



# TranspaTect

ONE THING IS CLEAR –  
NO REFLECTOR NEEDED

MultiTask photoelectric sensors

**SICK**  
Sensor Intelligence.

# LESS IS MORE: TranspaTect DELIVERS COMPLETE TRANSPARENCY WITHOUT REFLECTORS

Installing a reflector is now a thing of the past, with the new TranspaTect MultiTask photoelectric sensor!

## Reliability without reflectors

The TranspaTect detects transparent and semi-transparent objects as well as glossy, mirrored, or uneven surfaces reliably. Using the very latest SICK technologies, TranspaTect can detect trays and bottles without using reflectors, as existing machine parts such as panels or walls perform this role instead.

Together with the AutoAdapt feature, TranspaTect provides a cost-effective and reliable detection solution in packaging automation such as in the food and beverage and pharmaceuticals industries. Even the rugged die-cast zinc housing is ideally suited to this environment, as it is certified by Ecolab and is highly resistant to cleaning agents and disinfectants.

## Convincing benefits

- **Powerful:** Reliable detection of transparent objects such as trays and bottles
- **Intelligent:** No need for troublesome reflectors. TranspaTect uses a stable, matte background as a reference surface.
- **Easy to program:** Teach-in for the reference surface at the touch of a button
- **Trustworthy:** If the background suddenly becomes contaminated, object detection will continue reliably
- **Time-saving:** No need to install a reflector or make fine adjustments to the sensor
- **Rugged:** Tried-and-tested metal housing offers protection in harsh environments, Ecolab certified



# TranspaTect FOR THE FOOD AND BEVERAGE, AND PHARMACEUTICALS INDUSTRIES

## Benefits for machine designers and system operators

Machine designers and system operators are living with reflector workarounds. These can be redesigning the machine to install reflectors in tight spaces. Another workaround is to require regular cleaning intervals as reflectors can be damaged or even destroyed by aggressive cleaning agents. With TranspaTect, these issues are now a thing of the past.

This innovative detection solution affords machine designers unprecedented freedom when it comes to designing machines, and as the defined reference surface is now part of the machine, this gives them a real competitive edge.

During routine production, system operators no longer have to worry about time and costs for mounting, fine adjustments, and sensor maintenance. Even process safety is increased.

Simply point the TranspaTect at a matte background such as a sheet of glassbead blasted steel and hit the teach button!

## Ideal for the food and beverage, and pharmaceuticals industries

The key strength of the TranspaTect MultiTask photoelectric sensor is its ability to detect transparent packaging, such as that used for meat, cheese, and vegetables.

Typical applications include monitoring transparent trays in the inlet tunnel for tray sealers, or detecting packaged meat and cheese.

Whether it's in the beverage or pharmaceuticals industry, the TranspaTect MultiTask photoelectric sensor detects transparent and semi-transparent bottles of all shapes and sizes with the utmost reliability.



# TranspaTect SEEING AND BELIEVING



## Detection of transparent objects without a reflector

- Thanks to the latest SICK technology, you can now do away with reflectors completely
- Any stable, matte background, can act as the reference surface

- Benefits**
- No need for troublesome reflectors
  - Procurement and maintenance costs are minimized
  - Quick installation time



## AutoAdapt

Continuous threshold adaptation from SICK, which not only readjusts the switching threshold during the course of operation, but also sets the original threshold after the cleaning process.

- Benefits:**
- Fewer machine stoppages thanks to longer cleaning intervals
  - Increased reliability and productivity



## Ease of operation

- Teach-in with the touch of a button
- Highly visible status LEDs
- A precise, bright light spot thanks to PinPoint technology

- Benefits:**
- Quick commissioning
  - Rapid alignment
  - Direct optical monitoring





### Rugged metal housing

- Durable die-cast zinc housing
- Resistant to vibrations and impact

**Benefits:**

- Outstanding reliability even under demanding application conditions
- Enhanced chemical resistance with optional Teflon coating



### Ecolab certification

- Chemical resistance against cleaning agents and disinfectants

**Benefit:**

- Outstanding system reliability even when using aggressive cleaning agents

# ONE THING IS CLEAR - NO REFLECTOR NEEDED



## Product description

Thanks to new technologies from SICK, TranspaTect MultiTask photoelectric sensors are now able to detect transparent and semitransparent trays and bottles without the need for reflectors, a frequent source of errors. In these applications, the reference surface is provided by a stable matte background. Sensitivity is taught in simply by press-

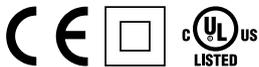
ing the teach-in button. Even high-gloss, reflective, or uneven surfaces can be detected reliably. Combined with AutoAdapt, SICK's function for continuous threshold adaptation, TranspaTect sensors provide a cost-effective and reliable detection solution in packaging processes in the food and beverage, and pharmaceuticals industries.

## At a glance

- High-performance SICK technology
- No reflectors required
- Existing machine parts are used as reference target
- AutoAdapt for continuous threshold adaptation in contaminated conditions
- PinPoint LED with bright and precise light spot
- Easy-to-use teach-in button
- Status LEDs visible from all sides
- Rugged metal housing (PTFE coating available on request)

## Your benefits

- Reliable detection of transparent and semitransparent objects without a reflector
- Reliable detection of objects regardless of color or surface qualities
- Freedom of machine design: no mounting system for the installation of a reflector required
- Quick commissioning: there is no need to mount a reflector or precisely adjust the sensor
- High operational safety: if the background becomes contaminated, object detection will continue uninterrupted
- Machine downtime is minimized: the integrated AutoAdapt function extends the time between cleanings
- Heightened productivity: mechanical and chemical ruggedness due to the metal housing



## Additional information

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→ [www.mysick.com/en/TranspaTect](http://www.mysick.com/en/TranspaTect)

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



## Detailed technical data

## Features

<b>Sensor principle</b>	Photoelectric proximity sensor
<b>Detection principle</b>	Foreground suppression
<b>Dimensions (W x H x D)</b>	15.6 mm x 48.5 mm x 42 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max. <sup>1)</sup></b>	150 mm ... 700 mm (adjustment range background)
<b>Sensing range <sup>1)</sup></b>	0 mm ... 400 mm (detection range transparent objects) <sup>2)</sup>
<b>Type of light</b>	Visible red light
<b>Light source <sup>3)</sup></b>	PinPoint LED
<b>Light spot size (distance)</b>	Ø 8 mm (300 mm)
<b>Wave length</b>	660 nm
<b>Sensitivity adjustment</b>	Single teach-in button
<b>Continuous threshold adaption</b>	✓

<sup>1)</sup> Referring to the background with 90 % remission (based on glass-bead blasted stainless steel, equivalent to standard white DIN 5033)

<sup>2)</sup> 0 mm ... 550 mm detection range non-transparent object.

<sup>3)</sup> Average service life of 100,000 h at  $T_a = +25 \text{ °C}$ .

## Mechanics/electronics

<b>Supply voltage <sup>1)</sup></b>	10 V DC ... 30 V DC
<b>Ripple <sup>2)</sup></b>	$\leq 5 \text{ V}_{pp}$
<b>Power consumption <sup>3)</sup></b>	$\leq 55 \text{ mA}$
<b>Output type</b>	PNP / NPN (depending on type)
<b>Output function</b>	Complementary
<b>Switching mode</b>	Light/dark-switching
<b>Signal voltage PNP HIGH/LOW</b>	$> U_v - 2,5 \text{ V} / \text{ca. } 0 \text{ V}$
<b>Signal voltage NPN HIGH/LOW</b>	Approx. $V_S / < 2.5 \text{ V}$
<b>Output current <math>I_{max}</math></b>	100 mA
<b>Response time <sup>4)</sup></b>	2 ms
<b>Switching frequency <sup>5)</sup></b>	250 Hz
<b>Connection type</b>	Male connector, M12
<b>Circuit protection</b>	A <sup>6)</sup> C <sup>7)</sup> D <sup>8)</sup>
<b>Protection class</b>	II
<b>Weight</b>	120 g
<b>Enclosure rating</b>	IP 66 IP 67
<b>Ambient operating temperature</b>	$-40 \text{ °C} \dots +60 \text{ °C}$
<b>Ambient storage temperature</b>	$-40 \text{ °C} \dots +75 \text{ °C}$

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A.

<sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

## Ordering information

Other models available at [www.mysick.com/en/TranspaTect](http://www.mysick.com/en/TranspaTect)

### WTF12G-3, clear material detection

- **Switching mode:** Light/dark-switching
- **Adjustment:** Single teach-in button
- **Light spot size (distance):** Ø 8 mm (300 mm)

Sensing range max. <sup>1)</sup>	Sensing range <sup>1)</sup>	Output type	Connection	Connection diagram	Model name	Part no.
150 mm ... 700 mm <sup>2)</sup>	0 mm ... 400 mm <sup>3)</sup>	PNP	Connector M12, 4-pin	Cd-084	WTF12G-3P2432	1065719
	0 mm ... 550 mm <sup>4)</sup>	NPN	Connector M12, 4-pin	Cd-084	WTF12G-3N2432	1066279

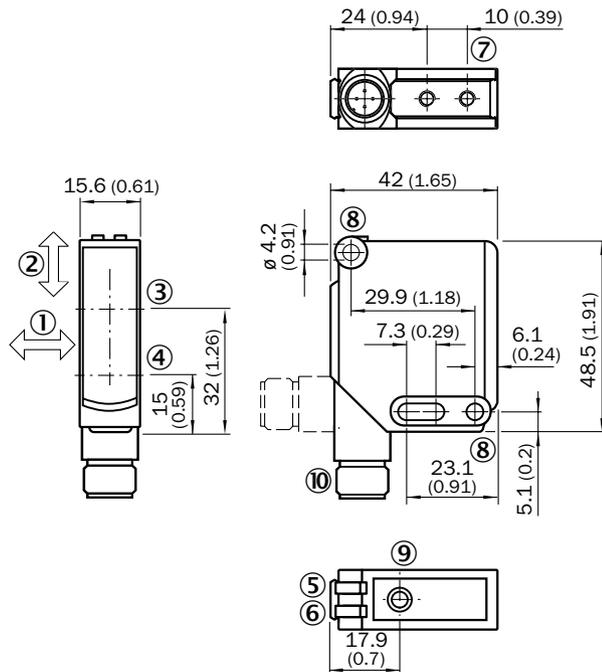
<sup>1)</sup> Referring to the background with 90 % remission (based on glass-bead blasted stainless steel, equivalent to standard white DIN 5033)

<sup>2)</sup> Adjustment range background

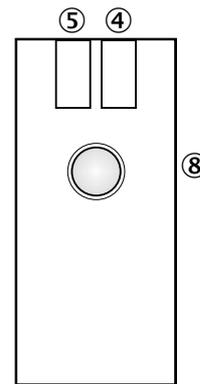
<sup>3)</sup> Detection range transparent objects

<sup>4)</sup> Detection range non-transparent objects

## Dimensional drawings (Dimensions in mm (inch))



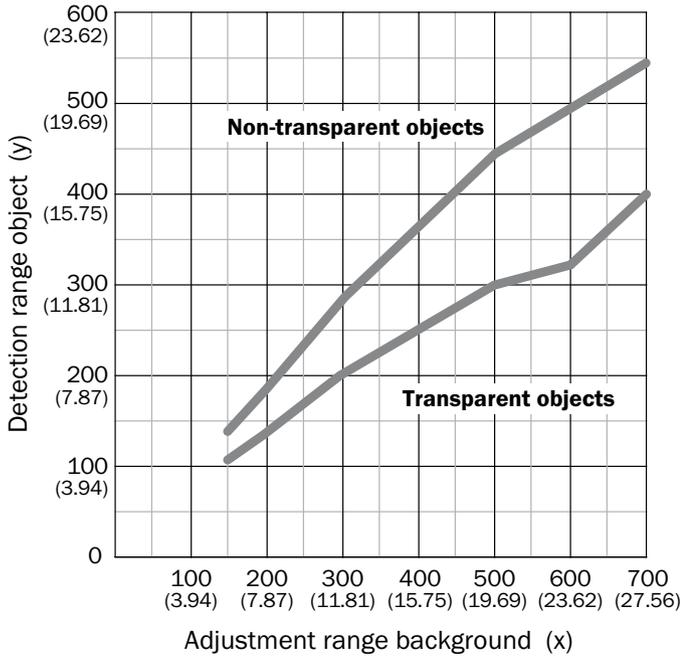
## Adjustments



- ④ Status indicator LED green: power on
- ⑤ Status indicator LED, yellow: Status of received light beam
- ⑧ Adjustment sensing range: single teach button

- ① Recommended installation for the detection of transparent trays
- ② Recommended installation for the detection of transparent bottles
- ③ Optical axis, receiver
- ④ Optical axis, sender
- ⑤ Status indicator LED green: power on
- ⑥ Status indicator LED, yellow: Status of received light beam
- ⑦ M4 threaded mounting hole, 4 mm deep
- ⑧ Mounting hole, Ø 4.2 mm
- ⑨ Adjustment sensing range: single teach button
- ⑩ Connection

**Characteristic curves** (Dimensions in mm (inch))



**Legend:**

- x: Sensing range max. in mm (adjustment range background)  
= Distance sensor / background
- y: Sensing range in mm (detection range object)  
= Maximum distance sensor / front edge of the object

Minimum distance sensor / background : 150 mm\*

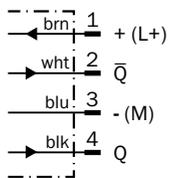
\* Referring to the background with 90 % remission equivalent to standard white DIN 5033 (i.e. glass-bead blasted stainless steel). The use of a shiny background can increase the minimum distance to the background (i.e. brushed and pickled stainless steel, minimum distance sensor to background: 300 mm).

**How to use this diagram:**

Measure the distance from the sensor to the metal surface in the background. This is the value for x (adjustment range background). If this is 500 mm for example, the maximum distance between the sensor and the leading edge of a transparent object is 300 mm.

**Connection diagram**

Cd-084



Recommended accessories

Mounting brackets/plates

Mounting brackets

Figure	Material	Description	Model name	Part no.
	Stainless steel	Mounting bracket, large	BEF-WG-W12	2013942
		Mounting bracket, small	BEF-WK-W12	2012938

Plug connectors and cables

Connecting cable (female connector-open)

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Enclosure rating	Model name	Part no.
	Female connector, M12, 4-pin, straight	Cable, open conductor heads	2 m, 4-pole	IP 67	DOL-1204-G02M	6009382
			5 m, 4-pole	IP 67	DOL-1204-G05M	6009866
	Female connector, M12, 4-pin, angled	Cable, open conductor heads	2 m, 4-pole	IP 67	DOL-1204-W02M	6009383
			5 m, 4-pole	IP 67	DOL-1204-W05M	6009867

Universal bar clamp systems

Figure	Material	Description	Model name	Part no.
	Zinc plated steel (sheet), Diecast zinc (clamp)	Plate N02 for universal clamp bracket	BEF-KHS-N02	2051608
		Plate N03 for universal clamp bracket	BEF-KHS-N03	2051609

Device protection (mechanical)

Protective housing/tubes

Figure	Material	Description	Model name	Part no.
	Zinc plated steel (protective housing), Diecast zinc (clamp)	Protective housing for universal clamp	BEF-SG-W12-3	2045175

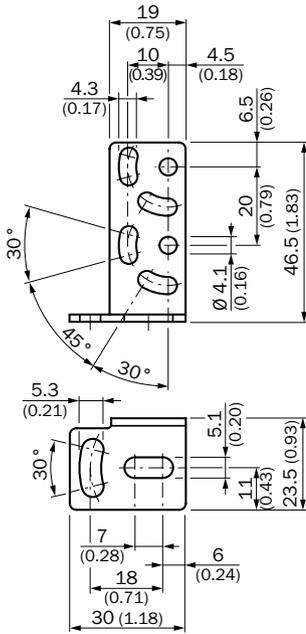
Terminal and alignment brackets

Terminal brackets

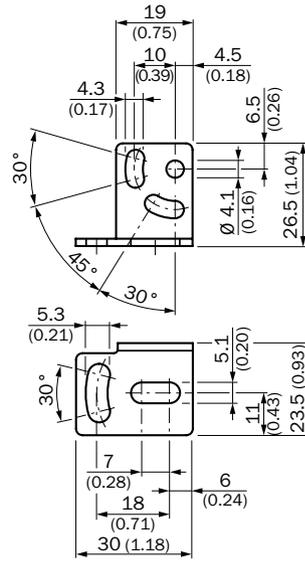
Figure	Material	Description	Model name	Part no.
	Steel, zinc coated	Clamping block for dovetail mounting	BEF-KH-W12	2013285

Dimensional drawings Mounting brackets/plates Mounting brackets

BEF-WG-W12



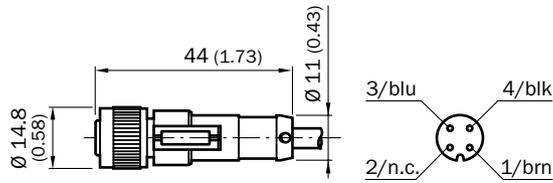
BEF-WK-W12



Dimensional drawings Plug connectors and cables Connecting cable (female connector-open)

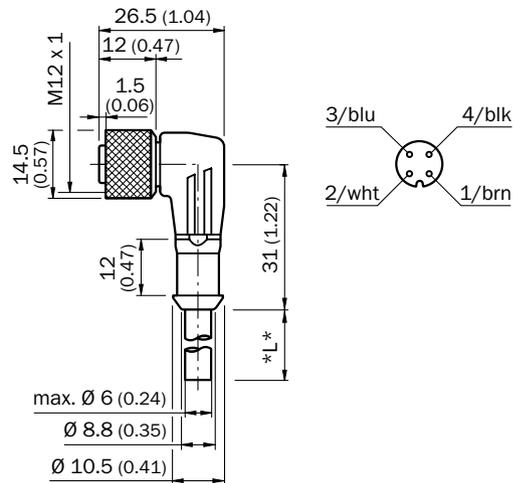
DOL-1204-G02M

DOL-1204-G05M



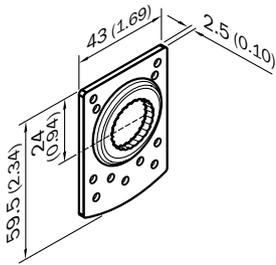
DOL-1204-W02M

DOL-1204-W05M

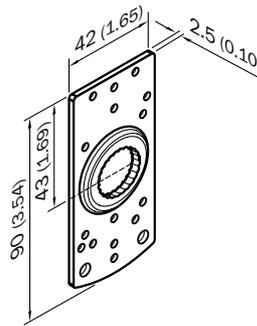


Dimensional drawings Universal bar clamp systems

BEF-KHS-N02

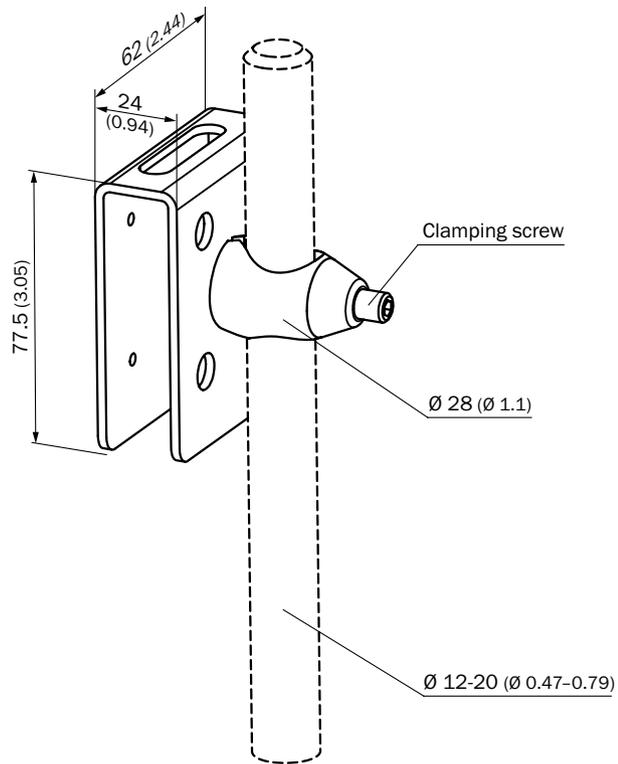


BEF-KHS-N03



Dimensional drawings Device protection (mechanical) Protective housing/tubes

BEF-SG-W12-3

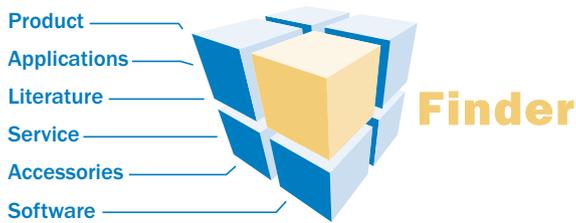






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## SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for factory, logistics, and process automation. With more than 6,000 employees and over 40 subsidiaries worldwide, we are always close to our customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in various industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services round out our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

### **Worldwide presence:**

Australia, Belgium/Luxembourg, Brasil, Česká republika, Canada, China, Danmark, Deutschland, España, France, Great Britain, India, Israel, Italia, Japan, México, Nederland, Norge, Österreich, Polska, România, Russia, Schweiz, Singapore, Slovenija, South Africa, South Korea, Suomi, Sverige, Taiwan, Türkiye, United Arab Emirates, USA.

Please find detailed addresses and additional representatives and agencies in all major industrial nations at: [www.sick.com](http://www.sick.com)