

Differential pressure indicator – switch Model 120 / 122

Switzer data sheet DPI-120/122

Applications

- Lube oil filter
- Oil & gas filtration
- Strainers
- Valves

Special features

- High static pressure
- Metallic piston operated
- Single or dual switch option
- Unique magnetic pointer movement
- Media isolated gauge case
- SS case
- 6" Dial (2½" optional)



Differential pressure indicator, model 120

120 Differential Pressure Indicator has a rugged design for industrial use to measure the differential pressure in a filtration system which indicates directly on a single gauge dial.

A specially designed magnetic movement allows the instantaneous sensing of both pressures while completely isolating the gauge function from the pressure chamber without the use of mechanical seals.

Unlike ordinary differential pressure gauges, these instruments can be supplied with switching facility through a reed switch to initiate an alarm signal or system shutdown. One or two switches can be provided to open or close on either rising or falling differential pressure. Switch setting is easily done through an external adjustment.

Standard version

Case

- Model 120: 304 SS
- Model 122: Nylon (Glass filled)

Dial nominal size in mm

- Model 120: 150
- Model 122: 65

Dial

Aluminium, white, black lettering

Scale

Non linear

Window material

- Model 120: Toughened safety float glass
- Model 122: Acrylic

Accuracy

±2% FSR ascending

Hysteresis

5% FSR

Scale ranges

0 ... 0.6 Kg/Cm² to 0 ... 7.0 Kg/Cm²

Maximum working pressure

200 Kg/Cm² (3000 psi)

Permissible ambient temperature

-10 ... +60°C

Permissible medium temperature

100°C with Buna-N sealing (Mandatory to use impulse piping when process temperature is above 80°C)

Ingress protection

- IP66 as per IEC 60529 category-2 for model 120
- IP65 as per IEC 60529 category-2 for model 122

Pointer travel

120 degree angular

Process element

316 SS piston

Measuring cell

304 SS

Magnet

Barium ferrite

Range Spring

- 304 SS for 304 SS / 316 SS body
- 304 SS with PTFE coated for 316L SS and monel body

Process entry

Back

Process connection

- 1/4" NPTF standard
- Others through adaptor

Migration of fluid from HP to LP

Will not exceed 15 SCFH

On-off Switching differential

Reed switch: Within 10% FSR

Switch rating

SPDT form reed switch (one / two)
DC: 0.25A Res, 3W, 120V

Switch setting adjustable

Between 10% (falling) to 90% (raising) FSR

Electrical connection

0.5 meter flying lead – 3 core, 4.5 mm OD, PVC cable

Mounting

Flush panel (standard)

Options

- 205°C with Viton sealing
- 200°C with Silicone sealing
- 125°C with EPDM sealing
- 316L SS process element
- Monel process element
- 316 SS measuring cell
- 316L SS measuring cell
- Model 150 power relay for high electrical rating in reed switch or for DPDT option or wide band adjustable differential.
- DIN 43650 connector
- Integral terminal housing with M16 or 3/4"ET or 1/2" NPTF (for model 120 only)
- Wall mounting
- 2" pipe mounting

Ordering matrix

Differential pressure gauge

Model 120: 6" (150 mm) _____ **120**

Model 122: 2½" (65 mm) _____ **122**

Scale ranges

Refer range table _____ ☐ ☐ ☐

Dial scale

Single _____ **S**

Dual (with two different pressure units) _____ **D**

Measuring cell

304 SS _____ **4**

316 SS _____ **2**

316L SS _____ **3**

Monel _____ **I**

Seal material

Buna-N _____ **OB**

Viton _____ **OV**

Silicon _____ **OS**

EPDM (Mandatory for ammonia service) _____ **OE**

Teflon _____ **OT**

Switching

No switch _____ **0**

One SPDT reed switch _____ **1**

Two SPDT reed switch _____ **2**

Mounting

Panel, standard (only with 304 ss stud and nut) _____ **P**

Surface / wall _____ **W**

2" Pipe _____ **2**

Special mounting plate _____ **D**

Mounting Material

Mild Steel _____ **C**

304 SS _____ **4**

316 SS _____ **2**

Electrical entry

None _____ **0**

Flying lead (0.5 M) standard _____ **J**

M16 (120 only) _____ **F**

1/2" NPTF (120 only) _____ **A**

DIN 43650 connector _____ **O**

Power relay (refer to model 150 catalogue for separate ordering code)

Required – When switching needs higher electrical rating _____ **A**

Not required _____ **Z**

Options

None _____ **0**

304 SS tag plate _____ **T4**

Wetted parts material conformation with NACE compliance (316L SS) _____ **SC**

Oxygen service _____ **S0**

Others _____ **Z**

Note: Standard single cable entry for one switch and dual cable entry for two switches

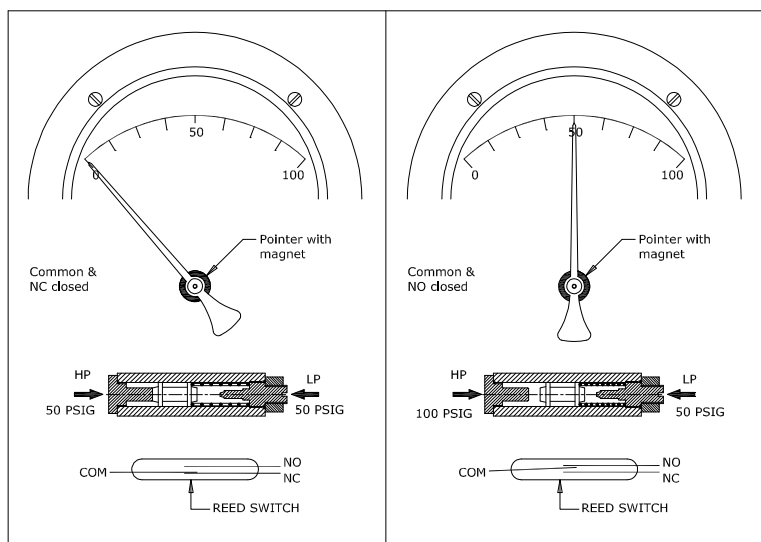
Range table

Code	Kg / Cm ²	Code	PSID	Code	kPa	Code	Bar
K20	0 ... 0.6	---	---	---	---	B81	0 ... 0.6
K22	0 ... 0.7	D06	0 ... 10	---	---	B82	0 ... 0.7
K23	0 ... 1	D07	0 ... 15	P02	0 ... 100	B04	0 ... 1
K47	0 ... 1.4	---	---	---	---	B83	0 ... 1.4
K24	0 ... 1.6	D08	0 ... 20	P03	0 ... 160	B05	0 ... 1.6
K25	0 ... 1.75	D09	0 ... 25	---	---	B84	0 ... 1.7
K26	0 ... 2	D10	0 ... 30	---	---	B06	0 ... 2
K27	0 ... 2.5	---	---	P04	0 ... 250	B07	0 ... 2.5
K28	0 ... 3.5	D11	0 ... 50	---	---	B08	0 ... 3.5
K29	0 ... 4	D12	0 ... 60	P05	0 ... 400	B56	0 ... 4
K48	0 ... 5	D13	0 ... 75	---	---	B09	0 ... 5
K30	0 ... 6	---	---	P06	0 ... 600	B57	0 ... 6
K31	0 ... 7	D14	0 ... 100	P07	0 ... 700	B10	0 ... 7

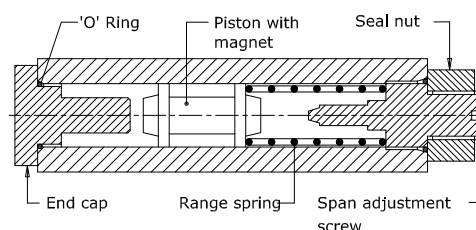
Design and operation

In models 120 / 122 differential pressure instruments work on the difference between two pressures acting on opposite side of a pressure sensor (piston). Variation in pressure difference will cause the pressure sensor and linear magnet to move in proportion to this change. A rotary pointer magnet, located in a separate body cavity, follows the linear movement of the pressure sensor magnet and indicates the differential pressure on the gauge scale.

Switching is achieved by locating reed switches adjacent to the pressure chamber. The switches are activated when the field of the linear magnet interacts at a preset point with the reed switch armature. Switch actuation point is adjustable over the top 80% of the gauge ranges.



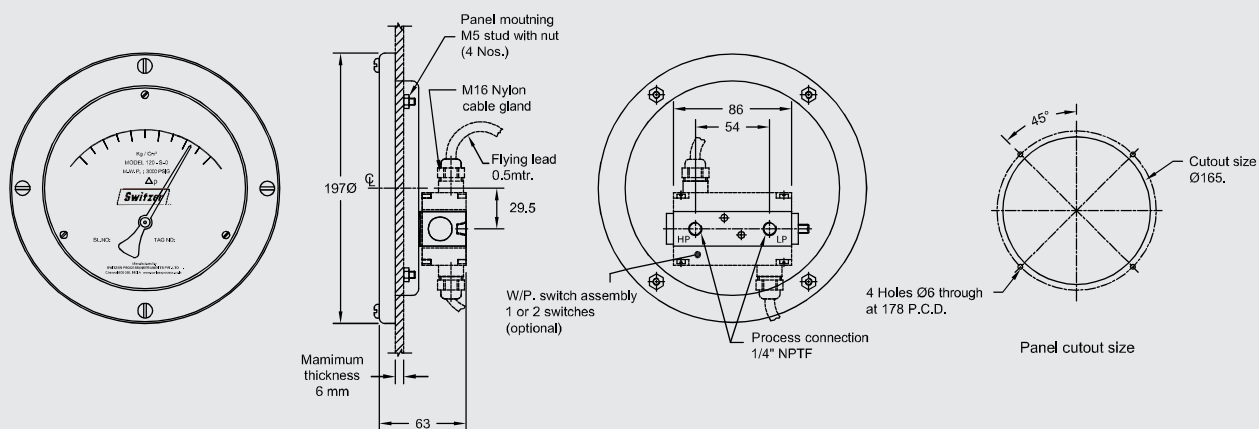
120 / 122 Body construction



Dimensions in mm

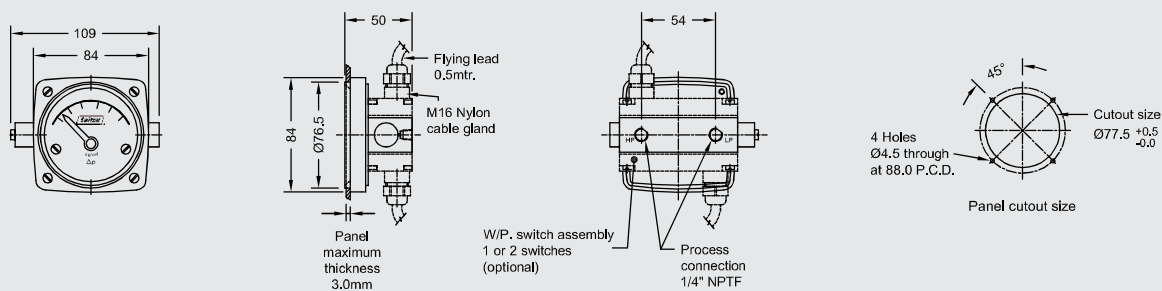
Switching / non-switching

Model 120



Switching / non-switching

Model 122



Ordering information

Model number / Scale ranges / Dial scale / Measuring cell / Seal material / Switching / Mounting / Mounting material
Electrical entry / Power relay / Options

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