

LCM4573 55te Low Temperature Telemetry Load Shackle

Application

Verification of the load capacity of a lifting beam

Features

- Manufactured using a Crosby G2140 bow shackle
- Existing load shackle pin used for added traceability
- Environmentally sealed to IP67
- Operating temperature range of -40 to +60°C
- Supplied with load centralising bobbin for optimal accuracy
- Transmission distance of 120m (clear line of sight)
- Supplied with custom designed software
- Complete system supplied fully calibrated and issued with certificates traceable to UKAS Standards

Design Brief

This enquiry was received from a bespoke solutions provider to the Canadian heavy lift and transportation market. Primarily supplying to the oil, energy, mining and petrochemical markets, their capabilities include jacking, lifting, weighing, ballasting and transportation. They operate a fleet of heavy lift cranes with capacities from 50te to over 1000te.

The requirement was for 55te telemetry load shackles that could function in the sub-zero temperatures of the Canadian winter, so had to be robust enough to operate consistently in temperatures as low as -40°C. The customer had seen our standard TELSHACK-B load shackles on our website, but as they are rated to -20°C, were not quite sufficient. Utilising over 30 years of load measurement experience, our design engineers were able to adapt the design to incorporate component parts with lower temperature ratings to make it suitable for their requirement.

A total of 14 telemetry load shackles were supplied, which were fitted to a lifting beam to enable load testing to be carried out. Suspended from a 750te crane, the lifting beam has 14 sliders along its length, each of which were fitted with a load shackle. Any number of sliders can be used for a lift, depending on the size and weight of the item being lifted. The sliding mechanisms enable the lifting strops to be positioned in such a way as to ensure the load is evenly distributed along the length of the lifting beam and that it is evenly balanced.

For the purposes of testing the beams load capacity, a number of counter weights were lifted and the resulting loads recorded. The photograph below shows two load shackles in use, but over the course of the tests all 14 were in operation. The load shackles performed to expectations and the customer subsequently ordered a further 14 load shackles for the testing of another lifting beam.

Main Criteria

- Must be suitable for use in extremely low temperatures
- Load cell to be a bow type load shackle
- Construction robust enough for heavy lifting environment
- Software to show individual load shackle values as well as total values
- Data transmitted wirelessly to laptop/PC
- Full material traceability



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APPLICATION NOTE

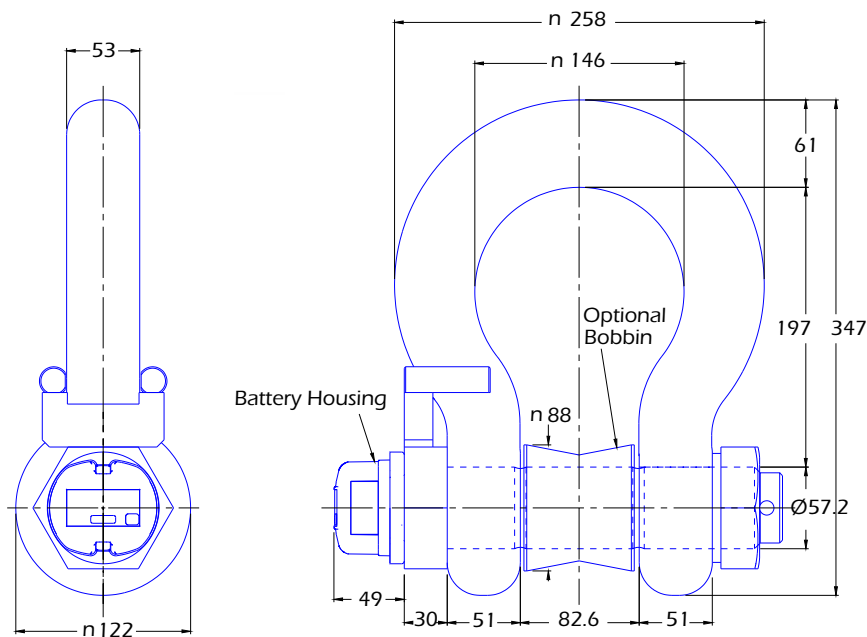


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Specification

Rated load (tonnes)	55te
Proof load	150% of rated load
Ultimate breaking load	>300% of rated load
Non-linearity	<±1% of rated load (typically)
Non-repeatability	<±0.1% of rated load
Transmission distance	Up to 120 metres (clear line of sight)
Battery life	200 hours typically (continuous use)
Battery	AAA Lithium x 2
Operating temperature range	-40 to +60°C
Internal wiring	PTFE
Environmental protection level	IP67

Dimensions



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APPROVED

(unapproved if printed)