

the **sensor** people

SOLID

Reliable Safety Light Curtains for
optimal productivity in every industry



SOLID – the **standard** that sets **benchmarks**.
Uncomplicated, long-lasting and slender.

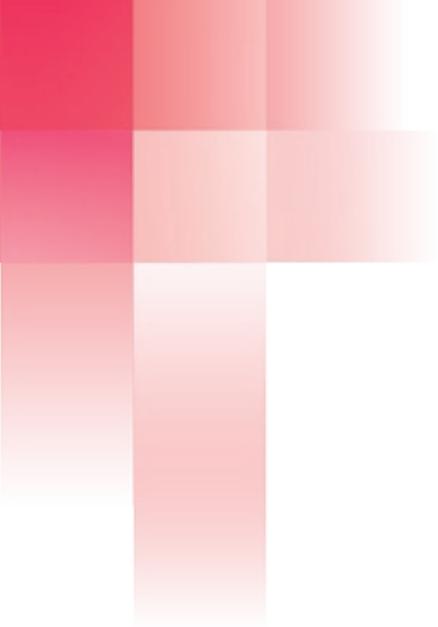
Combine high productivity
with flexible safety sensor technology.

A reliable and interference-proof safety sensor technology is a prerequisite for high system availability and achievement of production targets. At the same time the increasing costs pressure of global competition also requires an economical safety system.

Satisfying these central requirements was the maxim with the development of the SOLID Safety Light Curtains. Wherever man and machine work "hand in hand" and safety at work is a high priority, SOLID Safety Light Curtains can be used.

They can be applied vertically as hand and finger protection and access guarding, or horizontally as area protection. They meet the highest requirements with respect to integration capability, availability and cost effectiveness.





Typical SOLID features

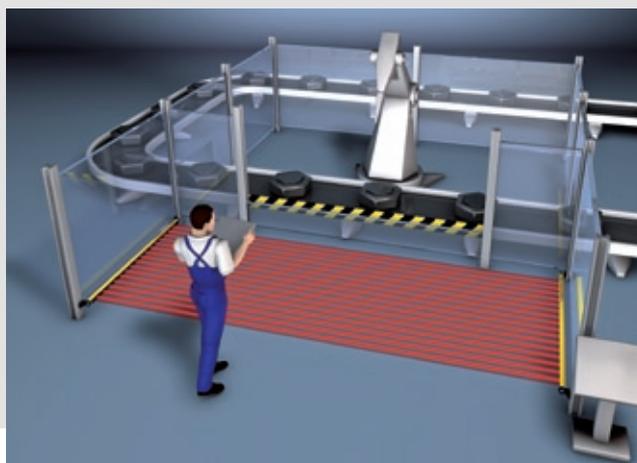
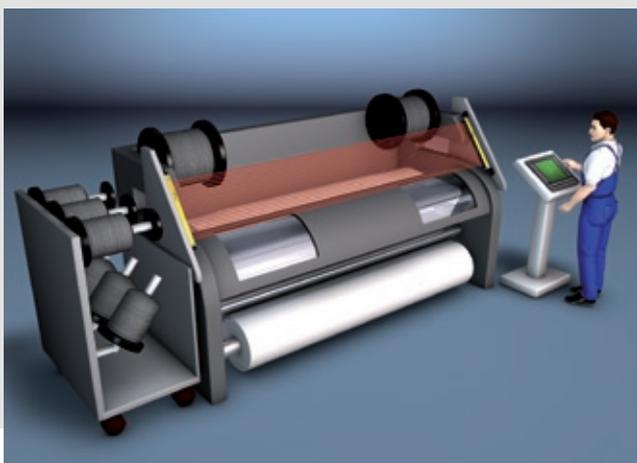
- Slender and robust aluminum housing (30x34 mm)
- Fault-free operation of adjacent devices with selection of different transmission channels
- Easy function selection with external wiring
- Maintenance-free with safety transistor outputs (OSSDs)

SOLID-2E, SOLID-4E functions

- Start/restart interlock, selectable
- Dynamic contactor monitoring, selectable
- 2 transmission channels, selectable
- LED and 7-segment display

Up to any safety requirement.

Standards conformity	SOLID-2, -2E	SOLID-2/SF	SOLID-4, -4E	SOLID-4cutter
IEC/EN 61496	Type 2	Type 2	Type 4	Type 4
IEC 61508 and IEC EN 62061	SIL 2	SIL 2	SIL 3	SIL 3
EN ISO 13849	PL d	PL d	PL e	PL e
C Standards	–	EN 1010-1/-2	–	EN 1010-3



From **classic installation** to **universal use**,
on through **special applications**.

SOLID-2, SOLID-2E
the type 2 all-rounders

With the proven SOLID-2 Safety Light Curtain Leuze electronic laid the foundation for the successful SOLID series. These devices are characterized by their robust housing design and high interference immunity. Functionalities and resolutions of 20, 30, 40 and 90 mm enable cost-optimized solutions for a wide range of applications.



SOLID-2/SF
Special solution for the
graphics industry

Custom-designed system for the delivery guard on the sheet-fed printing machines. CE, TÜV and IP 65 tested.

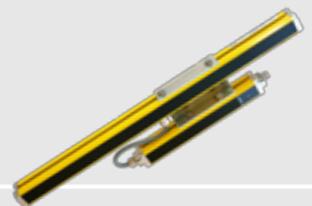


SOLID-4, SOLID-4E
the type 4 all-rounders

Safety Light Curtains from the SOLID-4E series offer reliable protection and provide for the highest system availability through their robust and interference-proof design. Versions with resolutions of 14, 20, 30, 40, 90 mm ensure short mounting times due to their slender design and versatile fixing options. The device displays (LED, 7-segment), a cascaded design as well as standard versions without restart interlock and contactor monitoring enable highly-flexible safety solutions with SOLID-4.

SOLID-4cutter
Special solution for paper
plane cutting machines

CE and TÜV tested sensor solution for efficient integration in new machines or for the conversion of old machines. The integration into different housing forms is possible. Standardized M12 connection system.



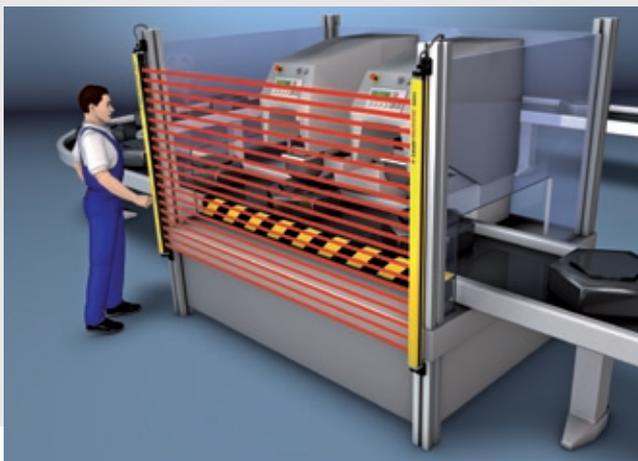
Type 2 sensors with integrated cyclical testing

Protected by a warp-resistant profile housing closed on four sides and with their uncomplicated M12 connection system, all SOLID devices withstand even the toughest industrial conditions.

The self-testing SOLID-2 and SOLID-2E type 2 sensors are predestined for hand and arm protection or for person presence detection.

Typical type 2 areas of application

Storage and conveyor systems, textile machines, the graphics industry, machinery in the timber and wood-processing industry, automatic loading systems, packaging machinery



E-versions with additional freely selectable functions

Additional functions with the SOLID-2E and SOLID-4E versions make it easier to optimally adjust the devices to the respective application in case of increased safety requirements, which can bring economic advantages. The restart interlock and contactor monitoring function as well as two different transmission channels are freely selectable for the error-free operation of adjacent devices.

Typical type 4 areas of application

The automotive industry and its suppliers, building material and glass machinery, print and paper processing machines, electrical and electronics manufacturers, robotics, the shoe and leather industry, the tobacco industry, packaging machinery, presses, wood processing machines, special-purpose machinery manufacturing



SOLID solutions – as **flexible** as your **production**.

Profit from the versatile, application-oriented and cost-efficient safety technology.

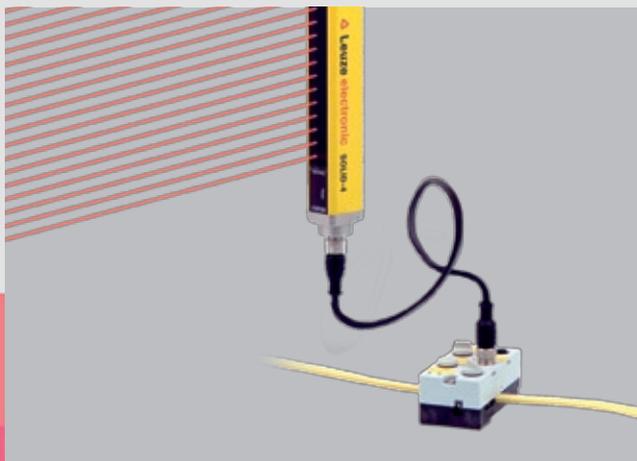
Special applications for the printing and paper industry

Safety Light Curtain **SOLID-4cutter**:
the custom-designed solution for paper plane cutting machines.

Multiple Light Beam Safety Device **SOLID-2/SF**:
the perfect solution for the delivery guard on sheet-fed printing machines. 2- or 3-beam, 4-beam system also optional. Quick integration due to simple alignment, wiring and mounting.

Simple connection to the AS-Interface safety at work bus system

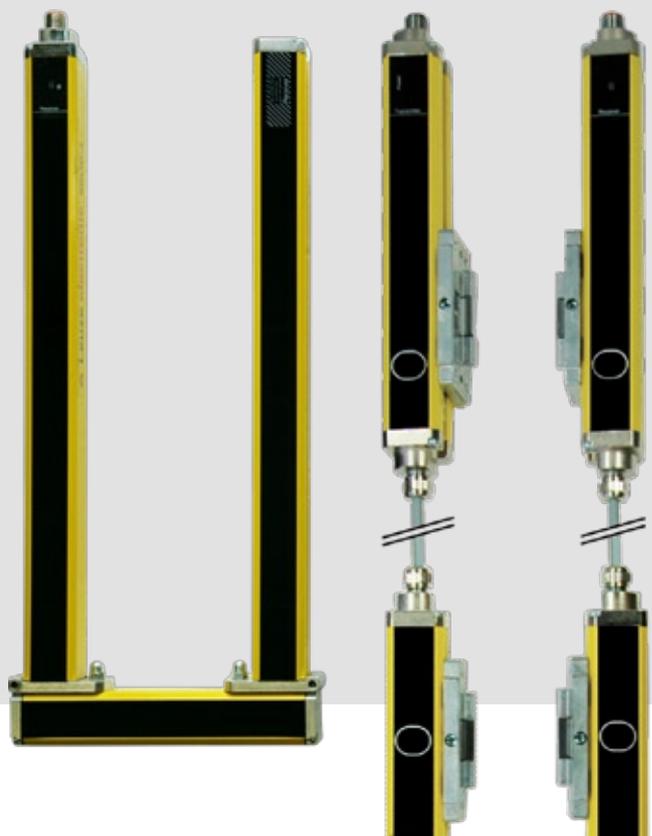
Safety bus components: **SOLID** Safety Light Curtains can be coupled simply to the AS-i networks with the safe ASKM2 coupling module.



Cascadability - clever solutions for economical applications

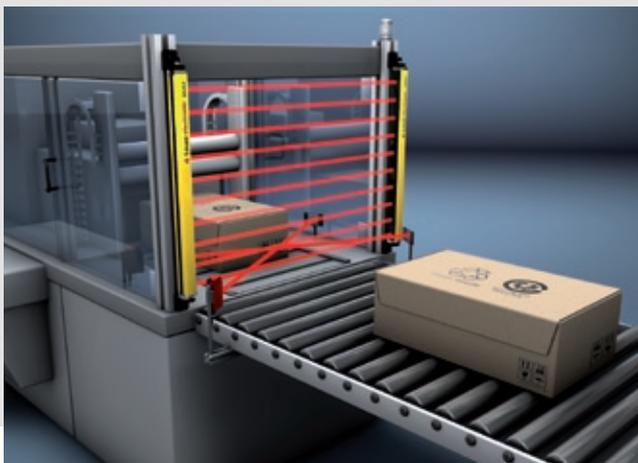
The cascading of the **SOLID-4E** Safety Light Curtains combined with the slender, torsionally-rigid housing allows for additional safeguarding options:

- Point of operation guarding with area protection (stepping behind protection)
- Multiple side safe guarding with L-shape and U-shape versions
- Optionally with flexible cascading (cable-connected) or fixed cascading



Function extensions are easily possible

- Muting or single/double-cycle control as well as the additional connection of Safety Switches or E-STOP command devices to SOLID-4 with MSI Safety Controllers
- Uncomplicated integration in the machine control with the compact MSI-RM2 and MSI-SR4 Safety Relays
- Optional protective screens for operation in rough environments, for example near welding lines
- Leuze electronic Machine Safety Services: Services for everything concerning machine safety, e. g. safety inspections



Optoelectronic Sensors

Cubic Series
Cylindrical Sensors, Mini Sensors, Fiber Optic Amplifiers
Measuring Sensors
Special Sensors
Light Curtains
Forked Sensors
Double Sheet Monitoring, Splice Detection
Inductive Switches
Accessories

Identification Systems

Data Transmission Systems

Distance Measurement

Barcode Readers
RF-IDent-System
Modular Interfacing Units
Industrial Image Processing Systems
Optical Data Transmission Systems
Optical Distance Measurement/Positioning
Mobile Code Readers

Safety Sensors

Safety Systems

Safety Services

Safety Laser Scanners
Safety Light Curtains
Transceivers and Multiple Light Beam Safety Devices
Single Light Beam Safety Devices
AS-i-Safety Product Range
Safety Sensor Technology for PROFIBUS DP
Safety Switches, Safety Locking Devices and Safety Command Devices
Safety Relays
Sensor Accessories and Signal Devices
Safety Engineering Software
Machine Safety Services

Leuze electronic GmbH + Co. KG

In der Braike 1

D-73277 Owen / Germany

Phone +49 (0) 7021 / 573-0

Fax +49 (0) 7021 / 573-199

info@leuze.de

www.leuze.com