

GK 14

Capacitive forked sensor

EN 07-2009/08 50110462



1 mm

10 - 30 V
DC

- Forked sensor for reliable detection of transparent and opaque labels
- PNP and NPN transistor output for optimum adaptation to the controller
- Robust metal housing with beveled inlet edges
- Inverting input for easy adaptation of the output signal level



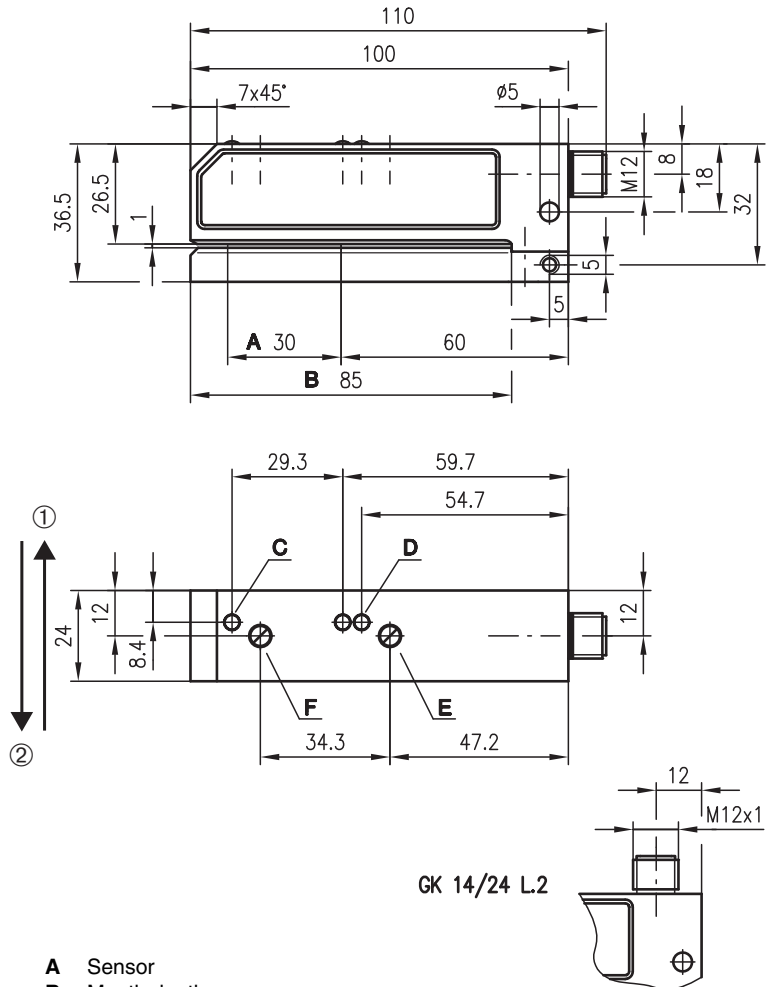
We reserve the right to make changes • DS_GK14_EN.fm

Accessories:

(available separately)

- M12 connectors (KD ...)
- Ready-made M12 cables (K-D...)

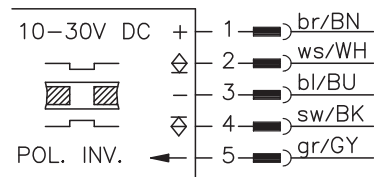
Dimensioned drawing



- A** Sensor
- B** Mouth depth
- C** Display switching output
- D** Display base adjustment
- E** Base adjustment
- F** Sensitivity adjustment:
Clockwise rotation = increase sensitivity

① + ② Direction of label-tape movement

Electrical connection



Specifications

Optical data

Mouth width	0.9mm ± 0.1 mm
Mouth depth	85mm

Timing

Switching frequency ¹⁾	5000Hz
Response time	0.1 ms
Delay before start-up	≤ 100ms

Electrical data

Operating voltage U_B	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of U_B
Open-circuit current	≤ 35mA
Switching output	1 PNP transistor output 1 NPN transistor output
Function characteristics	direction dependent, reversible
Signal voltage high/low	$\geq (U_B - 2V) / \leq 2V$
Output current	200mA
Sensitivity	adjustable with multiturn potentiometer
Base adjustment	adjustable with multiturn potentiometer

Indicators

Yellow LED	label/gap
LED yellow (2x)	base adjustment

Mechanical data

Housing	aluminum, anodized
Weight	175g
Connection type	M12 connector, 5-pin

Environmental data

Ambient temp. (operation/storage)	0°C ... +60°C
Protective circuit ²⁾	1, 2
VDE safety class	III
Protection class	IP 65

Options

Inverting input high/low	≥ 8V/≤ 2V
Input resistance	10kΩ

1) Max. label speed 10m/s, min. label gap 2mm

2) 1=polarity reversal protection, 2=short-circuit protection for all outputs

Remarks

● Switching behavior dependent on the infeed direction

Depending on the direction of movement of the label tape through the sensor, the following switching behavior occurs at the outputs:

Direction of movement	Switching outputs pin 2 + pin 4	
	Pin 5 not connected or 0V	Operating voltage U_B at pin 5
①	Signal in the gap	Signal on the label
②	Signal on the label	Signal in the gap

● Mounting

For optimum function of the capacitive forked sensor, the sensor should be mounted on a metallic machine part. A lock washer (e.g DIN 6797) should be placed under the screw head to secure the sensor.

● Approved purpose:

The GK 14 forked sensors are sensors for the capacitive detection of labels on a carrier tape. This product is only to be commissioned and used for the approved purpose by qualified personnel. This sensor is not a protective sensor and is not to be used for personnel protection.

Order guide

	Designation	Part No.
Rear connector	GK 14/24 L	500 26371
Top connector	GK 14/24 L.2	500 31714

Tables

Diagrams

Remarks

● Base setting

- Set sensitivity to max. (turn potentiometer to the right), then turn back 1/2 turn to the left.
- Base adjustment without label tape such that both LEDs are equally bright.
- If necessary, reduce the sensitivity setting (in steps of 1/4 turn to the left).

● Base adjustment

Perform after new mounting, cleaning, sensitivity increase.

● Switching behavior

A signal change at the switching output occurs when a label enters at the minimum speed. The output signal remains constant until the next edge of an exiting or entering label is detected.