



Features

- **Reliability** - “direct drive” bourdon tube technology featuring only one moving part ensures conformance to accuracy specification for a period exceeding 6 years....even in vibration and pulsation applications. No need for liquid filling of case, ever!!
- **Performance** - gold plated dual switch contacts. Field adjustable high/low setpoints perfect for operating alarms, stop-start circuits or device shutdowns
- **Safe Design** - a robust Inconel X-750 bourdon tube inherently safer product design in high vibration/pulsation applications
- **Rugged Product Packaging** - high density ABS case with corrosion resistant materials utilized throughout
- **Accurate Measurements** - 1% Full Scale accuracy
- **Versatility** - unique “Dyna-Mount” system allows for field adjustable flange and process connection
- **Options** - custom scales, logos and dial artwork are available



Product Description

The Accu-Switch series of pressure Switch Gauges from 3D Instruments offers a new standard for a mechanical pressure gauge with high/low switch contacts. The long life, gold plated switch contacts can be wired directly to electrical circuits to provide for operational alarms or can be used to “stop/start” a variety of electrical equipment...pumps, valves, motors, etc. The Accu-Switch gauge pointer acts as both a pressure indicator and as a switch pole which completes a circuit when it comes in contact with one of the field-adjustable limit contacts.

Utilizing our unique helical bourdon direct drive pressure measurement technology, the antiquated C-bourdon tube utilized in most conventional pressure gauges is eliminated. Additionally, the gearing, linkages, levers and springs required to generate pointer movement in the conventional pressure gauge, which are highly prone to wear and premature failure in high vibration and pulsation applications, are also eliminated!!

The Accu-Switch Switch Gauge is designed to provide superior performance in the harshest of process environments! It is housed in a robust weather-resistant 4 $\frac{1}{2}$ " ABS case and features corrosion resistant materials throughout: ABS case, Inconel X-750 helical bourdon tube and stainless steel process connection.

The Accu-Switch Switch Gauge incorporates some very revolutionary design concepts...from our unique “Dyna-Mount” flange/fitting system, whereby the process connection fitting can be adjusted from bottom to back configuration in the field with only the use of a screwdriver to the external zero adjustment to minimize potential maintenance.

The combination of sophisticated pressure measurement technology, robust design and long life switch contacts makes the Accu-Switch from 3D Instruments the ideal choice for your demanding pressure monitoring, alarm or switching applications.

GENERAL SPECIFICATIONS

FEATURES

Accuracy: +/- 1 % of Full Scale
 Repeatability: +/- 0.025% Full Scale
 Sensitivity: +/- 0.025% Full Scale

Accuracy specification includes all variations due to: non-linearity, hysteresis, repeatability and temperature over the operating temperature range.

Pressure Ranges:

Dials are configured with dual scales: PSI (outer ring) and either kPa or MPa (inner ring)

Vacuum/PSI	kPa/MPa
30" Hg/vac-30 psi	-100-0-200 kPa
30" Hg/vac-100 psi	-100-0-700 kPa
0-30 psi	0-200 kPa
0-60 psi	0-400 kPa
0-100 psi	0-700 kPa
0-160 psi	0-1100 kPa
0-200 psi	0-1400 kPa
0-300 psi	0-2000 kPa
0-500 psi	0-3500 kPa
0-600 psi	0-4000 kPa
0-1000 psi	0-7000 kPa
0-1500 psi	0-10 MPa
0-2000 psi	0-14 MPa
0-3000 psi	0-20 MPa
0-5,000 psi	0-35 MPa

Proof Pressure:
150% of full scale

Burst Pressure:
500% of full scale

Environmental:
 Ambient Temp Range:
 -65° F to 190° F / -54° C to 88° C
 Operating Temperature Range:
 -65° F to 400° F / -54° C to 204° C

Setpoint Switch Rating:
125 Volts @ 0.25 AMPS (AC or DC)

Dial Size:
4 1/2" (approximately 114 mm)

Process Connection:
Available in 1/4" NPT or 1/2" NPT (male)

Mounting Flange (optional):
Front or back versions - ABS Plastic
ASME bolt pattern for 4 1/2" gauge

Materials of Construction:
 - Case: ABS Plastic, black
 - Lens: Polycarbonate
 - Sensing element: Inconel X-750
 - Capillary Tube: 316 Stainless Steel
 - Process Connection: 316 Stainless Steel
 - Contacts: gold plated nickel silver

Long Life Contacts:
Gold plated nickel silver contacts provide for extremely good wear and long life.

Engineering Units:
PSI/kPa (or MPa) dual scales PSI scale black on white, kPa (or MPa) scale in blue. Single scale and custom dials available. Additional charges may apply: contact factory for additional details.

Helical Bourdon Tube:
"Direct Drive" design provides superior performance in high vibration/pulsation environments **no liquid filling of case required!** The "Direct Drive" design features only 1 moving part...the bourdon coil is coupled directly to the shaft-pointer. Inconel X-750 is a highly elastic metal with excellent corrosion resistance.

Damping:
The helical bourdon tube provides for instant pointer response and resists pointer pulsation. **No need for an expensive pulsation dampener!**

Dyna-Mount Process Connection:
Field-adjustable process connection and flange...both flange and process connection orientations can be re-configured in the field. Note: available on pressure ranges above 0-30 psi.

ORDERING INFORMATION

Example:

29504 - 33C21 GAD ISOD 0-3000 psi/0-20 MPa dual scale, 4 1/2"
 black ABS case, front flange, 1/2" NPT
 back connection and vibration dampener

① ② ③ ④ ⑤ ⑥ ⑦
29 X 04 - XX X XX XXX GAD ISOD

① **Product Description:**

29 = Accu-Switch line of Switch Gauges

② **Pressure Scales:**

1 = Compound scale (Vacuum/Positive pressure - only available on 0-30 and 0-100 psi ranges)

5 = Positive pressure scale (not used for compound scales)

③ **Dial Size:**

04 = 4 1/2" (approximately 114 mm)

④ **Pressure Range Codes: (Note: psi/kPa or psi/MPa dual scales are standard)**

48: 30" Hg(vac) -0-30 psi/-100-0-200 kPa	23: 30" Hg(vac) -0-100 psi/-100-0-700 kPa
21: 0-30 psi/200 kPa	25: 0-200 psi/1400 kPa
22: 0-60 psi/400 kPa	26: 0-300 psi/2000 kPa
23: 0-100 psi/700 kPa	27: 0-500 psi/3500 kPa
45: 0-160 psi/1100 kPa	28: 0-600 psi/4000 kPa
	32: 0-1000 psi/7000 kPa
	31: 0-2000 psi/14 MPa
	33: 0-3000 psi/20 MPa
	35: 0-5000 psi/35 MPa

⑤ **Process Connection:**

B = 1/4" npt (male)

C = 1/2" npt (male)

⑥ **Fitting/Flange Combination/Case type: (Black ABS case standard)**

11: flange front, fitting bottom	41: flange back, fitting back
21: flange front, fitting back	51: flange none, fitting bottom
31: flange back, fitting bottom	61: flange none, fitting back

⑦ **Option Codes:**

GAD - high viscosity silicone oil vibration dampener (**standard**)

ISOD - dual scale psi/kPa or psi/MPa (**standard**) - remove ISOD option code for PSI only single scales. For custom scales, contact factory for details.

EFF - Custom flange designed for a metric bolt pattern (Note: only available as a front flange) - contact factory for details.

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