“I appreciate the willingness of the Kele crew not just to provide exactly what I need to get my job done, but also for the part support and application help. Awesome people.”

PRESSURE

MADE IN USA

Products manufactured in the United States

NEW

Products that are new to the catalog

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Kele®

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Indicates New Products

DIFFERENTIAL PRESSURE SWITCH
KDPS SERIES

DESCRIPTION

The **KDPS Series** Adjustable Differential Pressure Switches are general-purpose, airflow-proving switches designed for HVAC and building automation applications. The **KDPS Series** can be used to sense positive, negative, or differential air pressure. The silicone diaphragm and calibration spring are housed in a rugged plastic enclosure with a removable cover protecting the set point adjustment knob and snap action switch terminals. Electrical connections are made through a 7/8" diameter opening in the cover that accepts a 1/2" conduit connection. Air sampling connections accept 1/4" ID tubing.

KDPS Series

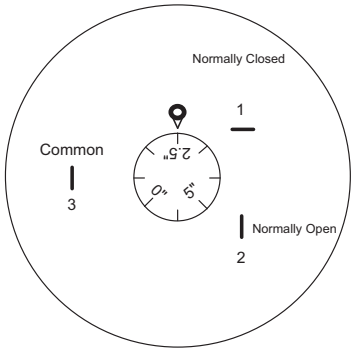
FEATURES

- ***Transparent cover for setpoint confirmation***
- ***Easy, field adjustable set point***
- ***Dual scales***

APPLICATION

- ***Proving fan status***
- ***Monitoring filter for excess pressure drop***
- ***Monitoring duct static pressure***
- ***Proving air flow***
- ***Monitoring damper status***

WIRING



SPECIFICATIONS

Contact Rating	1.5A (0.4A) @ 250V
Contact Type	SPST or SPDT
Differential	
KDPS-02/03	0.04" WC (10 Pa)
KDPS-04/05	0.08" WC (20 Pa)
KDPS-10	0.40" WC (100 Pa)
KDPS-25	0.60" WC (150 Pa)
Operating Pressure	20" WC (5 kPa)
Measurement Range	
KDPS-02	0.08 to 0.80" WC (20 to 200 Pa)
KDPS-03	0.12 to 1.20" WC (30 to 300 Pa)
KDPS-04	0.16 to 1.6" WC (40 to 400 Pa)
KDPS-05	0.20 to 2.00" WC (50 to 500 Pa)
KDPS-10	0.80 to 4.0" WC (200 to 1000 Pa)
KDPS-25	1.0 to 10.0" WC (500 to 2500 Pa)
Media Compatibility	Air, non-combustible and inert gases
Operating Temperature	-40° to 185°F (-40° C to 85°C)
Mounting	Diaphram positioned in any vertical plane
Enclosure	IP54 (with cover) similar to NEMA 12
Process Connection	0.25" (6.0mm) diameter for 0.25" ID Tubing
Wiring Terminations	0.25" (6.4 mm) copper alloy
Approvals	CE, UR recognized
Weight	6 oz (171.4g)
Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
KDPS-02	Differential pressure switch, 0.08" to 0.80" WC (20 to 200 Pa)
KDPS-03	Differential pressure switch, 0.12" to 1.20" WC (30 to 300 Pa)
KDPS-04	Differential pressure switch, 0.16" to 1.6" WC (40 to 400 Pa)
KDPS-05	Differential pressure switch, 0.20" to 2.00" WC (50 to 500 Pa)
KDPS-10	Differential pressure switch, 0.80" to 4.0" WC (200 to 1000 Pa)
KDPS-25	Differential pressure switch, 1.0" to 10.0" WC (500 to 2500 Pa)

ADJUSTABLE DIFFERENTIAL PRESSURE SWITCHES

AFS SERIES

DESCRIPTION

The AFS Series Adjustable Differential Pressure Switches are general-purpose, airflow-proving switches designed for HVAC and building automation applications. The AFS Series can be used to sense positive, negative, or differential air pressure. The diaphragm and calibration spring are housed in a plated enclosure with a removable metal guard protecting the set point screw and snap action switch terminals. Electrical connections are made through a 7/8 diameter opening in the metal guard that accepts a conduit connection. Air sampling connections accept OD rigid or semi rigid tubing. The **Model AFS-460** features a manual reset button to close the switch following actuation. For low current applications use **Model AFS-405** with gold contacts.

FEATURES

- ***Adjustable set point***
- ***For static or differential pressure***
- ***15A switch rating***
- ***Manual reset (Model AFS-460)***
- ***Gold contacts (Model AFS-405)***
- ***UR, CSA, FM approved***
- ***Two-year warranty***

APPLICATION

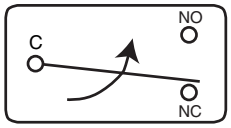
- ***Proving fan status***
- ***Monitoring filter for excess pressure drop***
- ***Monitoring duct static pressure***
- ***Proving air flow***
- ***Monitoring damper status***

SPECIFICATIONS

Contact Rating	
AFS-145, 222, 262, 405	15A non-inductive, 277 VAC, 60 Hz 24 VAC @ 2.4A
AFS-460, 460-DSS	15A @ 125-277 VAC 1/4 HP @ 125 VAC 1/2 HP @ 250 VAC 1/2A @ 125 VDC
Contact Type	
AFS-145, 222, 262, 405	
AFS-136, 460-137	SPDT
AFS-460	SPST N.C.
AFS-460-DSS	2-SPST N.C.
Switch Differential	
AFS-145, 222, 262, 405	Progressive, increasing from approximately 0.02" W.C. (5.0 Pa) @ minimum set point to approximately 0.8" W.C. (199 Pa) @ maximum set point
AFS-460, 460-DSS	None, manual reset
Overpressure	0.5 psig (3.5 kPa)

Measurement Range	
AFS-145, 222, 405	0.05" to 12.0" W.C. (12.5 to 2989 Pa)
AFS-262	0.05" to 2.0" W.C. (12.5 to 498 Pa)
AFS-460	0.4" to 12.0" W.C. (99.3 to 2989 Pa)
AFS-460-DSS	2.0" to 12.0" W.C. (498 to 2989 Pa)
Life Expectancy	AFS-145, 222, 262, 405: 100,000 cycles minimum @ 0.5 psig (3.5 kPa) maximum pressure each cycle and at maximum electrical load AFS-460: 6000 cycles
Operating Temperature	-40° to 180°F (-40° to 82°C)
Process Connection	
AFS-145	1/8" NPTF)
All Others	Ferrule and nut compression for 1/4" OD tubing
Approvals	CE, UR, cCSAus, RoHS, FM
Weight	1.2 lb (0.54 kg)
Warranty	2 years

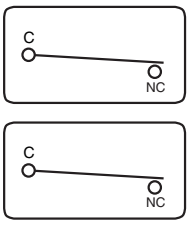
WIRING



Action on a rise in differential pressure

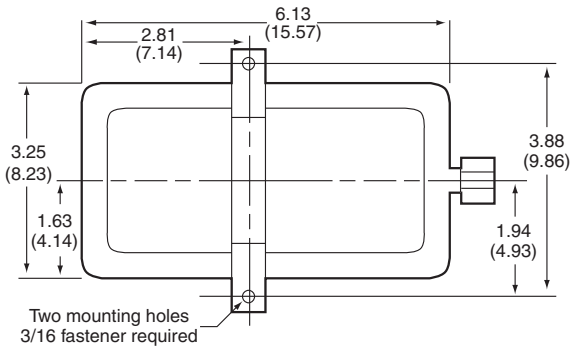
Opens on a rise in differential pressure

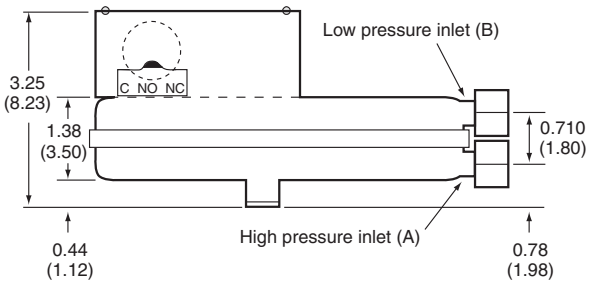
Opens on a rise in differential pressure



DIMENSIONS

in
(cm)





OPERATION

Select a mounting location that is free from vibration. The switch must be mounted with the diaphragm in any vertical plane in order to obtain the lowest specified operating setpoint. Avoid mounting with the sample line connections in the up position. Surface mount via the two 3/16" diameter holes in the integral mounting bracket.

The Model AFS-460-DSS has a lead switch (A) and a lag switch (B). The lead switch trips according to the setpoint knob and the lag switch trips after the lead switch. If dual-switch simultaneous operation is required, order AFS-460-136 (120 VAC power) or AFS-460-137 (24 VAC power).

Locate sampling probe a minimum of 1-1/2 duct diameters downstream from the air source. Install the sampling probe as close to the center of the airstream as possible.

Refer to the Dimensions drawing to identify the high pressure inlet (A) and the low pressure inlet (B), and connect the sample lines as follows:

Positive Pressure Only
Connect the sample line to (A);
(B) remains open to the atmosphere.
Negative Pressure Only
Connect the sample line to (B);
(A) remains open to the atmosphere.
Two Negative Samples
Connect the higher negative sample to (B);
Connect the lower negative sample to (A).
Two Positive Samples
Connect the higher positive sample to (A);
Connect the lower positive sample to (B).
One Positive and One Negative Sample
Connect the positive sample to (A);
Connect the negative sample to (B).

ORDERING INFORMATION

MODEL	DESCRIPTION
AFS-145	Differential pressure switch 0.05" to 12" W.C. (12.5 to 2989 Pa), 1/8" NPTF
AFS-222	Differential pressure switch 0.05" to 12" W.C. (12.5 to 2989 Pa), 1/4" compression fittings
AFS-222-112	Differential pressure switch 0.05" to 12" W.C. (12.5 to 2989 Pa), 1/4" barbed fittings
AFS-262	Differential pressure switch 0.05" to 2" W.C. (12.5 to 498 Pa), 1/4" compression fittings
AFS-262-112	Differential pressure switch 0.05" to 2" W.C. (12.5 to 498 Pa), 1/4" barbed fittings
AFS-405	Differential pressure switch 0.05" to 12" W.C. (12.5 to 2989 Pa), gold contacts
AFS-460	Manual reset differential pressure switch, 0.4" to 12" W.C. (99.3 to 2989 Pa), SPST
AFS-460-136	Manual reset differential pressure switch, 0.4" to 12" W.C. (99.3 to 2989 Pa), 120 VAC, SPDT
AFS-460-137	Manual reset differential pressure switch, 0.4" to 12" W.C. (99.3 to 2989 Pa), 24 VAC, SPDT
AFS-460-DSS	Manual reset differential pressure switch, 2" to 12" WC (498 to 2989 Pa), 2 SPST switches

	RELATED PRODUCTS	PAGE
21122	6" aluminum impact tube, 1/4" OD connection	925
21122-112	6" aluminum impact tube for 1/8" thru 1/4" ID flexible plastic tubing	925
60681	Static or total pressure sensing kit	925
A-301-K	Duct static pressure tip, 1/4" compression	925
A-302-K	Duct static pressure tip, 1/4" barb	925
A-308-K	Duct static pressure fitting, 1/4" barb	925
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	925
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	759

DIFFERENTIAL PRESSURE SWITCH

RH-3, RH-3-2

DESCRIPTION

Model RH-3 and **RH-3-2** Differential Pressure Switches monitor low-air pressure, vacuum, or differentials of air pressure. These switches are commonly used to prove blower operation, to sense dirty filters, and to monitor pressure drop across coils.

Models RH-3 and RH-3-2 are shipped with 1/4" compression fittings, suitable for use with 1/4" OD copper or plastic tubing, and a 12" (30.5 cm) length of 1/4" plastic tubing.

OPERATION

When pressure is applied to the high side of the airflow switch or vacuum is applied to the low side, an internal diaphragm moves against and operates the lever of the snap-switch. When the airflow switch is at rest (not operating), the snap-switch N.C. (normally closed) contact is made to the common terminal. When an increase in differential pressure operates the snap-switch, the N.O. (normally open) contact is made to the common terminal. The action of the diaphragm on the snap-switch is the same whether pressure or vacuum is being sensed. The wiring from the air sensing switch to other devices depends upon the application.

RH-3

SPECIFICATIONS

Contact Rating	300 VA pilot duty @ 125-277 VAC, 15A resistive @ 125 VAC, 1/4 hp @ 125 VAC, 1/2 hp @ 250 VAC, 2.4A @ 24 VAC, 0.5A @ 24-125 VDC
Contact Type	SPDT
Setpoint Range	
RH-3	0.05" to 12.0" W.C. (12.5 to 2989 Pa)
RH-3-2	0.05" to 2.0" W.C. (12.5 to 498 Pa)
Differential	0.02" W.C. (5.0 Pa) @ minimum setting, 0.8" W.C. (199 Pa) @ maximum setting
Overpressure	0.5 psig (3.5 kPa)
Operating Temperature	-40° to 180°F (-40° to 82°C)
Mounting	Any vertical plane
Process Connection	1/4" compression, suitable for use with 1/4" OD copper or plastic tubing
Approvals	UL listed, file #MH10196, CSA
Weight	2.0 lb (0.91 kg)
Warranty	1 year

INSTALLATION

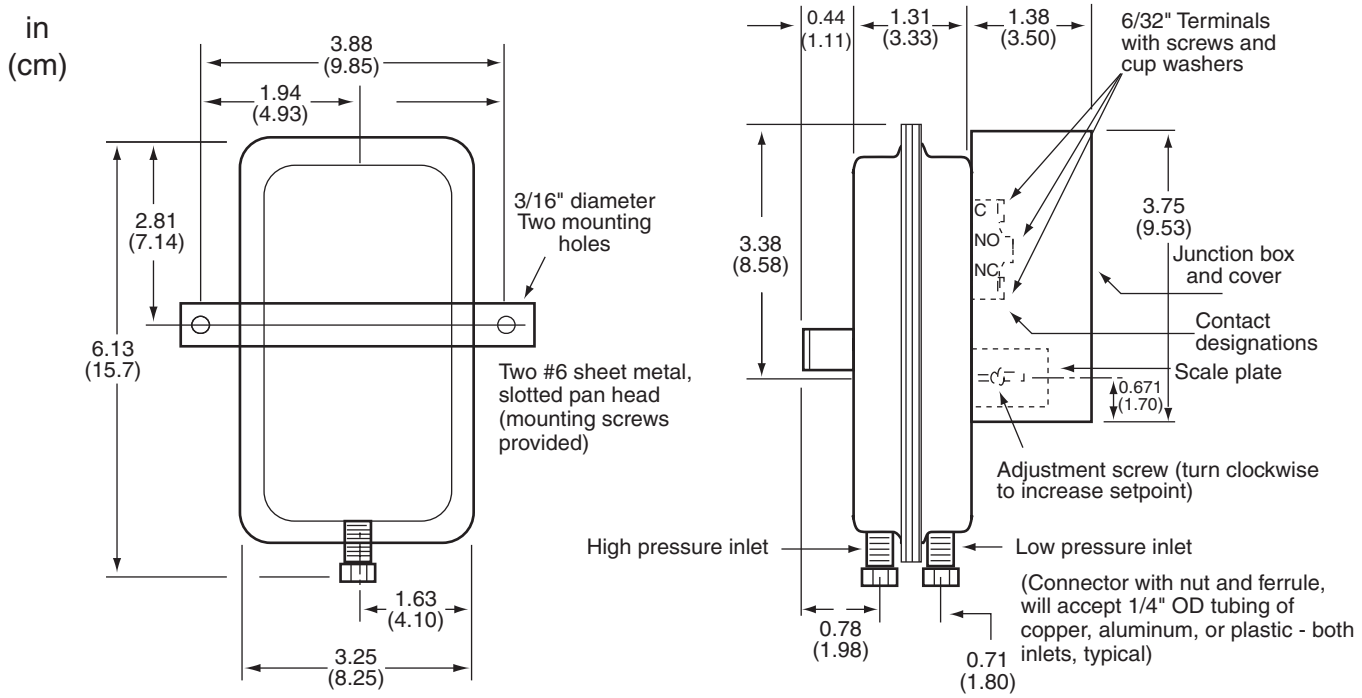
Mounting

The RH-3 and RH-3-2 may be used to sense pressure, vacuum, or differentials of pressure and vacuum. Using sheet metal screws, mount the control vertically on the duct or equipment. Avoid areas of high vibration. Connect the 1/4" tubing to the air flow switch using 1/4" compression fittings. Insert the other end of the tubing into area to be sensed. See ordering information for static pressure tips and duct impact (total pressure) tubes for use with **RH-3** and **RH-3-2** switches.

Adjustment

The adjusting screw located in the junction box may be used to change the operating point. The operating range is 0.05" to 12.0" W.C. for the RH-3, and 0.05" to 2.0" W.C. for the **RH-3-2**. The differential is 0.02" rising to 0.8" at the highest setting. The switch will operate at 0.05" and reset before 0.03" on the low end. It will operate at 12.0" and reset before 11.2" on the high end. Rotate the adjusting screw clockwise to increase setting.

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
RH-3	0.05" to 12.0" W.C. (12.5 to 2989 Pa)
RH-3-2	0.05" to 2.0" W.C. (12.5 to 2989 Pa)
RH-3-C	0.05" to 12.0" W.C. (12.5 to 498 Pa) custom calibration
RH-3-2-C	0.05" to 2.0" W.C. (12.5 to 498 Pa) custom calibration

	RELATED PRODUCTS	PAGE
21122	6" aluminum impact tube, 1/4" OD connection	**925**
21122-112	6" aluminum impact tube for 1/8" thru 1/4" ID flexible plastic tubing	**925**
60681	Static or total pressure sensing kit	**925**
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

ADJUSTABLE DIFFERENTIAL PRESSURE SWITCH KIT

NS2-0000-02

CLEVELAND CONTROLS

DESCRIPTION

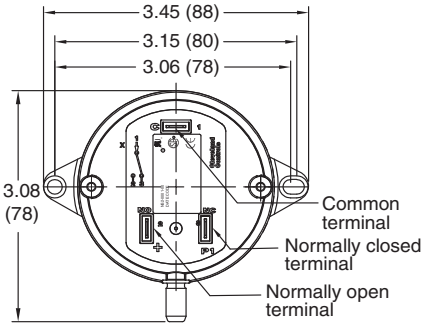
The economical **Model NS2** Adjustable Differential Pressure Switch Kit is designed for positive, negative, or differential pressure monitoring with actuation on pressure rise or fall. The set point range can be field configured between 0.10"w.c. to 10.0"w.c. using the appropriate spring included in the kit. The kit includes a switch with quick-connect terminals, 5 different springs to change the set point range, orifice plugs to restrict air flow, mounting brackets, a hex wrench, and instructions.

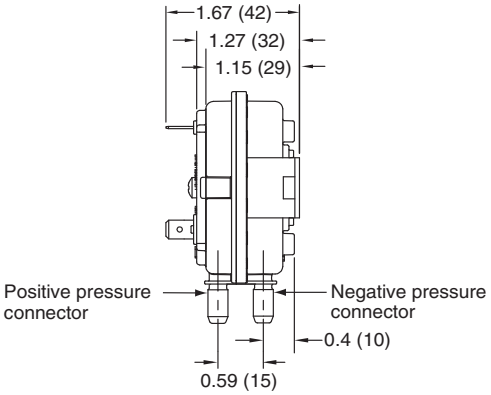
NS2-0000-02

FEATURES

- ***Five pressure ranges in one unit***
- ***Field adjustable setpoint and setpoint range***
- ***Actuated by pressure or vacuum***
- ***SPDT switch***

DIMENSIONS AND WIRING





SPECIFICATIONS

Contact Rating	1/10 hp @ 120-277 VAC; 28 VA pilot duty @ 24 VAC; 125 VA pilot duty @ 120 VAC
Contact Type	SPDT
Setpoint Spring Range	
Black	0.10" to 0.30" W.C. (25 to 75 Pa)
Neutral	0.30" to 0.90" W.C. (75 to 224 Pa)
Yellow	0.90" to 2.50" W.C. (224 to 623 Pa)
Red	2.5" to 5.0" W.C. (623 to 1245 Pa)
Blue	5.0" to 10.0" W.C. (1245 to 2490 Pa)

Overpressure	14" W.C. (3486 Pa)
Life Expectancy	100,000 cycles minimum
Operating Temperature	-40° to 190°F (-40° to 88°C)
Enclosure	Glass-filled polycarbonate
Diaphragm Material	Post-cured silicone
Process Connection	Connector for 3/8" flexible tubing
Wiring Terminations	Male quick connect terminals
Approvals	CE, CSA, UL Recognized
Weight	0.25 lb (0.11 kg)
Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
NS2-0000-02	Adjustable differential pressure switch kit

DIFFERENTIAL PRESSURE SWITCHES

RFS-4001

CLEVELAND CONTROLS

DESCRIPTION

Models RFS-4001-025 and **RFS-4001-031** Differential Pressure Switches are general-purpose, airflow-proving switches designed for HVAC and building automation applications. They may be used to sense positive, negative, or differential air pressure.

The plated housing contains a diaphragm, calibration spring and snap-acting switch. The **Model RFS-4001-025** pressure connections located on each side of the diaphragm, accept copper or flexible 1/4" OD tubing. The **Model RFS- 4001-031** has tri-barb connectors that accept 1/8", 1/4", and 5/16" ID flexible tubing. An enclosure cover guards against accidental contact with the live-switch terminal screws and the setpoint-adjusting screw. The enclosure will accept a 1/2" conduit connection.

RFS-4001-031

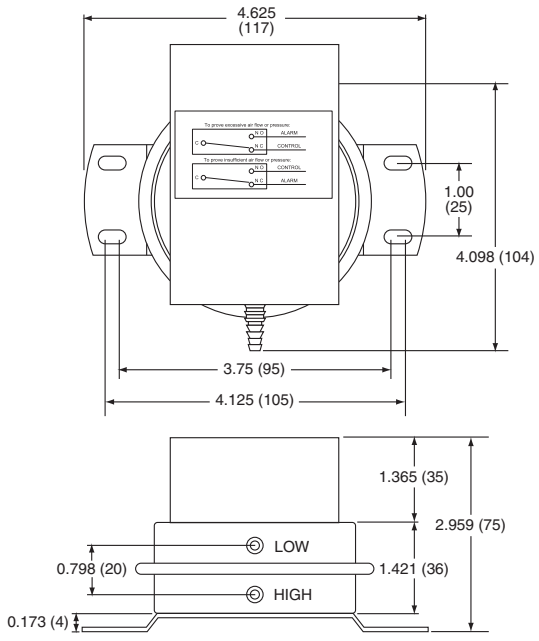
FEATURES

- ***Two-year warranty***
- ***Adjustable setpoint***
- ***Knockout for 1/2" conduit***
- ***Enclosed terminals***
- ***Compression or barb fittings***

SPECIFICATIONS

Contact Rating	300 VA pilot duty @ 115-277 VAC, 15A non-inductive to 277 VAC
Contact Type	SPDT
Setpoint Range	0.15" to 5.0" W.C. (37.3 to 1245 Pa)
Differential	Progressive, increasing from 0.05" W.C. at minimum setpoint to 0.3" W.C. at maximum setpoint
Overpressure	0.5 psig (3.5 kPa)
Life Expectancy	100,000 cycles minimum
Operating Temperature	-40° to 180°F (-40° to 82°C)
Mounting	Any vertical plane, avoid upward pressure connections
Process Connection	
RFS-4001-025	1/4" compression, suitable for use with 1/4" copper or plastic tubing
RFS-4001-031	Tri-barb connectors for 1/8", 1/4" and 5/16" ID tubing
Wiring Terminations	Screw terminals with cup washers
Approvals	UL and cUL, file #MH6213, CSA
Weight	14 oz (0.4 kg)
Warranty	2 years

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
RFS-4001-025	Differential pressure switch 0.15" to 5.0" W.C., 1/4" compression fittings
RFS-4001-025-C	Differential pressure switch 0.15" to 5.0" W.C., 1/4" compression fittings, custom calibrated
RFS-4001-031	Differential pressure switch 0.15" to 5.0" W.C., tri-barb fittings
RFS-4001-031-C	Differential pressure switch 0.15" to 5.0" W.C., tri-barb fittings, custom calibrated

	RELATED PRODUCTS	PAGE
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-308-K	Duct static pressure fitting, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

ADJUSTABLE DIFFERENTIAL PRESSURE SWITCH

RSS SERIES

DESCRIPTION

The economical **RSS Series** Adjustable Differential Pressure Switches are designed for positive, negative, or differential pressure monitoring with actuation on pressure rise or fall. The unit is constructed with a high temperature thermoplastic housing, an internal EPDM diaphragm, and an externally mounted snap action switch. Male quick connect terminals allows easy installation. The field adjustability makes these switches ideal for light industrial and commercial HVAC applications.

FEATURES

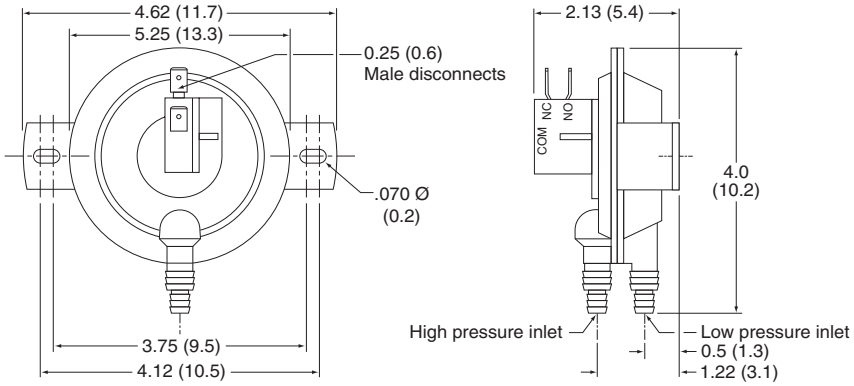
- ***Adjustable set point***
- ***Actuated by a pressure or vacuum air flow***
- ***Quick connect terminals***
- ***5A, SPDT switch***

CLEVELAND CONTROLS

SPECIFICATIONS

Contact Rating	5A resistive, 120-277 VAC, 60 Hz; 1A pilot duty (120 VA) @ 120 VAC
Contact Type	SPDT
Setpoint Range	
RFS-495-011	0.20" to 1.0" W.C. (49 to 249 Pa)
RFS-495-013	1.0" to 4.0" W.C. (249 to 996 Pa)
Overpressure	1 psi (0.06 bar)
Life Expectancy	100,000 cycles minimum @ 1 psi maximum each cycle and maximum rated load
Operating Temperature	-40° to 190°F (-40° to 88°C)
Diaphragm Material	EPDM
Enclosure	Thermoplastic
Process Connection	Barbed fittings for 1/4" ID or 3/8" ID flexible tubing
Approvals	UL recognized, file #MH6213, CSA, CE
Weight	0.25 lbs (0.11 kg)
Warranty	1 year

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
RSS-495-011	Adjustable differential pressure switch, 0.20" to 1.0" W.C. (49 to 249 Pa)
RSS-498-013	Adjustable differential pressure switch, 1.0" to 4.0" W.C. (249 to 996 Pa)

	RELATED PRODUCTS	PAGE
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-308-K	Duct static pressure fitting, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

DUAL SETPOINT DIFFERENTIAL PRESSURE SWITCH

DDP-109

CLEVELAND CONTROLS

DESCRIPTION

The **Model DDP-109** Dual Setpoint Differential Pressure Switch provides dual switch action for HVAC and energy management applications. Two separately operated, independently adjustable SPDT snap-acting switches are mounted on a common foot bracket. Since the switches are set independently, an adjustable "deadband" can be established for control circuits requiring both high and low actuation points. The unit can measure differential pressures up to 2" W.C.

FEATURES

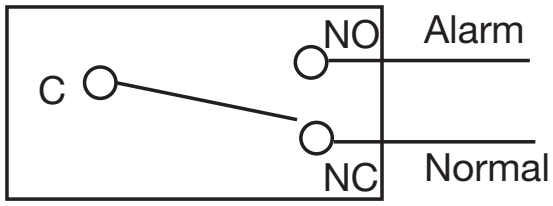
- ***Dual adjustable setpoints***
- ***Independent switch operation***
- ***Actuated by a pressure or vacuum air flow***
- ***15A SPDT switches***

SPECIFICATIONS

Contact Rating	15A resistive, 120-277 VAC, 60 Hz; 300 VA pilot duty @ 115-277 VAC, 60 Hz
Contact Type	Dual SPDT
Setpoint Range	0.05" to 2.0" W.C. (12.5 to 498Pa)
Differential	Progressive, 0.02" W.C. (5.0 Pa) @ minimum setpoint to 0.8" W.C. (199 Pa) @ maximum setpoint
Overpressure	0.5 psi (0.03 bar)
Measurement Range	0.05 to 2.0" WC (12.5 to 498 PA)
Life Expectancy	100,000 cycles minimum @ 1 psi maximum each cycle and maximum rated load
Operating Temperature	-40° to 176°F (-40° to 82°C)
Enclosure	Zinc-coated steel
Diaphragm Material	Silicone
Mounting	Diaphragm in vertical plane
Process Connection	Compression fittings for 1/4" OD rigid or semi-rigid tubing
Wiring Terminations	Screw terminals
Approvals	CE, CSA, UL Recognized
Weight	0.25 lbs (0.11 kg)
Warranty	1 year

WIRING

To prove excessive air flow or pressure:



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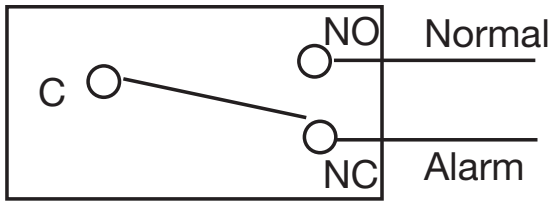


ORDERING INFORMATION

MODEL	DESCRIPTION
DDP-109	Dual setpoint differential pressure switch, 0.05" to 2.0" W.C. (12.5 to 498 Pa)

	RELATED PRODUCTS	PAGE
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

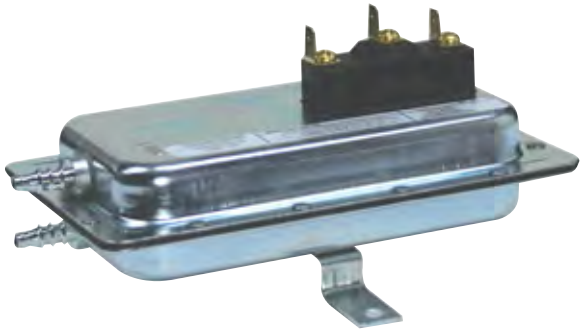
FIXED DIFFERENTIAL PRESSURE SWITCH

DFS-221

DESCRIPTION

The **Model DFS-221 Fixed Differential Pressure Switch** is an airflow proving switch designed for duct heater, oven, and other HVAC and energy management applications. The unit senses positive, negative, or differential pressure with SPDT switch actuation on pressure rise at 0.05 WC, ±0.02 WC. The model DFS-221 is equipped with two barbed sample line connections for use with ID flexible tubing. Electrical connections are made via male quick connect terminals for easy installation.

CLEVELAND CONTROLS



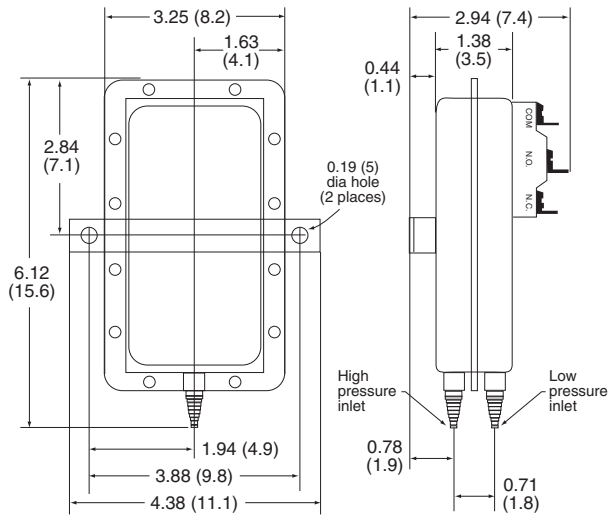
FEATURES

- ***Fixed set point at 0.05 W.C. (12.5 Pa)***
- ***Prove excessive or insufficient pressure***
- ***Quick connect terminals***
- ***15A, SPDT switch***

SPECIFICATIONS

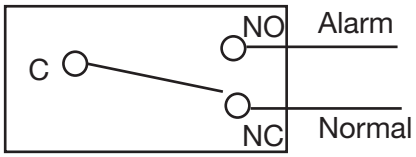
Contact Rating	15A resistive to 277 VAC, 60 Hz 300 VA pilot duty @ 115-270 VAC
Contact Type	SPDT
Setpoints	Fixed, 0.05" W.C. (12.5 Pa), ±0.02" W.C.
Differential	0.02" W.C., ±0.01" W.C.
Overpressure	0.5 psi (3.5 kPa bar)
Measurement Range	Fixed at 0.05" WC (12.5 Pa)
Life Expectancy	100,000 cycles minimum @ 0.5 psi maximum each cycle and maximum rated load
Operating Temperature	-40° to 180°F (-40° to 82°C)
Mounting	Diaphram in vertical plane
Process Connection	Barbed fittings for 1/4" ID flexible tubing
Wiring Terminations	Male quick connect terminals
Approvals	CE, CSA, FM, UL Recognized
Weight	1.2 lbs (0.5 kg)
Warranty	2 years

DIMENSIONS

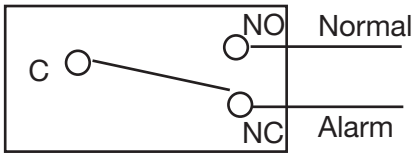


WIRING

To prove excessive air flow or pressure:



To prove insufficient air flow or pressure:



ORDERING INFORMATION

MODEL	DESCRIPTION
DFS-221	Fixed differential pressure switch, 0.05" W.C. (12.5 Pa)

DIFFERENTIAL PRESSURE SWITCHES

1910 SERIES

DESCRIPTION

1910 Series Differential Pressure Switches are designed to monitor the differential pressure of air in HVAC applications. These automatic reset switches are available in ranges from 0.07" to 20" W.C. (17.4 to 4982.0 Pa) and have SPDT screw type electrical connections. The optional Model A-602 air filter kit includes two static pressure tips, aluminum tubing, and fittings, and it allows the **1910 Series** to monitor filter pressure drop.

1910-5

SPECIFICATIONS

Dimensions	3-1/2" diameter x 2-1/2" depth (8.9 x 6.4 cm)
Approvals	UL and cUL listed, file #E38121
Contact	15A @ 120-240 VAC

ORDERING INFORMATION

MODEL	DESCRIPTION
1910-0	Pressure Switch 0.15 to 0.50 "WC
1910-00	Pressure Switch 0.07 to 0.015 "WC
1910-1	Pressure Switch 0.4 to 1.6 "WC
1910-10	Pressure Switch 3.0 to 11.0 "WC
1910-5	Pressure Switch 1.4 to 5.5 "WC

*NOTE: Add a "-C" at the end of the model number to request special calibration

	RELATED PRODUCTS	PAGE
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
A-602	Mounting kit for air filter applications. Includes two pressure tips, two 5-foot lengths of aluminum tubing and two adapters.	**393**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

MANUAL RESET PRESSURE SWITCH

1900-5-MR

DESCRIPTION

The **Model 1900-5-MR Manual Reset Pressure Switch** is designed to monitor duct static and shut down the blower when excess pressure occurs. The switch must be manually reset before the system can start again. Switch contacts are SPDT with solder-type connections. The **Model 1900-5-MR** measures static pressure only, not differential pressure. Order the A-399 duct pressure kit separately.

1900-5-MR

SPECIFICATIONS

Contact Type	SPDT
Operating Temperature	-30° to 180°F (-39° to 82°C)
Process Connection	1.8" FNPT
Dimensions	3-1/2" dia x 2-1/2" depth (8.9 x 6.4 cm)
Weight	1.3 lb (0.58 kg)

DIMENSIONS

3-1/2" dia x 2-1/2" depth (8.9 x 6.4 cm)

ORDERING INFORMATION

MODEL	DESCRIPTION
1900-5-MR	Manual reset pressure switch, 1.5-5.5" W.C.
1900-5-MR-C	Manual reset pressure switch, 1.5-5.5" W.C. with custom calibration

*NOTE: Add a "-C" at the end of the model number to request special calibration

	RELATED PRODUCTS
A-399	Duct pressure kit for Series 1910 and 1900-5-MR, includes mounting flange, tubing, and 1/8" FNPT fitting.

DIFFERENTIAL PRESSURE SWITCH

P32 SERIES

DESCRIPTION

The **P32 Series** Differential Pressure Switch is used to detect differential pressure or low positive gauge pressure by using only the high pressure connection and leaving the low pressure connector open. It can also detect vacuum by using only the low pressure connection and leaving the high pressure connector open to ambient pressure.

The **P32 Series** is factory set at the bottom of its operating range with the diaphragm in a vertical plane. The setting will change if mounted in other positions.

The **P32AF** has a close differential, and the **P32AC** has a standard differential.

P32 Switch with L Bracket

FEATURES

- ***Easy-to-read setpoint scale***
- ***Versatile mounting options***
- ***Durable construction***
- ***Setpoint switching repeatability***
- ***One-year warranty***

APPLICATION

- ***Air proving with electric duct heaters, humidifiers, and more***
- ***Maximum air flow controller for variable volume systems***
- ***Reheat duct-powered systems***
- ***Clogged filter detection***
- ***Detection of icing of air conditioning coils and initiation of defrost cycle***

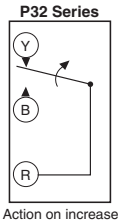
SPECIFICATIONS

Overpressure 1 psig (6.9 kPa)
Indicator Yes, visual scale
Electrical Ratings
P32AF Close differential, 1/4 hp
P32AC Standard differential, 1/2 hp
Operating Temperature -40°F (-40°C) to 165°F (75°C)
Mounting
P32AX-1 L Bracket
P32AX-2 U Bracket

Process Connection High pressure: metal 1/8" FNPT inside x 1/2" NPSM outside; low pressure: molded 1/8" FNPT
Approvals UL Listed, file MH10588
Weight 1.0 lb (0.45 kg); 1.1 lb (0.5 kg) with fittings
Warranty 1 year

Motor Ratings VAC	120	208	240
AC full load amp	5.8	3.35	2.9
AC locked rotor amp	34.8	20.1	17.4
Non-inductive or resistive load 10A, 24-277 VAC			
Pilot duty - 125 VA, 24 VAC; 360 VA, 120-277 VAC			

Motor Ratings VAC	120	208	240
AC full load amp	9.8	5.65	4.9
AC locked rotor amp	58.8	33.9	29.4
Non-inductive or Resistive Load 10A, 24-277 VAC			
Pilot duty - 125 VA, 24 VAC; 360 VA, 120-277 VAC			



Action on increase of pressure

Model	Contact Action	Range "W.C. (Pa)	Differential "W.C. (Pa)		Setpoint	Scale Plate	Bracket
			Minimum Setpoint	Maximum Setpoint			
P32AC-1	SPDT	0.15-12 (37.4-2990)	0.07 (17.4)	0.6 (149.5)	Adjustable	Yes	L
P32AC-2*	SPDT	0.05-5 (12.5-1246)	0.04 (10.0)	0.20 (49.8)	Adjustable	Yes	U
P32AF-1	SPDT	0.05-5 (12.5-1246)	0.025 (6.2)	0.11 (27.4)	Adjustable	Yes	L
P32AF-2*	SPDT	0.05-5 (12.5-1246)	0.025 (6.2)	0.11 (27.4)	Adjustable	Yes	U

*Supplied with 1/4" compression fitting, 4" extension tube, two mounting screws, gasket, angle barb fitting installed

ORDERING INFORMATION

Specify model number as shown in specifications above.
Add a -C to the end of the model number to request specific calibration.

DIFFERENTIAL PRESSURE SWITCH

24-013, 24-014

DESCRIPTION

Delta-Pro **Models 24-013** and **24-014 NEMA 4 Differential Pressure Switches** offer a unique blend of small size, excellent performance, environmental protection, and attractive price. They can be used with liquids or gases.

The precision snap-acting switch and sensitive opposing diaphragms combine to provide a narrow deadband and repeatability of approximately ±1% of span. Mechanical contact life is 10 million cycles, and actual switch life can be very long with typical pilot duty loads. The Delta-Pro NEMA 4 enclosure is small, yet it can still accommodate a 1/2" NPT conduit connection and terminal block wiring.

The Delta-Pro is not only lightweight but also strong and durable. The multiturn adjustment screw is externally accessible for convenience and excellent resolution. The Delta-Pro's force-balance design provides excellent vibration resistance.

24-013

FEATURES

- ***SPDT switch with screw terminals***
- ***Gasketed zinc-plated steel cover***
- ***Strong, corrosion-resistant polyester enclosure***
- ***External, multiturn adjusting screw for excellent resolution***
- ***7/8" hole for 1/2" NPT conduit connection***
- ***Corrosion-resistant brass port***
- ***Front accessible holes for surface mounting***
- ***NEMA 4 enclosure***

APPLICATION

Models 24-013 and **24-014** are used typically to sense differential pressure across devices such as oil or water filters, pumps, heat exchangers, chillers, coils, etc. They normally provide an alarm or shutdown function in applications where there is insufficient flow in a system or when excessive pressure differential indicates a problem. They may also be used to indicate pump status.

SPECIFICATIONS

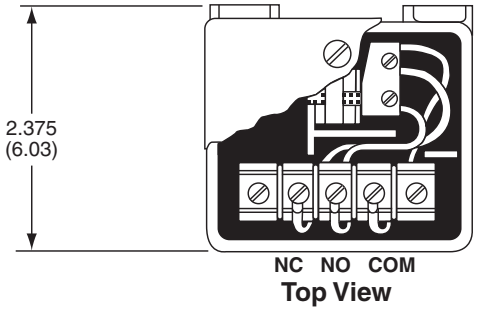
Contact Rating	5A resistive and inductive @ 125 VAC and 250 VAC, 1/4 hp 5A resistive and 3A inductive @ 30 VDC 0.5A resistive and 0.25A inductive @ 125 VDC gold clad silver contacts for minimum loads of 5 mA @ 6 VDC, 2 mA @ 12 VDC, and 1 mA @ 24 VDC
Contact Type	SPDT
Adjustments	Multiturn screw, accessible from outside enclosure
Repeatability	Typically ±1% of span
Overpressure	150 psid (1034.3 kPa) with surges up to 160°F (71°C) air temp, without loss of adjustability
Operating Pressure	0-150 psig (0-1034.3 kPa) up to 160°F (71°C) air temp
Life Expectancy	10 million cycles (actual life depends on load and cycle frequency)
Shock	15G, 10 ms duration
Vibration Resistance	MIL STD 810C, 2.5G, 5-500 CPS
Operating Temperature	30° to 160°F (-1° to 71°C)
Wetted Parts	Polyurethane diaphragm, ethylene propylene, polysulphone, brass
Media Temperature Range	200°F (93°C) @ 100 psig (689.5 kPa) working pressure
Storage Temperature	-20° to 180°F (-29° to 82°C)
Enclosure Rating	Reinforced nylon body, zinc-plated steel cover with neoprene gasket, NEMA 4
Mounting	Surface mount with two screws through clearance holes or mount by ports
Process Connection	1/4" FNPT brass
Wiring Terminations	7/8" hole for 1/2" conduit connector (not provided), three screw terminals 16 AWG max wire size
Approvals	UL Listed, CSA
Weight	6.5 oz (184.3g)
Warranty	1 year

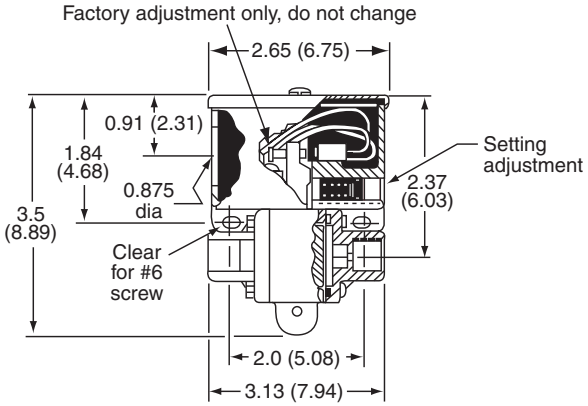
DIFFERENTIAL PRESSURE SWITCH

24-013, 24-014

DIMENSIONS

in
(cm)





INSTALLATION

Mounting
Mount unit in any position. Locate where shock and vibration are minimal and ambient temperature is below 160°F (71°C).

Surface mounting
Insert two #6 screws through holes on 2" (5.08 cm) centers (recommended mounting for maximum vibration resistance).

Suspended unit mounting
Mount unit from its two ports. Always hold a wrench on the pressure port when making pressure connection.

Making pressure connection
Connect the high side pressure to the port labeled high. Use a wrench on the pressure port and hold the unit steady. Then, thread a 1/4 NPTM fitting into the port.

CAUTION: Never tighten by turning the switch body into the fitting.

Wiring
Back out the screw terminal just enough to put stripped wire under this terminal block clamp. Maximum wire size is 16 AWG.

Setpoint adjustment
Use a screwdriver to turn the external adjusting screw. Turn "in" (clockwise) to increase differential pressure setting. For best setting accuracy, set the switch using the actual working pressures encountered in the application. The switch will make on a differential pressure rise to setpoint and break on a fall below setpoint minus the deadband (subtractive deadband).

PERFORMANCE CHART

MODEL*	ADJUSTABLE SETTING RANGE psid (kPa)				PORT	SWITCH	DEADBAND psig (kPa)
	On fall		On rise				
	Minimum	Maximum	Minimum	Maximum			
24-013	1.0 (6.895 kPa)	9.0 (62.1 kPa)	2.0 (13.8 kPa)	10.0 (69.0 kPa)	1/4 FNPT	5A	0.75 (5.2)
24-014	4.0 (27.6 kPa)	43.5 (299.9 kPa)	5.5 (37.9 kPa)	45.0 (310.3 kPa)	Brass	5A	1.0 (6.9)

* Add the suffix **-C** to have the unit precalibrated. Please specify the setpoint.

ORDERING INFORMATION

MODEL	DESCRIPTION
24-013	Differential pressure switch 1-10 psi SPDT
24-013-C	Differential pressure switch 1-10 psi SPDT, custom calibrated
24-014	Differential pressure switch 4-45 psi SPDT
24-014-C	Differential pressure switch 4-45 psi SPDT, custom calibrated
24-020	Gauge pressure switch 1-10 psi SPDT

DESCRIPTION

The **Model P74 Differential Pressure Switch** measures the difference in pressure exerted upon its two sensing elements and operates an SPDT switch at the differential pressure setpoint. The setpoint may be adjusted without removing the cover and is visible on a calibrated scale.

P74FA-1

FEATURES

- ***Brass bellows***
- ***Completely enclosed contact mechanism***
- ***Externally adjustable with visual setpoint scale***
- ***Universal mounting bracket supplied***
- ***Heavy-duty elements withstand high overrun pressure***
- ***For air, oil, or other liquids***
- ***One-year warranty***

APPLICATIONS

These differential pressure controls are used as operating controls and/or alarm controls. They are available for applications sensing air, oil, or liquid. Typical applications include proof-of-flow across a chiller or water-cooled condenser, proof-of-flow in a heating system, and lube oil pressure sensing on refrigeration compressors. In the water chiller application, the control provides low temperature protection. On proof-of-flow applications, the control measures pressure drop across two different points in either a closed water circulating system or a city water supply system. On a proof-of-flow application in a water chiller system, the control activates an alarm or signal light to warn the operator if a loss of water flow occurs.

SPECIFICATIONS

Model*	Pressure differential range psid (kPa)	Connector size	Switch action	Electrical rating	Switch differential psig (kPa)	Maximum overrun pressure psig (kPa)
P74FA-1	8-60 (55-414)	1/4" male flare	SPDT snap-acting	6A 120V, 50/60 Hz	1.5 (10)	180 (1241)
P74FA-5		1/4" FNPT	SPDT snap-acting	6A 120V, 50/60 Hz		
P74JA-2		1/4" male flare	SPDT floating	1A 24V, 50/60 Hz		
P74EA-8	2-30 (14-207)	36" capillary with 1/4" flare nut	SPDT snap-acting	16A 120V, 50/60 Hz	3.5 (24)	

* Add **-C** to the end of the model number to request specific calibration. Please specify the setpoint.

ORDERING INFORMATION

Specify model number as shown in specifications above.

DIFFERENTIAL PRESSURE SWITCHES

J21K SERIES

DESCRIPTION

The **J21K Series Differential Pressure Switches** utilize opposing metal bellows to detect pressure differences between two pressure sources. When the pressure at the high port exceeds the pressure at the low port by a pre-determined amount (setpoint), the mechanism operates a single snap-action switch. The control setpoint can be adjusted by turning the internal adjustment hex screw.

J21K

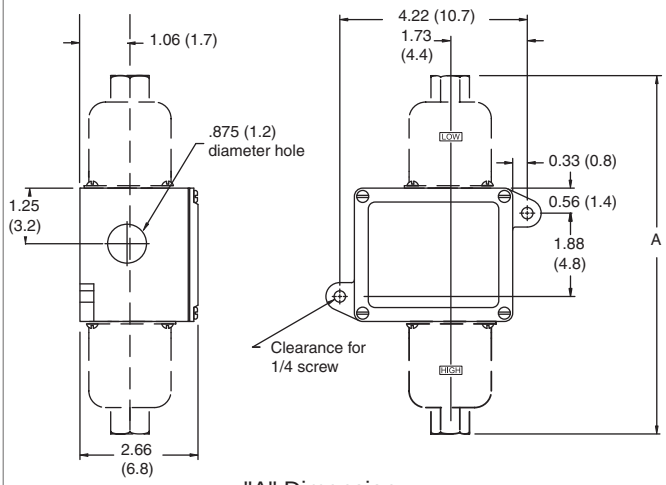
FEATURES

- ***Adjustable setpoint***
- ***Sealed metal bellows***
- ***15A switch rating***
- ***Epoxy coated enclosure***

SPECIFICATIONS

Setpoint Range	
J21K-140	0 to 6 psi (0 to 41 kPa)
J21K-150	0 to 40 psi (0 to 276 kPa)
J21K-232	0 to 25 psi (0 to 172 kPa)
J21K-254	0 to 90 psi (0 to 621 kPa)
J21K-357	0 to 70 psi (0 to 483 kPa)
Operating Pressure	
J21K-140	30" Hg vac to 30 psi (1241 kPa)
J21K-150	30" Hg vac to 180 psi (1241 kPa)
J21K-232	30" Hg vac to 110 psi (759 kPa)
J21K-254	30" Hg vac to 120 psi (828 kPa)
J21K-357	30" Hg vac to 350 psi (2413 kPa)
Contact Rating	15A resistive, 125/250/480 VAC
Contact Type	SPDT
Deadband	
J21K-140	0.1 to 0.4 psi (0.7 to 3 kPa)
J21K-150	0.3 to 0.7 psi (2 to 5 kPa)
J21K-232	0.6 to 1 psi (4 to 7 kPa)
J21K-254	2 to 4 psi (14 to 28 kPa)
J21K-357	2 to 4 psi (14 to 28 kPa)
Operating Temperature	-40° to 160°F (-40° to 71°C)
Wetted Parts	Brass or phosphor bronze bellows
Process Connection	1/4 NPTF
Enclosure	Type 4X (with water tight conduit fitting)
Approvals	UL listed, file #E42272, CE
Weight	2 lb (0.90 kg)
Warranty	1 year

DIMENSIONS



"A" Dimension

J21K-140/150	8.0" (20.5 cm)
J21K-232/254	6.5" (16.6cm)
K21K-357	6.875" (17.46 cm)

ORDERING INFORMATION

MODEL	DESCRIPTION
J21K-140	Differential pressure switch, brass bellows, 0 to 6 psi (0 to 41 kPa)
J21K-150	Differential pressure switch, brass bellows, 0 to 40 psi (0 to 276 kPa)
J21K-232	Differential pressure switch, bronze bellows, 0 to 25 psi (0 to 172 kPa)
J21K-254	Differential pressure switch, bronze bellows, 0 to 90 psi (0 to 621 kPa)
J21K-357	Differential pressure switch, stainless steel bellows, 0 to 70 psi (0 to 483 kPa)

DESCRIPTION

The **J54 Series Pressure Switch** uses a diaphragm to sense changes in pressure to open or close an electrical circuit. The control setpoint can be varied by turning the internal adjustment hex screw. The switch is available with adjustable ranges from 3 psi (21kPa) to 500 psi (3448 kPa).

J54 Series

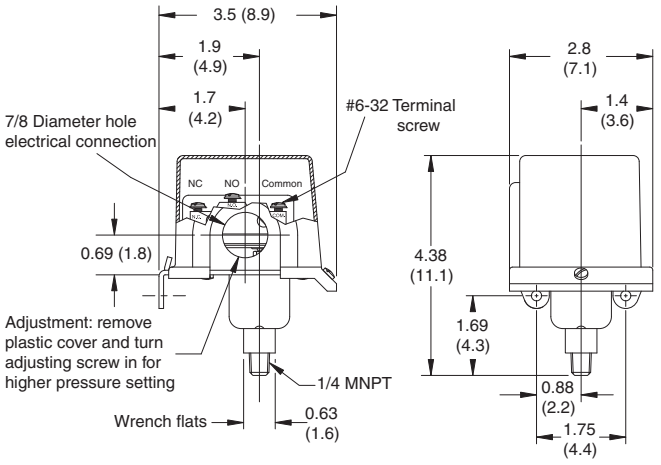
FEATURES

- ***Low cost***
- ***NEMA 1 enclosure***
- ***Compact size***
- ***15A SPDT switch***

SPECIFICATIONS

Setpoint Range	
J54-24	3 to 30 psi (21 to 207 kPa)
J54-25	10 to 100 psi (69 to 690 kPa)
J54-27	30 to 300 psi (207 to 2070 kPa)
J54-28	50 to 500 psi (345 to 3448 kPa)
Deadband	
J54-24	0.4 to 1.3 psi (3 to 9 kPa)
J54-25	1 to 2.5 psi (7 to 17 kPa)
J54-27	1.3 to 4 psi (9 to 28 kPa)
J54-28	1.5 to 5 psi (10 to 34 kPa)
Contact Rating	15A non-inductive, 277 VAC, 60 Hz
Contact Type	SPDT
Overpressure	200 psi (1379 kPa) above setpoint, maximum 600 psi (4137 kPa)
Operating Temperature	0° to 160°F (-18° to 71°C)
Wetted Parts	Buna-N diaphragm and O-ring, aluminum
Process Connection	1/4" MNPT
Approvals	UL and cUL listed E42272, CE
Weight	12 oz (343 g)
Warranty	1 year

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
J54-24	Pressure switch, 3 to 30 psi (21 to 207 kPa)
J54-25	Pressure switch, 10 to 100 psi (69 to 690 kPa)
J54-27	Pressure switch, 30 to 300 psi (207 to 2070 kPa)
J54-28	Pressure switch, 50 to 500 psi (345 to 3448 kPa)

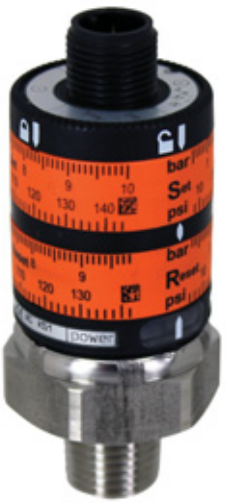
PRESSURE

PRESSURE SWITCH
PK SERIES

DESCRIPTION

The **PK Series** is a low cost series of pressure switches. Each switch uniquely features a set of two radial dials for set point and reset. The **PK Series** has one normally open and normally closed contact and a green LED for power indication and a yellow LED for switching status. Each switch carries an IP67 rating for protection for the harshest of environments. The **PK Series** is available in three models that will switch on pressures ranges up to 5800 psi.

NEW!



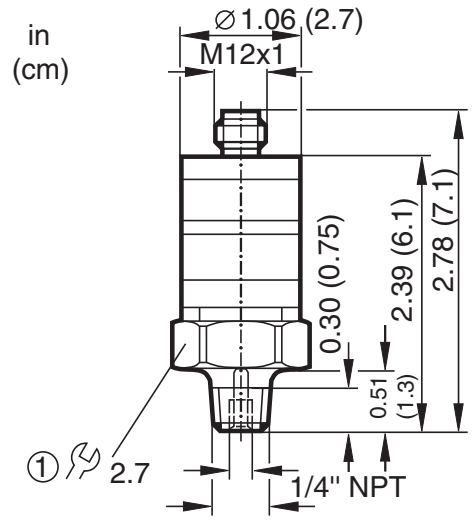
ifm efector

FEATURES

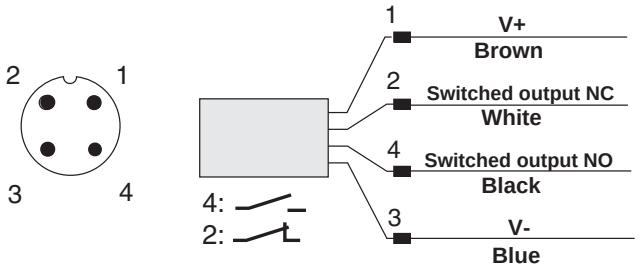
- ***Two, easy to use dual setup dials***
- ***Solid state electronics***
- ***Two PNP switching outputs***
- ***No software needed***
- ***Local LEDs for power and switching status***

PK Series

DIMENSIONS



WIRING



1: V+
2: Switched output NC
4: Switched output NO
3: V-

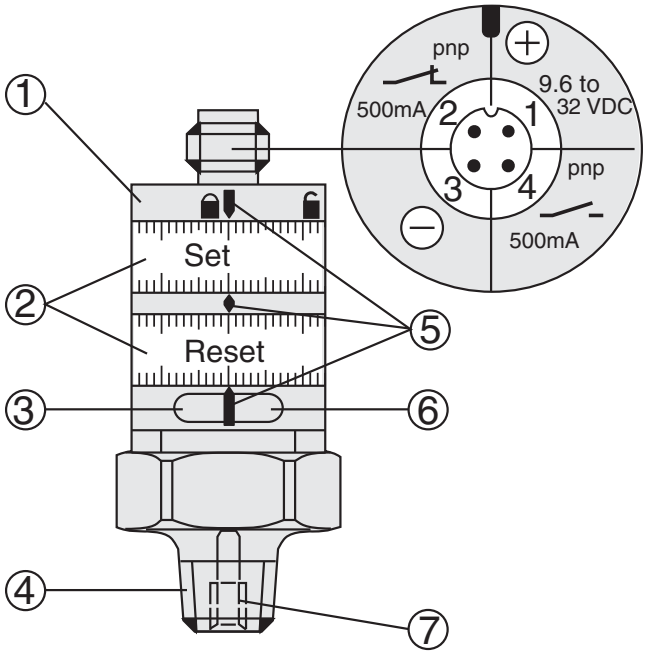
SPECIFICATIONS

Supply Voltage	9.6 to 32 VDC, 525 mA
Contact Rating	0.5A DC PNP (sourcing)
Contact Type	1 NO, 1 NC, open collector transistor
Accuracy	<±2.5% of full scale
Repeatability	<±0.5% of full scale
Measurement Range	
PK6224	0 to 145 psi
PK6222	0 to 1450 psi
PK6220	0 to 5800 psi,
Visual Indication	Power Green LED Switching status Yellow LED (Energized = Switched)
Shock	50g (11ms)
Operating Temperature	-13° to 176°F (-25° to 80°C)

Wetted Parts	Stainless 316L
Media Temperature Range	-13° to 176°F (-25° to 80°C)
Enclosure Rating	IP67, PBT (Pocan); PC (Makrolon); FPM (Viton); stainless steel 316L
Process Connection	¼" NPT
Wiring Terminations	4 pin M12 Electrical connector (order separately)
Dimensions	1.06" diameter x 2.78"H (2.7 x 7.06 cm)
Approvals	cULus, File E174189, CE
Weight	0.4 lb (0.2 kg)
Warranty	2 years

NEW!

SETTING / CONNECTION DIAGRAM



1: Locking ring: unlock the pressure switch by rotating the locking ring (1) to the unlocked position
2: Set and Reset Rings: Set rings to desrired "Set" and "Reset" positions
   a) Minimum distance between Set and Reset = 2% of the final value of the measuring range.
   b)To obtain the setting accuracy: Set the rings to the minimum value, then set the requested value.

3: A green LED inidcates power on and supply voltage normal
4: Process connection ¼" NPT; tightening torque 25 Nm
5: setting marks
6: yellow LED: Set value reached, OUT1 = ON / OUT2 = OFF
7: internal thread M5

ORDERING INFORMATION

MODEL	DESCRIPTION
PK6220	PK Series pressure switch, 0 to 5800 psi, 1 NO 1 NC contacts
PK6222	PK Series pressure switch, 0 to 1450 psi, 1 NO 1 NC contacts
PK6224	PK Series pressure switch, 0 to 145 psi, 1 NO 1 NC contacts

RELATED PRODUCTS

EVC001	6' foot straight connector
EVC002	15' straight connector
EVC003	30' straight connector
EVC004	6' right-angled connector
EVC005	15' right-angled connector
EVC006	30' right-angled connector
EVC008	15' right angled connector with LED indication
EVC009	30' right angled connector with LED indication
E30094	PK Series protective cover

PRESSURE SWITCH
P10 SERIES

DESCRIPTION

P10 Series Pressure Switches use changes in control air pressure to open or close an electrical circuit. The common terminal is red. The red-to-yellow terminals close an electrical circuit on a rise in pressure; the red-to-blue terminals close a circuit on a drop in pressure.

P10BC-7

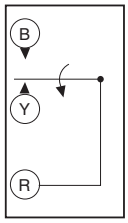
APPLICATION

Typical applications include pressure-electric switches in pneumatic systems, control of pumps or small air compressors, and pressure-electric interlock of fluid flow systems.

FEATURES

- ***Easily accessible screw terminals for field wiring***
- ***Snap-acting contacts in a dust-tight enclosure***
- ***Visible calibration scale***
- ***Field adjustment possible with cover on or removed***
- ***Gas and oil resistant nylon-reinforced diaphragm***
- ***One-year warranty***

WIRING



Action on increase of pressure

SPECIFICATIONS

Electrical ratings

P10BC, P10FC

Motor ratings VAC	120	208	240	277
AC full load amp	16.0	9.2	8.0	7.0
AC locked rotor amp	96.0	55.2	48.0	42.0
Non-inductive amp	16.0	9.2	8.0	7.2
Pilot duty - 125 VA @ 24-277 VAC				

P10BG

Motor Ratings VAC	120	208	240	277
AC full load amp	6.0	3.4	3.0	—
AC locked rotor amp	36.0	20.4	18.0	—
Non-inductive amp	6.0	3.4	3.0	2.6
Pilot duty - 125 VA @ 24-277 VAC				

Maximum Allowable Pressure: 150 psig (1034 kPa)

Model	Number of stages	Contact action	Range psig (kPa)	Factory setting psig (kPa)		Factory setting Switch Diff psig (kPa)		Pressure connector NPT*	Weight lb (kg)
P10BC-7	1	SPDT	3-20 (21-138)	12 (83) (R-Y cut-in)		2 (14)		1/8"	1.0 (0.45)
P10FC-4	2	2-SPDT		(R-Y cut-out) Low stage	(R-Y cut-in) High stage	Low stage	High stage	1/8"	1.5 (0.68)
				8 (55)	12 (82)	2 (14)	2 (14)		
P10BG-3	1	SPDT	2-20 (15-138)	12 (83) (R-Y cut-in)		0.2 (1.4)		1/8"	1.0 (0.45)

*Includes 1/4" barb fitting installed

ORDERING INFORMATION

Specify model number as shown in specifications above.

DIFFERENTIAL PRESSURE TRANSMITTER

DPA SERIES

DESCRIPTION

The Kele **DPA Series** Differential Pressure Transmitter is a very cost-effective, low-range differential air pressure transmitter for duct pressure applications where measurement of pressure differentials up to 10" W.C. is required. The **DPA Series** incorporates a piezoresistive, silicon, micromachined sensing element and integrated temperature compensation for excellent performance and accuracy.

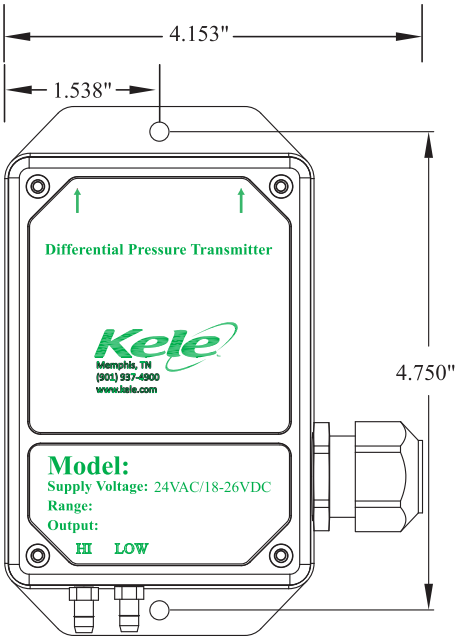
FEATURES

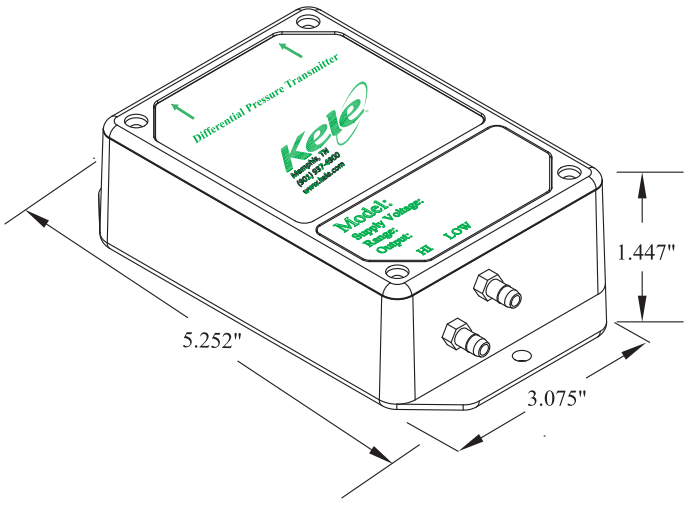
- ***Low cost***
- ***4-20 mA, 1-5 VDC, or 2-10 VDC outputs***
- ***24 VAC or 24 VDC power***
- ***Brass barb fittings for 1/4" tubing***
- ***Two-year warranty***

DPA-1-20

DPA-1-20-LCD

DIMENSIONS





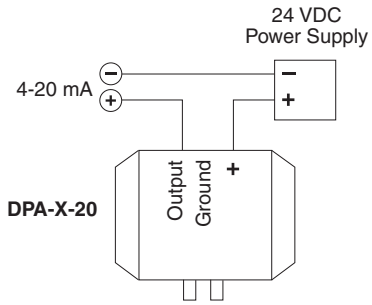
SPECIFICATIONS

Supply Voltage	18 to 36 VDC, 24 VAC ±10%
Supply VA	0.75
Supply Current	31.2 mA
Signal Output	4-20 mA (two-wire) 1-5 or 2-10 VDC (three-wire) Dip switch selectable
Maximum Output Impedance (mA)	550Ω maximum
Minimum Output Impedance (VDC)	100 kΩ minimum
Accuracy	±1.1% FS output (includes non-linearity, hysteresis, and non-repeatability)
Thermal Effect	Compensated temperature range: 32° to 122°F (0° to 50°C)
Media Compatibility	Dry Air or inert non-conductive gases
Overpressure	100" W.C.
Operating Temperature	-13° to 185°F (-25° to 85°C)
Wetted Parts	Brass fittings, PVC tubing, and silicon
Enclosure Rating	Plastic, rated UL94V-0
Process Connection	1/4" barbed fittings
Wiring Terminations	Screw terminal
Approvals	RoHS, CE
Weight	5.1 oz (144 g)
Warranty	5 years

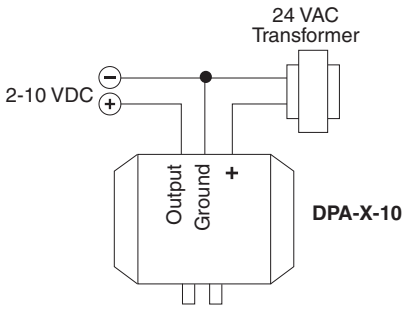
DIFFERENTIAL PRESSURE TRANSMITTER

DPA SERIES

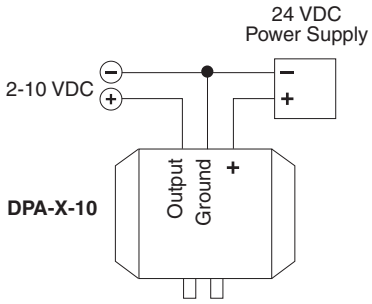
WIRING



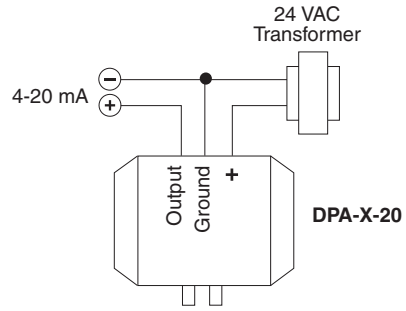
Two-wire 4-20 mA with 24 VDC Power Supply



Three-wire 2-10 VDC with 24 VAC Transformer
Note: Same wiring for 1-5 VDC models



Three-wire 2-10 VDC with 24 VDC Power Supply
Note: Same wiring for 1-5 VDC models



Three-wire 4-20 mA with 24 VAC Transformer

ORDERING INFORMATION

MODEL	DESCRIPTION
DPA	Differential pressure transmitter
	INPUT RANGE ("W.C.)
1	0-1
2	0-2
3	0-3
5	0-5
10	0-10
	OUTPUT SIGNAL
20	4-20 mA
10	2-10 VDC
5	1-5 VDC
	DISPLAY OPTION
LCD	LDC option

DPA – 10 – 5

Example: **DPA-10-5** Differential pressure transmitter with input range of 0-10" W.C. and 1-5 VDC output signal

001-901-382-6084 International | 888-397-5353 USA | kele.com

LOW DIFFERENTIAL PRESSURE TRANSMITTER

DPL SERIES

DESCRIPTION

The **DPL Series** Low Differential Pressure Transmitters offer reliable pressure measurements as low as ±0.10" w.c. (±25 Pa) with an exceptional 1% full scale accuracy. The rugged capacitance sensor can withstand up to 10 psig over pressure without damaging the unit. The transmitters feature reverse wiring protection and easily accessible zero and span pots. The **DPL Series** are designed for energy management systems, environmental pollution control, HVAC, and building automation applications.

FEATURES

- ***10 psig overpressure***
- ***±1% full scale accuracy***
- ***Reverse wiring protection***
- ***4-20 mA, 0-5 or 0-10 VDC output***
- ***Zero and span adjustment***
- ***Bidirectional ranges available***

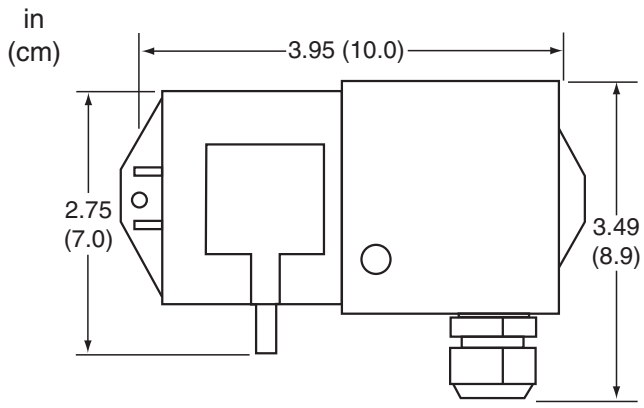
APPLICATION

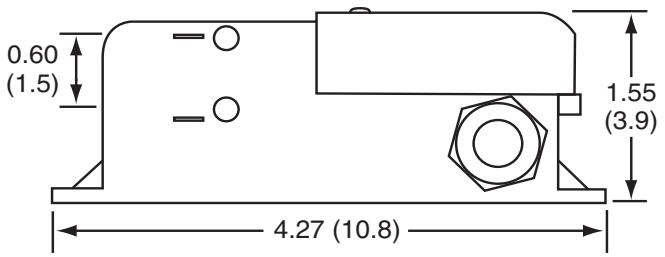
- ***HVAC and energy management systems***
- ***Variable air volume and fan control***
- ***Filter monitoring***
- ***Environmental pollution control***
- ***Furnace draft***
- ***Lab and fume hood control***

SPECIFICATIONS

Supply Voltage	
4-20 mA Model	9-30 VDC
0-5, 0-10 VDC Model	9-30 VAC/VDC
Signal Output	
DPL-XX-1	0-10 VDC (3-wire)
DPL-XX-4	4-20mA (2-wire)
DPL-XX-5	0-5 VDC (3-wire)
Maximum Output Impedance (mA)	800Ω
Minimum Output Impedance (VDC)	5,000Ω
Adjustments	Adjustable via trim pots
Accuracy	±1.0% full scale
Thermal Effect	Compensated temperature range: 0° to 150°F (-18° to 65°C)
Overpressure	±10 psig (68.95 kPa) in positive or negative direction
Operating Temperature	0° to 150°F (-18° to 65°C)
Storage Temperature	-40° to 185°F (-40° to 85°C)
Enclosure Rating	Fire retardant glass filled polyester (UL94V-0)
Process Connection	1/4" OD press-on fitting
Wiring Terminations	Screw terminal strip
Approvals	CE
Weight	5.3 oz (150 g)
Warranty	1 year

DIMENSIONS

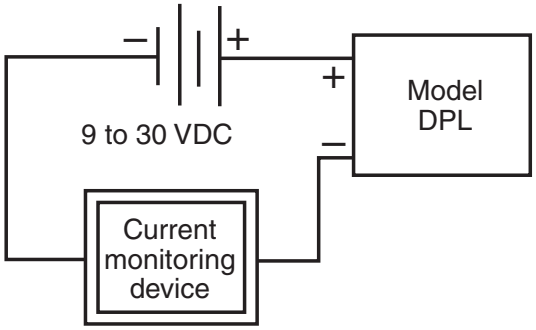


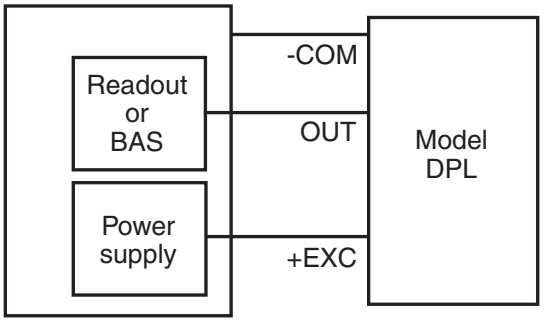


LOW DIFFERENTIAL PRESSURE TRANSMITTER

DPL SERIES

WIRING





ORDERING INFORMATION

MODEL	DESCRIPTION
DPL	Differential pressure transmitter
XXX	Range Code (see table)
1	0-10 V output
4	4-20 mA output
5	0-5 V output

DPL - 10 - 4 ***Example:*** **DPL-10-4** Differential pressure transmitter with 4-20mA output, ± 0.1"w.c.

TABLE 1. RANGE CODES

RANGE CODE	PRESSURE RANGE "W.C.	RANGE CODE	BIDIRECTIONAL RANGE "W.C.
1	0 to 0.25	10	±0.1
2	0 to 0.5	11	±0.25
3	0 to 1.0	12	±0.5
4	0 to 2.5	13	±1.0
5	0 to 5.0	14	±2.5
6	0 to 10.0	15	±5.0
7	0 to 25.0	16	±10.0
8	0 to 50.0	17	±25.0
9	0 to 100	18	±50.0

	RELATED PRODUCTS	PAGE
A-301-K	Duct static pressure tip, 1/4" compression	925
A-302-K	Duct static pressure tip, 1/4" barb	925
A-308-K	Duct static pressure fitting, 1/4" barb	925
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	925
RPS	Stainless steel room pressure sensor, 1/4" barb	925
RPS-I	Ivory plastic room pressure sensor, 1/4" barb	925
RPS-W	White plastic room pressure sensor, 1/4" barb	925
SD-01	Surge dampener	925
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	759

DIFFERENTIAL PRESSURE TRANSMITTER

M264 SERIES

DESCRIPTION

The **Model M264 Differential Pressure Transmitter** is a low-air pressure transmitter able to sense differential pressure in both negative and positive ranges. The **Model M264** incorporates a tensioned stainless steel diaphragm to form a variable capacitor that will produce variation in the output signal. The **Model M264's** durable design will tolerate an overpressure of 10 psig (68.95 kPa) and has an unconditional three-year warranty.

FEATURES

- ***4-20 mA output signal***
- ***Voltage output signal optional***
- ***10 psig (68.70 kPa) overpressure***
- ***Three-year unconditional warranty***
- ***1% accuracy***
- ***Reverse wiring protected***
- ***Stainless steel diaphragm***
- ***Ideal for air and non-conducting gases***

APPLICATION

- ***HVAC building automation***
- ***Variable air volume control***
- ***Environmental pollution control***
- ***Lab and fume hood control***
- ***Filter monitoring***
- ***Medical instrumentation***
- ***Velocity pressure measurement***

SPECIFICATIONS

Supply Voltage	
Current Models	9 to 33 VDC
Voltage Models	9 to 30 VDC
Signal Output	4-20 mA (two-wire) 0-5 VDC (three-wire)
Maximum Output Impedance (mA)	750Ω @ 24 VDC
Minimum Output Impedance (VDC)	5000Ω
Accuracy	±1% FS
Non-linearity	±0.96% FS
Non-repeatability	0.1% FS
Hysteresis	0.2% FS
Compensated Temperature	
Range	0° to 150°F (-18° to 65°C)
Thermal Effect	Zero/Span shift 0.033°F (0.018°C)
Overpressure	Upto 10 psig (68.95 kPa) range dependant

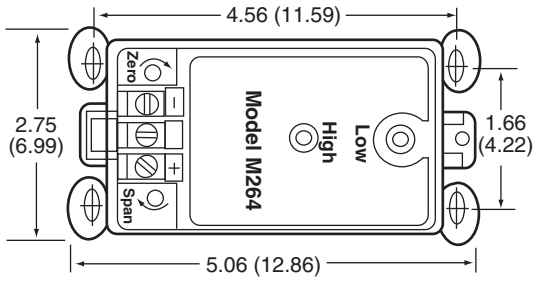
Position Effect	(Unit is factory calibrated at 0g effect with diaphragm vertical),
Range	**Zero offset (%FS/G)**
Up to 0.5" WC	0.60
Up to 1.0" WC	0.50
Up to 2.5" WC	0.22
Up to 5.0" WC	0.14
Operating Temperature	0° to 175°F (-18° to 79°C)
Storage Temperature	-65° to 250°F (-54° to 121°C)
Enclosure	Fire-retardant glass filled polyester (UL 94 V-0 approved)
Process Connection	3/16" OD barbed brass
Dimensions	3.00"H x 5.51"W x 1.91"D (14.00 x 7.62 x 4.85 cm)
Approvals	CE
Weight	9 oz (255g)
Warranty	3 years

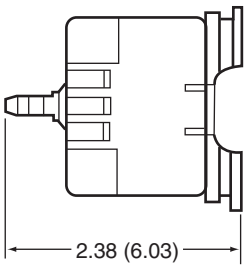
DIFFERENTIAL PRESSURE TRANSMITTER

M264 SERIES

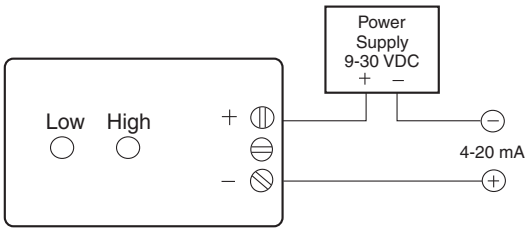
DIMENSIONS

in
(cm)

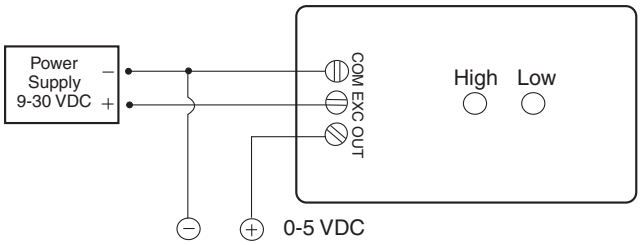




WIRING



4-20 mA Output



0-5 VDC Output

ORDERING INFORMATION

MODEL	DESCRIPTION	
M264	Differential pressure transmitter	
XXX	**RANGE CODE** (see Table 1 below)	
	C	4-20 mA output (stocked at Kele)
	V	0-5 VDC output (call Kele for availability)

M264 - **2R5WB** - **C**

Example: **M264-2R5WB-C** Differential pressure transmitter with a 4-20 mA output proportional to a range of -2.5" to 2.5" W.C. (622 Pa)

TABLE 1. SPECIFYING RANGE

RANGE CODE	PRESSURE RANGE "W.C.	PRESSURE RANGE Pa	RANGE CODE	BIDIRECTIONAL PRESSURE RANGE "W.C.	BIDIRECTIONAL PRESSURE RANGE Pa
0R1WD	0-0.10	0-24.9	0R1WB	±0.1	±24.9
R25WD	0-0.25	0-62.2	R25WB	±0.25	±62.2
0R5WD	0-0.50	0-124	0R5WB	±0.5	±124
001WD	0-1.00	0-249	001WB	±1.0	±249
2R5WD	0-2.50	0-622	2R5WB	±2.5	±622
005WD	0-5.00	0-1244	005WB	±5.0	±1244
010WD	0-10.0	0-2488	010WB	±10.0	±2488
025WD	0-25.0	0-6221	025WB	±25.0	±6221
050WD	0-50.0	0-12441			
100WD	0-100.0	0-24883			

RELATED PRODUCTS

		PAGE
264-A1	Conduit housing for M264	**874**
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-308-K	Duct static pressure fitting, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
RPS	Stainless steel room pressure sensor, 1/4" barb	**925**
RPS-I	Ivory plastic room pressure sensor, 1/4" barb	**925**
RPS-W	White plastic room pressure sensor, 1/4" barb	**925**
SD-01	Surge dampener	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

DESCRIPTION

Modus **M30/40** and **T30/40** Series Differential Pressure Transmitters are reliable, stable, low-air pressure transmitters with 4-20 mA outputs. The **M30** and **T30 Series** are DC-powered, while the **M40** and **T40 Series** are AC-powered. Ranges up to 2" W.C. utilize a differential capacitance cell for pressure measurement. Higher ranges utilize piezo-resistive sensors. Ranges are available from 0" to 0.3" W.C. to 0" to 10" W.C.

All models may be furnished in bidirectional ranges, which will measure both positive and negative pressure differentials. **Models M30** and **M40** are for NEMA 4 applications or applications that require CE-approved products.

M30/40 and T30/40 Series

Distributor
GE Energy

FEATURES

- ***Position insensitive***
- ***No moving parts to wear out***
- ***Compact size***
- ***Fast response time due to low internal volume***
- ***Solid-state circuitry for long life***
- ***Low power consumption***
- ***NEMA 4 enclosure and CE certification (Models M30/40)***

APPLICATION

- ***General automation***
- ***Medical and analytical instruments***
- ***Leak detection***
- ***HVAC monitoring of the following:***
  - ***Filter differential pressures***
  - ***Clean room pressures***
  - ***Variable air volume systems***
  - ***Velocity pressures***

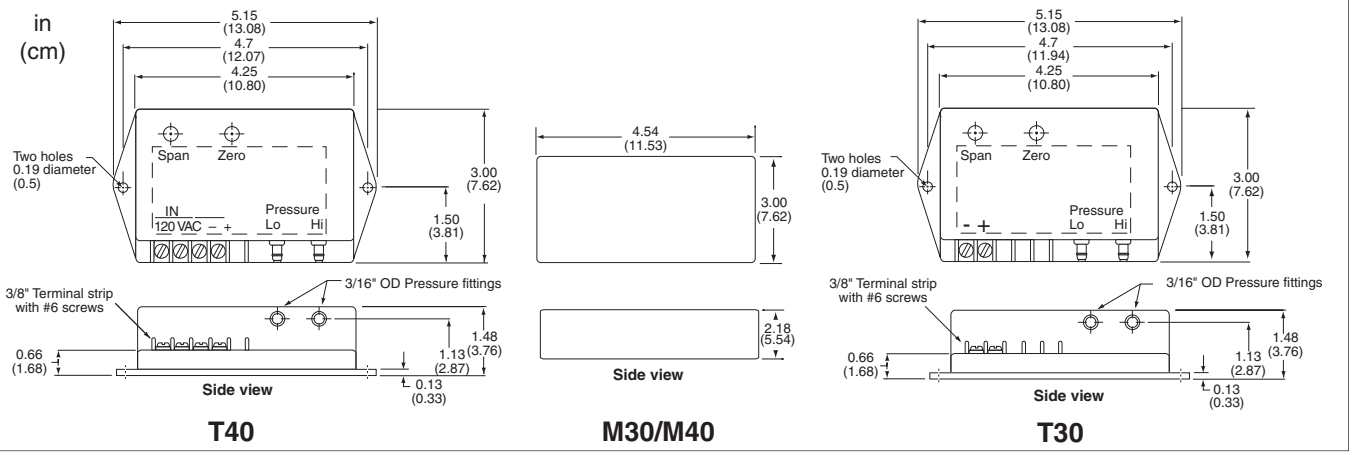
SPECIFICATIONS

Supply Voltage	
T30/M30	11-32 VDC (protected against reversal of polarity)
T40/M40	19-32 VAC, 100-140 VAC
Supply VA	
T30/M30	1 VA
T40/M40	0.9 VA
Signal Output	4-20 mA
Maximum Output Impedance	
T30/M30	700Ω @ 24 VDC (= 50 x VDC – 500)
T40/M40	750Ω
Adjustments	Zero/Span adjustments: Non-interactive adjustments by means of 20-turn potentiometers for fine resolution
Accuracy	1% of range (including non-linearity and hysteresis)
Thermal Effect	Zero ±0.05%/°C; Span ±0.02%/°C
Measurement Range	Upto 10" WC
Vibration Resistance	5G to 50 Hz
Operating Temperature	32° to 115°F (0° to 45°C)
Storage Temperature	-20° to 160°F (-30° to 70°C)
Media Compatibility	Air, Inert gases
Enclosure	
T30/40	Not rated, Flame retardant, glass-reinforced NORYL
M30/40	(IP65), aluminum alloy #A382
Process Connection	3/16" diameter suitable for 1/8" or 5/32" ID (1/4" OD) Tygon or polyurethane tubing; integral filters at both ports
Wiring Terminations	3/8" terminals, #6 screws
Approvals	CE
Weight	
T30	0.42 lb (0.19 kg)
T40	0.57 lb (0.26 kg
M30	1.27 lb (0.58 kg)
M40	1.2 lb (0.55 kg)
Warranty	1 year

DIFFERENTIAL PRESSURE TRANSMITTERS

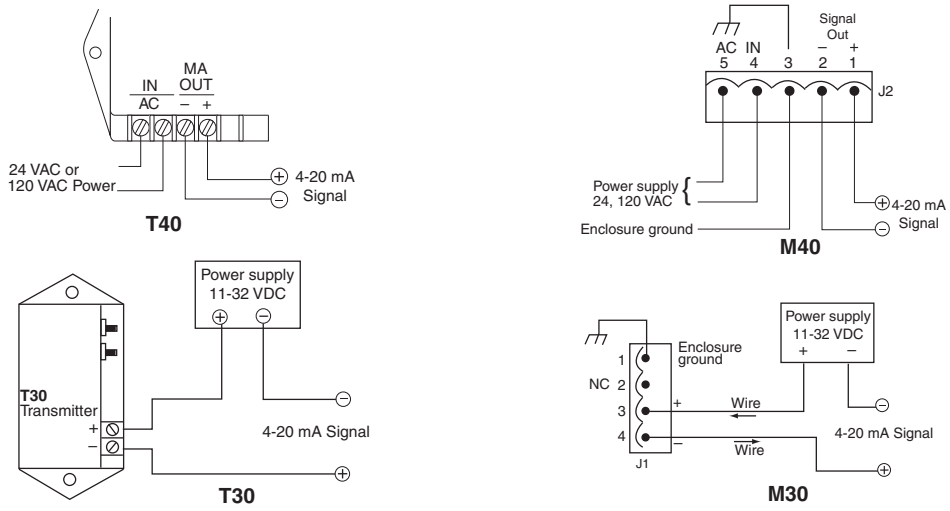
T30/40 AND M30/40 SERIES

DIMENSIONS



T40 **M30/M40** **T30**

WIRING



ORDERING INFORMATION

MODEL	DESCRIPTION
T30	Differential pressure transmitter with NEMA 1 case
T40	Differential pressure transmitter with NEMA 1 case
M40	Differential pressure transmitter with NEMA 4 case, CE certified
M30	Differential pressure transmitter with NEMA 4 case, CE certified
XXX	**RANGE CODE** (see Table 1 to the right)
	POWER SUPPLY (T40, M40 only)
C	24 VAC power
D	120 VAC power
	OPTIONS (leave blank for standard unit)
B	Bidirectional (12 mA @ zero pressure)

T40 — 002 — C — B

Example: **T40-002-C-B** Differential pressure transmitter 4 mA @ -0.2" W.C., 12 mA @ 0" W.C., and 20 mA @ + 0.2" W.C., 24 VAC power

Note: NIST certification options available, consult Kele

TABLE 1. RANGE

RANGE CODE	GE MODEL	PRESSURE RANGE*	
		"W.C.	Overpressure
001	Obsolete	0-0.1	5" W.C.
002	Obsolete	0-0.2	5" W.C.
003	03E	0-0.3	5" W.C.
005	04E	0-0.5	5" W.C.
010	05E	0-1.0	20" W.C.
020	06E	0-2.0	20" W.C.
030	07E	0-3.0	20" W.C.
050	08E	0-5.0	5 psid
100	09E	0-10.0	5 psid

*Call Kele for higher pressure ranges or metric ranges

MULTIRANGE DIFFERENTIAL PRESSURE TRANSMITTER WITH DISPLAY

260 SERIES

DESCRIPTION

The **260 Series** Multirange Differential Pressure Transmitter with **Display** incorporates many powerful, attractive and easy to use features as standard in a multi-configurable package. One model with very low selectable differential pressure ranges is perfect for measuring space static pressure and duct airflow velocity pressure. A second model with higher selectable ranges is used for sensing duct static pressure. Two similar models, with Pascal engineering units instead of inches of water, are also available. The 260 Series comes standard with a wide variety of selectable output signals, 1-5 VDC, 0-5 VDC, 0-10 VDC or 4-20 mA, making it compatible with virtually any building automation controller.

FEATURES

- ***Standard LCD on all models***
- ***Switches and jumpers for configuration***
- ***Selectable analog output***
- ***Designed for AC/DC unregulated power supplies***
- ***Display feedback of configuration selection***
- ***LCD flashes when out of range***
- ***Push button zero***
- ***Optional integral duct static probe***
- ***Models with ranges in Pascal units***
- ***Eleven-point NIST certification available***

APPLICATION

- ***Space static pressure***
- ***Duct static pressure***
- ***Duct airflow***
- ***Clean room pressure***
- ***Air lock/isolation rooms***
- ***Air filter monitoring***

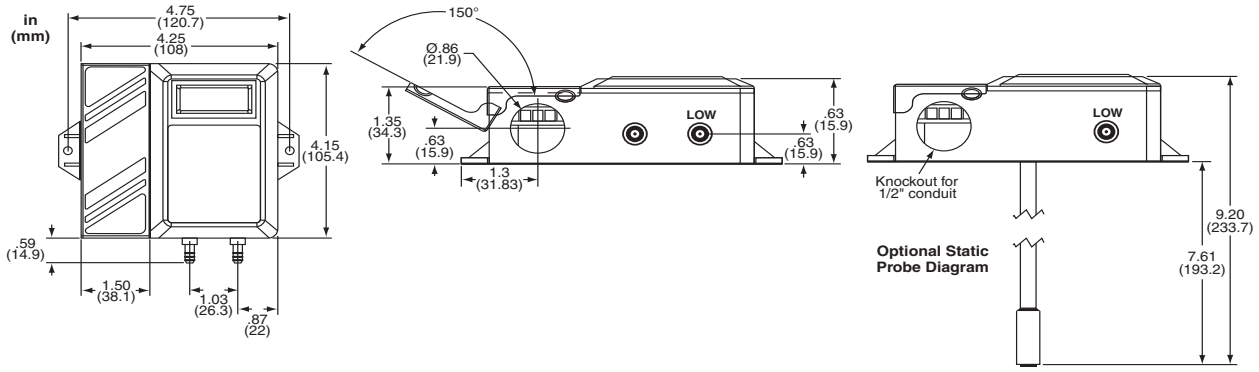
SPECIFICATIONS

Supply Voltage	
Current Output	12-30 VDC
Voltage Output	24 VAC/VDC
Signal Output	4-20 mA (two wire) , 0-5 VDC (three-wire), 0-10 VDC (three-wire)
Maximum Output Impedance (mA)	800Ω @ 30 VDC
Minimum Output Impedance (VDC)	10,000Ω
Accuracy	±1.0% FS at constant temperature
Non-linearity	±0.96% FS
Non-repeatability	0.05% FS
Hysteresis	0.1% FS
Compensated Temperature Range	32° to 122°F (0° to 50°C)
Thermal Effect	Zero/Span shift 0.02% FS/°F (0.036% FS/°C)
Overpressure	10 psig (69 kPa)
Operating Temperature	32° to 122°F (0° to 50°C)
Storage Temperature	23° to 131°F (-5° to 55°C)
Enclosure	UL 94V-0 flame resistant enclosure plenum rated
Process Connection	3/16" OD barbed brass
Approvals	Meets CE standards
Weight	8 oz (227g)
Warranty	1 year

MULTIRANGE DIFFERENTIAL PRESSURE TRANSMITTER WITH DISPLAY

260 SERIES

DIMENSIONS

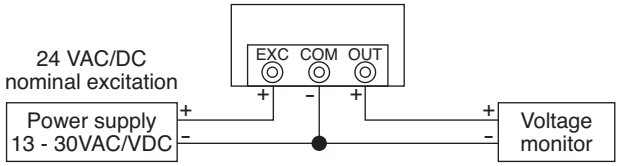


SELECTABLE RANGES PER MODEL

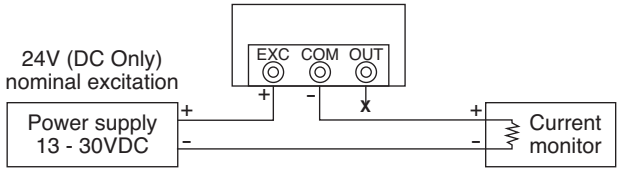
Model	Unidirectional ranges	Bi-directional ranges
MS1	0" to 0.1" W.C.	±0.1" W.C.
	0" to 0.25" W.C.	±0.25" W.C.
	0" to 0.5" W.C.	±0.5" W.C.
	0" to 1.0" W.C.	±1.0" W.C.
MS2	0" to 1.0" W.C.	±1.0" W.C.
	0" to 2.5" W.C.	±2.5" W.C.
	0" to 5.0" W.C.	±5.0" W.C.
	0" to 10.0" W.C.	±10.0" W.C.
MS3	0 to 25 Pa	±25 Pa
	0 to 50 Pa	±50 Pa
	0 to 100 Pa	±100 Pa
	0 to 250 Pa	±250 Pa
MS4	0 to 250 Pa	±250 Pa
	0 to 500 Pa	±500 Pa
	0 to 1000 Pa	±1000 Pa
	0 to 2500 Pa	±2500 Pa

WIRING

Voltage – Three-Wire, 0-5, 0-10 VDC Configuration



Current – Two-Wire, 4-20 mA Configuration



ORDERING INFORMATION

MODEL	DESCRIPTION
260G	Multirange differential pressure transmitter with display
	RANGES
MS1	0-0.1" to 0-1.0" W.C. ranges, wall mount
MS2	0-1.0" to 0-10" W.C. ranges, wall mount
MS3	0-25 to 0-250 Pa ranges, wall mount
MS4	0-250 to 0-2500 Pa ranges, wall mount
	PROBE OPTION
S	Static pressure probe
	DISPLAY OPTION
D	Display
N	No Display
	NIST OPTION
NIST	11-point calibration certificate included

2601 – MS1 – S – ☐

Example: **2061MS1S** Model 260 transducer 0" to 1.0" W.C. range with optional static pressure probe.

RELATED PRODUCTS

		PAGE
A-301-K	Duct static pressure tip, 1/4" compression	925
A-302-K	Duct static pressure tip, 1/4" barb	925
A-308-K	Duct static pressure fitting, 1/4" barb	925
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	925
RPS	Stainless steel room pressure sensor, 1/4" barb	925
RPS-I	Ivory plastic room pressure sensor, 1/4" barb	925
RPS-W	White plastic room pressure sensor, 1/4" barb	925
SD-01	Surge dampener	925
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	759

MULTI-RANGE DIFFERENTIAL PRESSURE TRANSMITTER

M267-MR

DESCRIPTION

The **Model M267-MR** Differential Pressure Transmitter is a multi-rangeable low air differential pressure transmitter. One **Model M267-MR** replaces six single-range pressure transmitters and is ideal for stocking. Each **Model M267-MR** is factory calibrated for its highest range but can easily be recalibrated. The rugged poly-carbonate NEMA 4 case protects the internal electronics from the environment.

FEATURES

- ***Measure six ranges with one unit (three positive and three bidirectional ranges)***
- ***1% accuracy in each range***
- ***10 psig (68.70 kPa) maximum overpressure***
- ***Rugged IP65/NEMA 4 case***
- ***Available in current or voltage outputs***
- ***Available in ranges up to 30" W.C. (7.473 kPa)***
- ***Easily reranged with dip switches***

M267-MR2-C

APPLICATION

- ***HVAC building automation***
- ***Static duct pressure***
- ***Clean room pressure***
- ***Environmental pollution control***
- ***Filter monitoring***

SPECIFICATIONS

Supply Voltage	
Current Output	9 to 33 VDC
VOltage Output	9 to 30 VDC
Supply VA	0.8 VA
Signal Output	4-20 mA (two-wire), 0-5 VDC (three-wire), 0-10 VDC (three-wire)
Maximum Output Impedance (mA)	750Ω @ 24 VDC
Minimum Output Impedance (VDC)	≥5000Ω
Accuracy	±1.0% FS at constant temperature
Non-repeatability	0.1% FS
Non-linearity	±0.98% FS
Hysteresis	0.2% FS
Thermal Effect	Zero/Span shift 0.033% FS/°F (0.018%FS/°C)
Overpressure	Upto ±10 psig (68.95 kPa) - range dependant

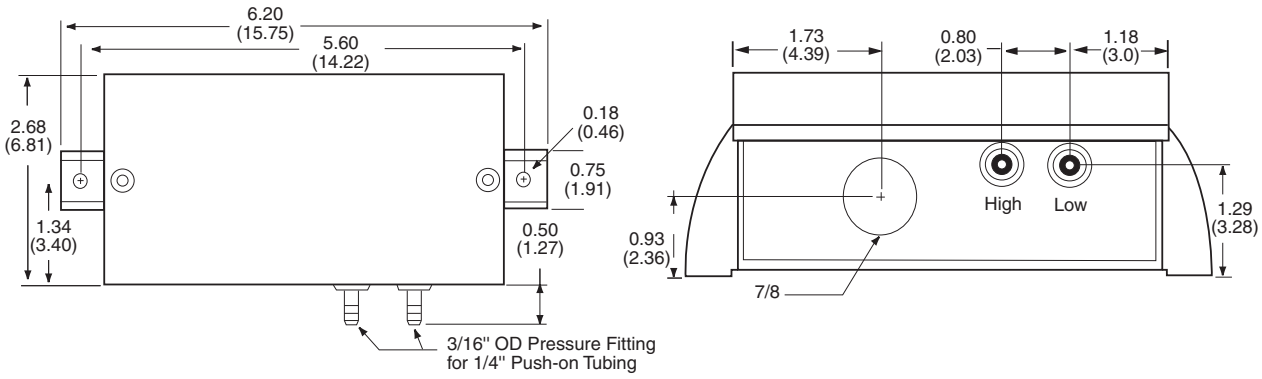
Position Effect	(Unit is factory calibrated at 0g effect with diaphragm vertical)
Range (in)	**Zero Offset (%FS/G)**
0-30	0.06
0-5	0.14
0-1.0	0.22
0-0.1	2.10
Operating Humidity	35% to 95% non-condensing
Operating Temperature	0° to 150°F (-18° to 65°C)
Compensated Temperature Range	40° to 150°F (5° to 65°C)
Enclosure	Plastic glass-filled polycarbonate
Enclosure Rating	NEMA 4 (IP65)
Process Connection	3/16" OD barbed brass, for 1/4" OD tubing
Dimensions	2.68"H x 6.20"W x 2.32"D (6.81 x 15.25 x 5.90 cm)
Approvals	CE
Weight	9 oz (255g)
Warranty	1 year

MULTIRANGE DIFFERENTIAL PRESSURE TRANSMITTER

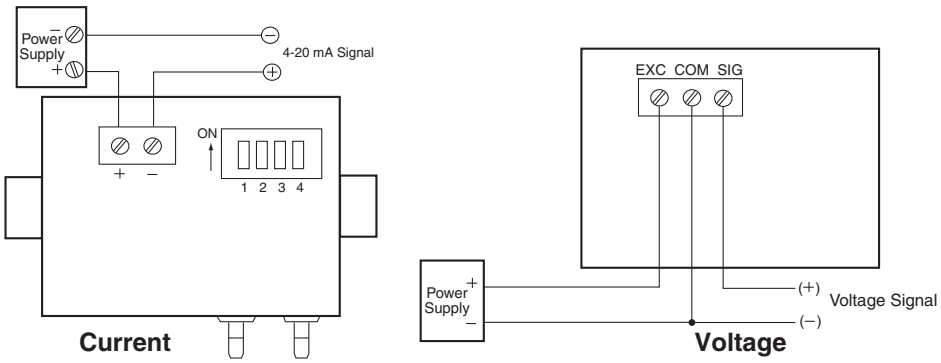
M267-MR

DIMENSIONS

in
(cm)



WIRING



ORDERING INFORMATION

MODEL	DESCRIPTION	
M267	Multi-range differential pressure transmitter	
XXX	**RANGE CODE** (see Table 1 below)	
	C	4-20 mA output
	V5	0-5 VDC output
	V10	0-10 VDC output

M267 — **MR2** — **C**

Example: **M267-MR2-C** Multirange differential pressure transmitter with a 0-0.25" to 0-1.0" W.C. pressure range and a 4-20 mA output.

TABLE 1. SPECIFYING RANGE

RANGE CODE	PRESSURE RANGE			
	"W.C.	Pa	"W.C.	Pa
MR1*	0-0.1	24.91	± 0.05	12.46
MR2	0-0.25	62.03	±0.125	31.14
	0-0.5	124.55	±0.25	62.03
	0-1.0	249.10	±0.50	124.55
MR3	0-1.25	311.38	±0.625	155.69
	0-2.5	622.75	±1.25	311.38
	0-5.0	1245.50	±2.5	622.75
MR4	0-7.5	1868.25	±3.75	934.13
	0-15	3736.50	±7.5	1868.25
	0-30	7473.00	±15.0	3736.50

* **MR1** is available only with 0-0.1" W.C. and ±0.05" W.C.

DESCRIPTION

The BAPI **ZPS Series** Differential Pressure Transmitter is an accurate, rugged and economical solution for measuring and reporting duct/building static pressure, room-to-room differential pressure or air flow velocities/volumes. The **ZPS Series** micro-machined silicon piezoresistive pressure sensor is specifically developed for low differential pressure. The sensor's custom ASIC (Application Specific Integrated Circuit) provides five-point error correction over the compensated temperature range for excellent accuracy, repeatability and stability.

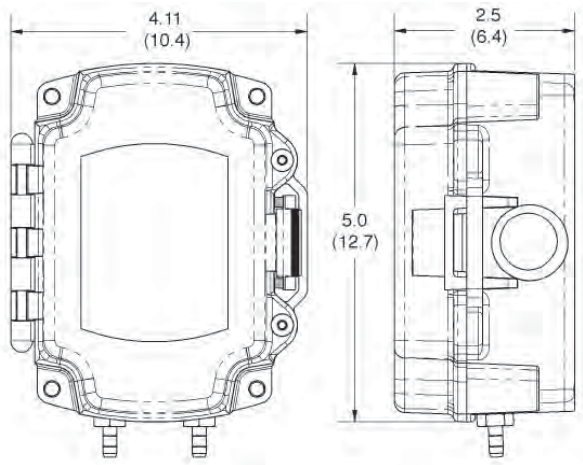
ZPS Series

FEATURES

- ***Field-selectable ranges and output signals***
- ***Five direct and five bidirectional standard ranges***
- ***4-20 mA, 0-5 VDC, or 0-10 VDC output signal***
- ***Inches of water or Pascal engineering units***
- ***Optional large LCD display***
- ***Microprocessor controlled auto-zero***
- ***Rugged IP66 (NEMA 4) housing***
- ***Short-circuit proof and polarity protected***
- ***Three-year warranty***

DIMENSIONS

in
(cm)



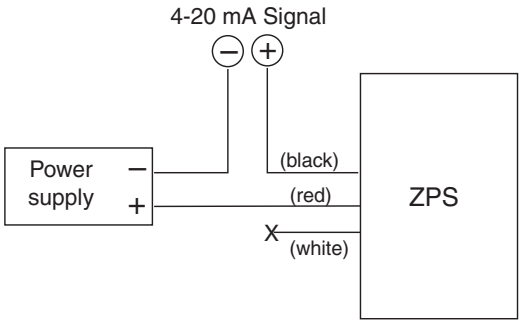
SPECIFICATIONS

Supply Voltage	
4-20 mA Models	7 to 45 VDC
0-5 VDC Models	7 to 45 VDC, 7 to 32 VAC
0-10 VDC Models	13 to 45 VDC, 13 to 32 VAC,
Signal Output	Two-wire, 4-20 mA or three-wire, 0-5 or 0-10 VDC
Stability	±0.25% ful scale per year
Maximum Output Impedance (mA)	850Ω @ 24 VDC
Minimum Output Impedance (VDC)	1 kΩ
Accuracy	±0.5% (±1% on 0 to 0.1" W.C. and ±0.1" W.C. range models)
Thermal Effect	±2% of Span maximum (±1.0 in WC @ 50°F to 104°F, 10 to 40°C)
Overpressure	1 psi proof pressure, 1.5 psi burst pressure
Operating Humidity	0 to 95% RH, non-condensing
Operating Temperature	32° to 140°F (0° to 60°C)
Enclosure	UV-resistant Polycarbonate, UL94, V-0, IP66, NEMA 4
Mounting	Four external tabs with holes for #10 screws
Process Connection	3/16" barbed fitting (use 1/8" ID tubing)
Wiring Terminations	2 wires (4-20mA Current loop) 3 wires (AC or DC powered, Voltage out)
Weight	1.0 lb (0.45 kg)
Warranty	3 years

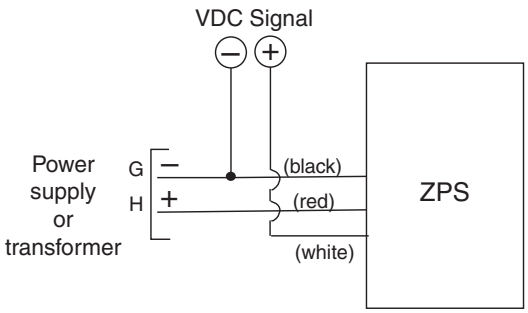
DIFFERENTIAL PRESSURE TRANSMITTER

ZPS SERIES

WIRING



4-20 mA Wiring
(See specifications for power supply information)



0-5 VDC or 0-10 VDC Wiring
(See specifications for power supply information)

ORDERING INFORMATION

ZPS	Differential Pressure transmitter				
	20	4 to 20 mA (7 to 45 VDC Supply ONLY)			
	05	0 to 5 V (7 to 45 VDC Supply or 7 to 32 VAC Supply)			
	10	0 to 10 V (13 to 45 VDC Supply or 13 to 32 VAC Supply)			
		LR	Low range: pressure ranges 0 to 1" W.C., +/- 1.0"W.C.		
		SR	Standard ranges: pressure ranges greater than 1.0"W.C., +/-2.5" W.C.		
			Option	Range ("W.C.)	Option	Range (Pascals)
			S1	0 to 0.10	61	0 to 30
			S2	0 to 0.25	62	0 to 50
			S3	0 to 0.50	63	0 to 100
			S5	0 to 1.00	65	0 to 250
			73	0 to 2.50	88	0 to 500
			75	0 to 5.00	85	0 to 1000
			S6	-0.10 to 0.10	66	-30 to 30
			S7	-0.25 to 0.25	67	-50 to 50
			S8	-0.50 to 0.50	68	-100 to 100
			60	-1.00 to 1.00	70	-250 to 250
			78	-2.50 to 2.50	88	-500 to 500
			80	-5.00 to 5.00	90	-1,250 to 1,250
			ENCLOSURE			
			BB	BAPI Box		
			OPTIONAL STATIC PRESSURE PROBE			
			NT	No tube or probe included		
			ST	Statid pressure measurement probe		
			DISPLAY			
			D	LCD Display		

RELATED PRODUCTS

		PAGE
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-308-K	Duct static pressure fitting, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
RPS	Stainless steel room pressure sensor, 1/4" barb	**925**
RPS-I	Ivory plastic room pressure sensor, 1/4" barb	**925**
RPS-W	White plastic room pressure sensor, 1/4" barb	**925**
SD-01	Surge dampener	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**
ZPS-ACC01	2" X 4" Stainless steel wall plate with static pickup	
ZPS-ACC10	Rooftop or wall-mount outside air pressure pickup port	
ZPS-ACC12	Pitot pressure probe assy, 6" long (includes static & total probe assy)	

DESCRIPTION

The **Ashcroft XLdp Series** Differential Pressure Transmitters are an industrial-quality differential air pressure transmitter for use with air and other noncorrossive gases. The **XLdp** models are available in ranges from 0.1" to 25" W.C. and can withstand up to 10 psid overpressure. They are highly accurate and available in accuracies of 0.25% and 0.50%.ϖs

FEATURES

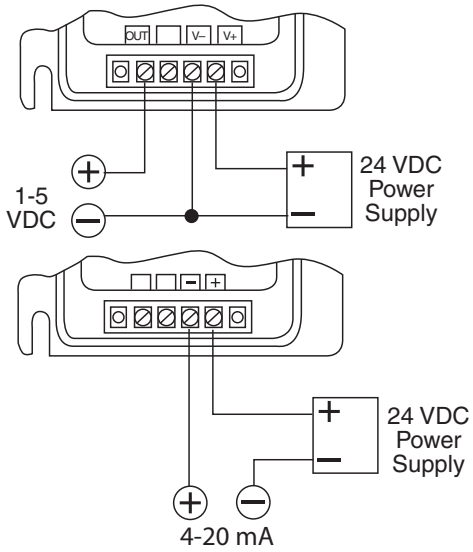
- ***Reliable, stable capacitive sensor***
- ***Low-range models down to ±0.05" W.C.***
- ***Positive or bidirectional ranges available***
- ***Reverse polarity protected***
- ***High proof pressure***
- ***Includes NIST certificate***

XLDP Series

SPECIFICATIONS

Supply Voltage	12-36 VDC
Signal Output	4-20 mA, 1-5 VDC
Maximum Output Impedance	545Ω @ 24 VDC (up to 1045Ω @ 36 VDC)
Accuracy	0.25% or 0.5%
Stability	±0.5% FS/yr
Compensated Temperature Range	35° to 135°F (2° to 57°C)
Overpressure	10 psid (69 kPa)
Burst Pressure	25 psig (172 kPa)
Response Time	250 ms
Operating Temperature	-20° to 160°F (-29° to 71°C)
Media Compatibility	Air and non-corrosive gases
Dimensions	4.5"W x 4.4"H x 1.8"D (11.6 x 11.1 x 4.7 cm)
Weight	14.0 oz (0.4 kg
Warranty	1 year

WIRING



ORDERING INFORMATION

MODEL	DESCRIPTION
XL	XLdp differential pressure transmitter
3	0.25% accuracy
5	0.50% accuracy
MB2	1/4" barbed stainless steel fittings
42	4-20 mA signal output
15	1-5 VDC signal output
ST	Electrical termination

PRESSURE RANGE "W.C.

P1IW	0-0.1	**P05IWL**	±0.05
P25IW	0-0.25	**P1IWL**	±0.1
P5IW	0-0.5	**P25IWL**	±0.25
1IW	0-1.0	**P5IWL**	±0.5
2IW	0-2.0	**1IWL**	±1.0
2P5IW	0-2.5	**2IWL**	±2.0
3IW	0-3.0	**2P5IWL**	±2.5
5IW	0-5.0	**3IWL**	±3.0
10IW	0-10.0	**5IWL**	±5.0
		10IWL	±10.0

XL | **3** | **MB2** | **42** | **ST** | **P1IWL**

Example: **XL-3-MB2-42-ST-P1IWL** Differential pressure transmitter with 0.25% accuracy that measures from -0.1" to 0.1" W.C. with a 4-20 mA output

RELATED PRODUCTS

		PAGE
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-308-K	Duct static pressure fitting, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

DIFFERENTIAL PRESSURE TRANSMITTERS

CXLDP/RXLDP SERIES

DESCRIPTION

The **CX/RXLdp Series** Differential Pressure Transmitters are designed for use with air and other non-corrosive gases. The **CXLdp Series** feature an accuracy of 0.8% and can be DIN rail mounted. The RXLdp Series are constructed with a stainless steel enclosure and offer a 1% accuracy.

FEATURES

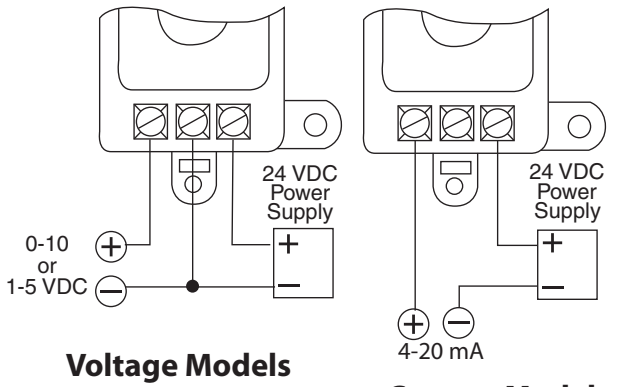
- ***Reliable, stable capacitive sensor***
- ***Reverse polarity protected***
- ***High proof pressure***
- ***DIN rail mount CXLdp models***
- ***Power LED on CXLdp models***

CXLdp
RXLdp

SPECIFICATIONS

Supply Voltage	12-36 VDC
Signal Output	RXLdp: 4-20 mA, 1-5 VDC, 0-10 VDC CXLdp: 4-20 mA
Maximum Output Impedance	RXLdp: 545Ω @ 24 VDC (up to 1045Ω @ 36 VDC) CXLdp: 545Ω @ 24 VDC (up to 1091Ω @ 36 VDC)
Accuracy	RXLdp: 1% CXLdp: 0.8%
Stability	±0.5% FS/yr
Compensated Temperature Range	RXLdp: 40° to 125°F (4° to 52°C) CXLdp: 35° to 130°F (2° to 54°C)
Overpressure	10 psid (69 kPa)
Burst Pressure	25 psig (172 kPa)
Response Time	250 ms
Operating Temperature	0° to 160°F (-18° to 71°C)
Media Compatibility	Air and non-corrosive gases
Dimensions	RXLdp: 2.8"W x 3.8"H x 1.6"D (7.0 x 9.7 x 4.1 cm) CXLdp: 1.9"W x 3.3"H x 1.3"D (4.8 x 8.5 x 3.3 cm)
Weight	RXLdp: 4.5 oz (0.13 kg) CXLdp: 2.5 oz (0.07 kg)
Warranty	1 year

WIRING



Voltage Models (RXLDP Only)

Current Models

ORDERING INFORMATION

MODEL	DESCRIPTION
RX	RXLdp differential pressure transmitter
CX	CXLdp differential pressure transmitter
7	1% accuracy (RX only)
8	0.80% accuracy (CX only)
MB2	1/4" barbed stainless steel fittings
F01	1/8" FNPT (CX only)
42	4-20 mA signal output
15	1-5 VDC signal output (RX only)
10	0-10 VDC signal output (RX only)
ST	Electrical termination (RX only)

PRESSURE RANGE "W.C.

P1IW	0-0.1	***P05IWL**	±0.05
P25IW	0-0.25	**P1IWL**	±0.1
P5IW	0-0.5	**P25IWL**	±0.25
1IW	0-1.0	**P5IWL**	±0.5
2IW	0-2.0	**1IWL**	±1.0
2P5IW	0-2.5	**2IWL**	±2.0
3IW	0-3.0	**2P5IWL**	±2.5
5IW	0-5.0	**3IWL**	±3.0
10IW	0-10.0	**5IWL**	±5.0
		10IWL	±10.0

*Not a valid range for CXLdp

RX | **7** | **MB2** | **42** | **ST** | **P1IWL**

Example: **RX-7-MB2-42-ST-P1IWL** Differential pressure transmitter with 1.0% accuracy that measures from -0.1" to 0.1" W.C. with a 4-20 mA output

RELATED PRODUCTS

		PAGE
101A213-01	1/2" conduit/plenum kit for CXLdp transmitter	**883**

PRECISION LOW DIFFERENTIAL PRESSURE TRANSMITTER

269 SERIES

DESCRIPTION

The **269 Series Precision Low Differential Pressure Transmitters** are designed for high performance applications such as clean rooms, isolation rooms, and other critical environments. The transmitters offer full scale accuracy of ±0.5% with excellent long term stability. Installation and calibration is easy with the removable process head, detachable terminal block and Din Rail mounting.

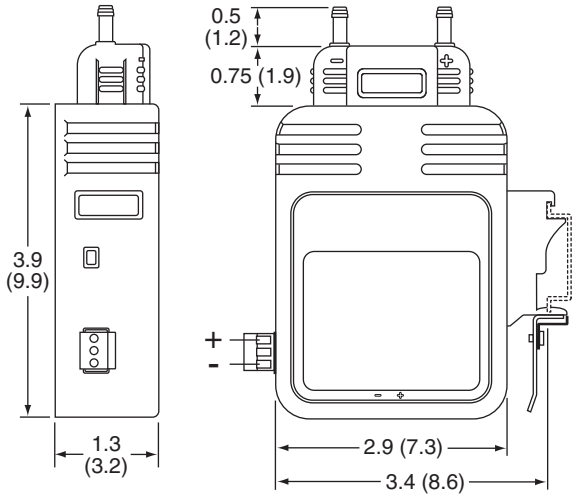
FEATURES

- ***2 psig overpressure***
- ***0.5% full scale accuracy***
- ***Reverse wiring protection***
- ***4-20 mA output***
- ***Removable process head***
- ***Bidirectional ranges available***

SPECIFICATIONS

Supply Voltage	13.5-30 VDC
Signal Output	4-20mA (2-wire)
Maximum Output Impedance	800Ω
Adjustments	Adjustable via an external security key
Accuracy	±0.5% full scale
Thermal Effect	Compensated temperature range: 20° to 140°F (-6.7° to 60°C)
Overpressure	±2 psig (14 kPa), positive or negative
Operating Temperature	-20° to 160°F (-29° to 71°C)
Storage Temperature	-40° to 185°F (-40° to 85°C)
Enclosure Rating	ABS plastic, fire retardant (UL94 V-0)
Mounting	Vertical, DIN rail
Process Connection	3/16" O.D. brass barbed fittings
Wiring Terminations	Detachable screw terminal connector
Approvals	CE
Weight	9 oz (255 g)
Warranty	1 year

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
2691-001WB	Differential pressure transmitter, ±1.0" W.C.
2691-001WD	Differential pressure transmitter, 0-1.0" W.C.
2691-005WB	Differential pressure transmitter, ±5" W.C.
2691-005WD	Differential pressure transmitter, 0-5" W.C.
2691-010WD	Differential pressure transmitter, 0-10" W.C.
2691-0R1WB	Differential pressure transmitter, ±0.1" W.C.
2691-0R1WD	Differential pressure transmitter, 0-0.1" W.C.
2691-0R5WB	Differential pressure transmitter, ±0.5" W.C.
2691-0R5WD	Differential pressure transmitter, 0-0.5" W.C.
2691-2R5WB	Differential pressure transmitter, ±2.5" W.C.
2691-2R5WD	Differential pressure transmitter, 0-2.5" W.C.
2691-R25WB	Differential pressure transmitter, ±0.25" W.C.
2691-R25WD	Differential pressure transmitter, 0-0.25" W.C.

ACCESSORIES

269425-02	Security cal key (required for calibration)

ROOM PRESSURE MONITOR

SRPM

DESCRIPTION

The **Model SRPM** Room Pressure Monitor provides a system for monitoring differential pressures in critical low pressure applications. A backlit LCD provides an intuitive graphic user interface for ease of unit, security and alarm setup. Installation costs and on going calibration costs of ownership are significantly reduced. A red LED, green LED, backlit LCD, local audible alarm and optional remote annunciator alert personnel of the status of the system. A SPDT relay output is also available for additional status indication. Three analog outputs are available in the same unit to interface with BAS system. The **Model SRPM** is housed in a tough fire resistant plastic housing designed for surface mounting. The attractive case fits into Hospital and Pharamceutical applications. Models are available for 120/240 VAC or 24 VAC. The optional SRAN remote annunciator provides a visual and audible warning of room conditions at a remote location.

BACNET VERSIONS

FEATURES

- ***Easy, menu-driven programming***
- ***Large 2" x 2" LCD touch screen display***
- ***0.5% accuracy***
- ***Visual and audible local alarms w/ alarm silence***
- ***Built in alarm horn with local alarm silence***
- ***Optional remote annunciator available***
- ***Selectable analog voltage and milli-amp outputs***
- ***SPDT alarm relay***
- ***Red and green room status LEDs***
- ***Display resolution of 0.001"***
- ***Door status monitor***
- ***Variable alarm delay***
- ***NIST certification included***
- ***Optional BACnet MSTP***

APPLICATION

Typical applications include positive-pressure clean rooms such as pharmaceutical processing areas and negative-pressure isolation rooms such as hospital rooms housing contagious patients.

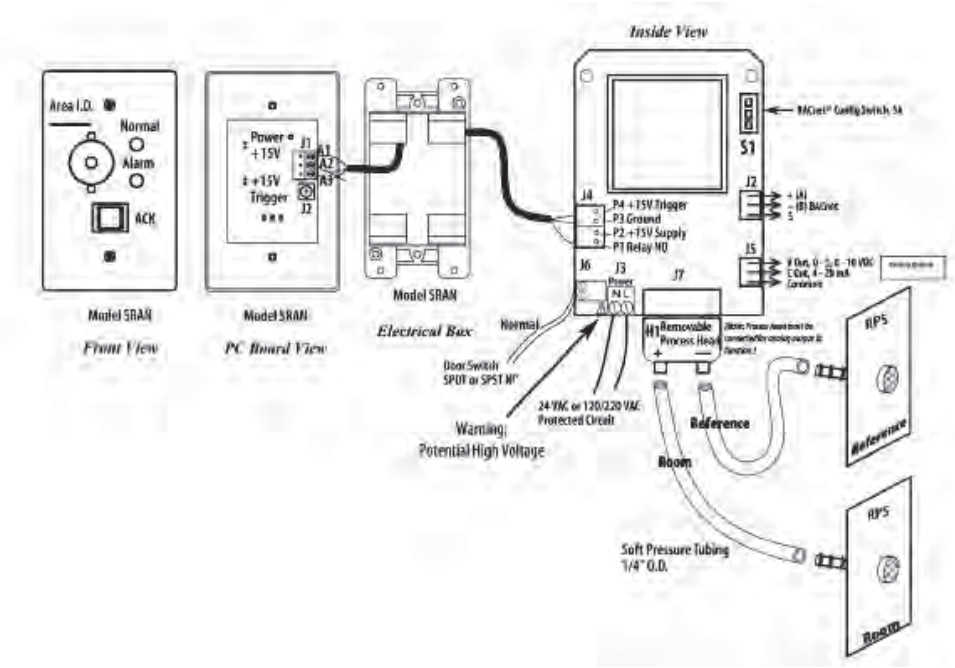
Optional Remote Annunciator

Setra's SRAN annunciator allows remote indication of room status at monitoring or nurses station. A GREEN LED indicates a normal room condition, a RED LED and audible alarm signal a breach in room pressure status.

SPECIFICATIONS

Supply Voltage	24 VAC 50/60 Hz, 120 VAC 50/60 Hz	**Operating Humidity**	5 to 95% (non-condensing)
Supply Watts	5W	**Operating Temperature**	32° to 120°F (0° to 50°C)
Signal Output	0-5 VDC (2.5 V @ 0 pressure) 0-10 VDC (5 V @ 0 pressure) 4-20 mA sourcing (12 mA @ 0 pressure)	**Enclosure Rating**	NEMA 1, Fire retardant plastic
		Mounting	Mounts to a 4" x 4" electrical box
		Process Connection	Barbed fittings for 1/4" OD tubing
		Dimensions	8.0"H x 5.4"W x 1.6"D (20.3 x 13.7 x 4.1 cm)
Alarm Relay Output	SPDT, 5A @ 30 VDC, 120 VAC		
Accuracy	0.5% FS	**Approvals**	CSA C22.2 No. 1010 Safety
Display	LCD, 128x128 RGB backlit	**Weight**	1.5 lb (0.69 kg)
Display Resolution	0.001" WC	**Warranty**	1 year
Display Units	Inches of Water ("WC), Pascals (Pa)		
Protocol	BACnet		

WIRING



ORDERING INFORMATION

Model	Description			
SRPM	Setra Room Pressure Monitor			
	R05WB	±0.05" WC		
	0R1WB	±0.1" WC		
	R25WB	±0.25" WC		
	0R5WB	±0.5" WC		
	001WB	±1.0" WC		
	2R5WB	±2.5" WC		
	005WB	±5.0" WC		
		A1	24 VAC Supply voltage	
		V1	120 VAC Supply voltage	
		A2	24 VAC Supply, BACnet	
		V2	120 VAC Supply, BACnet	
			V	0.25% Accuracy
			E	0.5% Accuracy

Example: **SRPM-001WB-A1-E** SRPM pressure monitor measuring ±1.0" W.C. pressure 24VAC supply voltage at 0.5% accuracy.

RELATED PRODUCTS		PAGE
4BX11234	4" square steel box 1-1/2" deep, 1/2" and 3/4" KO	**187**
RPS	Stainless steel room pressure sensor, 1/4" barb	**925**
RPS-I	Ivory plastic room pressure sensor, 1/4" barb	**925**
RPS-W	White plastic room pressure sensor, 1/4" barb	**925**
SRAN	Remote annunciator with red and green status LEDs, audible alarm and acknowledge switch	**887**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

ROOM CONDITION MONITOR

SRCM SERIES

DESCRIPTION

The **SRCM Series** from Setra is a 2-in-1 solution incorporating the best of the SRPM and adding room condition monitoring capability. A large 4.3" TFT displays room conditions such as room ID, room pressure mode, room status, room pressure and a slide bar that indicates pressure relative to set point. It is also capable of displaying a full screen room condition banner to communicate the current room status and is easily programmed through the SmarTTouch™ display

The **SRCM Series** incorporates a flush mount design for the most esthetic installation. The display hinges up for easy access to a USB port that is provided for quick cloning of multiple units. The **SRCM Series** also has Multi-room differential pressure measurement capabilities with the use of a remote differential pressure transmitter, as well as the ability to display up to eight parameters utilizing BACnet® MSTP. In addition to the standard analog and relay outputs, the **SRCM Series** is available in a BACnet® MSTP configuration that is easily setup through the SmarTTouch™ display.

The **SRCM Series** is perfect for applications in laboratory, pharmaceutical, research, isolation room, and surgical suite applications or anywhere maintaining and monitoring differential pressure.

FEATURES

- ***Color coded room status indication***
- ***Flush Mount Design***
- ***New intuitive interactive interface***
- ***Clone configuration capability***
- ***Selectable analog voltage and milliamp outputs***
- ***SPDT alarm relay***
- ***4.3" TFT LCD Display***
- ***Optional BACnet MSTP***
- ***SPDT relay output***
- ***Analog current or voltage outputs***

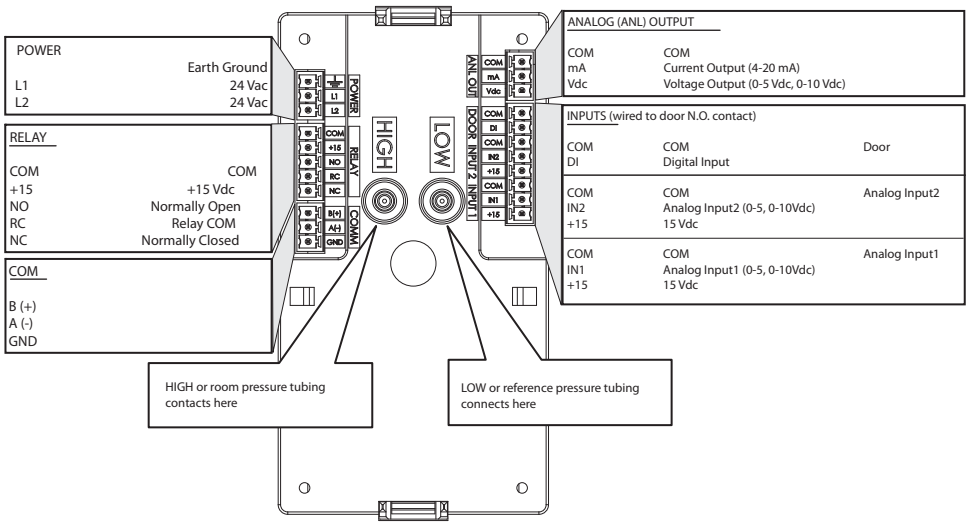
Optional Remote Annunciator

Setra's SRAN annunciator allows remote indication of room status at monitoring or nurses station. A GREEN LED indicates a normal room condition, a RED LED and audible alarm signal a breach in room pressure status.

SPECIFICATIONS

Supply Voltage	18-32 VAC, 50-60 HZ	**Overpressure**	±1 psi (15" WC for 0.10" WC or less models)
Supply Watts	10W maximum, 3W typical	**Operating Humidity**	5 to 95% RH (Non-condensing)
Signal Output	Current 4-20 mA	**Operating Temperature**	32˚ to 120˚F (0˚ to 50˚C)
Voltage	0 to 5, 0 to 10 VDC	**Enclosure Rating**	Flush Mount
Maximum Output Impedance (mA)	510Ω	**Process Connection**	Barbed Fittings for 1/4" Tubing
Minimum Output Impedance (VDC)	5000Ω	**Wiring Terminations**	Removable Terminal Block
Relay Output	SPDT: 0.6A @ 120 VAC, 2A @ 30 VDC	**Dimensions**	5.84"H x 7.45"W x 0.38"D (14.8 x 18.9 x 1.0 cm)
Accuracy	±0.5% ±0.25% (optional)	**Approvals**	CE (EMC Directive 2004/108 EC)
		Weight	1lb 3.2oz (0.554 kg)
		Warranty	1 year

WIRING



REAR VIEW

ORDERING INFORMATION

MODEL	DESCRIPTION
SRCM	Room pressure and condition monitor
	PRESSURE RANGES
R05WB	+/-0.05" WC
0R1WB	+/-0.10" WC
R25WB	+/-0.25" WC
0R5WB	+/-0.50" WC
001WB	+/-1.00" WC
2R5WB	+/-2.50" WC
005WB	+/-5.00" WC
025LB	+/-25 Pa
050LB	+/-50 Pa
100LB	+/-100 Pa
250LB	+/-250 Pa
500LB	+/-500 Pa
10CLB	+/-1000 Pa
	SUPPLY VOLTAGE
A1	24 VAC 4-20 mA, 0-5 VDC or 0-10 VDC
A2	24 VAC with BACnet
	ACCURACY
H	+/- 0.5% full scale
F	+/- 0.25% full scale
	PRESSURE SNUBBER
N	No snubber
1	One snubber
2	Two snubbers

RELATED PRODUCTS

RPS	Stainless steel room pressure sensor, 1/4" barb
RPS-I	Ivory plastic room pressure sensor, 1/4" barb
RPS-W	White plastic room pressure sensor, 1/4" barb
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)
SRAN	Remote annunciator with red and green status LEDs, audible alarm and acknowledge switch

PRESSURE CONTROLLER

PCM SERIES

DESCRIPTION

The **PCM Series Pressure Controller** is a low air pressure transducer combined with a microprocessor-based proportional or Proportional plus Integral (PI) controller. The compact size and ease of installation and setup makes this unit ideal for standard HVAC applications. Ranges are available from 0-2, 3, or 5 "W.C. The setpoint adjustment knob is clearly marked with the appropriate scale for ease of use. All setup and tuning is easily accomplished by DIP switches and bottle plug jumpers. Mounting is a snap with the convenient mounting tabs or with the DIN rail mounting option. Remote setpoint is also possible with voltage or milliamp signals. The **PCM Series** can be configured for direct or reverse acting control.

MADE IN USA

RoHS

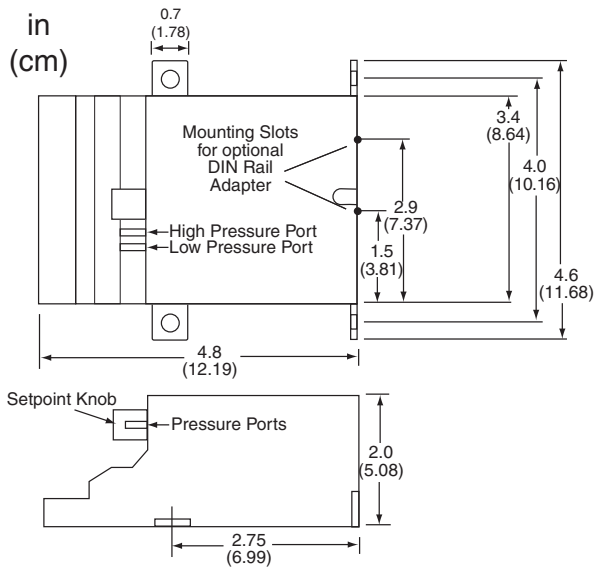
FEATURES

- ***Proportional or PI control***
- ***Easy setup***
- ***DIP switch/jumper setup and tuning***
- ***Selectable proportional band***
- ***Selectable integral reset rate***
- ***Direct or reverse acting***
- ***Optional DIN rail mounting***
- ***Compact size***
- ***Position insensitive***

APPLICATION

- ***Controlling duct pressures***
- ***Isolation rooms***
- ***VAV systems***
- ***Inlet guide vanes and VFDs***
- ***Paint booths***
- ***Relief damper control***
- ***Pressure bypass damper control***

DIMENSIONS



SPECIFICATIONS

Supply Voltage	24 VDC +15%, -10%
Supply Current	75 mA max
Signal Output	4-20 mA sourcing
Maximum Output Impedance	650Ω max
Local Setpoint Input	Built-in three-wire potentiometer
Remote Setpoint Input	4-20 mA, 1-5 VDC
Accuracy	±2% of range including non-linearity and hysteresis
Maximum Overpressure	800% of the pressure range
Resolution	255 steps
Operating Humidity	0% to 90% non-condensing
Operating Temperature	32° to 125°F (0° to 52°C)
Process Connection	3/16" dia suitable for 1/4" OD polyethylene tubing
Weight	1.3 lb (0.61 kg)
Warranty	18 months

WIRING

PCM DIP SWITCH SETTINGS
1=ON 0=OFF

	Local Setpoint	Remote Setpoint
A1	0	1
A2	1	0

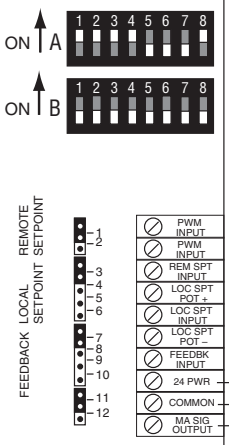
	Reverse Acting	Direct Acting
A3	0	1

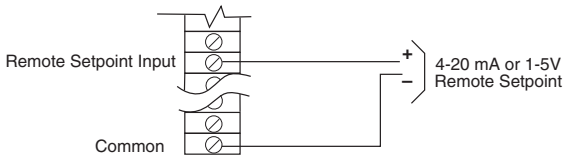
	Reset Per Minute Rate			
	Off	0.5	1.0	2.0
A4	0	0	1	1
A5	0	1	0	1

This Unit's Range Is:
0-2" W.C. ☐
0-3" W.C. ☐
0-5" W.C. ☐

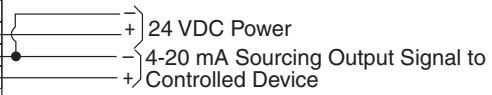
	Proportional Throttling Range Settings							
	10%	20%	35%	50%	65%	80%	90%	100%
A6	0	0	0	0	1	1	1	1
A7	0	0	1	1	0	0	1	1
A8	0	1	0	1	0	1	0	1

PCM JUMPER POSITIONS
All B switches should be in the off position
Local Setpoint Jumper Positions 1, 8, 11
For Remote Setpoint:
Voltage Input Jumper Positions 2, 8, 11
Current Input Jumper Positions 1, 8, 11





Optional Remote Setpoint Wiring
4-20 mA or 1-5 VDC



SETUP FOR LOCAL SETPOINT OPERATION (FACTORY SETTINGS)

1. Switch A1 off and switch A2 on.
2. Set jumper positions to 1, 8, and 11.
3. Set switch A3 in the on position for direct acting control and in the off position for reverse acting control.
4. Set switches A4 and A5 in the off position.
5. Set switches A6, A7, and A8 in the on position. This will set the proportional band at 100%.
6. Set all B switches to the off position.
7. All systems will require a fine-tuning process. Start the tuning process by decreasing the proportional band in increments through switches A6 through A8 until the system becomes unstable. Then, return to the DIP switch settings before the system started to hunt.
8. Switches A4 and A5 are used to select the integral reset rate. This feature corrects the offset that is inherent with proportional-only controllers. If it is determined that the integral reset is needed, increase the rate until this offset is corrected and still maintains stability.

ORDERING INFORMATION

MODEL	DESCRIPTION
PCM	Pressure setpoint controller
	PRESSURE RANGE
020	0-2" W.C.
030	0-3" W.C.
050	0-5" W.C.
	OPTIONS
47	DIN rail mounting (must be factory installed)

PCM – 020 – 47 ***Example:*** **PCM-020-47** Pressure controller for a 0-2" W.C. range with DIN rail mounting

RELATED PRODUCTS		PAGE
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-308-K	Duct static pressure fitting, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
RPS	Stainless steel room pressure sensor, 1/4" barb	**925**
RPS-I	Ivory plastic room pressure sensor, 1/4" barb	**925**
RPS-W	White plastic room pressure sensor, 1/4" barb	**925**
SD-01	Surge dampener	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

DIFFERENTIAL PRESSURE TRANSMITTER

DPW-692 SERIES

DESCRIPTION

The **DPW-692 Series** Differential Pressure Transmitter is ideal for monitoring pumps and piping differential pressures in HVAC systems and process systems including tank level monitoring. The **DPW-692 Series** incorporates proven, unique ceramic sensor technology and the stainless steel housing is compatible with a wide variety of liquid or gas media. The convenient DIN 43650-A wiring connector makes installation easy and provides NEMA 4 (IP65) environmental protection.

DPW-692-100-KIT

FEATURES

- ***Competitively priced***
- ***Very high quality***
- ***Short-circuit proof***
- ***Protection from reverse polarity***
- ***Compact heavy duty housing***
- ***True differential pressure sensing***
- ***1/2" NPT conduit connector***
- ***NEMA 4 (IP65) environmental rating***
- ***Mounting bracket included***

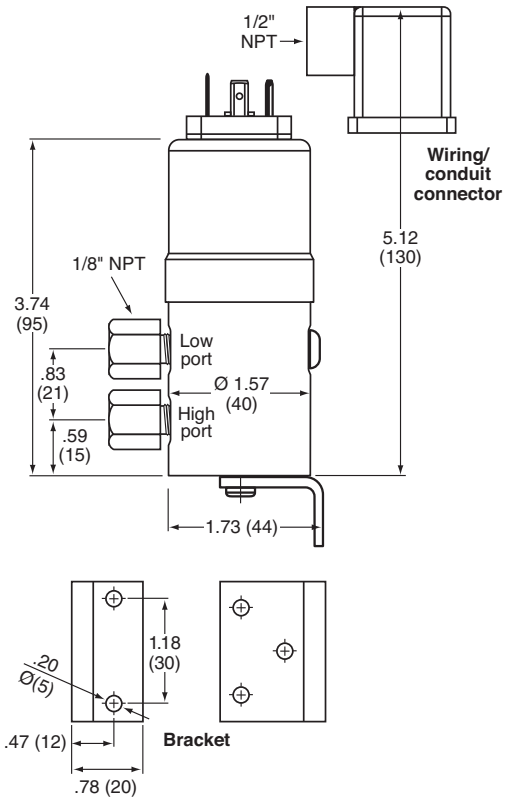
SPECIFICATIONS

Supply Voltage	11-33 VDC
Signal Output	Two-wire, 4-20 mA
Maximum Output Impedance	800Ω at 24 VDC
Accuracy	< ±0.5% FS (includes linearity, hysteresis, and repeatability)
Thermal Effect	<0.1% FS/°C
Maximum Operating Pressure	
0-60 psid	362 psig (2500 kPa)
100 psid and greater	725 psig (5000 kPa)
Overpressure	
0-60 psid	543 psi (3750 kPa)
100 psid and greater	1088 psi (7500 kPa)
Response Time	<5 ms
Maximum Differential: Port-to-Port	
0-60 psid	174 psid
0-100 psid and Greater	Hi: 464 psi, Low: 174 psi
Operating Temperature	5° to 176°F (-15° to 80°C)
Wetted Parts	303 stainless, FPM (Viton®) seals
Enclosure Rating	NEMA 4 (IP65)
Process Connection	1/8" FNPT
Wiring Terminations	DIN 43650-A connector with terminal blocks
Approvals	CE
Weight	0.94 lb (0.43 kg)
Warranty	1 year

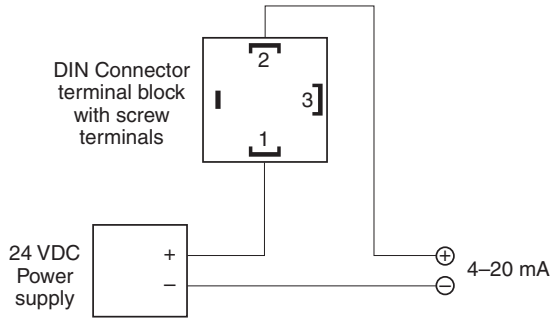
Note: The **DPW-692** can be field calibrated ±10%; see installation instructions for this procedure. However, due to the very small recessed calibration screws, field calibration is difficult and not recommended. Kele can provide factory custom calibration; please allow two weeks for delivery.

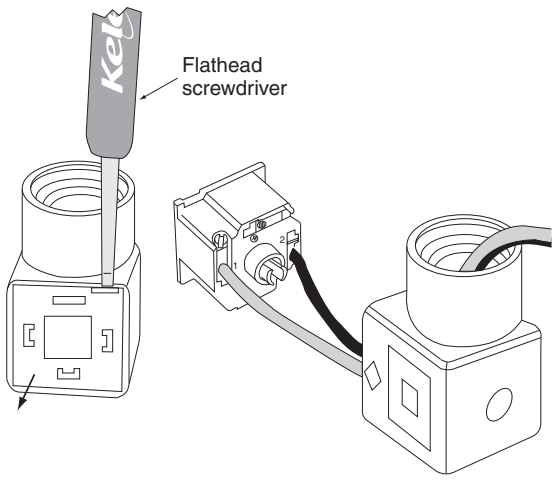
CAUTION: Not for use with ammonia.

DIMENSIONS



WIRING





ORDERING INFORMATION

MODEL	DESCRIPTION
DPW-692-25-KIT	0–25 psid, 4–20 mA, 1/8" FNPT with bracket and conduit connector
DPW-692-35-KIT	0–35 psid, 4–20 mA, 1/8" FNPT with bracket and conduit connector
DPW-692-60-KIT	0–60 psid, 4–20 mA, 1/8" FNPT with bracket and conduit connector
DPW-692-100-KIT	0–100 psid, 4–20 mA, 1/8" FNPT with bracket and conduit connector
DPW-692-200-KIT	0–200 psid, 4–20 mA, 1/8" FNPT with bracket and conduit connector

To order a **DPW-692** pre-assembled in a five-valve bypass enclosure, replace -KIT with -BVA suffix.
To order a **DPW-692** pre-assembled with a three-valve manifold, replace -KIT with -3VLV suffix.
To order a **DPW-692** with factory custom range, add -C suffix to complete model number.
To order a **DPW-692** for use with refrigerants, add -R suffix after -KIT. A neoprene seal is used in place of Viton®. Not applicable with -BVA or -3VLV assemblies.

RELATED PRODUCTS

G51001101000	DIN 43650-A replacement conduit connector with gasket
101999	DPW-692 Series replacement mounting bracket with screws

DIFFERENTIAL PRESSURE TRANSMITTER

M230 SERIES

DESCRIPTION

The **Model M230** Differential Pressure Transmitter is a highly accurate differential pressure transmitter that incorporates a capacitive technology to produce a linear electronic signal proportional to the differential pressure. It will measure differential pressure in unidirectional applications as much as 100 psi and bidirectional applications as much as 50 psi. The stainless steel wetted parts and elastomer seals make this unit ideal for both liquids and gases. The NEMA 4 (IP65) case keeps the internal electronics protected from the environment.

M230-025PD-C

FEATURES

- ***0.25% accuracy***
- ***NEMA 4 (IP65) protection***
- ***Stainless steel wetted parts***
- ***Elastomer seals***
- ***High proof pressure***
- ***Current or voltage outputs***
- ***Mounting bracket included***

SPECIFICATIONS

Supply Voltage
Current models Minimum 9 VDC + (0.02 x circuit resistance) Maximum 30 VDC + (0.004 x circuit resistance)
Voltage Models
0-5 VDC 9-30 VDC
0-10 VDC 13-30 VDC,
Signal Output 4-20 mA, 0-10 VDC, 0-5 VDC
Maximum Output Impedance (mA) 750Ω @ 24 VDC
Minimum Output Impedance (VDC) ≥5000Ω
Accuracy ±0.25% FS
Non-repeatability 0.05% FS
Non-linearity ±0.20% FS
Hysteresis 0.10% FS
Compensated Temperature Range 30° to 150°F (-1° to 65°C)
Thermal Effect Zero/span shift 2.0% FS/100°F (1.8% FS/50°C)

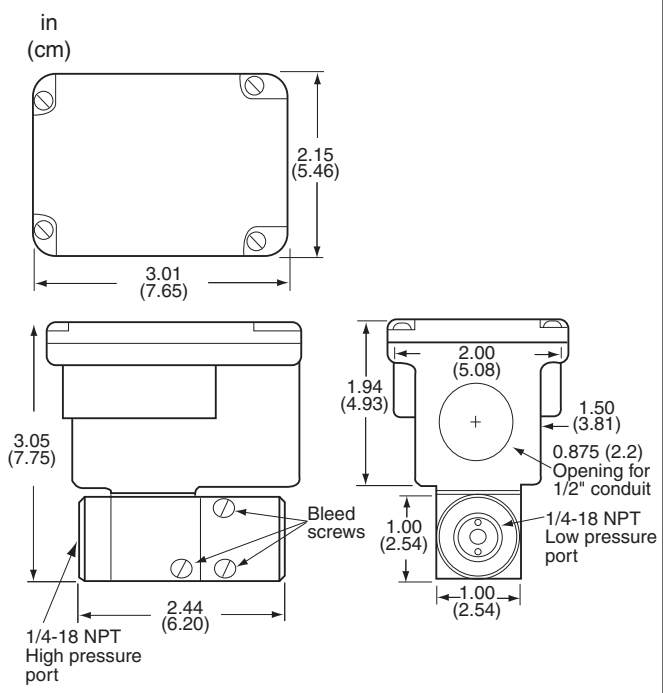
Maximum Operating Pressure 250 psig (1723.8 kPa) model dependant

Overpressure

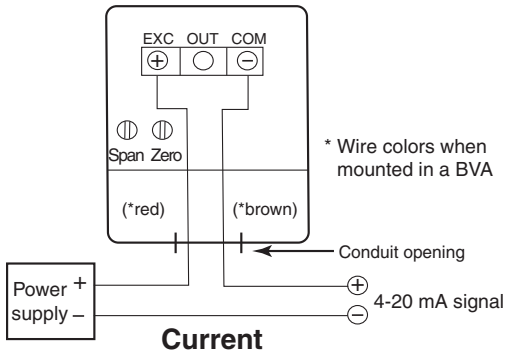
PROOF PRESSURE (High Side)							
Range		Proof		Range		Proof	
psid	kPa	psid	kPa	psid	kPa	psid	kPa
0-1	6.89	20	137.9	±0.5	±3.45	20	137.9
0-2	13.79	40	275.8	±1	±6.89	40	275.8
0-5	34.47	100	689.5	±2.5	±17.24	100	689.5
0-10	68.95	100	689.5	±5	±34.47	100	689.5
0-25	172.4	250	1723.7	±10	±68.95	200	1379.2
0-50	344.7	250	1723.7	±25	±172.4	250	1723.7
0-100	689.5	250	1723.7	±50	±344.7	250	1723.7

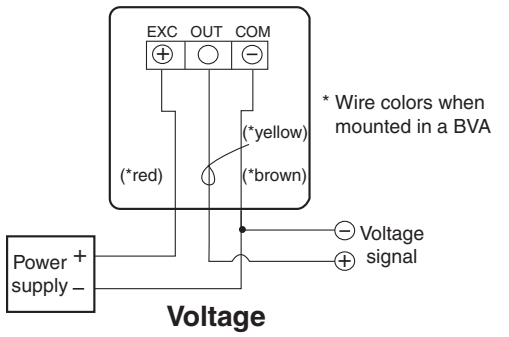
Operating Temperature 0° to 175°F (-18° to 79°C)
Wetted Parts 17-4 PH stainless, 300 Series stainless steel, viton, silicon rings
Storage Temperature -65° to 250°F (-54° to 121°C)
Enclosure Rating NEMA 4 (IP65)
Process Connection 1/4-18 FNPT
Approvals CE
Weight 14.4 oz (0.41 kg)
Warranty 1 year

DIMENSIONS



WIRING





ORDERING INFORMATION

MODEL	DESCRIPTION	
M230	Differential pressure transmitter	
	PRESSURE RANGE psid (kPa)	
	001PD	0-1.0 (6.90)
	002PD	0-2.0 (13.79)
	005PD	0-5.0 (34.48)
	010PD	0-10.0 (68.95)
	025PD	0-25.0 (172.38)
	050PD	0-50.0 (344.75)
	100PD	0-100.0 (689.50)
	0R5PB	±0.5 (±3.45)
	001PB	±1.0 (±6.90)
	2R5PB	±2.5 (±17.24)
	005PB	±5.0 (±34.48)
	010PB	±10.0 (±68.95)
	025PB	±25.0 (±172.38)
	050PB	±50.0 (±344.75)
	OUTPUT	
	C	4-20 mA
	V5	0-5 VDC
	V10	0-10 VDC
	OPTIONS	
	BVA	Bypass valve assembly
	3VLV	Three-valve manifold assembly

M230 - **010PD** - **C**

Example: **M230-10PD-C** Differential pressure transmitter ranging from 0-10 psid with a 4-20 mA output

REMOTE MOUNTED DIFFERENTIAL PRESSURE TRANSMITTER

231RS SERIES

DESCRIPTION

The **231RS Series** Multi-Range Differential Pressure Transmitter is ideal for monitoring pumps and load differential pressures in HVAC systems and processes where local indication is needed.

Setra's **231RS Series** with remote sensors reduces labor, materials, and time. The sensors are installed directly into the pipe and electrical connection is made between the remote sensors and the **Model 231RS** via cables or conduit. This reduces labor cost by one-third and the cost of copper to connect the pressure transducer to the pipe. Startup time is reduced since purging air out of the lines is not necessary.

The Multi-Sense® **Model 231** wet-to-wet differential pressure transducer's all inclusive design provides users with field accessible ranging, choice of output and field zeroing.

NEW!

CE

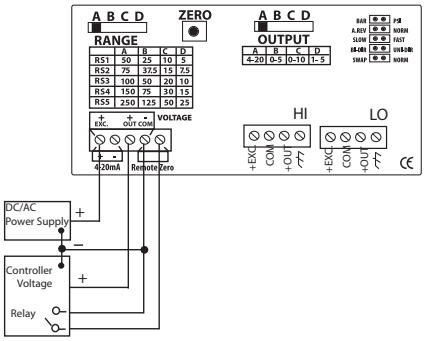
FEATURES

- ***Remote sensors***
- ***Conduit and cable versions***
- ***Field selectable output - 4 to 20 mA, 0 to 5, 1 to 5, and 0 to 10 VDC***
- ***Field accessible push-button zero and remote zero***
- ***Jumper selectable port swap***
- ***Optional LCD display***
- ***All cast aluminum, NEMA4 rated housing***

APPLICATION

- ***Energy management systems***
- ***Process control systems***
- ***Flow measurement of various gases or liquids***
- ***Liquid level measurement of pressurized vessels***

WIRING



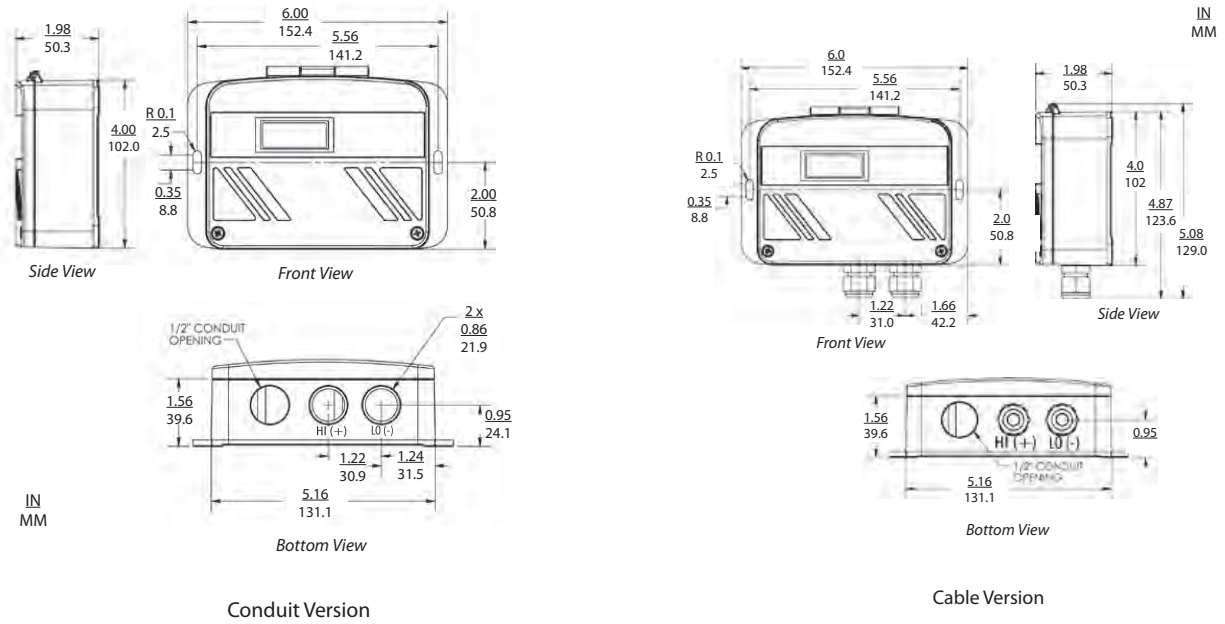
SPECIFICATIONS

Supply Voltage	15-30 VDC
Supply Current	40 mA (typical) at 18-30 VAC
Warm Up Time	<0.12% FS
Signal Output	4-20 mA, 0 to 5 VDC, 0 to 10 VDC, 1 to 5 VDC
Maximum Output Impedance	250Ω
Accuracy	Pressure Ranges A, B, C ±1.0% FS Pressure Range D ±2.0% FS
Thermal Effect	Compensated 32° to 130°F (0° to 54°C) Zero Shift %FS/100°F (50°C) 2.0 (1.8) Span Shift %FS/100°F(50°C) 2.0 (1.8)
Media Compatibility	Liquids or Gases Compatible with 17-4 PH Stainless Steel Note: Hydrogen not recommended for use with 17-4 PH stainless steel.
Maximum Operating Pressure	Equal to top of maximum range specified in order
Overpressure	2X full scale
Burst Pressure	15 x Full Scale (50 psi) 10 X Full Scale (75 x 150 psi) 8 x Full Scale (250 psi)
Response Time	1-5 seconds (adjustable)
Compensated Temperature Range	32° to 130°F (0° to 54°C)
Operating Temperature	-4° to 185°F (-20° to 85°C)
Wetted Parts	17-4 PH Stainless Steel
Enclosure	Die Cast Aluminum, Powder
Enclosure Rating	NEMA 4
Process Connection	1/4-18 NPT Male
Wiring Terminations	1/2" conduit entry (7/8" dia), screw/crimp terminals
Dimensions	4.0"H x 6.0"W x 2.0"D (10.2 x 15.2 x 5.1 cm)
Approvals	CE, RoHS compliant
Weight	1.5 lbs (0.68 kg) - case only
Warranty	1 year

REMOTE MOUNTED DIFFERENTIAL PRESSURE TRANSMITTER

231RS SERIES

DIMENSIONS



OPERATION

Pressure range selection:

1. Examine the pressure application and determine the highest system line pressure.
2. Determine the differential pressure being measured.
3. Find the maximum line pressure in the table on the right that is higher than your highest system line pressure.
4. Verify that your DP falls within the selectable ranges in that row.
5. Follow that row to the left and select that range code.

Example:

Highest System Line Pressure: 125 psig
Differential Pressure Measured: 75 psid
"Max Line Pressure" Higher than System Line Pressure: 150 psid (75 psid DP falls within ranges in this row)
Select Range Code: RS4

ORDERING INFORMATION

MODEL	DESCRIPTION	
231	WET/WET DIFFERENTIAL REMOTE SENSING PRESSURE TRANSDUCER	
	PRESSURE RANGE CODE	
	RS1	5, 10, 25, 50 psid, ±5, ±10, ±25, ±50 psid
	RS2	7.5, 15, 37.5, 75 psid, ±7.5, ±15, ±37.5, ±75 psid
	RS3	10, 20, 50, 100 psid, ±10, ±20, ±50, ±100 psid
	RS4	15, 30, 75, 150 psid, ±15, ±30, ±75, ±150 psid
	RS5	25, 50, 125, 250 psid, ±25, ±50, ±125, ±250 psid
	PRESSURE CONNECTION	
	3M	1/4-18 NPT Male Remote Sensor (Conduit Version)
	4M	1/4-18 NPT Male Remote Sensor (Cable Version)
		DISPLAY OPTION
		N — No display
		D — Display
		CABLE LENGTH
		10 — Sensors cableling length 10 ft
		20 — Sensors cableling length 20 ft
		30 — Sensors cableling length 30 ft

DIFFERENTIAL PRESSURE TRANSMITTER

231 SERIES

DESCRIPTION

The **231 Series Multi-Range Differential Pressure Transmitter** is ideal for monitoring pumps and load differential pressures in HVAC systems and processes where local indication is needed. The **231 Series** design provides users with field accessible ranging, choice of outputs, and field zero adjustment.

FEATURES

- ***Field selectable ranges and outputs***
- ***Field accessible pushbutton zero and remote zero***
- ***Field selectable port swap***
- ***True 4-20 mA output, and choice of VDC outputs***
- ***Hinged cover***
- ***Heavy duty aluminum NEMA 4 housing***
- ***Optional LCD display***
- ***RoHS compliant***

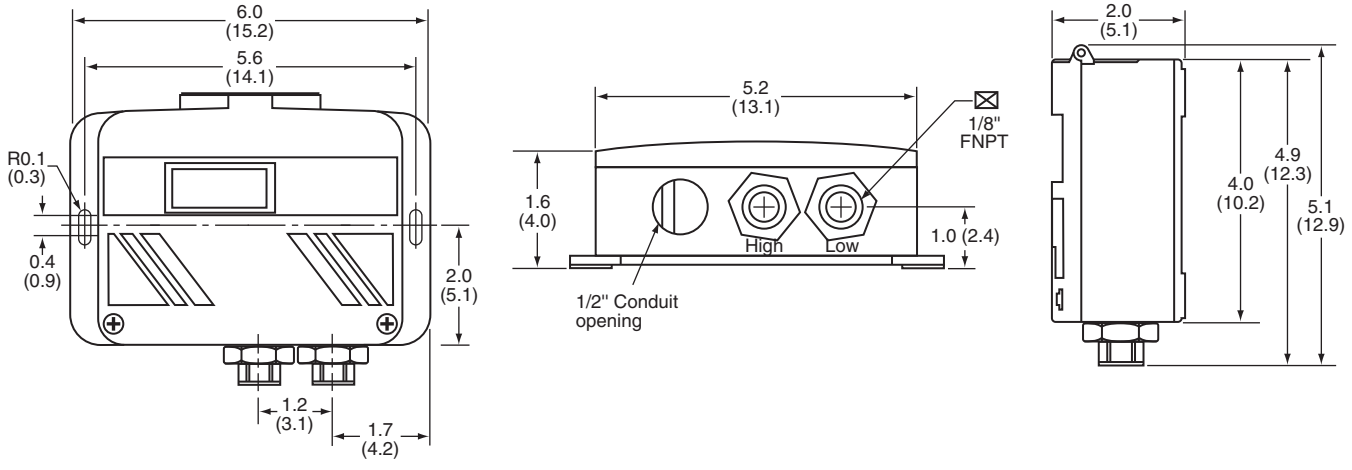
231 Series

SPECIFICATIONS

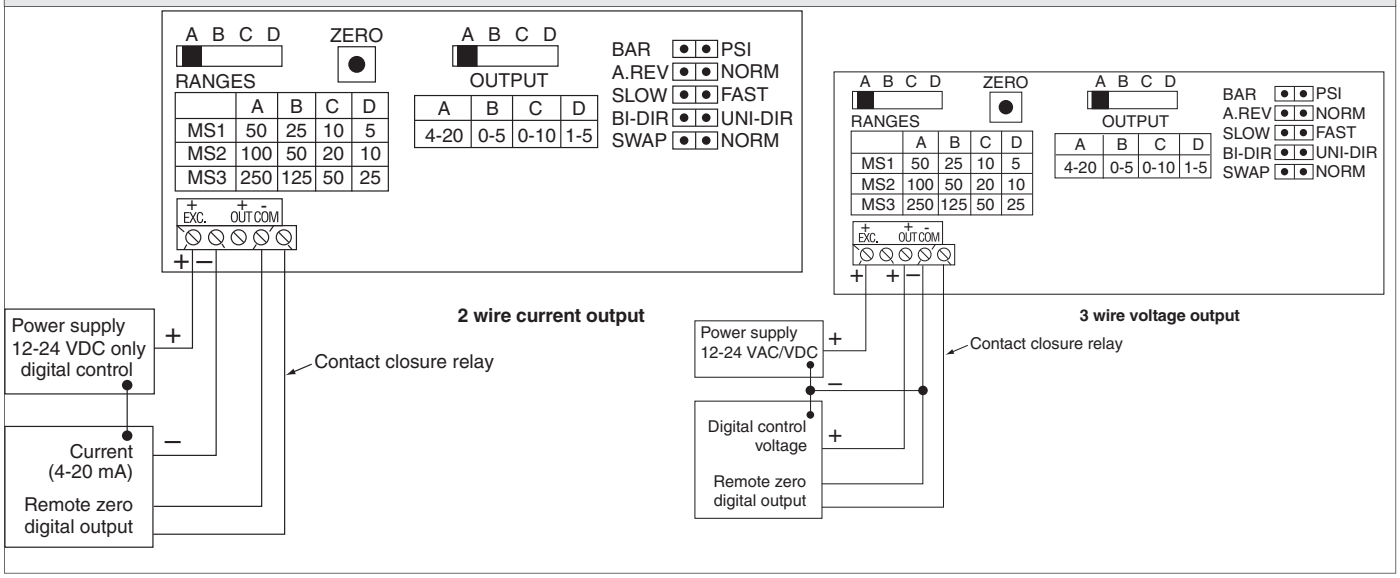
Supply Voltage	Current Model: 12-30 VDC
Voltage Model:	12-30 VDC/18-28 VAC
Signal Output	Current Model: 2-wire, 4-20 mA
Voltage Model:	3-wire, 0-5, 0-10, or 1-5 VDC
Maximum Output Impedance (mA)	600Ω @ 24 VDC
Minimum Output Impedance (VDC)	5000Ω
Accuracy	±1.0% FS (±2.0% FS for range D model)
Overpressure	2.2X full scale
Burst Pressure	40X full scale
Measurement Range	Upto 250 psi
Response Time	1-5 seconds (adjustable)
Operating Temperature	-4° to 185°F (-20° to 85°C)
Compensated Temperature Range	32° to 130°F (0° to 54°C)

Wetted Parts	17-4 PH Stainless Steel
Media Compatibility	Liquids or Gases Compatible with 17-4 PH Stainless Steel
Note: Hydrogen not recommended for use with 17-4 PH stainless steel.	
Enclosure	Die Cast Aluminum, Powder Coated
Enclosure Rating	NEMA 4
Process Connection	1/8" FNPT
Wiring Terminations	1/2" conduit entry (7/8" dia), screw/ crimp terminals
Dimensions	4.0"H x 6.0"W x 2.0"D (10.2 x 15.2 x 5.1 cm)
Approvals	CE, RoHS compliant
Weight	1.5 lbs (0.68 kg)
Warranty	1 Year

DIMENSIONS



WIRING



	A	B	C	D
MS1	50	25	10	5
MS2	100	50	20	10
MS3	250	125	50	25

A	B	C	D
4-20	0-5	0-10	1-5

ORDERING INFORMATION

MODEL	DESCRIPTION
231G	Wet to wet differential pressure transmitter
	RANGES: UNIDIRECTIONAL AND BIDIRECTIONAL
MS1	5, 10, 25, 50 psid and ±5, ±10, ±25, ±50 psid
MS2	10, 20, 50, 100 psid and ±10, ±20, ±50, ±100 psid
MS3	25, 50, 125, 250 psid and ±25, ±50, ±125, ±250 psid
	PRESSURE CONNECTION
2F	1/8-18 NPT female (Standard)
	DISPLAY OPTION
N	No display
D	LCD display
	MANIFOLD OPTION
3VLV	3 valve bypass option

231G - MS1 - 2F - D - 3VLV

Example: **231G-MS1-2F-D-3VLV** Setra differential pressure transmitter Model 231 ranging from 0 to 50 psid with LCD display and 3VLV bypass option.

	RELATED PRODUCTS	PAGE
47B-1	Brass piston style snubber	**899**
47S-1	Stainless steel piston style snubber	**899**
PT	1/4" pigtail syphon with fittings	**390**

DIFFERENTIAL PRESSURE TRANSMITTER

W30 SERIES

Distributor
GE Energy

DESCRIPTION

The **W30 Series** Differential Pressure Transmitters measure differential pressure in liquids and gases compatible with 316 stainless steel. They are an excellent choice for HVAC and process applications, including measurement of differential pressure across flow elements, heat exchangers, pumps, filters, coils, and liquid level monitoring.

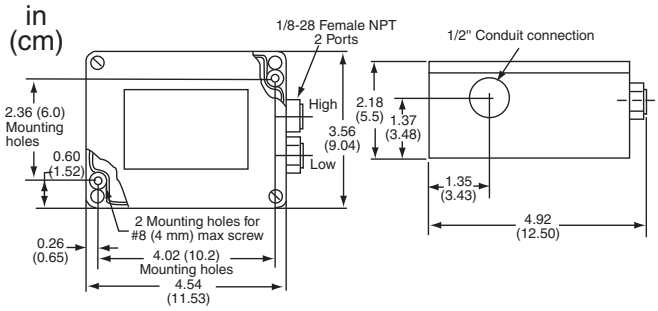
W30 Series transmitters are housed in a compact, heavy-duty cast aluminum case designed to NEMA 4 (IP65) standards. The rugged design allows it to withstand high overpressure without damaging the unit or affecting calibration. It is ±0.5% accurate and available in eight ranges up to 200 psi differential. The **W30 Series** is a 4-20 mA two-wire loop-powered device that operates on nominal 24 VDC.

W30

FEATURES

- ***316 stainless steel wetted parts***
- ***4-20 mA two-wire output***
- ***Operates on nominal 24 VDC***
- ***NEMA 4 cast aluminum enclosure***
- ***Accuracy of ±0.5%***
- ***Ranges to 200 psig (1379 kPa) differential***

DIMENSIONS

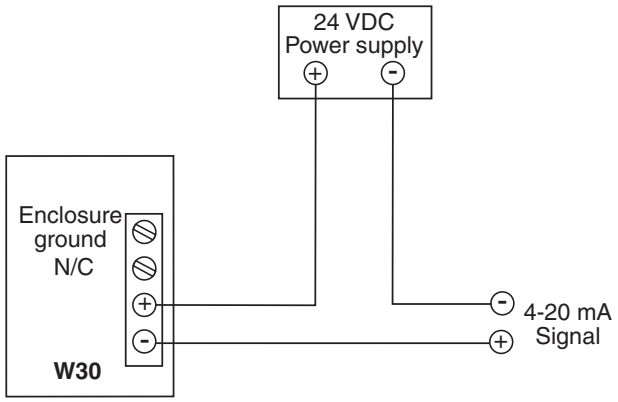


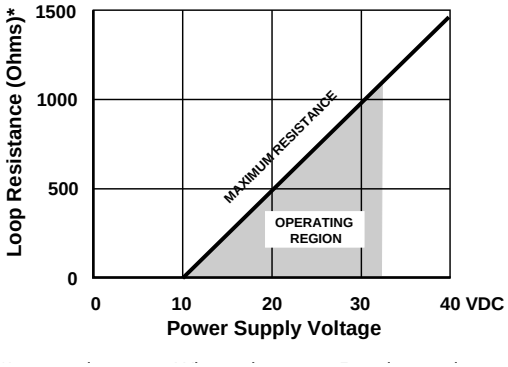
Front View **Bottom View**

SPECIFICATIONS

Supply Voltage	11-32 VDC, 25 mA maximum
Signal Output	4-20 mA
Maximum Output Impedance	600Ω @ 24 VDC
Accuracy	±0.5% of differential pressure range, including non-linearity and hysteresis, or ±1.0% for 0-6 psid (0-41.4 kPa) range
Thermal Effect	Zero: ±0.05% per °C Span: ±0.03% per °C
Overpressure	
6 to 30 psid	100 psi (690 kPa)
60 to 200 psid	300 psi (2069 kPa)
Effect of Static Pressure	Less than 0.25% for static pressure change from 0-100%
Operating Humidity	10% to 90% RH non-condensing
Operating Temperature	32° to 122°F (0° to 50°C)
Wetted Parts	316 Stainless Steel
Enclosure	Aluminum alloy #A380 with black epoxy paint finish and stainless steel cover screws, NEMA4, IP65
Process Connection	1/8" FNPT
Wiring Terminations	14-26 AWG pluggable terminal block
Approvals	CE
Weight	1.1 lb (0.5 kg)
Warranty	1 year

WIRING





INSTALLATION

The **W30 Series** transmitter should be mounted on a stable surface, free of vibration and pipe strain. A Model PT steam syphon is recommended to protect the transmitter on steam applications. Another device that might be required is the Model 47 pressure snubber to protect the transmitter from pressure pulses.

ORDERING INFORMATION

MODEL	DESCRIPTION
W30	Liquid differential pressure transmitter

RANGE (call Kele for metric ranges)

RANGE	DIFFERENTIAL PRESSURE RANGE psid (kPa)	MAXIMUM OPERATING STATIC PRESSURE* psig (kPa)
31E	6 (41.4)	100 (690)
32E	10 (69.0)	
33E	15 (103.4)	
34E	30 (206.8)	
35E	60 (413.6)	300 (2069)
36E	100 (689.5)	
37E	150 (1034)	
38E	200 (1379)	

*The maximum safe momentary over pressure at any port is two times the maximum operating static pressure.

MANIFOLD OPTION

BVA	Bypass valve assembly
3VLV	Three-valve manifold assembly

W30 – 36E

Example: **W30-36E** Stainless steel liquid differential pressure transmitter with a range of 0-100 psig (689.5 kPa)

RELATED PRODUCTS		PAGE
47B-1	Brass piston style snubber	899
47S-1	Stainless steel piston style snubber	899
PT	1/4" pigtail syphon with fittings	390

WET/WET DIFFERENTIAL PRESSURE TRANSMITTER

GC52 SERIES

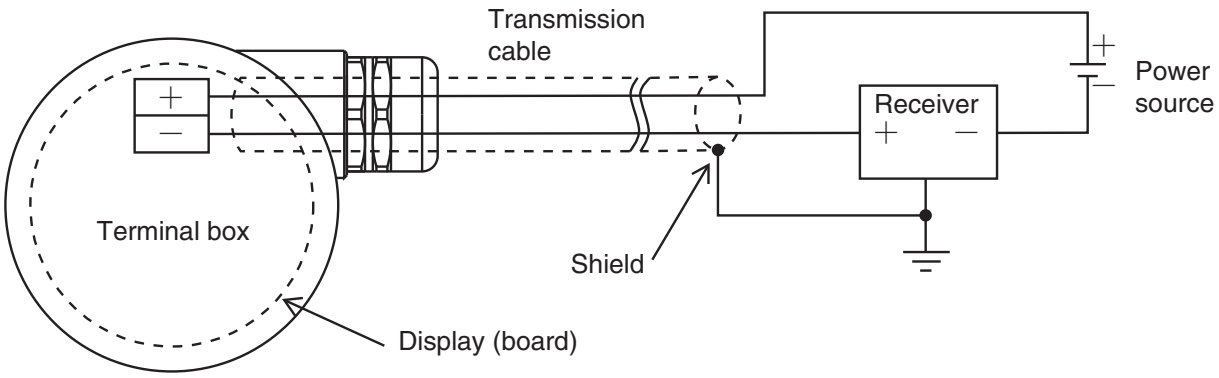
DESCRIPTION

The **GC52 Series Low Differential Pressure Transmitter** offers reliable, low differential pressure measurement with an accuracy of 0.5%. The transmitter is loop powered with an integral LCD display. The **GC52** features zero and span adjustment, linear scaling function, digital filter function, and push button configuration. The rugged NEMA 4X enclosure allows usage in indoor or outdoor environments.

FEATURES

- ***0.5% accuracy***
- ***Push button configuration***
- ***Linear scaling***
- ***LED back light***
- ***Loop check function***
- ***4-20 mA output***
- ***NEMA 4X (IP65) protection***

WIRING

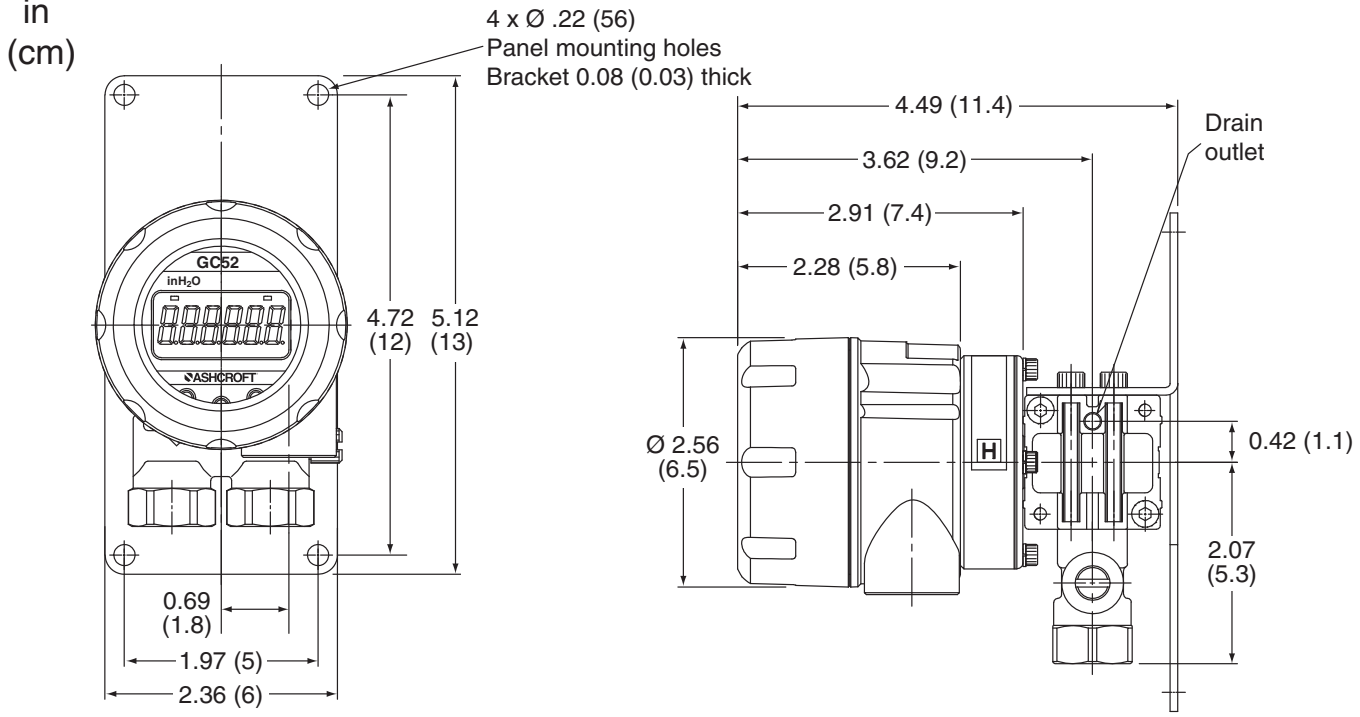


SPECIFICATIONS

Supply Voltage	12-32 VDC
Signal Output	4-20 mA (2-wire)
Maximum Output Impedance	500Ω
Adjustments	Zero and Span Adjustable -10% to 110% FS
Accuracy	±0.5% FS (includes linearity, hysteresis, and repeatability)
Thermal Effect Zero/Span Shift	±0.03% FS/°C
Compensated Temperature Range	14° to 140°F (10° to 60°C)
Overpressure Ranges 4IW, 8IW, 4IWL	30 psid (207 kPa)
All Others	100 psid (690 kPa),
Display	3-1/2 digit, 10 mm LCD; ±0.5% FS + last digit accuracy
Operating Temperature	14° to 140°F (-10° to 60°C)
Wetted Parts	316 SS, viton, and Alumina Ceramic
Storage Temperature	5° to 150°F (-15° to 65°C)
Enclosure Rating	Epoxy coated aluminum, NEMA 4X (IP65)
Process Connection	1/4 FNPT
Wiring Terminations	1/2 FNPT conduit
Approvals	CE
Weight	1.5 lb (670 g)
Warranty	1 year

DIMENSIONS

in
(cm)



ORDERING INFORMATION

MODEL	DESCRIPTION	
GC52	Low differential pressure transmitter	
	PRESSURE RANGE "W.C. (kPa)	
	4IW	0-4.0 (1.0)
	8IW	0-8.0 (2.0)
	20IW	0-20.0 (4.98)
	40IW	0-40.0 (9.95)
	80IW	0-80.0 (19.9)
	200IW	0-200.0 (49.7)
	400IW	0-400.0 (99.5)
	4IWL	±4.0 (±1.0)
	8IWL	±8.0 (±2.0)
	20IWL	±20.0 (±4.98)
	40IWL	±40.0 (±9.95)
	80IWL	±80.0 (±19.9)
	200IWL	±100.0 (±49.7)
	400IWL	±400.0 (±99.5)

GC52 – **40IW**

Example: **GC52-40IW** Low differential pressure transmitter ranging from 0-40"w.c.

BYPASS VALVE ASSEMBLY

BVA-5

DESCRIPTION

Differential pressure transmitters are often installed in systems with pressures much higher than the differential pressure being monitored. During installation, start-up, or shutdown, the pressure differential may exceed the transmitter differential pressure rating, resulting in severe damage to the transmitter. A **Model BVA-5 Bypass Valve Assembly** will minimize this possibility. When it is purchased with a transmitter, the transmitter is assembled in a NEMA 1 or NEMA 3R enclosure with two isolation valves, an equalizing valve, and two vent valves mounted and piped. Optional pressure snubbers are also available mounted on the **Model BVA-5**.The **Model BVA-5** is designed for use on systems with maximum pressures less than 150 psig (1034.3 kPa) at 150 Deg. F (65 Deg. C).

BVA-5

MADE IN USA

OPERATION

To Place Transmitter in Service:

1. Open V-3.
2. Open V-4 and V-5.
3. Slowly open V-1 and V-2 to bleed the lines of air.
4. Close V-4 and V-5.
5. Open V-1 and V-2 fully.
6. Close V-3 to read differential pressure.

To Take Transmitter Out of Service:

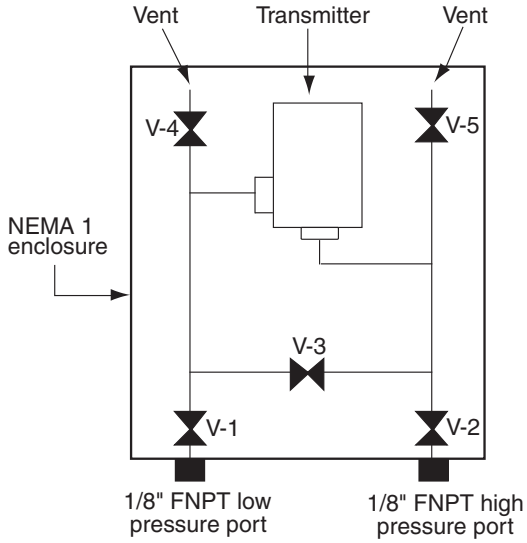
1. Open V-3. This will equalize the pressure at the transmitter.
2. Close V-1 and V-2.
3. Open V-4 and V-5 to release pressure.

CAUTION: A BVA-5 bypass valve assembly is for use on systems with a maximum pressure of 150 psig (1034.3 kPa) at 150

SPECIFICATIONS

Maximum Pressure	150 psi (1035 kPa)
Additional Specifications	
	150°F (66°C)
Dimensions	
BVA-5-W30, DPW	18"H x 10"W x 4"D (45.7 x 25.4 x 10.2 cm)
All Others	12"H x 10"W x 4"D (30.5 x 25.4 x 10.2 cm)
Weight	
BVA-5-W30, DPW	15.5 lbs (7.0 kg)
All Others	10.5 lbs (4.8 kg)
Warranty	1 year

DIMENSIONS



BVA-5 piping

ORDERING INFORMATION

To order BVA-5: Add the suffix BVA after the differential pressure transmitter model number.
Example: **M230-050PD-C-BVA**: M230 differential pressure transmitter 0-50# with NEMA 1 BVA-5-R

To order 3R enclosure: Add suffix BVA-3R after the differential pressure transmitter model number.
Example: **M230-050PD-C-BVA-3R:** M230 0-50# differential Pressure Transmitter with NEMA 3R BVA-5-R

All **Model BVA-5** bypass systems include mounting and piping of transmitter in a NEMA 1 or NEMA 3R enclosure.

THREE-VALVE MANIFOLDS

DPW-3VLV, M230-3VLV, W30-3VLV

DESCRIPTION

These Three and Five-Valve Manifolds, machined from brass, are perfect for applications up to 200°F (93°C) and 250 psig (1724 kPa). The manifolds can be ordered pre-assembled with a **Model DPW-692**, **M230**, or **W30 Series** differential pressure transmitter (see transmitter catalog page). Each transmitter ordered with a manifold is assembled before shipping.

FEATURES

- ***High temperature tolerance***
- ***High pressure tolerance***
- ***Brass construction***
- ***Easy to install***
- ***Easy to operate***

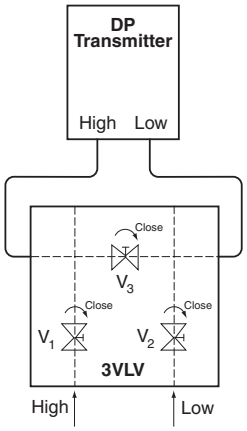
DPW-3VLV (shown with transmitter)

W30-3VLV (shown with transmitter)

M230-3VLV (shown with transmitter)

5 VLV (shown with transmitter)

SEQUENCE OF OPERATION



To place transmitter in service
1. Open V-3
2. Open V-1
3. Open V-2
4. Bleed air from system
5. Close V-3

To take transmitter out of service
1. Open V-3
2. Close V-1
3. Close V-2
4. Remove transmitter

To bleed system with 5VLV
1. Briefly open then close V4 to remove excess air
2. Briefly open then close V5 to remove excess air

SPECIFICATIONS

Maximum Pressure	250 psig (1724 kPa)
Maximum Temperature	200°F (93°C)
Process Connection	1/4" FNPT
Dimensions	
DPW-3VLV	9.75"H x 7.24"W (24.8 x 18.4 cm)
M230-3VLV	7.875"H x 7.25"W (20 x 18.4 cm)
W30-3VLV	11.125"H x 7.25"W (28.3 x 18.4 cm)
M230-5VLV	7.83"H x 7.05"W (19.9 x 17.9 cm)
Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
DPW-3VLV	Three-valve manifold for Kele DPW-692 (not included)
M230-3VLV	Three-valve manifold for Setra M230 (not included)
W30-3VLV	Three-valve manifold for Modus W30 (not included)
M230-5VLV	Five-valve manifold for Setra M230 (not included)

Ordering note: To order with manifold assembled with M230, DPW, or W30 transmitter use "3VLV" or "5VLV" suffix after appropriate model number.

STAINLESS STEEL PRESSURE TRANSMITTER

P51 SERIES

DESCRIPTION

The compact and robust **P51 Series Stainless Steel Pressure Transmitter** is designed for use with a wide variety of liquid or gas media and for industrial, process or commercial applications. The 304L and 316L stainless steel wetted parts makes the transmitter ideally suited for media such as water, glycol, refrigerants, steam (w/pigtail), and ammonia. The **P51 Series** is available in models with a 4-20 mA output or with 1-5 VDC output and come standard with a 3 foot cable. It is very competitively priced and can be ordered in an optional enclosure assembly, or enclosed with a gauge for local pressure indication.

P51

P51 with optional enclosure and gauge

FEATURES

- ***Robust compact package***
- ***Laser welded stainless steel design***
- ***Reverse polarity protection***
- ***3' cable standard***
- ***Optional enclosure***
- ***Optional gauge assembly***
- ***Ranges up to 500 psi***

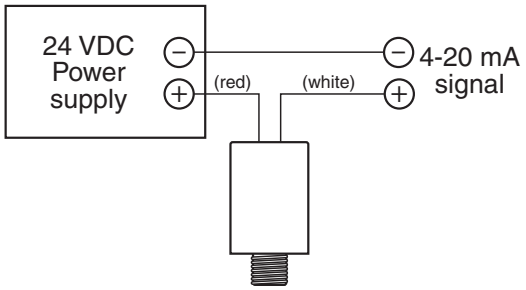
APPLICATION

- ***Hot/chilled water***
- ***Pneumatics***
- ***Steam (with pigtail)***
- ***Compressors***
- ***Refrigeration***
- ***Agriculture***
- ***Hydraulics***
- ***Process control***
- ***Flow***

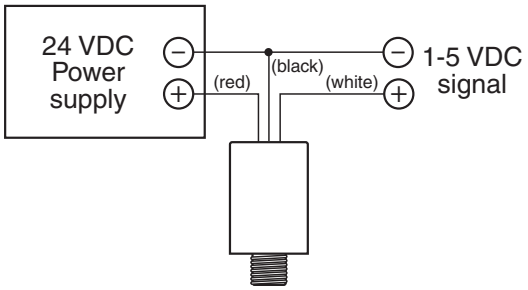
SPECIFICATIONS

Supply Voltage	8-30 VDC
Supply Current	<5 mA (1-5 VDC models)
Signal Output	4-20 mA, 1-5 VDC
Output Current	0.45 mA maximum (sink or source, 1-5 VDC models)
Maximum Output Impedance	800Ω at 24 VDC
Minimum Output Impedance	50,000Ω
Accuracy	<0.5% FS includes non-linearity, repeatability, and hysteresis (<1% on models with range ≤50 psig)
Stability	<0.25% FS per year typical
Thermal Effect	<0.5% FS (-40°C to 105°C) (<1% on models with range ≤50 psig)
Overpressure	3X rated pressure
Burst Pressure	5x rated pressure
Measurement Range	0-15 psi to 0-500 psi
Response Time	<1 ms
Operating Temperature	-40° to 221°F (-40° to 105°C)
Weight	0.25 lb (0.11 kg)
Warranty	1 year

WIRING

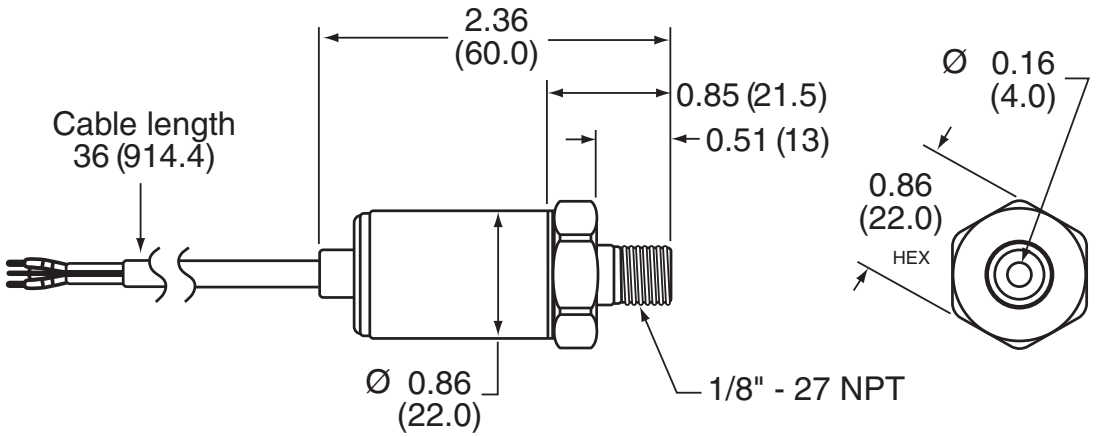


4-20 mA



1-5 VDC

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION	
P51	Pressure transmitter	
	RANGE psig (kPa)	
	15	0-15 (0-103)
	50	0-50 (0-345)
	100	0-100 (0-690)
	200	0-200 (0-1379)
	300	0-300 (0-2069)
	500	0-500 (0-3448)
	OUTPUT SIGNAL	
	20	4-20 mA output
	5	1-5 VDC output
	OPTIONS	
	E	Transmitter in watertight enclosure with stainless steel fittings
	E-G	Transmitter in enclosure with a pressure gauge, brass fittings

P51 – **100** – **20** – [ ]

Example: **P51-100-20** 0-100 psi transmitter with 4-20 mA output, no options

RELATED PRODUCTS		PAGE
47B-1	Brass piston style snubber	**899**
47S-1	Stainless steel piston style snubber	**899**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**837**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**836**
PT	1/4" pigtail syphon with fittings	**390**
ZG-R01	500Ω, 1/2W, 1% resistor	**37**

STAINLESS STEEL PRESSURE TRANSMITTER

PSS2 SERIES

DESCRIPTION

The Kele **PSS2 Series Stainless Steel Pressure Transmitter** is highly accurate and compact, which makes it ideal for HVAC, building automation, and process gauge pressure applications. A splash-proof Packard-type electrical connector is provided for ease of installation. Eleven standard ranges are available for a wide variety of applications.

PSS2

PSS2

PSS2 with optional enclosure and gauge

FEATURES

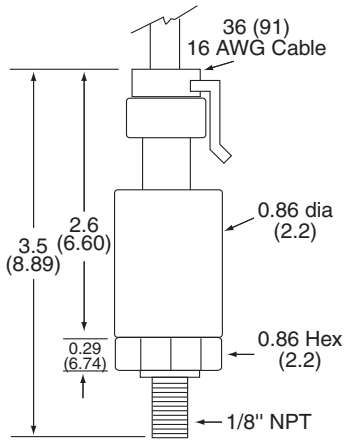
- ***Splash-proof, plug-in electrical connector***
- ***For steam, water, glycol, refrigerant, and more***
- ***4-20 mA output***
- ***304L/316L stainless steel wetted parts***
- ***Wide range of pressures***
- ***High overpressure capability***

SPECIFICATIONS

Supply Voltage	8-30 VDC
Signal Output	4-20 mA
Maximum Output Impedance	800Ω @ 24 VDC
Accuracy	Models > 75 psi <0.5% of span Models < 50 psi <1.0% of span
Stability	<0.25% of span/year
Thermal Effect	-40° to 221°F (-40° to 105°C), <0.5% FS
Overpressure	3x range
Burst Pressure	5x range
Measurement Range	0-15 psi to 0-1000 psi
Media Compatibility	Fluids compatible with brass, 304L and 316 stainless steel
Response Time	<1 ms
Operating Temperature	-40° to 221°F (-40° to 105°C)
Process Connection	1/8" MNPT, 316 stainless steel
Wiring Terminations	Splash-proof Packard connector, 16 AWG cable, 36" length
Dimensions	Enclosure: 5.11"H x 5.11"W x 2.95"D (13.0 x 13.0 x 7.5 cm)
Weight	4.4 oz (125 g) with 36" cable
Warranty	1 year

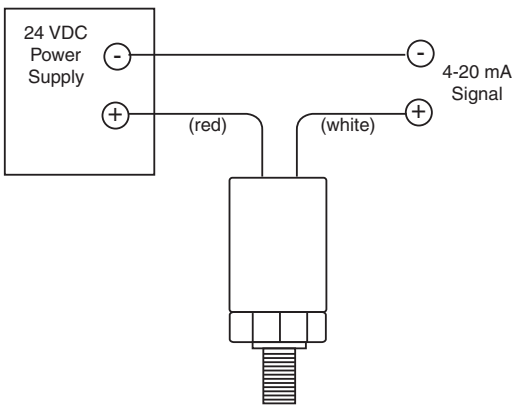
DIMENSIONS

in
(cm)



WIRING

in
(cm)



INSTALLATION

Mount the **PSS2 Series** in a manner that protects it from steam or temperatures outside of its operating range. A Model PT steam pigtail syphon must be installed in all applications where steam is to be monitored. When monitoring the pressure of a medium that is above or below the temperature operating range of the transmitter, the sensor should be isolated by a length of tubing. If 6" to 12" (15.2 to 30.5 cm) of brass tubing is used, temperatures up to 400°F (204°C) can be tolerated. See the Technical Reference section for information on Steam Isolation and Temperature Protection.

If the **PSS2 Series** is to be subjected to fluid hammer, pressure surges, or pulsations, a Model 47 pressure snubber is recommended.

CAUTION: Not for use with ammonia. The PSS2 can be used with media that is compatible with 304L and 316L stainless steel.

ORDERING INFORMATION

MODEL	DESCRIPTION	
PSS2	Stainless steel 4-20 mA pressure transmitter	
	PRESSURE RANGE psig (kPa)	
	15	0-15 (0-103.4)
	30	0-30 (0-206.9)
	50	0-50 (0-344.8)
	75	0-75 (0-517.1)
	100	0-100 (0-689.5)
	150	0-150 (0-1034)
	200	0-200 (0-1379)
	300	0-300 (0-2068)
	500	0-500 (0-3497)
	750	0-750 (0-5171)
	1000	0-1000 (0-6895)
	OPTIONS (leave blank for no options)	
	E	Watertight enclosure (with stainless steel bulkhead fitting)
	G*	Enclosed with pressure gauge (watertight with transparent cover, brass fittings)
	LCD*	Model LPI-1C LCD display with enclosure (not watertight, brass fittings)
	RED*	Model LPI-1CR red digital display with enclosure (not watertight, brass fittings)

PSS2 – **100** – **G**

Example: **PSS2-100-G** Stainless steel pressure transmitter with a 4-20 mA output over the range of 0-100 psig, with pressure gauge, installed in a watertight enclosure with a transparent cover

* Brass wetted parts option is only for those mediums compatible with brass.

RELATED PRODUCTS		PAGE
250R-3-1	250 OHM 3 WATT 1% Resistor Long Leads	**89**
47B-1	Brass piston style snubber	**899**
47S-1	Stainless steel piston style snubber	**899**
PT	1/4" pigtail syphon with fittings	**390**

STAINLESS STEEL PRESSURE TRANSMITTER

PTX1 SERIES

DESCRIPTION

The PTX1 Series Stainless Steel Pressure Transmitter utilizes a thin film strain-gauge bridge and stainless steel diaphragm to provide a highly accurate, stable means of measuring gauge pressures up to 2000 psig (13.79 MPa). Splash-proof cable connections protect the wiring, allowing the PTX1 Series to be mounted near the medium being measured. Optional indication is available as a digital display or as a 2" (5.1 cm) gauge.

FEATURES

- ***For steam, water, glycol, ammonia, refrigerants, and more***
- ***1% full scale accuracy***
- ***200% proof pressure***
- ***Wide range of pressures***
- ***4-20 mA output***
- ***Reverse polarity protected***
- ***Plug-in, splash-proof connector with 6' cable***
- ***Stainless steel wetted parts***
- ***Stainless steel case***
- ***Optional watertight polystyrene enclosure***
- ***Optional LCD/red digital indication***
- ***Optional gauge available for mediums compatible with brass***

PTX1-E-07

PTX1-07

SPECIFICATIONS

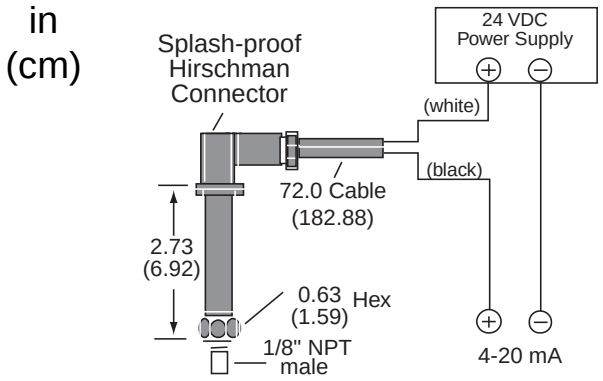
Supply Voltage	10-30 VDC @ 25 mA
Signal Output	4-20 mA
Maximum Output Impedance	650Ω @ 24 VDC maximum
Accuracy	±1% FS
Thermal Effect	±0.04% FS/°F zero and span
Overpressure	200%
Burst Pressure	800%
Response Time	1 ms
Media Compatibility	Fluids compatible with brass and 17-4 PH stainless steel
Wetted Materials	Diaphragm: 17-4 PH stainless steel
Compensated Temperature Range	-20° to 160°F (-29° to 71°C)
Operating Temperature	-40° to 200°F (-40° to 93°C)
Transmitter Case	304 stainless steel
Process Connection	1/8" NPT male 316 stainless steel, with enclosure: 1/8" FNPT
Wiring Terminations	72" (182 cm) jacketed leads
Dimensions	7.09"H x 4.33"W x 3.54"D (18.0 x 11.0 x 9.0 cm)
Weight	
PTX1	0.45 lb (0.20 kg)
PTX1EG	2.05 lb (0.93 kg)
Warranty	1 year

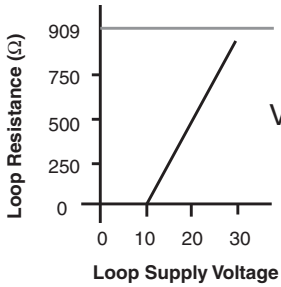
INSTALLATION

Mount the **PTX1 Series** in a manner that protects it from steam or temperatures outside of its operating range. A Model PT steam pigtail syphon must be installed on all applications where steam is to be monitored. When monitoring the pressure of medium that is above or below the temperature operating range of the transmitter, the sensor should be isolated by a length of tubing. If 6" to 12" (15.2 to 30.5 cm) of brass tubing is used, temperatures up to 400°F (204°C) can be tolerated. See the Technical Reference section for information on Steam Isolation and Temperature Protection.

If the **PTX1 Series** is to be subjected to fluid hammer, pressure surges, or pulsations, a Model 47 pressure snubber is recommended.

WIRING





$V_{min} = 10V + [0.022A*(R_{Loop})]$

Load Limitations 4-20 mA Output

ORDERING INFORMATION

MODEL	DESCRIPTION
PTX1	Pressure transmitter with cable
PTX1E	Pressure transmitter in watertight enclosure, stainless steel fittings
PTX1E-G**	Pressure transmitter in watertight enclosure, with gauge, brass fittings
PTX1E-LCD**	Pressure transmitter enclosed (not watertight), with LCD, brass fittings
PTX1E-RED**	Pressure transmitter enclosed (not watertight), with red LCD, brass fittings

PRESSURE RANGE psig (kPa)	
01	30" Hg VAC to 0 (-101.6 VAC to 0)
02	30" Hg VAC to 15 (-101.6 VAC to 103.4)
03	0-15 (0-130.4)
04	3-15 (20.7-103.4)
05	0-30 (0-206.9)
06	0-60 (0-413.7)
07	0-100 (0-689.5)
08	0-150 (0-1034.3)
09	0-200 (0-1379.0)
10	0-300 (0-2068.5)
11	0-500 (0-3447.5)
12	0-750 (0-5171.3)
13	0-1000 (0-6895.0)
14*	0-2000 (0-13,790.0)
15	30" Hg VAC to 30 (-101.6 VAC to 206.9)
16	30" Hg VAC to 60 (-101.6 VAC to 413.7)

PTX1E-LCD – **07** ***Example:*** **PTX1** Stainless steel pressure transmitter with 100 psig pressure range in enclosure with LCD indication

* Enclosed models not available in pressure ranges above 1000 psig
** Brass wetted parts; do not use with mediums that are not compatible with brass

Note: NIST certificate available; contact Kele.

RELATED PRODUCTS		PAGE
47B-1	Brass piston style snubber	**899**
47S-1	Stainless steel piston style snubber	**899**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**837**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**836**
PT	1/4" pigtail syphon with fittings	**390**

PRESSURE TRANSMITTER

209 SERIES

DESCRIPTION

The Setra **209** Series Pressure Transmitter is specifically designed for industrial applications with high performance requirements. It measures gauge pressure and can be used with gases or liquids compatible with 17-4 PH stainless steel. The **209 Series** is packaged in a rugged, stainless steel/Valox housing, which is small and lightweight. The stainless steel capacitance sensing element and high level output, IC-based circuit assures excellent stability.

209 Series

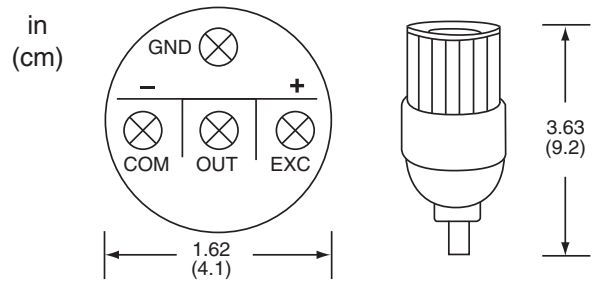
FEATURES

- ***Low cost***
- ***Highly accurate***
- ***Current output***
- ***Lightweight***
- ***Compatible with most common applications***
- ***Stainless steel construction***
- ***Conduit adapter standard***
- ***Optional voltage output available***

APPLICATION

- ***HVAC/R equipment***
- ***Industrial equipment***
- ***Compressor control***
- ***Hydraulic systems***
- ***Process and refrigeration systems***

DIMENSIONS

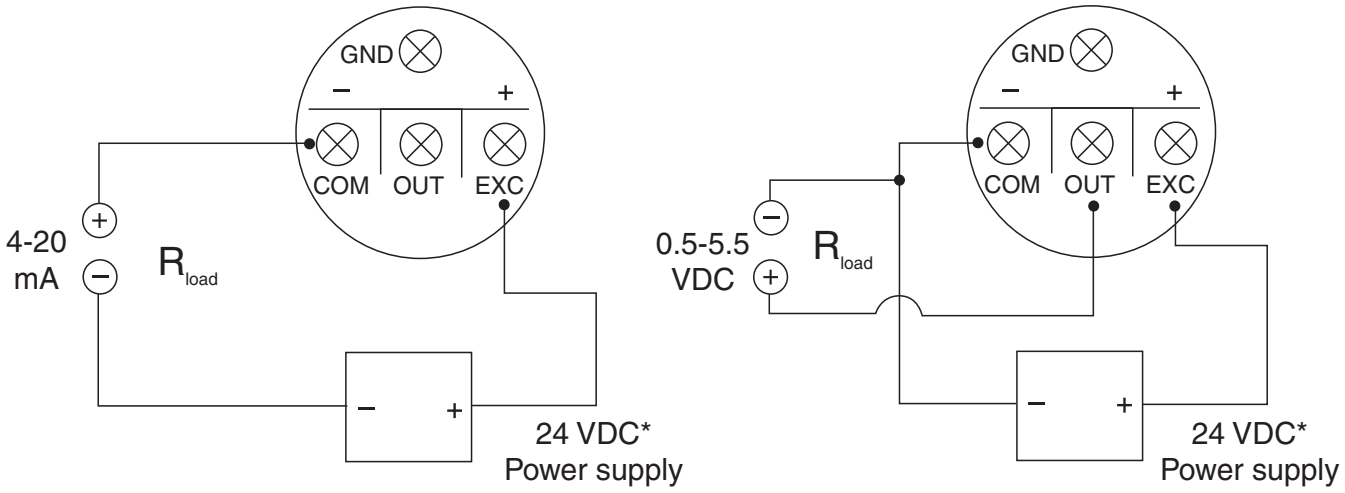


SPECIFICATIONS

Supply Voltage	
Current	14 to 31 VDC (R_L=250Ω)
Voltage	9 to 30 VDC
Signal Output	
Current	4-20 mA
Voltage	0.5 to 5.5 VDC
Maximum Output Impedance (mA)	750Ω @ 24 VDC
Minimum Output Impedance (VDC)	5000Ω
Accuracy	±0.25% FS
Stability	0.5% FS/year
Non-repeatability	0.05% FS
Non-linearity	±0.22% FS
Hysteresis	0.10% FS

Thermal Effect	
Zero	±2.0% FS/100°F (±1.8% FS/50°C)
Span	±1.5% FS/100°F (±1.3% FS/50°C)
Overpressure	See ordering information
Measurement Range	0 - 1 psi to 2000 psi
Operating Temperature	-40° to 185°F (-40° to 85°C)
Compensated Temperature Range	-4° to 176°F (-20° to 80°C)
Process Connection	1/4" 18 NPT
Enclosure	Stainless Steel, Valox
Wiring Terminations	Screw terminals
Approvals	CE, RoHS
Weight	2.3 oz (65g)
Warranty	1 year

WIRING



* See Specifications on previous page for power supply requirements.

4-20 mA **0.5-5.5 VDC**

ORDERING INFORMATION

MODEL	DESCRIPTION		
209	Pressure transmitter	PROOF	BURST
	RANGE psig (kPa)	PRESSURE (psig)	PRESSURE (psig)
001P	0-1 (0-7)	2	250
002P	0-2 (0-14)	4	250
005P	0-5 (0-34)	10	250
010P	0-10 (0-69)	20	500
025P	0-25 (0-172)	50	500
050P	0-50 (0-345)	100	750
100P	0-100 (0-690)	200	1000
200P	0-200 (0-1379)	400	2000
250P	0-250 (0-1724)	500	2000
500P	0-500 (0-3448)	1000	3000
10CP	0-1000 (0-6895)	2000	5000
20CP	0-2000 (13790)	3000	6500
	OUTPUT		
G2M11	4-20 mA analog		
G2M24	0.5-5.5 VDC analog		
	CONNECTION		
A1	Threaded conduit connection		

209 – 050P – G2M11 – A1

Example: **209-050P-G2M11-A1** 0-50 psig transmitter with 4-20 mA output and conduit connection

RELATED PRODUCTS		PAGE
PT	1/4" pigtail syphon with fittings	390

PRESSURE TRANSMITTER

PVI-1, PVI-2

DESCRIPTION

Model PVI-1 and **PVI-2** Pressure Transmitters are designed to provide economical monitoring of control air pressure in HVAC applications. The **Model PVI-1** is furnished in a unique slim-line design housing, which saves panel space, and can be ordered with an optional DIN rail-mounting adapter. The **Model PVI-2** is a snap-track mounted version with identical operation. Both versions are available with an optional pressure indication gauge.Both units have LED indication for power and for output over range when input pressure exceeds maximum calibrated pressure. The output signal is limited to 110% of normal full scale (20 mA, 5/10/15V).

PVI-1

FEATURES

- ***AC or DC power***
- ***0-20 psig (0-137.9 kPa) input pressure range***
- ***4-20 mA and voltage outputs available simultaneously***
- ***Adjustable zero and span***
- ***LED indication of power and output over range***
- ***Optional pressure gauge***

APPLICATION

Models PVI-1 and **PVI-2** convert an input pressure to a 4-20 mA current sourcing and a jumper-selectable 1-5, 2-10, or 3-15 VDC output signal that is directly proportional to the input pressure. The zero and span potentiometers allow for adjustment if the output signal required is different from the standard calibration.

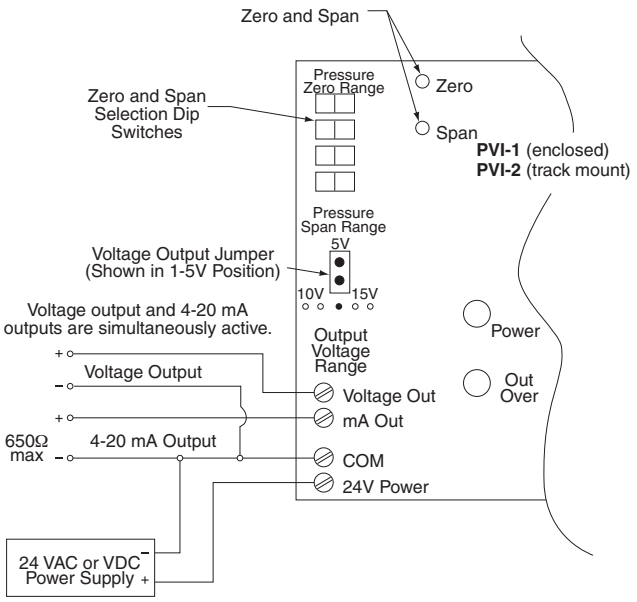
PVI-2 with Optional Gauge

SPECIFICATIONS

Supply Voltage	24 VAC ±10% @ 80 mA 24 VDC ±10% @ 35 mA
Signal Output	
Current	4-20 mA (sourcing)
Voltage	1-5 VDC, 2-10 VDC, 3-15 VDC
Maximum Output Impedance (mA)	650Ω
Minimum Output Impedance (VDC)	1-5 VDC: 1250Ω 2-10 VDC 2500Ω 3-15 CDC 3750Ω
Accuracy	±0.1 psig @ 77°F (25°C)
Span Adjustments	3-20 psig (20.7-137.9 kPa)
Zero Adjustments	0-17 psig (0-117.2 kPa)
Pressure Range	0-20 psig (0-137.9 kPa) factory setting
Media Compatibility	Air and non-conductive gases
Operating Temperature	32° to 122°F (0° to 50°C)
Process Connection	1/4" barb
Wiring Terminations	Terminals
Dimensions	
PVI-1	3.4"H x 4.9"W x 2"D (8.6 x 12.4 x 5.1 cm)*
PVI-2	3.25"H x 3.25"W x 1.75"D (8.26 x 8.26 x 4.45 cm)*
Weight	
PVI-1	0.85 lb (0.39 kg)
PVI-2	0.75 lb (0.34 kg)
Warranty	18 months

* Add 0.6"H (1.5 cm) each for mounting tabs and 2.3"H (5.8 cm) for gauge option.

WIRING



CALIBRATION

Models PVI-1 and **PVI-2** are factory calibrated for 0-20 psig (0-137.9 kPa). If another pressure range is required, select the pressure zero range from Table 1 and set SW1 and SW2 accordingly. Then, select the pressure span range (high pressure minus low pressure) required from Table 2 and set SW3 and SW4. Apply the low-end pressure and adjust the zero pot for the desired output. Apply the high-end pressure and adjust the span pot. Repeat as required.

Example: To monitor an 8-13 psig signal, the pressure zero range is 8, so set SW1 ON and SW2 OFF. The pressure span range is 5 (13-8 = 5), so set SW3 OFF and SW4 OFF.

TABLE 1. PRESSURE ZERO RANGE

ZERO	SW1	SW2
0.00-4.25 psig (0-29.3 kPa)	ON	ON
4.25-8.50 psig (29.3-58.6 kPa)	ON	OFF
8.50-12.75 psig (58.6-87.9 kPa)	OFF	ON
12.75-17.00 psig (87.9 kPa-117.2 kPa)	OFF	OFF

TABLE 2. PRESSURE SPAN RANGE

SPAN	SW3	SW4
3.00-7.25 psig (20.7-50.0 kPa)	OFF	OFF
7.25-11.50 psig (50.0-79.3 kPa)	OFF	ON
11.50-15.75 psig (79.3-108.6 kPa)	ON	OFF
15.75-20.00 psig (108.6-137.9 kPa)	ON	ON

ORDERING INFORMATION

MODEL	DESCRIPTION	
PVI-1	Pressure transmitter	
	OPTIONS (must be factory installed)	
	43	Pressure indication gauge
	47	DIN rail mounting
	C	Special calibration (specify range when ordering)

Example: **PVI-1-43-47** Enclosed pressure transmitter with pressure indication gauge and DIN rail mounting

MODEL	DESCRIPTION	
PVI-2	Track-mounted pressure transmitter	
	OPTIONS (must be factory installed)	
	G	Pressure indication gauge
	C	Special calibration (specify range when ordering)

Example: **PVI-2-G** Track-mounted pressure transmitter with pressure gauge

DIFFERENTIAL PRESSURE GAUGE

K2000 SERIES

DESCRIPTION

The **K2000 Series Differential Pressure Gauges** can be used in applications for measuring positive, negative, or differential pressure with an accuracy of 2%. The gauge includes a 4" (10.2 cm) easy-to-read dial, housed in a rugged die cast aluminum housing. The **K2000 Series** has both back and side connections so that it may be either surface- or flush-mounted. Ranges are available from 0" to 0.25" W.C. up to 10" W.C.

FEATURES

- ***2% full-scale accuracy***
- ***Easy-to-read 4" (10.16 cm) white dial and red-tipped pointer***
- ***Flush or surface mounting***
- ***Easily accessible zero adjustment***
- ***Corrosion-resistant cast aluminum housing***
- ***Back and side connections***

NEW!

K2000

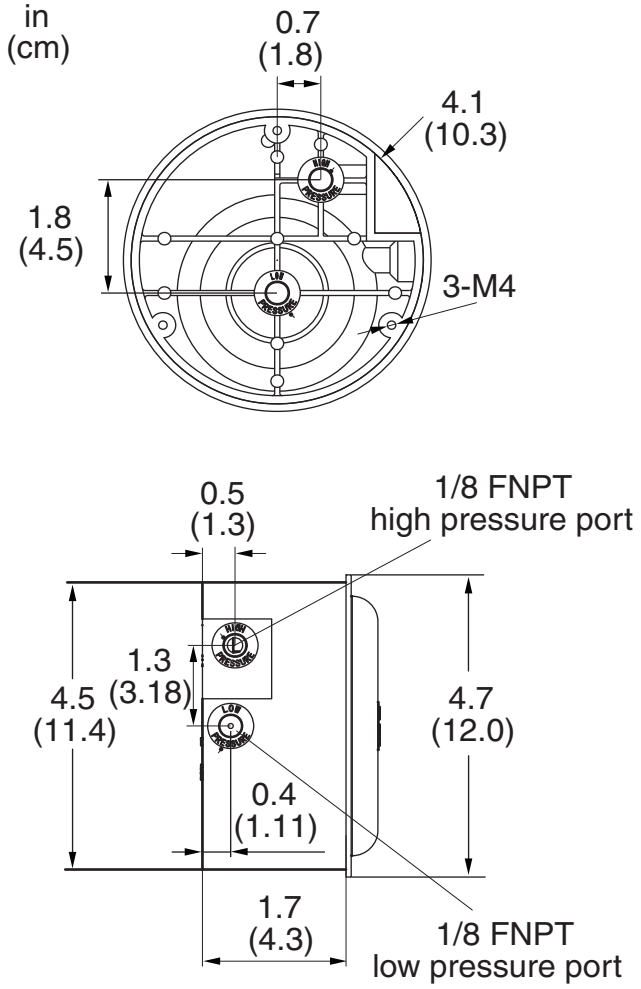
APPLICATION

The **K2000 Series** is ideal for monitoring filter status, duct static pressure, room pressure, fan or blower pressure, paint booths, dust collectors, and cabinet purging.

SPECIFICATIONS

Accuracy	±2% of FS through out ranges @ 70°F (3% on 0.5" ranges and 4% on 0.25" ranges)
Operating Pressure	-20" Hg to 15 psig (103 kPa)
Media Compatibility	Air and compatible gases
Operating Temperature	20° to 140°F (-7° to 60°C)
Enclosure	Die-cast aluminum case and bezel with acrylic cover
Process Connection	1/8" NPT female high and low pressure taps, duplicated-one pair side and one pair back.
Included Accessories	Two 1/8" FNPT barbed fittings, two plugs for duplicate pressure taps, and three flush mounting tabs with screws
Weight	1.1 lb (0.51 kg)
Warranty	2 years

DIMENSIONS



NEW!

INSTALLATION

Mounting the K2000 Series Differential Pressure Gauge: Mount the K2000 with the dial face in the vertical plane. Avoid areas of excessive vibration, pulsating pressures, or extreme temperature swings. Long runs of pneumatic tubing will not affect performance but it may affect response times. Once the K2000 is mounted, the pointing needle of the K2000 may need to be adjusted to the zero position. If adjustment is required, slightly turn the external pointer adjustment screw in either direction as required.

Using the K2000 to measure differential pressure: The high pressure ports will always be connected to the higher of the two pressures that are being monitored. Conversely the lower pressure ports will always be connected to the lower of the two pressures being measures.

Monitoring variable positive pressures: This application will measure the positive pressure as it varies with respect to the atmosphere. Port the highest pressure source to a high port connection of the K2000 and leave the low pressure ports open to the atmosphere. Make sure any unused high pressure port is plugged.

Monitoring variable negative pressures: This application will measure the negative positive pressure as it varies with respect to the atmosphere. Port the low pressure source to a low port connection of the K2000 and leave the high pressure ports open to the atmosphere. Make sure any unused low pressure port is plugged.

ORDERING INFORMATION

MODEL	RANGE "W.C.	MINOR DIV.	MODEL	RANGE DUAL SCALE "W.C./Pa	MINOR DIV.
K2000-00*	0-0.25	0.005	**K2000-00D***	0-0.25/0-60	0.005
K2000-0*	0-0.5	0.01	**K2000-0D***	0-0.5/0-125	0.01
K2001	0-1.0	0.02	**K2001D**	0-1.0/0-250	0.02
K2002	0-2.0	0.05	**K2002D**	0-2.0/0-500	0.05
K2003	0-3.0	0.10	**K2003D**	0-3.0/0-750	0.10
K2004	0-4.0	0.10	**K2004D**	0-4.0/0-1000	0.10
K2005	0-5.0	0.10	**K2006D**	0-5.0/0-1.5k	0.10
K2006	0-6.0	0.20	**K2008D**	0-6.0/0-2.0k	0.20
K2008	0-8.0	0.20	**K2010D**	0-8.0/0-2.5k	0.20
K2010	0-10	0.20	**K2020D**	0-10/0-5.0k	0.20

* These ranges are calibrated for vertical scale position

Order by model number from selection chart above. Contact Kele for pressure ranges, metric ranges, and air velocity scales other than those shown.

	RELATED PRODUCTS	PAGE
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
A-368-K	Surface mounting plate	**917**
A-605	Mounting kit for air filter application. Includes aluminum surface mounting brackets with screws, two 5 ft. lengths of 1/4" aluminum tubing, two static pressure tips and two plastic vent valves.	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

DIFFERENTIAL PRESSURE GAUGES

2000 SERIES

DESCRIPTION

The **2000 Series** Magnehelic® Differential Pressure Gauges provide an accurate, economical indication of positive, negative, or differential air pressure. The gauge includes a 4" (10.2 cm) easy-to-read dial and a frictionless magnetic movement in a cast aluminum housing, and it is resistant to shock, vibration, and overpressure. The Magnehelic® Gauge has both back and side connections, so that it may be either surface- or flush-mounted. Ranges are available from 0" to 0.25" W.C. up to 10" W.C.

2001

FEATURES

- ***2% full-scale accuracy***
- ***Easy-to-read 4" (10.16 cm) white dial and red-tipped pointer***
- ***Flush or surface mounting***
- ***Easily accessible zero adjustment***
- ***Corrosion-resistant cast aluminum housing***
- ***Back and side connections***

APPLICATION

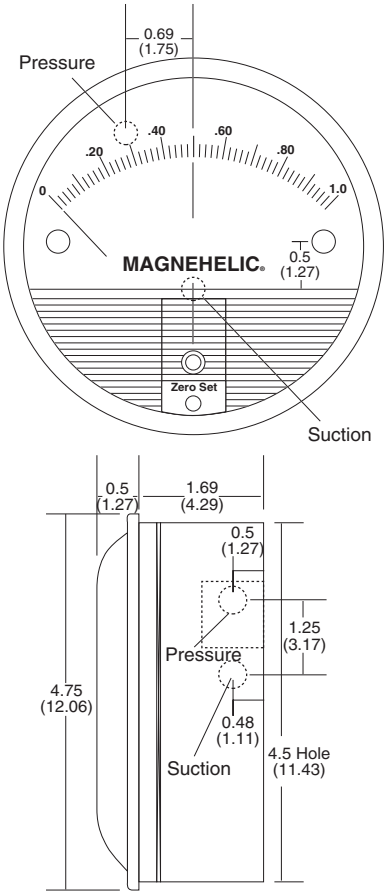
The **2000 Series** is ideal for monitoring fan and blower pressures, filter resistance, air velocity, and pressure drop across coils. It may be used to measure positive, negative, or differential pressures of air or compatible gases.

SPECIFICATIONS

Accuracy	± 2% of FS (3% on -0 and 4% on -00 ranges) throughout range
System Pressure	-20" Hg to 15 psig (103 kPa)
Overpressure	Relief plug designed to open at 25 psig (172 kPa)
Enclosure	Die-cast aluminum
Operating Temperature	20° to 140°F (-7° to 60°C)
Process Connection	1/8" NPT female high and low pressure taps, duplicated-one pair side and one pair back
Standard Accessories	Two 1/8" NPT plugs for duplicate pressure taps, two 1/8" pipe thread to rubber tubing adapters, and three flush mounting adapters with screws
Weight	1.55 lb (0.7 kg)
Warranty	1 year

DIMENSIONS

in
(cm)



Note: Dimensions are slightly different on medium and high pressure models.

INSTALLATION

Mount the **2000 Series Magnehelic Gauge®** with the dial in a vertical position in a location free of excessive vibration or pulsating pressures. Sensing lines may be run any distance necessary, but long tubing lengths will increase response time slightly. If the pointer is not exactly on the zero mark with both the high- and low-pressure connections open to the atmosphere, adjust with the external zero adjust screw.

To monitor positive pressure, connect tubing from the source of pressure to either of the two high-pressure ports. Plug the other high-pressure port, and vent one or both low-pressure ports to atmosphere.

To monitor negative pressure, connect tubing from the source of negative pressure to either of the two low-pressure ports. Plug the other low-pressure port, and vent one or both high-pressure ports to atmosphere.

To monitor differential pressure, connect tubing from the source of the higher pressure to either of the two highpressure ports. Connect tubing from the source of the lower pressure to either of the low-pressure ports. Plug both unused ports.

ORDERING INFORMATION

MODEL	RANGE "W.C.	MINOR DIV.	MODEL	RANGE ZERO CENTER "W.C.	MINOR DIV.
2000-00*	0-0.25	0.005	**2300-0***	0.25-0-0.25	0.01
2000-0*	0-0.50	0.01	**2301**	0.5-0-0.5	0.02
2001	0-1.0	0.02	**2302**	1-0-1	0.05
2002	0-2.0	0.05			
2003	0-3.0	0.10			
2004	0-4.0	0.10			
2005	0-5.0	0.10			
2006	0-6.0	0.20			
2008	0-8.0	0.20			
2010	0-10	0.20			

* These ranges are calibrated for vertical scale position

Order by model number from selection chart above. Contact Kele for pressure ranges, metric ranges, and air velocity scales other than those shown.

	RELATED PRODUCTS	PAGE
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
A-368-K	Surface mounting plate	**917**
A-605	Mounting kit for air filter application. Includes aluminum surface mounting brackets with screws, two 5 ft. lengths of 1/4" aluminum tubing, two static pressure tips and two plastic vent valves.	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

DIFFERENTIAL PRESSURE SWITCH / GAUGE

3000 SERIES

DESCRIPTION

The **Series 3000 Photohelic® Differential Pressure Switch/ Gauge** combines two versatile, precise pressure switches with a time-proven Magnehelic® pressure gauge. The gauge reading is unaffected by switch operation. External knobs are used to adjust the two DPDT switch setpoints. Switch setpoints (indicated by red pointers) and system pressure are fully visible at all times. Ranges are available from 0" to 0.25" W.C. up to 10" W.C. full scale. The **3000 Series** may be ordered with the switch assembly remote mounted to facilitate panel mounting.

A3002

FEATURES

- ***Two DPDT switches, externally adjustable***
- ***Dependable Magnehelic® pressure indication***
- ***2% F.S. accuracy***
- ***Visible switch set points and pressure indication***
- ***Easily accessible zero adjustment***
- ***4" (10.2 cm) easy-to-read white dial***
- ***Optional manual reset***
- ***Optional remote mounting of switch assembly***
- ***UL listed, CSA and CE certified***

APPLICATION

The **3000 Series** may be used for applications requiring one or two stages of pressure alarm or control, as well as continuous pressure indication. Both high and low pressure relays can be wired to latch and remain energized by using an optional auxiliary manual reset switch. The **3000 Series** may also be used to control tri-state (floating) actuators for inlet vane or damper control of duct pressure.

SPECIFICATIONS

Supply Voltage	110 VAC, 50/60 Hz, 5W	**Cutout Size**	4.75" (12.06 cm) diameter
Contact Rating	10A @ 120 VAC, 60 Hz resistive	**Depth Required**	7.63" (19.37 cm)
Accuracy	±2% of full scale @ 70°F (21°C)	**Dimensions**	5.0"H X 5.0"W X 8.44"D (12.7 X 12.7 X 21.4
Overpressure	20" Hg to 25 psig (172 kPa) total pressure on either side of diaphragm	**Approvals**	UL listed, file #E38121, CSA, CE
Operating Temperature	20° to 120°F (-7° to 49°C)	**Weight**	4.0 lb (1.81 kg)
Process Connection	1/8" FNPT	**Warranty**	1 year
Conduit Entrance	3/4" conduit		

ORDERING INFORMATION

MODEL	RANGE "W.C."	MINOR DIVISION	MODEL	RANGE "W.C."	MINOR DIVISION
A3000-00	0-0.25	0.005	**A3004**	0-4.0	0.10
A3000-0	0-0.50	0.01	**A3005**	0-5.0	0.10
A3001	0-1.0	0.02	**A3006**	0-6.0	0.20
A3002	0-2.0	0.05	**A3008**	0-8.0	0.20
A3003	0-3.0	0.10	**A3010**	0-10	0.20

OPTIONS

RMR	**Remote mounting gauge and separate relay assembly with 5ft (12.7 cm) interconnecting cable (additional cable available in 5ft increments)**
TAMP	**Tamper-proof knobs**
A-601	**Manual reset switch (one required for each circuit)**

Contact Kele for pressure ranges other than those shown (metric ranges, air velocity scales, etc.)

RELATED PRODUCTS		PAGE
A-301-K	Duct static pressure tip, 1/4" compression	**925**
A-302-K	Duct static pressure tip, 1/4" barb	**925**
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)	**925**
T-101	1/4" OD black poly tubing, 1 coil, 250 ft (76 m)	**759**

DESCRIPTION

The **A2G Series** (Air2Guide) pressure gauges are the latest innovation in accurate, full featured, pressure gauges and are ideally suited for the measurement of low pressure and differential pressure from 1.0" to 50" WC. Both the **A2G-10** and the **A2G-15 Series** incorporate a two-piece modular design. A benefit of the modular design is a two-part assembly that separates the measuring system from case components. This allows the replacement of only the measuring system, which provides reduced repair costs. The panel mount version of the Air2Guide is extremely easy to install and requires no tools.

In addition to the local display, the **A2G-15** features an electronic output signal and is available with a 2-wire, 4 to 20 mA or 3-wire 0 to 10 VDC output signal. This A2G-15 gauge is ideal for applications where a local indication and remote monitoring or evaluation is needed.

A2G10

A2G15

FEATURES

- ***Zero adjustment in front***
- ***Red mark pointer standard***
- ***Simple mounting and dismounting***
- ***Two part construction***
- ***Analog output signal (A2G-15)***

APPLICATION

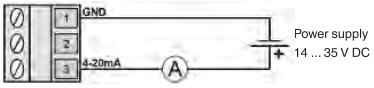
- ***For dry, clean, non-aggressive gases, air***
- ***Monitoring of blowers and ventilators***
- ***Filter monitoring via differential pressure***
- ***Positive overpressure in clean rooms***
- ***Positive and negative pressure in isolation chambers***

SPECIFICATIONS

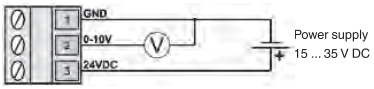
Supply Voltage	15 to 35 VDC (A2G-15 only)
Signal Output	4-20 mA, 0-10 VDC (A2G-15 only)
Maximum Output Impedance	600Ω @ 24 VDC
Dial Size	4.5" (11.4 cm)
Accuracy	±3% of full span
Maximum Pressure	80 in WC
Range	0 to 0.2" WC to 0 to 50" WC
Operating Temperature	-22° to 176°F (-3°0 to 80°C)
Gauge Movement	Frictionless magnetic transmission
Materials Of Construction	Case: Aluminum Pointer: Plastic black Set Pointer: Plastic red Window: Makrolon Mounting Case: Black thermoplastic, high impact resistant
Diaphragm Material	Silicone rubber
Enclosure Rating	NEMA 3 (NEMA 4 Optional)
Process Connection	1/8" - 3/16" hose barbed adapters included
Mounting	LM = lower mount (surface mount), CBM = center back mount (panel mount)
Wiring Terminations	PG gland M12 (A2G-15 only)
Approvals	CE
Weight	1.0 lb (0.45 kg)
Warranty	3 year

WIRING

Output signal 4 ... 20 mA, 2-wire



Output signal 0 ... 10 V, 3-wire



ORDERING INFORMATION

MODEL	DESCRIPTION	
A2G	WIKA differential pressure gauge series	
	CONFIGURATION	
	10	WIKA differential pressure gauge
	15	WIKA differential pressure gauge with analog signal
	-	Surface mount (LM)
	P	Panel mount (CBM)
	ANALOG SIGNAL (A2G-15 only)	
	420	4-20 mA analog signal
	010	0-10 VDC analog signal
	RANGE CODES	
	P25	0 to 0.25" WC
	P50	0 to 0.05" WC
	01	0 to 1.0" WC
	02	0 to 2.0" WC
	03	0 to 3.0" WC
	04	0 to 4.0" WC
	05	0 to 5.0" WC
	06	0 to 6.0" WC
	07'	0 to 8.0" WC
	08	0 to 10.0" WC
	CP10	±0.1" WC
	CP20	±0.2" WC
	CP50	±0.5" WC
	C10	±1.0" WC
	C20	±2.0" WC
	C40	±4.0" WC
	C60	±6.0" WC

NEW!

DIGITAL GAUGE
SERIES A

DESCRIPTION

The **Series A1 and A2** digital differential pressure gauges utilize a patent pending microprocessor based digital pressure gage for positive, negative, and differential measurement designed to be a direct replacement for mechanical gauges. The **Series A** digital differential pressure gauges utilize an extremely stable piezoresistive sensing technology to give a standard full scale accuracy of 1%. For applications requiring better accuracy, the **Series A1** and **A2** are also available with 0.5% or 0.25% accuracy. The **Series A1** and **A2** also have an optional 4-20 mA output for applications requiring an output signal. While the **A1** features a bright LED display, the **A2** adds a bright process arch which gives the gauge improved visibility, readability and precision. Both the **Series A1** and **A2** digital differential pressure gauges also feature 5 user selectable engineering units including inches of W.C., mm W.C., cm W.C., kPa, and Pa.

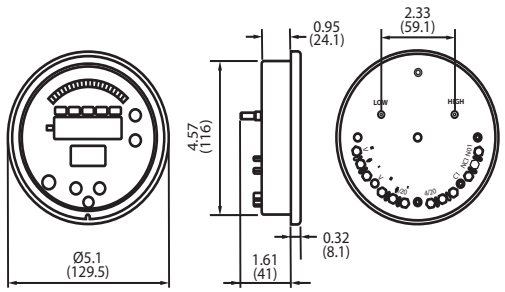
The **Sensocon Series A3 and A4** digital differential pressure controllers are a patent pending microprocessor based pressure controllers for positive, negative, and differential pressure as well as velocity and flow. These **Series A3 and A4** differential pressure controllers include (2) 8A SPDT relays and an associated programming menu that allows full configuration of variables such as setpoints, dead band, engineering units, flow coefficients, and more. The programming is done from a user friendly menu on the LCD(**A3**) or OLED (**A4**) display or uploaded using an Opti Link.

NEW!

FEATURES

- ***Mounts in industry standard holes***
- ***1.6" (41 mm) panel depth***
- ***LED or OLED program display***
- ***Measures flow & velocity***
- ***Optional 4-20 mA output***
- ***Universal power 24-240 VAC/VDC***
- ***Two 8A SPDT relays***

DIMENSIONS



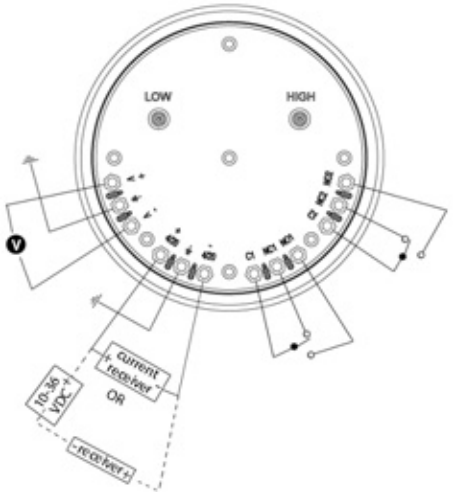
SPECIFICATIONS

Supply Voltage	24-240 VAC/VDC
Signal Output	4-20 mA (optional)
Maximum Output Impedance	750Ω
Relay Output	(2) SPDT
Relay Output Rating	8 Amps @ 250 VAC, 5A @30 VDC
Accuracy	1.0% standard (0.5% and 0.25% optional)
Thermal Effect	+/- 0.02% FS/°F
Maximum Pressure	≤4" WC 2 psi; 5" WC or more 10 psi
Display	4 Digit, red LED, ½" digits, LCD programming display (A3 and A4 only)
Response Time	<100 ms
Operating Temperature	-10° to 140°F (-23° to 60°C)
Media Compatibility	Air and compatible non combustible, non corrosive gasses
Enclosure	Glass Filled Nylon
Enclosure Rating	Face designed to meet NEMA 4X; with optional cover the entire product is weatherproof
Process Connection	Push on connection for 3/16" tubing
Wiring Terminations	screw terminals
Approvals	ETL, CE

ORDERING INFORMATION

Model	Descpition		
A	Series A 4.5" panel mount display		
	DISPLAY CONFIGURATION		
	1	LED display	
	2	LED display, process arch	
	3	LED display, process arch, and LCD	
	4	LED display, process arch, and OLED	
		FUNCTION	
		0	Indication
		1	Control (2) SPDT relays (A3 and A4 only)
		TRANSMITTER	
		0	None
		1	4-20 mA
			ACCURACY
			0 1%
			1 0.50%
			2 0.25%
			PRESSURE RANGE*
			0 0 – 0.25" (60 Pa)
			1 0 – 0.5" (125 Pa)
			2 0 – 1" (250 Pa)
			3 0 – 2" (500 Pa)
			4 0 – 3" (750 Pa)
			5 0 – 4" (1 kPa)
			6 0 – 5" (1.25 kPa)
			7 0 – 8" (2.0 kPa)
			8 0 – 10" (2.5 kPa)
			9 0 – 15" (3.75 kPa)
			10 0 – 20" (5.0 kPa)
			11 0 – 30" (7.5 kPa)
			12 0 - 40" (10 kPa)
			13 0 - 50" (12.5 kPa)

* All ranges are bi-directional



REFRIGERATION GAUGE
25W100

DESCRIPTION

The **Model 25W100 Refrigeration Gauge** is ideal for installation on refrigeration manifolds for testing air conditioning units. The compound scale is designed specifically for R134A refrigerant testing.

25W100

SPECIFICATIONS

Dial Size	2 1/2" (6.4 cm)
Accuracy	1%-2%-5%
Measurement Range	30" Hg vac to 120 psi (retard to 250 psi)
Wetted Parts	Brass socket, phosphor bronze bourdon tube
Process Connection	1/8" NPT, lower
Enclosure	Window: Polycarbonate
Case:	ABS plastic

ORDERING INFORMATION

MODEL	DESCRIPTION
25W1007PH01L-R134A	Refrigeration gauge for R134A

PRESSURE GAUGES
PG SERIES

DESCRIPTION

The **PG Series Pressure Gauges** are durable, cost-effective, general-purpose gauges for use in a wide variety of HVAC controls applications. All gauges are compatible with air, oil, and water and have a steel case, bronze bourdon tube, acrylic lens, and dual unit psi/kPa scale. The **PG Series** (except model **PG-05**) has a screw-on lens and recalibrator screw. A wide variety of models, options, and accessories are available, including panel-mount models, specialty gauges, and diaphragm seals.The Model 25W100 Refrigeration Gauge is ideal for installation on refrigeration manifolds for testing air conditioning units. The compound scale is designed specifically for R134A refrigerant testing.

PG Series

SPECIFICATIONS

Accuracy	
PG Series	**2%-1%-2% ANSI/ASME Grade A**
PG-05 (only)	3%-2%-3% ANSI/ASME Grade B
Overpressure	125% of FS value
Additional Specifications	Movement: Brass (flutterless)
Operating Temperature	-40° to 150°F (-40° to 65°C)
Wetted Parts	Brass socket, phosphor bronze bourdon tube
Casing	Black painted steel (stainless steel on contractor gauges)
Window Material	Acrylic
Process Connection	1/8" NPT or 1/4" NPT, depending on model (LM = lower mount, CBM = center back mount, PM = panel mount)
Dimensions	2" gauge: 2.11" (5.4 cm) 2-1/2" gauge: 2.66" (6.8 cm)

ORDERING INFORMATION

	GAUGE TYPE								
	ECONOMY	QUALITY							CONTRACTOR
DIAL SIZE CONNECTION	1-1/2" 1/8" CBM	1-1/2" 1/8" LM	1-1/2" 1/8" CBM	2" 1/4" CBM	2" 1/4" LM	2" 1/4" PM	2-1/2" 1/4" LM	2-1/2" 1/4" PM	4-1/2" 1/4" LM
PRESSURE RANGE									
30" Hg VAC/kPa	N/A	PG-15-30-0-8L	PG-15-30-0-8C	PG-20-30-0-4C	PG-20-30-0-4L	PG-20-30-0-4P	PG-25-30-0-4L	PG-25-30-0-4P	PG-45-30-0-4L
30" Hg VAC-30 psig	N/A	N/A	N/A	N/A	N/A	N/A	PG-25-30-30-4L	N/A	PG-45-30-30-4L
0-15 psig/kPa	N/A	PG-15-0-15-8L	PG-15-0-15-8C	PG-20-0-15-4C	PG-20-0-15-4L	PG-20-0-15-4P	PG-25-0-15-4L	PG-25-0-15-4P	PG-45-0-15-4L
0-30 psig/kPa	PG-05*	PG-15-0-30-8L*	PG-15-0-30-8C*	PG-20-0-30-4C	PG-20-0-30-4L*	PG-20-0-30-4P	PG-25-0-30-4L*	PG-25-0-30-4P	PG-45-0-30-4L*
0-60 psig/kPa	N/A	PG-15-0-60-8L*	PG-15-0-60-8C*	PG-20-0-60-4C	PG-20-0-60-4L*	PG-20-0-60-4P	PG-25-0-60-4L*	PG-25-0-60-4P	PG-45-0-60-4L*
0-100 psig/kPa	N/A	PG-15-0-100-8L*	PG-15-0-100-8C*	PG-20-0-100-4C	PG-20-0-100-4L*	PG-20-0-100-4P	PG-25-0-100-4L*	PG-25-0-100-4P	PG-45-0-100-4L*
0-160 psig/kPa	N/A	PG-15-0-160-8L*	PG-15-0-160-8C*	PG-20-0-160-4C	PG-20-0-160-4L*	PG-20-0-160-4P	PG-25-0-160-4L*	PG-25-0-160-4P	PG-45-0-160-4L*
0-200 psig/kPa	N/A	PG-15-0-200-8L*	PG-15-0-200-8C*	PG-20-0-200-4C	PG-20-0-200-4L*	PG-20-0-200-4P	PG-25-0-200-4L*	PG-25-0-200-4P	PG-45-0-200-4L*
0-300 psig/kPa	N/A	PG-15-0-300-8L*	PG-15-0-300-8C*	PG-20-0-300-4C	PG-20-0-300-4L*	PG-20-0-300-4P	N/A	N/A	N/A
0-400 psig/kPa	N/A	PG-15-0-400-8L*	PG-15-0-400-8C*	PG-20-0-400-4C	PG-20-0-400-4L*	PG-20-0-400-4P	N/A	N/A	N/A
0-600 psig/kPa	N/A	PG-15-0-600-8L*	PG-15-0-600-8C*	PG-20-0-600-4C	PG-20-0-600-4L*	PG-20-0-600-4P	N/A	N/A	N/A

* Indicates models that are normally stocked.

SNUBBERS, PIGTAIL

47B, 47S, 747B, 747S, PT

DESCRIPTION

Snubbers will stop shocks and pulsations that damage pressure instruments, thus cutting costs of maintenance, calibration, and repair. They will also assure accuracy of the instruments and the readings, increase life of instruments, and prevent false operation of control equipment. Kele offers two types of pressure snubbers; piston and porous.

Model 47 Snubbers
Model 47 incorporates a piston that moves up and down inside of an internal tube within the snubber. This movement of the piston, caused by the shocks and pulsations of the fluid, dampens the effect of these pulsations.

Model 47 comes with three piston sizes: #02, #2, and #3. Piston #2 is installed in the factory in the snubber. It is used for most applications, such as water, air, and steam. The #3 piston is used for a greater snubbing effect, while the #02 piston is used for relatively thick fluids or low pressure water applications.

Model 747 Snubbers
Model 747 is a porous snubber and a low-cost alternative to piston snubbers. There are no moving parts. It uses a porous material to dampen the effect of shocks and pulsations. The **Model 747** is available in stainless steel and brass, and it is ordered based on the application, gases or liquids.

Model PT
In steam pressure monitoring, the temperature of the steam is higher than the maximum operating temperature of most pressure transmitters. A **Model PT steam pigtail syphon** will protect a pressure transmitter applied to steam systems. See the "Technical Reference" section in the Kele catalog for more detailed information.

The **Model PT** is constructed of steel and is suitable for steam pressure to 250 psig (1724 kPa) 400°F (204°C). Each is furnished with two 1/4" FPT x 1/8" FPT couplings and one 1/8" MPT x 1/8" MPT nipple for convenient installation.

PT
(Steam Syphon),

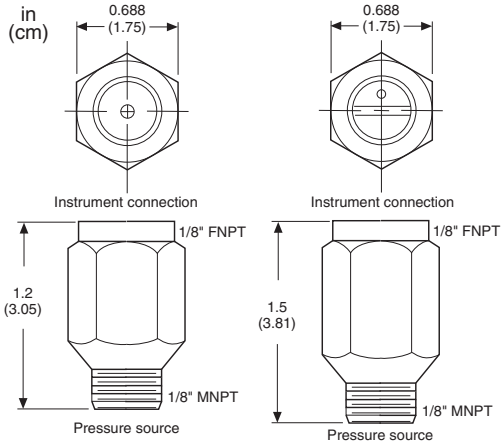
PTX1 with 47S-1

747B Snubber

SPECIFICATIONS

Maximum Pressure	
Brass Snubbers	3000 psig (20,685 kPa)
SS Snubbers	5000 psig (34,475 kPa)
PT	250 psig (1724 kPa)
Maximum Temperature	
PT	400°F (204°C)
Materials Of Construction	
Snubbers	Brass, Stainless Steel
PT	Steel
Process Connection	
Snubbers	1/8" MNPT
PT	1/4" NPT (1/8" NPT fittings provided
Dimensions	
747 Series	1.2"H X 0.69" diameter (3.05 X 1.75 cm)
47 Series	1.5"H X 0.69" diameter (3.81 X 1.75 cm)
PT	5.5" L (14 cm)

DIMENSIONS



Maximum pressure

747B - 3000 psig (20,685 kPa)
747S - 5000 psig (34,475 kPa)
Model 747

47B - 3000 psig (20,685 kPa)
47S - 5000 psig (34,475 kPa)
Model 47

ORDERING INFORMATION

MODEL	DESCRIPTION
47B-1	Brass piston style snubber
47S-1	Stainless steel piston style snubber
747BE-1	Brass porous style snubber for light oil and water
747BG-1	Brass porous style snubber for air, steam, and other gases
747SE-1	Stainless steel porous style snubber for light oil and water
747SG-1	Stainless steel porous style snubber for air, steam, and other gases
PT	1/4" pigtail syphon with fittings

AIR PRESSURE SENSORS, SURGE DAMPENERS

A300 SERIES, RPS, SD-01, 21121, 60681

DESCRIPTION

Static Pressure Sensors
The **A-300-K Series** sensors are used with pressure transmitters and pressure switches to sense duct pressures. Two sensors are required to monitor pressure across coils, filters, blowers, etc. **A-301-K** and **A-302-K** have four radial sensing holes and 4" (10.2 cm) insertion depth. The **A-308-K** should be used only where accuracy is not critical. All mount in a 3/8" hole in the duct. If the interior of the duct is not accessible, an optional **A-345-K** flange mounting kit may be used.

Room Static Pressure or Total Pressure Sensor Kit
The versatile **Model 60681** Pressure Sensing Kit is used for monitoring static pressure (aspiration) or total pressure (impact). The kit includes a 7" (17.8 cm) universal sensing probe, adjustable mounting flange, 1/4" adapter, and 3' (0.9 m) length of tubing (1/4" ID x 3/8" OD). For total (impact) pressure applications, install the curved tip opening facing into the air stream or away from the air stream for vacuum applications.

Total Pressure Sensor
The **Model 21122 (4")** and **21123 (8")** sensors are used primarily for proving air flow in ducts. The opening in the tip of the 4" (10.2 cm) aluminum tube faces upstream and senses impact (total) pressure. The "-112" models accept 1/8" to 1/4" ID flexible tubing.

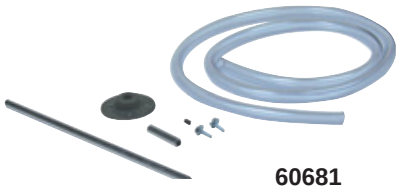
Outdoor Static Pressure Sensor
The **A-306-K** Outdoor Static Pressure Sensor provides an outdoor pressure signal for reference in building pressurization applications. The **A-306-K** includes the sensor, 50' (15.24m) of vinyl tubing, mounting bracket, and hardware.

Room Static Pressure Sensor
The **Model RPS** is a stainless steel, wall-mounted room static pressure sensor. It mounts directly to the wall or to a standard electrical box. The **Model RPS-W** is a white plastic, wall-mounted room static pressure sensor, and the **Model RPS-I** is ivory. The RPS sensors have a 100 micron stainless steel breather vent.

Filter Kit
The Model **A-605** Filter Kit includes an aluminum surface mounting bracket and screws, two 5 ft lengths of 1/4" aluminum tubing, two static pressure tips, and two plastic vent valves.

Surge Dampener
Surge Dampener **Model SD-01** absorbs rapid pressure fluctuations to provide steady pressure outputs. The dampener has two independent channels - one for the low pressure tubing and one for the high pressure tubing. Surge dampeners are typically used with outdoor pressure sensors, which are subject to wind gusts, and isolation rooms, clean rooms, or operating rooms where opening or closing doors creates sudden pressure changes.

RPS-W

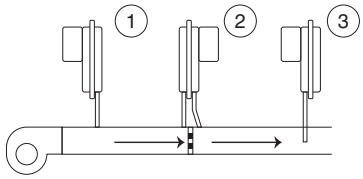


60681

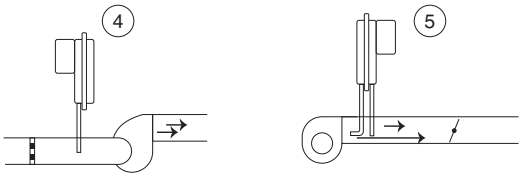
A-300 Series

RPS & SD-01

DIMENSIONS



1. Positive static pressure increases as the filter gets dirty.
2. Differential across filter changes as filter gets dirty.
3. Flow is reduced as filter gets dirty.



4. Negative pressure increases as the filter gets dirty.
5. Fan operation and true air flow: varying amounts of static pressure. Probes must be perpendicular to air flow.

ORDERING INFORMATION

MODEL	DESCRIPTION
60681	Static or total pressure sensing kit
A-301-K	Duct static pressure tip, 1/4" compression
A-302-K	Duct static pressure tip, 1/4" barb
A-308-K	Duct static pressure fitting, 1/4" barb
A-345-K	Flange mounting kit (1 required for each A-301-K or A-302-K)
A-3145K	A-301-K duct static pressure tip, 1/4" compression with A-345-K mounting flange
A-3245K	A-302-K duct static pressure tip, 1/4" barb with A-345-K mounting flange
A-3845K	A-308-K duct static pressure fitting, 1/4" barb with A-345-K mounting flange
21122	6" aluminum impact tube, 1/4" OD connection
21122-112	6" aluminum impact tube for 1/8" thru 1/4" ID flexible plastic tubing
21123	8" aluminum impact tube, 1/4" OD connection
21123-112	8" aluminum impact tube for 1/8" thru 1/4" ID flexible plastic tubing
A-306-K	Outdoor air static pressure kit
A-605	Mounting kit for air filter application. Includes aluminum surface mounting brackets with screws, two 5 ft. lengths of 1/4" aluminum tubing, two static pressure tips and two plastic vent valves.
RPS	Stainless steel room pressure sensor, 1/4" barb
RPS-I	Ivory plastic room pressure sensor, 1/4" barb
RPS-W	White plastic room pressure sensor, 1/4" barb
SD-01	Surge dampener
B-137	1/4" barb adapter for #21122 and #21123 (standard pack-50)

DWYER HANDHELD DIGITAL MANOMETER

475-FM SERIES

DESCRIPTION

The Dwyer **475-FM Series** Mark III handheld digital manometer is ideal for field-calibrating, monitoring, or troubleshooting HVAC systems, clean rooms, and a wide range of other low-pressure applications. This handy instrument measures positive, negative, or differential pressures of air and natural gases. The **475-FM Series** is approved and intrinsically safe for hazardous locations, Class 1, Division 1, Groups A, B, C, D, and T4.

FEATURES

- ***Measures positive, negative or differential pressure***
- ***Handheld and battery powered***
- ***Intrinsically safe for hazardous locations***

475-1-FM-1

AV Kit

SPECIFICATIONS

Device Type	Service of Air and some combustible gases
Supply Voltage	9V alkaline battery
Battery	Life Up to 100 hours
Accuracy	±0.5% FS, 60° to 78°F (15.6° to 25.6°C); ±1.5% FS from 32° to 60°F (0° to 15.6°C) and 78° to 104°F (25.6° to 40°C)
Pressure Range	
475-000-FM	0-1.00" W.C. (0-0.249 kPa)/ 5 psig (35 kPa) maximum
475-0-FM-AV	0-10.00" W.C. (0-2.49 kPa)/5 psig (35 kPa) maximum
475-00-FM-AV	0-4.00" W.C. (0-0.995 kPa)/5 psig (35 kPa) maximum
475-0-FM	0-10.00" W.C. (0-2.49 kPa)/5 psig (35 kPa) maximum
475-1-FM	0-19.99" W.C. (0-4.97 kPa)/10 psig (69 kPa) maximum
Operating Temperature	32° to 104°F (0° to 40°C)
Storage Temperature	-4° to 176°F (-20° to 80°C)
Connection Type	Two barbed for use with 1/8" (3.18 mm) or 3/16" (4.76 mm) ID tubing
Display	0.5" liquid crystal, 3-1/2 digits
Dimensions	6.6" x 2.8" x 0.9" (16.8 x 7.1 x 2.3 cm)
Air Velocity kit	Air velocity kit includes the 475-FM Manometer, (2) A303 Static Pressure tips, (2) 9' lengths of 3/16" ID rubber tubing, (1) 166-6-CF Pitot Tube, (1) A-397 Step Drill bit, A532 Air Velocity slide chart, Instructions, and a molded plastic Carrying Case, Air velocity kit includes the 475-FM manometer, (2) static pressure tips, (2) 9' lengths of 3/16" ID rubber tubing, (1) 166-6-CF pitot tube, (1) A-397 step drill bit, air velocity slide chart, instructions, and a molded plastic carrying case
Approvals	FM, CE
Weight	0.68 lbs (0.31 kg)
Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
475-0-FM	Handheld digital manometer, 0-10" W.C.
475-0-FM-AV	Handheld digital manometer, 0-10" W.C. with air velocity kit
475-00-FM	Handheld digital manometer, 0-4" W.C.
475-000-FM	Handheld digital manometer, 0-1" W.C.
475-000-FM-AV	Handheld digital manometer, 0-1" W.C. with air velocity kit
475-1-FM	Handheld digital manometer, 0-19.99" W.C.

DWYER WET/WET HANDHELD DIGITAL MANOMETER

490 SERIES

DESCRIPTION

The Dwyer **490 Series wet/wet digital manometers** are versatile, handheld, and battery operated. Units are highly accurate (±0.5% FS) for positive or positive-differential pressure measurement,and they can tolerate most liquid media compatible with 316L stainless steel. There are seven common English and metric pressure units (psi, "H2O, "Hg, mm Hg, kPa, Bar, or mBar), so conversions are not necessary.

490

FEATURES

- ***Measures positive and positive differential pressure***
- ***High accuracy (±0.5% FS)***
- ***Tolerant of most liquid media compatible with 316L stainless steel***
- ***Seven English and metric pressure units (psi,"H2O, "Hg, mm Hg, kPa, Bar, or mBar)***
- ***Two 1/8" female NPT connections***

SPECIFICATIONS

Device Type	Service of compatible, non-combustible gases and liquids
Supply Voltage	9V alkaline included
Battery Life	Up to 100 hours
Accuracy	±0.5% FS from 60° to 78°F (15.6° to 25.6°C) ±1.5% FS from 32° to 60°F (0 to 15.6°), 78° to 104°F (25.6° to 40°C)
Wetted Materials	Type 316L stainless steel
Pressure Range	
490-1	0-15.00 psid (0-100 kPa)/30 psig max (200 kPa)
490-2	0-30.00 psid (0-200 kPa)/60 psig (400 kPa) maximum
490-3	0-50.00 psid (0-350 kPa)/100 psig (670 kPa) maximum
Operating Temperature	32° to 104°F (0° to 40°C)
Storage Temperature	-4° to 176°F (-20° to 80°C)
Dimensions	9"H x 4.7"W x 0.9"D
Connection Type	Two 1/8" (3.18 mm) female NPT
Display	0.42" (10.6 mm), 4-1/2 digit LCD
Approvals	CE
Weight	0.88 lbs (0.4 kg)
Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
490-1	Wet/Wet digital manometer, 0-15 psid
490-2	Wet/Wet digital manometer, 0-30 psid
490-3	Wet/Wet digital manometer, 0-50 psid
A-402A	Gray nylon carrying case

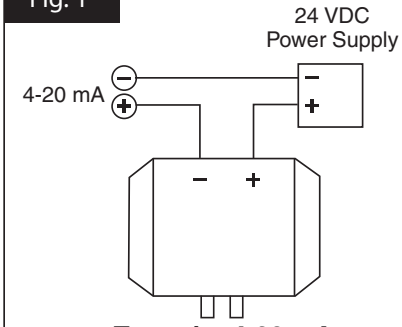
A REFRESHER ON 4-20 MA SIGNAL

The control signal, 4-20 mA, is the most common type of analog/proportional/modulating (these terms tend to be used interchangeably in our industry) signal we deal with and there are some fundamental facts about the 4-20 mA signal that we all know but are worth reviewing.

The 4-20 mA control signal is, of course, a variable current signal where 4 mA typically represents the low end of a range, for example 0%, and 20 mA represents the high end, for example 100%. This works great for measuring a given pressure range in a duct, the stroke position of a damper actuator, or the speed command being sent to a variable frequency drive. With the low end of the signal being 4 mA rather than zero, the instrumentation, and the technician, can distinguish between a zero signal and a broken wire or broken instrument.

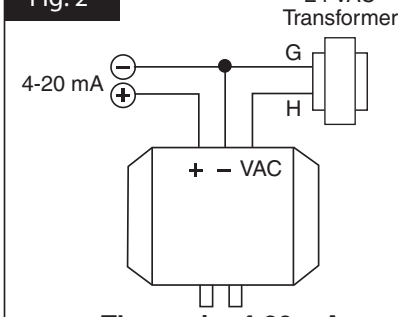
When referring to sensors, there are two-wire 4-20 mA signals, in which the sensor and the output signal are “loop-powered” with a 24 VDC power supply (Fig. 1), and three-wire 4-20 mA signals where the device requires 24 VAC (or VDC) power and generates the 4-20 mA signal (Fig. 2) directly. The examples shown are based on the Kele DPA Series differential pressure transmitters, but the wiring is typical of all the 4-20 mA sensors in our catalog.

Fig. 1



Two-wire 4-20 mA with 24 VDC Power Supply

Fig. 2



Three-wire 4-20 mA with 24 VAC Transformer

Any 4-20 mA signal can be converted to a 2-10 VDC signal by putting a 500Ω resistor across the signal +/- terminals. The controller will “see” 2-10 VDC across the resistor as the 4-20 mA flows through it (Ohm’s Law, V=IR). In the example above, if a controller analog input requires a voltage instead of a current signal, installing the resistor across the two input terminals at the controller will do the trick.

The same resistor solution holds true for sending a signal to an actuator used to drive a damper or valve. If a controller analog utput is 4-20 mA, and the actuator requires a 2-10 VDC signal, just install the resistor at the actuator signal input terminals. For 1-5 VDC, substitute a 250Ω resistor instead of 500Ω.

Verifying the signal is easy; put a meter in series with the 4-20 mA signal wires so the current flows through the meter. Set it to measure DC milliamps, make sure the leads are plugged into the common and milliamp sockets, and set the scale to read in the range that includes 20 mA. See the sidebar at the top of the next page to avoid a pitfall that we hear about all too frequently!

There you have it. Give us a call if you have questions. Did you know the Technical Sales Reps in the Kele Sales Department have combined over 120 years in the HVAC Controls business? We know our business, we can help, and we’re here to make it easy for you!

$$\% \text{ of Full Scale} = \frac{(X \text{ mA} - 4 \text{ mA}) \times 100}{(20 \text{ mA} - 4 \text{ mA})}$$