

# LA

# PRECISION DUAL SHEAR LOAD PIN

## applications

- Tension/Compression Measurements
- Clevis Pin/Shackle Loading
- Crane, Lifting & Winch Systems
- Mooring Line Tension Measurements
- Sprockets & Pulley Axles

#### features

- 5,000 to 200,000 lbs. Capacities
- Dual Shear Beam Technology
- Stainless Steel Construction
- Application Versatility
- 0.5% Accuracy Class
- Excellent Overall Performance
- IP67 Environmental Sealing
- Non-Standard Configurations
- Two Year Warranty

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APPLICATION TIP:

The Model LA load pins feature Dual Shear Beam Technology, field-proven as the best solution for reliable force measurements.

The LA Series is an extremely rugged, high performance load pin constructed of tool steel (LA1) or stainless steel (LA3). The LA Series load pins are designed to accurately measure compression and tension loads in capacities ranging from 5,000 lbs. to 200,000 lbs. (Nonstandard capacities from 2,000 of pounds to 500,000 pounds+ available.) The robust Dual Shear Beam design readily tolerates angular, end loading and side loading effects, with minimal sensitivity to these anomalies. Proprietary, axial "gun-bore" gauging techniques produce the benefits of relatively compact size and enhanced environmental sealing. To achieve a sealing rating of IP67 (thoroughly sealed against airborne particles and the effects of immersion up to 1 meter.) metal seal and composite environmental barriers are integrated to protect the load pin. The cable is a durable polyurethanejacketed cable, with a tinned-copper braided shield for mechanical protection and to minimize the effects of RFI and EMI. The LA Series offers unique mounting capabilities to address application-specific requirements. The attributes of the LA Series make it ideal for clevis pin/shackle loading, crane/lift/winch loading, mooring line tension monitoring, sprocket/pulley force measurements, specialty applications such as web tension and steel coil weighing, as well as for O.E.M. situations where a versatile, rugged and high performance solution is needed. The LA Series reliability produces exceptional performance yields under extraordinary conditions in aerospace, automotive, steel processing, off-shore, power generation, mining, material handling, wood/pulp/paper, petrochemical and similarly demanding applications.

Innovative Measurement Solutions



# specifications



#### Model LA Load Pins feature Dual Shear Beam Technology! performance

Rated capacities (1) (lbs.): 5K, 10K, 20K, 50K, 100K & 200K (Custom Range 2K-500K+)

0.5, 1, 2 mV/V (nominal)

Combined error ≤ 0.50 % FSO Non-linearity ≤ 0.30 % FSO Hysteresis ≤ 0.20 % FSO Non-repeatability ≤ 0.10 % FSO

Side Load Rejection Ratio ≤ 500:1

Creep (30 minutes) ≤ 0.05% of load Zero balance ≤ 2.0 % FSO

Better than 0.05 % FSO Zero return (30 minutes)

 $^{(1)}$  ("K" = thousand)

Rated output (FSO)

#### mechanical

Material: Alloy tool steel (LA1)

Stainless Steel (LA3) Finish: Electroless nickel (LA1) Electro-polished (LA3)

Safe overload Compression/Tension: 200% FSO

Side load: 100% FSO

Ultimate overload Compression/Tension: 400% FSO Side load: 200% FSO

Weight See table below Deflection See table below

#### electrical

Cable type

Input impedance (ohms) 380 (nominal) Output impedance (ohms) 350 (nominal)

Insulation resistance >1000 Megohms @ 50VDC **Excitation Voltage** 10 V AC/DC (15 V maximum) Cable Color code:

+ Excitation (red)

- Excitation (black)

+ Output (green) - Output (white)

+ Remote Sense Option (Blue)

Remote Sense Option (Brown)

Shield (bare)

4-conductor; 22 AWG; tin-copper, braided shield; polyurethane jacket

Cable termination Finished conductors

#### environmental

Temperature, operating Temperature, compensated Temperature effects:

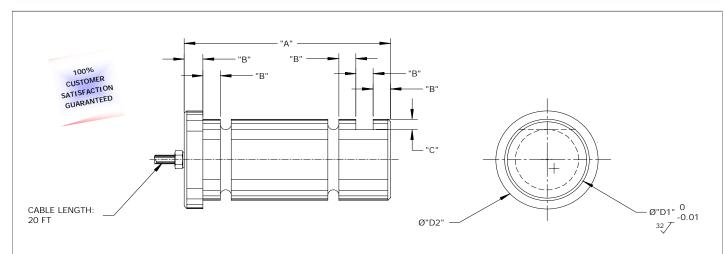
0 to +175 °F (-18 to +79°C) 40 to +150 °F (4 to +65°C) < 0.0020% FSO/°F Zero < 0.0036% FSO/°C Output < 0.0020% of Rdg./°F

< 0.0036% Rdg./°C Sealing IP67, Multi-redundant; IP66/68, Hermetic

### options

Special Cable Lengths, High Temperature Operation, Conduit Adapters, MS Connectors, Instrumentation and Non-Standard Configurations.

## dimensions



CAPACITY (LB)	"A"	"B"	"C"	"D1"	"D2"	DEFLECTION (IN)	WEIGHT(LB)
CALACITI (LD)	_ ^	, , ,		D1	D2	DEFECTION (III)	WLIGITI(LD)
5K	3.00	0.25	0.150	0.970	1.375	0.005	2.0
10K	3.75	0.38	0.250	1.457	1.875	0.008	3.0
20K	4.75	0.44	0.250	1.957	2.375	0.010	5.5
50K	6.00	0.50	0.375	2.200	2.750	0.013	7.5
100K	9.00	0.75	0.375	2.450	3.250	0.017	14.0
200K	11.50	1.00	0.500	3.450	4.500	0.020	33.0