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THE GATEKEEPER

Man-Machine Safeguarding News

August 2017

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NEW Catalog

Machine Guarding Safety Products catalog

Our latest edition of our GK-1 Catalog containing technical data sheets for all safety products.

Download the catalog

Literature

Machine Safety in Europe

Our latest book examines European machine safety standards and communicates the basic principles of machine safety at an international level. Hardcover.

Order a complimentary copy

Reference

Technical Article: Efficiency in Machine Safety

This paper looks at the growing trend of designing safety systems to meet the efficiency requirements of other machine control systems. It provides several examples of systems currently being used such as electronic switches and AS-Interface.

Download the PDF here

Tec.nicum Brochure

This 12 page brochure provides an overview of our safety engineering services, such as training seminars on current local and international standards, machine safety system validations, and risk assessments.

Download the PDF here

Schedule

Upcoming dates

Here are a few events in the coming months where Schmersal can be found:

General Machine Safety Training Course
8/28 Mountain View, CA
8/29 Berkley, CA
8/30 Lake Oswego, OR
8/31 Bellevue, WA

NAEC Conference
9/13 Orlando, FL

Pack Expo 2017
9/25 Las Vegas, NV
Join us in the AS-I Booth (7970, South Upper hall)

AHTD Conference
10/4 Asheville, NC

RIA National Robot Safety Conference
10/10 Pittsburg, PA

AS-I Technology Workshop
10/24 Loveland, OH

Contact Us

Visit our website

Online Product Catalog

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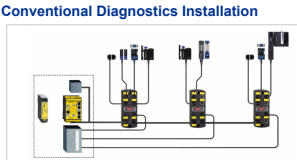
Efficient Safety

Being able to fulfil necessary safety requirements while keeping costs down is a delicate yet crucial aspect for machine controls. Safety devices have evolved to not only deliver detailed information regarding the safety system, but to also communicate directly with the automation controls of the machine. There is no question that safety must be incorporated into the machine. How to accomplish this task most efficiently without degradation to safety is the question that is continually asked and must be answered.

Schmersal offers a unique portfolio which allow multiple electronic smart sensors to be wired together to create systems of various topologies from simple series connections to complexed zoning. The CSS and RSS range of electronic devices feature internal redundant self-diagnostics allowing them to be used in the highest level of safety such as PLe to ISO 13840 and SIL3 to IEC 61508. The devices featuring RFID technology also have the capability of individual actuator coding to meet the High coding requirements of ISO 14119. Options include non-locking, solenoid or magnetic locking, IP69K ratings for high pressure /high temperature wash down, Ecolab approvals, and integrated door handle assemblies. Even though each device includes several LED's to easily and quickly diagnose the switch status, they also have the ability to be installed together seamlessly without degradations to its many features or safety rating.

Conventional Diagnostics Installation



Schmersal electronic safety devices will feature an auxiliary PNP semiconductor output to provide basic information of the guard status. In order to preserve the individual switch status in a series or zoned connection, Schmersal offers both passive and active field-box options.

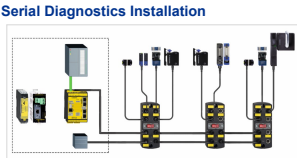
PFB-IOP-4M12-IOP

The passive field-box features fused M12 connectors for quick and easy installations of up to 4 switches per unit. Multiple field-boxes can also be wired together with an M12 cable for various application setups. Each sensor will have an LED status at the field-box M12 connection and be able to send its individual diagnostics signal to a PLC. Its IP67 rating also allows for installation outside the control panel. More

SRB-E-204PE

The active input expander allows connections of up to 4 switches per unit. Multiple SRB-E units can be series connected and easily configured via a rotary knob for various application setups. LED on its front cover provides information regarding switch outputs or errors. The 22.5mm with and din rail clip makes it an ideal installation within the control cabinet. More

Serial Diagnostics Installation



The electronic safety devices also have an option for serial diagnostics. Instead of a basic PNP output, a serial data package will send detailed information of an individual switch. This information can be communicated via a wide range of network protocols by the use of a Gateway and be displayed on a machines' HMI.

PFB-SD-4M12-SD

Similar to the conventional diagnostics PFB, however since data packages are sent by a specific device address, only one I/O cable is needed for PLC communication. More

CSS-Y

IP67 rated Y-Connectors can be used to wire serial diagnostic electronic devices. Options also include a Power Y adaptor to provide additional power to a series connection for solenoid locking devices. More

SD-I-U

The SD Gateways for the different fieldbus systems convert the serial diagnostics signal of the sensors and solenoid interlocks into the desired fieldbus protocol which include, PROFIBUS DP-V0, PROFINET IO, DeviceNet, EtherNet IP, EtherCAT, CC-Link, CANopen, and Modbus/TCP. More

Integration with Safety PLC

PSC-1

The latest generation of Schmersal safety programmable software controllers features module expansions to safely monitor up to 272 I/O points. Features include safe speed monitoring and safe communication between modules over Ethernet. Master modules also have the option for an integrated Gateway for full communication over a preferred network. More

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Ask The Expert

Devin Murray,
TÜV Functional Safety Engineer
ID-No. 4274/11

Q: What is the difference between a safety PLC and a standard PLC?

A: A safety PLC differs from standard PLC due to its added safety which is achieved by redundancy and certifications. Unlike a standard PLC, a safety PLC will have redundant microprocessors which will monitor both the inputs and outputs of the system.
A failure detected with one of the microprocessors, an input or output device will not lead to the loss of the safety function. Also, unlike a standard PLC, the safety PLC must fulfill stringent requirements of current safety standards such is ISO 61508 which will classify the safety PLC under a certain Safety Integrity Level.

Have any questions related to machine safety? Please submit them to our expert at dmurray@schmersal.com to be answered.