

CWM-1 Container Weighing System (LCM4660)

Application

Container weight verification

Features

- Weighs in real time as part of normal lifting operations
- Fast and simple installation
- Utilises proven strain gauge technology
- Pins manufactured from stainless steel to IP67
- Supplied with pre-wired cable assemblies
- Non intrusive method of load measurement
- Typical accuracy of 1% of rated load
- Complete system supplied fully calibrated and issued with certificates traceable to UKAS Standards

Design Brief

We were contacted by a longstanding customer about the feasibility of supplying them with a SOLAS compliant container weighing system. We had been supplying this specialist straddle carrier and forklift manufacturer with container weighing systems for around five years, which they offered as an option on their straddle carrier range. With the introduction of updates to the SOLAS regulations, which stipulates that all containers must have a verified weight prior to shipping, they wanted a bespoke system to meet the standard that could be fitted to their equipment.



To meet the new legislative requirements, LCM Systems had to redesign the electronics of their existing system, and also introduce a new tablet display that showed the load on each individual pin and the total weight. Two existing load bearing pins were replaced with custom designed 25 tonne load measuring pins, which connect to an interface module where the mV/V output signal is converted to RS485 and the data then sent to the in-cab tablet display.

The new system was designed with pre-wired cable assemblies for connection to the interface module to allow installation to be carried out by untrained personnel, and also to facilitate fast and easy replacement of cables in the event of any becoming damaged. The tablet display, in addition to showing weight information, also has an in-built function that only allows the weight to be recorded once stable to ensure accuracy. It also includes a tare function and the facility to enter container numbers and generate reports.

Main Criteria

- Must be simple to install during manufacture or retrofit
- Load pins manufactured to dimensions of existing load bearing pin they replace
- Data to be sent to in-cab tablet display
- Software to show individual load pin weights, total container weight and load distribution values
- Must meet the requirements of SOLAS regulations
- Loads to be measured only when weight is stable



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APPLICATION NOTE

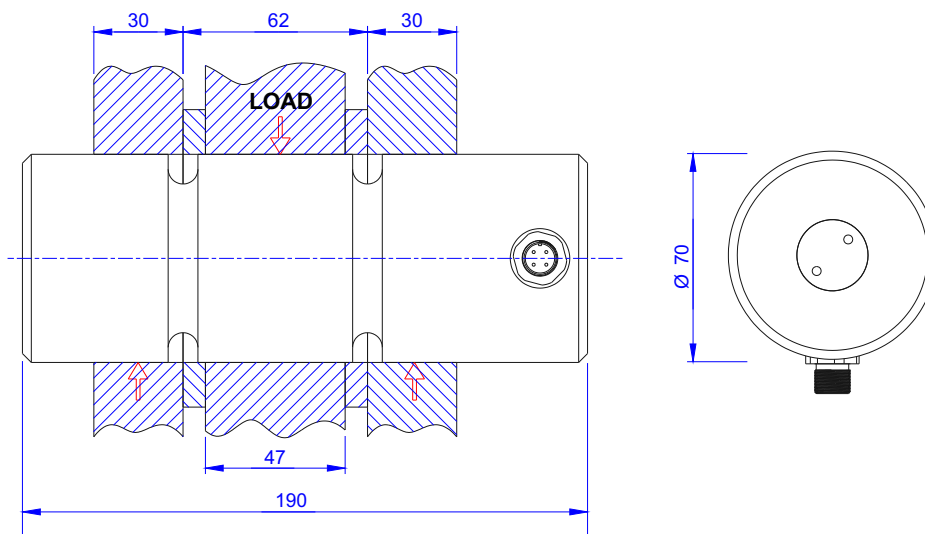
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Specification

Rated load (tonne)	25
Proof load	150% of rated load
Ultimate breaking load	>500% of rate load
Output	1.2mV/V \pm 1% (rationalised)
Non-linearity	$<\pm$ 1% of rated load (typically)
Non-repeatability	$<\pm$ 0.1% of rated load
Excitation voltage	10vdc recommended, 15vdc maximum
Bridge resistance	1000 Ω
Insulation resistance	>500M Ω @ 500vdc
Operating temperature range	-20 to +70°C
Compensated temperature range	-10 to +70°C
Zero temperature coefficient	$<\pm$ 0.01% of rated load/°C
Span temperature coefficient	$<\pm$ 0.01% of rated load/°C
Environmental protection level	IP67

Dimensions



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APPROVED

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