BULLETIN NO. 124/18
(SUPERSEDES BULLETIN NO. 124/12)

Mid-West® Instrument

"Piston Type"

Differential Pressure Gauges
Switches & Transmitters

Model 124

A low cost differential pressure gauge for use in measuring the pressure drop across filters, strainers, separators, valves, pumps, chillers, etc., and for local flow indication and control.

Model 124
0-75 PSID Shown with
End Connections & Transmitter

- Simple, rugged, compact design.
- Working pressure up to 10,000 PSIG (690 bar)
- Over-range protection to maximum pressure.
- Body materials: 316L Stainless Steel with 316 stainless steel internals.
- Weather-resistant construction standard.
- Shatter resistant acrylic lens.
- Variety of Dial type and Sizes: 2-1/2", 3-1/2", 4-1/2" & 6"
- Available DP Ranges: Inches H2O, PSID, bar, and Kpa
- ¼" FNPT & ½" FNPT Process Connections
- Multiple mounting options available
- Temperature Limits: -40°F(-40°C) to +200°F(+93°C)
- Transmitter Option: -20°F(-28°C) to +150°F(+65°C)

Model 124
Terminal Switch
exposed.

Due to precision sizing of piston and body bore, leakage across piston will not exceed 15 SCFH air at 100 PSID at ambient temperature.

Model 124
0-300 PSID 4-1/2" Dial

An optional maximum indication follower pointer provides automatic indication of maximum differential occurring during a time period or system cycle. Reversed pressure ports are optionally available to facilitate installation and readability depending on which side of a filter, etc., the instrument must be installed.

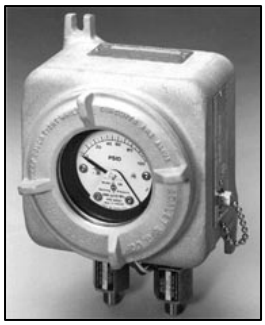
Model	Body Material	Accuracy	Min. ΔP Range	Max. ΔP Range	MWP PSIG (Bar)	Switch Options
124	316L Stainless Steel	±3/2/3%	0-5 PSID (0-0.35 bar) 0-150 PSID (0-10.0 bar)	0-110 (0-7.0 bar) 0-400 (0-27.0 bar)	10,000 (690)	1 & 2 switch Hermetically Sealed or 4-20 mA Transmitter

Proof Pressure: Two times rated working pressure at ambient temperature

Standards: Model 124 gauge either conforms to and/or is designed to the requirements of the following standards:

ASME B1.20.1	NACE MR0175
ASME B40.100	NEMA Std. No. 250
CSA-C22.2 No. 14.25 and 30	SAE J514
EN-61010-1	UL Std. No. 50,508 and 1203

"Piston Type"
Differential Pressure Gauge
Switch & Transmitter Options
Models 120, 122, 123 & 124




The Model 120-124 Series DP gauges are available with one or two hermetically sealed reed switches or 4-20mA transmitter depending on model. (See chart below)

The switches are adjustable (see table for adjustment range) within a defined percentage of the full scale range of the gauge and are available in SPDT and SPST, normally open or normally closed configurations for various load power ratings. The switches can be set to activate or deactivate on rising or falling pressure.

The standard reed switch is enclosed in a weather-resistant plastic housing. Adjustment of the switch setting is made with an external screw adjustment.

The switch functionality will be different for gauges with bi-directional operation for positive and negative delta pressure. For example a SPDT switch with positive .P applied to the gauge, the red wire will be N.O. and the black will be N.C.. For negative .P the functionality will be reversed.

Location for a single SPDT (grommet or conduit) switch will be on the bottom of the gauge body for a normal port and on the top for a reverse port. Locations for a single SPST (grommet or conduit) N.O. or SPST N.C. switch will be on the bottom and top respectively for a normal port gauge. The locations will be reversed for a reverse port gauge.
A non-indicating (no dial) differential pressure switch is also available.

Hazardous Location switches are 3rd Party Certified Class I Div 2 or Class I Div 1 dependant on type of switch. Listings are for the entire design and not just the enclosure. Standard and weatherproof units are CE marked for conformance with the Low Voltage Directive to harmonized standard EN 61010-1.

Transmitters feature Microprocessor based, external zero interface, 8-28 Vdc loop powered, 2 wire interface. Standard output of 4-20mA with a max loop resistance of 1000 Ohms.

Model Type	•120, ^122,+123, +124 SPDT	•120,^122, •123, SPDT	•120, ^122,+123, +124 SPST NO	•120, •123,•124 SPST NC	•120, •123,•124 SPST NO/NC	121, 124 4-20mA
Power	3 W	60 W	60 W	60 W	60 W	4-20 mA Loop Power
Max Current	0.25 Amps	1.0 Amps	3.0 Amps	3.0 Amps	3.0 Amps	8-28 VDC Loop Powered 2-Wire interface
Max Voltage VAC/VDC	125	240	240	240	240	1000 Ohm max Loop resistance at 28 vdc
Setting Full Scale	•10-90% ^10-100% +15-90%	•25-100% ^25-100%	•25-95% ^25-100% +25-95%	•25-95%	•25-95%	20-100%
Hysterisis (Max / Norm)	10% / 5% (FS)	20% / 13% (FS)	15% / 8% (FS)	15% / 8% (FS)	15% / 8% (FS)	N/A
Repeatability	1% F.S.	1% F.S.	1% F.S.	1% F.S.	1% F.S.	1% F.S
Leads 22 Awg	(3) 24"	(3) 24"	(2) 24"	(2) 24"	(2) 24"	N/A

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Mid-West® Instrument

Standard Dial Ranges: Model 120, 122, 123, 124

Range Type			
PSID	**Kpa**	**Bar**	**Dual Scale**
0-5 PSID	0-35 Kpa	0-1.0 Bar	0-5 PSID & 0-0.35 Kg/Cm2
0-10 PSID	0-70 Kpa	0-1.6 Bar	0-5 PSID & 0-35 KPA
0-15 PSID	0-100 Kpa	0-1.75 Bar	0-10 PSID & 0-0.7 BAR
0-20 PSID	0-160 Kpa	0-2.0 Bar	0-10 PSID & 0-0.7 KG/CM2
0-25 PSID	0-250 kpa	0-2.5 Bar	0-10 PSID & 0-70 KPA
0-30 PSID	0-400 Kpa	0.4.0 Bar	0-100 PSID & 0-7 BAR
0-50 PSID	0-600 Kpa	0-6.0 Bar	0-100 PSID & 0-7 KG/CM2
0-60 PSID	0-700 Kpa	0-7.0 Bar	0-100 PSID & 0-700 KPA
0-75 PSID			0-15 PSID & 0-1 BAR
0-100 PSID			0-15 PSID & 0-1 KG/CM2
0-110 PSID			0-15 PSID & 0-100 KPA
**0-150 PSID			0-20 PSID & 0-1.4 BAR
**0-200 PSID			0-20 PSID & 0-140 KPA
**0-250 PSID			0-25 PSID & 0-1.75 BAR
**0-300 PSID			0-25 PSID & 0-1.75 KG/CM2
**0-400 PSID			0-25 PSID & 0-175 KPA
			0-30 PSID & 0-2 BAR
Bi-Directional	**Bi-Directional**	**Bi-Directional**	0-30 PSID & 0-2 KG/CM2
5-0-5 PSID	40-0-40 Kpa	0.4-0-0.4 Bar	0-30 PSID & 0-200 KPA
10-0-10 PSID	60-0-60 Kpa	0.6-0-0.6 Bar	0-50 PSID & 0-3.5 BAR
15-0-15 PSID	100-0-100 Kpa	1-0-1 Bar	0-50 PSID & 0-3.5 KG/CM2
20-0-20 PSID	160-0-160 Kpa	1.6-0-1.6 Bar	0-50 PSID & 0-350 KPA
25-0-25 PSID	250-0-250 Kpa	2.5-0-2.5 Bar	0-75 PSID & 0-500 KPA
30-0-30 PSID	400-0-400 Kpa	4-0-4 Bar	
50-0-50 PSID	600-600 Kpa	6-0-6 Bar	
60-0-60 PSID			
100-0-100 PSID			

Bi-Directional ranges available for Model 120 4-1/2" Dials only.

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

Model	Min. ΔP Range	Max. ΔP Range
120	0-5 PSID (0-0.35 bar)	0-110 PSID (0-7 bar)
122	0-5 PSID (0-0.35 bar)	0-100 PSID (0-7 bar)
**123	0-150 PSID (0-10 bar)	0-400 PSID (0-27.0 bar)
**124	0-5 PSID (0-0.35 bar) 0-150 PSID (0-10 bar)	0-110 PSID (0-7 bar) 0-400 PSID (0-27.0 bar)

Proof Pressure: Two times rated working pressure at ambient temperature
Temperature Limits: -40°F(-40°C) to +200°F(+93°C)
Transmitter Option: -20°F(-28°C) to +150°F(+65°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 120 -124 Series gauges either conform to and/or are designed to the requirements of the following standards:

ASME B1.20.1	NACE MR0175
ASME B40.100	NEMA Std. No. 250
CSA-C22.2 No. 14.25 and 30	SAE J514
EN-61010-1	UL Std. No. 50,508 and 1203

Standard Model Number Sequence: 124SA-00-OO

10,000 PSIG Working Pressure, 316L Stainless Steel Body, Stainless Steel Piston, Ceramic Magnet, Buna-N Seals, ¼" FNPT Back Connections, 2-1/2" Round Dial, Engineered Plastic Dial Case with Shatter Resistant Acrylic Lens
Accuracy ±3/2/3% Full Scale (Ascending)

Range: 0-5 PSID to 0-110 PSID (0-.35 bar to 0-7.0 bar)

Range: 0-150 PSID to 0-400 PSID (0-10.3 bar to 0-27.5 bar) *(End connections only)*

Gauge Body and Internal components are considered wetted parts.

1	2	3	4	5	6	7	8
1	2	4					

Basic Model

Range:_____

2	Material
S	316 S.S Body / Stainless Steel Piston
Z	Special ***(Un-coded Options)***
3	**Dial Size & Type**
A	2-1/2" Round Dial w/Engineered Plastic Dial Case
C	4-1/2" Round Dial w/Engineered Plastic Dial Case
E	3-1/2" Round Dial w/Anodized Aluminum Dial Case
G	4-1/2" Round Dial w/Anodized Aluminum Dial Case
J	6" Round Dial w/Engineered Plastic Dial Case
T	Non-Indicating DP Switch Only
Z	Special ***(Un-coded Options)***
4	**Seal Materials**
0	Buna-N *(Standard)*
1	Viton®-A Registered Trademark of Dupont
5	Ethylene Propylene
9	Special ***(Un-coded Options)***
5	**Process Connections**
0	1/4" FNPT Back Connections *(Standard)*
2	1/4" FNPT End Connections
4	1/2" FNPT End Connections
9	Special ***(Un-coded Options)***

Model 124 - continued

6	Additional Options
O	NONE
A	Reversed High / Low Process Connections *(Not available with switch or transmitter)*
E	Two (2) 1/4-20 Mounting Holes
F	Carbon Steel 2" Pipe Mounting Kit
G	Stainless Steel 2" Pipe Mounting Kit
K	1/2" FNPT S.S. Adapter *(Back Connections Only)*
L	Liquid Fill *(Glycerin Fill Standard) (1) (Not available with shatterproof glass lens)*
M	Maximum Indicator Follower Pointer *(Not available with 3-1/2", 6" Dial or Liquid fill) (Not available with shatterproof glass lens)*
N	NACE
S	Shatter Proof Glass Lens *(4-1/2" available with "G" option Aluminum Dial Case only)(Not available with liquid fill option)*
T	Oxygen Cleaning
U	Stainless Steel Tag with S.S. Wire
W	Wall Mount Kit *(Not available with back connections)*
Z	Special ***(Un-coded Options)***
	(1) Silicone Fill available please contact factory
	NOTE: Not All Options Available in Combination with other Options
7	**Electrical Configurations (All switches CE Marked & ROHS Compliant)**
O	NONE
C	One (1) Reed switch in NEMA 4X/IP65 Plastic enclosure with terminal strip *(1/2" FNPT Conduit Connection)*
D	Two (2) Reed switches in NEMA 4X/IP65 Plastic enclosure with terminal strip *(1/2" FNPT Conduit Connection)*
T	4-20 mA Transmitter in NEMA 4X/IP65 Plastic enclosure with terminal strip *(1/2" FNPT Conduit Connection)* Temperature Limit: -20°F(-28°C) to +150°F(+65°C)
Z	Special ***(Un-coded Options)***
8	**Electrical Specifications (For Resistive Loads)**
O	NONE
A	SPDT 3W, 0.25 Amp, 125 VAC/VDC *(Switch adjustable range of 15-90%)*
E	SPST 60W, 3.0 Amp, 240 VAC/VDC *(Normally Open) (Switch adjustable range of 25-95%)*
F	SPST 60W, 3.0 Amp, 240 VAC/VDC *(Normally Closed) (Switch adjustable range of 25-95%)*
G	SPST 60W, 3.0 Amp, 240 VAC/VDC *(1) Normally Open, (1) Normally Closed (Switch adjustable range of 25-95%)*
T	4-20 mA Transmitter (8-28 VDC Loop Power) *(±2% accuracy from 20% to 100% of scale. Ascending)*
Z	Special ***(Un-coded Options)***

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 700,000 piston type units 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 or contact us toll free at **1-800-648-5778** and one of our knowledgeable sales coordinators will be happy to assist you…

MADE IN USA

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