The SMC 4 Multicontroller

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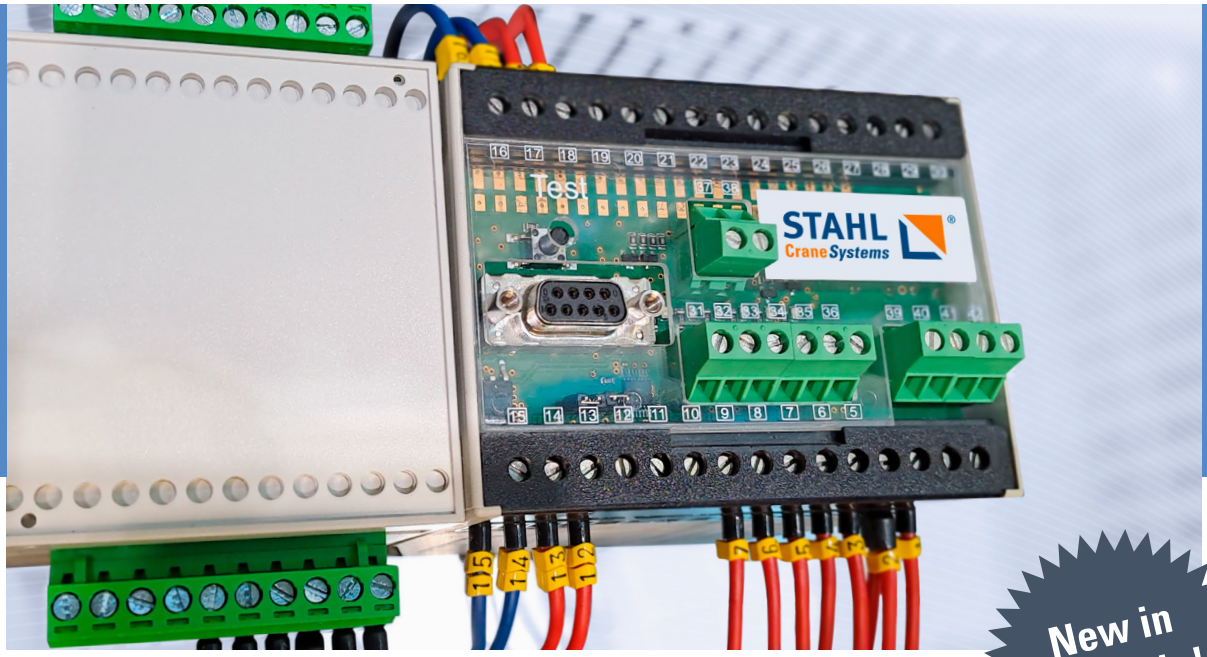

New in portfolio!

The SMC 4 Multicontroller is an electronic control and monitoring device that provides increased safety for hoists with pole-changing or frequency-controlled drives. By permanently monitoring the condition of the hoist, the SMC 4 contributes to safe operation and proper hoist use.

A Control and Safety Device All in One

Ensuring the safe and proper use of your hoist is important. The STAHL CraneSystems SMC 4 Multicontroller provides various safety and control functions in a simple, easy-to-use interface. Versatile and flexible, the SMC 4 gives you the ability to scale the device to your unique application needs with numerous functional and safety features as well as improved communication interfaces. By combining the features of the SMC 4 with the power of Magnetek's industry-leading IMPULSE®·VG+ Series 4 frequency inverter, including Advanced Ultra-Lift at partial load, you get safety and performance you can count on.

All safety-related functions and features have been updated and improved in accordance with applicable standards for lifting equipment to EN 14492-2, EN 15011 and EN 13001-2. The SMC 4 also provides integrated reliable speed monitoring in accordance with EN standards. Therefore, Performance Level PL c to DIN EN ISO 13849-1 is attained. Performance Level PL d applies to the TÜV-certified microprocessor and operating system, as well as the optional Intercept Rope Drum Brake. No other devices are required, as the SMC 4 handles all monitoring and control.

Product Overview

- Modular hardware and software
- Option Module for six additional programmable inputs and outputs
- Optional rope drum brake in Performance Level PL d
- Extended operating data acquisition and exact fault diagnostics
- Fail-safe data storage
- Configuration app access for reading out and processing data
- Amplifier for up to 500 m cable connection via RS485
- Varnished circuit boards to protect against condensation

STAHL CraneSystems | CMCO INTELLIGENT MOTION

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Features and Functions

The SMC 4 Multicontroller is a compact solution for controlling a hoist and can be configured and customized to application needs. Learn more about the wide range of features and functions of the SMC 4 that help improve safety and increase the service life of your hoist.

Slack Rope Monitoring

The SMC 4 monitors and detects the release of tension on the rope when the load reaches its position and automatically stops the lowering operation. This prevents the load attachment device from touching or falling over onto the load. Once engaged, the hoist can only be used in the upwards direction.

Load Spectrum Recorder

Logs the hoist's use and runtime. Taking into account the load capacity, operating time, and lifting speed, the recorded data is used to calculate the hoist's full load hours and remaining service life.

Brake Monitoring

The SMC 4 can be used to monitor the function and wear of the brakes. Data is recorded, evaluated and displayed via the configuration app and read out via PC interface.

Configuration App For Data Evaluation

Authorized persons can access data in the app and adjust parameters for safe operation via a wired SMC data transfer to a PC.

Load-Dependent Lifting Speed: Advanced Ultra-Lift

When the hoist is lifting a partial load (not full capacity), the Advanced Ultra-Lift feature will increase the hoist's speed up to 150 % for more efficient and economical operation.

Load Display

Sensors are used to determine load and condition values, and the load can be tared. The values determined can be sent via the SMC 4 to external load displays and suitable radio receivers for easy data viewing. Large load displays in various formats and displays on radio transmitters are available as an option.

Automatic Load Control (ALC)

To prevent load spikes when attaching and lifting loads, automatic load control (ALC) is implemented via the SMC 4. Slow speed is maintained by the hoist drive control until the load has been lifted from ground. The response is adapted to the respective application with multiple dynamic steps.

Motor Management

Easy and precise load positioning is achieved with intelligent motor management. Jog mode suppression prevents the motors from overheating and reduces stress and wear on the hoist. With a frequency converter, the load is held in suspension without the brake being activated.

Load Early Warning

If the SMC 4 is parametrised appropriately, a load warning is given when the set limit value is reached. The crane operator is warned of a dangerous situation by signalling devices such as a horn, lamp or flashing light.

Overload Cut-off

With dynamic overload protection, load sensors monitor lifting and lowering operations as well as the status of suspended loads. The SMC 4 detects any overloading of the hoist, evaluates the data and responds if the maximum permitted load is exceeded. The load is then safely lowered.

Operating Data Acquisition

Using a PC, all operating data can be accessed, evaluated, archived, and used with the configuration app for networked systems and production processes.

Radio Remote Control

Magnetek's robust radio transmitters with either pushbuttons or master switch/joystick controls ensure operator comfort and ergonomic operation.

Temperature Monitoring

The hoist and travel motors are equipped with PTC thermistor sensors for temperature monitoring as standard.

IMPULSE®·VG+ Series 4 Frequency Inverters From Magnetek

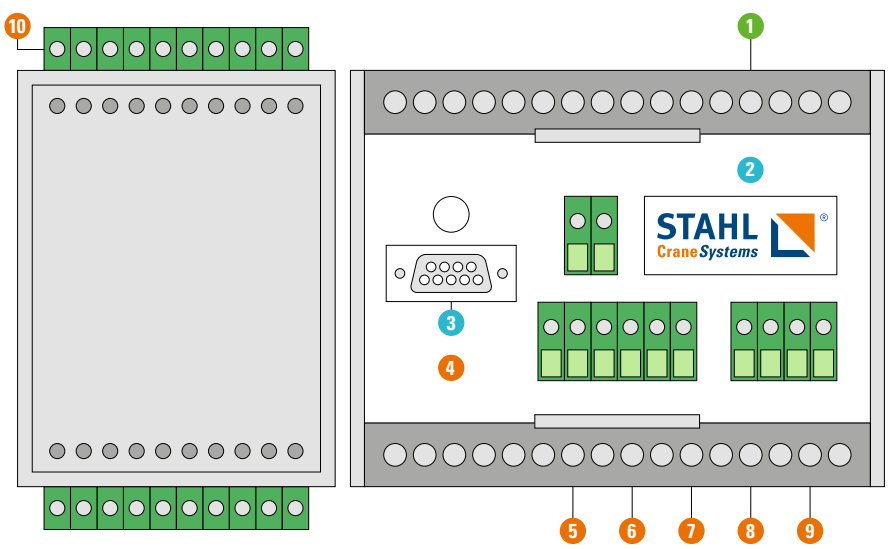
A frequency inverter is always advantageous when productivity is to be supplemented by an extended speed range. With the Advanced Ultra-Lift feature, when the hoist is not at full capacity, the speed can be safely increased to improve productivity and efficiency. Reducing the lifting speed, in turn, allows the load to be set down gently and positioned precisely.

By means of a frequency converter, the SMC 4 Multicontroller provides a range of important safety capabilities, including functional safe shutdown in case of overload, speed monitoring, improved ALC automatic load control, brake and temperature monitoring, motor management, and slack rope cut-off. It also enables control and monitoring of the hoist speed with communication via the serial Modbus interface.

Optional Rope Drum Brake

Designed as a safety intercept and holding brake, the rope drum brake prevents the load from falling even if the gearbox breaks. It also serves as an optional safety brake and is available in Performance Level PL d.

The SMC 4 Multicontroller monitors the speed of the rope drum and all functional control actions. The safety brake engages as soon as the intended speed limit is exceeded. The holding brake engages with a time delay after each stop and secures the suspended load. The control system ensures smooth operation of the rope drum brake by means of a speed sensor and pawl position switch. By monitoring the brake and the release time, the rope drum brake and complete motor control is monitored. The braking torque between pawl ring and rope drum can be checked and set at any time. The rope drum brake is available with an explosion-proof design as an option if needed.



1. Load display
   Radio remote control
2. Operating data collection
   Load spectrum recorder
   Load pre-warning
   Overload protection
3. Configuration app (data analysis)
   Frequency inverter with load-dependent speed Advanced Ultra-Lift
4. Function and error display via device LED
5. Automatic load control ALC
   Slack rope monitoring
6. Motor management
7. Brake monitoring
8. Temperature monitoring
9. Device voltage of 24 VDC
   Control voltages of 24 V…230 VAC
10. Optional rope drum brake

Wired Connection Modbus RS485 CAN-BUS

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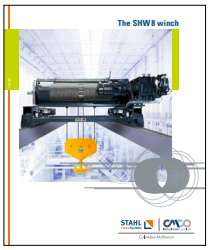

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