

APPLICATION SAFETY LIGHT CURTAINS

A metal foundry manufactures e.g. flywheels for use in the automotive industry. After the metal has been cast, the blanks are mechanically processed to produce a ready-to-install component.

To optimize the production process, a robot was integrated to automatically load the components onto an oven conveyor. The transport racks and pallets are set down at separate retrieval points by a forklift and fed into the process via roller conveyors so that the robot can then collect the components and place them onto the oven conveyor. Here, access to the danger zone and the movement area of the robot must be safeguarded at all times. It was not possible to use safety guards or gates for this application because opening and closing of the gates would have resulted in unacceptable delays and installation would have been too complex and costly.

Instead it was decided to use the OY32 safety light curtains (performance level 'e', category 4) from ipf electronic. The systems with a resolution of 30mm (hand protection) are designed in such a way that they safeguard access points at the transfer stations on both sides (loading and robot side). As a result, they protect the hazardous area against unauthorized entry and also provide collision protection between the robot and e.g. a forklift during loading of the components. When the robot takes a component from a pallet and thus interrupts the inner light curtain, the process remains active. If, however, the outer light curtain is interrupted, this causes immediate shutdown of the robot. The same thing happens if the robot interrupts the inner light curtain and a person attempts to enter the robot's working area. In this way it was possible to ensure efficient plant operation without compromising plant safety.



Automated loading of an oven conveyor