

Laser copy counter *SCATEC*



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Overview

The laser copy counter *SCATEC* is an edge detection device. It is specially designed for lap stream counting of newspapers and magazines on a conveyor belt. Other objects with clearly defined edges are also recognized. The operation of *SCATEC* is independent of color. Matte to shiny objects in various colors are all counted with the same high precision. Even single sheets are

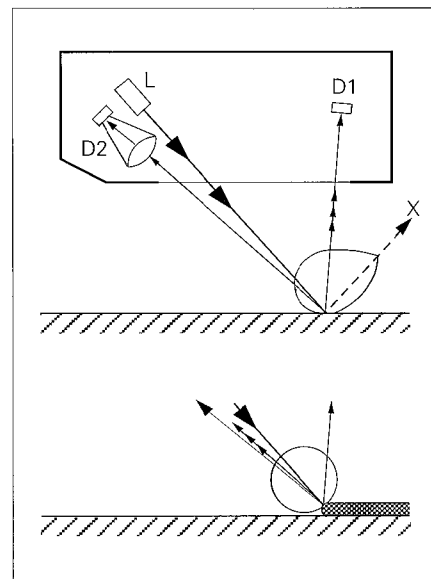
recognized up to a counting rate of 1,5 million copies per hour (400 Hz). For lap stream applications, an efficient multiple pulse suppression is built-in. Only those edges which are facing the inclined laser beam are detected. No output signal is given on the trailing edges. Edges are recognized independent of the direction of movement.

Operating principle

At the heart of *SCATEC* is a new patented optical sensing principle: A laser diode emits a small red light spot onto the transport/conveying level. The laser beam hits the surface at an angle. Most of the light is reflected in the X-direction. Diode D1 receives more light than diode D2. If the laser beam hits an edge, the diode D2 receives more light than diode D1.

This compact device detects the smallest edges, due to precise focusing of the light. There is no blind region below the sensor. Large targets may even touch the sensor without any counting error.

Since a red light source is used the detection point is clearly visible.



Features

- **Function display**
Green LED
- **Edge display**
Red LED lights up, as long as an edge is within the beam
- **Sensitivity adjustment**
For complex detection applications, the sensitivity of the sensor can be manually adjusted
- **Color insensitivity**
The laser power is controlled for optimum performance and continually adapted to the color and surface quality of each target. *SCATEC* is extremely independent of any color variations.

- **Multiple pulse suppression**

A built in micro controller suppresses multiple pulses by switching on a dead time after each recognition. The following programming options ensure an optimum configuration for any counting problem:

- Fixed dead time:
Adjustable in milliseconds.
- Dynamic dead time:
The micro controller continuously monitors the pulse rate, even with variable transportation speed and eliminates multiple pulses by setting the dynamic dead time to the pulse rate.
- Synchronizing with the machine cycle:

SCATEC can be synchronized to the machine cycle via a synchronization input. The dead area is then a defined distance, depending on the speed of the conveyor belt.

- **No miscounts with a non-continuous lap stream**

SCATEC recognizes only those edges that face the beam. Trailing edges are ignored.

- **Large measuring range**

0...103 mm with SCATEC-1
0...43 mm with SCATEC-2

- **Clear recognition of edges**

SCATEC-1

minimum edge thickness 0,1 mm

SCATEC-2

minimum edge thickness 0,2 mm

