

# ESPS, ESTS series

## Pressure and Temperature Combined Senders/Switches

The ESPS and ESTS series are engine-mounted oil pressure and coolant temperature measurement sensors with both resistive sender and fault limit switch outputs.

Resistive sender outputs have the same pressure/temperature versus resistance characteristics as the Murphy ES series senders, allowing use with EG(S)21 series gauges or Swichgages, engine/genset controllers or input/output modules (e.g. a Murphy MeCAN interface).

Switch output contacts are normally open (at normal running pressures and temperatures), with the contacts closing to sensor body/case ground when pressure falls below, or temperature rises above, the factory set limits (see How To Order for preset temperature limits). The switch outputs can be used with external control devices to signal fault conditions, and trigger operator warning and/or engine shutdown protection. For example, the contacts can be used in place of, or in addition to, EG(S)21 Swichgage outputs, to provide two staged limits for warning and shutdown.



## Specifications

### ESPS pressure models

**Pressure process connection:** 1/8"-27 NPTF dryseal  
**Measurement pressure range:** 0 - 100 psi (689 kPa, 6.89 Bar)  
**Maximum operating pressure:** 100 psi (689 kPa, 6.89 Bar)  
**Switch set point:** 15 PSI (103kPa, 1.03 Bar) falling  
**Switch contacts:** closed when pressure falls below set point  
**Contact rating:** 5.6W (28VDC, 200mA) max  
**Exterior case material:** Zinc plate Chromate  
**Electrical connection:** 10-32 UNF-2A studs (x2), brass-tin plate. Brass hex nut.  
**Dimensions:** see separate section

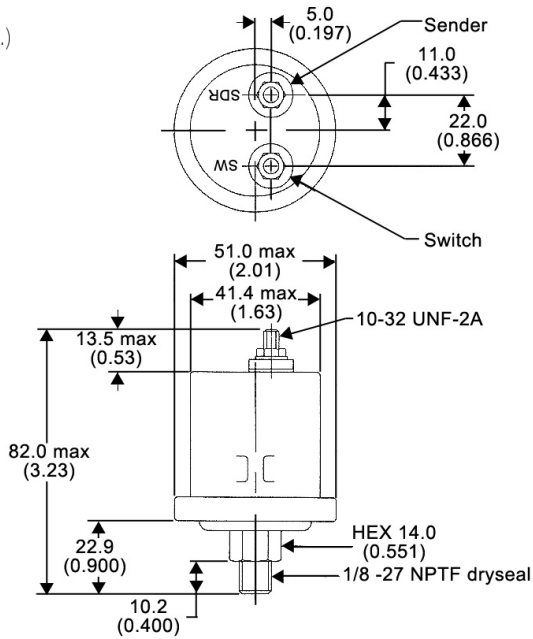
### ESTS temperature models

**Temperature bulb connection:** 5/8"-18 UNF  
**Measurement temperature range:**  
38- 121°C /100 – 250°F (model ESTS-250) or  
38- 148°C /100 – 300°F (model ESTS-300)  
**Switch set point:** 105°C/221°F or 130°C/266°F, ±3°C  
**Switch contacts:** closed when temperature rises above set point  
**Contact rating:** 5.6W (28VDC, 200mA) max  
**Electrical connection:** blade terminals, 6.3 mm / 0.248 in. (sender) and 4.8 mm / 0.0189 in. (switch)  
**Dimensions:** see separate section

## Dimensions

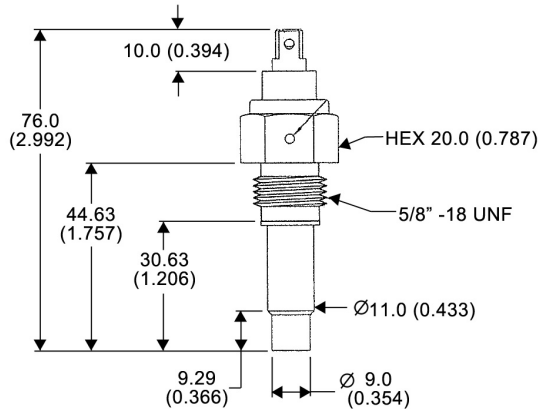
ESPS pressure models:

mm (in.)



ESTS temperature models:

mm (in.)



## How to Order

Note: ESPS and ESTS orders are subject to a minimum order quantity of 100 units.

| Stock code | Model    | Description   |
|------------|----------|---|
| 05707753   | ESPS-100 | ESPS-100 pressure sender/switch, 1/8" NPT thread, sender range 0-100 PSI, switch set at 15 PSI                              |
| 10703807   | ESTS-250 | ESTS-250 temperature sender/switch, 5/8" -18 UNF thread, sender range 38 – 121°C / 100 – 250°F, switch set at 105°C / 221°F |
| 10703808   | ESTS-300 | ESTS-300 temperature sender/switch, 5/8" -18 UNF thread, sender range 38 – 148°C / 100 – 300°F, switch set at 130°C / 266°F |

## Sender Resistance Characteristics

ESPS pressure models:

| Pressure, PSI   | Nominal resistance, Ohms | Tolerance, Ohms |
|-----------------|--------------------------|-----------------|
| 0 (descending)  | 240                      | 227 – 257       |
| 50 (descending) | 103                      | 92 – 114        |
| 100 (ascending) | 33.5                     | 22 - 49         |

ESTS temperature models:

| Temperature     | Nominal resistance, Ohms | Tolerance, Ohms |
|-----------------|--------------------------|-----------------|
| 37.8°C / 100°F  | 1123                     | 1022 – 1224     |
| 82.2°C / 180°F  | -                        | 197 – 223       |
| 104.4°C / 220°F | -                        | 99 – 110        |
| 137.8°C / 280°F | -                        | 39 - 46         |