

LOAD PIN SLC AND LCA LOAD CELL AMPLIFIER



The Load Pin can be dimensioned to replace an existing shaft.

The Load Pin/ Transducer Amplifier are compatible with all PIAB electronic systems for overload protection and load indication.

The SLC and LCA are made for use in aggressive environments and fully conform to IP 67

GIGASENSE

Gigasense products within Force Measurement and Crane Safety are well known high quality products, built from many years' experience and used by leading heavy duty industry around the world.

Gigasense products meet the highest demands of performance level requirements.

We are represented by selected local partners in more than 30 countries on six continents.



Technical Data

CAPACITY

Minimum 500 kg.

DIAMETER

Minimum 20 mm.

INACCURACY

Typical value approx. 1% of rated capacity for Load Pin in equalization pulley close to the load. (Installation-dependant)

MATERIAL

High-tensile alloy steel.

PROTECTION SPECIFICATION

IP 67, according to IEC 529.

TEMPERATURE RANGE

-20°C to +70°C.

OVERLOAD

Can occasionally be overloaded up to 100% of rated capacity.

SAFETY FACTOR

5:1 (Guaranteed safety against rupture 5 times nominal load.)

CABLE

Length 5 m as standard.

SIGNAL OUTPUT

0,5-1,5 mV/V.

DIMENSIONS

See figure.

Range of Applications

When overload protection and/ or load indication is to be installed in a conveyor/crane or other device, the PIAB SLC is the ideal solution. The Load Pin can easily replace the existing shaft at an equalizing pulley or in other parts of the construction. The Load Pin should be installed as close as possible to the force/load for best accuracy. Both the Load Pin and the Amplifier are designed to withstand extreme environmental conditions for a long operation time.

Function

The PIAB SLC Load Pin is designed as a shaft. Built into the shaft is a number of foil-strain-gauges for sensing of the deformation of the shaft during exposure to load. Shear forces appear in the section between the support and the applied load. Those shear forces are relative to the load on the Load Pin. Since the strain gauges are positioned in the centre of the Load Pin little or no influence is derived from bending or torsion forces. The strain gauges shall be fed with 10 VDC from PIAB Amplifier LCA. The strain gauges deliver a signal to the amplifier (mV/V). This is converted in the LCA Amplifier to a current signal of 4-20 mA, which is extremely resistant to interference. The Transducer Amplifier should be installed as close as possible to the Load Pin. The Load Pins can be designed within very wide limits for dimensions and capacities.

LCA Transducer Amplifier for Current Signal Output

The PIAB LCA Transducer Amplifier, is an instrument amplifier with "chopper"-input. A DC Power Supply of 10VDC for strain gauges is integrated in the Amplifier. The Amplifier converts the mV/V signal from the Transducer to a robust, standardized "Current Signal" of 4-20 mA.



Applications for Load Pins SLC and LCA



Load Pin SLC installed on an EOT as overload guard.



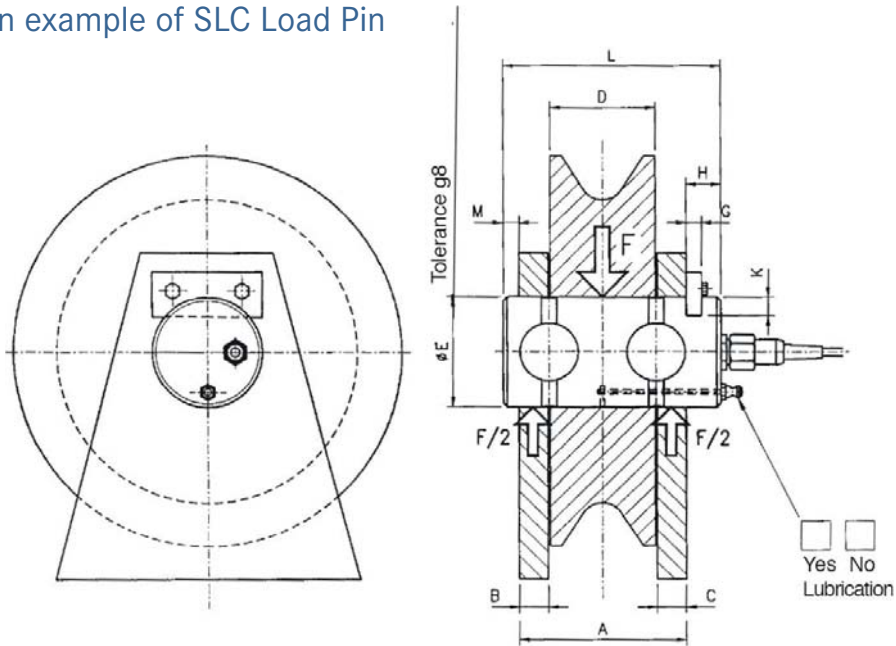
Load Pin SLC mounted in an equalisation sheave.



Top view of the LCA Load Cell Amplifier without top cover. It gives an output signal of 4-20mA.



Installation example of SLC Load Pin

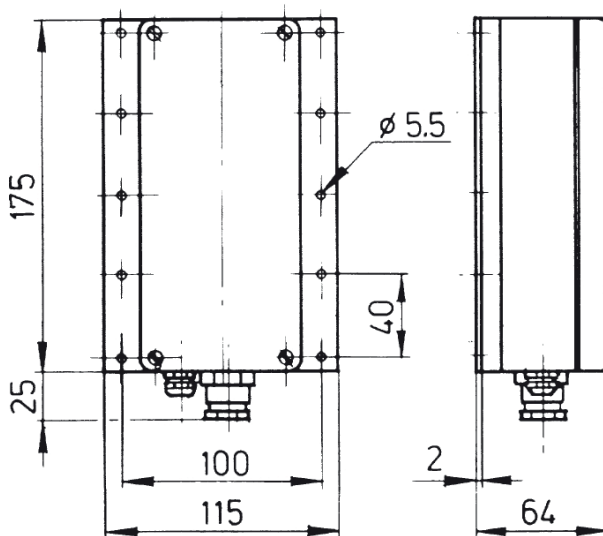


Design dimensions when ordering a PIAB SLC LoadPin. (To be filled in by the customer)

A	B	C	D	E	Tol:	G	H	K	L	M

Force F= metric ton. F= Force to the Load Pin when crane is loaded to Safe Working Load (SWL).

LCA Load Cell Amplifier



TRANSDUCER INPUT

For strain gauges of 350 ohm impedance, up to max. 4 each in parallel.

TEMPERATURE RANGE

-20°C - +70°C.

POWER SUPPLY

15 to 30 VDC.

CURRENT DRAIN

Max. 70 mA at full load on one load cell.

PROTECTION CLASS

IP 67, according to IEC 529.
NEMA 4X

DIMENSIONS

See figure.



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