

## **Modular, migration-enabled, cost-conscious: the Drive Monitor for safe monitoring of drives**

**Waldkirch, November 2012 – SICK AG is introducing a new member of the Motion Control product family, the Drive Monitor FX3-MOC0 for the safe monitoring of drives in stationary and mobile applications, at the SPS/IPC/DRIVES 2012 trade fair. Drives that have not been certified as safe can be used in safety applications in combination with this new expansion module for the Flexi Soft safety controller – meeting the safety demands of PL e according to EN ISO 13849, SIL3 in line with IEC 61508, and SIL3CL in compliance with EN 62061. Multi-axis applications profit from the Drive Monitor's migration capability: expansion of up to six FX3-MOC0 modules is possible. Flexi Soft gateways ensure the technically and economically efficient integration of the Drive Monitor in all important fieldbus and network environments.**

Use of the Drive Monitor FX3-MOC0 allows implementation of the safety-oriented monitoring of drives that are fully integrated in SICK's Flexi Soft safety controller – without separation or distribution of the safety functions to the controller or drive level. This approach, which clearly differentiates between automation and safety technologies, opens up individual freedoms and opportunities for machine producers and system integrators. Thus drive components and their suppliers can be individually selected to optimize, for example, procurement, operation and maintenance costs. Unlike integrated safety solutions, this offers a high level of independence from controller and drive producers, and optimum adaptability to the differing requirements of

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end-users. The Drive Monitor FX3-MOC0 can implement comprehensive safety functions in both mobile and stationary applications.

**Safe drive monitoring in mobile applications**

The Drive Monitor FX3-MOC0 from SICK is predestined for use on automated guided vehicles (AGVs). Its safety functions provide safety-oriented monitoring of the speed of an AGV as well as switching of the warning and protection fields of the safety laser scanners integrated in the vehicle's safety concept – even if encoders that are not safety-certified are used. The Drive Monitor FX3-MOC0 controls the reduction of vehicle speed if an obstacle is detected in a scanner's warning field. It ensures that the vehicle comes to an emergency stop if a protection field is infringed. In this case, the Drive Monitor FX3-MOC0 also blocks the direction of rotation of the drive that has just been used. As a result, the vehicle can only carry out movements in one direction and can thus move safely away from the obstacle. The Drive Monitor therefore contributes to a more flexible structuring of transport processes and thus to maximum AGV efficiency and availability.

**Safe setup and maintenance work in stationary applications**

When working on or in a machine – e.g. a press, a wood or metal processing machine, or a gantry robot – the Drive Monitor monitors the safely reduced speed necessary for setup or maintenance work. The machine process must therefore not be brought to a total stop – manual reaching-in to the machine is possible with a minimum risk of injury when the speed is slowed. The Drive Monitor thus improves machine productivity. Any exceeding of this low speed is detected as a fault and results in a switch-off of the machine's drive.

### **Safe machine operation through opened mechanical guards**

The comprehensive safety functions of the Drive Monitor FX3-MOC0 also make it a flexible and safe monitoring solution for hazardous points-of-operation protected by mechanical guards such as hoods or protective doors through which, however, an operator often has to reach in to the hazardous area as a result of the particular process involved. In order to permit such a reaching-in to be carried out rapidly and safely, the Drive Monitor FX3-MOC0 initially ensures that the drive comes to a safe stop and prevents a restart. Immediately thereafter, it releases the opening of the mechanical guard and thus, without delay, access to the hazardous point-of-operation. This allows operation that is as rapid as possible and also safe, of advantage to both machine productivity and availability. In emergency situations, the stop function is required through the use of an emergency stop button, through the opening of a non-mechanically interlocked protective door or hood, or through the activation of electro-sensitive protective equipment. As a consequence, the safety functions of the Drive Monitor bring the machine to a standstill. If the machine fails to contact the controller or drive regulator due to a fault, the Drive Monitor activates a mechanical brake within a few milliseconds. Safe switch-off behavior is thus guaranteed at all times.

The Drive Monitor FX3-MOC0 allows safety-oriented drive monitoring with added value, because in addition to safety at the highest level the Motion Control module from SICK also offers an increase in machine and plant productivity.