPUT RATINGS (Resistive Load)

Type	SPST	SPDT	SPDT	DPDT Relay
Electrical Specification Input Option	A	A	A	B,C,D,E,F,G,H
Electrical Specification Output Option	E	H	A	R
*Power	60 W	60 W	3W	N/A
Maximum Current	3 Amps	1.0 Amps	0.25 Amps	10 Amps
Max. Volts VAC/VDC	240	240	125	277 / 30
Setting (Full Scale) **	15% to 100%	25% to 100%	15%-100%	15% to 100%
Hysteresis Full Scale	20% / 9% (Max / Nom)	25% / 18% (Max / Nom)	15% / 6% (Max / Nom)	20% / 10% (Max / Nom)
Repeatability	1% Full Scale	1% Full Scale	1% Full Scale	1% Full Scale

\* Product of the switching voltage and current shall not exceed the power rating of device

\*\*For ranges ≥60 PSID, minimum adjustability = 25%

**Warning:** The suitability of the application and installation of this differential pressure switch is the responsibility of the end user. The applicable certifications, listings apply to the differential pressure switch only.

# “Diaphragm Type” Differential Pressure Gauge Transmitter Option Model 240

Model 240 Transmitter provides a simple low cost loop powered 8-28 Vdc two wire 4-20 mA transmitter with highly visible local display allowing for monitoring at the unit and in the control room.

The transmitter utilizes the same CSA, UL and ATEX rated sensor and explosion proof housing as on the Model 240 explosion proof switch. Although the transmitter option is not yet listed, the sensors and explosion proof housing are rated Class I, Division 1 Groups B, C & D. Class II, Division 1 Groups E, F & G and Ex d IIB + H2, Ex tb IIIC, IP65. Each transmitter is individually calibrated to the gauge using an 11 point calibration linearization technique.

<b>TRANSMITTER SPECIFICATIONS</b>				
<b>Transmitter Specifications: Comments:</b>				
Differential Pressure Range	0-20" H2O to 0-100 PSID			
Leakage	None, Diaphragm Isolated Hi to Lo			
Pressure (Ratings)				
Max Working	1500 PSIG			
Gauge Accuracy	2%	ASME B40.100 GRADE B		
Operating Temperature (Max.)	-20°F -150°F			
<b>ELECTRICAL:</b>				
	<b>Min</b>	<b>Typ</b>	<b>Max</b>	
Transmitter Accuracy (FSR)			2%	Upper 80% of Full Scale Range
Supply Voltage (3) (Vdc)	8		28	Pin 3 Reverse Polarity Protected
Output Current (ma)				
Zero Floating (2)	4.0 – 20.1 ma	4.0 – 21.0	4.0 – 22.0	Pin 2
Zeroed (1 connected to 2)		8		
Voltage (Pin 2 to 1)	4.8		6.3	
Zero Time (seconds)	2			
Max Loop Resistance (ohms)			1000	
Max Loop Resistance Formula	$((V_s - 8) / 20) * 1000$			
<b>INTERFACE:</b>				
<b>Electrical:</b>				
Connections:	4 Position Terminal Strip; ½" NPT Conduit 1= Rtn, 2= Zero, 3 = 8-28 Vdc In 4= Chassis			22 Awg – 12Awg Wire
Environmental Rating:	Explosion-proof Enclosure rated Class I, Div I, Groups B, C, D; Class II, Div I, Groups E, F, & G **			
Certifications:	Ex d IIB + H2 T6 (-30°C ≤ Ta ≤ 65°C)Gb Ex tb IIIC IP65 T85°C (-30°C ≤ Ta ≤ 65°C)Gd ATEX and IECEx			

**PROOF PRESSURE:** 3,000 PSI.

**TEMPERATURE LIMITS: -40°F (-40°C) to +185°F (+85°C)**– For electrical Input Options A in combination with electrical output options A, E, & H. These limits are based on the entire instrument being saturated to these temperatures. System (process) temperatures may exceed these limitations with proper installation. Contact our customer service representative for details.

**-40°F (-40°C) to +160°F (+70°C) – For output option R (Relay Output)**  
**-20°F (-30°C) to +150°F (+65°C) – For output option 4-20 mA Transmitter**

**STANDARDS:** The Model 240 Series differential pressure gauge either conforms to and/or is designed to the requirements of the following standards:

ASME B1.20.1	NEMA Std. No. 250
ASME B40.100 GRADE B	SAE J514
CSA-C22.2 No. 14, 25 and 30	EN60079-0, EN60079-1 & EN13463-1
UL Std. No. 50, 508, 698, and 1203	IEC60079-31





## Standard Model Specifications: 240-AC-02-O (JAA)

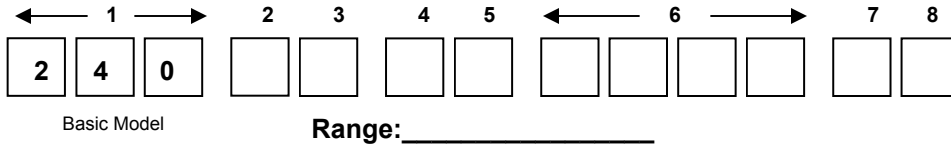
1500 PSIG Working Pressure, Aluminum wetted pressure containing body assembly, Stainless Steel/Ceramic Magnet Internals, Buna-N Seals, 1/4" FNPT End Connections, 4-1/2" round dial, engineered plastic dial case with Shatter Resistant Acrylic Lens, (1) 3W 125 VAC/VDC SPDT reed switch with terminal strip, aluminum explosion proof switch enclosure and 1/2" FNPT electrical access.

**Mid-West Instrument**

**Complete assembly 3<sup>rd</sup> Party Certified**

**1-800-648-5778**

**Range 0-20 IN. H<sub>2</sub>O to 0-100PSID (0-50 mbar to 0-7.0 bar)**



<b>2</b>	<b>Material</b>
<b>A</b>	Aluminum Wetted Pressure Containing Body, Stainless Steel / Ceramic Magnet Internals
<b>S</b>	316/316L S.S Wetted Pressure Containing Body Assembly
<b>S</b>	Stainless Steel / Ceramic Magnet Internals
<b>Z</b>	Special ( <b>Un-coded Options</b> )
<b>3</b>	<b>Dial Size &amp; Type</b>
<b>C</b>	4-1/2" Round Uni-Directional Dial w/Engineered Plastic Dial Case
<b>F</b>	4-1/2" Round Uni-Directional Dial w/Anodized Aluminum Housing Dial Case
<b>T</b>	Non-Indicating DP Switch Only (with select electrical options)
<b>Z</b>	Special ( <b>Un-coded Options</b> )
<b>4</b>	<b>Seal Materials</b>
<b>0</b>	Buna-N ( <b>Standard</b> )
<b>1</b>	Viton®-A Registered Trademark of Dupont
<b>5</b>	Ethylene Propylene
<b>9</b>	Special ( <b>Un-coded Options</b> )
<b>5</b>	<b>Process Connections</b>
<b>2</b>	1/4" FNPT End Connections ( <b>Standard</b> )
<b>7</b>	1/2" FNPT End Connections
<b>9</b>	Special ( <b>Un-coded Options</b> )
<b>6</b>	<b>Additional Options</b>
<b>O</b>	None
<b>F</b>	Carbon Steel 2" Pipe Mounting Kit
<b>G</b>	Stainless Steel 2" Pipe Mounting Kit
<b>M</b>	Maximum Indicator Follower Pointer ( <b>Not available with Electrical Configurations R &amp; S</b> )
<b>Q</b>	CRN ( <b>Canadian Registration Number</b> )
<b>S</b>	Shatter Proof Glass Lens ( <b>Available with 4-1/2" Aluminum Dial Case only</b> )
<b>T</b>	Oxygen Cleaning
<b>U</b>	Stainless Steel Tag with S.S. Wire
<b>V</b>	Stainless Steel Tag with S.S. Screw
<b>Z</b>	Special ( <b>Un-Coded Options</b> )

**NOTE: Not All Options Available in Combination with other Options**

## Standard Model Specifications – continued Model 240

"MODEL 240" ELECTRICAL CONFIGURATIONS	
<b>7</b>	<b>DP Ranges greater than or equal to 60 PSID the Switch adjustability is 25%-100% of Full Scale for all Switch options. (T6 Temperature Class unless specified)</b>
<b>A</b>	One (1) Control switch in NEMA-4X enclosure (1) (6) (8)
<b>B</b>	Two (2) Control switches in NEMA-4X enclosure (1) (6) (7) (8)
<b>J</b>	One (1) Control switch in NEMA 7 (Explosion Proof Enclosure) (2)
<b>K</b>	Two (2) Control switches in NEMA 7 (Explosion Proof Enclosure) (2) (7)
<b>R</b>	One (1) Control switch in Ex d Enclosure (CE marked) ATEX / IECEx (2) (9)
<b>S</b>	Two (2) Control switches in Ex d Enclosure (CE marked) ATEX / IECEx (2) (7) (9)
<b>T</b>	4-20 mA Transmitter in NEMA7/EEExd (Explosion Proof Enclosure) (9) (Temperature Limits -20°F to +150°F) Transmitter not yet CSA or UL certified
<b>Z</b>	Special ( <b>Un-coded Options</b> )
<b>8</b>	<b>"INPUT OPTIONS" ELECTRICAL SPECIFICATIONS (Select (1) input and (1) output option)</b>
<b>A</b>	No Input power for reed outputs A, E, F, G & H
<b>B</b>	5/6 VDC
<b>C</b>	12 VDC
<b>D</b>	24 VDC
<b>E</b>	48 VDC
<b>F</b>	24 VAC
<b>G</b>	120 VAC
<b>H</b>	240 VAC (T4-ATEX; T4A-NORTH AMER.) TEMP CLASS
<b>T</b>	8-28 Vdc Loop Power (Option T only)
<b>"OUTPUT OPTIONS" ELECTRICAL SPECIFICATIONS (Resistive Load) (3)</b>	
<b>A</b>	SPDT, 3W, 0.25 Amp., 125 VAC/VDC (Switch Adjustable 15-100% of full scale ascending) 60 PSID & Above 25-100% of full scale ascending
<b>E</b>	SPST, 60W, 3.0 Amp., 240 VAC/VDC (Normally Open) (Switch Adjustable 15-100% of full scale ascending)
<b>H</b>	SPDT, 60W, 1.0 Amp., 240 VAC/VDC (Switch Adjustable 25-100% of full scale ascending)
<b>R</b>	DPDT, Relay, 10A @ 30 VDC, 120/240 VAC (7) (8) (Switch Adjustable 15-100% of full scale ascending) 60 PSID & Above 25-100% of full scale ascending
<b>T</b>	4-20 mA Transmitter in general purpose enclosure, 3rd Party Certified Division 2 Hazardous Locations with Terminal Strip / 1/2" FNPT Conduit Connection ( $\pm 2\%$ accuracy from 20-100% of full scale ascending)
<b>Z</b>	Special (Contact Factory)
(1) Complete Assy. 3 <sup>rd</sup> Party Certified. Rated Class I, Div II, Groups A, B, C & D; Class II Div II Groups F&G (R output excluded)	
(2) Complete Assy. 3 <sup>rd</sup> Party Certified. Rated Class I, Div I, Groups B, C & D; Class II Div I Groups E, F&G	
(3) For output options A through H, the product switching voltage and current shall not exceed power rating.	
(6) Enclosure Type 4/4X	
(7) For electrical configuration B, K & S, SPDT relay output only	
(8) Electrical configuration A & B in combination with Output Option R is not rated for Hazardous Locations	
(9) Atex / IECEx Rated CE marked Ex d IIB + H <sub>2</sub> , Ex tb IIIC, IP65 (3000 PSIG SWP)	
(10) Not Available with Electrical Configurations R & S	

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# Mid-West<sup>®</sup> Instrument



## “Diaphragm Type” Model 522 Differential Pressure Gauge & Switch



Range: 0-5 PSID to 0-50 PSID

Available Dial Scales: PSID and Dual Scale PSID/kPa or PSID/bar



Model 522 Diaphragm Type DP Gauge provides outstanding capabilities in a modestly priced differential pressure gauge/switch.

Suited for use on dissimilar fluids, wet gas and process fluids with particulates present.

**Common Applications:** Filter/Strainer Monitoring, Compressed Air, Hydraulic, Refrigerant, Pump Performance Testing, Heat Exchanger Pressure Drop Monitoring, Water Treatment Applications.

### Gauge Features:

- Aluminum, 316 / 316L S.S. or Acetal Gauge Body.
- Wetted Parts: 316 SS, Ceramic, & Acetal components
- Seal & Diaphragm Material: Buna-N or Viton
- ALUM. & S.S. Bodies / Safe Working Pressure: 1000 PSIG
- Acetal Body / Safe Working Pressure: 500 PSIG
- 1/4" FNPT Process Connections (End Connected)
- Weather-resistant construction standard.
- 2-1/2" Diam. Black on White Dial (Std)  
(Dial Color Breaks Optional)
- Shatter Resistant Acrylic Lens
- **Optional:** (2)10-32 mounting holes on back of gauge body 1.75" apart x .330" Depth
- Accuracy  $\pm 5\%$  Full Scale (ascending)

### Switch Option:

- Hermetically Sealed Switch
  - One (1) DIN 43650/IP65/NEMA 4X Plug-in Connector Switch\*\*
  - Output: 3 amps SPST, 60W, 240 VAC/VDC, Normally Open
  - Switch Adjustable from 40%-95% of Full Scale Range
  - CE Marked for Compliance with the Low Voltage Directive.
- \*\*Product of the switching voltage & current shall not exceed 60W



Shown with special option color dial

**NOTE:** Reverse pressure should be avoided.



DIN  
Connector Shown

**Operation:** Differential pressure is sensed by flexible elastomer diaphragm and a calibrated spring. A magnetic coupling transmits the sensing element motion to an indicating pointer. This prohibits the possibility of fluid leaking into the gauge case, while assuring total isolation of the process fluid within the pressure capsule. The diaphragm assures total separation between high and low pressure signals.

**Temperature Limits:** -40 °F (-40° C) to 200°F (93°C). These limits are based on the entire instrument being saturated to these temperatures. System (process) temperatures may exceed these limitations with proper installation. Contact our customer service representative for details.

**Standards:** All Model 522 Series differential pressure gauges either conform to and/or are designed to the requirements of the following standards: ASME B1.20.1, ASME B40.100 NEMA Std. 250, EN-61010-1 UL Std. No. 50 & 508, CSA-C22.2 No. 14

Factory Preset of switch available at no charge (Specify switch setting on the order)

The use of diaphragm seals is not recommended.

Attempts to install such seals on this gauge will void the warranty

# Mid-West<sup>®</sup> Instrument

## Standard Dial Ranges: Model 522

Switch Set Point		Range	
Min Set Pt.	Max Set Pt.	PSID	DUAL SCALE
2 PSID	4.75 PSID	0-5 PSID	0-5 PSID & 0-0.35 bar
4 PSID	9.50 PSID	0-10 PSID	0-5 PSID & 0-35 kPa
6 PSID	14.25 PSID	0-15 PSID	0-10 PSID & 0-0.7 bar
8 PSID	19.00 PSID	0-20 PSID	0-10 PSID & 0-70 kPa
10 PSID	23.75 PSID	0-25 PSID	0-15 PSID & 0-1 bar
12 PSID	28.50 PSID	0-30 PSID	0-15 PSID & 0-100 kPa
16 PSID	38.00 PSID	0-40 PSID	0-20 PSID & 0-1.4 bar
20 PSID	47.50 PSID	0-50 PSID	0-20 PSID & 0-140 kPa
			0-25 PSID & 0-1.75 bar
			0-25 PSID & 0-175 kPa
			0-30 PSID & 0-2 bar
			0-30 PSID & 0-200 kPa
			0-40 PSID & 0-2.75 bar
			0-40 PSID & 0-275 kPa
			0-50 PSID & 0-3.5 bar
			0-50 PSID & 0-350 kPa

The above mentioned ranges are some of the most popular requested today. Mid-West Instrument can provide special un-cataloged dial range requirements. Multiple scale dials, multiple color dials and special decals are available upon request. Please consult factory for complete information.

Model	Min. ΔP Range	Max. ΔP Range
522	0-5 PSID (0-0.35 bar)	0-50 PSID (0-3.5 bar)

**Working Pressure:** 1000 PSI (69 bar) for Aluminum & Stainless Steel  
500 PSI (34.5 bar) for Acetal

**Proof Pressure:** 2000 PSI (138 bar) for Aluminum & Stainless Steel  
1000 PSI (69 bar) for Acetal

**Max Differential Pressure (Hi to Low)** 200 PSID (13.8 bar)

**Temperature Limits:** -40°F (-40°C) to +200°F (+93°C) - These limits are based on the entire instrument being saturated to these temperatures. System (process) temperatures may exceed these limitations with proper installation. Contact our customer service representative for details.

**Standards:** Model 522 Series gauge either conforms to and/or is designed to the requirements of the following standards:

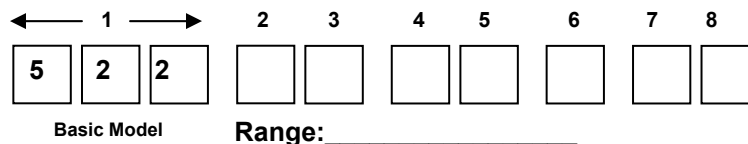
ASME B1.20.1	ASME B40.1
NEMA Std. No. 250	CSA-C22.2 No. 14
EN-61010-1	UL Std. No. 50, 508

### Standard Model Specifications: 522-AA-02-00

1000 PSIG Working Pressure, Aluminum body, 316L Stainless Steel, Ceramic & Acetal Internal Parts  
 Buna-N Diaphragm and Seals, 1/4" FNPT End Connections  
 2-1/2" Round Black on White Dial w/ Engineered Plastic Case & Shatter Resistant Acrylic Lens  
 Accuracy ±5% Full Scale(Ascending)

**Mid-West Instrument**  
 1-800-648-5778

Range 0-5 PSID to 0-50 PSID (0.35 to 3.5 bar)



<b>2</b>	<b>Material</b>
<b>A</b>	Aluminum Body / 316 Stainless Steel, Ceramic & Acetal moving components
<b>S</b>	316 S.S. Body / 316 Stainless Steel, Ceramic & Acetal moving components
<b>P</b>	Acetal (Plastic) Body / 316 Stainless Steel, Ceramic & Acetal moving components
<b>3</b>	<b>Dial Size &amp; Type</b>
<b>A</b>	2-1/2" Round, Black on White Dial w/Engrd. Plastic Dial Case. <b>(Standard)</b>
<b>T</b>	Non-Indicating DP Switch Only
<b>4</b>	<b>Seal Materials</b>
<b>0</b>	Buna-N
<b>1</b>	Viton®-A Registered Trademark of Dupont
<b>5</b>	<b>Process Connections</b>
<b>2</b>	1/4" FNPT End Connections
<b>6</b>	<b>Options</b>
<b>O</b>	None
<b>A</b>	(2)10-32 Mounting Holes, Spaced 1.75" apart. x .330" Deep
<b>7</b>	<b>Electrical Configuration</b>
<b>O</b>	None
<b>L</b>	(1) Switch in Std. enclosure with plug-in connector (DIN43650/IP65) NEMA 4X Available with SPST 60W N.O. Electricals Only! Switch adj. 40 to 95% (F.S. Ascending)
<b>8</b>	<b>Electrical Specifications</b>
<b>E</b>	SPST 60W 3.0 Amp 240 VAC/VDC <b>(Normally Open)</b>

Factory Preset of switch available at no charge

Mid-West understands that in today's demanding environment, flexibility, quick response time and the ability to ship most of our product line in 2 weeks or less is essential to our customers. Standard configurations can be customized and modified to suit our customer's needs for ease of installation or retrofit.

If you are in need of additional information please visit our web site at [www.midwestinstrument.com](http://www.midwestinstrument.com) or contact us toll free at **1-800-648-5778** and one of our knowledgeable sales coordinators will be happy to assist you...