

Direct-Mount Temperature Swichgauge® Instrument SDB Series



Features

- Easy to Read Dial
- Bi-Metallic Sensor
- Two Ranges:
100 to 500°F (40 to 260°C)
200 to 1000°F (100 to 500°C)
- Dials Scaled in Degrees Fahrenheit/Celsius
- CSA Listed Explosion-proof Model Available



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

The SDB Series are direct-mounting temperature Swichgauge devices. They provide an accurate direct-reading gauge with an adjustable limit switch to activate alarms and/or shutdown. A knob on front of the Swichgauge instrument allows you to adjust the limit switch trip point. Pointer movement is actuated by a bi-metallic sensing element.

Models SDB500, SDB501 and SDB500EX have a temperature range of 100 to 500°F (40 to 260°C). SDB500EX enclosure is explosion-proof and CSA listed for Class I, Group C and D hazardous locations.

The SDB1000 has a temperature range of 200 to 1000°F (100 to 500°C).

Basic Operation

SDB500, SDB501 and SDB1000: When the indicating pointer on the SDB touches the adjustable contact, a one-wire-to-ground circuit is completed to shut down the equipment and/or actuate audible or visual alarms. Proper relays or Tattle-tale® annunciators (magnetic switches) must be incorporated into the system.

SDB500EX: When the temperature rises to the preset trip point, the pointer engages an internal SPDT snap-switch to close/open circuits.

Applications

The most common use of the SDB Series is to monitor gas compressor temperatures. Engine exhaust temperature can also be monitored to indicate overloading or lean fuel mixtures; or use the SDB to help coordinate loads on twin-engine installations.

Specifications

Temperature Ranges:

SDB500, SDB500EX, and SDB501: 100 to 500°F (40 to 260°C).
SDB1000: 200 to 1000°F (100 to 500°C).

Sensing Bulb Material and Size: 304 stainless steel; 1/2 in. dia. x 4 in. (13 x 102 mm) insertion depth.

Maximum Bulb Pressure: 285 psi (1.97 MPa) [19.7 bar] at 625°F (329°C).
NOTE: use of a thermowell is recommended.

Process Connection: 1/2 NPTF. 3/4 NPT adapter available.

Sensing Element: High torque bi-metal element in heliarc welded stainless steel bulb.

Contact Rating:

SDB500, SDB501 and SDB1000: 2 A @ 30 VAC
SDB500EX: 2 A @ 120 VAC

Limit Contact Adjustment: By knob through full range.

Maximum Unit Temperature:

SDB500, SDB500EX, SDB501: 625°F (329°C).
SDB1000: 1250°F (677°C).

Case Material: SDB501: Die-cast aluminum.

SDB500, SDB1000, SDB500EX: Sand-cast aluminum.

SWICHGAGE® Accuracy: ± 3% of full scale.

NOTE: All models are calibrated for use with a thermowell. Specify when a thermowell is NOT to be used, (see How to Order on back page).

Wire: 18 AWG (1.0 mm²). See Dimensions for lengths, reverse side.

Dial: Black print on stainless steel. Dials are scaled in degrees Fahrenheit and Celsius.

Shipping Weight:

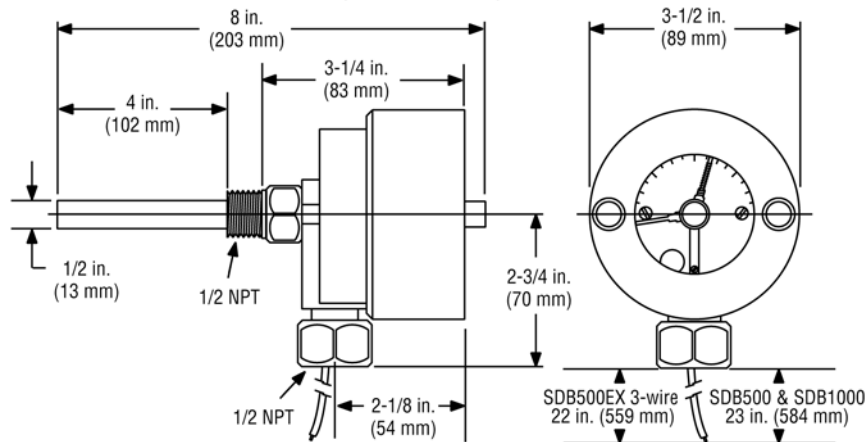
SDB501: 1 lb. 4 oz. (0.57 kg).
SDB500 and SDB1000: 2 lb. (1.0 kg).
SDB500EX: 2 lb. 5 oz. (1.05 kg).

Shipping Dimensions:

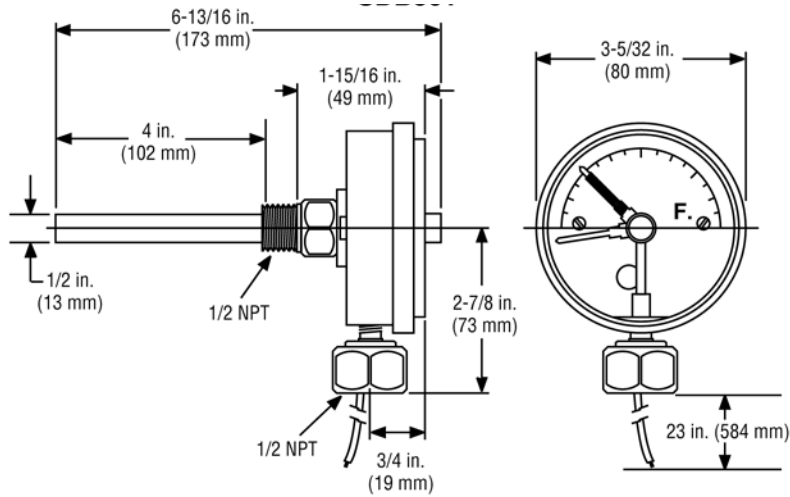
SDB501: 8-1/4 x 4-1/4 x 4-1/2 in. (210 x 108 x 114 mm).
SDB500 and SDB1000: 8-1/4 x 4-1/4 x 4-1/2 in. (210 x 108 x 114 mm).
SDB500EX: 9 x 5-1/2 x 6 in. (229 x 140 x 152 mm).

Dimensions

SDB500, SDB500EX, and SDB1000

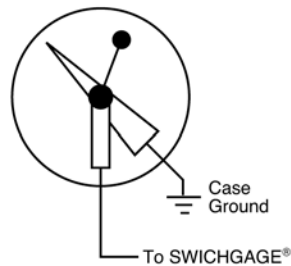


SDB501



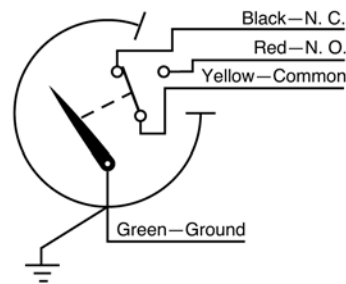
Wiring Diagrams

SDB500, SDB501, and SDB1000



Contact Rating: 2 A @ 30 VAC

SDB500EX

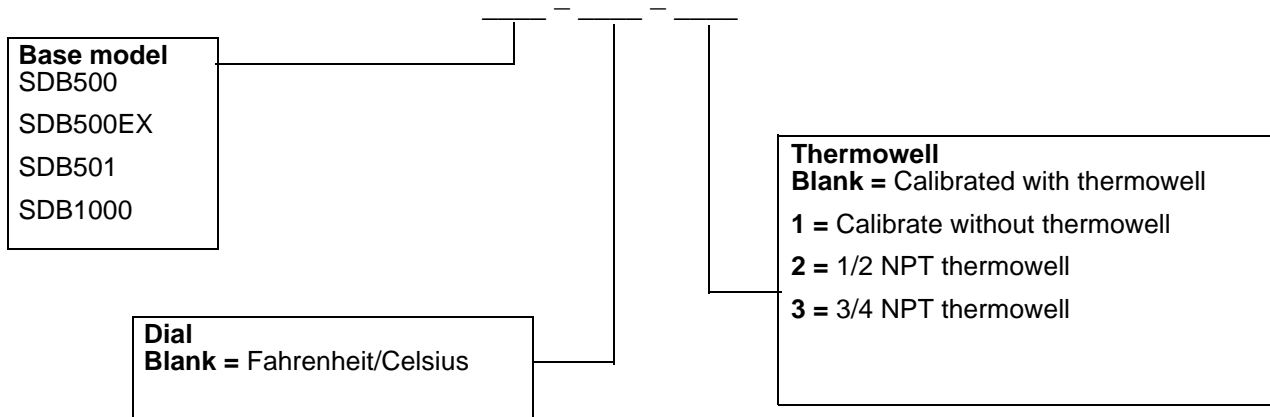


Contact Rating: 2 A @ 120 VAC

Warranty - A limited warranty on materials and workmanship is given with this FW Murphy product. A copy of the warranty may be viewed or printed by going to <http://www.fwmurphy.com/warranty>

How to Order

To order the SDB use the model number diagram below. Model number example: **SDB500EX-3**.



Optional Thermowells

Murphy offers thermowells (separable sockets) to facilitate maintenance of a temperature Switchgauge instrument and to protect the temperature sensing bulb from extreme amounts of system pressure. For system pressures exceeding 285 psi (1.97 MPa) [19.7 bar] at 625°F (329°C) an optional thermowell is recommended for use with the SDB series. The thermowell protects the SDB bulb from system pressures up to 3000 psi (20.68 MPa) [206.8 bar] at 300°F (149°C). Two thermowell options are available: 1/2 NPT and 3/4 NPT. Thermowells can be ordered with the SDB Series Switchgauge instrument or ordered separately. See "How to Order" on back page.

To order thermowell separately:

Specify part number **10050025** for 1/2 NPT.

Specify part number **10050311** for 3/4 NPT.

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