TYPE: SHK-A



SHK-A ATEX Bow Type Crosby™ Cabled Load Shackle

Features

- Ranges from 3.25 tonne to 400 tonne
- High tensile carbon steel construction
- Environmentally sealed to IP67
- Simple installation and operation
- Shackle and load pin fully certified
- Optional load centralisng bobbin
- Can be supplied with amplified output
- Many other options available

Typical Applications

- Under-hook hoist/crane weighing
- Cable tension monitoring
- Towing/Mooring Tension
- Crane safe load monitoring

Description

The LCM range of ATEX/IECEx load shackles is designed for lifting and weighing in rugged or harsh environments, and also meet the requirements for operation in Zone 1 and 2 hazardous areas. The shackle pins are forged from high tensile stainless steel and are machined to an exacting specification. The basic shackle uses the Crosby G2130 (1 to 25te) and G2140 (40 to 400te) series.

This range of ATEX loads shackles is proof loaded to 150% of the normal rated load, and is available in a range from 3.25 tonne to 400 tonne. The SHK-A is internally gauged and the whole instrumented area is sealed to IP67 to protect it in service. They are simple to install and are available in standard shackle sizes. As an option, a rotating bobbin can be supplied to centralise the load and to minimise any point-load effects when the shackle is placed under load.

We are also always happy to discuss any special requirements that can be accommodated. The SHK-A ATEX series can be supplied on its own or combined with our extensive range of instrumentation to provide a complete load monitoring package. Larger shackle sizes up to 1500 tonnes are also available using GN Rope shackles.

Specification

Rated load (tonnes)	3.25, 4.75, 6.5, 9.5, 12, 17, 25, 40, 55, 85, 120, 200, 300, 400
Proof load	150% of rated load
Ultimate breaking load	300% of rated load
Output	1.5mV/V at rated load (nominal)
Non-linearity	<±1.0% of rated load (typically)
Non-repeatablity	<±0.10% of rated load
Excitation voltage	10vdc recommended, 15vdc maximum
Bridge resistance	350Ω
Insulation resistance	>500MΩ @ 500vdc
Operating temperature range	-20 to +55°C
Compensated temperature range	-10 to +50°C
Zero temperature coefficient	<±0.01% of rated load/°C
Span temperature coefficient	<±0.01% of rated load/°C
Environmental protection level	IP67
Connection type	10 metre 4 core screened PUR cable (glanded exit)
Wiring connections	+ve supply: Red -ve supply: Blue +ve signal: Green -ve signal: Yellow
Certification	II 2 G EX d IIC T6 Gb IP6X Tamb -20°c to +55°c II 2 D Ex tb IIIC T85°c Db IP6X Tamb -20°c to +55°c
Certificate numbers	IECEx TRC 14.0011x, TRAC14ATEX0023x

Available Options

- Special ranges and capacities up to 1500te
- Displays and specially packaged electronics available on request
- Special electrical connections
- Integral signal conditioning
- Centralising load bobbin
- Lloyds, ABS or DNV witness testing
- External termination box (see AEN data sheet)

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Solutions in Load Cell Technology

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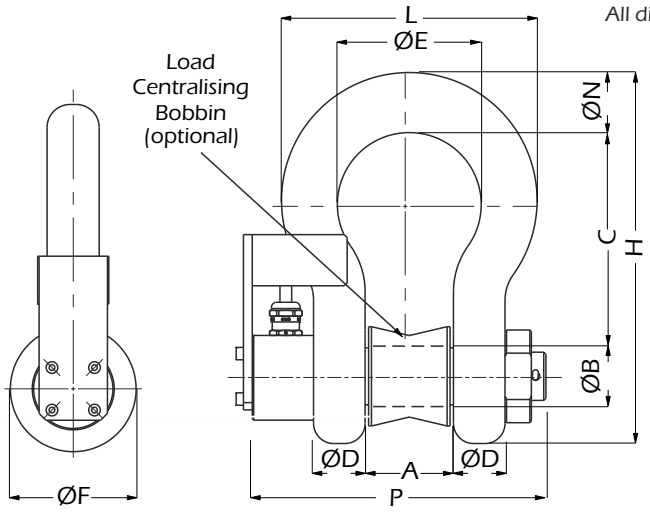


Special Options

Special ranges	The SHK-A can be supplied in any range, between 3.25te and 400te and calibrated as required. Usually we will choose the nearest standard shackle size. We can also offer special design shackles up to 1500te. Please contact our design team for more details
Special electrical	The standard SHK-A cable exits the shackle pin via a gland and is restrained using the anti-rotation bracket. We can offer variations to the electrical connection method. For example, integral connectors, special cable length etc. For more details contact our office.
Integral signal conditioning	We can offer various integral signal conditioning options: **Analogue Signals** 4-20mA 2-wire current output (7.5 to 30vdc supply) 4-20mA 3-wire current output (10 to 30vdc supply) 0-5vdc 3-wire voltage output (8.5 to 28vdc supply) 0-10vdc 3-wire voltage output (13 to 30vdc supply) **Digital Signals** RS232 digital - various protocols (5.4 to 18vdc supply) RS485 digital - various protocols (5.4 to 18vdc supply)
Centralising bobbin	We can offer an optional centralising bobbin. This helps improve the overall accuracy in certain cable tension applications. The bobbin is shown pictorially in the drawing below.

Dimensions

All dimensions are in mm



Rating (tonnes)	A	ØB	C	ØD	ØE	ØF	H	L	ØN	P	Weight (kgs)	Resolution (tonnes)
3.25	26.9	19.1	60.5	16	42.9	38.1	106	74.5	17.5	126.5	2.8	0.005
4.75	31.8	22.4	71.5	19.1	51	46	126	89	20.6	140	3	0.005
6.5	36.6	25.4	84	22.4	58	53	148	102	24.6	157	3.2	0.005
9.5	46	31.8	108	28.7	74	68.5	190	131	31.8	187	5.2	0.01
12	51.5	35.1	119	31.8	82.5	76	210	146	35.1	201	8	0.01
17	60.5	41.4	146	38.1	98.5	92	254	175	41.1	233	12	0.02
25	73	51	178	44.5	127	106	313	225	57	267	18	0.02
40	73	51	178	44.5	127	106	313	225	57	267	18	0.05
55	82.5	57	197	51	146	122	348	253	61	284	25	0.05
85	105	70	267	66.5	184	145	453	327	79	364	45	0.1
120	127	82.5	330	76	200	165	546	365	92	439	85	0.1
150	133	95.5	372	95.5	229	203	625	419	105	503	125	0.1
200	184	121	397	95.5	279	267	743	533	152	541	215	0.2
300	213	152	495	121	330	305	895	635	172	638	364	0.2
400	210	178	572	165	330	356	1022	660	184	728	520	0.5

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Due to continual product development, LCM Systems Ltd reserves the right to alter product specifications without prior notice.

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