

B-Series Murphygage® Instrument

The B-Series Murphygage® instrument is a high-quality, diaphragm-actuated indicating gage. Built by Enovation Controls with the same heavy-duty design as the standard 20 series and 25 series Swichgage® instrument, the B-gage is more compact and is the optimum instrument for gage-only applications. It has a high impact polycarbonate lens, sturdy steel case and a polished, low-profile stainless steel bezel. Accuracy and protection from moderate over-pressure/over-temperature are assured by a unique, unitized diaphragm chamber, superior quality materials and the design of the gage movement.

Pressure Murphygage instrument

Pressure changes at the diaphragm convert to accurate mechanical movements that are indicated on an easy-to-read analog dial. A pulsation dampener in the pressure port helps eliminate pointer flutter. It can be removed for cleaning to maintain the gage's response and accuracy.

Vacuum Murphygage instrument

Available in 0 to 20 or 0 to 30 in. Hg. (0 to -68 or 0 to -102 kPa) vacuum.

Temperature Murphygage instrument

As temperature rises, the fluid in the sensing bulb vaporizes to apply pressure on the diaphragm. The movement translates this vapor pressure to a calibrated reading of temperature on the dial. The standard capillary is copper with a PVC armor. Optional armor covering is galvanized steel or 316 stainless steel (specify). Optional bulb types, adaptor nuts and thermowells are available.

The B-Series can be utilized in industrial engines and equipment in the oil field, marine, irrigation, construction and trucking industries as well as monitoring engine coolant, crankcase oil and transmission oil.



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

Specifications

Dial: White on black; U.S.A. standard scale is dual scale; others available.

Gage Accuracy:

Pressure/Vacuum (% of Full Scale):

Range	Lower 1/4	Middle 1/2	Upper 1/4
≤ 300 psi (24 bar)	±3%	±2%	±3%
400 psi (28 bar)	±3%	±3%	±5%

Temperature: See chart.

Temperature Range:

Pressure/Vacuum:

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

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

Temperature: See chart on reverse side.

Maximum Panel Thickness: 1/4 in. (6 mm)

Port: Brass

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

Bezel: Polished stainless steel, standard; optional bezels are available.

Pointer: White (black dial); black (white dial)

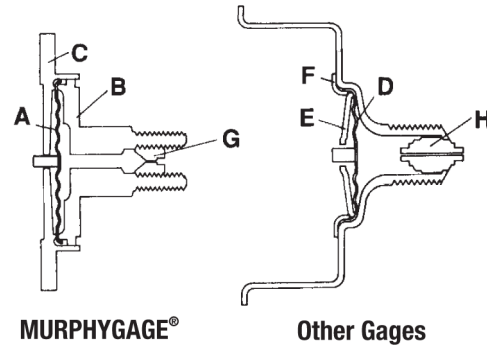
Lens: Polycarbonate, high-impact

Sensing Element: Beryllium copper diaphragm

Comparison of Murphy Gages to Most Other Gages

The basic difference between the Murphygage instrument and most other gages is the internal design. The Murphygage instrument does not rely on the gage case to serve as part of the sensing chamber. The diaphragm (A) which must expand and contract consistently with changing pressures and temperatures, is held firmly in place by the back plate (B) and the mounting plate (C). In most other gages, the diaphragm (D) and an expansion retarding plate (E) are soldered directly into the case port and held in place by a locator ring (F). Should the case receive any damage in this area the diaphragm operation could be affected. However, in the Murphygage instrument, the diaphragm is protected and securely locked in position.

Another feature of the Murphygage instrument is the removable pulsation dampener (pressure instruments only) (G) which provides for periodic cleaning when

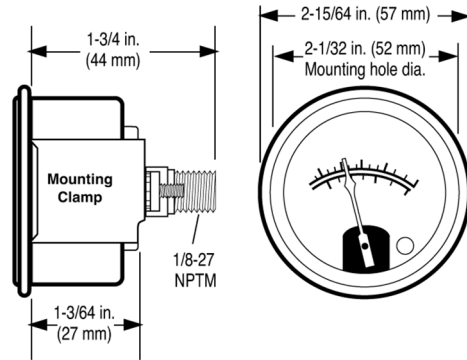


being used with liquids which might cause clogging. Other gages are usually equipped with a non-removable dampener (H).

NOTE: For optional temperature capillary lengths, engine adaptors, sensing bulbs and range combinations, see Murphy bulletin T-8428B.

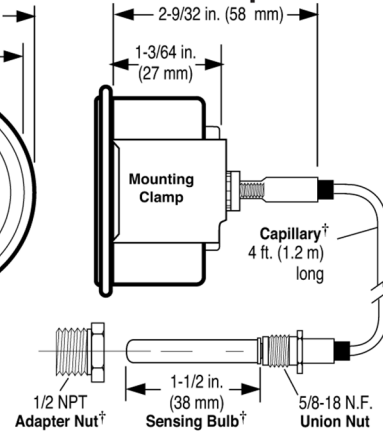
Dimensions

Pressure/Vacuum



†Standard combinations. See Murphy bulletin T-8428B for optional sensing bulb, engine adaptors and capillary combinations.

Temperature



Temperature Accuracy/Range Chart

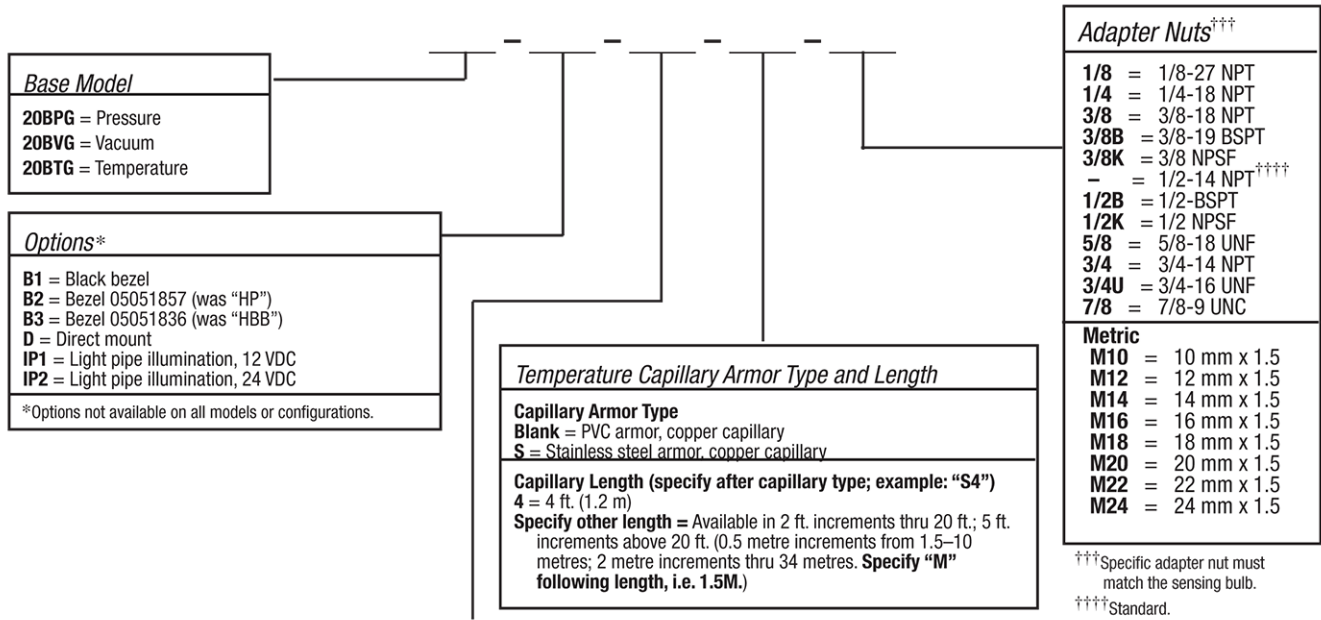
Celsius measurements are shown in parentheses.

Range	Lower 1/3 Scale	Middle 1/3	Upper 1/3
32-120 (0-49)	±12° (±6°)	±5° (±2.4°)	±6° (±3°)
32-160 (0-71)	±20° (±10°)	±8° (±4.4°)	±7° (±4°)
130-220 (54-104)	±6° (±3°)	±13° (±1.6°)	±4° (±2°)
130-250 (54-121)	±9° (±5°)	±5° (±2.4°)	±4° (±2°)
140-300 (60-149)	±10° (±5.2°)	±6° (±3°)	±5° (±2.4°)
160-320 (71-160)	±10° (±5.2°)	±5° (±2.4°)	±5° (±2.4°)
180-350 (82-177)	±12° (±6°)	±5° (±2.4°)	±5° (±2.4°)
300-440 (149-227)	±9° (±5°)	±5° (±2.4°)	±4° (±2°)

Range	Maximum Process Temperature
≤250° (120°)	120 % of Full Scale
300° (140°)	350° (198°)
≤320° (160°)	120% of Full Scale

How to Order

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



<i>Range^{††}</i>																																																												
Pressure (20BPG) Dual scale (psi/kPa)	Pressure (20BPG) Single scale (bar)	Vacuum (20BVG) Dual scale (in. Hg/kPa)	Temperature (20BTG) Dual scale (°F/°C)	Temperature (20BTG) Single scale (°C)																																																								
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