

Electric Gage and Swichgage® Instruments

MURPHY
reliable innovation



Sharper Accuracy
Higher Durability
Advanced Technology

Sharper Accuracy. Higher Durability. Advanced Technology.

The EG21 Series Electric Gage and the EGS21 Series Switchgage instrument take the electric gage to new heights with proven state of the art technology and reliability.

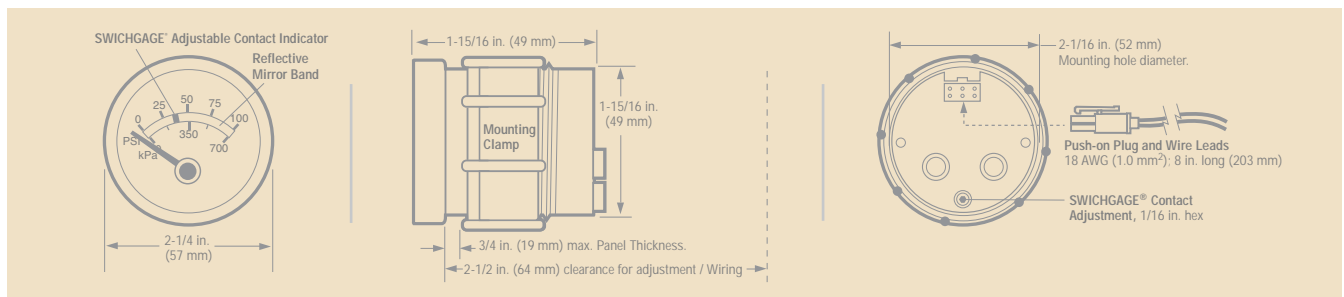


- ▼ EG Air Core movement design
- ▼ Technological improvements in lighting, accuracy in reading and wiring installation
- ▼ Assurance of highest reliability and service
- ▼ Environmentally sealed design
- ▼ Exceeds the rigid SAE J1810 standard
- ▼ Corrosion-resistant materials.
- ▼ Desirable for marine and other environmentally sensitive applications
- ▼ Soft, non-glare dial and pointer illumination by "cold light" LED.

Electric Switchgage instrument

The EGS21 Series Switchgage instrument has all of the features of the EG21 Series Gage plus an adjustable set point PowerHall® Effect switch output for operating alarms or equipment shutdown. The trip point is adjustable over 90% of the scale and has a set point indicator visible from the gage face. Now you can have both, the ease of electric gage installation and the reliable switching of Murphy's famous Switchgage instrument.

Dimensions



Specifications

Power Input, all models and sender: 12 VDC or 24 VDC.

Case: Polyester (PBT), impact and weather resistant with screw-on mounting clamp.

Bezel: Polished 316 stainless steel standard; available in black. SAE style optional.

Lens: Clear Polycarbonate and UV stabilized.

Air Core Movement: Silicon dampened pointer.

Dial: Black with white markings; back-lite (marking becomes red when illuminated); dual scale with mirror band to reduce parallax reading errors.

Switchgage instrument Sensor: PowerHall® Effect; outputs ground signal (sinking output) rated: 300 mA continuous (EGS21 models). Pressure, Fuel, Volts set on decreasing scale. Temperature and Amps set on increasing scale. Output saturation voltage (voltage drop across switch): 1.3-2.3 Volts @ 25°C (may require some conditioning to work with logic inputs)

Switchgage instrument Set Point Indicator: Visible on mirror band (scale); adjustable from the back of the unit (1/16 in. hex type wrench).

Wiring: Plug connector with wire leads, 18 AWG (1.0 mm²), 8 in. (203 mm) long.

Operating Temperature: -40 to 185°F (-40 to +85°C).

Storage Temperature: -77 to 185°F (-60 to 85°C).

Over Voltage (Gage Movement): Withstands 200% of nominal system voltage for 5 min. Meets SAE J1810.

Reversed Polarity (Gage Movement): Withstands reversed battery terminal polarity indefinitely within operating temperatures.

Environment and Test: Meets SAE J1810 standards.



Ranges

PRESSURE

80 psi	(552 kPa)	[5.52 bar]
100 psi	(689 kPa)	[6.89 bar]
200 psi	(1.38 MPa)	[13.80 bar]
300 psi	(2.07 MPa)	[20.70 bar]
400 psi	(2.76 MPa)	[27.60 bar]

TEMPERATURE

250°F	(121°C)
300°F	(149°C)

FUEL LEVEL

Empty — 1/4 — 1/2 — 3/4 — Full

AMMETER

60 — 0 — 60 amps (internal shunt)*

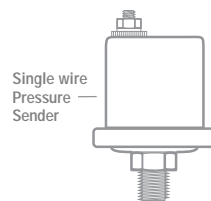
VOLTMETER

12 VDC: 8 — 18 Volts
24 VDC: 16 — 36 Volts



IMPORTANT: EG21 Series gage and EGS21 Series Switchgage Movement and Illumination require 12 VDC to function. For 24 volts systems, voltage converters are built into the electrical wire / connector assembly and supplied with the instrument, Specify voltage when ordering.

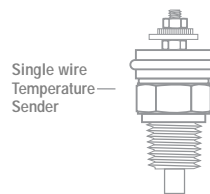
Electric Gage Senders



Single wire
Pressure
Sender

PRESSURE

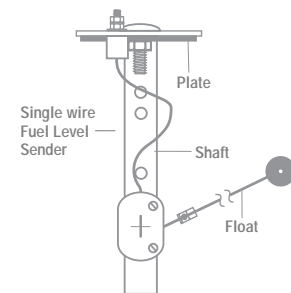
- ▼ ESP: 1-wire-to-ground sender[†]
- ▼ ES2P: 2-wire ungrounded sender[†]
- ▼ ESDP: 2-wire ungrounded sender, it drives 2 gages[†]



Single wire
Temperature—
Sender

TEMPERATURE

- ▼ EST: 1-wire-to-ground sender
- ▼ ES2T: 2-wire ungrounded sender
- ▼ ESDT: 2-wire ungrounded sender, it drives 2 gages.



Single wire
Fuel Level
Sender

FUEL LEVEL

- ▼ ESF: 1-wire-to-ground sender
- ▼ ES2F: 2-wire ungrounded sender
- ▼ ESDF: 2-wire ungrounded sender, it drives 2 gages.

[†] Thru 100 psi (689 kPa) [6.89 bar].

How to Order EG Series Gage and Switchgage Instruments



IMPORTANT: EG21 Series gage and EGS21 Series Switchgage Movement and Illumination require 12 VDC to function. For 24 volts systems, voltage converters are built into the electrical wire / connector assembly and supplied with the instrument. Specify voltage when ordering. No designator is required for standard configurations.

EGS21 P - 100 - 12 - A

Base Model

EG21 = Gage
EGS21 = Switchgage

Measurement Units

P = Pressure
PV = Pressure Special*
TV = Temperature Special**
T = Temperature

F = Fuel
AM = Ammeter
VM = Voltmeter

Range Scale

Show maximum value and units of measure (if other than psi or °F) for Pressure, Temperature, Amps, and Volts

Bezel

Standard = Polished Stainless Steel
A = Black, Semi-Gloss Finish
B = SAE Low Profile Stainless

Battery Voltage

12 = 12 VDC systems
24 = 24 VDC systems

*Available only as EG21PV-80-12 or -24-A. This model is designed to read senders with resistance curve of 9.5 to 182 ohms, which are commonly supplied as standard senders.

**Available only as EG21TV-300-12 or -24-A. This model is designed to read senders with resistance curve of 240 to 18 ohms, which are commonly supplied as standard senders.

How to Order EG Senders

ES 2 T - 250/300 - 1/4

Sender Type

Blank = 1-wire
2 = 2-wire
D = 2-wire, dual

Process to be Measured

P = Pressure¹⁾
PM = Pressure^{2) & 3)}
T = Temperature
F = Fuel

Range/Scale

Show maximum value and units of measure (if other than psi or °F) for Pressure, Temperature, Amps, Volts.

Thread Sizes

(for temperature senders)

X = 5/8-18 UNF⁴⁾
1/8 = 1/8-27 NPT⁵⁾
1/4 = 1/4-18 NPT
3/8 = 3/8-18 NPT
3/8B = 3/8-19 BSPT
1/2 = 1/2-14 NPT⁵⁾
1/2B = 1/2-14 BSPT
5/8 = 5/8-18 UNF
3/4 = 3/4-14 NPT
7/8 = 7/8-9 UNC
M14 = 14 mm x 1.5
M16 = 16 mm x 1.5
M18 = 18 mm x 1.5
M20 = 20 mm x 1.5
M22 = 22 mm x 1.5
M24 = 24 mm x 1.5

¹⁾ Thru 100 psi (689 kPa) [6.89 bar].

²⁾ Ranges above 100 psi (689 kPa) [6.89 bar].

³⁾ Mounting off-equipment recommended.

⁴⁾ Straight threads, for use with adapter nut.

⁵⁾ Separate adapter nut not required.

NOTE: Boot is optional on ES2T and ESDT temperature senders. Specify p/n 00-00-3624.

Fuel level senders are for fuel tanks only. Tank depths 6-24 in. (152-610 mm).

How to Order Accessories and Replacement Parts

Off-Equipment Mounting Kit

This kit allows off-equipment mounting of the ESPM, ES2PM and ESDPM pressure senders. Recommended for protection from damaging vibration. Customer supplies hose and fittings. Specify part number 30-00-0213 when ordering.

Wire/Connector Assembly

Listed below are replacement part numbers for all wire/connector assemblies. Voltage converter included for 24 and 32 volt. Specify part number when ordering.

	12 VDC	24 VDC
EG21P/T/F	05004506	05006166 (05004546)
EGS21P/T/F	05004507	05006168 (05004548)
EG21AM	05004505	05006170 (05004550)
EGS21AM	05004504	05006172 (05004552)
EG21VM	05004508	05004508
EGS21VM	05004504	05004504

LOW VOLUME CONFIGURATIONS NOTE:

Low volume configurations may require minimum purchase quantities.



CAUTION: Certain danger to human safety and to equipment may occur if some equipment is stopped without pre-warning. It is recommended that monitored functions be limited to alarm-only or alarm before shutdown.

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