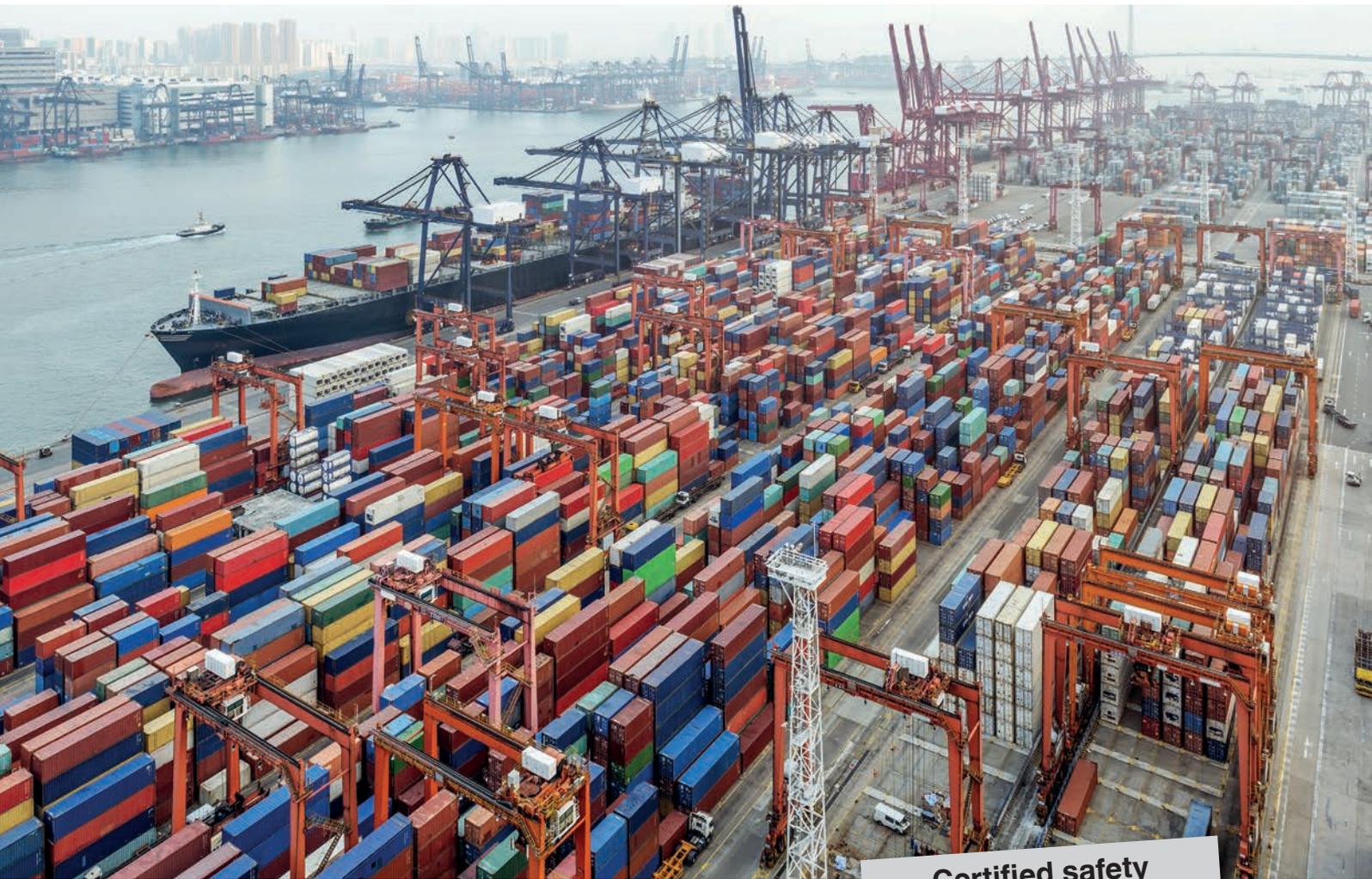


Overload protection in harbour logistics



**Certified safety
PL d acc.
DIN EN ISO 13849**

tecsis

A division of the WIKA Group

Technology for the highest safety standards

Harbour logistics providers and terminal operators put their trust in tecsis measurement technology components and systems to safely prevent overloading and protect people and machinery. 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.

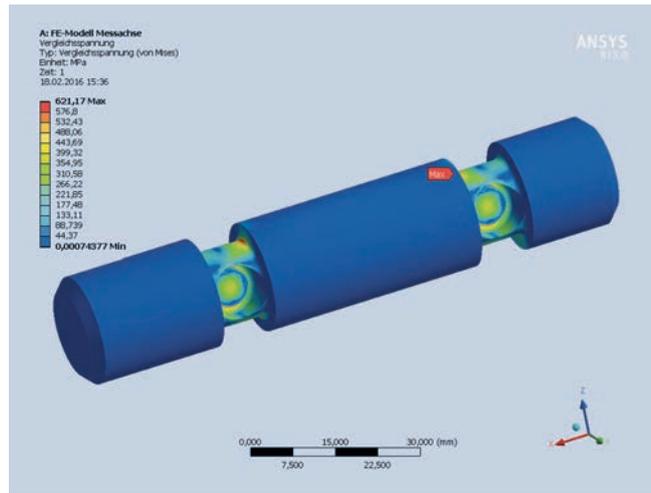
Highest standards require intelligent solutions - efficient interaction of all components

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

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.





Safely preventing overloading

Measuring loads directly at the spreader and weighing them reliably: tecsis can offer two solutions here – measuring container weight and load distribution using a ring force transducer or with the twistlock sensing system integrated into the twistlock pin.

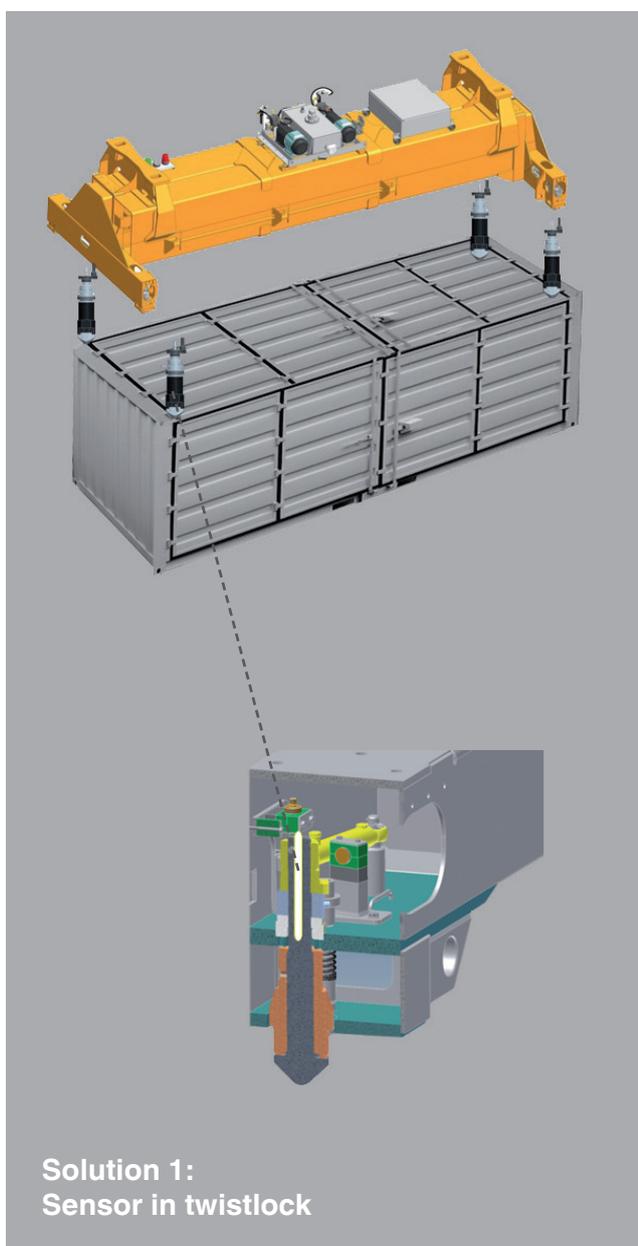
Container weighing - using the twistlock sensing system

A sensor element made of top quality stainless steel and screwed tightly into the twistlock by means of a centred 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 4-20 mA 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 (option to swap twistlock with sensor)
- Suitable for reduced installation space at spreader
- Shock- and vibration-resistant
- IP67 protection



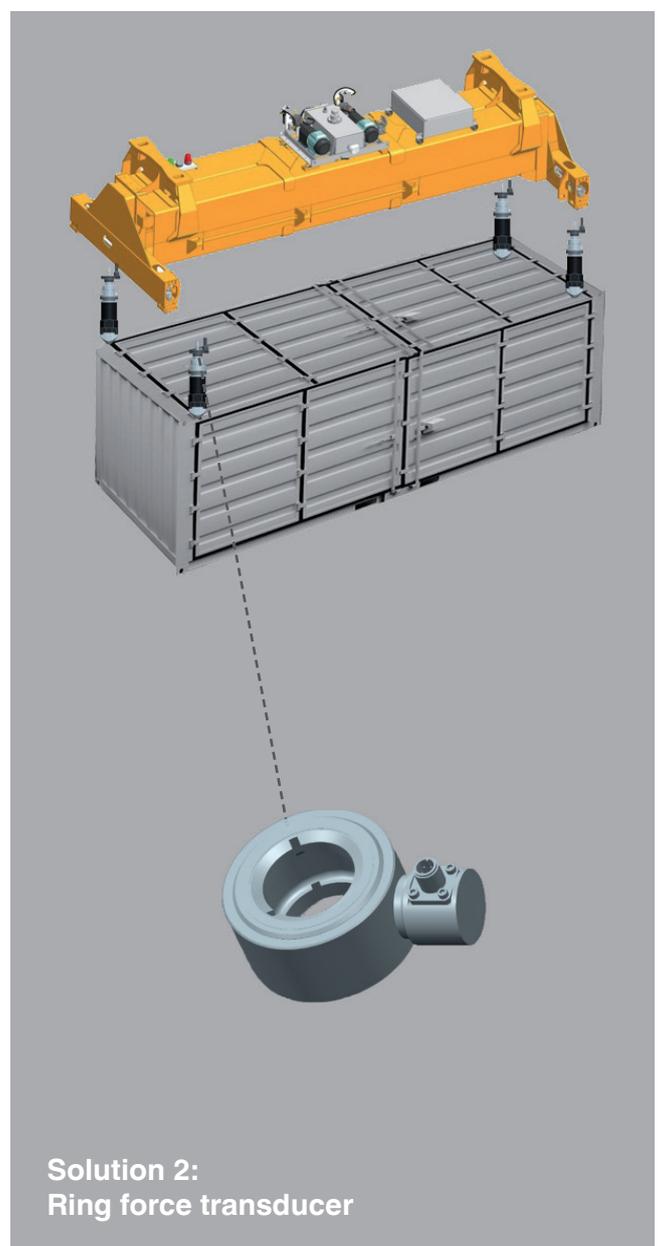
Container weighing - using a ring force transducer

A ring force transducer transmits the load created when the container is lifted to the processing unit as a 4-20 mA output signal. Here, the force transducer is located directly beneath the telescopic frame on the twistlock to which the container is locked.

Load measurement with a ring force transducer is the perfect solution when there is sufficient installation space available for the ring force transducer above the mechanism and/or where this installation space has been directly planned into the construction of the spreader.

Advantages:

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



Certified safety

ELMS1 overload protection system – certified safety for crane systems

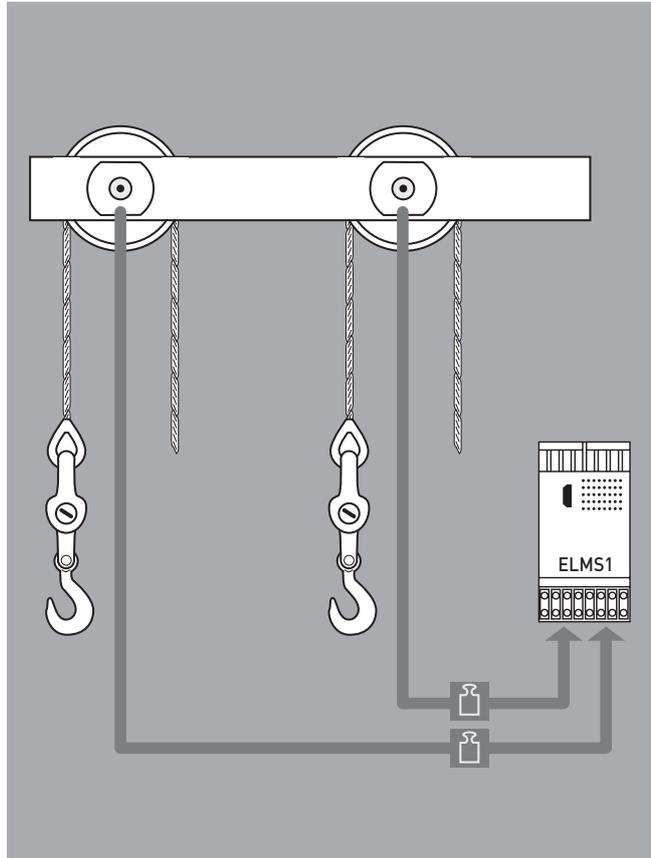
The tecsis product of choice here is the ELMS1 overload protection system solution, which complies with the EU Machinery Directive 2006/42/EG. The entire solution, comprising central unit, software and force transducers, is certified with PL d /SIL 2 in according to DIN EN ISO 13849 and DIN EN 62061 – avoiding the hassle of individual certifications after initial installation of the crane system.

The systems intelligence is located in the central ELMS1 module. The signals from the force transducers are registered via the integrated analogue inputs, guaranteeing comprehensive monitoring of load conditions. The system enables automatic equalisation of the force transducers during crane system operation.

Advantages:

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 Profibus module)
- No tedious manual equalisation procedure



Other applications at harbour logistics



Application: reach stackers

Reach stackers are increasingly being used to load and stack containers in port operations. tectsis force transducers 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, tectsis can provide you with robust force transducers that will reliably deliver all data to the electronic evaluation system.



Application: Ship-to-shore cranes

In view of the large number of containers being used in ports, fast handling times are important: In the ship-to-shore cranes, robust force transducers with associated overload protection technology are therefore used.

Put your trust in tecsis



Since 1992, tecsis has been part of the WIKA Group, a global leader in pressure, temperature and level measurement technology. WIKA employs 9,300 people in more than 40 countries and develops comprehensive solutions that are integrated into the business processes of its customers.

As a force measurement technology specialist within the group, tecsis represents innovative quality solutions for measuring and sensor technology. The product range is

designed for a very wide range of applications, from mechanical engineering to crane and lifting technology and many other industrial sectors.

With its own production facilities in Germany, the US and China, tecsis is a one-stop-shop for all key technologies: innovative measuring components with thin film sensors, strain gauges and hydraulic force transducers.

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