

Pressure SWICHGAGE Mitter™

SWICHGAGE® with 4–20 mA Output

FWMurphy



SGM45F Series

- Combination Indicating Gage, Critical Pressure Limit Switches and 4-20 mA Output
- High Visibility 4-1/2 inch (114 mm) Diameter Dial
- Adjustable High and Low Pressure Limit Contacts
- 0.25% Accuracy on 4-20 mA Output
- Environmentally Sealed Option Available

Description

The SGM45F Pressure SWICHGAGEMitter™ is a combination 4-20 mA pressure transmitter and a pressure indicating gage with adjustable low and high limit contacts or snap acting switches. Limit switches can be wired directly to electric pilot circuits to operate alarms, shut down or start/stop engines and electric motors. The SGM45F features a 4-1/2 in. (114 mm) dial for easy viewing. Adjustable limit switches are accessible from the front of the SGM45F SWICHGAGEMitter™. Limit contacts have self-cleaning motion to enhance electrical continuity.

SWICHGAGE® Specifications

Case: Die cast aluminum; weatherproof.

Contacts: See *Electrical* section on back page.

Dial: 4-1/2 in. (114 mm) white on black, dual scaled psi /kPa.

Gage Accuracy: ±2% for the first and last quarters of the scale, the middle half is ±1%.

Geared Movement: 302 & 304 stainless steel.

Lens: Optically clear polycarbonate.

Pointer: High visibility, has pointer calibration hub.

Temperature Effect: 1.5 % per 100°F.

Over Pressure/Proof Pressure: No more than 10% without calibration shift.

Sensing Element: 316 stainless steel bourdon tube.

Process Connection: 1/4 NPT Drawn C-Tube Thru 1,000 psi (6.89 MPa) [68.95 bar]
1/2 NPT Drawn Helical 1,500/2,000 psi (10.3/13.8 MPa) [103.4/137.9 Bar].

4–20 mA Output Specifications

Accuracy (Full Scale, Best Straight Line): ±0.25% including non-linearity, hysteresis and repeatability.

Over Pressure / Proof Pressure

400% up to 400 psi range (2.76 MPa) [27.6 Bar].

200% on 1000 psi range (6.89 MPa) [68.9 Bar].

125% on 2000 psi range (13.8 MPa) [138 Bar].

Burst Pressure

600% up to 400 psi range 2.76 MPa) [27.6 Bar].

300% on 1000 psi range (6.89 MPa) [68.9 Bar].

150% on 2000 psi range (13.8 MPa) [138 Bar].

Temperature:

Operating: -40 to 180°F (-40 to 82°C).

Compensated: +14 to 120°F (-10 to 50°C).

Total Thermal Effects Over Compensated Range: ±2% FS TEB

Environmental Effect:

Humidity: No effect.

Shock/Vibration: Negligible effect unless severe.

Physical: *Wetted Parts:* 316L stainless steel, Hastelloy C276.

Electrical Cable: Integral; 42 in. (1067 mm)

Power Requirements: Typically 24 VDC required.

Using the Loop Resistance Graph, 10-30

VDC. **Output:** 4–20 mA, 2-wire.

Insulation: Greater than 100 Mohms @ 500 VDC.

Contact lead termination is by pigtail wires.

Tamperproof Contact Option: The "T1" option is available to help prevent tampering with contact knobs.

Environmentally Sealed Option: The "ES" option helps minimize damage caused by the elements.

Shipping Weights: 3 lbs 7 oz (1.6 kg).

Shipping Dimensions: 9-1/4 x 8-1/4 x 5-1/2 in. (235 x 210 x 140 mm).

Pulsation Dampener

Eliminate pointer contact flutter on pressure SWICHGAGEMitter™ instruments which are subject to pulsating pressure from reciprocating pumps or compressors.

Allow close high-low contact settings for more accurate pressure indication and equipment control. Also decreases wear on internal geared movement and increase the life of your instrument by eliminating excessive strain and unnecessary pointer movement.

Pulsation Dampeners are available in brass, carbon steel and stainless steel. They must be ordered separately see Bulletin number PD-95145B.

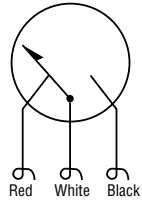
“When used in pulsating service such as positive displacement pumps or compressor discharge monitoring, a pulsation dampener must be used or product may not be covered by warranty.”

Warranty

A one-year limited warranty on materials and workmanship is provided with this Murphy product. Details are available on request and are packed with each unit.

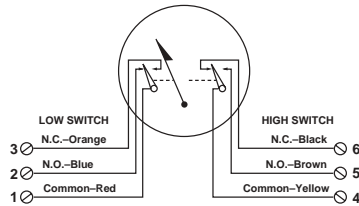
Typical Wiring Diagrams

SGM45F



SPST Contacts: 1 SPDT; Center off; 2A, 30 V DC, 1A, 125 VAC pilot duty.

SGM45EF



Contact Rating: 2-SPDT snap-switches (one for high and low pressure); 2 A @ 250 VAC

NOTE: Diagrams show the pointer in the at rest (shelf) position.

4-20mA Output



CAUTION: HOOKUP CABLE IS NON-SERVICEABLE.

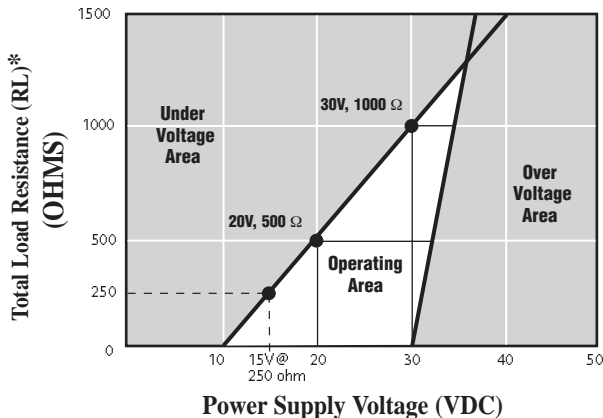
Wire leads color coding:

Red wire (+ DC) = Power Supply.
Black wire (-DC) = 4-20mA output.
Shield wire = Not connected.

Loop Resistance Chart

Loop Resistance Graph

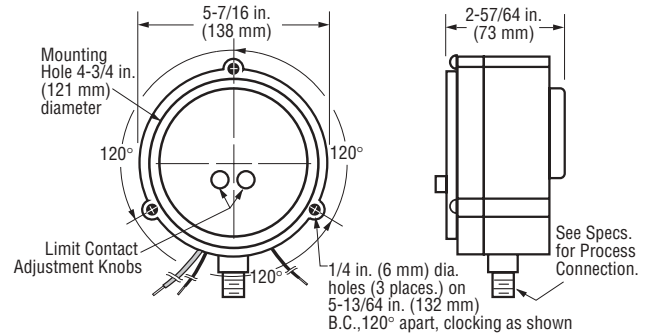
Supply voltage for the SGM45 must be within range of 10-30 VDC. The Graph below shows the minimum supply voltage (VDC) required for a given load resistance (RL).



*NOTE: Cable resistance effect included in RL.

4-20mA output: Red wire (+DC); Black wire (-DC) 4-20mA output.

Dimensions



How to Order

Specify the model = **SGM45F-1000-ES**

Base Model

SGM45F= Round Case; SPST Contacts
***SGM45EF**= Round Case; SPDT Snap Switches
*Non-stock-call for delivery.

Range (psig)	Transmitter range
30V30	30V30
30V100	30V100
15	30
30	30
60	100
100	100
200	400
300	400
400	400
600	1000
1000	1000
1500	2000
2000	2000

Options

ES= Environmentally Sealed
T1= (TPC1) Tamperproof Knob Locks
Blank= No Options

Indicating Dials

All dials are dual scaled psi and kPa/MPa. Single scale dials and custom dials available. Additional charges may apply.