

p-RELS-DRO Series: Premium Rod-End Load Sensor with Digital Readout

RELS Series load sensors mount 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.

Premium RELS load sensors enhance performance by offering significantly improved accuracy, repeatability, off-axis / eccentric load compensation, and temperature compensation.

The p-RELS-DRO package is a Premium RELS load cell mated with a HR-DRO digital readout, which are calibrated together as a dedicated pair. Its variety of configuration options and user-selectable features create a flexible, accurate, traceable and easy-to-use measurement system.

Key Applications

- On-screen capture of peak force measurements
- Analog, digital or wireless connection to PC / PCL for remote force monitoring
- Transfer standard for calibration/verification of force measurement devices
- Determination of effective area in pressure-based force measurement systems



PERFORMANCE SPECIFICATIONS

	Part Number	Full Scale (±N)	Resolution (±N)	Combined Error (±N)	Non-Repeatability (±N)	Eccentric Load Sensitivity (±%RDG / mm)	Min Rod Ø (mm)	Deflection (mm / FS)	
Standard Sensor Capacities	p-RELS-25KN-DRO	25,000	1 N	20	2.5	0.10	28	0.05	
	p-RELS-50KN-DRO	50,000	1 N	35	5		56		
	p-RELS-100KN-DRO	100,000	2 N	80	10				
	p-RELS-250KN-DRO	250,000	0.01 kN	160	25				
	p-RELS-450KN-DRO	450,000	0.01 kN	450	45			70	0.10
	p-RELS-900KN-DRO	900,000	0.02 kN	1,500	90			110	0.30
	p-RELS-1.8MN-DRO	1,800,000	0.1 kN	3,000	180			140	0.20
	p-RELS-2.7MN-DRO	2,700,000	0.1 kN	5,400	270			180	0.20
	p-RELS-4.5MN-DRO	4,500,000	0.1 kN	11,250	450		240	0.20	
	p-RELS-9MN-DRO	9,000,000	0.2 kN	31,500	900	320	0.30		

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.

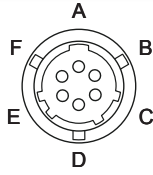
MECHANICAL (sensor)	
Safe Overload	±150%FS
Enhanced Safe Overload	+300%FS (compression only)

NAMING SCHEME: Modifier-Series-Capacity-Output
EXAMPLE: p-RELS-100K-DRO

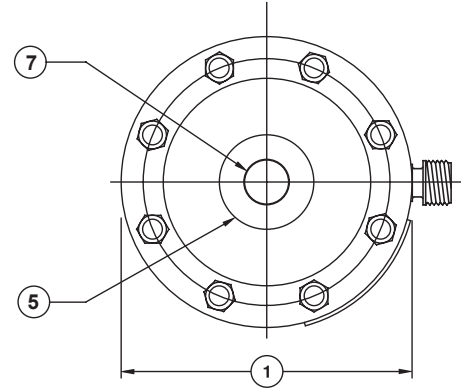
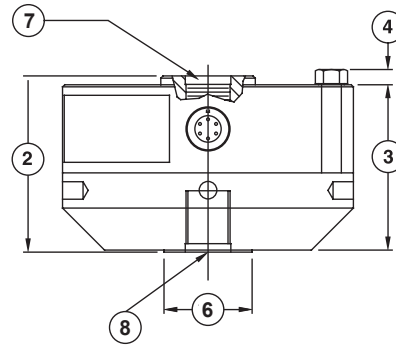
THERMAL	
Compensated Range (sensor)	-10 to 45°C
Operating Range (sensor)	-20 to 90°C
Effect on Output (sensor)	0.0015%FS/°C
Operating Range (display)	-10 to 40°C

USER-SELECTABLE DISPLAY OPTIONS	
Display Resolution	100 to 50,000 counts
Sampling Rate	1.75 to 1200.00 Hz
Averaging Filter	0 to 12 samples
Units of Measure	lbf, N, kgf

STANDARD SENSOR CABLE	
Wires	4
Length	4.5 m

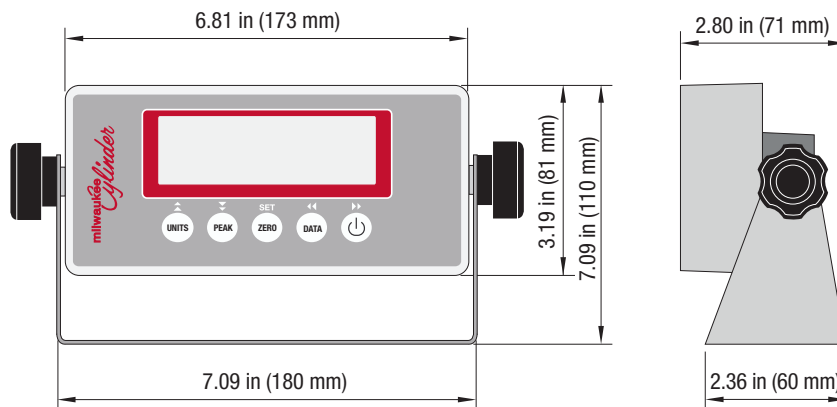


Connector: PT02E-10-6P	
Pin	Function
A	Excitation +
B	Signal +
C	Signal -
D	Excitation -
E	Sense -
F	Sense +



DIMENSIONS (mm)

Description	① Body Ø	② Total Length	③ Body Length	④ Cap Head Height	⑤ Loading Surface Ø		⑦ Thread Type x Depth	
					Active	Mounting	Active	Mounting
					p-RELS-25KN-DRO	104.8	63.5	60.3
p-RELS-50KN-DRO	104.8	63.5	60.3	5.1	34.0	31.8	M16x2 x 28.4	M16x2 x 22.1
p-RELS-100KN-DRO	153.9	89.0	85.9	7.6	67.3	57.2	M33x2 x 35.6	M33x2 x 35.6
p-RELS-250KN-DRO	153.9	89.0	85.9	7.6	67.3	57.2	M33x2 x 35.6	M33x2 x 35.6
p-RELS-450KN-DRO	203.2	114.3	108.0	10.2	95.2	76.2	M42x2 x 54.6	M42x2 x 44.5
p-RELS-900KN-DRO	279.0	165.1	152.4	12.7	122.2	114.3	M72x2 x 70.0	M72x2 x 69.8
p-RELS-1.8MN-DRO	304.8	228.6	222.3	20.0	156.8	152.4	M90x3 x 104.9	M90x3 x 95.3
p-RELS-2.7MN-DRO	393.7	266.7	254.0	12.5	196.3	196.9	M120x4 x 108.0	M120x4 x 108.0
p-RELS-4.5MN-DRO	520.7	336.6	330.2	25.4	267.9	267.9	M150x4 x 143.0	M150x4 x 162.0
p-RELS-9MN-DRO	660.4	425.5	419.1	31.3	350.3	355.6	M200x4 x 178.0	M200x4 x 184.0



OPTIONS

	Part Number	Description
Display Output	CABLE-RS232	RS-232 Output Cable*
	OUT-ANALOG	0-10V / 4-20mA Output
	OUT-BT	Bluetooth 4.0 Output
Sensor Connection	CABLE-6W	6-Wire Cable (4.57m)
	CABLE-RF	Wireless Sensor Link
Sensor Modification	p-RELS-Capacity-DRO-ESO	Enhanced Safe Overload

* RS-232 digital output is standard