The all-rounder for safe optoelectronics
SLC/SLG 440 - 445

SLC/SLG 445

The multifunctional

■ **Multifunctional:**

Adaptable to any application with various functions in one version.

■ **Unique:**

No other manufacturer integrates all these features in one product.

■ **Efficient:**

Parameter setting without external tools (PC / software).

■ **Robust:**

The closed sensor profile offers an optimal protection under extreme mechanical loads.

all-rounder

- **User-friendly:**
Integrated set-up tool and large status
display (end cap). Reduces assembly
expenditures and lowers the costs
of the plant.

- **Budget-friendly:**
Due to the integrated functions,
no external switchgear is required.

- **Ecological:**
High protection class - safe and reliable
operation under rough ambient conditions.

- **Resource-efficient:**
Compact dimensions and low weight.

SCHMERSAL
Safe solutions for your industry

Optoelectronic safety devices

The SLC/SLG 440 - 445 product series are an efficient solution for automated process cycles, offering the highest protection of man for the user. It provides for a smooth and flexible adaptation to any machine concept by means of the integrated functions, which can be parametrized without any tools whatsoever (PC / software). The protective targets can be smoothly and effortlessly implemented if changes to the process lead to modified settings such as fixed and dynamic object blanking with variable periphery. The integrated set-up tool and status indication (7 segment display) reduce the installation expenditure and keeps the operator informed about the current operating status when the machine is running.

- Process safety with highest availability
- Reliable safety concept in case of interferences (EMC, welding sparks)
- User-friendly parameter setting, no tools required
- Integrated set-up tool

Market requirements and application usage

The users of opto-electrical protection equipment prefer systems that can be easily integrated in the surrounding structure and are operational quickly. A high level of availability is a prerequisite. Some machine and plant manufacturers are seeking a cost effective standard solution without any additional functions, others require just these functions to ensure an optimal integration of the protection equipment in the production processes.

Application usage of safety light barriers and light grids are varied. Some examples:
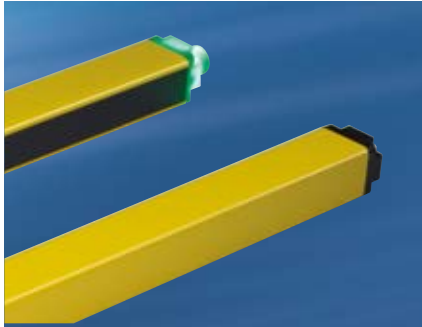
- Assembly workstations (hand and finger protection)
- Presses and other equipment of the metal processing industry (hand and finger protection)
- Robotics and assembly cells (zone protection)
- Warehouse logistics (differentiation between people and material)
- Protection of cluttered production areas (double acknowledgment).

This requirement profile shows: There has to be more than just one range. That is why Schmersal has developed the three product ranges SLC/SLG 440-445 that are based on the same technology and construction form, and cover all requirements.

Overview

SLC/SLG 440 COM
The compact solution

A range flexible in its use, whereby the protective field height corresponds to the profile length this makes it ideal for compact constructions. All standard functions are present but no more. The profile length corresponds to the protective field height to allow for optimal installation with the application.

SLC/SLG 440 standard
For classical safety requirements

Universal usage, easy to use when setting up and entering the parameters with its 7 segment display. Parameters like object blanking beam coding, contactor control and double acknowledgement can be set without any aids.

SLC/SLG 445 Multifunctional
The all-round All-rounder

The high end range portfolio. Everything that the SLC 440 range offers and even more: Multi-scan function to blank interferences, muting function to determine between people and material, and a cycle function. Use for the highest level of productivity and flexibility at the man-machine interface.
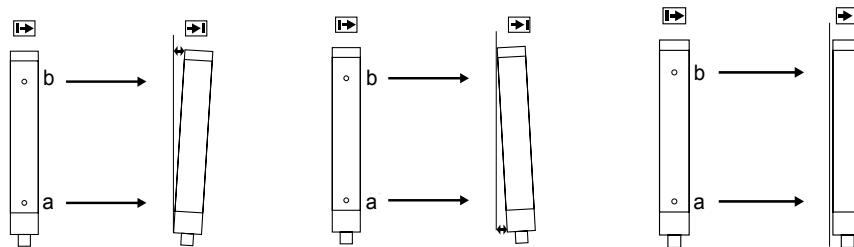
The all-rounder for your safety – SLC 445

Safety and profitability - that is what many manufacturers promise. However, we are the only one, who can offer one product featuring this variety of integrated functions without external tools.

- Automatic and restart interlock mode
- EDM contactor control
- Double acknowledgement/reset
- Stationary and dynamic object blanking
- Blanking with movable edge region
- Beam coding
- Status and diagnostic indication
- Integrated set-up tool
- Multiple sampling
- Muting
- Cyclic operation

Availability and status
User-friendly set-up tool

a) optimal

b) adjust

a) adjust

b) optimal

a) optimal

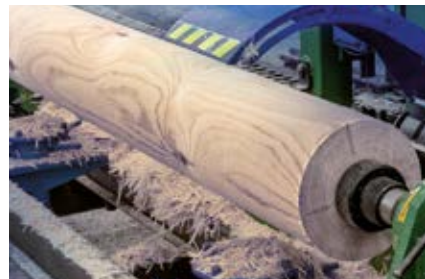b) optimal

a = Second beam
b = Last beam

Area and hazardous point protection

Profitable hazardous point protection featuring low space requirements, undisturbed access to the process and the highest user comfort.

Multiple sampling

When using machines for wood or metal processing, shavings result as part of the working process, which can impair the protection equipment (light barrier or zone protection). The protection area multiple sampling ensures trouble-free operation.
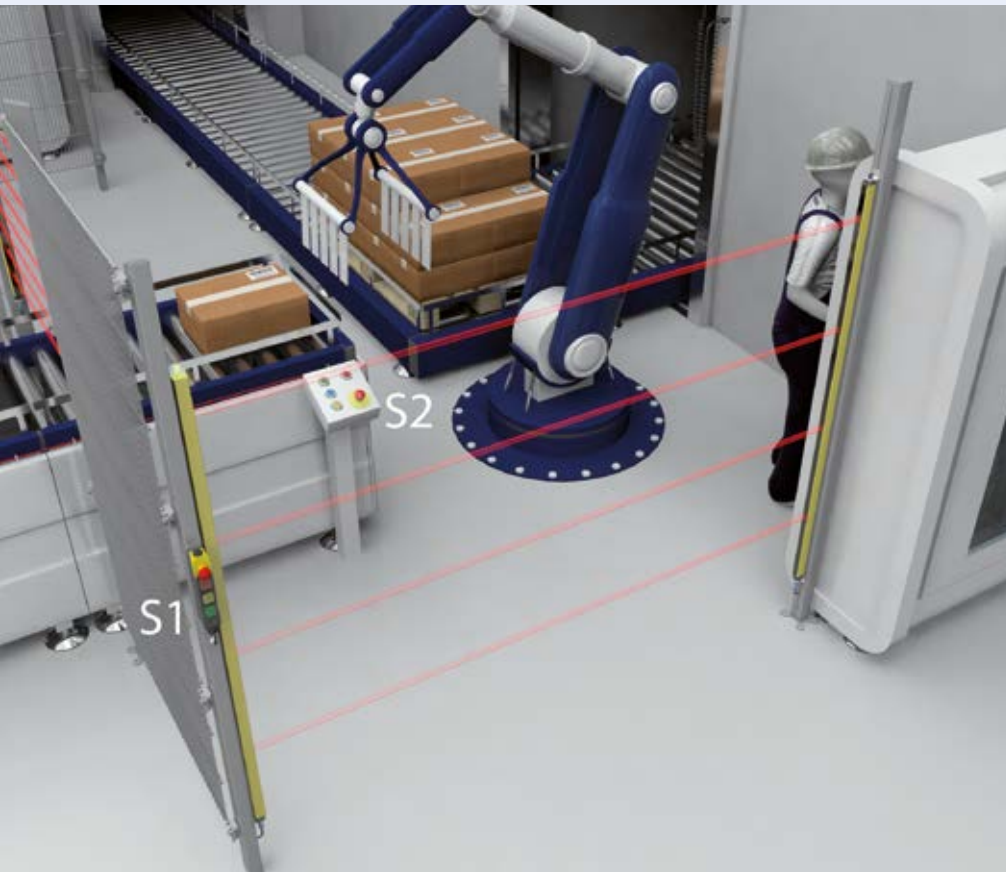

Configurable muting

Multi functional parameters settable without aids

- Muting signals 2 or 4
- Arrangement of MS sequential or diagonal
- Bridging of object gaps
- Muting END extension
- Partial muting height
- Belt-stop and override
- Enable input muting

Double acknowledgement

Large production areas which are only partly visible, present multiple risks which include persons walking behind the safety equipment, or third parties pushing the acknowledgment button thereby inadvertently restarting of the machine.

The solution: the SLC/SLG 440-445 integrates the function "Double acknowledgment". The additional input is integrated in the receiver.

As soon as anyone enters the hazardous area the hazardous movement is stopped. The safe release is then carried out.

Actuate command device S2

↓

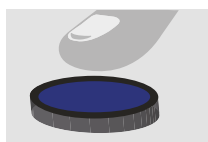Cross the protected area and release

↓

Actuate command device S1

↓

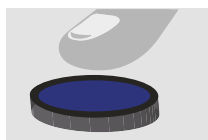Operational release

Parameter setting

Simple and quick - without tools

The function selection is implemented in parameter setting mode. To that effect, the 7-segment display offers a parameter selection, which is selected in a user-friendly manner by means of a command device (button/enabling switch) instead of a PC and software and permanently saved.
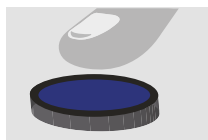
Example: Activate contactor control

Contactor control not active

↓

Contactor control active

↓

Save new configuration

↓

Contactor control function available

Advantages

- Simple menu navigation
- Very fast implementation
- No tools required
  (PC, software, external parameter setting units)

Technical data

Features	SLC/SLG440COM	SLC/SLG440 Standard	SLC/SLG445 Multifunctional
Type	Safety light grids / light curtains Type 4	Safety light grids / light curtains Type 4	Safety light grids / light curtains Type 4
Application	Hazardous point and area protection	Hazardous point and area protection	Hazardous point and area protection
Resolution	14, 30, 35 mm	14, 30 mm	14, 30 mm
Protection field height	330 mm ... 1930 mm	170 mm ... 1930 mm	170 mm … 1770 mm, depending on resolution
Range	0.3 ... 12 m, depending on resolution	0.3 ... 20 m, depending on resolution	0.3 ... 20 m, depending on resolution
Response time	10 ... 28 ms	10 ... 28 ms	10 ... 37 ms
Operating mode	Protective mode / Automatic Restart interlock (manual reset) Diagnostic and setting mode	Protective mode / Automatic Restart interlock (manual reset) Diagnostic and setting mode	Protective mode / Automatic Restart interlock (manual reset) Diagnostic and setting mode Muting and cyclic operation
Function	---	Contactor control Double acknowledgement/reset Floating and fixed blanking of objects Beam coding	Contactor control Double acknowledgement/reset Floating and fixed blanking of objects Beam coding Multiple scan Special operating mode
Synchronisation	Optical	Optical	Optical
Status indication	Illuminated element/ end cap	LED and 7 segment illuminated element/end cap	LED and 7 segment illuminated element/end cap
Safety outputs	2 x PNP (timing)	2 x PNP (timing)	2 x PNP (timing)
Protection class	IP67	IP67	IP67
Termination	Connector M12, 4 and 5 pin	Connector M12, 4 and 8 pin	Connector M12, 4 and 12 pin
Ambient temperature	−10 °C … +50 °C	−25 °C … +50 °C	−25 °C … +50 °C
Resistance to shock	10 g, 16 ms to IEC 60028-2	10 g, 16 ms to IEC 60028-2	10 g, 16 ms to IEC 60028-2
Resistance to vibrations	10 … 55 Hz to IEC 60068-2	10 … 55 Hz to IEC 60068-2	10 … 55 Hz to IEC 60068-2
Dimensions	27.8 x 33 mm	27.8 x 33 mm	27.8 x 33 mm
Safety level	PL e and SIL 3	PL e and SIL 3	PL e and SIL 3
Standards	EN 61496-1, CLC/TS 61496-2, EN ISO 13849, EN 62061	EN 61496-1, CLC/TS 61496-2, EN ISO 13849, EN 62061	EN 61496-1, CLC/TS 61496-2, EN ISO 13849, EN 62061
Approvals	TÜV cULus	TÜV cULus	TÜV cULus

Product family Type 4

Variants for custom-made concepts

Safety Control at Mühldorf, the Centre of Competence for Optoelectronics of the Schmersal Group has developed a wide range of Type 4 safety light grids and safety light curtains for various application requirements.

- Muting connection on the sensor SLC/SLG425I
- Multifunctional SLC/SLG445
- Standard SLC/SLG440
- Compact SLC/SLG440COM

The product variants enable an individual selection of the products for the necessary safety concept and ensure a high level of availability for the different customer requirements.

The Schmersal Group

In the demanding field of machine safety, the owner-managed Schmersal Group is one of the international market leaders. The company, which was founded in 1945, has a workforce of about 2000 people and seven manufacturing sites on three continents along with its own companies and sales partners in more than 60 nations.

Customers of the Schmersal Group include global players from the area of mechanical engineering and plant manufacturing as well as operators of machinery. They profit from the company's extensive expertise as a provider of systems and solutions for machine safety. Furthermore, Schmersal specialises in various areas including foodstuff production, the packaging industry, machine tool industry, lift switchgear, heavy industry and the automotive industry.

A major contribution to the systems and solutions offered by the Schmersal Group is made by tec.nicum with its comprehensive range of services: certified Functional Safety Engineers advise machinery manufacturers and machinery operators in all aspects relating to machinery and occupational safety – and do so with product and manufacturer neutrality. Furthermore, they plan and realise complex solutions for safety around the world in close collaboration with the clients.

Safety Products

- Safety switches and sensors, solenoid interlocks
- Safety controllers and safety relay modules, safety bus systems
- Optoelectronic and tactile safety devices
- Automation technology: position switches, proximity switches

Safety Systems

- Complete solutions for safeguarding hazard areas
- Individual parametrisation and programming of safety controllers
- Tailor-made safety technology – be it for individual machines or a complex production line
- Industry-specific safety solutions

Safety Services

- tec.nicum academy – Seminars and training
- tec.nicum consulting – Consultancy services
- tec.nicum engineering – Design and technical planning
- tec.nicum integration – Execution and installation

The details and data referred to have been carefully checked.
Subject to technical amendments and errors.

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