



Model Number

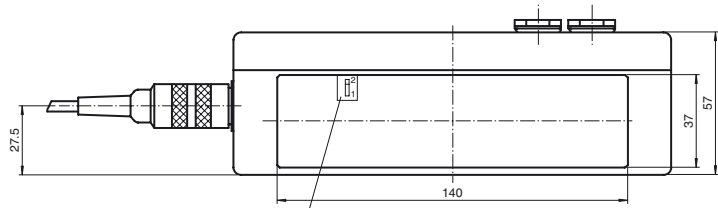
RST101-2379

Remission scanner
with 7-pin flange connector

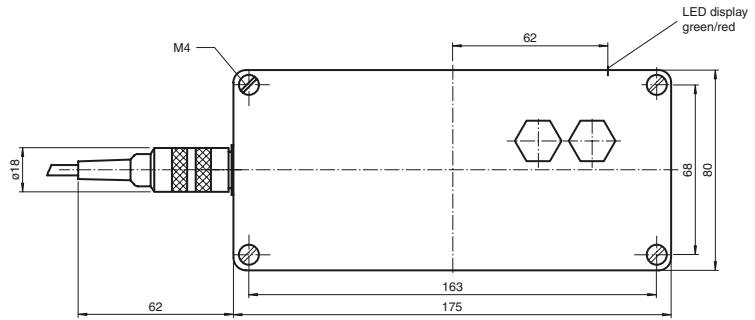
Features

- Remission scanner with large depth of focus
- High switching frequency for the detection of fast moving objects
- Switchable external and internal time function
- Printing sensitivity: not sensitive
- Protection degree IP64

Dimensions



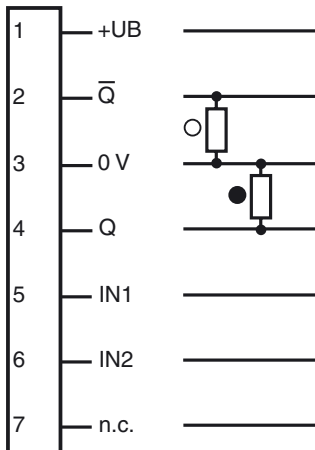
Switch for selecting the time function



LED display green/red

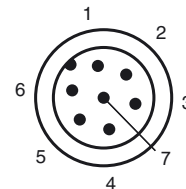
Electrical connection

Option:



○ = Light on
● = Dark on

Pinout



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Technical data

General specifications

Sensor range	100 mm
Light source	IRED
Light type	modulated infrared light
Light spot representation	approx. 20 mm x 70 mm
Approvals	CE
Angle of divergence	$\pm 10^\circ$
Resolution	3 mm up to 100 mm step height

Functional safety related parameters

MTTF _d	330 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Function display	LED red/green red: no edge green: edge detected
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Electrical specifications

Operating voltage	U _B	24 V DC
Ripple		$\pm 10\%$
No-load supply current	I ₀	approx. 250 mA

Input

Function input	Pin 5: step pulse input Pin 6: reset input
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Output

Switching type	light/dark on	
Signal output	2 PNP, complementary, short-circuit protected, open collectors	
Switching voltage	24 V DC	
Switching current	200 mA	
Switching frequency	f	1000 Hz
Response time		0.15 ms

Standard conformity

Standards	EN 60947-5-2
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Ambient conditions

Ambient temperature	0 ... 50 °C (32 ... 122 °F)
Storage temperature	-20 ... 75 °C (-4 ... 167 °F)

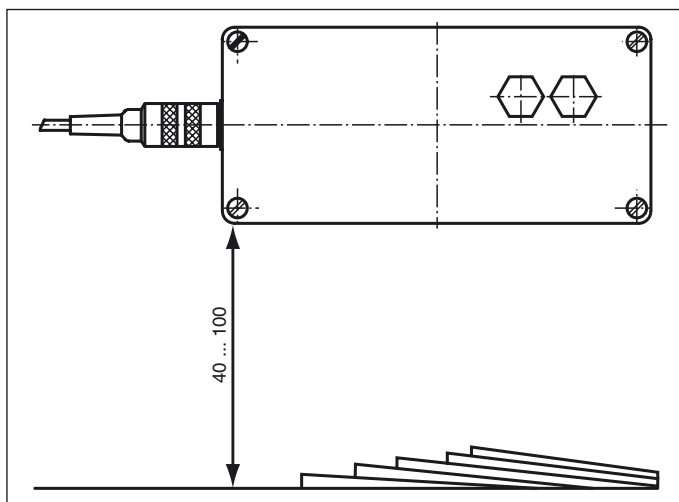
Mechanical specifications

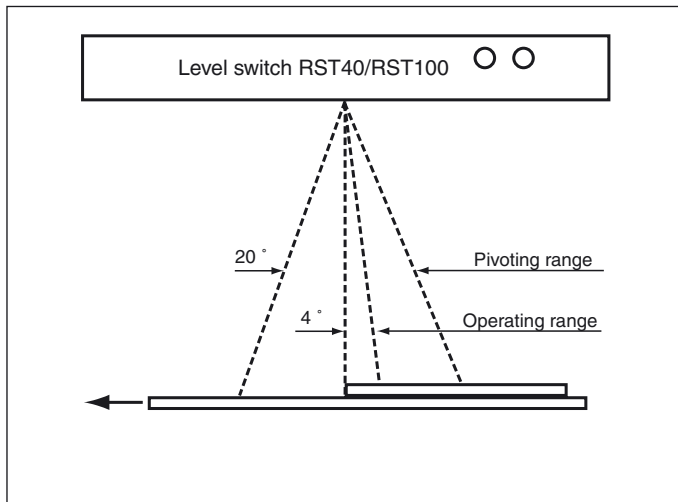
Protection degree	IP64
Connection	7-pin, T3477 flange connector
Material	
Housing	lacquer-coated aluminum
Optical face	glass
Mass	approx. 600 g

Approvals and certificates

CCC approval	Products with a maximum operating voltage of ≤ 36 V do not bear a CCC marking because they do not require approval.
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Curves/Diagrams





Functional description

Application example

The scanner is used to detect overlapping or edges of flat objects. The RST 101 can be used in the newspaper printing industry for counting or positioning. The RST detects the front edges of newspapers and emits a length adjustable output pulse. This can be used for precise positioning of an address label.

Functional description

Functionality is based on the fact that edges and slopes cast shadows. Each IR transmitter group beams alternately from the right or the left at the conveyor on which the objects are being moved.

The light output of the right transmitter group is set at a higher intensity than that of the left transmitter group. A photoelectric receiver detects more light from the right array when the surface is level (no edge is present), but it detects more light from the left array when an edge is present.

Mounting/Alignment

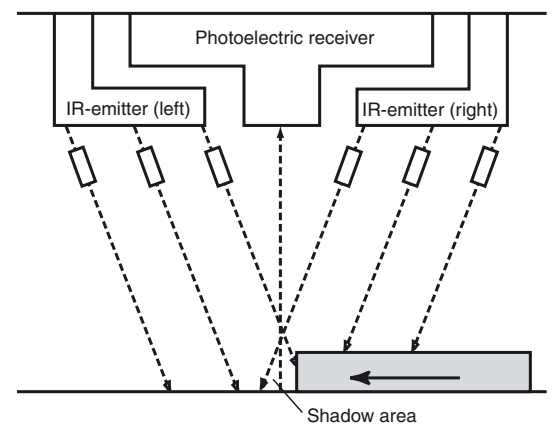
It follows from the function principle that the sensors must be oriented in a defined manner to the product stream. A pictogram on the front of the sensor indicates the orientation of the product stream. The sensor does not detect copies that do not move according to this product stream orientation.!

RST40, RST100

The sensors are only capable of working in an inclination range of about 4°. This angle range can fall within an inclination of $\pm 10^\circ$ relative to the alignment parallel to the level of the object. Therefore, the sensors must be mounted so that they can rotate $\pm 10^\circ$. A sensor mounted in this way will be able to detect a product stream so that the LED switches from green to red. Then the sensor is rotated further by approximately 2°. For control, this is then extended to run one level under the sensor. Running through the level must change the LED from red to green.

If this does not happen, the sensor has been moved too far in the direction of "Red LED" and must be rotated back in the direction of "Green LED".

RST41, RST101



These do not require a rotating support and can be mounted without attention to critical details. They are also not sensitive to printing.

Timer functions

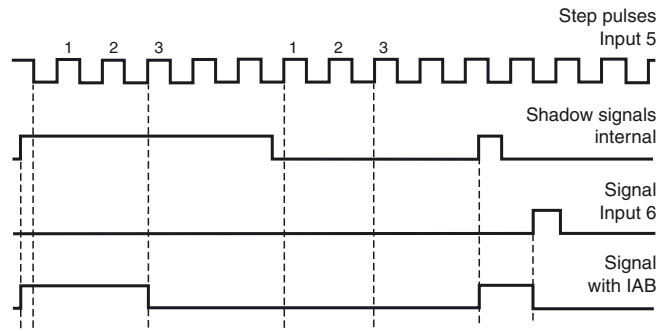
External timer function

With the external timer function, the length of the output signal is controlled by external incremental pulses.

The output is locked in the switched state by a shadow signal that is received. After an adjustable number of pulses is entered at control input 5, the output is locked and returns to the idle state.

Pulse counting from control input 5 starts with the shadow signal.

After the sealing plug on the device has been removed, two BCD switches are accessible which can be used to adjust the pulse count until the output is reset to between 1 and 99.



Control of IAB with incremental pulses at input 5 and via an active signal at input 6. The setting made for the incremental pulse number is n = 3.

Internal timer functions

The internal timer function generates a pulse (IAB) that starts when the shadow signal disappears.

Time functions can be adjusted with the BCD switches. The numbers 0 ... 99, multiplied by the base delay of 1 ms yield the approximate length of the time function. This results in an adjustment range of 1 ... 99 ms.

Switching between the timer functions

It is possible to choose between the internal and external timer functions with the aid of an internal switch. To change, it is necessary to open the device.

Outputs

External timer function

Output 2 (\bar{Q})

Low when shadow begins (just before the front edge of the newspaper) to n number of pulses made at input 5.

Output 4 (Q)

High when shadow begins (just before the front edge of the newspaper) to n number of pulses made at input 5.

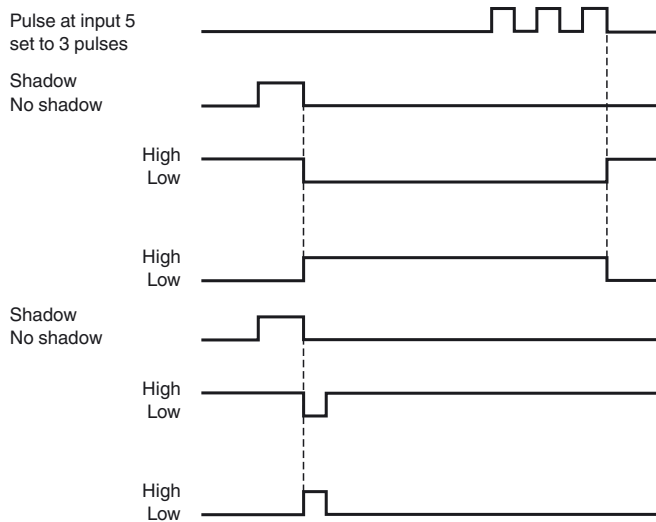
Internal timer function

Output 2 (\bar{Q})

Low pulse 1 - 99 ms adjustable when shadow ceases (front edge of the newspaper)

Output 4 (Q)

High pulse 1 - 99 ms adjustable when shadow ceases (front edge of the newspaper)



Description of control inputs

The device has two control inputs which are activated with potential-free contacts or with NPN transistors against 0 V.

Control terminal 5 (IN1) has the following tasks:

- With external timer function: Input of the incremental pulses
- With internal timer function: NC

Control terminal 6 (IN2) has the following task:

- Muting when output 6 connected at 0 V (reset of output).

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