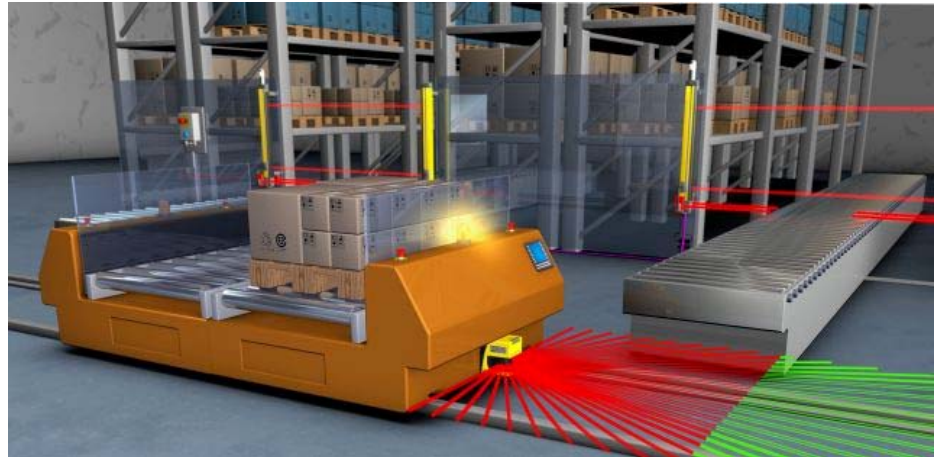


Leuze electronic Safety Laser Scanners now with new function “Motion”

ROTOSCAN RS4-4M with customized functions for operating transfer trolleys

Among other special features, intelligent sensors boast the ability to perform several tasks at once, so that a task can generally be completed quicker and easier – and the user saves money in the process. The new ROTOSCAN RS4-4M Safety Laser Scanner is a good example of this kind of function integration. Leuze electronic presented the function extensions of its flexible multi-talent for people safety for the first time at the Hanover Trade Fair 2008: “MotionMonitoring” and “Distance Measuring”.

The “M” in the ROTOSCAN RS4-4M product name stands for “motion”, and is there to show that this new member of the Leuze electronic Safety Laser Scanner family is ideal for mobile applications in particular (title picture). Compactness, low



energy consumption, various detection/warning zone combinations and a status-dependent zone changeover are the essential features of Safety Laser Scanners for guarding material handling vehicles (picture 1). The new ROTOSCAN RS4-4M (picture 2)

meets these requirements and has been equipped with two further important functions for this application.

Reliable speed and distance measuring

In addition to the reliable travel path guarding, the RS4-4M also enables highly reliable speed measurements for the MotionMonitoring and distance measurements for the positioning. “Reliable” here means that the measurement is tolerant with regard to objects that at times are in the measuring zone outside the warning/detection zone, because a system stop is not activated in this situation. The current measured values are given a Q value instead, which awards it a certain “quality”. The respective quality or “measured quality” of the data determines the further behavior of the Safety Laser Scanner.

An example: A transfer trolley with the ROTOSCAN RS4-4M Laser Scanner for travel path guarding



Pict 1: Transfer trolley with mounted Safety Laser Scanners for travel path guarding

moves corridor-connected in a specific direction. The “reliable” measurement now allows people to move easily through the measuring zone, which ranges for well over 30 meters. This actually results in a reduction in the measured quality, however the RS4-4M does not activate a stop signal. Only when the quality drops below a certain value will the scanner issue a signal and make an entry in the dynamically running software log.

The benefit of the reliable measurement is clear to see. The transfer trolley operation runs extremely fault-free and efficiently; internal movements on the travel path do not cause any interferences.

MotionMonitoring with transfer trolley operation

MotionMonitoring allows up to 6 speed values to be monitored and detection zones to be adjusted as required. No additional increment encoders are required here – the entire functionality is performed by the scanner and the PLC. A safety PLC is therefore no longer necessary in most cases. The protection area in accordance with the traveling direction and traveling speed is automatically adjusted using the detection zones and their situation-conditional activation (see box).

If, for example, a specified speed is exceeded as a transfer trolley passes by, the detection zone automatically changes over to the next, i.e. an extended detection zone is activated and the safety is guaranteed again. This in turn means that the transfer trolley can always move safely at a high speed, because the detection zones extend in a preset scaling.

Only when the speed increases again does the scanner immediately

activate a system stop after a specific permissible limit value is reached. The speed may also be downgraded beforehand, which avoids an emergency stop in many cases. A status-dependent detection/warning zone changeover can also be easily implemented, with a forward or reverse movement, for example. The continuous detection zone adjustment also enables a much more efficient operation.

The software provides an important special feature when it comes to efficiency. The user must only define



Pict. 2: The ROTOSCAN RS4-4M Safety Laser Scanner with the new function “Motion”: especially effective for operating transfer trolleys

two speed scenarios, preselect the detection zone lengths, and define the detection zone contours. The program takes care of everything else with the integrated braking distance interpolation. This means that only the desired transfer trolley speeds have to be specified; the corresponding detection zone contours are already calculated automatically – another example of how the overall sensor technology becomes more intelligent and can make the user’s work so much easier.

Distance measuring for positioning transfer trolleys

The ROTOSCAN RS4-4M continues to impress with a new measuring method that allows it to measure distances to and from defined reference planes. This procedure makes it possible to precisely determine positions. A transfer trolley can consequently stop exactly where it is supposed to in front of a conveyor belt to transfer the transported material.

In addition to the classic areas of application with danger zone guarding on mobile systems, the ROTOSCAN RS4-4M extended version also has the necessary approvals for vertical access and point of operation guarding. The Laser Scanner’s resolution can be varied between 30 mm and 150 mm.

ROTOSCAN RS4 – the scanner family for every application

The ROTOSCAN RS4 Safety Laser Scanner can be individually adapted to the user’s requirements and easily integrated into production processes at the same time. Using the RS4soft PC configuration software, the shape of the zone contours is graphically set up according to the local conditions and required safety distances.

In the same way, all other parameters can also be quickly and effectively set according to the requirements of the production process. Whether it be hand or arm protection, for danger zone guarding or access guarding – Leuze electronic Safety Laser Scanners are versatile in their adaption to every situation, and offer the user flexible options for people protection. They comply with SIL 2 in acc. with IEC/EN 61508 and type 3 in acc. with IEC/EN 61496.

Whether it's RS4-4, RS4-4E or RS4-4M, whether for AS-i Safety at Work or for PROFiSafe – all ROTOSCAN RS4 series originate from one single device family and therefore provide a high degree of compatibility in their application. This has many advantages, but particularly when swapping out a Laser Scanner with

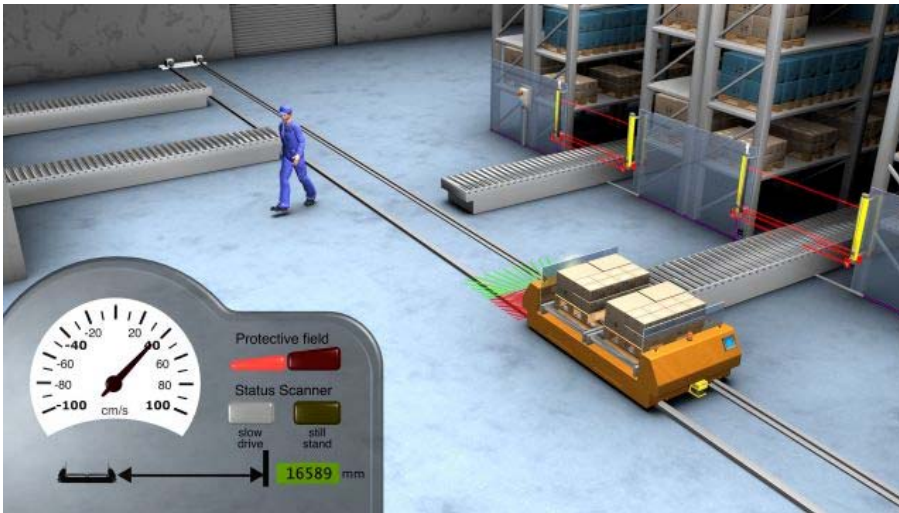
the intelligent ConfigPlug device plug, because it is compatible with the entire ROTOSCAN RS4 family.

Using the ConfigPlug device plug is incredibly easy. After an initial configuration of the Laser Scanner with the easy to use and self-explanatory RS4soft software, all

settings are kept permanently in the plug. The configuration saved in the ConfigPlug is already transferred to the new device with the swap-out, and the system can continue to run with no problems whatsoever. Safety technology has to be this easy today!

ROTOSCAN RS4-4M animated film

At its stand at this year's Hanover Trade Fair, Leuze electronic showed an animated film that impressively illustrates the innovative functionality of the new RS4-4M Safety Laser Scanner (picture 3). The film uses a transfer trolley to demonstrate the MotionMonitoring function and precise positioning on a conveyor line. You can also watch the film on the Leuze electronic homepage at www.leuze.com/rs4m.



Pict: 3: A clip from an RS4-4M animated film that very precisely shows the new functions can be seen at www.leuze.com/rs4m