

Diffuse laser sensor with background suppression

OHDM 16

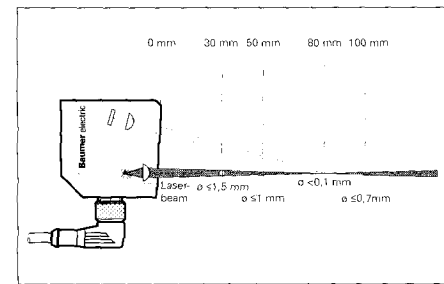
General

The new diffuse sensor with a laser light source and background suppression has been especially developed for very precise positioning tasks. Even very small targets like threads or connecting wires of electronic components are accurately detectable and easily

countable due to a well collimated laser beam. Applications that previously called for expensive devices or may have been considered impossible to solve with standard diffuse sensors can now be realized.

Working principle

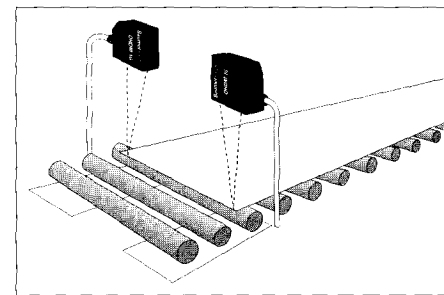
The sensor is based on the triangulation principle like standard diffuse sensors with background suppression. It is not the intensity but the angle of the light reflected by the target that determines the sensing point. Most accurate results are obtained at a distance of 80 mm from the sensing face, where the slightly convergent light beam is narrowest before it widens up again. Excellent beam visibility combined with low laser power emitted assures safe and easy handling of this laser class 2



device in every application. The only thing that must be avoided at all times is to stare directly into the light beam.

Device setup

A sensor with background suppression must be mounted and adjusted in such a way so that everything in the background is cancelled out by a safe margin. This proper setup guarantees reliable target detection in most applications. Please note that objects must approach the sensor from the side in order to prevent false triggerings especially when working with shiny materials. To achieve precise position detection of shiny or bright objects it is recommended to use a background within 300 mm from the sensor.



Features

- **Red laser light**
Sensor can be visually aimed at small objects due to visible red light source
- **Small spot size**
The spot size (diameter of laser light spot) is $\leq 0,1\text{ mm}$ at the specified focal distance from the sensor (80 mm).
- **Fast response time**
Small fast moving objects are reliably detected due to the short response time $\leq 0,6\text{ ms}$ or $\leq 0,1\text{ ms}$
- **Dull and shiny surfaces**
Sensor works ideally on dull and frosted surfaces. Shiny surfaces are sensed too, with slightly reduced resolution in background suppression, but precise position detection by lateral approach.
- **Adjustable sensing distance**
Sensing point can be accurately set by means of an adjusting screw
- **Enclosure**
Compact, robust metal housing