

Container Load Sensing & Accident Prevention

Technical Specification Sheet

LASSTEC

Twistlock Load Sensing & Accident Prevention System



The **Twistlock Load Sensing & Accident Prevention System** is designed to measure the load in each twistlock of single- or twin-lift spreaders. (For tandem lift, one system per spreader is used). The system can be used for the following:

- Ensure all twistlocks are engaged when lifting a container
- Measure exact load of each twistlock and the total container weight, even in twinlift applications
- Determine load eccentricity in single-, twinlift and Mobile Harbour Crane applications
- Prevent hoisting if one or more container corner is still locked to the stack on the vessel
- Instant snag load detection
- Detect and prevent accidental lifting of a road trailer still connected to a container
- Monitor and record twistlock load cycles to optimise replacement intervals
- Provide spreader and crane life cycle management and track overload situations



Twistlock sensors in each corner of the container capture and send valuable, individual load data to the Interrogator (data processing unit). Data is analyzed, and output signals are fed to the crane PLC and displayed on a monitor in the crane cabin.

by
LASSTEC

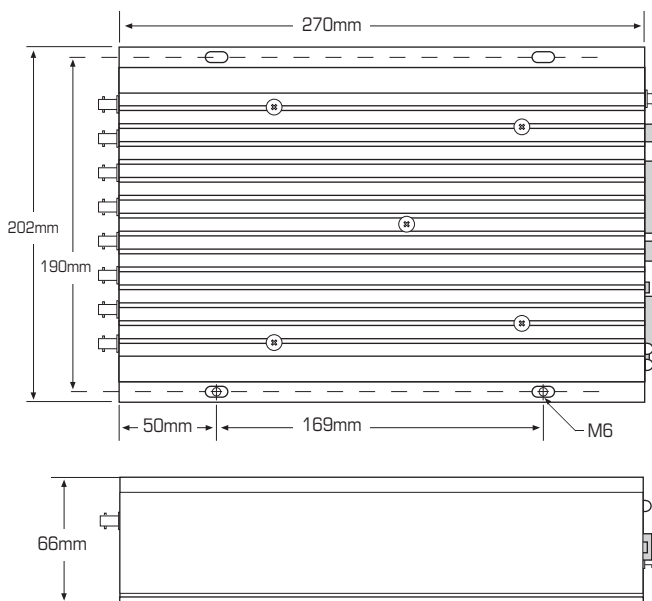
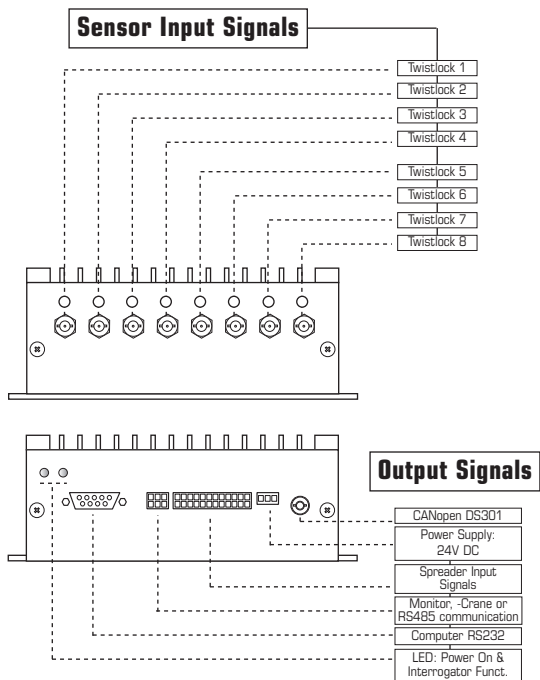


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Load and Strain Surveillance Technology
(Patented)

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- The sensor is located in a small hole drilled in the centre of the twistlock. The hole is minuscule and does not affect the overall strength of the twistlock.
- Data emanating from the twistlock sensors are fed into the interrogator (data processing unit) which is installed in the electrical cabinet of the spreader. Output signals are fed to the crane PLC and displayed on a monitor in the crane cabin.
- The system can be installed in new spreaders or retro-fitted to existing installations.
- The sensors are "solid state" and totally insensitive to shock loads and humidity.
- The system is immune to EMI, lighting and corrosive environments.
- No re-calibration is required throughout system life.
- The sensors can be installed by the customer following instructions provided by LASSTEC.

Technical Specifications	
Max. capacity reading per twistlock	60'000 kg
Load sampling rate per twistlock	50Hz
Accuracy per twistlock	± 150kg at F.S.
Interrogator Output Signals	CANopen DS301 RS485 with Modbus protocol Profibus Module (optional)
Interrogator Output Data	Date and Time, Container size, Load of each twistlock, Total load Load eccentricity (in X and y-axis) Peak load for each twistlock when lifting container, Total peak load
Alarm Data	Consult Lasstec
Interrogator power source	24VDC, 1A (min 22.5V DC/max 28.5V DC)
Interrogator protection	IP55
Interrogator operating temperature range	-30°C to +60°C
Interrogator Humidity resistance	Max 90% at 40°C without condensation
Interrogator shock & vibration resistance	According to IEC 60068-2-6
Interrogator EMC resistance	EN 61000-6-2, EN 61000-6-3, EN 61000-4-2, DIN 40839-T1
Functionality indications with built-in LEDs	Power On/Off State of Interrogator functioning
Menu driven software and PC Interface	RS232 for calibration and Interrogator diagnostic
Interrogator weight	2 kg
Signals required from the spreader	Twistlocks locked Twistlocks unlocked Spreader in 20, 30, 40 and 45ft positions Spreader in Twinlift mode

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