



CASE STUDY

CABLE CARRIERS FOR SHIP-TO-SHORE CRANES

APPLICATION OVERVIEW:

12 ship-to-shore cranes in Asia equipped with Energy Chain[®] cable carriers and Chainflex[®] cables

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12 ship-to-shore cranes in Asia equipped with Energy Chain[®] cable carriers

With a cable carrier system installed in a crane application over a travel distance of nearly 1,500 ft in Malaysia already under its belt, igus[®] began a new project in Asia, equipping 12 ship-to-shore (STS) cranes with Energy Chain[®] cable carriers (Series 5050R). The cable carriers were installed in a channel in the floor and equipped with stainless-steel guide troughs to run over travel distances reaching 1,600 ft.

[Ship-unloading crane - Malaysia](#)

PPDS online monitoring system

As part of this complex project, igus[®] installed its "PPDS" online condition monitoring system to prevent damages and downtimes. The system monitors the compressive forces and tensile strengths of the cable carriers and



improves operational safety through preventive maintenance and fine-tuning. The system compares the compressive force and tensile strength data four times a second with a pre-determined

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value. In case of an error, an alarm message is immediately and automatically generated and sent, for instance, by e-mail or SMS. An analysis of the error message is thus feasible at any required location. The stored data can also be retrieved and analyzed retrospectively for up to three months.

Technical information on PPDS

- Data entry:
Target/actual comparison of the force value on the towing arm, measured four times per second, relative to the position of the energy chains system.
- Data exchange option:
E-mail function issues a warning as per definition - by SMS, e-mail or fax. Online or e-mail remote data exchange
- Data recording:
Readout options of the system data, retrospective up to three months, with a 128 MB memory chip. Alternative: Event-dependent data output by a modem memory.

Advantages for crane builders



The main trolley on the new STS cranes travels at a speed of 13 ft/s (4 m/s). igus® Rol-Energy Chain® roller cable carriers are used for data and energy transmission. In this high-speed application, it is not necessary to use additional control or drive systems for the cable carriers. Another advantage compared to conventional systems is the weight reduction in the trolley drive system and crane carriage.

More on applied products:

[E4/4 type, Series 5050](#)

[Chainflex® cables overview](#)

More application examples from different industries

[Energy Chain® cable carrier application examples](#)