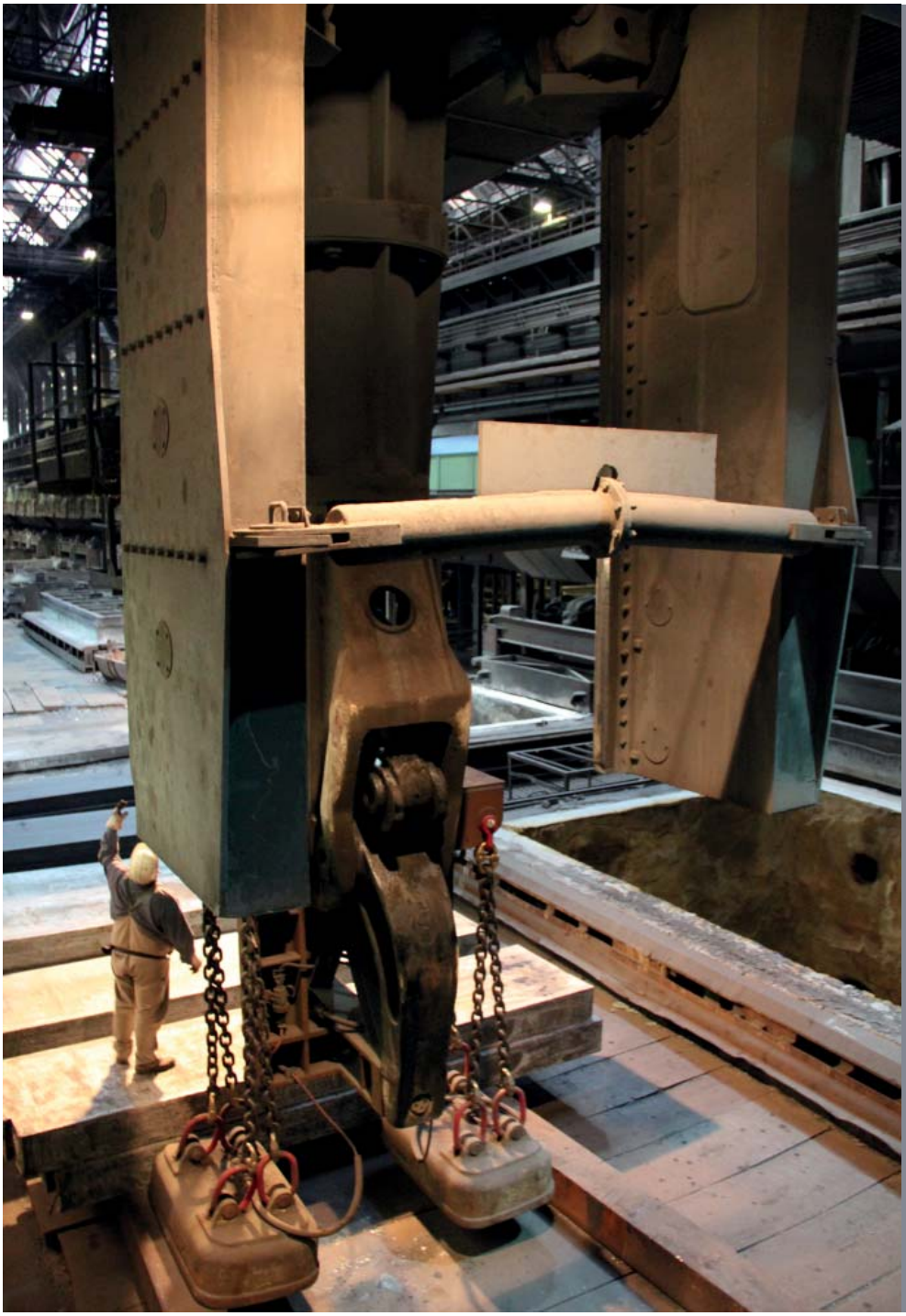
GIGASENSE

QUALITY AND SERVICE TAKEN SERIOUSLY

Force Transmitter

LKVE, 4-20mA or LKVEi, mV/V



The LKVE is a force transmitter which is attached to a stationary rope part. The LKVE gives a 4-20mA output signal. It has high repeatability, is made for use in aggressive industrial environments and fully conforms 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 many selected local partners in more than 30 countries on six continents.

Force Transmitter

Range of application

The LKVE combined with a PIAB Electronic Unit or a Crane Safety Monitor is intended for use as an overload guard or a slack rope switch in lifting equipment and is made in a range for forces up to 16000 kp in single rope part and for max. 44 mm rope diameter.

Function

The LKVE consists of a load cell with amplifier and an electronic signal processing unit. The LKVE is attached to a stationary rope part. The rope is deflected through a slight angle between the two wheels and the clamping jaw. When loaded, the rope tends to straighten and applies a force on the load cell. The foil gauge of the load cell is fed with a constant tension from the transmitter amplifier. A signal is received in return, which is proportional to the force on the load cell. This signal is amplified and is converted to a current signal of 4 - 20 mA. The strong signal makes it possible for the distance between the force transmitter and the electronic unit to be up to 550 yards (500 m).

Protection against corrosion

The LKVE is Zinc coated and yellow chromated. The bearings of the hardened wheels are sealed with O-rings and lubricated with Mo2.
The load cell and the amplifier are hermetically sealed and meet the requirements for international protection specification class IP 67 according to IEC 144.

Safety

The LKVE is not directly included in the rope system and does not interfere with the construction of the lifting equipment. The clever design of the clamping jaw keepes the measurement test result unaffected by the changes in the rope diameter that occur after some use.
Together with PIAB electronics, the LKVE is protected against faulty operation and adopts overload mode in all combinations of cable breakdowns or short circuits that can arise due to cable damage. The load cell can be mechanically overloaded by 100% nominal load without affecting the accuracy of measurement.

Measuring Signal

The LKVE gives a defined output of 4-20 mA, which is hard to disturb. The strong signal manages serial resistances of up to 250 ohm and the cable can therefore be lengthened without special demands on joints or cable lenghts.

It is also available without transducer amplifier and is then called LKVEi.
The impedance of the transducer bridge is 350Ω and the sensitivity 1.6 mV/V nominally.
Recommended supply voltage 10 VDC.

The unshielded cable, 4x1/16 sq.inch (4x1.5 mm2) transfers supply voltage to the transmitter amplifier and load cell as well as the measuring signal to the PIAB Electronic Unit.
The cable can be placed close to other live cables without affecting the measuring signal.

Technical Data

CONNECTION
The supply voltage to the transducer is 15-30 VDC. Power comsumption 60 mA.

WORKING TEMPERATURES
-4°F- +158°F (-20°C -+70°C).
The load cell is temperature compensated with regard to both span and zero-offset.

ACCURACY
The repeatability and linearity of the load cell are better than 0.1%. Mounted on the rope the LKVE has a repeatability of 0.1-1.5% and a linear deviation of 0-4%. The variations arise from differing rope characteristics.

INTERNATIONAL PROTECTION SPECIFICATION CLASS
IP 67, according to IEC 144.

GIGASENSE
producer of PIAB

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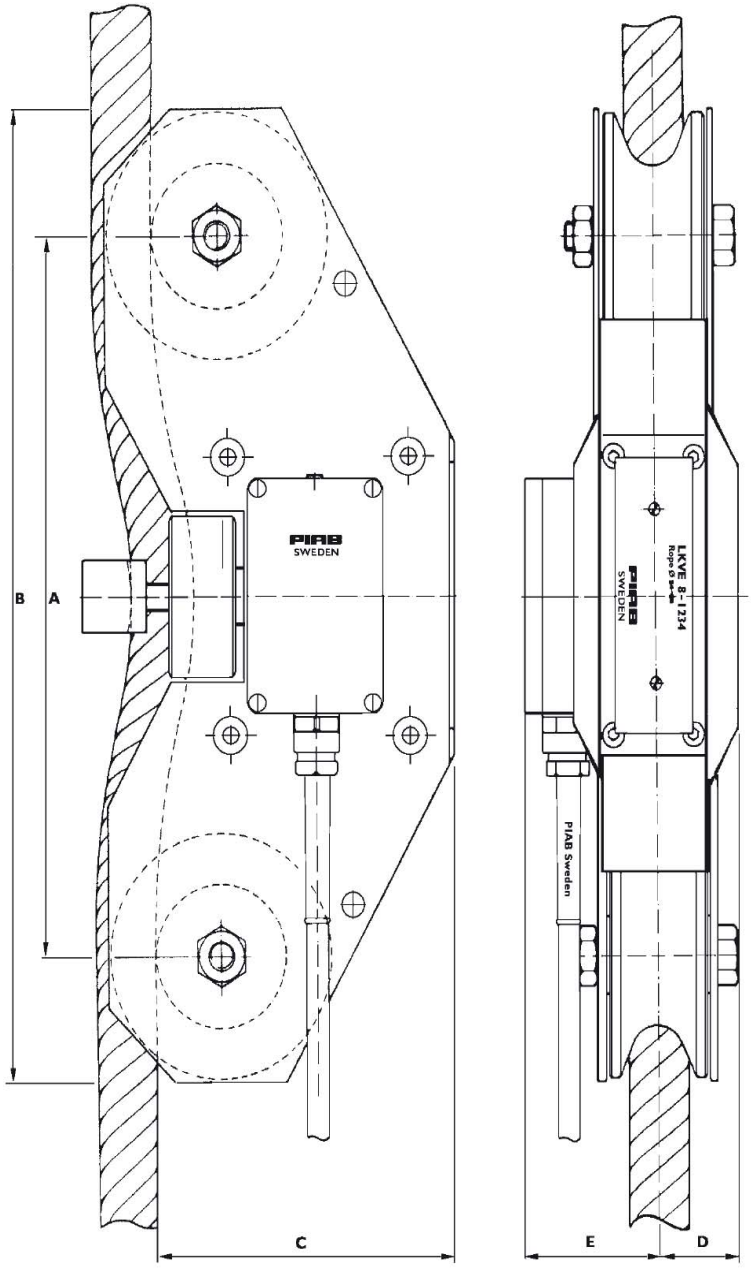

The drawing is for LKVE 8-12. The measurements for different LKVE capacities are shown in the table below. The other types are of a slightly different design.

TYPE	MAX.SWITCH VALUE IN LB.(KG)	FOR WIRE DIMENSION Ø IN INCHES AND (MM)	DEADWEIGTH IN LB. (KG)	DIMENSIONS IN INCHES AND (MM) A	B	C	D	E
LKVE/i 1	2200 (1000)	3/16- 5/16 (5-8)	10 (5)	7.8740 (200)	10.7087 (272)	4.8031 (122)	1.1024 (28)	2.1654 (55)
LKVE/i 2	4400 (2000)	5/16- 15/32 (8-12)						
LKVE/i 4	8800 (4000)	15/32- 5/8 (12-16)						
		5/8- 25/32 (16-20)						
LKVE/i 8	17600 (8000)	5/8- 25/32 (16-20)	26 (12)	11.8110 (300)	15.9853 (406)	5.5118 (140)	1.5354 (39)	2.4803 (63)
		25/32- 15/16 (20-24)						
LKVE/i 12	26000 (12000)	15/16- 1.7/64 (28-32)						
		1.7/64- 1.1/4 (28-32)						
		1.1/4-1.27/64 (32-36)						
LKVE /i16	35000 (16000)	1.1/4-1.27/64 (32-36)	48 (21)	11.8110 (300)	15.9853 (406)	5.5118 (140)	1.5354 (39)	2.4803 (63)
		1.27/64- 1.1/2 (36-40)						
		1.1/2- 1.3/4 (40-44)						

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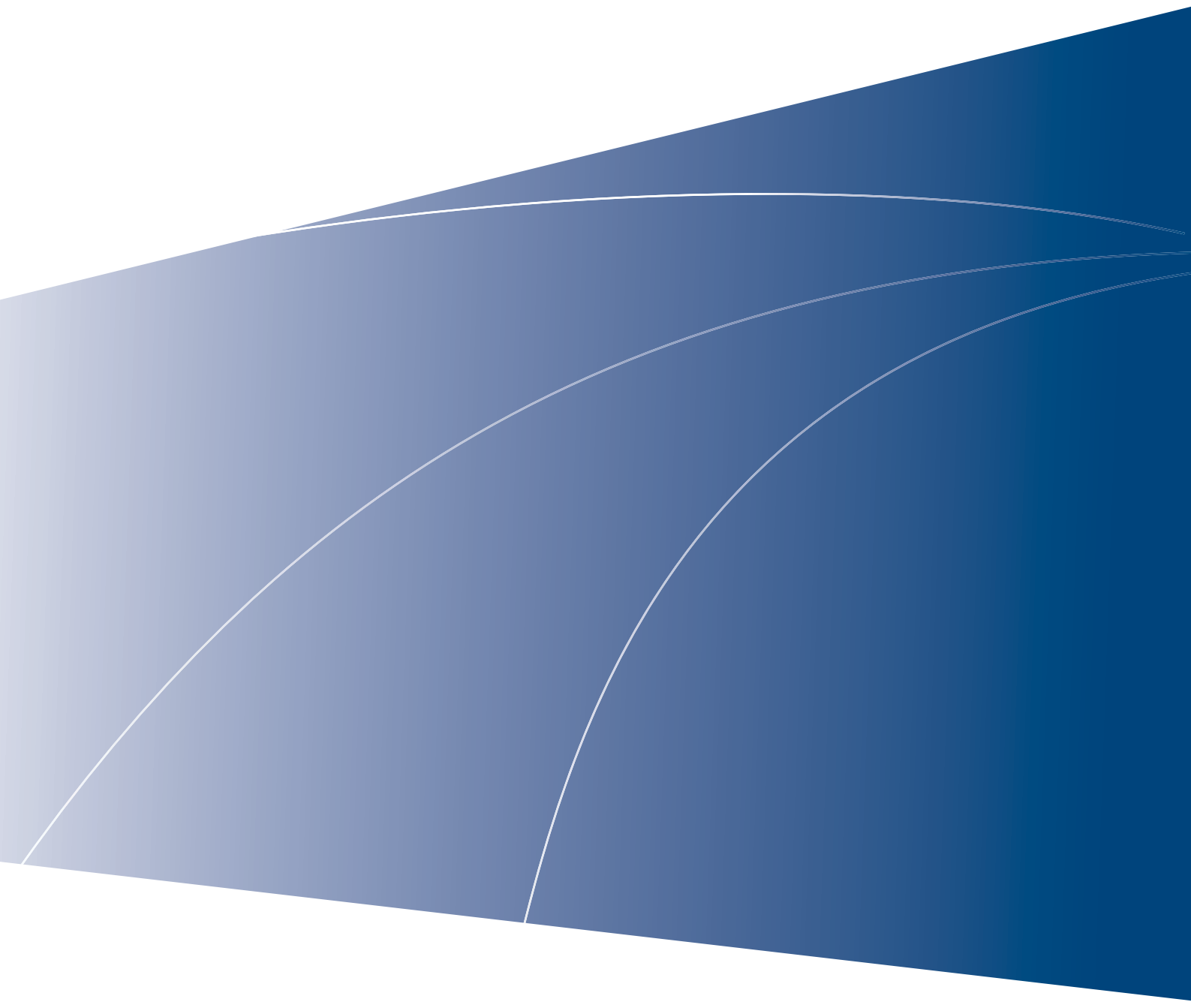

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