Leuze electronic

the sensor people

MLD 500, MLD 300

Multiple Light Beam Safety Devices and Transceiver with integrated Muting

MLD – the cost-effective alternative.

The new Multiple Light Beam Safety Devices with integrated cost savings potential.

The Multiple Light Beam Safety Devices of the MLD 300 and MLD 500 series are active opto-electronic protective devices for persons at access points or at hazard locations of machines and plants. They are available as 2-, 3- and 4-beam transmitter-receiver systems as well as 2- and, for the first time, 3-beam Transceiver systems.

The systems combine a high level of safety with scalable, individual functionality. In addition to the start / restart interlock and contactor monitoring functions, various Muting modes can be selected. No PC is necessary for configuration, as the functions are set via the pin assignments at the connection of the devices – no additional modules are therefore necessary and the sensor does not need to be reconfigured when replacing a device.

Options such as the Laser Alignment Aid, a Muting indicator and the new swivel mount set for easy fastening and alignment round out the MLD product range. The user consequently has an extensive, quick and easily applicable safety system for a high level of efficiency and cost effectiveness.

Compliance with standards	MLD 300	MLD 500
Type in accordance with IEC/EN 61496	Type 2	Type 4
SIL in accordance with IEC 61508 bzw. IEC/EN 62061	SIL 2	SIL 3
Performance Level (PL) in accordance with EN ISO 13849-1	PL d	PL e

Access guardings, perimeter guardings, Muting – your requirements are decisive.

By selecting a given function class, the user can appropriately determine the performance of his safety sensor for the application and the respective requirements. In addition, the individual series have their own notable features:

- **Transceiver innovation**
  The new 3-beam Transceiver can replace more complex systems
- **Suitable for low temperature environment**
  Completely functional up to -25°C
- **Easy start-up**
  All settings, e.g. configuration of the Muting modes, are set without a PC; no programming is necessary when replacing a device via Plug & Play
- **Muting without additional devices**
  Integrated Muting functions, configurable by means of pin assignments, Muting indicator optionally built into receiver
- **Fast and precise Laser Alignment**
  Integrated Laser Alignment Aid (option) for the easy and fast alignment for long distances
- **7-segment display**
  Easy determination of the sensor behavior and appropriate countermeasures

Whether Transceiver or transmitter-receiver system – the MLD advantages are always included.

The respective equipment (function class) of the MLD series can be selected depending on the application. This applies not only to the integrated Muting functions, but also to further optional features. The MLD 330 and MLD 530 series has, for example, a 7-segment display, which you can use to immediately determine the cause of sensor behavior and initiate the proper countermeasures.

Transceiver system

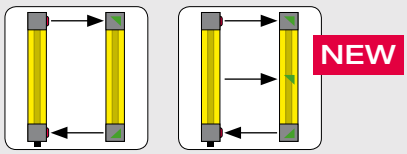
This system consists of an active transceiver (transmitter / receiver in one housing) and a passive Deflecting Mirror without electrical connection.

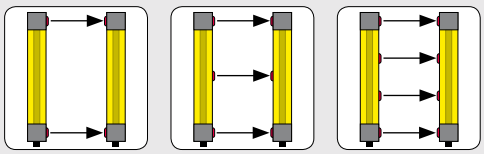
- 2- and 3-beam systems available
- Operating range from 0.5 to 8 m
- M12 connection technology
- High robustness against interferences through multiple scanning

Transmitter-receiver system

The system of separate transmitter and receiver increases the operating ranges.

- 2-, 3- and 4-beam systems available
- Operating range type 1 (MLD…-R /-T): 0.5 to 50 m
- Operating range type 2 (MLD…-xR /-xT): 20 to 70 m
- M12 connection technology
- High robustness against interferences through multiple scanning





Function	MLD 310 MLD 312 * MLD 510	MLD 320 MLD 520	MLD 330 MLD 530
Automatic start / restart	X	X	X
Start/restart interlock (RES), selectable		X	X
Contactor monitoring (EDM), selectable		X	X
Configurable operating modes		X	X
2-sensor Muting integrated (parallel, sequential)			X
Laser Alignment Aid (optional for transmitter-receiver systems)	X	X	

*) MLD 312 with external test

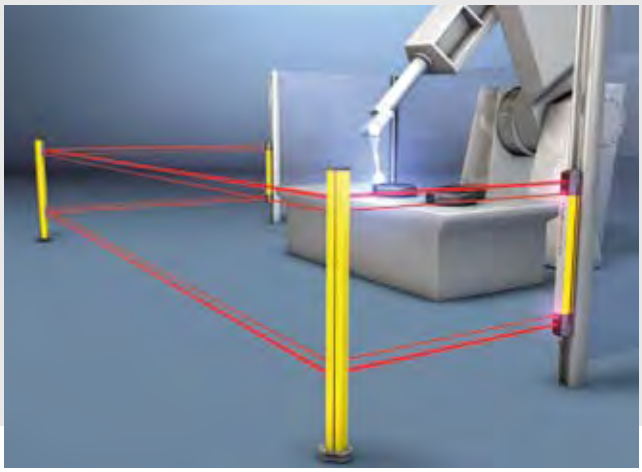
Alignment and mounting – a child's play.

Easy alignment
with integrated Laser Alignment Aid.

The series is predestined for wide-area perimeter guarding, which is realized with Deflecting Mirrors. Ranges of up to 70 m are here possible. With the integrated Laser Alignment Aid, alignment of such safeguards is noticeably simplified. A reflective element integrated in the cap on the receiver side of the system ensures clear visibility of the alignment laser spot, even over long distances. The Deflecting Mirror columns necessary for perimeter guarding are simply and quickly aligned, step-by-step. The setup time is considerably reduced.

BT-240 swivel mount (optional)
With the swivel mount, the safety sensor can be flexibly turned 240° on its own axis, easily aligned and reliably mounted – an extremely practical solution for further simplifying use of the devices and for accelerating the installation.

BT-P40 clamp bracket (optional)
With the clamp brackets, the safety sensor can, when used in device columns, be flexibly adjusted in height and easily aligned in its vertical position.



Easy alignment with integrated Laser Alignment Aid when setting up access guarding.

Configure Muting modes without a PC.

With MLD sensors, a total of 6 different Muting operating modes can easily be set. Configuration is performed by means of wiring or pin assignments at the plug and socket. Further auxiliary equipment such as PC, software etc., is no longer required and additional Muting devices are dispensable. When setting up the Muting application, all this considerably simplifies the overall construction.

With the individual operating modes, the sensor is well equipped for a wide range of Muting applications. You can implement both the 2-sensor Parallel Muting frequently used in conveyor and storage systems as well as the 2-sensor Sequential Muting preferred for applications with limited space, e.g. when moving pallets out of the danger area. If necessary, the Muting timeout can be adjusted, whereby the times can also be extended as needed. A Muting timeout of up to 8 hours is possible. In addition, you have the option of switching to partial Muting. In this case, the lower beams can be muted while the upper beam remains active. As a result, a safeguard that would otherwise be necessary, e.g. by means of guards or other protective sensors, can be eliminated.

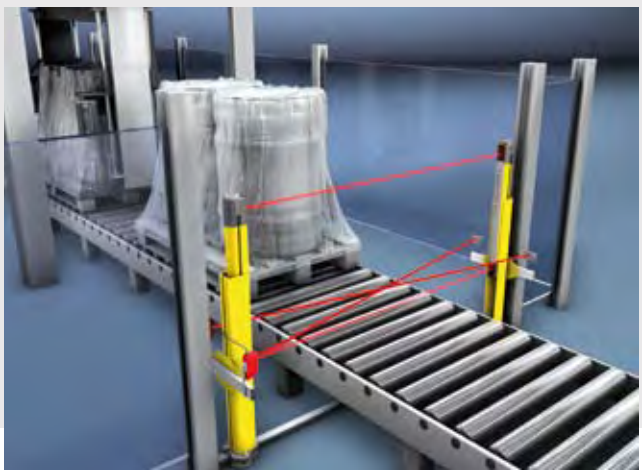
If a Muting signal comes from a PLC, the user can use the 8-pin plug (machine interface) directly on the sensor for this signal. This reduces cabling requirements. Furthermore, the Muting enable function can be used to enable or disable the Muting sequence via an external signal. This increases security against manipulation.

Safeguardings with and without Muting – simply innovative!

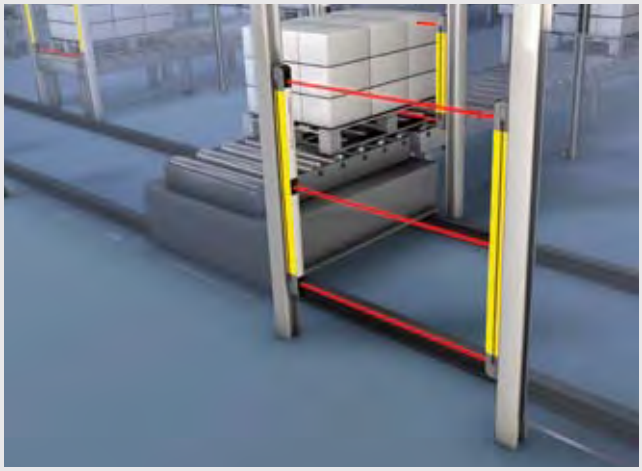
The series can be used with standard access guarding as well as for applications where sequential or parallel Muting is required. Here, too: just connect and the device is immediately ready.

Access guarding with MLD Multiple Light Beam Safety Devices in an application with partial Muting in which the lower beams can be muted and the upper beam remains active.

MLD 500 Multiple Light Beam Safety Device with integrated Muting indicator in an application with parallel Muting.



Access guarding with 3-beam Transceiver of the MLD 300 series for conveyor and storage systems.



MLD 500 Multiple Light Beam Safety Device with integrated Muting indicator in an application with sequential Muting.