

p-SMLS Series: Premium Surface-Mount Load Sensor

SMLS Series sensors can be mounted to any flat, rigid surface to capture a direct measurement of force normal to that surface.

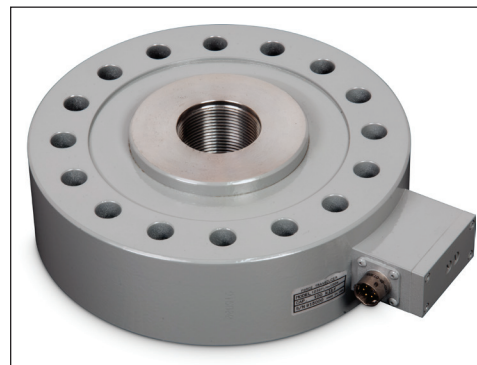
The Premium SMLS features advanced eccentric / off-axis load compensations to significantly improve accuracy and repeatability; this is particularly beneficial when load alignment can be subject to variance.

Benefits of Direct Force Measurement vs Pressure-Derived Load Estimates

- Excellent Accuracy and Sensitivity
- Improved Reproducibility and Repeatability
- Low Latency, Immune to Cylinder Friction
- Temperature Compensated
- Measurement is NIST Traceable

Key Applications

- Direct Input to Delta Computer Systems and other PLC platforms
- Accurate, Reproducible and Sensitive Force Measurements
- Extreme Repeatability of Displacement Measurements for Servo Control
- High Speed Measurements / Data Logging
- Calibration Reference for Pressure-Measurement-Based Systems



PERFORMANCE SPECIFICATIONS

| | Part Number | Full Scale (±lbf) | Combined Error (±lbf) | Non-Repeatability (±lbf) | Eccentric Load Sensitivity (%RDG / in) | Deflection (in / FS) |
|----------------------------|-------------|----------------------|--------------------------|-----------------------------|---|-------------------------|
| Standard Sensor Capacities | p-SMLS-5K | 5,000 | 3.5 | 0.5 | 0.25 | 0.002 |
| | p-SMLS-10K | 10,000 | 7 | 1 | | |
| | p-SMLS-25K | 25,000 | 20 | 2.5 | | |
| | p-SMLS-50K | 50,000 | 40 | 5 | | |
| | p-SMLS-100K | 100,000 | 100 | 10 | | 0.003 |
| | p-SMLS-200K | 200,000 | 240 | 20 | | 0.012 |
| | p-SMLS-400K | 400,000 | 680 | 80 | | 0.007 |
| | p-SMLS-600K | 600,000 | 1,200 | 120 | | 0.008 |
| | p-SMLS-1M | 1,000,000 | 2,500 | 200 | | 0.008 |
| | p-SMLS-2M | 2,000,000 | 7,000 | 400 | | 0.012 |

Additional capacities available upon request. %RDG: percent of applied load. 5-Points bidirectional NIST / ISO 17025 Accredited Calibration included. FS: full scale, the capacity of the sensor. Min Rod Diameter: Recommended to fully support load cell in compressive loading.

| MECHANICAL | | |
|---------------|-----|-------|
| Safe Overload | 150 | ± %FS |

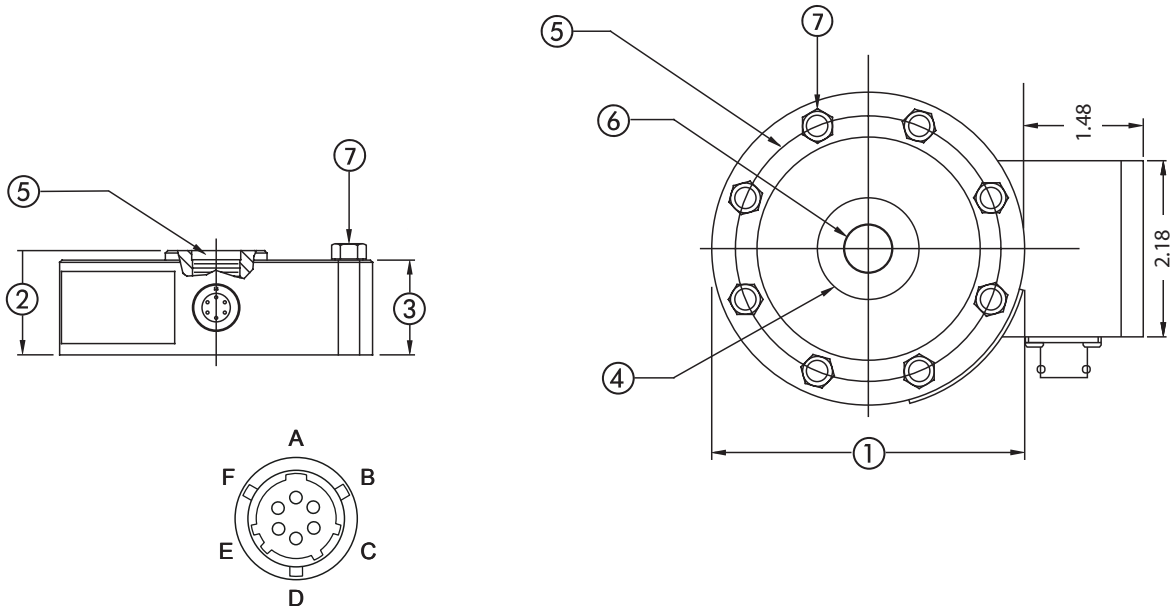
| THERMAL | | |
|-------------------|------------|----------|
| Compensated Range | 15 to 115 | °F |
| Operating Range | -65 to 200 | |
| Effect on Output | 0.0008 | %FS / °F |

| RESPONSE | | |
|-----------|------|----|
| Dynamic | 1000 | Hz |
| Bandwidth | 1 | ms |

NAMING SCHEME: Modifier-Series-Capacity-Output
EXAMPLE: p-SMLS-100K-V

| Signal Output Selection | PN Suffix | Output At | | | Power Supply | |
|-------------------------|-----------|------------|-------|----------------|--------------|----|
| | | Tension FS | Zero | Compression FS | VDC | mA |
| | -V | -10 V | 0 V | +10 V | 11.5 – 26 | 24 |
| -A | 4 mA | 12 mA | 20 mA | | | |

Other output types available upon request.



| Connector: PT02E-10-6P | |
|------------------------|---------------|
| Pin | Function |
| A | + Supply |
| B | Supply Ground |
| C | Output Ground |
| D | + Output |
| E | Shunt Cal |
| F | Shunt Cal |

| DIMENSIONS (in) | | | | | | | |
|-----------------|--------|--------------|-------------|-------------------|-------------|------------------------------|------------------|
| Description | ① | ② | ③ | ④ | ⑤ | ⑥ Thread Type (UNF) x Length | |
| | Body Ø | Total Height | Body Height | Loading Surface Ø | Bolt Circle | Loading Thread | Mounting Screws* |
| p-SMLS-5K | 4.13 | 1.38 | 1.25 | 1.34 | 3.50 | 5/8-18 F x 1.12 | 1/4-28 x 1.50 |
| p-SMLS-10K | 4.13 | 1.38 | 1.25 | 1.34 | 3.50 | 5/8-18 F x 1.12 | 1/4-28 x 1.50 |
| p-SMLS-25K | 6.06 | 1.75 | 1.63 | 2.65 | 5.13 | 1 1/4-12 F x 1.40 | 1/4-28 x 1.50 |
| p-SMLS-50K | 6.06 | 1.75 | 1.63 | 2.65 | 5.13 | 1 1/4-12 F x 1.40 | 3/8-24 x 2.25 |
| p-SMLS-100K | 8.00 | 2.50 | 2.25 | 3.76 | 6.50 | 1 3/4-12 F x 2.15 | 1/2-20 x 3.00 |
| p-SMLS-200K | 11.00 | 3.50 | 3.00 | 4.81 | 9.00 | 2 3/4-8 F x 2.75 | 5/8-18 x 4.00 |
| p-SMLS-400K | 12.00 | 4.50 | 3.25 | 6.18 | 9.88 | 3 1/2-8 F x 4.13 | 3/4-16 x 5.50 |
| p-SMLS-600K | 15.50 | 5.50 | 5.00 | 7.73 | 12.68 | 4 1/4-8 F x 4.25 | 7/8-14 x 6.40 |
| p-SMLS-1M | 20.50 | 6.25 | 6.00 | 10.55 | 16.50 | 6-8 F x 5.63 | 1-14 x 7.50 |
| p-SMLS-2M | 26.00 | 7.75 | 7.50 | 13.79 | 20.50 | 8-8 F x 7.00 | 1 1/4-12 x 9.50 |

*Mounting screws should be Grade 8 (10.9) or better