

SPS 2021

Building control system architecture

As machines become more autonomous, functional safety is playing an increasingly role in machine design. STW has now had its ESX.3ios CAN I/O modules certified for safety applications, complementing their range of safety-certified control products.



The company is part of the SPS 2021 (Source: STW)

With the ESX.3ios from STW, the control system - e.g. of a mobile machine - can be expanded with additional inputs or outputs. In order to simplify the design of a functionally safe system architecture, and provide more flexibility in that design, STW has recently had the ESX.3ios certified by the TÜV, explained the company. These “responder” I/O modules have been certified according to EN ISO 13849 (up to Performance Level PL d) and EN 61508 (Safety Integrity Level SIL 2). In combination with a safety-certified “responder” controller, decentralized, functionally safe control architectures can be implemented, said the company.

The I/O module transfers the signals of sensors and actuators to the main controller, for example the company’s ESX.3XL, using a functionally safe method. There is no need for additional SIL2/PL d control units in this example system.

The ESX.3ios has 16 inputs and 15 outputs and is designed for harsh environmental conditions, such as those encountered in mining, construction, or agriculture. The product has a protection rating of up to IP6k9k and a specified operating temperature of -40 °C to +85 °C. The communication protocols CANopen and CANopen safety are currently supported, and support for J1939 and STW’s own Eces protocol is planned in the near future. A wake-up functionality can be implemented on CAN 1.

Due to support within the company’s open-source development and life-cycle management tool, Opensyde, the I/O modules can be configured and updated in a functionally manner. With the modular control system and the software suite, the designers of mobile machine control systems have the tools at their disposal to build a control system, explained the company.

The company is part of the SPS 2021 exhibition in Nuremberg, Germany in hall 7, stand 158.

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