

The GATEKEEPER

SCHMERSAL
TURNING WORKPLACES INTO SAFEPLACES

February 2012

CONTENTS

»Knowledge is Key - Safety Starts with Education

»Webinar

»MRL News Book

»Seminar Schedule

»Safety Tutorial Videos

»Safety Standards

»Ask The Expert

»Reference

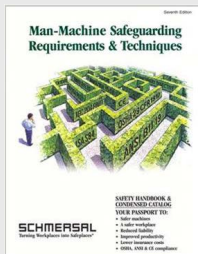
Passport

ISO13849 Guide

Links to organizations

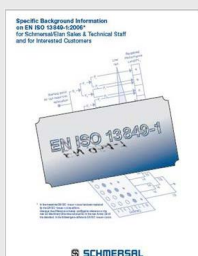
»Product Demonstration Video

REFERENCE



[Passport](#)

This 32 page Q & A tutorial is a compilation of our responses to the most frequently-asked questions from people who are actively engaged in designing machine guard systems.



[ISO 13849 Guide Specific Background](#)

Knowledge Is Key - Safety Starts With Education

Safety requirements for workers in almost all industries have evolved to insure that safety in the workplace is no longer an option. Government organizations around the world have made worker safety a priority for companies which have drawn even greater attention to the topic of safety. OSHA regulations and industrial consensus standards such as those of ANSI, ISO, and IEC aim to identify what is considered an acceptable safe environment for workers. Both protection for man and machine have become an integral part of machinery from the design phase to the production process. Standards exist today that focus on the safety of machines throughout the entire life cycle.

In addition to regulations and standards which look at the complete system, there are also those which deal with specific safety components, such as requirements for emergency stop pushbuttons, safety light curtains, interlock switches, etc. If certain hazards cannot be reduced by design, then using approved safety components can be applied to bring them to an acceptable level.

The latest product developments from Schmersal have focused on advanced safety systems designed to satisfy the most current safety standards and regulations. In addition to providing solutions through product, Schmersal also believes in providing solutions through education. As a result, we have put together educational documents such as the MRL News, offer in house training sessions and provide free webinars.

WEBINAR: General Machine Guarding

Hosted by:



February 28, 2012 - 2 pm EST

[Click here for more details](#)

Schmersal is sponsoring a New Equipment Digest Webinar titled General Machine Safeguarding - Separating Guards on February 28th. The presenter is Mike DeRosier, Engineering Services Manager for Schmersal USA and a TUV certified Functional Safety Engineer for Machinery. Click [here](#) to learn more about this one hour webinar and to register.

MRL News book

This book is designed to provide background knowledge and additional information on the subject of machine safety, as well as practical

[Information on EN ISO 13849-1:2006](#)

is a comprehensive guide to the new Risk Assessment standard.

Links

- [OSHA](#)
- [Canada Bodies](#)
- [IHS Standards store](#)
- [UL](#)
- [CSA](#)
- [ANSI](#)
- [IEC](#)
- [ISO](#)
- [RIA](#)

VIDEO



Product Demonstration: BDF200 Control Panel
Application Engineer Devin Murray shows the BDF200 control panel. (Duration: 2 min, 15 sec)

[Go to Video Page](#)

CONTACT



Schmersal USA
660 White Plains Road,
Suite 160,
Tarrytown, NY 10591
Tel: 888-496-5143
Fax: 914-347-1567
E-Mail:
Infousa@schmersal.com
Web:
www.schmersalusa.com

Schmersal Canada
15 Regan Road, Unit #3,
Brampton, Ontario L7A 1E3
Tel: 905.495.7540
Fax: 905.495.7543
E-Mail:
InfoCanada@schmersal.com
Web:
www.schmersalcanada.com

tips and helpful suggestions that can be applied to individual applications.

Available in print only: Hardcover. 200 Pages.

If you would like to receive a complimentary copy of this book, please fill in the **order form** and return it by fax or e-mail.



Schedule: Safety Training Seminars

In May we will be presenting two back to back, 7 hour safety courses in the greater Philadelphia area:

May 9: General Machine Guarding

Anyone responsible for the design, operation, or maintenance of machines needs an understanding of legal requirements, risk assessment, types of hazards, the several levels of circuit design, and available types of safety equipment and how they all come together for a complete safety solution. Let Schmersal help you take that step into the world of machine safety.



May 10: ISO 13849

ISO 13849 is a global harmonized standard relating to the risk assessment, design, and performance of safety control systems on machinery. This standard is accepted worldwide as the principle safety control design guideline and it represents a major change in the philosophy of hazard analysis and designing safety related parts of machine control systems.



Safety Tutorial Videos: Man-Machine Safeguarding

Volume 1: Principles & Practices

In this video, you'll learn how to create a safer work place, reduce liability, improve productivity and lower your insurance costs. (Duration: 16 min, 50 sec)



Volume 2: Problems and Solutions

This video goes into more depth on the types of safety switches, how they function, and how they can best be installed to achieve a safe workplace. (Duration: 15 min, 11 sec)

Volume 3: Safety Controller Application and Selection

This video demonstrates in more depth how to select and use safety controllers based on your risk analysis and machine safety requirements. (Duration: 19 min, 29 sec)

Safety Standards

The standards and regulations for machine safety form an important basis for the selection of safety switchgear. Here we have collected a listing of the **relevant safety regulations and consensus standards** for the United States, Canada, and the European Union.

ASK THE EXPERT:

Devin Murray

TUV Functional Safety Engineer
ID-No. 4274/11



Q: Why is a feedback loop needed for motor control relays?

A: Just like a safety switch is monitored by a safety controller, so should the motor control relays (MCR) when they are incorporated into the safety circuit. When the safety controller has checked its inputs and is able to reset, it will energize the MCR(s). The energized coil of the MCR will then actuate the positive-guided contacts within, which must consist of both Normally Open (NO) and Normally Closed (NC) contacts. Positive-guided contacts may also be referred to as forced-guided, mechanically linked or mirrored contacts, depending on which product standard is being referenced. These contacts differ than those of a conventional relay under a failure condition. If a NO contact were to be welded shut as a result of an electrical surge or overloading for example, then the NC contacts in the same MCR will not be able to close again leaving at least a gap of 0.5mm, which results in not being able to reset the safety controller.

The NC contact from the MCR(s) is wired into the feedback loop of the safety controller. The safety controller will monitor this closed connection to ensure the MCR contacts are operational prior to a reset or startup. Since the MCR's are an extension of the safety circuit, they need to be monitored so that failures are detected and the reset of the safety controller is prevented until the fault is cleared.