Safely preventing overloading

Other applications at harbour logistics

ELMS1 overload protection system – certified safety for crane systems

The tecsis product of choice here is the ELMS1 overload protection system solution, which complies with the EU Machinery Directive.

The entire solution, comprising central unit, software and load cells, is certified with PL d / SIL 2 in accordance to DIN EN ISO 13849 and DIN EN 62061 – avoiding the hassle of individual certifications after initial installation of the crane system.

The system’s intelligence is located in the central ELMS1 module. The signals from the load cells are registered on the integrated analogue inputs, guaranteeing comprehensive monitoring of load conditions.

The system enables automatic equalization of the load cells during crane system operation.

Application: reach stackers

Reach stackers are increasingly being used to load and stack containers in port operations. tecsis force, pressure and inclination sensors can effortlessly withstand the harshest of conditions brought about by shocks, temperature variations and changes in load.

Application: harbour cranes

Loading containers and goods flexibly and economically: here, tecsis can provide you with robust load cells that will reliably deliver all data to the electronic evaluation system.

Application: ship-to-shore cranes

Given the high turnover of containers in a harbour, quick processing times are crucial, so robust load cells with fitted overload protection electronics are used in ship-to-shore cranes.

ELMS1

Advantages of ELMS1:
- Safety functions for:
  - Monitoring total load
  - Monitoring up to 4 individual loads
  - Slack rope indication
- Identification and output of system, equipment and application faults via digital outputs (CANopen® or Profinet module)
- No tedious manual equalization procedure

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Overload protection in harbour logistics

Certified
PL d acc. DIN ISO 13849

ONE NAME. ALL SOLUTIONS.
Harbour logistics providers and terminal operators put their trust in tecsis measurement technology components and systems to safely prevent overloading and protect people and materials. A sure hand with clients’ technical requirements and experience in this specialist sector have made tecsis a reliable business partner for all aspects of overload protection.

Highest standards require intelligent solutions – efficient interaction of all components

Increasing speed and turnover rates require maximum safety and system availability in modern logistic processes. This is especially the case for harbour logistics.

In addition to protecting people and the functional safety of lifting gear, reducing costs with minimal down time and low servicing and maintenance overheads are of central importance.

Staying safe with tecsis – SOLAS Convention comes into effect

Keeping up with constant change and requirements in port technology calls for partners who monitor developments and can provide appropriate solutions.

Since the introduction of the new Convention for the Safety of Life at Sea (SOLAS), a verified weight must be logged for each container to be loaded. Port operators are already preparing themselves for the new convention and looking for efficient ways of satisfying these far-reaching requirements.

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Container weighing – using the twistlock sensing system

A sensor element made of top-quality stainless steel and screwed tightly into the twistlock by means of a centre-boring detects the container’s weight through the elongation of the sensor connected to the twistlock before transmitting it to the processing unit as a 4-20mA output signal.

tecsis provides the twistlock sensing system in a choice of two variants: as a complete solution, calibrated and ready-mounted in the twistlock or as a single solution with a standardised output interface. Both variants have all the advantages of the twistlock sensing system.

Advantages:
• Simple retrofitting
• Suitable for reduced installation space at spreader
• Shock- and vibration-resistant
• IP67 protection

Solution 1: Sensor in twistlock

Solution 2: Ring load cell

Recording loads directly at the container for weigh-in-motion technology:
If there is no space for a twistlock solution, the container can be weighed using a ring load cell. tecsis offers two variants: using a twistlock sensing system or using a ring load cell.

Advantages:
• Simple assembly/disassembly
• Reduced time and costs for operator
• Highly shock- and vibration-resistant
• IP67 protection