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Innokran builds 100 t crane with purpose-built control

Performance Level D and double safety

Extremely large, incredibly heavy: Spedition Kübler in Michelsfeld stores and transports anything that needs a lot of space and specialised logistics solutions. The headquarters near Schwäbisch Hall, comprising several buildings, is a conveniently located transhipment site providing ample room for storage, erection, finishing and packaging.
One of the buildings has been extended recently, and a new crane to lift loads up to 100 tonnes has been installed. As the existing crane runway was only designed for loads up to 25 t and is only being reinforced for the 100 t crane in one section of the building, a purpose-built crane control complying with strict safety regulations was required. The crane and the appropriate control were designed by Innokran, the hoist and crane components were supplied by STAHL CraneSystems, the crane technology expert.

Analysis of the crane runway and the optimised statics showed a permissible load of a maximum of 63 t in the existing building after reinforcement, however only in certain areas. Thus the width of the building was divided into three sectors. The maximum load of 63 t is permissible in the centre of the building, 40 t in the next sector and 32 t farther out. Amongst other features, this is made possible by using coupled crane endcarriages which distribute the load onto four wheels per crane runway. In future the logistics company will be able to lift the maximum load of 100 tonnes on the crane runway in the extension which has been designed accordingly.

How does the crane know what load it is allowed to lift?
32 t, 63 t, 100 t – the maximum permissible safe working load varies depending on in which sector of the building the load is lifted. When the crane runway has been reinforced, the building will be divided into a total of seven load sectors. The crane control must meet

the high standard of Performance Level D to be able to operate such a crane safely. Thus several redundant systems are used: the auxiliary control developed by Innokran and linked to the STAHL CraneSystems control is based on a failsafe SPC. The load is evaluated both by the STAHL CraneSystems SMC 22 Multicontroller and by the SPC.
Two distance lasers with millimetre accuracy establish the position of the crab, a failsafe inductive sensor determines the sector of the crane runway. The load is cross-checked by a load display on the crane control, showing the load permissible at that point, and a load display on the hoist showing the actual load. The lifting equipment used by Innokran is an AS 7 twin hoist from STAHL CraneSystems. The field-proven hoist combination of two AS 7 wire rope hoists is ideal for use in the logistics building thanks to its high safe working load and compact dimensions.
The crane had its first major assignment in March, loading two large transformers.

Photo material (lead and detail photos):

In the future, Spedition Kübler will be able to handle even heavier loads.

The hoist is a compact AS 7 ZW from STAHL CraneSystems.

Presseartikel | Press Article

Heavy load: the new crane loads transformers weighing over 70 t onto a special-purpose vehicle.

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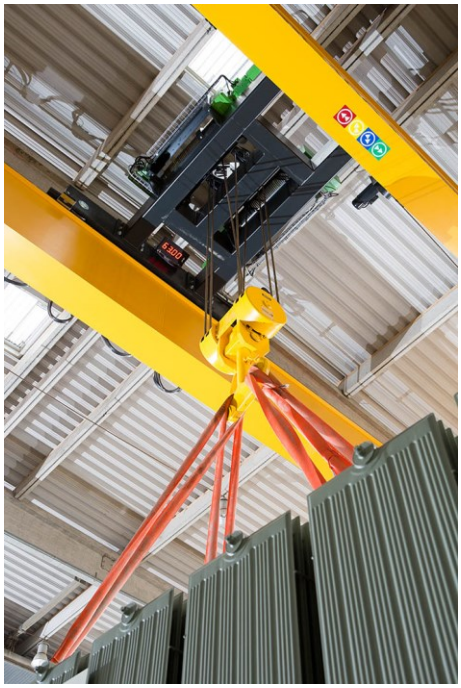

The load is crosschecked by means of a load display.

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