

# LOAD PIN SLC AND TRANSDUCER AMPLIFIER LCA



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.

**PIAB**<sup>TM</sup>



*PIAB Force Measurement  
is certificated according to  
SS-EN ISO 9001.*

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## RANGE OF APPLICATION

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When overload protection and/ or load indication is to be installed in a conveyor/crane or other device, the PIAB SLC may be 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.

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## FUNCTION

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The PIAB Load Pin SLC is designed as a shaft. Built into the shaft is a number of foil-strain-gauges for sensing of the de-formation 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 V DC from PIAB Amplifier LCA. The strain gauges delivers 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.

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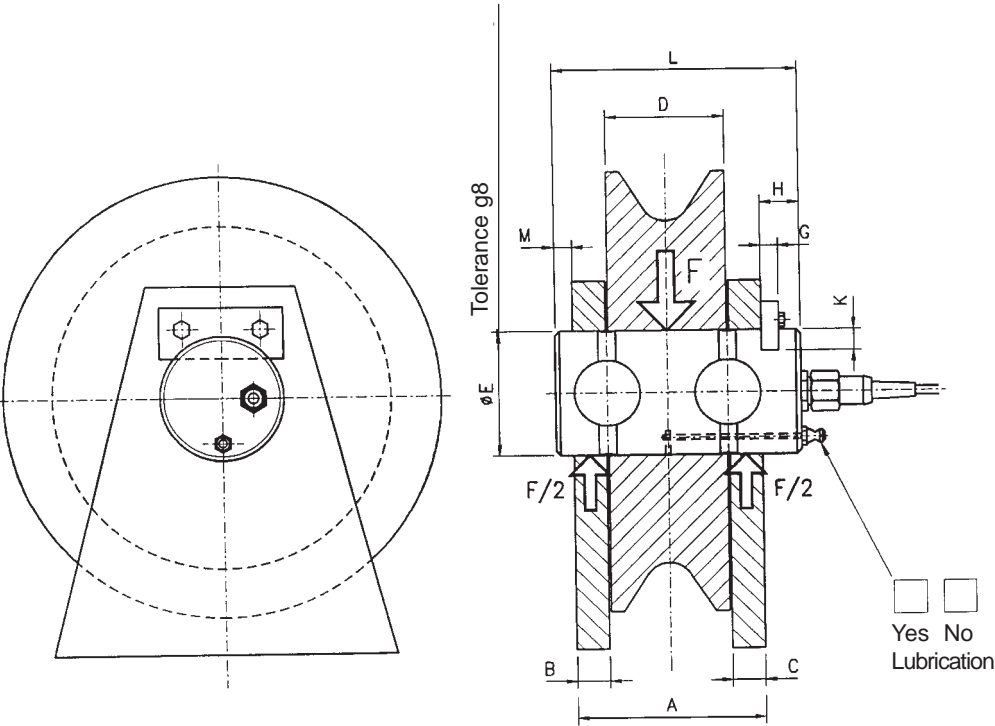
## PIAB LCA TRANSDUCER AMPLIFIER FOR CURRENT SIGNAL OUTPUT

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The PIAB Transducer Amplifier LCA, Art. No. 301281, is an instrument amplifier with "chopper"-input. An DC Power Supply (10V DC) for strain gauges is integrated with the

Amplifier. The Amplifier converts the mV/V signal from the Transducer to a robust, standardized "Current Signal" (4-20 mA).

## INSTALLATION EXAMPLE OF PIAB LOAD PIN SLC

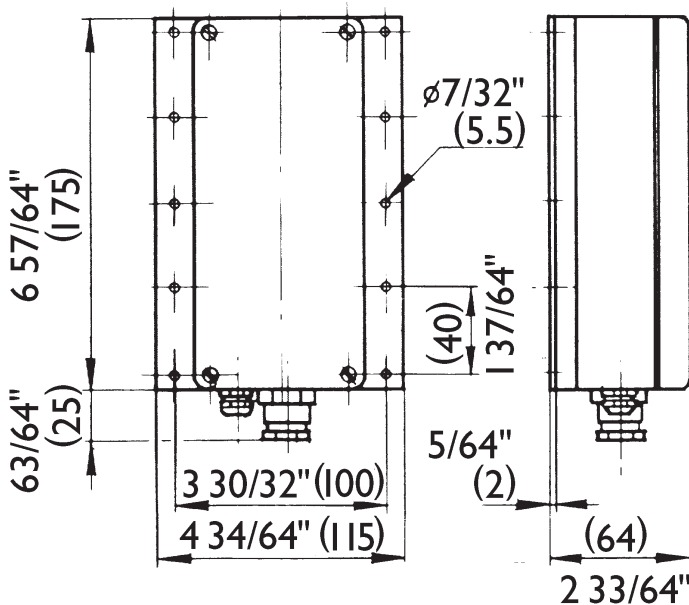


Design dimensions when ordering a PIAB SLC Load Pin. (To be filled in by the Customer)

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).

## PIAB AMPLIFIER LCA



### TECHNICAL DATA SLC

CAPACITY  
*Minimum 1100 lb(500 kg).*

DIAMETER  
*Minimum 3/4" (20 mm).*

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

MATERIAL  
*High-tensile alloy steel.*

INTERNATIONAL PROTECTION SPECIFICATION CLASS  
*IP 67, according to IEC 529.*

TEMPERATURE RANGE  
*-40°F - +158 °F (-20°C - +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 15 feet (5 m) as standard.*

SIGNAL OUTPUT  
*0.5-1.5 mV/V.*

DIMENSIONS  
*See figure.*

### TECHNICAL DATA LCA

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

TEMPERATURE RANGE  
*-40°F - +158 °F (-20°C - +70°C).*

POWER SUPPLY  
*+15 to +30 V DC.*

CURRENT DRAIN  
*Max. 70 mA at full load on one load cell.*

INTERNATIONAL PROTECTION SPECIFICATION CLASS  
*IP 67, according to IEC 529.*

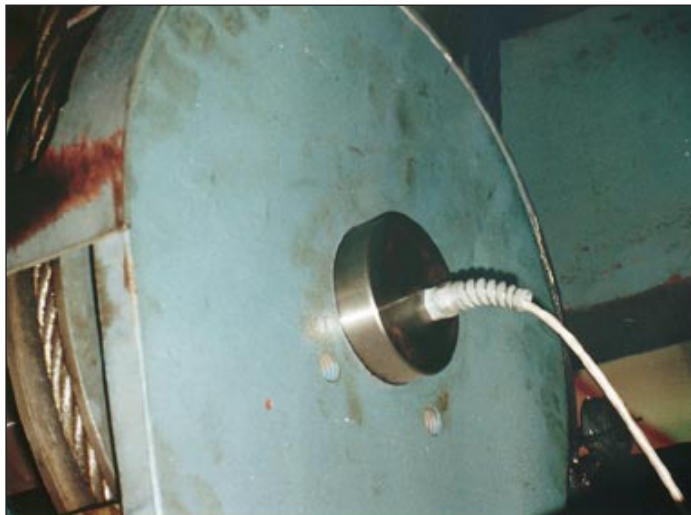
DIMENSIONS  
*See figure.*

# APPLICATIONS USING PIAB SLC AND LCA

*PIAB Load Pin SLC installed on a EOT as overload guard.*



*PIAB Load Pin SLC mounted in an equalisation sheave.*



*The 9:200 has two separate tripping relays. One intended for warning or slack rope indication and the other for tripping at overload. The 9:200 is designed for 0-2 mV/V input.*



**PIAB™**

**Force Measurement**

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