s-RELS Series: Standard Rod-End Load Sensor

RELS Series sensors are mounted directly to the rod-end of a cylinder, situating the measurement device in an ideal position: directly within the load chain and immediately adjacent to the loading event.

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
- Highly Repeatable 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)	Min Rod Ø (in)	Deflection (in / FS)
Standard Sensor Capacities	s-RELS-5K	5,000	15	3	1¾	0.001
	s-RELS-10K	10,000	30	5		
	s-RELS-25K	25,000	75	13		
	s-RELS-50K	50,000	150	25	2½	
	s-RELS-100K	100,000	220	50	3½	0.004
	s-RELS-200K	200,000	560	100	4½	
	s-RELS-300K	300,000	600	90	5	0.012
	s-RELS-500K	500,000	1,000	150	5½	
	s-RELS-700K	700,000	1,400	210	6½	
	s-RELS-1M	1,000,000	2,000	300	9	

Additional capacities available upon request. 5-Point ISO 17025 Accredited Calibration traceable to NIST is included with every RELS Sensor.
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

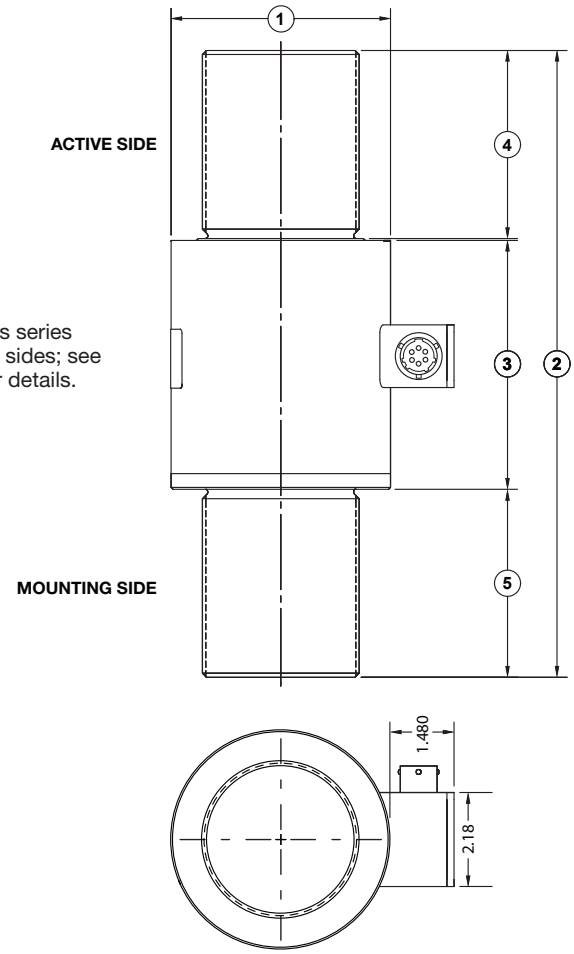
THERMAL		
Compensated Range	15 to 115	°F
Operating Range	-40 to 185	
Effect on Output	0.006	%FS / °F

RESPONSE		
Dynamic	1000	Hz
Bandwidth	1	ms

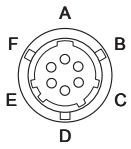
NAMING SCHEME: Modifier-Series-Capacity-Output
EXAMPLE: s-RELS-100K-V

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	26
	-A	4 mA	12 mA	20 mA		

Other output types available upon request.



Note: Not all sensors in this series have male threads on both sides; see dimensions table below for details.



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

DIMENSIONS (in)

	①	②	③			④	⑤
Description	Body Ø	Total Length	Body Length	Loading Surface Ø		Thread Type x Length	
				Active	Mounting	Active	Mounting
s-RELS-5K	1.50	4.50	2.32	1.31	1.27	1.00-14 M x 1.00	1.00-14 F x 1.00
s-RELS-10K	1.50	4.50	2.32	1.31	1.27	1.00-14 M x 1.00	1.00-14 F x 1.00
s-RELS-25K	1.73	4.50	2.32	1.50	1.50	1.00-14 M x 1.00	1.00-14 F x 1.00
s-RELS-50K	2.75	7.00	3.81	1.75	2.50	1.50-12 M x 1.50	1.50-12 F x 1.50
s-RELS-100K	3.50	10.00	3.97	3.50	3.50	2.50-12 M x 3.00	2.50-12 M x 3.00
s-RELS-200K	4.47	13.00	4.97	4.47	4.47	3.50-8 M x 4.00	3.50-8 M x 4.00
s-RELS-300K	5.50	16.50	9.00	5.00	5.00	3.50-12 F x 3.75	3.50-12 F x 3.75
s-RELS-500K	6.00	21.26	12.00	5.50	5.50	4.00-12 F x 4.50	4.00-12 F x 4.50
s-RELS-700K	7.50	25.50	14.00	7.00	7.00	5.00-8 F x 5.50	5.00-8 F x 5.50
s-RELS-1M	9.50	27.80	14.50	9.00	9.00	6.00-8 F x 6.50	6.00-8 F x 6.50