

# 2 Inch and 2.5 Inch Pressure Switchgauge® 20 and 25 Series

The 20 Series (2 inch/51 mm dial) and the 25 Series (2-1/2 inch/64 mm dial) Switchgauge models are diaphragm-actuated, pressure-indicating gages with built-in electrical switches. These switches exceed SAE standards and are used for tripping alarms and/or shut-down devices.

Ranges are available from 0-15 psi (103 kPa) [1.0 bar] through 0-400 psi (2.8 MPa) [28 bar].

The gage mechanism is enclosed in a steel case coated to resist corrosion. A polycarbonate, break-resistant lens and a polished, stainless steel bezel help protect this rugged, built-to-last instrument. Accuracy and protection from moderate overpressure is assured by a unique, unitized diaphragm chamber. A built-in pulsation dampener helps eliminate pointer flutter and is removable for cleaning. For models 20P and 25P, the gage pointer acts as a pressure indicator and as one switch pole which completes a circuit when it touches the adjustable limit contact. Contacts are grounded through the case and have self-cleaning motion to ensure electrical continuity.

Models 20PE and 25PE have internal snap-acting SPDT switches.

Gage-only models without the switches (MurphyGage®) are also available.

The Switchgauge® was specifically designed to protect engines/equipment in oil field, marine, irrigation, construction and trucking applications to monitor engine lube pressure, water pump pressure, hydraulic pressure, air pressure, etc.

## Base Models

### 20P and 25P Series Switchgauge

The gage pointer makes with an adjustable contact to complete a pilot-duty circuit.

### 20PE and 25PE Switchgauge

**20PE** (was 20EO) and **25PE** (was 25EO)

Features internal snap-acting SPDT switches, instead of the single pole/pointer contacts. When the switch closes on falling pressure, it becomes set, as pressure rises the switch resets.

### 20PABS and 25PABS Switchgauge

Same as 20P and 25P with internal SPDT snap-switch for pre-alarm.

### 20P7 and 25P7 Lockout Switchgauge

Same as 20P and 25P Series. They also include a front, semi-automatic lockout for startup override. This built-in device holds the pointer away from the contact on startup. When pressure exceeds the set point, the lockout is automatically disengaged (see following pages for details).

### 20PG and 25PG MurphyGage

Gage without contact(s)



CE

Products covered in this bulletin comply with EMC Council directive 89/336/EEC regarding electromagnetic compatibility except as noted.

## Specifications

**Dial:** White on black, dual scale; U.S.A. standard scale is psi/kPa; U.K. standard scale is psi/bar; others available (see How to Order).

**Case:** Plated steel; mounting clamp included (except for direct mount models)

**Bezel:** Polished stainless steel, standard; others are available.

**Lens:** Polycarbonate, high-impact

**Oil:** Silicon Oil

**Temperature Range:**

Ambient: -40° to 150° F (-40° to 66° C)

Process: -40° to 250° F (-40° to 121° C)

**Process Connection:** 1/8-27 NPTM brass

**Sensing Element:** Beryllium copper diaphragm

**Gage Accuracy (% of Full Scale):**

Range	Lower 1/4	Middle 1/2	Upper 1/4
≤300 psi (20 Bar)	±3%	±2%	±3%
400psi (28 Bar)	±3%	±3%	±5%

**Maximum Pressure:** See Pressure Ranges and Factory Settings table next page

**Adjustable Limit Contact (20P and 25P):** SPST contact; pilot-duty only, 2 A @ 30 VAC/DC; Normally Close (NC) when the low limit is met. Normally Open (NO) when pointer is in normal operating range. Contacts are gold flashed silver.

**Limit Contact Adjustment:** By a 1/16 in. hex wrench through 100% of the scale

**Limit Contact Wire Leads:** 18 AWG (1.0 mm2) x 12 in. (305 mm)

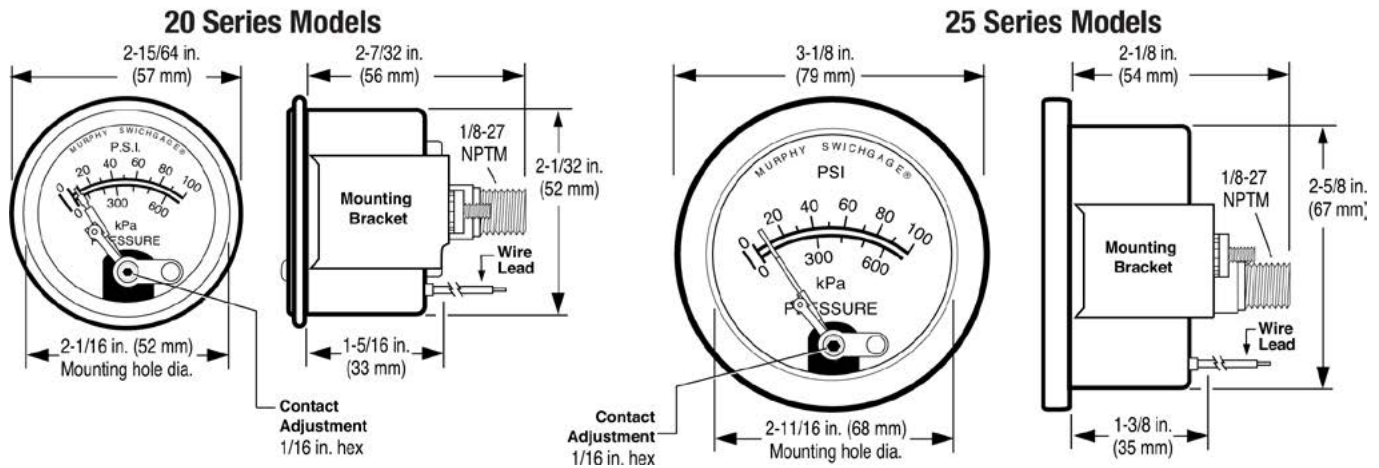
**Snap-Switch Rating (20PE and 25PE):** SPDT, 3 A @ 30 VDC inductive; 4 A @ 125 VAC inductive

**Snap-Switch Wire Leads:** 20 AWG (0.75 mm2) x 12 in. (305 mm)

**Unit Weight:** 20 Series: 8 oz. (0.23 kg); 25 Series Models: 11 oz. (0.31 kg)

**Unit Dimensions:** 20 Series: 3 x 3 x 3 in. (76 x 76 x 76 mm); 25 Series Models: 4-3/4 x 4-3/4 x 2-3/4 in. (121 x 121 x 70 mm)

# Dimensions

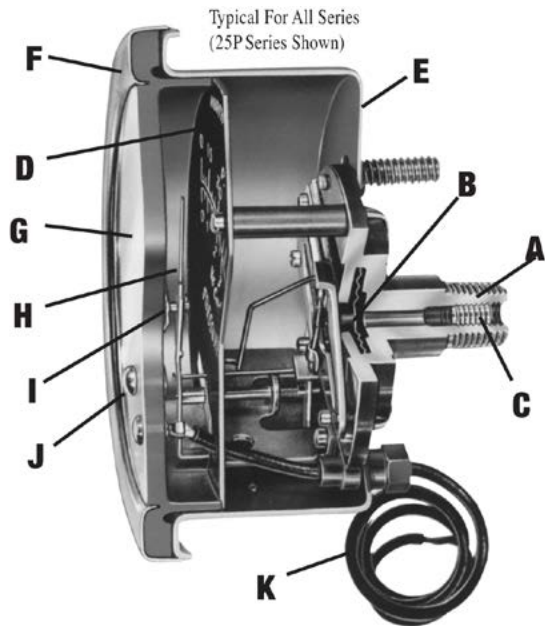


## Pressure Ranges and Factory Settings

Ranges Available psi (kPa) [bar]	Maximum Pressure	Standard Settings			High Settings		20PABS and 25PABS Settings			
		psi (kPa) [bar]	psi (kPa) [bar]	psi (kPa) [bar]	psi (kPa) [bar]	Low	Alarm			
0-15 (103) [1.0]	2 x scale	3 (21) [0.2]	12 (83) [0.8]	3 (21) [0.2]	6 (41) [0.3]					
0-30 (103) [1.0]	2 x scale	7 (48) [0.4]	24 (165) [1.6]	7 (48) [0.4]	10 (69) [0.6]					
0-50 (345) [3.5]	2 x scale	10 (69) [0.8]	40 (276) [2.8]	10 (69) [0.8]	13 (90) [1.0]					
0-75 (517) [5.0]	2 x scale	15 (103) [1.0]	60 (414) [4.0]	15 (103) [1.0]	18 (124) [1.5]					
0-100 (690) [7.0]	2 x scale	20 (138) [1.5]	80 (552) [5.5]	20 (138) [1.0]	23 (159) [1.5]					
0-150 (1.0 MPa) [10]	2 x scale	30 (207) [2.0]	120 (827) [8.0]	30 (207) [1.5]	33 (228) [2.0]					
0-200 (1.4 MPa) [14]	2 x scale	50 (345) [3.0]	150 (1 MPa) [10]	50 (345) [3.0]	53 (365) [4.0]					
0-300 (2.1 MPa) [20]	1-2/3 x scale	75 (517) [5.0]	225 (1.6 MPa) [15]	75 (517) [5.0]	78 (538) [5.0]					
0-400 (2.8 MPa) [28]	1-1/4 x scale	150 (1.0 MPa) [7.0]	300 (2.1 MPa) [20]	75 (517) [5.0]	150 (1 MPa) [10]					

## Features

- A. Process Connection and Port:** Machined from brass bar stock; together with the diaphragm forms the diaphragm chamber.
- B. Diaphragm:** Beryllium copper; material is die formed and heat treated to very close physical and metallurgical specifications.
- C. Pulsation Dampener:** Designed to minimize undesirable pointer chatter. It is removable for cleaning.
- D. Dial:** White letters on a black background, dual scale (psi & kPa) standard; others available on request (see How to Order).
- E. Case:** Steel with zinc and iridite; mounting clamp included (except for direct mount models).
- F. Bezel:** Polished stainless steel standard, black bezel also available
- G. Lens:** Made of polycarbonate glass, high-impact treated
- H. Pointer:** Tempered nickel silver for continuity and corrosion resistance. It is mounted on a machined brass post.
- I. Limit Contact:** SPST contact; N.C. when low limit is met. N.O. when pointer operates above limit.
- J. Limit Contact Adjustment:** By 1/16 in. hex type wrench through 100% of the scale. Easy adjustment knob available.
- K. Wire Leads:** 12 in. (305 mm) long, 18 AWG (1.0 mm<sup>2</sup>) for face-adjustable contacts. 20 AWG (0.75 mm<sup>2</sup>) for snap-switches models.

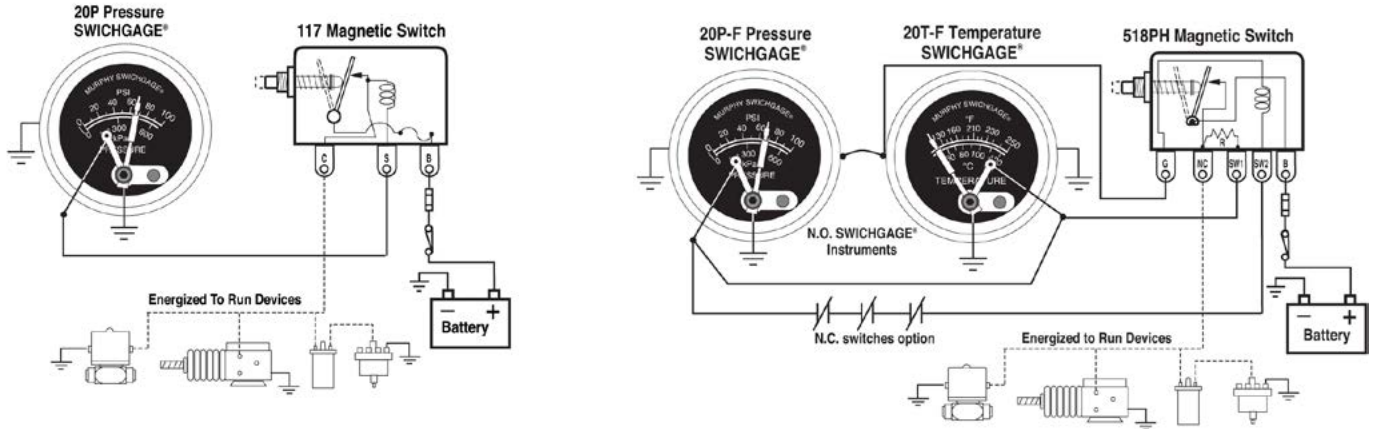


**Warranty** — A limited warranty on materials and workmanship is given with this Murphy product.

A copy of the warranty may be viewed or printed by going to [www.murphybynovationcontrols.com/support/warranty.htm](http://www.murphybynovationcontrols.com/support/warranty.htm)

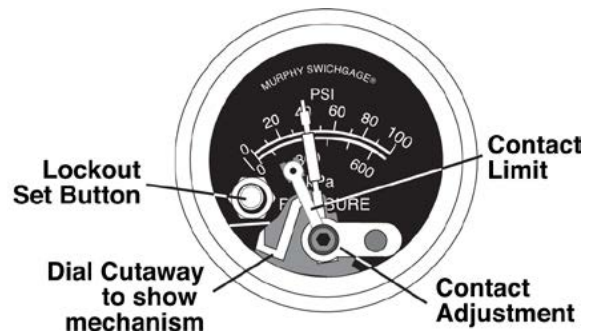
# Magnetic Switch

**INDUCTIVE AND HIGH CURRENT LOADS REQUIRE THE USE OF A MAGNETIC SWITCH.** The Swichgag contacts are for light-duty electrical switching to operate alarms or control devices. Enovation Controls manufactures the Magnetic Switch for protection of the light-duty Swichgag limit contacts. Tattletale® Magnetic Switches show the cause of shutdown for applications that include: capacitor discharge or magneto ignitions, battery systems and electric motor driven equipment. Typical wiring diagrams are shown.



## Start-Up Lockout (P7 Versions)

The Swichgag low limit contact can be bypassed on start-up by pushing this optional lockout button. It holds the pointer away from the shut-down contact while the engine starts. The lockout will disengage automatically on rising pressure.



## How to Order

Options listed below. All configurations may not be available. Call your sales representative or Enovation Controls for more information.

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