

2 Inch and 2.5 Inch Pressure Swichgauge® 20 and 25 Series

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

Ranges are available from 0-15 psi (103 kPa) [1.0 bar] through 0-100 psi (690 kPa) [7.0` 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.

Model 20PE has internal snap-acting SPDT switches.

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



CE

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

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Base Models

20P and 25P Series Swichgauge

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

20PE Swichgauge

20PE (was 20EO)

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.

20P7 Lockout Swichgauge

Same as 20P 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 MurphyGage

Gage without contact(s)

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

Lens: Polycarbonate, high-impact

Oil: Silicon Oil

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%

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)

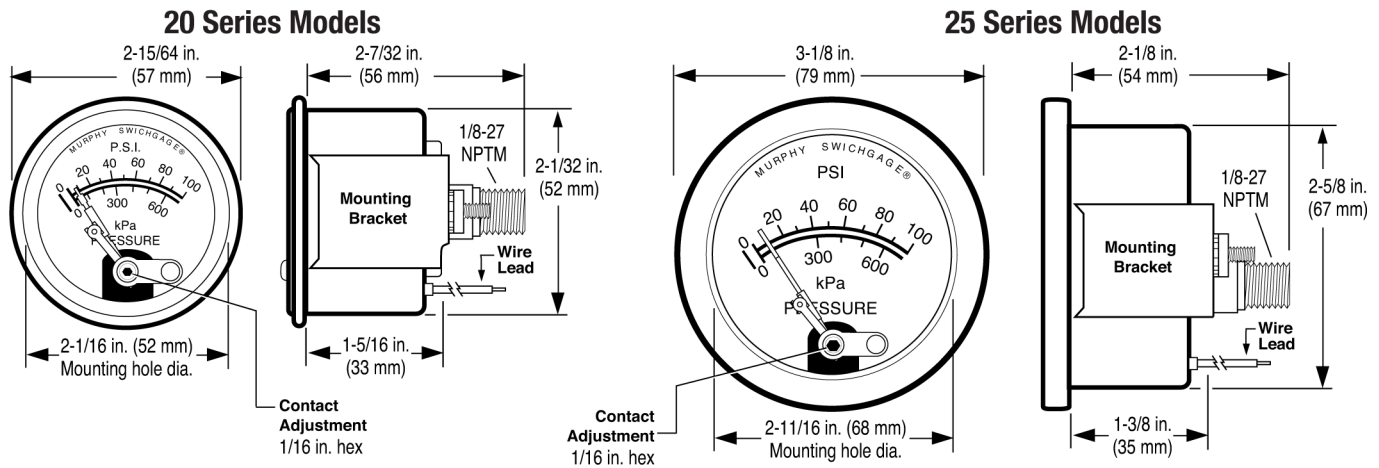
Snap-Switch Rating (20PE and 25PE): SPDT, 3 A@ 30 VDC inductive; 4 A @ 125 VAC inductive

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

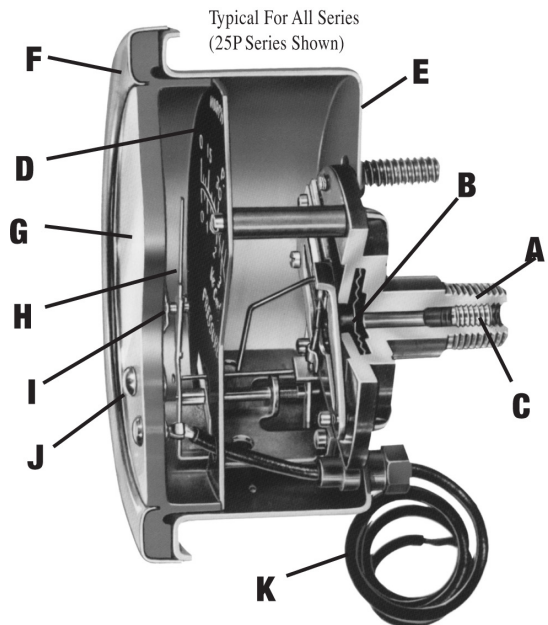


Pressure Ranges and Factory Settings

Ranges Available psi (kPa) [bar]	Maximum Pressure	Standard Settings			High Settings		
		psi	(kPa)	[bar]	psi	(kPa)	[bar]
0-30 (103) [1.0]	2 x scale	7	(48)	[0.4]	24	(165)	[1.6]
0-75 (517) [5.0]	2 x scale	15	(103)	[1.0]	60	(414)	[4.0]
0-100 (690) [7.0]	2 x scale	20	(138)	[1.5]	80	(552)	[5.5]

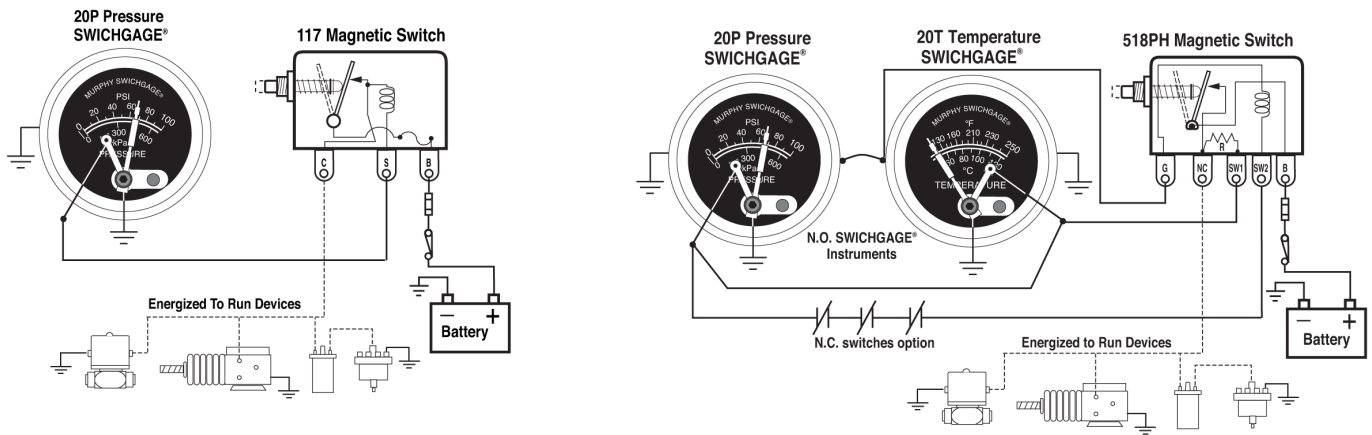
Features

- 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.
- 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 mm²) for face-adjustable contacts. 20 AWG (0.75 mm²) for snap-switches models.



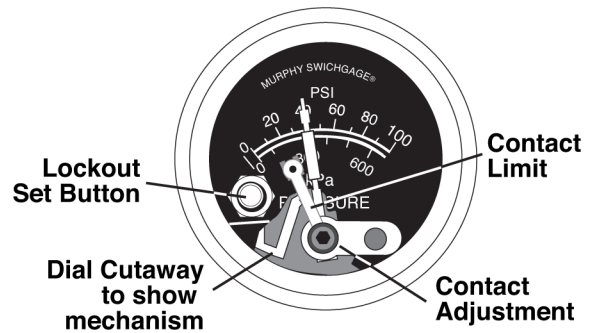
Magnetic Switch

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. The Magnetic Switch is 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 FW Murphy for more information.

25P - 100

Base Model 20P 20PE 20P7 20PG 25P	Pressure Range Dual Scale psi kPa/MPa 30 = 0-30 psi 0-207 kPa 50 = 0-50 psi 0-345 kPa 75 = 0-75 psi 0-517 kPa 100 = 0-100 psi 0-689 kPa Consult factory for availability of dials other than psi/kPa. Select scale so your normal operating temperature is in the middle half of the scale.	
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Approximate Shipping Weight and Dimensions		
Model	Weight	Dimension
20 Series	8 oz. (0.23 kg)	3 x 3 x 3 in. (76 x 76 x 76 mm)
25 Series	11 oz. (0.31 kg)	4-3/4 x 4-3/4 x 2-3/4 in. (121 x 121 x 70 mm)