Intelligent solutions in lifting technology

STAHL CraneSystems offers solutions for the intelligent production of tomorrow.

The term Industry 4.0 describes the intertwining of industrial production with information and communication technologies, resulting in intelligent value chains. Comprehensive networking, automated communication and the analysis of collected data call for new technologies in production and crane systems. With the programmable SMC multicontroller, RCM remote condition monitoring system and the latest generation of frequency inverters, STAHL CraneSystems offers intelligent solutions for crane and hoisting technology.

At the end of the 18th century, mechanisation by steam and water power heralded the first industrial revolution and radically changed the economy and society through new production methods. With the invention of the assembly line and the beginning of mass production at the end of the 19th century as well as the digital revolution at the end of the 20th century, two further developments caused major upheavals in almost all spheres of life. Under the catchword “Industry 4.0”, a further change is currently taking place in industrial production: systems are being linked to enable communication and interaction between people, machines, plants, processes and products – turning rigid production steps into flexible value-added networks. Data from sensors, systems and processes are recorded, processed, shared and evaluated in real time. The networks thus function autonomously on a data basis and are able to exchange information and control themselves.

Partners in motion control: STAHL CraneSystems and Magnetek

STAHL CraneSystems offers intelligent solutions for digitisation and networking in production plants. Magnetek – like STAHL CraneSystems also a member of the Columbus McKinnon family – is a strong cooperation partner in this. The company is one of the largest suppliers of digital drive and motion control systems for industrial cranes and hoists in America. The engineers and technicians from STAHL CraneSystems and Magnetek research...
and work together in globally linked centres of excellence to develop the extensive product portfolio further.

**Products for intelligent manufacturing**

In modern production, information and communication technologies collect operating data and enable the analysis of usage behaviour, material wear and safety information. The programmable SMC multicontroller from STAHL CraneSystems as a control and evaluation device has long served as the basis for intelligent communication and networking of hoisting and crane technology. The SMC multicontroller records the complete operating data of a hoist. In addition to the total operating hours, the actual use of the hoist unit is recorded and the full load hours and the remaining service life are calculated taking load, running time and hoist speed into account. The ConfigTool from STAHL CraneSystems allows the data to be read out and evaluated on a computer. The RCM remote condition monitoring system is used for wireless data transmission in networked systems. The operating data recorded by the SMC is transmitted by the RCM to a global server via a GSM connection. Authorised persons can then access this data worldwide in real time. A further component for intelligent networking of hoisting and crane technology is the latest generation of frequency inverters from Magnetek. Their parameters can be adjusted both via external software and directly via input on the display.

**Digital transparency reduces maintenance costs and improves safety**

One of the cornerstones of Industry 4.0 is predictive maintenance. It differs from reactive maintenance, where faults are only repaired after they have occurred, and preventive maintenance, which replaces parts that are possibly still working well at fixed intervals as a precaution. In predictive maintenance, the wear of individual parts can be calculated better with the help of the data collected on a system. This means that failures can be prevented with selective maintenance measures. The SMC multicontroller, RCM remote condition monitoring system and frequency inverters record parameters relevant for maintenance with the help of functions such as brake monitoring, automatic load control and load spectrum recorder. Sway control and slack rope monitoring prevent dangerous swinging and tipping over of the load. The frequency inverters reduce the energy consumption of the system through efficient power recovery and enable intelligent motor management. Crane and crab distance protection as well as work area limits define areas which the crane or hoist may not enter. These areas are fixed using photo-electric barriers or laser measuring systems and can optionally be extended with PLC controls and touch panels. The products from STAHL CraneSystems and Magnetek thus enable more effective system management, predictive maintenance and higher occupational safety through networking and data analysis.

5.382 Zeichen (inkl. Leerzeichen)
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