

Muting without additional modules – simply innovative!

Suitable for a wide range of applications, easy to use – the new MLD 300 and MLD 500 Multiple Light Beam Safety Devices from Leuze electronic



Leuze electronic presents Multiple Light Beam Safety Devices (Type 2, Type 4) and, for the first time, 3-beam Transceiver systems as well in various function classes for access guarding, also with Muting. And no additional modules are necessary!

With technical products – from the video recorder to the mobile phone to the safety sensor – it is frequently a case of products being able to do too much or too little. Neither case is satisfactory for users. It is no secret that product developers face a great challenge in designing devices that meet the exact needs of the intended target group. This is due to, among other reasons, the fact that the requirements are anything but homogeneous. In the development of the new Multiple Light Beam Safety Device, Leuze electronic paid this issue great attention. The result: two series, various function classes, multiple options. As a result, a user can select and use the best safety sensor for his application.

Challenge: diverse requirements

Applications for Multiple Light Beam Safety Devices range from simple access guarding with short sensor ranges to wide-area perimeter guarding and safeguarding with Muting, e.g. at pallet transport paths. This range of applications alone clearly illustrates that Multiple Light Beam Safety Devices must meet numerous requirements.

Of fundamental importance from a safety perspective when selecting and using the Multiple Light Beam Safety Devices are, in addition to the required characteristic data in accordance with standards (e.g. type, category, Safety Integration Level SIL, Performance Level PL), the number of beams the sensor has. Depending on the risk potential and safety considerations, 2-, 3- or 4-beam systems are to be used.

On top of this come aspects such as the various mounting options and useful system expansions. This refers, above all, to tools for efficient installation and simple alignment – keyword Laser Alignment Aid – as well as integrative accessories depending on the application – keyword Muting indicator.

All things considered, it is, thus, advantageous from a cost effectiveness and optimum usability standpoint to use Multiple Light Beam Safety Devices that are characterized by features and functions that match the specific requirements of the given application as closely as possible. Leuze electronic specifically developed the MLD 500 (type 4, PLe) and MLD 300 (type 2, PLd) series for this purpose and designed the devices accordingly.

Solution: series with function classes

Available in both MLD series are 2-, 3- and 4-beam transmitter-receiver systems as well as 2- and 3-beam Transceiver systems. With the Transceiver (in this case, the transmitter and receiver are contained in a single housing), sensor wiring is necessary only on the Transceiver side of the protective field – the mirror can be mounted without cable connection. Here, the range is 8 m; for the transmitter-receiver system, on the other hand, ranges of 70 m are possible. These ranges are important in the case of wide-area perimeter guarding, which is realized with Deflecting Mirrors. In both versions, the sensor can be operated without problem at ambient temperatures as low as -30 °C.

The new MLD sensors are characterized, in particular, by their individual "function classes". The user can select precisely the functions that he needs for his application – not more and not less. Depending on function class, start/restart interlock (RES), contactor monitoring (EDM) or various Muting modes (table) can be selected. No PC is necessary for configuration, as the functions are set via the pin assignments at the connection. No reconfiguration is necessary when replacing a device.

Muting: ready-to-use

The devices of the two series can be used both for standard access guarding as well as for applications where sequential, parallel or partial Muting is required. Configuration is simply performed by means of wiring or through pin assignments at the plug and socket. Additional Muting devices are not required.

If a Muting signal does not come from Muting sensors, but instead from a system control, the user can use the 8-pin plug (machine interface) directly on the sensor for this signal. This reduces cabling requirements. Furthermore, with the MLD 330 and MLD 530 series, the Muting enable function can be used to enable or disable the Muting sequence via an external signal. This increases, in particular, security against tampering.

Other options offer nearly everything that the user might need. For example, with certain MLD device versions, the Muting indicator is already integrated. When setting up the Muting application, these features simplify the overall construction – and this can be a contributing factor in considerably lowering costs!

Setup: simple and efficient

When setting up both simple as well as complex applications and operating modes, the MLD series support the user with LEDs and an easy-to-read, 7-segment display. This simplifies checking the proper function and, if necessary, troubleshooting. Using the messages that appear on the 7-segment display, the user can immediately determine the cause of the sensor behavior and take appropriate countermeasures, for example: clean front screen, check wiring, correct operating mode and configuration of the Muting sensors and similar.

Transmitter and receiver are normally aligned with the aid of the LEDs, i.e. the diode generally illuminates green if the devices are properly positioned with respect to one another. This method is not suitable for longer distances, because the position of the beam axis reacts sensitively to alignment movements at the sensor at these distances and the LEDs are not usually easy to identify from a distance. This motivated the product developers at Leuze electronic to come up with another special feature: the integrated Laser Alignment Aid. This makes alignment of the devices child's play – not a game of patience.

The laser beam activated on the transmitter side causes a reflective element on the receiver to visibly illuminate over a long distance, allowing the installer to immediately recognize whether the devices are correctly positioned relative to one another. If Deflecting Mirrors are used for perimeter guarding, the laser beam is used to align the subsequent Deflecting Mirror columns one by one and correctly align the Deflecting

Mirrors. This is performed quickly and easily, even over long distances – the setup time for perimeter guarding can be considerably reduced in this way.

With the new BT-240 swivel mount, the MLD sensors can be mechanically mounted. With this mounting bracket, the user can flexibly turn the safety sensor by 240 degrees, easily align and reliably mount – a very practical solution for further simplifying and speeding up alignment and mounting. Clamp brackets can be used to secure the sensors in device columns.

Summary: the requirements of the users are decisive

As well-established sensors, Multiple Light Beam Safety Devices are not constantly reinvented by Leuze electronic. Yet, if one considers all of the facts, the manufacturer has, with the new MLD series, scored a particular success: a further development that satisfies the users' demands for diversity and simplicity. In other words: tailor-made functionality.

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About the company

The extensive line of sensor products from Leuze electronic is used around the world in the automobile industry, in conveyor and storage systems and in packaging technology as well as in printing machines and analysis technology. These include technologically trendsetting identification systems, data transmission systems and image processing systems that have become an essential part of automatic processes in industry and logistics. Optoelectronic Protective Devices for safety at work and industrial automation round out the range of solutions.

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Author

Dipl. Physicist *Andreas Jüttner* is product manager for, among other products, the MLD series at Leuze electronic GmbH + Co. KG, Safety Systems Division, Fuerstenfeldbruck.

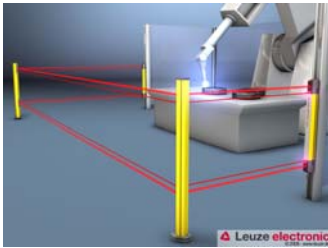
Table: Function of the MLD 300 and MLD 500 series:

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
Contacting 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

Selection of images





Easy alignment with integrated Laser Alignment Aid when setting up access guarding with the MLD 500 series



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



Access guarding with MLD Multiple Light Beam Safety Devices in an application with partial Muting



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

Press inquiries

Leuze electronic GmbH + Co. KG
Matthias May, Tel. +49 8141 5350-123
matthias.may@leuze.de, www.leuze.com

