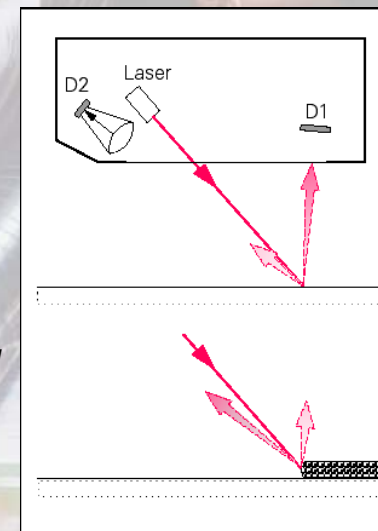


Baumer electric



Sensor desarrollado para conteo sin contacto de material impreso

Detecta los bordes de los ejemplares que pasan a través del haz de LASER que se dispersa con diferente intensidad al detectar el borde de una copia ó pieza.



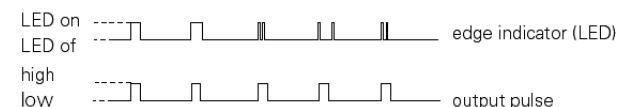
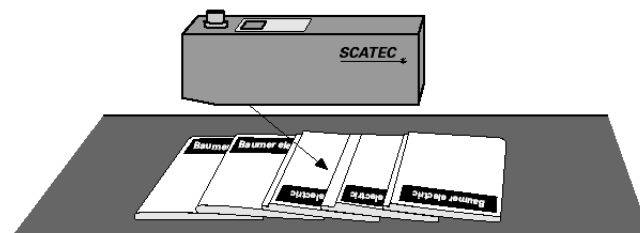
Supresion de pulso múltiple programable que evita conteo en falso

Cuenta hasta 3 millones de piezas por hora

Detección de hojas sencillas desde 0.1mm de espesor.

ZAS Ingeniería y Servicio

www.zas.com.mx



Laser copy counter



- Laser based edge detection
- Color independent
- Detection of single sheets
- High counting rates
- Multiple pulse suppression



Laser copy counter *SCATEC*

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

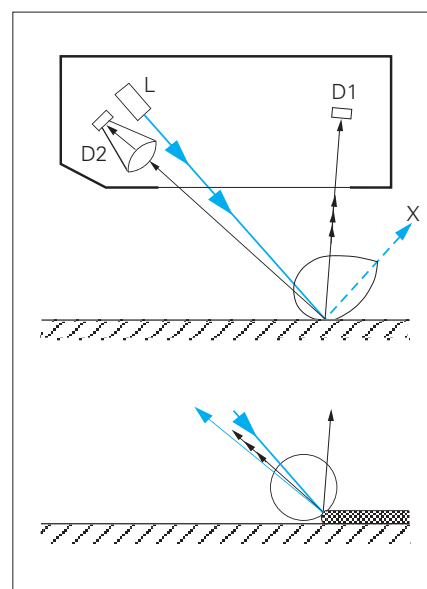
recognized up to a counting rate of 1,5 million copies per hour (400 Hz). For lap stream applications, an efficient multiple pulse suppression is built-in. Only those edges which are facing the inclined laser beam are detected. No output signal is given on the trailing edges. Edges are recognized independent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

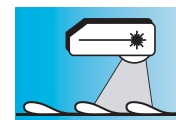
This compact device detects the smallest edges, due to precise focusing of the light. There is no blind region below the sensor. Large targets may even touch the sensor without any counting error.

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**

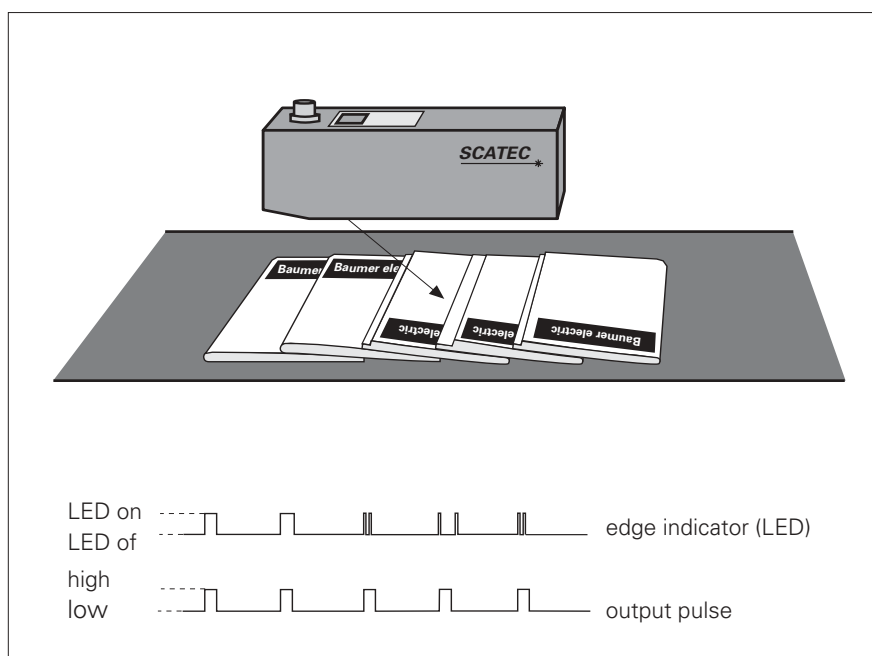
SCATEC recognizes only those edges that face the beam. Trailing edges are ignored.

- **Large measuring range**

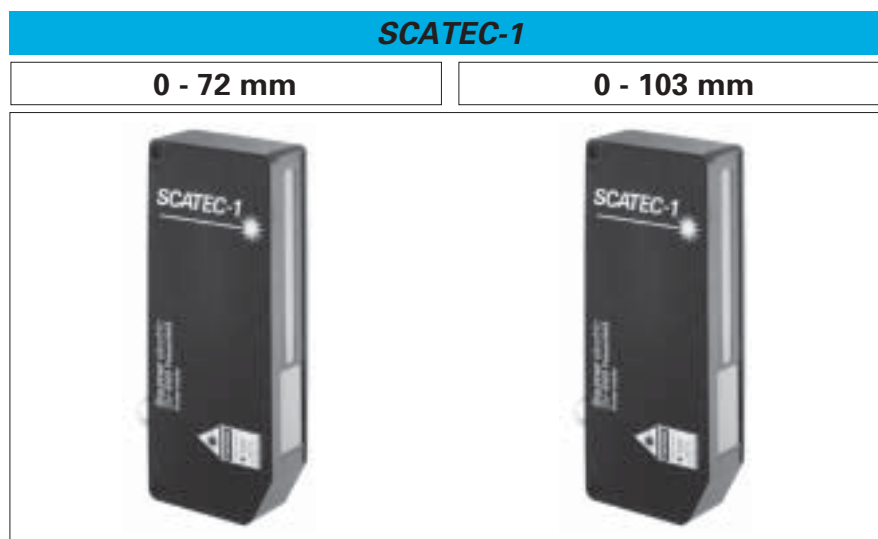
0...103 mm with SCATEC-1
0...43 mm with SCATEC-2

- **Clear recognition of edges**

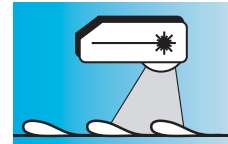
SCATEC-1
minimum edge thickness 0,1 mm
SCATEC-2
minimum edge thickness 0,2 mm



Laser copy counter



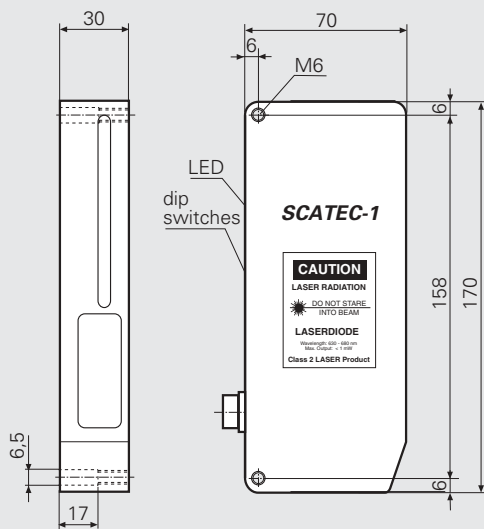
		SCATEC-1	
		0 - 72 mm	0 - 103 mm
Push-pull	Part number	FLDM 170G1001/S42	FLDM 170G1010/S42
Opto isolated open collector	Part number	FLDM 170C1001/S42	FLDM 170C1010/S42
technical data			
measuring range		0...72 mm	0...103 mm
enlarged measuring range		0...90 mm (with reduced sensitivity)	0...120 mm (with reduced sensitivity)
sensitivity		single sheet/edge thick. 0,1 mm (from 90 g/m ²)*	single sheet/edge thick. 0,2 mm *
power indicator		green LED	green LED
edge indicator		red LED	red LED
light source / wave length		red light laser diode / 675 nm	red light laser diode / 675 nm
measuring point		visible red point	visible red point
counting rate		max. 1,5 million copies/hr	max. 1,5 million copies/hr
object speed (edge ≥ 0,3 mm)		0...2 m/sec (5 m/sec **)	0...2 m/sec (5 m/sec **)
distance between objects		min. 1 mm (single sheet edge)	min. 1 mm (single sheet edge)
synchronization input		yes	yes
voltage supply range		18 - 30 V	18 - 30 V
supply current average value / peak value		120 mA / 140 mA	120 mA / 140 mA
output pulse length		2 / 5 / 10 / 20 ms selectable	2 / 5 / 10 / 20 ms selectable
short circuit protection		yes	yes
reverse polarity protection		yes	yes
temperature range		+10...+40 °C	+10...+40 °C
housing material		die-cast zinc	die-cast zinc
connector base		DIN 45322	DIN 45322
connector		Nr. 104236 included	Nr. 104236 included
protection class		IP 54	IP 54
laser class		2	2
		* mounting 70 mm above conveyor	* mounting 100 mm above conveyor
		** for thick copies	** for thick copies
Functions			
sensitivity		reducible in 4 steps	reducible in 4 steps
multiple pulse suppression		by micro controller (1 standard program and 3 programs with adjustable parameters)	by micro controller (1 standard program and 3 programs with adjustable parameters)
synchronization of multiple pulse suppression to conveyor belt speed		automatic by micro controller or with encoder/machine cycle to synchronization input	automatic by micro controller or with encoder/machine cycle to synchronization input
product orientation (with magazines)		folded or cut edge leading	folded or cut edge leading



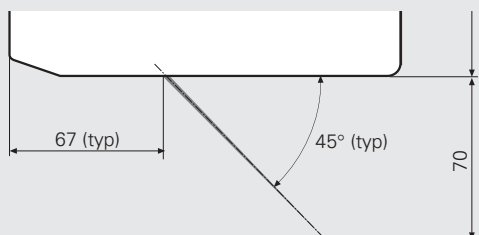
SCATEC

- Laser based edge detection
- Color independent
- Detects paper thickness down to 0,1 mm
- High counting rates
- Multiple pulse suppression

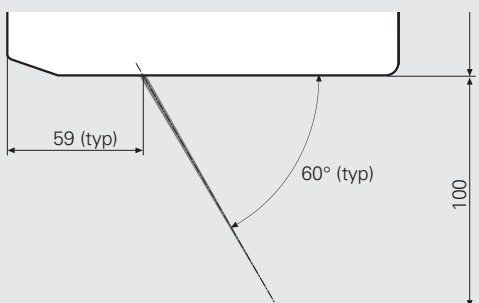
dimensions



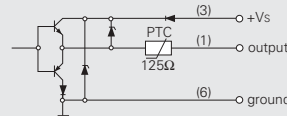
laser spot Type 1001



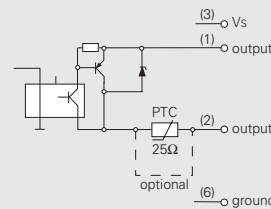
laser spot Type 1010



output circuits

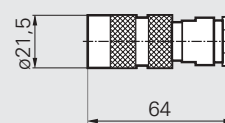


push-pull

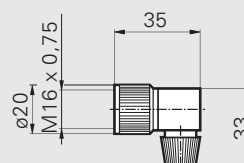


**opto isolated
open collector**

connectors



standard: connector included
part number 104236



option: right angle connector
part number 106224

**Counting rate
1,5 million/hr**

**Measuring
range 103 mm**

**Color inde-
pendent**



Laser copy counter

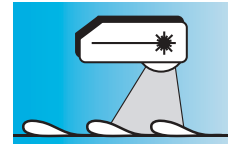


Push-pull	Part number	FLDK 110G1002/S42	
Opto isolated open collector	Part number	FLDK 110C1002/S42	

technical data		
measuring range	0...43 mm	
enlarged measuring range	0...60 mm (with reduced sensitivity)	
sensitivity	single sheet/edge thickness 0,2 mm*	
power indicator	green LED	
edge indicator	red LED	
light source / wave length	red light laser diode / 675 nm	
measuring point	visible red point	
counting rate	max. 0,6 million copies/hr	
object speed (edge ≥ 0,3 mm)	0...2 m/sec (5 m/sec **)	
distance between objects	min. 1 mm (single sheet edge)	
synchronization input	no	
voltage supply range	18 - 30 V	
supply current average value / peak value	120 mA / 140 mA	
output pulse length	5 / 10 / 15 / 20 ms selectable	
short circuit protection	yes	
reverse polarity protection	yes	
temperature range	+10...+40 °C	
housing material	PBTP	
connector base	DIN 45322	
connector	Nr. 104236 included	
protection class	IP 54	
laser class	2	
	* mounting 40 mm above conveyor	
	**for thick copies	

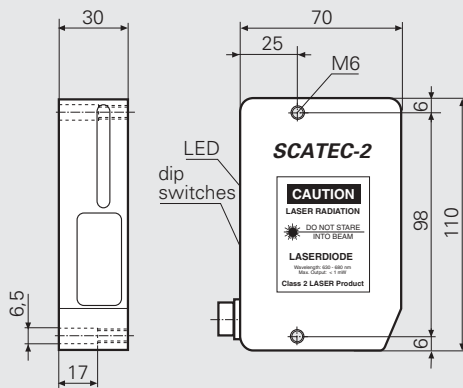
Functions		
sensitivity	reducable in 2 steps	
multiple pulse suppression	by micro controller (1 standard program on / off switchable)	
synchronization of multiple pulse suppression to conveyor belt speed	automatic by micro controller	
product orientation (with magazines)	normally only folded edge leading, but cut edge leading under certain conditions	

- Laser based edge detection
- Color independent
- Detects paper thickness down to 0,2 mm
- High counting rates
- Multiple pulse suppression

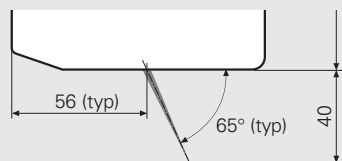


SCATEC

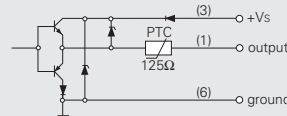
dimensions



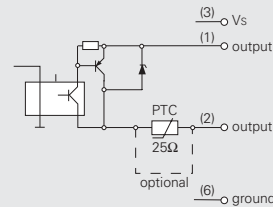
laser spot



output circuits

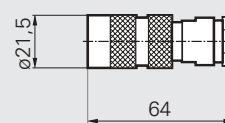


push-pull

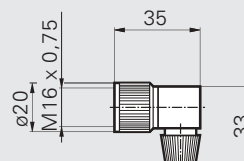


**opto isolated
open collector**

connectors



standard: connector included
part number 104236



option: right angle connector
part number 106224

**Counting rate
0,6 million/hr**

**Measuring
range 43 mm**

**Color inde-
pendent**

