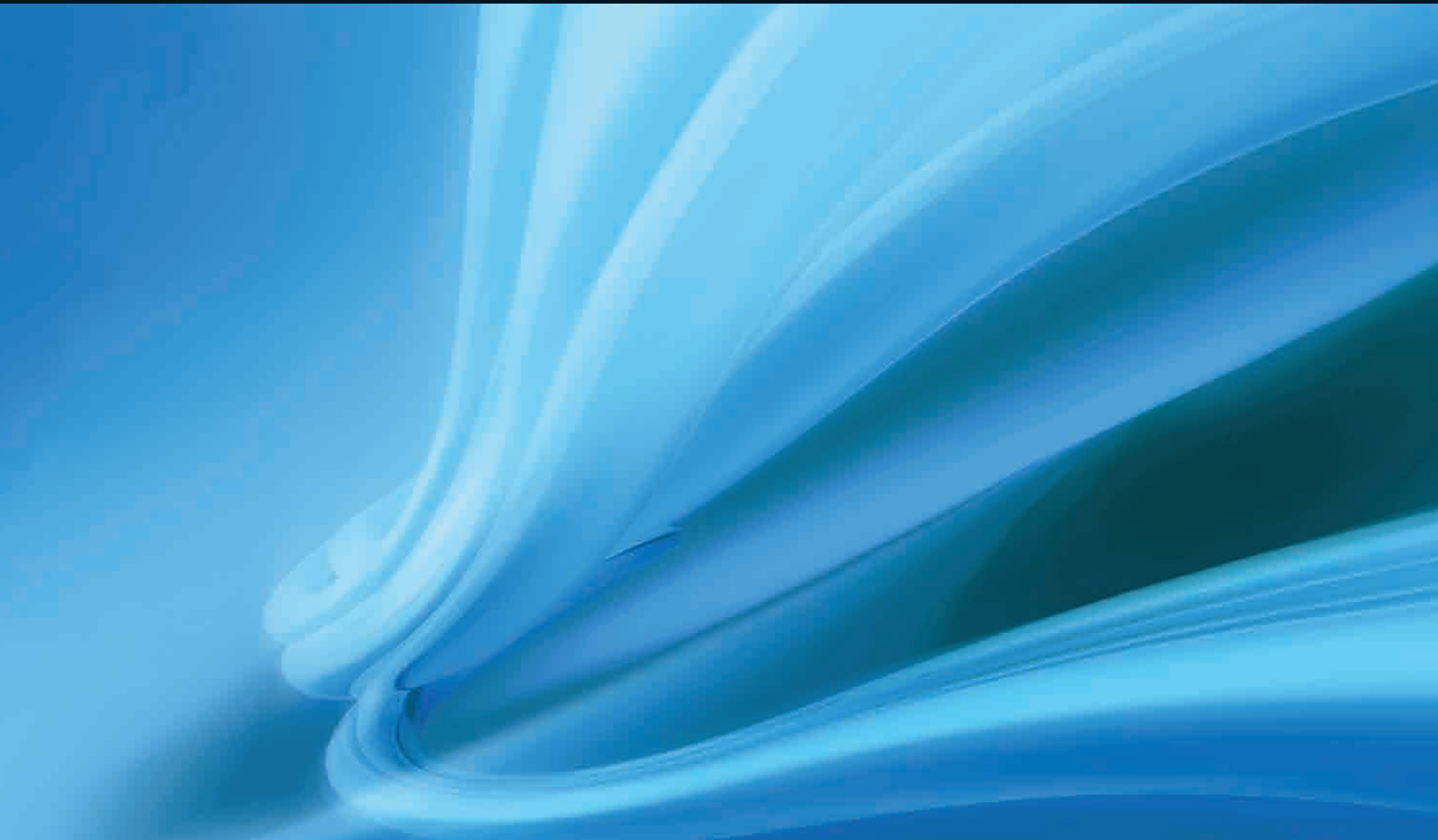




30 years

# Compact Catalog

Sensors | Lighting | Vision | ID





Change of the angle **precisely** detected

## ◆ INCLINATION SENSORS



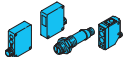


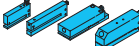
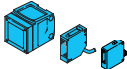

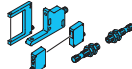




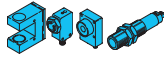
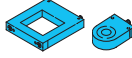
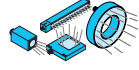
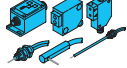


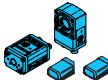

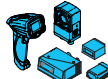
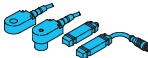
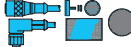
di-soric inclination sensors are designed to reliably detect changes in angle. Signals will be provided either as analog outputs or programmable switching outputs.

Thanks to the high protection class and the robust metal casing, these devices can also be perfectly used in harsh industrial environmental conditions as well as outdoors.

**Further information on page 30.**



## Innovative products for your automation

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	Company	4	 Optical Movement Sensors	28
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	Laser Photoelectric Sensors	8	 Label Sensors	32
	Laser Distance Sensors	10		34
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## High performance and competence



For 30 years the di-soric corporate group is specialized in the development and production of sensors for industrial automation. Thanks to continuous innovations a vast product range is available, which is completed by high-value LED-lightings, machine vision and ID systems. The family owned company currently employs over 180 members of staff.

Close customer contact and continuous market analysis allow us to identify and implement new or changed product standards immediately. Customized versions are another particular strength of our production department.



The headquarter is located in Urbach – east of Stuttgart, Germany. The development and production site is in Lüdenscheid – south of Dortmund, Germany.

Our international customers are advised and supported within their countries through our distribution partners. These partners operate with their own service technicians and engineers. This way customer proximity is always guaranteed – also for after sales services.



Our customers include small and medium sized companies as well as international groups and numerous car manufacturers. Our products have unique selling points which are of great benefit to our customers. Special highlights are the well-known fork light barriers which were invented by di-soric over 20 years ago and are constantly further developed.

Friendly and helpful staff, competent technical advice by phone, on-site customer support, a highly efficient warehouse and quick delivery service are the reasons our customers value us. We don't consider ourselves just a supplier, but a partner to our customers.

Use this partnership to your advantage.

The Eisemann family

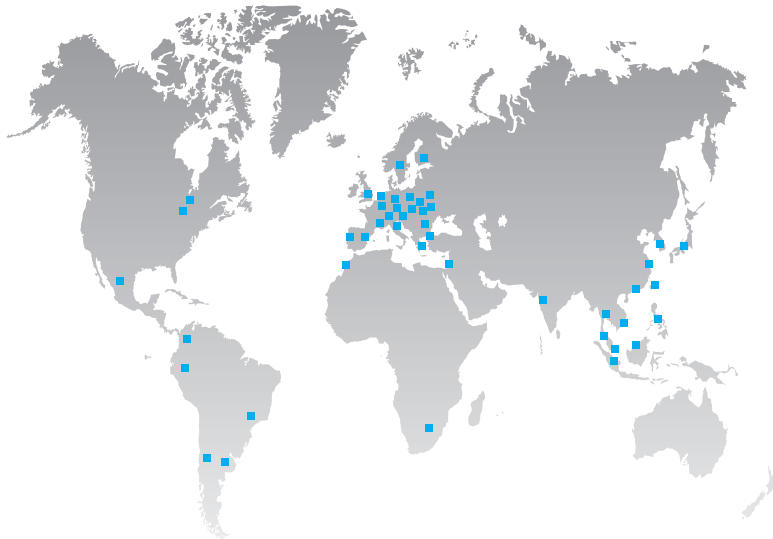


Sales, warehouse and administration in Urbach



Development and production in Lüdenscheid

## International Sales Network



## Find the appropriate product – easily online: di-soric e-shop

A clear structure in connection with intelligent search function allows for a simple identification of the matching product. By means of that product finder and the technical

features the matching product can be selected. The product direct selection allows the systematic search for a specific catalogue description or parts hereof.



## Your advantages with just one click

- Exact delivery dates can be indicated by you
- Matching accessories
- SSL-encryption
- Order history



[www.di-soric.com](http://www.di-soric.com)



# Photoelectric Sensors

di-soric photoelectric sensors are the optimum solution for all tasks in automation technology. The most diverse designs and operating principles allow for a perfect, wide range of applications.

## Through beam sensors

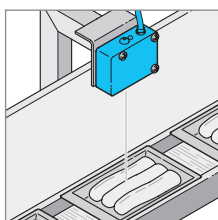
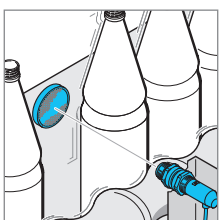
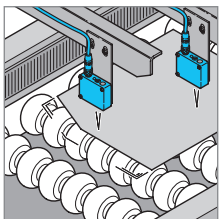
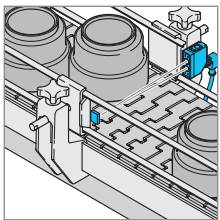
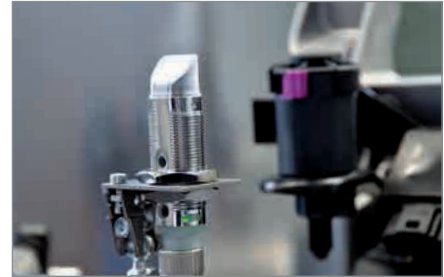
- High resolution
- Ranges up to 50 m
- Alignment aid
- Stainless steel casing with protection class IP 69K

## Retroreflective sensors

- High resolution
- Ranges up to 10 m
- Potentiometer or teach function
- Stainless steel casing with protection class IP 69K

## Diffuse sensors

- Contrast sensor with white light LED
- High resolution
- Sensing distance up to 2 m
- Background suppression
- Potentiometer or teach function
- Functional reserve/contamination indicator
- Stainless steel casing with protection class IP 69K



CE

<b>Technical data (typ.)</b>	<b>+20 °C, 24 VDC</b>
Service voltage	10 ... 30 VDC
	some versions with extended service voltage range 10 ... 35 VDC

	Operating distance, Setting range (mm)	Size (mm)	Sensitivity adjustment by means of	Transmitter (S)/Receiver (E)	Red light, clocked	Infrared light, clocked	White light	Switching output	Ambient temperature (°C)	Protection class	Casing material	Connector / cable length	Connecting cable	Product-ID*
<b>Diffuse sensors, energetic</b>														
	... 10	∅ 4,0	–	–	■			pnp, 100 mA, NO	0 ... +55	IP 67	Stainless steel V2A	2 m	–	OTV 40 V 10 P1K
	... 20	M5	–	–	■			pnp, 100 mA, NO	0 ... +55	IP 67	Stainless steel V2A	M8	TK ...	OTV 05 V 20 P1K-TSSL
	... 50	40x5x7	–	–	■			pnp, 100 mA, NO	0 ... +55	IP 67	Stainless steel V2A	2 m	–	OTV Q5 M 50 P1LK
	... 400	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +50	IP 66	Plastics Metal	M12	VK ... /4	OT 6-18 K 400 P3K-BSL OT 6-18 M 400 P3K-BSL
	100 ... 500	50x40x15	Poti Teach	–	■			pnp, 200 mA, NO/NC	–10 ... +60	IP 67	Die-cast zinc	M12	VK ...	OTV 51 M 500 P3K-IBS OTVTI 51 M 500 P3K-IBS
	100 ... 1.000	41x31,5x16	Teach Teach, Remote teach	–	■			Push-pull, 200 mA, NO/NC	–20 ... +60	IP 67	Die-cast zinc	M8	TK ... TK ... /4	OTT 41 M 1 G3-T3 OTT 41 M 1 FG3-T4
	0 ... 600	38x27x15	Poti	–	■			pnp, 100 mA, NO pnp, 100 mA, NC	–25 ... +60	IP 67	Plastics	M8	TK ...	OT 6-41 K 0.6 P1-T3 OT 6-41 K 0.6 P2-T3
<b>Diffuse sensors with background suppression</b>														
	10 ... 120	M18	Poti	–	■			pnp, 200 mA, NO	–25 ... +55	IP 65	Brass nickel plated	M12	VK ...	OHT 18 M 120 P1K-IBSL
	15 ... 150	30x30x15	Poti	–	■			pnp, 200 mA, NO	–25 ... +55	IP 65	Plastics	M8	TK ...	OHT 30 K 150 P1K-TSSL
	200 ... 2.000	68x40x20	Poti	–	■			pnp, 100 mA, NO/NC	–20 ... +55	IP 67	Plastics	M12	VK ...	OHT 68 K 2000 P3K-BSL
	40 ... 200	41x31,5x16	Teach Teach, Remote teach	–	■			Push-pull, 200 mA, NO/NC	0 ... +50	IP 67	Die-cast zinc	M8	TK ... TK ... /4	OHT 41 M 0.2 G3-T3 OHT 41 M 0.2 FG3-T4
<b>Optical contrast diffuse sensor</b>														
	30 ± 3	50x40x15	Teach	–	■			Push-pull, 200 mA, NO/NC	–10 ... +60	IP 67	Die-cast zinc	M12	VK ... /4	OKTTI 55 M 30 FG3LK-IBS
<b>Retroreflective sensors</b>														
	... 2.000	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +50	IP 66	Plastics Metal	M12	VK ... /4	OR 6-18 K 2000 P3K-BSL OR 6-18 M 2000 P3K-BSL
	... 3.000	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +50	IP 66	Plastics Metal	M12	VK ... /4	OR 6-18-1 K 3000 P3K-BSL OR 6-18-1 M 3000 P3K-BSL
	40 ... 2.000	50x40x15	Poti Teach	–	■			pnp, 200 mA, NO/NC	–10 ... +60	IP 67	Die-cast zinc	M12	VK ...	ORV 51 M 2000 P3K-IBS ORVTI 51 M 2000 P3K-IBS
	200 ... 10.000	41x31,5x16	Teach Teach, Fernteach	–	■			Push-pull, 200 mA, NO/NC	–20 ... +60	IP 67	Die-cast zinc	M8	TK ... TK ... /4	ORT 41 M 10 G3-T3 ORT 41 M 10 FG3-T4
	0 ... 4.000	38x27x15	Poti	–	■			pnp, 100 mA, NC pnp, 100 mA, NO	–25 ... +60	IP 67	Plastics	M8	TK ...	OR 6-41 K 4 P1-T3 OR 6-41 K 4 P2-T3
<b>Through beam sensors</b>														
	... 8.000	M18	Poti	S/E	■			pnp, 100 mA, NO/NC	–25 ... +50	IP 66	Plastics Metal	M12	VK ... /4	OES 6-18 K 8000 P3K-BSL OES 6-18 M 8000 P3K-BSL
	0 ... 10.000	50x40x15	Poti	S E	■			– pnp, 200 mA, NO/NC	–25 ... +60	IP 67	Die-cast zinc	M12	VK ...	OSV 51 M 10000-IBS OEV 51 M 10000 P3K-IBS
	0 ... 50.000	50x40x15	Poti	S E	■			– Push-pull, 200 mA, NO/NC	–40 ... +50	IP 67	Die-cast zinc	M12	VK ...	OSP 50 M 50000-IBS OEV 50 M 50000 G3K-IBS

\* Excerpt from our delivery programme

# Laser Photoelectric Sensors

Laser photoelectric sensors can safely, quickly and reliably detect even the smallest parts.  
The highly visible laser spot eases the alignment also on larger distances.

## Laser photoelectric sensors

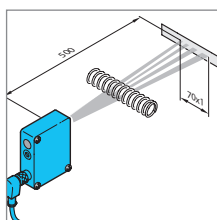
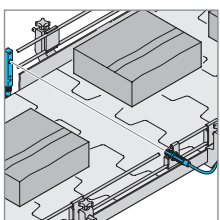
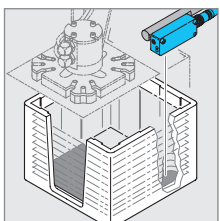
- Resolution 0,2 mm
- High switching frequency
- Collimated red light laser, clocked
- Range up to 50m
- Robust metal casing
- Compact design

## Laser line retroreflective sensors

- Fan-shaped laser beam with auto collimation principle
- Detects small parts in the entire active zone
- Red light laser, clocked
- 4-way potentiometer or teach function
- Robust metal casing
- Compact design

## Laser diffuse sensors with background suppression

- Optical or electronic background suppression
- Vibration-safe 6-way setting for very fine adjustment
- Red light laser, clocked, with small laser point
- Push-pull power stage pnp + npn
- High resolution, switching accuracy and frequency
- Functional reserve indicator/contamination
- Automatic readjustment of the transmit power
- Teach function





<b>Technical data (typ.)</b>	<b>+20 °C, 24 VDC</b>
Emitted light	Red light laser, clocked
Service voltage	10 ... 35 VDC / 10,8 ... 26,4 VDC (LLT 21 ... / LRT 21 ... / LES 21 ...)
Protection class	IP 67

	Operating distance, setting range (mm)	Size (mm)	Sensitivity adjustment by means of	Transmitter (S)/Receiver (E)	Switching output	Operating frequency (Hz)	Internal power consumption (mA)	Ambient temperature (°C)	Ambient light immunity (Lux)	Casing material	Connector	Connecting cable	Product-ID*	
<b>Laser diffuse sensors</b> ⚠														
	45 ... 300	22x13x8,5	Poti	–	pnp, 50 mA, NO/NC	1.000	15	–10 ... +55	3.000	Plastic casing	2 m M8	–	LT 21 K 300 P3 LT 21 K 300 P3-K-T4	
	75 ... 200	50x40x15	Poti	–	pnp, 200 mA, NO/NC	2.000	30	–10 ... +50	8.000	Die-cast zinc	M8 M12	TK ... /4 VK ...	LTV 51 M 200 P3K-TSSL LTV 51 M 200 P3K-IBS	
	75 ... 200	50x40x15	Teach	–	pnp, 200 mA, NO/NC	2.000	30	–10 ... +50	8.000	Die-cast zinc	M8 M12	TK ... /4 VK ...	LTVTI 51 M 200 P3K-TSSL LTVTI 51 M 200 P3K-IBS	
	100 ... 600	50x40x15	Poti	–	pnp, 200 mA, NO/NC	500	30	–10 ... +50	5.000	Die-cast zinc	M8 M12	TK ... /4 VK ...	LTV 51 M 600 P3K-TSSL LTV 51 M 600 P3K-IBS	
	100 ... 600	50x40x15	Teach	–	pnp, 200 mA, NO/NC	500	30	–10 ... +50	5.000	Die-cast zinc	M8 M12	TK ... /4 VK ...	LTVTI 51 M 600 P3K-TSSL LTVTI 51 M 600 P3K-IBS	
<b>Laser diffuse sensors with background suppression</b> ⚠														
	40 ... 200	41x31,5x16	Teach Teach, Remote teach	–	Push-pull, 200 mA, NO/NC	500	40	0 ... +50	50.000	Die-cast zinc	M8	TK ... /4	LHT 41 M 0.2 G3-T3 <sup>3)</sup> LHT 41 M 0.2 FG3-T4 <sup>3)</sup>	
	50 ... 200	50x40x15	Poti Teach	–	pnp, 200 mA	500	45	–10 ... +50	8.000	Die-cast zinc	M12	VK ... /4	LHT 51 M 200 P3K-IBS <sup>1)</sup> LHTTI 51 M 200 FP3K-IBS <sup>1)</sup>	
	40 ... 300	76x30x18	Poti	–	Push-pull, 200 mA, NO/NC	1.000	30	–10 ... +60	5.000	Die-cast zinc	M12	VK ... /4	LHT 81 M 300 G4L-IBS <sup>2)3)</sup> LHT 81 M 400 G4L-IBS <sup>2)</sup>	
	40 ... 400													
<b>Laser retroreflective sensors</b> ⚠														
	0 ... 4.000	22x13x8,5	Poti	–	pnp, 50 mA, NO/NC	1.000	15	–10 ... +55	3.000	Plastic casing	2 m M8	–	LR 21 K 4000 P3 LR 21 K 4000 P3-K-T4	
	1.000	50x40x15	Poti	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M8 M12	TK ... /4 VK ...	LRV 51 M 1000 P3K-TSSL LRV 51 M 1000 P3K-IBS	
	1.000	50x40x15	Teach	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M8 M12	TK ... /4 VK ...	LRVTI 51 M 1000 P3K-TSSL LRVTI 51 M 1000 P3K-IBS	
	2.000	41x31,5x16	Teach Teach, Remote teach	–	Push-pull, 200 mA, NO/NC	1.000	40	0 ... +50	50.000	Die-cast zinc	M8	TK ... /4	LRT 41 M 2 G3-T3 <sup>3)</sup> LRT 41 M 2 FG3-T4 <sup>3)</sup>	
	2.000	50x40x15	Poti	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M8 M12	TK ... /4 VK ...	LRV 51 M 2000 P3K-TSSL LRV 51 M 2000 P3K-IBS	
	2.000	50x40x15	Teach	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M8 M12	TK ... /4 VK ...	LRVTI 51 M 2000 P3K-TSSL LRVTI 51 M 2000 P3K-IBS	
	10.000	50x40x15	Poti	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M8 M12	TK ... /4 VK ...	LRV 51 M 10000 P3K-TSSL LRV 51 M 10000 P3K-IBS	
	10.000	50x40x15	Teach	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M8 M12	TK ... /4 VK ...	LRVTI 51 M 10000 P3K-TSSL LRVTI 51 M 10000 P3K-IBS	
<b>Laser through beam sensors</b> ⚠														
	0 ... 1.000	19x12x8,5	–	S/E	pnp, 50 mA, NO/NC	1.000	10	–10 ... +55	3.000	Plastic casing	2 m M8	–	LES 21 K 1000 P3 LES 21 K 1000 P3-K-T4	
	0 ... 2.000	M8x70	–	S E	pnp, 200 mA, NO	2.000	30	0 ... +50	5.000	Stainless steel	M8	TK ...	OLS 08 V 2000-TSSL OLE 08 V 2000 P2K-TSSL	
	0 ... 2.000	M12x70	–	S E	pnp, 200 mA, NO	2.000	30	0 ... +50	5.000	Stainless steel	M12	VK ...	OLS 12 V 2000-IBSL OLE 12 V 2000 P2K-IBSL	
	500...2.000	10x10x60	–	S E	pnp, 200 mA, NO	2.000	30	0 ... +50	5.000	Die-cast zinc	M8	TK ...	OLS Q 10 M 2000-TSSL OLE Q 10 M 2000 P2K-TSSL	
	2.000...50.000	15x15x69	Poti	–	S E	pnp, 200 mA, NO/NC	1.200	24 15	5 ... +45	–	Stainless steel	M8	TK ...	OLS Q 15 V 50000-TSSL OLE Q 15 V 50000 P3K-TSSL

\* Excerpt from our delivery programme

<sup>1)</sup>electronic background suppression / <sup>2)</sup>optical background suppression / <sup>3)</sup>class 1 laser product

# Laser Distance Sensors

Laser distance sensors with switching and/or analog output are working with laser light. The fields of application are diverse from height and loop control on conveyor belts up to distance measurement on linear units.

## Laser distance sensors LAT 51 ...

- Large detection range
- Exactly linearized object detection
- Digital and analog output
- Remote teach option with key-lock function
- Red light laser, clocked with small laser spot
- Robust metal casing
- High protection class

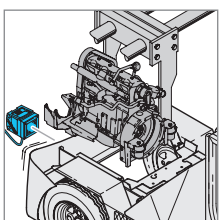
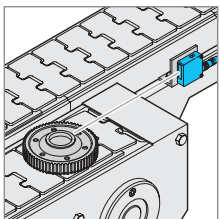
## Laser distance sensors LHT 9-45 ...

- Large range; up to 10 m
- Red light laser for simple alignment
- Switching and analog output parametrizable
- Four-digit display parametrizable
- Very good colour and surface independence
- Robust metal casing
- High protection class



## Laser distance sensors LAT 61 ...

- Extremely high resolution
- Integrated configuration display
- 2 analog and 3 digital outputs
- Timing- and multifunction input
- Light construction for mounting on moving parts
- High protection class



Technical data (typ.) +20 °C, 24 VDC	LAT 51 ...	LAT 61 ...	LHT 9-45 ...
Switching output 1	Push-pull, 150 mA, short-circuit-proof	pnp/npn, 50 mA	Transistor pnp, 200 mA, NO/NC programmable
Switching output 2	–	pnp/npn, 50 mA	Transistor pnp or analog output
Switching output 3	–	pnp/npn, 50 mA	–
Analog output	4 ... 20 mA (... IG3-B5) 0 ... 10 V (... UG3-B5)	4 ... 20 mA 0 ... 10 V	4 ... 20 mA (instead of switching output 2) or 0 ... 10 V (instead of switching output 2)
Linearity analog output	1,0 %	–	–
Load resistance (4 ... 20 mA)	≤ 500 Ω	≤ 300 Ω	max. 250 Ω (only LHT 9-45 M 10 P3IU-B4)
Load resistance (0 ... 10 V)	≥ 1.000 Ω	≥ 100 Ω	min. 5.000 Ω (only LHT 9-45 M 10 P3IU-B4)
Threshold	–	–	2 ... 100 % adjustable
Internal power consumption	60 mA	< 100 mA	< 150 mA
Ambient temperature	0 ... +50 °C	-10 ... +45 °C	-10 ... +60 °C
Ambient light immunity	5.000 Lux	3.000 Lux	100.000 Lux
Protection class	IP 67	IP 67	IP 67
Protection degree	III, Operation on protective low voltage	III, Operation on protective low voltage	III, Operation on protective low voltage
Casing material	Aluminium, black anodized	Plastic (PBT)	Die-cast zinc, black lacquered
Window casing	PMMA	Acryl	Glass

	Laser distance sensors	Laser sensors with background suppression	Detection range (mm)	Size (mm)	Red light laser, clocked (Laser class 2)	Service voltage (VDC)	Max. resolution (mm)	Max. operating frequency (Hz)	Output sequence frequency (Hz)	Diameter of light spot (mm)	Connector / cable length	Connecting cable	Product-ID*
	■		50 ... 500	50x50x16	■	18 ... 35	0,05 ... 1,5	500	–	∅ 2	M12	VK ... /5	LAT 51 M 500 IG3-B5 LAT 51 M 500 UG3-B5
	■		30 ± 4 50 ± 10 85 ± 20 120 ± 60	60x57x20	■	21,6 ... 26,4	0,5 µm 1,5 µm 2,5 µm 8,0 µm	–	–	0,1x0,1 0,5x1,0 0,75x1,25 1,0x1,5	5m	–	LAT 61 K 30/8 IUPN LAT 61 K 50/20 IUPN LAT 61 K 85/40 IUPN LAT 61 K 120/120 IUPN
	■	■	200 ... 10.000	45x52x42	■	10 ... 30 18 ... 30	–	5 5	– 1 ... 33	∅ 6	M12	VK ... VK ... /4	LHT 9-45 M 10 P3-B4 <sup>1)</sup> LHT 9-45 M 10 P3IU-B4 <sup>1)</sup>

<sup>1)</sup>Digital display

Mounting set for laser distance sensor LHT 9-45 ...	Product-ID*
<ul style="list-style-type: none"> <li>■ Adjustable</li> <li>■ Robust design</li> <li>■ Stainless steel</li> </ul>	SH-LHT9-45

\* Excerpt from our delivery programme

# High Performance Photoelectric Sensors

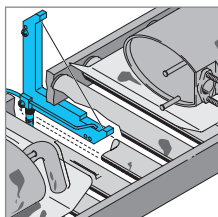
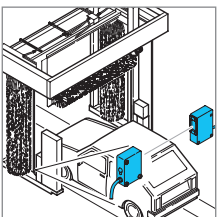
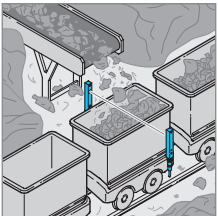
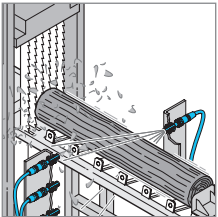
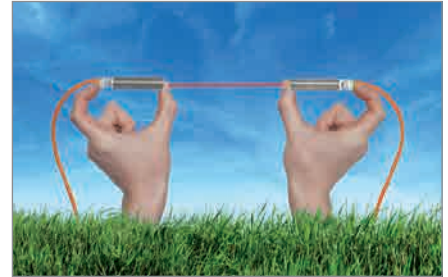
High performance photoelectric sensors are the more powerful versions of the various photoelectric sensors series. Thanks to their extremely high performance, chips, dust, oil and waste water can all be reliably penetrated.

## High performance photoelectric sensors

- High switching accuracy
- Extremely resistant to dirt
- Ranges up to 50 m
- Protection classes IP 67, IP 68 and IP 69K
- Versions with switchable heating function
- Versions with stainless steel casing







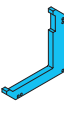

## High performance angled light barriers with contamination indicator/-output

- Intelligent contamination output with LED
- Intelligent contamination indicator
- High functional reserve
- Listed in the automobile industry
- Optical axis approachable in x-, y- and z-direction
- All-purpose mounting
- Robust metal casing



\* only OGLP and OGUP

Technical data (typ.)	+20 °C, 24 VDC
Emitted light	Infrared light, clocked
	Red light, clocked, collimated (only OGL 50/31 .../OGL 55/54 ...)
Contamination output	200 mA, pnp (only OGL 50/31 .../OGL 55/54 ...)
Ambient temperature	-10 ... +60 °C
	-20 ... +60 °C (only Oxp 12 ...)
	-40 ... +50 °C (only .../H)
Protection class	IP 67
	IP 67, IP 68, IP 69K (only Oxp 12 ...)

	Operating distance, Setting range (mm), Fork opening (mm), Journal length (mm)	Size (mm)	Transmitter (S)/Receiver (E)	Service voltage (VDC)	Switching output	Operating frequency (Hz)	Internal power consumption (mA)	Ambient light immunity (Lux)	Casing material	Connector	Connecting cable	
	<b>High performance through beam sensors</b>											<b>Product-ID*</b>
	50.000	M12x75	S E	10 ... 35	- Push-pull, 200 mA, NO	- 20	55 40	- 15.000	Stainless steel V2A	M12	VK ...	OSP 12 VHF-IBSL OEP 12 V 50000 G2-IBSL
	50.000	12 x 12 x 91	S E	10 ... 35	- Push-pull, 200 mA, NO	- 20	55 40	- 15.000	Aluminium anodised	M8	TK ...	OSPQ 12 MHF-TSSL OEPQ 12 M 50000 G2-TSSL
	0 ... 50.000	50x40x15	S E	10 ... 35	- Push-pull, 200 mA, NO/NC	- 20	55 40	- 15.000	Die-cast zinc	M12	VK ...	OSP 50 M 50000-IBS O EVP 50 M 50000 G3LK-IBS
	0 ... 50.000	50x40x15	S E	10 ... 35	- Push-pull, 200 mA, NO/NC	- 20	55 40	- 15.000	Die-cast zinc	M12	VK ... /4	OSP 50 M 50000-IBS/H <sup>1)</sup> O EVP 50 M 50000 G3LK-IBS/H <sup>1)</sup>
	<b>High performance fork light barriers</b>											
	30	50x60x10	-	10 ... 30	pnp, 200 mA, NO/NC	300	30	20.000	Die-cast zinc	M8	TK ...	OGUP 030 P3K-TSSL
	50	70x80x10										OGUP 050 P3K-TSSL
	80	100x80x10										OGUP 080 P3K-TSSL
	<b>High performance angled light barriers</b>											
	50	75x75x10	-	10 ... 35	pnp, 200 mA, NO/NC	1.000	30	20.000	Die-cast zinc	M8	TK ...	OGLP 050 P3K-TSSL
	80	105x105x10				300	30	20.000				OGLP 080 P3K-TSSL
	120	150x150x12				2.000	40	50.000				OGLP 120 P3K-TSSL
	150	180x180x12				2.000	40	50.000	Aluminium			OGLP 150 P3K-TSSL
	<b>High performance angled light barriers with contamination indicator/-output</b>											
	50/31	60x83x10	-	10 ... 35	pnp, 200 mA, NO	200	45	20.000	Die-cast zinc	M12	VK ... /4	OGL 50/31 P6L-IBS
	55/54	65x106x10										OGL 55/54 P6L-IBS

\* Excerpt from our delivery programme

<sup>1)</sup>with heating function



# Angled Light Barriers

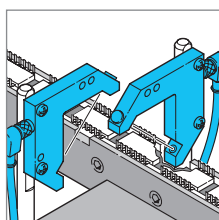
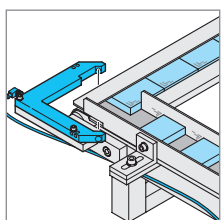
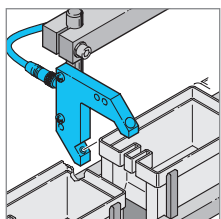
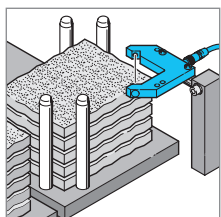
The angled light barrier is of particular use when removing workpieces or detecting parts. With high operating frequency, short response time and high resolution; exact positioning as well as the safe detection of extremely fast motion sequences of the smallest parts is possible.

## Angled light barriers

- Red and infrared types
- High operating frequency
- Sensitivity adjustable
- Light/dark switching
- Robust metal casing
- All-purpose mounting
- 3-years function guarantee \*

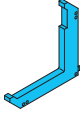


## Laser angled light barriers

- Very high resolution
- Visible laser spot
- Mountable side by side
- High operating frequency
- Sensitivity adjustable
- Light/dark switching
- Robust metal casing
- All-purpose mounting
- Class 1 laser product



\* according to our General Conditions of Export

Technical data (typ.)	+20 °C, 24 VDC
Service voltage	10 ... 35 VDC
Voltage drop	< 2,8 V
Switching hysteresis	< 0,25 mm
Ambient temperature	-10 ... +60 °C
Insulation voltage endurance	500 V
Protection class	IP67
Casing material	Die-cast zinc, lacquered

Journal length (mm)	Size (mm)	Red light 660 nm	Infrared light 880 nm	Red light laser 670 nm	Switching output	Internal power consumption (mA)	Resolution (mm)	Operating frequency (Hz)	Ambient light immunity (Lux)	Reproducibility (mm)	Connector	Connecting cable	Product-ID*
<b>Angled light barriers</b>													
	50	75 x 75 x 10	■	■	- pnp, 200 mA, NO/NC	< 30	∅ 0,5	4.000	80.000	0,06	M8	TK ...	OGL 051 P3K-TSSL
	80	105 x 105 x 10	■	■		< 30	∅ 0,7	4.000	25.000				OGL 050 P3K-TSSL
	120	150 x 150 x 12	■	■		< 40	∅ 1,0	2.000	70.000				OGL 081 P3K-TSSL
													OGL 080 P3K-TSSL
													OGL 121 P3K-TSSL
													OGL 120 P3K-TSSL
<b>Laser angled light barriers</b> 													
	50	81 x 81 x 10			pnp, 200 mA, NO/NC	< 30	∅ 0,05	3.000	100.000	0,01	M8	TK ...	LGL 051 P3K-TSSL
	80	106 x 106 x 10		■		< 30	∅ 0,05	3.000	100.000				LGL 081 P3K-TSSL
	120	146 x 146 x 12											LGL 121 P3K-TSSL
<b>High performance angled light barriers</b> see page 12 until 13													

\* Excerpt from our delivery programme

# Fork Light Barriers

With di-soric fork light barriers, you can reliably monitor, control and manage your material flow. The largest range of fork light barriers in conjunction with customised designs always offers the best solutions.

## Fork light barriers

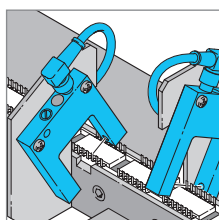
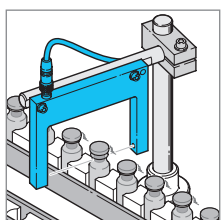
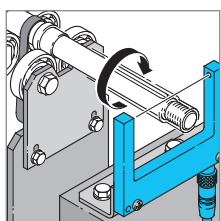
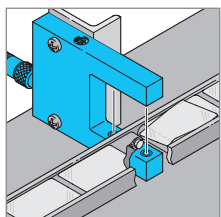
- Potentiometer or teach function
- Static or dynamic operating principle
- Analog/switching output
- Fork widths from 2 to 250 mm
- High operating frequency
- Sensitivity adjustable
- Light/dark switching
- Versions in V4A
- 3-years function guarantee\*

## Differential fork light barriers

- Differential evaluation
- High resolution
- Detects transparent objects and the thinnest threads
- Fork widths from 30 to 90 mm
- 3-years function guarantee\*







## Laser fork light barriers

- Resolution 0,05 mm
- High switching frequency
- Reproducibility 0,01 mm
- Fork widths from 30 to 120 mm
- Class 1 laser product



\* according to our General Conditions of Export

Technical data (typ.)	+20 °C, 24 VDC
Service voltage	10 ... 35 VDC / 12 ... 35 VDC (only ODG ...) / 10 ... 30 VDC (only LGU ...)
Switching output	pnp, 200 mA, NO/NC switchable / push-pull, 200 mA, NO/NC switchable (only ... G3K ...)
Sensitivity adjustment	Potentiometer Teach key (only OGUTI ...)
Laser power	100 µW only LGU ...
Laser class	1- EN 60825-1 (only LGU ...)
Ambient temperature	-10 ... 60 °C / +5 ... 45 °C (only LGU ...)
Protection class	IP 67
Casing material	Die-cast zinc, lacquered Stainless steel V4A (1.4404 / 1.4571) (only OGU ... V4A) Aluminium, black anodized (only ODG ... / LGU ...)

Fork opening (mm)	Size (mm)	Sensitivity adjustment by means of	Red light 660 nm, clocked	Infrared light 880 nm, unclocked	Red light laser 670 nm, clocked	Internal power consumption (mA)	Resolution, smallest detectable part (mm)	Voltage drop (V)	Operating frequency (Hz)	Switching hysteresis (mm)	Reproducibility (mm)	Ambient light immunity (Lux)	Connector	Connecting cable	Product-ID*	
<b>Fork light barriers in standard version</b>																
	10	25x45x10	Poti	■	■	40	∅ 0,3	2,4	10.000	0,1	0,01	20.000	M8	TK ...	OGU 010 G3K-TSSL	
	20	40x50x10		■	■	30	∅ 0,4	2,8	4.000	0,1	0,02	70.000			OGU 021 P3K-TSSL	
	30	50x60x10		■	■	30	∅ 0,5	2,8	4.000	0,25	0,02	30.000			OGU 031 P3K-TSSL	
	50	70x80x10		■	■	30	∅ 0,5	2,8	4.000	0,25	0,04	25.000			OGU 051 P3K-TSSL	
	80	100x80x10		■	■	30	∅ 0,5	2,8	4.000	0,25	0,06	25.000			OGU 081 P3K-TSSL	
	120	144x90x12		■	■	45	∅ 0,8	2,0	2.000	0,2	0,06	20.000			OGU 121 P3K-TSSL	
<b>Fork light barriers in stainless steel casing</b>																
	30	50x60x10	Poti	■					4.000	0,25	0,02	30.000	M8	TK ...	OGU 031 P3K-TSSL/V4A	
	50	70x80x10													OGU 051 P3K-TSSL/V4A	
	80	100x80x10													OGU 081 P3K-TSSL/V4A	
	120	144x90x12													OGU 121 P3K-TSSL/V4A	
<b>Fork light barriers with teach function</b>																
	30	50x60x10	Teach	■				2,0	3.000	0,1	0,03	20.000	M8	TK ...	OGUTI 031 P3K-TSSL	
	50	70x80x10													OGUTI 051 P3K-TSSL	
	80	100x80x10													OGUTI 081 P3K-TSSL	
	120	144x90x12													OGUTI 121 G3K-TSSL	
<b>Fork light barriers with teach function, dynamic evaluation and adjustable pulse stretching 5 ... 150 ms</b>																
	30	50x60x10	Teach	■				2,0	100	-	-	10.000	M8	TK ...	OGUTID 031 P3K-TSSL <sup>1)</sup>	
	50	70x80x10													OGUTID 051 P3K-TSSL <sup>1)</sup>	
	80	100x80x10													OGUTID 081 P3K-TSSL <sup>1)</sup>	
<b>Differential fork light barriers</b>																
	30	50x70x10	Poti	■			35	∅ 0,07	2,5	5.000	0,2	0,01	-	M8	TK ...	ODG 30 P3K-TSSL <sup>1)</sup>
	50	70x90x10														ODG 50 P3K-TSSL <sup>1)</sup>
	90	110x115x10														ODG 90 P3K-TSSL <sup>1)</sup>
<b>Laser fork light barriers</b> ⚠																
	30	60x60x10	Poti		■		30	∅ 0,05	2,8	3.000	0,02	0,01	100.000	M8	TK ...	LGU 031 P3K-TSSL
	50	80x80x10														LGU 051 P3K-TSSL
	80	110x80x10														LGU 081 P3K-TSSL
	120	150x90x12														LGU 121 P3K-TSSL
<b>High performance fork light barriers</b> see page 12 until 13																

\* Excerpt from our delivery programme

<sup>1)</sup>without UL-approval

# Frame & Ring Light Barriers

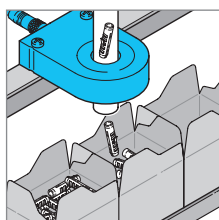
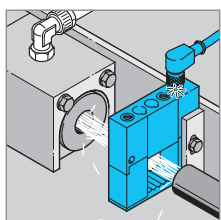
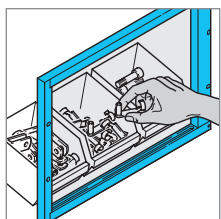
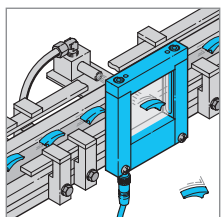
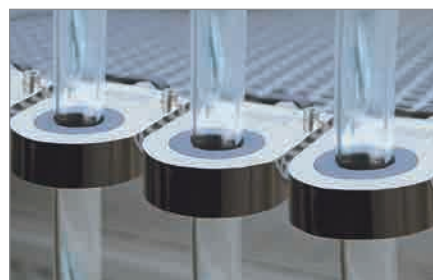
The optimum solution for detecting metallic and non-metallic parts, for counting small parts or for checking ejection or removal of workpieces in press and stamping plants.

## Frame light barriers

- Detachable corrugated crossbar
- Patented baffle protection for protected optics
- Invariable resolution even in the border area
- Resolution 0,7 mm
- Very short response time
- Adjustable pulse stretching
- Switchable static/dynamic operating principle
- Integrated blow-off ports
- Robust metal casing

## Ring light barriers

- Resolution 1 mm
- Short response time
- Adjustable pulse stretching
- Switchable static/dynamic operating principle






CE





Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Infrared light 880 nm
Response time	0,1 ms
Release time	0,1 ... 150 ms (only OGWSD ...)
Pulse stretching	0,1 ... 150 ms (only OGWSD ...)
	1 ... 150 ms (only ORSD ...)
Ambient temperature	0 ... 60 °C
Protection class	IP67
Insulation voltage endurance	500 V
Casing material	Aluminium, anodised (only OGWSD ...)
	Plastic PA (only ORSD ...)

Active zone/Ring diameter (mm)		Size (mm)		Functional principles Static (S)/Dynamic (D)		Switching output		Internal power consumption (mA)		Resolution, dynamic mode (mm)		Resolution, static mode (mm)		Ambient light immunity (Lux)		Service voltage (VDC)		External amplifier		Connector		Connecting cable		
<b>Frame light barriers</b>																							<b>Product-ID*</b>	
	25x23	60x60x15	S/D	pnp, 200 mA, NO/NC	25	∅ 0,7	∅ 1,0	30.000	10 ... 35	■	M8	TK ...	OGWSD 25 P3K-TSSL											
	40x49	85x80x15			30	∅ 0,7	∅ 1,0	20.000	18 ... 35				OGWSD V 4055 P3K-TSSL											
40x49	80x125x20	30			∅ 0,7	∅ 1,0	20.000	18 ... 35	OGWSD 4055 P3K-TSSL															
70x62	110x123x20	30			∅ 1,5	∅ 2,0	20.000	18 ... 35	OGWSD 70 P3K-TSSL															
100x92	140x153x20	35			∅ 2,5	∅ 3,0	20.000	18 ... 35	OGWSD 100 P3K-TSSL															
	150x142	190x203x20			45	∅ 3,0	∅ 5,0	20.000	18 ... 35				OGWSD 150 P3K-TSSL											
	250x242	290x303x20			45	∅ 5,0	∅ 8,0	10.000	22 ... 26				OGWSD 250 P3K-TSSL											
	300x397,5	340x458,5x20			50	∅ 5,0	∅ 10,0	8.000	22 ... 26				OGWSD 300 P3K-TSSL											
<b>Ring light barrier</b>																								
	20,6	60x85x20	S/D	pnp, 200 mA, NO	30	∅ 1,5	∅ 1,5	5.000	10 ... 35		M12	VK ...	ORSD 20 P2K-IBS											

\* Excerpt from our delivery programme

# Fibre-optic Cables/-Amplifiers

Glass fibre-optic cables are used for narrow spaces at extreme temperatures. Thanks to their small casing design, plastic fibre-optic cables can be used in even the narrowest spaces.

## Glass fibre-optic cables

- High-quality glass fibre-optic cables
- Silicone, metal or PU coating
- Bendable probes
- High temperature resistance
- Robust, highly flexible construction
- Special designs

## Amplifiers for glass fibre-optic cables

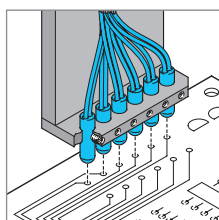
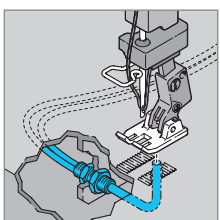
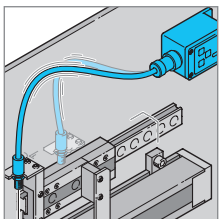
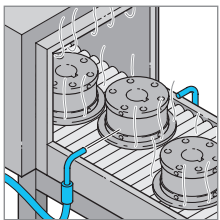
- High switching frequency
- Analog and digital outputs
- Infrared, red and green light, clocked
- Potentiometer or teach function
- Robust metal casing

## Plastic fibre-optic cables

- High resolution
- Large operating distances
- Fine internal fibres
- Auxiliary optics
- Bendable sensor probe
- Versions with coaxial arrangement

## Amplifiers for plastic fibre-optic cables

- Digital LED display
- High operating frequency
- Timer function
- Potentiometer or teach function
- High operating distance
- Functional reserve output



CE

<b>Technical data (typ.)</b>	<b>+20 °C, 24 VDC</b>
Switching output	Transistor, pnp, 200 mA
Ambient temperature	-25 ... +55 °C (only OLVK 31 .../OLVKxx 61 ...)
	0 ... +60 °C (only OLVK 41 ...) / -10 ... +60 °C (only OLVxx 4x ...)
Casing material	PBTP (Crastin) / Polyester (only OLVK 41 ...) / Die-cast zinc (only OLV 4x .../OLVTI 4x ...)

Size (mm)	Sensitivity adjustment by means of	Service voltage (V)	Operating frequency (Hz)	Infrared light, clocked	Red light, clocked	NO/NC switchable	Antivalent	Switching hysteresis (%)	Temperature drift (%/K)	Ambient light immunity (Lux)	Protection class	Internal power consumption (mA)	Connector	Connecting cable	Product-ID*
<b>Amplifiers for plastic fibre-optic cables</b>															
	30x30x15	Poti	10 ... 36	1.000		■	■	10	0,3	10.000	IP 67	15	M8	TK.../4	OLVK 31 P4K-TSSL
	40x36x12	Poti	12 ... 35	750		■	■	15	0,3	30.000	IP 65	36	M8	TK...	OLVK 41 P3K-TSSL
	60x31x10	Poti	10 ... 30	1.500		■	■	10	0,2	10.000	IP 64	15	M8	TK... TK.../4	OLVK 61 P3K-TSSL/3 OLVK 61 P3FK-TSSL
	60x31x10	Teach	10 ... 30	1.500 4.000		■	■	10 5	0,2	10.000	IP 64	25 30	M8	TK.../4	OLVKTI 61 P3FK-TSSL OLKTD 61 P3-T4 <sup>1)</sup>
	65x31x10	Teach	12 ... 24	4.000		■	■	-	0,2	3.000	IP 40	30	M8	TK.../4	OLKTD 71 P3-T4 <sup>1)</sup>
<b>Amplifiers for glass fibre-optic cables</b>															
	40x41x75	Poti	12 ... 35	1.500	■	■	■	10 15	0,3	20.000	IP 65	55	M12	VK.../4	OLV 40 P3K-IBS OLV 41 P3K-IBS
	40x41x75	Teach	10 ... 35	1.500	■	■	■	12 12	0,1 0,25	50.000	IP 65	45	M12	VK.../4	OLVTI 40 P3K-IBS OLVTI 41 P3K-IBS

Application as diffuse sensor	Application as through beam sensor	Operating distance up to ... (mm) depending on amplifier	Sensor probe	Thread sleeves (brassnickel-plated)	Thread sleeves (VA)	Mounting	Coating cable (PE)	Coating cable (silicone metal coating)	Length fibre-optic cable <sup>1)</sup> (mm)	Temperature resistance (°C)	Protection class	Product-ID*
<b>Plastic fibre-optic cables (PMMA)</b>												
	■	70	-	■		M3						WRBT 2000 K-M3-0.5
	■	140	-	■	■	M5						WRBT 2000 K-M5-Z8
	■	150	VA	■		M6	■	2.000 <sup>2)</sup>	-25 ... +70	IP 67		WRBT 2000 KBF-M6-1.0
	■	200	-	■		M6						WRBT 2000 K-M6-1.0
	■	1.700	-	■		M6						WRBE 2000 KR-M6-1.0
<b>Glass fibre-optic cables</b>												
	■	20	VA			∅5x15						WRB 120SB 2.0-1.0
	■	150	VA			∅5x15						WRB 220SB 2.0-1.0
	■	70	VA			∅8x35						WRB 120SR-8.0-2.5
	■	800	VA			∅8x35						WRB 220SR-8.0-2.5
	■	85	VA			∅8x15	■	600 <sup>3)</sup>	-40 ... +180	IP 67		WRB 120S-8-2.5
	■	1.000	VA			∅8x15						WRB 220S-8-2.5
	■	85	VA			M4x20						WRB 120S-M4-2.5
	■	1.800	VA			M4x20						WRB 220S-M4-2.5
■	85	AL			30x16x10						WRB 120SQ-90-10-0.6	
■	650	AL			30x16x10						WRB 220SQ-90-10-0.3	

\* Excerpt from our delivery programme

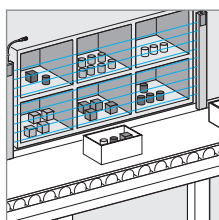
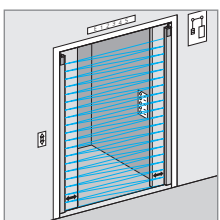
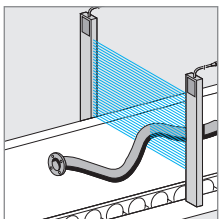
<sup>1)</sup> with digital display / <sup>2)</sup> cut to length / <sup>3)</sup> further lengths available

# Light Curtains

Specified areas for checking individual parts are safely monitored with invisible, infrared light beams in di-soric light curtains.


## Light curtains

- Transistor outputs or relay outputs
- Integrated or external evaluation electronics
- Alarm output for contamination
- Light beam interspace from 12,5 to 112 mm
- Monitoring heights from 35 to 5.775 mm
- Compact design
- Aluminium casing
- Simple mounting



CE

<b>Technical data (typ.)</b>	<b>+20 °C, 24 VDC</b>
	<b>LA.../LA-D...</b>
Operating distance	0,7 ... 4,0 m / factory present to 4,0 m
Emitted light	Infrared light 880 nm, clocked
Service voltage	20,4 ... 28,8 VDC
Switching output	Transistor pnp (switching and alarm output)
Maximum rating	200 mA, short-circuit-proof
Ambient temperature	-10 ... +45 °C
Protection class	IP 54
EMC directives	EN 61000-6-3:2001/EN 61000-6-1:2001
Casing material	Aluminium, rod profile (24 x 12 mm)

Product-ID* light curtains LA.../LA-D...							
	Light beam evaluation LA... = Horizontal LA-D... = Diagonal	Nos. of beams	Light beam interspace (mm)	Monitored height H (mm)	Profile length L ca. (mm)	Mounting	H = Light switching D = Dark switching
	LA LA-D	8	-12.5	-88	-260	I-	H D
<b>Ordering example:</b> Light curtains with horizontal light beam evaluation, Nos. of beams = 8, Light beam interspace = 12,5 mm, Monitored height = 88 mm, Profile length = 260 mm, light switching							<b>LA 8-12.5-88-260 I-H</b>

Operating distance 12,5 mm			Operating distance 12,5 mm			Operating distance 25 mm			Operating distance 50/112 mm		
LA	8-12.5-88-260 I-	H	LA	72-12.5-888-1060 I-	H	LA	8-25-175-360 I-	H	LA	8-50-350-560 I-	H
LA-D		D	LA		D	LA-D		D	LA-D		D
LA	16-12.5-188-360 I-	H	LA	80-12.5-988-1160 I-	H	LA	16-25-375-560 I-	H	LA	16-50-750-960 I-	H
LA-D		D	LA-D		D	LA-D		D	LA-D		D
LA	24-12.5-288-460 I-	H	LA	88-12.5-1088-1260 I-	H	LA	24-25-575-760 I-	H	LA	24-50-1150-1360 I-	H
LA-D		D	LA-D		D	LA-D		D	LA-D		D
LA	32-12.5-388-560 I-	H	LA	96-12.5-1188-1360 I-	H	LA	32-25-775-960 I-	H	LA	32-50-1550-1760 I-	H
LA-D		D	LA-D		D	LA-D		D	LA-D		D
LA	40-12.5-488-660 I-	H	LA	104-12.5-1288-1460 I-	H	LA	40-25-975-1160 I-	H	LA	40-50-1950-2160 I-	H
LA-D		D	LA-D		D	LA-D		D	LA-D		D
LA	48-12.5-588-760 I-	H	LA	112-12.5-1388-1560 I-	H	LA	48-25-1175-1360 I-	H	LA	8-112-783-1050 I-	H
LA-D		D	LA-D		D	LA-D		D	LA-D		D
LA	56-12.5-688-860 I-	H	LA	-	H	LA	56-25-1375-1560 I-	H	LA	16-112-1677-1950 I-	H
LA-D		D	LA-D		D	LA-D		D	LA-D		D
LA	64-12.5-788-960 I-	H	LA	-	H	LA	64-25-1575-1760 I-	H	LA	24-112-2571-2840 I-	H
LA-D		D	LA-D		D	LA-D		D	LA-D		D

\* Excerpt from our delivery programme / npn-types are available upon request

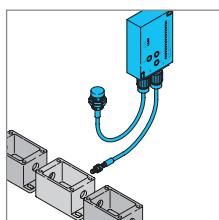
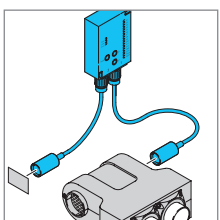
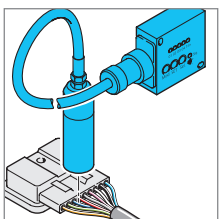
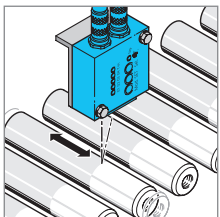


# Colour Sensors

These high-quality sensors detect shades in changes to colour or surface structures and are frequently used in quality testing.



## Colour sensors

- ◆ Perceptive operating mode (depending on sensitivity)
- ◆ Measurement in colorimetric colour spaces e. g.  $L^*a^*b$  and  $L^*u^*v$
- ◆ Differentiation of very small colour nuances ( $\Delta E < 1$ )
- ◆ Up to 350 channels
- ◆ 2-channel differential evaluation
- ◆ Adjustable colour tolerance
- ◆ Very short response time
- ◆ High ambient light compensation
- ◆ Reflection compensation
- ◆ Exportable measured values for PC applications (.xls, .csv)
- ◆ Extensive setting options via PC
- ◆ Surface structure checking
- ◆ Separate evaluation of brightness and colouring
- ◆ Illumination with aging-compensated white light LED
- ◆ Key lock function
- ◆ Fixed optics or fibre-optic cable adaption
- ◆ Fibre-optic cable with various auxiliary optics
- ◆ Visualisation of chrominance values with PC software
- ◆ FS software included in the scope of delivery

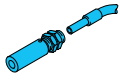

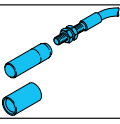
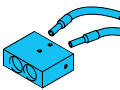
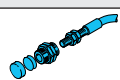


CE

Technical data (typ.)	+20 °C, 24 VDC		
Emitting light source	White light LED, can be switched off		
Colour resolution	DE Lab < 1		
Response time / Scan frequency	0,2 ms	5.000 Hz:	up to 350 colour evaluable
	0,1 ms	10.000 Hz:	up to 30 colour evaluable
	0,05 ms	20.000 Hz:	3 colour evaluable

	Operating distance (mm)	Number of sensing channels	Teach-in colour channels (nos.)	Colour channels with binary coding (nos.)	Fibre-optic cable adapter	Fixed optics	Colour memory internal	4x npn + pnp (Push-pull)	12x npn + pnp (Push-pull)	Illumination with age compensating white light LED	Profibus	Service voltage (VDC)	Internal power consumption (mA)	Protection class	Product-ID
	see fibre-optic cables 30 ... 60	1	4	15	■	■	350	■	■	■	■	18 ... 28	500	IP 54	FS 12-50 M G3-B8 FS 50 M 60 G3-B8
	see fibre-optic cables	1	12	350	■	■	350	■	■	■ <sup>3)</sup>	■ <sup>3)</sup>	■	18 ... 28	500	IP 54
2		FS 12-100-2 M G8-B8 <sup>1)</sup>													
2		FS 12-100-2 M G8-B8-PB <sup>2)</sup>													
	Adapter cable 0,25 m (USB/RS232)														RS232S-0.25-USB
	Connecting cable 5 m														BSHM-Z-5/8-A
	Connecting cable 2 m (USB)														BSHM-Z-2/4-USB
	Connecting cable 2 m (RS232)														BSHM-Z-2/4-RS232K

<sup>1)</sup> Versions with CANopen and fast Ethernet Feldbus interface available upon request / <sup>2)</sup> Profibus / <sup>3)</sup> with stabilization target

	Focus optics	Fibre-optic cable to be used as diffuse sensor	Fibre-optic cable to be used as through beam sensor	Measuring spot Ø (mm)	Active Ø (mm)	Opening angle	Working distance (mm)	Scanning distance (mm)	Size (mm) Dimensions sensor probe (mm)	Mounting fibre-optic cable / focus optics	Material focus optics Aluminium, anodised	Material sensor probe stainless steel	Protection class	Product-ID
	■	■	–	2,5	67°	–	–	Ø 4,5 x 12	Ø 4,5	■	■	IP 67	WRB 120 S-SG-4.5-2.5	
			2,0	–	–	10	10 ... 15	Ø 15 x 60	Ø 4,5	■	■	–	VO-M12/10-4.5-2.5	
		■	–	2,5	67°	–	–	M4 x 20	M4	■	■	IP 67	WRB 120 S-SG-M4-2.5	
		■	–	2,5	67°	–	–	M6 x 30	M6	■	■	IP 67	WRB 120 S-SG-M6x30-2.5	
	■		6,0	–	–	35	30 ... 60	Ø 22 x 63	M6	■	■	–	VO-M6/35-M6x30-2.5	
	■		6,0	–	–	50	35 ... 60	Ø 22 x 39	M6	■	■	–	VO-M6/50-M6x30-2.5	
		■	–	2,5	67°	–	–	Ø 4,5 x 12	Ø 4,5	■	■	IP 67	WRB 220 S-4.5-2.5	
	■		14	–	–	90	70 ... 150	40 x 50 x 22	Ø 4,5	■	■	–	VO-F/90-4.5-2.5	
<b>Stabilisation target</b> for external drift stabilisation and matching fibre-optic cable														
	Target colours: RAL 9003 / RAL 7046 / black				–	–	–	–	M6	■	■	–	FS-STAB	
	Fibre-optic cable 300 mm				67°	–	–	M6 x 20	M6	■	■	IP 67	WRB 110 S-M6-2.5	

Further information and types will be found under [www.di-soric.com](http://www.di-soric.com)

# Ring- & Tube Sensors

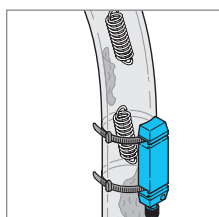
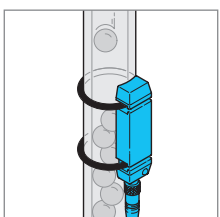
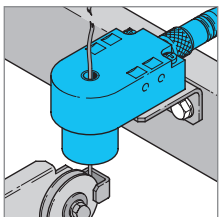
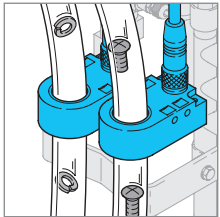
This series is featured by an easy mounting for safe detection of guided, small metal parts like, springs or screws. Versions for wire break detection complete our range.

## Inductive ring sensors/ Wire break sensors













- High resolution:
  - Steel ball  $\varnothing$  0,5 to 10 mm
  - Copper wire from  $\varnothing$  0,1 mm
- Static or dynamic operating principle
- Sensitivity adjustment
- Short response time
- Adjustable pulse stretching
- Switchable NO/NC function
- Ring diameter from 4 to 150 mm
- Insensitivity to dirt
- Protection class IP 67

## Inductive tube sensors

- High resolution
- Short response time
- Static or dynamic operating principle
- Universal mounting
- Low weight
- Compact design
- Automatic elimination of metalliferous contamination
- Protection class IP 67



Technical data (typ.)	+20 °C, 24 VDC
Service voltage	10 ... 35 VDC
Sensitivity adjustment	Potentiometer (only IRx ...)
Voltage drop	2,0 V
Shock/vibration loading	30 g <sub>r</sub> /10 ... 55 Hz, 1 mm (only ISx ...)
Speed of parts	< 35 m/s
Ambient temperature	-25 ... 70 °C
Protection class	IP67
Insulation voltage endurance	500 V (1.000V only IRx .../IRDB ...)
Display LED	Output yellow, operation green (only ISx 70 ...)
Casing material	Polyamide, ring POM (only IRx .../IRDBx 6 ...)
	Polyamide, ring POM, ceramic insert (only IRDBx 4 ...)
	Polycarbonate (only ISx ...)

	Ring diameter (mm)	Evaluation: Static (S)/Dynamic (D)	Internal power consumption (mA)	Resolution, steel ball (mm)	Resolution copper wire (mm)	Switching output	Pulse stretching	Connector	Connecting cable	Versions with radial plug connection ... RIBS available	Product-ID*
<b>Inductive ring sensors</b>											
	6,1	S	11	1,0	-	pnp, 200 mA, NO/NC	10 ... 150 ms	M12	VK...	■	IR 6 PSOK-IBS
		D	20	0,5	-						IRD 6 PSOK-IBS
	10,1	S	11	1,5	-	pnp, 200 mA, NO/NC	10 ... 150 ms	M12	VK...	■	IR 10 PSOK-IBS
		D	20	0,6	-						IRD 10 PSOK-IBS
	15,1	S	11	2,0	-	pnp, 200 mA, NO/NC	10 ... 150 ms	M12	VK...	■	IR 15 PSOK-IBS
		D	20	0,8	-						IRD 15 PSOK-IBS
	20,1	S	11	2,5	-	pnp, 200 mA, NO/NC	10 ... 150 ms	M12	VK...	■	IR 20 PSOK-IBS
		D	20	1,0	-						IRD 20 PSOK-IBS
	25,1	S	11	3,0	-	pnp, 200 mA, NO/NC	10 ... 150 ms	M12	VK...	■	IR 25 PSOK-IBS
		D	20	1,2	-						IRD 25 PSOK-IBS
	35,2	S	11	4,5	-	pnp, 200 mA, NO/NC	10 ... 150 ms	M12	VK...		IR 35 PSOK-IBS
		D	20	2,0	-		0,1 ... 150 ms				IRD 35 PSOK-IBS
	51,0	S	11	6,0	-	pnp, 200 mA, NO/NC	10 ... 150 ms	M12	VK...		IR 50 PSOK-IBS
		D	20	2,5	-		0,1 ... 150 ms				IRD 50 PSOK-IBS
	101,0	S	15	10,0	-	pnp, 200 mA, NO/NC	10 ... 150 ms	M12	VK...		IR 100 PSOK-IBS
		D	20	5,0	-		0,1 ... 150 ms				IRD 100 PSOK-IBS
	151,0	S	15	19,0	-	pnp, 200 mA, NO/NC	10 ... 150 ms	M12	VK...		IR 150 PSOK-IBS
		D	20	10,0	-		0,1 ... 150 ms				IRD 150 PSOK-IBS
<b>Wire break sensors</b>											
	4,0	S	11	-	0,2	pnp, 200 mA, NO/NC	0,1 ... 150 ms	M12	VK...		IRDB 4 PSOK-IBS
		D	20	-	0,1						IRDBD 4 PSOK-IBS
	6,1	S	11	-	0,2	pnp, 200 mA, NO/NC	0,1 ... 150 ms	M12	VK...		IRDB 6 PSOK-IBS
		D	20	-	0,1						IRDBD 6 PSOK-IBS
<b>Inductive tube sensors</b>											
	-	S	15	**	-	pnp, 200 mA, NO/NC	100 ms	M8	TK...		IS 70 PSK-TSSL
		D	25	**	-			M12	VK...		IS 70 PSLK-K-BS
	-	S	15	**	-	pnp, 200 mA, NO/NC	100 ms	M8	TK...		ISDP 70 PSK-TSSL
		D	25	**	-			M12	VK...		ISDP 70 PSLK-K-BS

\* Excerpt from our delivery programme / \*\* depending on the feeding hose used

# Optical Movement Sensors

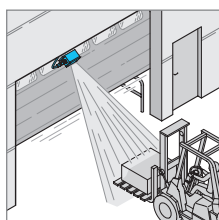
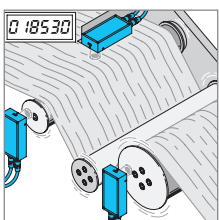
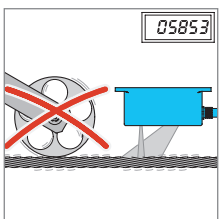
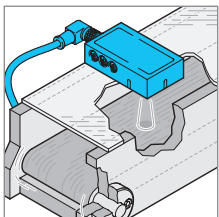
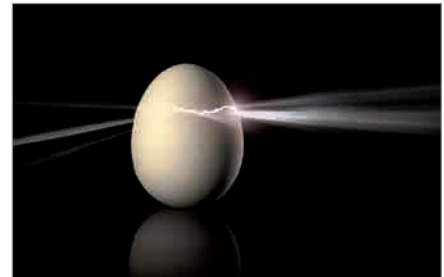
Movements will be safely and contactless detected or measured with optical movement sensors. Radar sensors are used for larger distances and for outdoor use.

## Optical movement sensors

- Incremental outputs for measuring speed, length and rpm
- Two detection axes (along and across the casing)
- Direction detection
- Detection of movement or standstill
- OBS software included in the scope of delivery
- Adjustable pulse stretching
- High protection class
- Robust metal casing

## Radar sensors

- Detection range up to 6 m
- Non-contact object detection depending on the direction of movement
- Adjustable detection area and pulse stretching
- Can be fitted behind non-metallic materials
- Wear-free switching outputs
- Switch outputs for approach and remote detection
- High protection class IP 67 for outdoor use
- Robust metal casing



CE

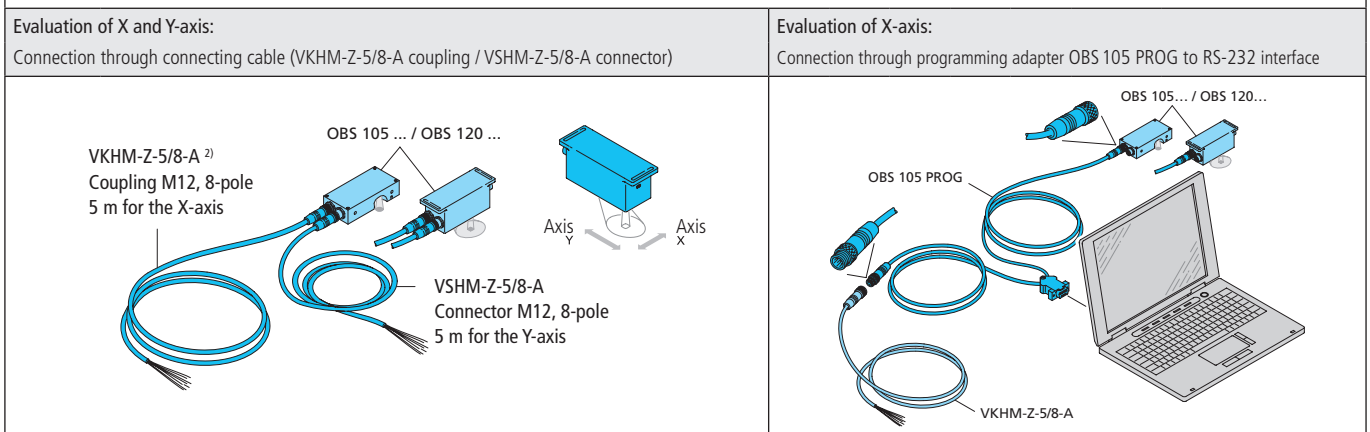


Technical data (typ.)	+20 °C, 24 VDC
Pulse stretching	2 ... 1.000 ms adjustable (only OBS 60 ...)
	1 ... 100 ms adjustable (only OBS 105 .../OBS 120 ...)
	0,1 ... 30 sec. adjustable (only RS ...)
Laser class (EN 60825-1)	1M (only OBS 60 .../OBS 105 ...)
Ambient temperature	+5 ... +45 °C (only OBS ...) / -20 ... +60 °C (only RS ...)
Protection class	IP 67 / IP 65 (only OBS 105 ...)
Casing material	Aluminium, black anodized (only OBS ...) / die-cast zinc, black lacquered (only RS ...)

Working distance, Material dependent (mm)	Speed (m/s)	Service voltage (VDC)	Internal power consumption (mA)	Red light 650 nm	Infrared laser 850 nm	Radar 24, 125 GHz	Switching output	Switching output 1: +UB, 100 mA, pnp/npn (push-pull), configurable	Switching output 2: +UB, 100 mA, pnp/npn (push-pull), configurable	1 switching output for approaching and moving away detection	1 switching output for approaching- and 1 switching output for distance detection	Connector	Connecting cable	Product-ID
<b>Optical movement sensor with switching output</b> ⚠														
	30 ± 10	< 1	10 ... 35	70	■		pnp, 200 mA, NO/NC					M8	TK ...	OBS 60 M 30 P3K-TSSL
<b>Optical movement sensors with incremental- and two configurable switching outputs for smooth surfaces</b> ⚠														
	30 ± 5	< 4	10 ... 30	50	■		Push-Pull RS 422	■	■			M12	VxHM ...	OBS 105 M 30 INC-3 <sup>2)</sup> OBS 105 M 30 INC-4 <sup>2)</sup>
<b>Optical movement sensor with incremental- and two configurable switching outputs for rough surfaces</b>														
	40 ± 4	< 4	10 ... 30	250	■		Push-Pull RS 422	■	■			M12	VxHM ...	OBS 120 M 40 INC-1 <sup>2)</sup> OBS 120 M 40 INC-2 <sup>2)</sup>
<b>Radar sensors</b>														
	500 ... 6.000 <sup>1)</sup>	> 0,1	10 ... 35	35	■		1x push-pull, 200 mA, NO/NC 2x push-pull, 200 mA, NO/NC			■	■	M12	VK ... VK .../4	RS 40 M 6000 G3L-IBS RS 40 M 6000 G8L-IBS

<sup>1)</sup> measured on walking speed. Distance depends on reflection and speed of object.

Accessories for OBS 105 ... and OBS 120 ...														
	Connecting cable for X-axis and supply voltage, length 5 m, coupling M12													VKHM-Z-5/8-A <sup>2)</sup>
	Connecting cable for Y-axis and switching outputs, length 5 m, connector M12													VSHM-Z-5/8-A
	Programming adapter to connect to RS-232 interface Length 2.5 m, RS 232, coupling M12, connector M12													OBS 105 PROG <sup>3)</sup>



<sup>2)</sup> VKHM-Z-5/8-A mandatory for connection of the OBS ...

<sup>3)</sup> OBS 105 PROG is only necessary for connecting OBS 105 ... / OBS 120 ... to a RS-232 interface

# Inclination Sensors

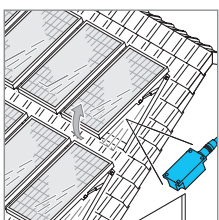
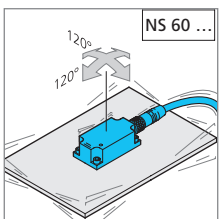
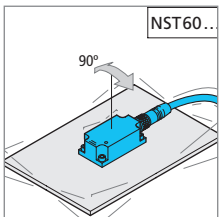
di-soric inclination sensors are designed to reliably detect changes in angle. Analog/switching outputs, different detection ranges on the evaluation of the x- and y-axis offer diverse fields of application. Thanks to the high protection class and the robust metal casing, these devices can also be perfectly used in harsh industrial environmental conditions as well as outdoors.

## Inclination sensors NS 60 ...



- Independent evaluation of two axes at the same time
- Measuring range  $\pm 60^\circ$
- Teach-in for zero position
- Two analog outputs  
0 ... 10 V or 4 ... 20 mA
- Robust metal casing

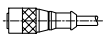
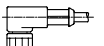
## Inclination sensors NST 60 ...

- Measuring range  $\pm 45^\circ$
- Teach-in for analog range and switching output
- Two definable ranges of switching outputs
- Analog outputs  
0 ... 10 V or 4 ... 20 mA
- Robust metal casing



<b>Technical data (typ.)</b>	<b>+20 °C, 24 VDC</b>
Service voltage	12 ... 30 VDC
Internal power consumption	< 40 mA (NST 60 M 45 ...) < 25 mA plus 2 x 20 mA under load (NS 60 M 60 ...)
Inverse polarity protection present	Present (on all connection cables)
Shock resistance	< 30g
Temperature stability	± 0,05 °/K (NST 60 M 45 ...) ± 0,03 °/K (NS 60 M 60 ...)
Cross-sensitivity to the other axis	± 3 % (NS 60 ...)
Remote teach entry	UB (> 6V) = start teach-in process immediately, open = normal mode (NS 60 M 60 ...)
Readiness delay	< 100 ms (NST 60 M 45 ...) < 300 ms (NS 60 M 60 ...)
Ambient temperature	-25 ... +70 °C
Protection class	IP 67
Protection degree	III, operation on protective low voltage

	Detection area (per axis)	Detection axis	Resolution	Reproducibility	Size (mm)	Switching output push-pull 100 mA	Analog output 0 ... 10V, linearised	Analog output 4 ... 20 mA, linearised	Output signal at 0°	Casing material	Connecting cable	
<b>Inclination sensors</b>											<b>Product-ID</b>	
	± 45°	Y	0,1°	0,2°	32 x 20 x 60	2x	■	■	5 V 12 mA	Aluminium, anodized	VK ... /5	NST 60 M 45Y-U-B5 NST 60 M 45Y-I-B5
	± 60°	X/Y	0,3°	0,5°	32 x 20 x 60	-	■	■	5 V 12 mA	Aluminium, anodized	VK ... /5	NS 60 M 60XY-U-B5 NS 60 M 60XY-I-B5

	Size	Socket	Cable length (m)	Metal coupling ring	Maximal allowed service voltage (VAC/DC)	Connector material	Cable material PVC, PU cladding	Protection class	
<b>Connecting cable</b>									<b>Product-ID</b>
	M12, 5-poled	straight	3 5 10	■	max. 125	PU	■	IP 67	VKHM-Z-3/5 VKHM-Z-5/5 VKHM-Z-10/5
	M12, 5-poled	angled	3 5 10	■	max. 125	PU	■	IP 67	VKHM-W-3/5 VKHM-W-5/5 VKHM-W-10/5

# Label Sensors

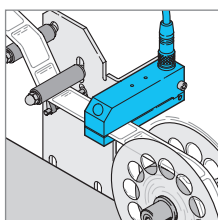
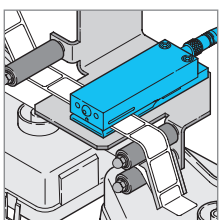
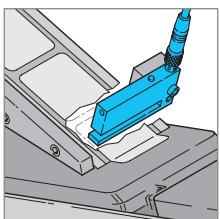
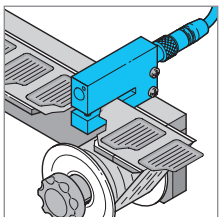
Are you a labelling machine manufacturer or do you work with labels and want to position them exactly on a product? di-soric label sensors detect all label materials and have a high repeat accuracy.

## Capacitive label sensors

- Detection of all label materials, including metallized ones
- High switching frequency
- Autoteach during ongoing processes
- Remote teach possibilities with key-lock function
- Signalling for the teaching process using LEDs
- Temperature and air humidity compensation
- Separable casing for cleaning the sensor slot

## Optical label sensors

- Can be integrated directly on the dispenser edge
- Autoteach during ongoing processes
- Remote teach possibilities with key-lock function
- Signalling for the teaching process using LEDs
- Detection of the most diverse labels













CE

OGUTI 005/50 ...

Fork height only 3,5 mm for direct integration on the dispenser edge

Technical data (typ.)	+20 °C, 24 VDC
Service voltage	10 ... 35 VDC
Operating frequency	< 3.000 Hz (only OGUTI ...)
Switching hysteresis	0,1 mm (only OGUTI 00x .../OGUTI 005/100 ...)
	0,15 mm (only OGUTI 005/50 ...)
	Material dependent (only KSSTI ...)
Ambient temperature	-10 ... +60 °C (only OGUTI ...)
	0 ... +60 °C (only KSSTI ...)
Protection class	IP 67 (only OGUTI ...)
	IP 65 (only KSSTI ...)
Casing material	Die-cast zinc, lacquered (only OGUTI ...)
	Aluminium / black anodized (only KSSTI ...)

	Fork/slot width (mm)	Slot depth (mm)	Infrared light 880 nm, clocked	Switching output	Internal power consumption (mA)	Voltage drop (V)	Ambient light immunity (Lux)	Sensitivity adjustment by means of teach key	Sensitivity adjustment by means of teach key and remote teach	Connector	Connecting cable	
<b>Optical contrast diffuse sensors</b>												<b>Product-ID*</b>
	2	40	■	pnp, 200 mA, NO/NC	35	2,0	> 100.000	■	■	M8	TK ... TK .../4	OGUTI 002 P3K-TSSL OGUTI 002 FP3K-TSSL
	5	40	■	Push-pull, 200 mA, NO/NC	35	2,0	> 100.000	■	■	M8	TK ... TK .../4	OGUTI 005 G3K-TSSL OGUTI 005 FG3K-TSSL
	5	50	■	Push-pull, 200 mA, NO/NC	35	2,0	> 100.000	■	■	M8	TK ... TK .../4	OGUTI 005/50 G3K-TSSL OGUTI 005/50 FG3K-TSSL
	5	100	■	pnp, 200 mA, NO/NC	35	2,0	> 100.000	■	■	M8	TK ... TK .../4	OGUTI 005/100 P3K-TSSL OGUTI 005/100 FP3K-TSSL
<b>Capacitive label sensors</b>												
	0,4	50		Push-pull, 200 mA, NO/NC	70	2,5	-	■	■	M8	TK ... TK .../4	KSSTI 400 G3K-TSSL KSSTI 400 FG3K-TSSL
	0,6	50		Push-pull, 200 mA, NO/NC	70	2,5	-	■	■	M8	TK ... TK .../4	KSSTI 600 G3K-TSSL KSSTI 600 FG3K-TSSL
	1,0	50		Push-pull, 200 mA, NO/NC	70	2,5	-	■	■	M8	TK ... TK .../4	KSSTI 1000 G3K-TSSL KSSTI 1000 FG3K-TSSL
	0,6	85		Push-pull, 200 mA, NO/NC	70	2,5	-	■	■	M12	VK .../4	KSSTI 600/80 FG3LK-IBS <sup>1)</sup> KSSTI 1000/80 FG3LK-IBS <sup>1)</sup>
	0,6	85		Push-pull, 200 mA, NO/NC	70	2,5	-	■	■	M12	VK .../4	KSSTI 600/80 FG3LK-AIBS <sup>1)</sup> KSSTI 1000/80 FG3LK-AIBS <sup>1)</sup>
<b>Accessories</b>												
	Bottom part for mounting on KSSTI xx/80 ... for label widths up to 175 mm.											KSSTI 1000/80-U190
	Bottom part for mounting on KSSTI xx/80 ... for label widths up to 215 mm.											KSSTI 1000/80-U270

\* Excerpt from our delivery programme

<sup>1)</sup> suitable for metalized label material

# Proximity Switches

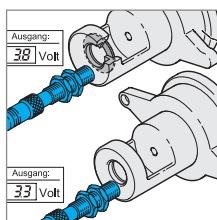
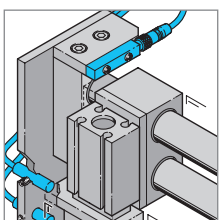
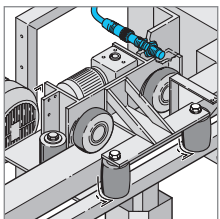
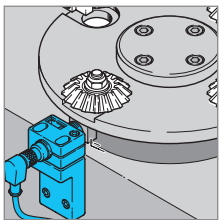
Depending on the functional principle, proximity switches detect metallic or non-metallic materials. Various designs and versions offer a diverse range of possible applications.

## Inductive proximity switches

- High temperature-resistant versions up to 230 °C
- Pressure-resistant versions up to 500 bar
- Versions with closed VA sleeve
- Sensing distances up to 4 times more than normal switching distance
- Versions with analog output
- Versions resistant to food and sea water
- Designs  $\varnothing$  3 mm up to M30
- Cuboid designs from 5 x 5 to 41 x 80 x 100 mm

## Capacitive proximity switches


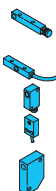


- Detection of: fluid, powdery, solid, electrically conductive and non-conductive materials
- Sensing distances adjustable up to 30 mm
- Probe for level measurement
- Designs  $\varnothing$  6,5 mm to M30
- Disk design  $\varnothing$  50 x 10 mm
- Cuboid form 34 x 16 x 8 mm



CE



<b>Technical data (typ.)</b>	<b>+20 °C, 24 VDC</b>
Service voltage	10 ... 30 VDC some versions with extended service voltage range 10 ... 35 VDC
Internal power consumption	< 6 ... 15 mA
Protection class	IP67
Ambient temperature	-25 ... +70 °C

Size (mm)	Switching output	Casing material	Connector	Connecting cable	Operating distance (mm)			Operating frequency (Hz)	Product-ID*	Operating distance (mm)			Operating frequency (Hz)	Product-ID*
					Flush-fitted (b)/non-flush-fitted (nb)/quasi-flush-fitted (qb)	Flush-fitted (b)/non-flush-fitted (nb)/quasi-flush-fitted (qb)	Flush-fitted (b)/non-flush-fitted (nb)/quasi-flush-fitted (qb)			Flush-fitted (b)/non-flush-fitted (nb)/quasi-flush-fitted (qb)	Flush-fitted (b)/non-flush-fitted (nb)/quasi-flush-fitted (qb)	Flush-fitted (b)/non-flush-fitted (nb)/quasi-flush-fitted (qb)		
<b>Inductive proximity switches in cylindrical designs</b>														
	Ø 3x22	pnp, 100 mA, NO	VA	–	2 m, PUR	0,6	b	5.000	DCC 3.0 V 0.6 PSLK	1,0	b	3.000	DCC 3.0 V 1.0 PSLK	
	Ø 4x25	pnp, 200 mA, NO	VA	–	2 m, PVC	0,8	b	5.000	DCC 4.0 V 0.8 PSLK	1,5	b	3.000	DCC 4.0 V 1.5 PSLK	
	Ø 6.5x16	pnp, 200 mA, NO	VA	–	2 m, PVC	1,5	b	5.000	DCCKR 6.5 V 1.5 PSLK	2	b	3.000	DCCKR 6.5 V 02 PSLK	
	M4x0,5	pnp, 100 mA, NO	VA	M8	TK ...	0,6	b	5.000	DCC 04 M 0.6 PSK-K-TSL	1,0	b	3.000	DCC 04 V 1.0 PSK-K-TSL	
	M5x0,5	pnp, 200 mA, NO	VA	M8	TK ...	1,5	b	3.000	DCC 05 V 1.5 PSK-TSL	2,5	b	800	DCC 05 V 2.5 PSK-TSL	
	M8x1	pnp, 200 mA, NO	VA	M8	TK ...	1,5	b	5.000	DCCK 08 M 1.5 PSK-TSL	2	b	3.000	DCC 08 M 02 PSK-TSL/29	
	M8x1	pnp, 200 mA, NO	MS	M8	TK ...	3	qb	1.000	DCC 08 M 03 PSK-TSL	6	nb	500	DCC 08 M 06 PSK-TSL	
	M12x1	pnp, 200 mA, NO	MS	M12	VK ...	6	qb	800	DCC 12 M 06 PSK-IBSL	8	qb	300	DCC 12 M 08 PSK-IBSL	
	M12x1	pnp, 200 mA, NO	MS	M12	VK ...	2	b	3.000	DCC 12 M 02 PSK-IBSL	10	nb	400	DCC 12 M 10 PSK-IBSL	
<b>Inductive proximity switches in rectangular designs</b>														
	5x5x25	pnp, 200 mA, NO	MS	–	2 m, PUR	0,8	b	5.000	DCCQ 05 M 08 PSLK	1,5	b	3.000	DCCQ 05 M 1.5 PSLK	
	8x8x40	pnp, 200 mA, NO	AL	–	2 m, PUR	–	–	–	–	1,5	b	2.000	DCQZ 08 M 1.5 PSLK	
	8x8x59	pnp, 200 mA, NO	MS	M8	TK ...	2,0	b	3.000	DCCQ 08 M 02 PSK-TSL	3,0	qb	1.000	DCCQ 08 M 03 PSK-TSL	
	28x16x10	pnp, 200 mA, NO	Ks	M8	TK ...	–	–	–	–	2,0	b	2.000	DCR 30 K 02 PSK-TSL	
	30x20x11,5	pnp, 200 mA, NO	AL	M8	TK ...	–	–	–	–	1,5	b	3.000	DCR 20 M 1.5 PSK-K-TSL	
	40x26x12	pnp, 200 mA, NO	Ks	M8	TK ...	2,0	b	2.000	DCR 40 K02 PSK-TSL	4,0	nb	2.000	DCR 40 K04 PSK-TSL	
<b>Inductive proximity switches with stainless steel casing</b>														
	M8x1	pnp, 200 mA, NO	VA	M8	TK ...	3	b	1.000	D7C 08 V 03 PSK-TSL	6	nb	700	D7C 08 V 06 PSK-TSL	
	M12x1	pnp, 200 mA, NO	VA	M12	VK ...	6	b	400	D7C 12 V 06 PSK-IBSL	10	nb	400	D7C 12 V 10 PSK-IBSL	
	M18x1	pnp, 200 mA, NO	VA	M12	VK ...	10	b	200	D7C 18 V 10 PSK-IBSL	20	nb	200	D7C 18 V 20 PSK-IBSL	
	M30x1,5	pnp, 200 mA, NO	VA	M12	VK ...	20	b	100	D7C 30 V 20 PSK-IBSL	40	nb	100	D7C 30 V 40 PSK-IBSL	
<b>Capacitive proximity switches</b>														
	Ø 6.5x54	pnp, 50 mA, NO	VA	M8	TK ...	1,5	b	100	KDC 6.5 V 1.5 PSK-TSL	3,0	nb	100	KDC 6.5 V 03 PSK-TSL	
	Ø 50x10	pnp/npn, 150 mA, NO/NC	Ks	–	2 m, PUR	25	b	50	KDC 50 K 25 PNSOLK	–	–	–	–	
	M8x1	pnp, 50 mA, NO	VA	M8	TK ...	1,5	b	100	KDC 08 V 1.5 PSK-TSL	3,0	nb	100	KDC 08 V 03 PSK-TSL	
	M12x1	pnp, 200 mA, NO	VA	M12	VK ...	4	b	100	KDC 12 M 04 PSK-IBSL	–	–	–	–	
	M18x1	pnp, 200 mA, NO	VA	M12	VK ...	8	b	100	KDC 18 M 08 PSK-IBSL	–	–	–	–	
	M18x1	pnp, 200 mA, NO	Ks	M12	VK ...	–	–	–	–	15	nb	100	KDC 18 K 15 PSK-IBSL	
	M30x1,5	pnp, 300 mA, NO/NC	VA	M12	VK ...	20	b	100	KDC 30 M 20 PSOK-BSL	–	–	–	–	
	34x16x8	pnp, 50 mA, NO	Ks	–	2 m, PUR	8	b	100	KDCR 16 K 08 PSLK	8	nb	2	KDCR 16 K 085 PSLK	

Flush mounting (b)	Quasi-flush mounting (qb)	Non-flush mounting (nb)
<p>These proximity switches can be mounted in all materials (metallic/non-metallic), so that the sensing face is flush with the front of the surrounding material.</p> <p>They have the following advantages:</p> <ul style="list-style-type: none"> <li>- Flush mounting (see installation notes) in conductive materials (metals)</li> <li>- Protection of the active zone from mechanical damage</li> <li>- Lower influence of external interference fields</li> <li>- Lower lateral distance to the next proximity switch</li> </ul>	<p>These proximity switches possess a higher operating distance than proximity switches for flush-mounting.</p> <p>They may be mounted into conductive materials only quasi-flush mounted, i. e. not completely flush mounted.</p> <p>The proximity switches must exceed a little bit over the installation surface (see installation notes).</p> <p>Flush mounting in non-conductive materials is permissible.</p>	<p>These proximity switches must not be flush-mounted with the surface of conductive materials.</p> <p>They have the greatest possible operating distance. Special installation notes are applicable for these proximity switches.</p> <p>Flush mounting in non-conductive materials is permissible.</p>

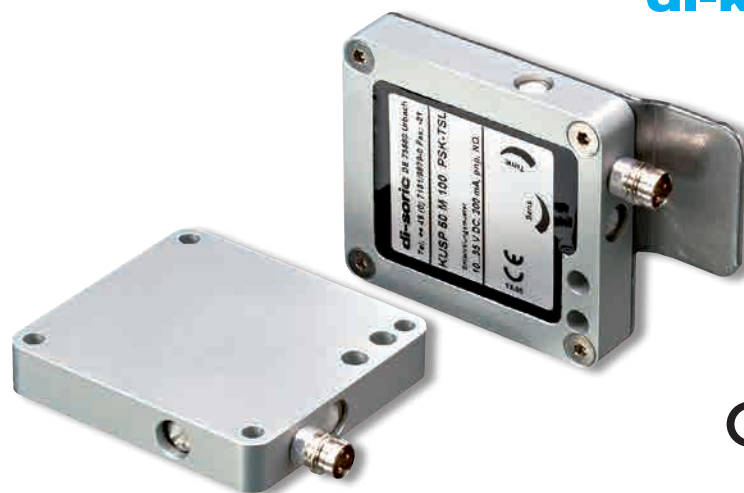
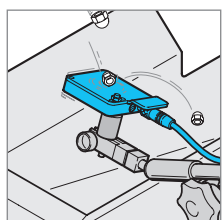
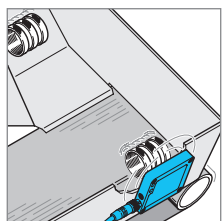
\* Excerpt from our delivery programme

# Contact Sensors

Striking parts produce structure-borne noise, which is converted into a standard output signal.

## Contact and vibration sensors





- Detects with direct contact to ejected parts or parts in free fall
- For screws, studs, springs and non-metallic parts
- Adjustable suppression of multiple pulses
- Up to 100 parts can be detected per second
- Long service life thanks to replaceable baffle plate
- Functional assurance even under the most extreme conditions



di-kus®



<b>Technical data (typ.)</b>	<b>+20 °C, 24 VDC</b>
Service voltage	10 ... 35 VDC
Sensitivity adjustment	Steel ball Ø 3 mm from 20 mm height
Pulse stretching	1 ... 30 ms
Ambient temperature	-25 ... +70 °C
Protection class	IP 67
Internal power consumption	> 15 mA
Operating frequency	< 100 Hz

		<i>Size (mm)</i>	<i>Switching output</i>	<i>Casing material</i>	<i>Connector</i>	<i>Connecting cable</i>	
<b>Contact sensors</b>							<b>Product-ID</b>
	Sensor incl. baffle plate	50x75x14	pnp, 200 mA, NO	Aluminium	M8	TK ...	KUSP 50 M 100 PSK-TSL
				Heat-treatable steel	-	-	
	Sensor	50x55x10	pnp, 200 mA, NO	Aluminium	M8	TK ...	KUS 50 M 100 PSK-TSL
<b>Accessories</b>							
	Baffle plate	50x75x4	-	Heat-treatable steel	-	-	P-KUS 50
	Damper set for mounting	-	-	-	-	-	D-KUS 50

# Cylinder Sensors

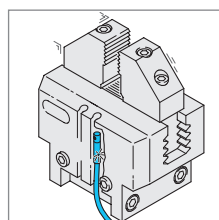
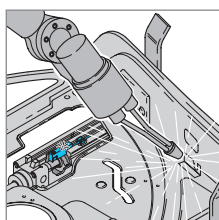
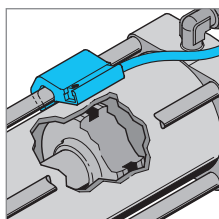
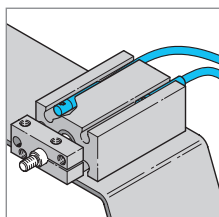
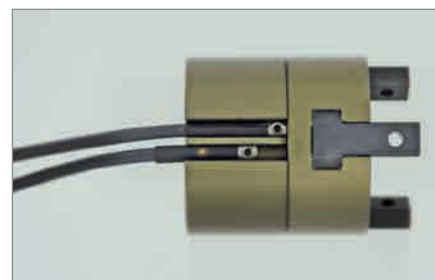
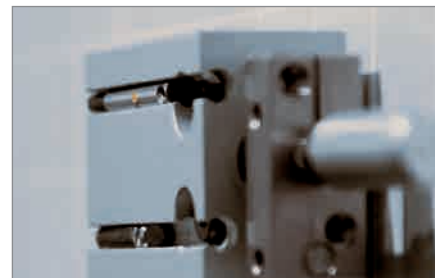
Cylinder sensors are designed for pneumatic cylinders with integrated magnets. The piston position is detected through the cylinder wall.

## Cylinder sensors

- For all common pneumatic cylinders
- Versions which can be fitted from above
- High reproducibility
- Vibration-resistant
- Robust metal casing or shock-proof plastic casing
- Fastening elements made from metal
- High protection class
- Weld-proof versions

## Sensors for gripper systems

- Specially aligned magnetic field for using on gripping tongs
- High reproducibility
- Short construction
- Fastening element made from stainless steel
- Vibration-resistant
- High protection class



CE

Technical data (typ.)	+20 °C, 24 VDC
Service voltage	10 ... 30 VDC
Switching output	Transistor pnp / NO
Voltage drop	2,0 V
	2,5V only MZEx 9-xx ...
Operating frequency	1.000 Hz
Ambient temperature	-25 ... +70 °C
	-25 ... +80 °C (only MZEx 9-xx ...)
Insulation voltage endurance	500 V
Casing material	Die-cast zinc
	Plastic and V2A (only MZEC 3.7 .../MZES 3.9 ...)
	V2A (only MZEC 4.0 ...)
	Polyamide, mounting excentric stainless steel (only MZEx 9-xx ...)

	Size (mm)	Type of mounting	Flush-fitted (b)/non flush-fitted (nb)	Current-carrying capacity	Short-circuit-proof	Polarity-safe	Internal power consumption	Reproducibility	Protection class	Cable length (mm)	Connector	Matching connecting cable	Connecting cable PUR, Welding-spark resistant	Product-ID*
<b>Cylinder sensors for C-shaped groove</b>														
	∅ 3,7 x 21	←	b	100 mA	■	■	11 mA	0,1 mm	IP 67	2.500 300	- M8	- TK...	■	MZEC 3.7 PSL MZEC 3.7 PS-K-TSSL
	∅ 4,0 x 25	←	b	100 mA	■	■	11 mA	0,1 mm	IP 67	2.500 300	- M8	- TK...	■	MZEC 4.0 PSL MZEC 4.0 PS-K-TSSL
	2,8 x 7,7 x 17,5	↓	nb	100 mA	■	■	10 mA	0,2 mm	IP 67	2.000 300	- M8	- TK...		MZEC 9-18 PSL MZEC 9-18 PSL-K-TSS
	2,8 x 5 x 25,8	↓	nb	100 mA	■	■	10 mA	0,2 mm	IP 67	2.000 300	- M8	- TK...		MZEC 9-26 PSL MZEC 9-26 PSL-K-TSS
<b>Cylinder sensors for T-shaped groove</b>														
	6,1 x 5 x 25	←	b	200 mA	■	■	10 mA	0,1 mm	IP 67	2.500 300	- M8	- TK...	■	MZET 25 PSLK MZET 25 PSK-K-TSSL
	6,1 x 5 x 25	↓	nb	200 mA	■	■	10 mA	0,1 mm	IP 67	2.500 300	- M8	- TK...	■	MZET 28 PSLK MZET 28 PSK-K-TSSL
	5 x 7 x 20	↓	nb	200 mA	■	■	10 mA	0,1 mm	IP 67	-	M8	TK...		MZERT 20 PSK-TSSL
	5,2 x 5 x 25	←	b	200 mA	■	■	10 mA	0,1 mm	IP 67	2.500 300	- M8	- TK...	■	MZEK 25 PSLK MZEK 25 PSK-K-TSSL
	5 x 6,5 x 25	↓	b	100 mA	■	■	10 mA	0,2 mm	IP 67	2.000 300 300	- M8 M12	- TK... VK...		MZET 9-25 PSL MZET 9-25 PSL-K-TSS MZET 9-25 PSL-K-IBS
<b>Sensors for gripper systems for C-shaped groove</b>														
	∅ 3,9 x 21	←	b	100 mA	■	■	12 mA	0,1 mm	IP 67	2.500 5.000 300 600	- - M8 M8	- - TK... TK...	■ ■	MZES 3.9 PSL MZES 3.9 PSL/5 MZES 3.9 PS-K-TSSL MZES 3.9 PS-K0.6-TSSL
<b>Sensors for gripper systems for T-shaped groove</b>														
	6,1 x 5 x 25	←	b	100 mA	■	■	12 mA	0,1 mm	IP 67	2.500 300 2.500 300	- M8 - M8	- TK... - TK...	■ ■	MZES 25 PSL MZES 25 PS-K-TSSL MZEKS 25 PSL MZEKS 25 PS-K-TSSL

\* Excerpt from our delivery programme

← Mounting longitudinal in the groove  
↓ To be inserted in the groove from above

# Ultrasonic Sensors

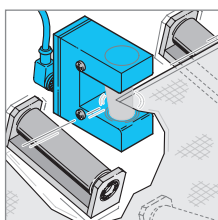
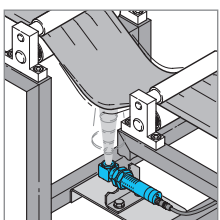
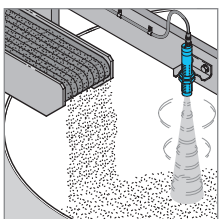
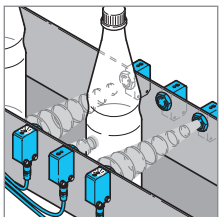
Ultrasonic sensors are used to measure distance in automation tasks. These sensors measure the duration of the noise and can thereby detect even transparent, fluid and powdery objects.

## Ultrasonic sensors

- Dirt resistant
- Insensitive to noise interference
- High resolution
- High cycle speed
- Measures independent of surface
- Operational range up to 6 m
- Synchronisation input/release input
- Analog/digital output

## Ultrasonic fork sensors















- Large linearized analog range
- Very high repeatability
- Web edge control also with transparent materials
- Dirt resistant
- Robust metal casing



CE



<b>Technical data (typ.)</b>	<b>+20 °C, 24 VDC</b>
Service voltage	18 ... 30 VDC
some versions are available with advanced operating range of 12 ... 36 VDC	

	Scanning distance (mm) Fork opening/ Measuring range (mm)	Size (mm)	Sound output	Switching output (Transistor pnp)	Analog output	Repeat accuracy	Ambient temperature (°C)	Protection class	Casing material	Connector	Connecting cable	Product-ID*		
<b>Ultrasonic distance sensors</b>														
	20 ... 150	M12x91	Axial	100 mA, NO/NC	–	–	–25 ... 70	IP 65	Brassnickel-plated	M12	VK.../4	USTI 12 MFB 150 PSOK-IBSL		
				–	0 ... 10 V	0,5 %						USTI 12 MFB 150 A-IBSL		
				–	4,0 ... 20 mA	–						USTI 12 MFB 150 I-IBSL		
	20 ... 200	M12x70	Axial	100 mA, NO/NC	–	–	–25 ... 70	IP 65	Brassnickel-plated	M12	VK.../4	USTI 12 M 200 PSOK-IBSL		
				–	0 ... 10 V	0,5 %						USTI 12 M 200 A-IBSL		
				–	4,0 ... 20 mA	–						USTI 12 M 200 I-IBSL		
	180 ... 1.000	M18x90	Axial	100 mA, NO	–	2%/Sn max.	–20 ... 50	IP 67	Polyamide	Cable 2,0 m		US 18 K 1003 PSLK		
		M18x96	Radial									US 18 KR 1003 PSLK		
	180 ... 1.000	M18x90	Axial	100 mA, NO	1,6 ... 10 V	2%/Sn max.	–20 ... 50	IP 67	Polyamide	M8	TK.../4	US 18 K 1003 PSAK-TSSL		
		M18x96	Radial									US 18 KR 1003 PSAK-TSSL		
	180 ... 1.000	M18x90	Axial	100 mA, NO	1,8 ... 10 V	2%/Sn max.	–20 ... 50	IP 67	V2A	M8	TK.../4	US 18 V 1003 PSAK-TSSL		
	100 ... 700	M18x63,5	Axial	150 mA, NO	–	1 mm	–25 ... 70	IP 67	Brassnickel-plated	M12	VK.../4	USCTI 18 M 700 FPSK-BSL		
		M18x81,5	Radial									USCTI 18 MR 700 FPSK-BSL		
	150 ... 1.000	M18x101	Axial	150 mA, NO	–	2 mm	–25 ... 70	IP 67	Brassnickel-plated	M12	VK.../4	USC 18 M 1000 IPSK-IBSL		
				–	4,0 ... 20 mA	–						USC 18 M 1000 I4/20-IBSL		
	200 ... 1.300	M30x131	Axial	–	–	2 mm	–25 ... 70	IP 65	Brassnickel-plated	M12	VK.../4	USC 30 M 1300 IPSK-BSL		
				300 mA, NO	0 ... 10 V	9 mm						USC 30 M 6000 I0/10PSK-BSL		
				–	4,0 ... 20 mA	9 mm						USC 30 M 6000 I4/20PSK-BSL		
	120 ... 500	46x30x18	Radial	100 mA, NO	–	–	–20 ... 50	IP 67	Polyamide V2A	M8	TK...	US 46 K 500 PSK-TSSL		
				–	–	–						US 60 K 500 PSS-TSSL		
				100 mA, NO	5,6 ... 20 mA	1%/Sn max.						–20 ... 50	IP 67	Polyamide
	400 ... 5.000	60x41x38		100 mA, NO	5,3 ... 20 mA							US 60 K 5000 PSI-TSSL		
<b>Ultrasonic retroreflective sensors</b>														
	0 ... 200	M18x63,5	Axial	150 mA, NO	–	–	–25 ... 70	IP 67	Brassnickel-plated	M12	VK.../4	USCRTI 18 M 200 FPSK-BSL		
				–	–	–						USCRTI 18 MR 700 FPSK-BSL		
	0 ... 700	M18x81,5	Radial	150 mA, NO	–	–	–25 ... 70	IP 67	Brassnickel-plated	M12	VK.../4	USCRTI 18 MR 700 FPSK-BSL		
<b>Ultrasonic through beam sensors</b>														
	0 ... 1.500	Receiver	Radial	100 mA, NO	–	–	–20 ... 50	IP 67	Polyamide V2A	M8	TK...	USE 46 K 1500 PSKT-TSSL		
		Transmitter		–	–	–						USS 46 K 1500-TSSL		
<b>Ultrasonic fork sensors</b>														
	30/8	74x30x65	–	–	–	–	10 ... 0 V	0,15 mm <sup>1)</sup>	0 ... 60	IP 67	Aluminium anodised	M12	VK.../4	USGT 30/8 A-B4
	40/13	92x39x80	–	–	–	USGT 40/13 A-B4								
	60/8	104x30x65	–	–	–	USGT 60/8 A-B4								
	70/13	122x39x80	–	–	–	USGT 70/13 A-B4								

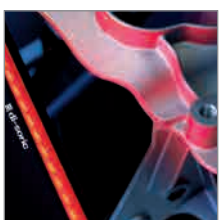
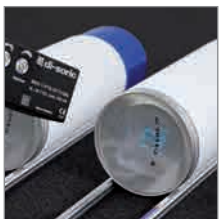
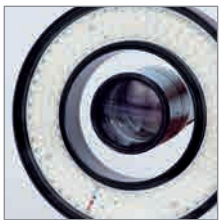
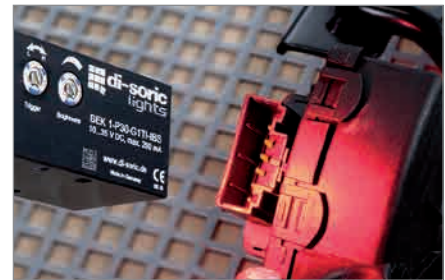
\* Excerpt from our delivery programme

<sup>1)</sup>at 50% coverage

di-soric provides an extensive range of lightings for machine vision as well as inspection tasks. Unique technical features in combination with extremely robust casings and a high protection class feature di-soric lights.

## Lighting

- ◆ Internal control of power output
- ◆ Homogeneous luminous field
- ◆ High Protection class up to IP 69K
- ◆ External trigger input
- ◆ High efficiency
- ◆ Low levels of heat produced
- ◆ Adjustable light intensity
- ◆ Various options of mounting
- ◆ Different light colours
- ◆ Sturdy casing design
- ◆ Standard M12-Connector



Technical data (typ.)	+20 °C, 24 VDC
Trigger input low level	0 ... < 2,8V
Trigger input high level	> 3,3 ... 35 V
Shock/vibration loading	30 g/10 – 55 Hz, 1 mm
Ambient temperature	0 ... +50 °C

Colour code	Example
Infrared ...-G0TI-...	BEK 1-A300-G0TI-IBS
Red ...-G1TI-...	BEK 1-A300-G1TI-IBS
Green ...-G2TI-...	BEK 1-A300-G2TI-IBS
Blue ...-G3TI-...	BEK 1-A300-G3TI-IBS
White ...-G5TI-...	BEK 1-A300-G5TI-IBS
<sup>1)</sup> Version clear	BEK-R70/30-GxTI-IBS-CLR
<sup>1)</sup> Version diffuse	BEK-R70/30-GxTI-IBS-DIF
<sup>1)</sup> Version polarized	BEK-R70/30-GxTI-IBS-POL

	Illuminated area / length (mm)	Angle of reflected beam (°)	Size (mm)	Service voltage (VDC)	Integrated power output control	Light intensity can be adjusted	Trigger, pnp/npn switchable	Protection class	Casing material	Connector	Connecting cable	Light colour (refer to colour code)	Product-ID*
<b>Backlights</b>													<b>Product-ID*</b>
	50x50 100x100 150x150 200x200	–	80x110x15 130x160x15 180x210x15 230x260x18	10 ... 35	■	■	■	IP 67	Aluminium	M12	VK ...	...-GxTI-...	BEK-F50/50-GxTI-IBS BEK-F100/100-GxTI-IBS BEK-F150/150-GxTI-IBS BEK-F200/200-GxTI-IBS
<b>Barlights SMD-LED</b>													
	65 120 240	120°	16x20x84 16x20x144 16x20x254	24				IP 20	Aluminium	M12	VK ...	...-GxTI-...	BE 1-A65/120-Gx-K-BS BE 1-A120/120-Gx-K-BS BE 1-A240/120-Gx-K-BS
<b>Barlights</b>													
	130 240	–	16x20x144 16x20x254	24				IP 20	Aluminium	M12	VK ...	...-GxTI-...	BE 1-A130-Gx-K-BS BE 1-A240-Gx-K-BS
	100 300 500	–	40x40x145 40x40x345 40x40x545	15 ... 35	■	■	■	IP 65	Aluminium	M12	VK ...	...-GxTI-...	BEK 1-A100-GxTI-IBS BEK 1-A300-GxTI-IBS BEK 1-A500-GxTI-IBS
<b>Spotlights</b>													
	–	10° 14° 30° 60°	30x32x60 30x32x60	10 ... 35	■	■	■	IP 67	Aluminium	M12	VK ...	UV ...-GxTI-...	BEK 1-P10-G7TI-IBS BEK 1-P14-GxTI-IBS BEK 1-P30-GxTI-IBS BEK 1-P60-GxTI-IBS
<b>Ringlights</b>													
	∅ 70 ∅ 70	120° 30°	∅ 130x29 ∅ 130x29	18 ... 35	■	■	■	IP 67	Aluminium	M12	VK ...	Weiß ...-GxTI-...	BEK-R70/120-G5TI-IBS-xxx <sup>1)</sup> BEK-R70/30-GxTI-IBS-xxx <sup>1)</sup>
<b>Darkfield lights</b>													
	∅ 120	–	170x200x15	10 ... 35	■	■	■	IP 67	Aluminium	M12	VK ...	...-GxTI-...	BEK 1-D120-GxTI-IBS
<b>Coaxial lights</b>													
	50x50	–	62x58x103,5	18 ... 35	■	■	■	IP 20	Aluminium	M12	VK ...	...-GxTI-...	BEK-K50/50-GxTI-IBS
<b>Backlights with stainless steel casing</b>													
	50x50 70x100	–	70x70x15 90x120x15	10 ... 35	■	■	■	IP 69K	Stainless steel	M12	VK ...	...-GxTI-...	BEE-F50/50V-GxTI-IBS BEE-F70/100V-GxTI-IBS
<b>Barlights with stainless steel casing</b>													
	100 300 500	–	40x40x145 40x40x345 40x40x545	15 ... 35	■			IP 69K	Stainless steel	M12	VK ...	...-GxTI-...	BEK 1-A100V-GxTE-IBS BEK 1-A300V-GxTE-IBS BEK 1-A500V-GxTE-IBS
<b>Spotlights with stainless steel casing</b>													
	–	10° 14° 30° 60°	30x32x60 30x32x60	10 ... 35	■			IP 69K	Stainless steel	M12	VK ...	UV ...-GxTI-...	BEK-P10V-G7T-IBS BEK-P14V-GxT-IBS BEK-P30V-GxT-IBS BEK-P60V-GxT-IBS

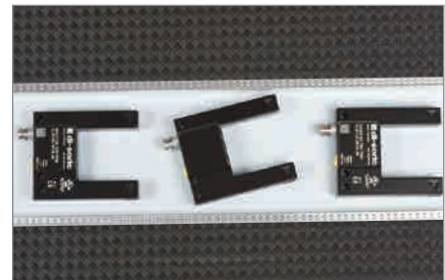
\* Excerpt from our delivery programme

# Vision Sensors

Checker is the universal vision sensor for all industries. Fastest processes will be safely detected, inspected and verified.

## Vision sensors









- di-soric Checker software included in the scope of delivery
- Internal Trigger with patented part detection technology
- Different inspection sensors
- Integrated exchangeable lighting
- Integrated „Ladder-Logic“ allows logical linking of multiple inspection sensors
- User-friendly software
- Polarization possible / filters possible
- Profinet / Ethernet / IP



## CHECKER



Technical data (typ.)		+20 °C, 24 VDC	Outputs	
Service voltage	24 VDC	(22 – 26 VDC)	Output	Optocoupler
Internal power consumption	250 mA max.			100 mA, 24 V DC
Protection class	IP 67		Max voltage drop	3,5 VDC at 100 mA
Dimensions	67 x 41 x 60 mm		Max. load	100 mA
Ambient temperature	0 ... 50 °C		Protection	Opto-isolated, short-circuit-proof, pole-protected / overcurrent protected
Shock	80G at 5ms on each axis (per IEC 68-2-2)			
Vibration resistance	10 G (10-500 Hz, per IEC 68-2-6)			
External trigger input / Job control inputs			Encoder inputs	
Input ON	> 10 VDC (> 6 mA)		Encoder type	300 kHz (max.) Quadratur-Encoder
Input OFF	< 2 VDC (< 1,5 mA)			Open collector and differential output
Protection	Opto-isolated, pole-protected		ON/OFF	50 % nominal
			Load	50 % encoder max.

	Section recognition	Inspection: Presence	Inspection: Measurement	Inspection: Positioning	Different inspections can be combined	Number of possible inspections	Mode of operation: Internal trigger	Mode of operation: External trigger input	Mode of operation: Free running	Input	Encoder was based section pursuit	Logic for user-defined outputs	Max. inspection rate (ppm)	Resolution (128x101 pixel)	Resolution (752x480 pixel)	Ethernet / TCP / IP	Profinet	Lighting changeable	Product-ID
	■	■	■	■		–	■	■	■	32	■	■	6.000	■		■	■	■	C4G1-24G-E00
	■	■				4		■	■	32			1.800		■			■	C4G7-24S-E00
	■	■	■	■		–	■	■	■	32	■	■	3.750		■	■	■	■	C4G7-24G-E00
	■	■	■	■	■	–	■	■	■	32	■	■	3.750		■	■	■	■	C4G7-24X-E00
Accessories																			Product-ID*
	Lenskit	Lenskit includes 4 lenses with a focal distance of 3.6 / 8 / 16 and 25 mm																	CKR-200-LENSKIT
	Daylight cutoff-filter	–																	CKR-TLS 2
	Bandpass filter	Infrared, 850 nm ±5%																	CKR-BP 850
		Red, 635 nm ±5%																	CKR-BP 635
		Green, 525 nm ±5%																	CKR-BP 525
		Blue UV, 470 nm ±5%																	CKR-BP 470
		Orange, 590 nm ±5%																	CKR-BP 590
	Polarized lenscover	To reduce reflections in combination with polarized light																	CKR-WINDOW-POL
	Internal ring lights	Infrared																	CKR-IRRL-00
		Red																	CKR-RDRL-00
		Green																	CKR-GNRL-00
		Blue																	CKR-BLRL-00
UV																	CKR-UVRL-00		
	Adjustable mounting bracket	Adjustable bracket for mounting the checker, with holes for mounting of metric and inch threads																	CKR-200-BKT
	Repairkit	Lens cover																	CKR-4G-REPAIRKIT
Locking rings																			
- For 5.8 mm and 25 mm lens (blue)																			
- For 3.6, 8.0 and 16 mm lens (black)																			
Lens (5.8 mm)																			
	Ethernet-cabel	Ethernet, connector straight											Protection class IP 67	Cable length 2 m	VKHM-Z-2/RJ45				
														Cable length 5 m	VKHM-Z-5/RJ45				
														Cable length 10 m	VKHM-Z-10/RJ45				
	I/O-cable	I/O, connector straight											Protection class IP 67	Cable length 5 m	VKHM-Z-5/12-A				
		I/O, connector straight, flexible chain											Protection class IP 67	Cable length 5 m	VKSM-Z-5/12-A				
	I/O-extension cable	I/O, connector straight											Protection class IP 67	Cable length 5 m	VSM-Z-5/VKM-Z/12-A				
		I/O, connector angled											Protection class IP 67	Cable length 5 m	VSM-Z-5/VKM-W/12-A				

\* Excerpt from our delivery programme



di-soric offers a wide range of vision systems for the industrial use. From All-In-One-Systems in the size of a matchbox up to high resolution C-Mount Systems; we have the perfect solution for your application. Thanks to a scaleable system even very demanding image processing applications can be easily solved.

## VS-05

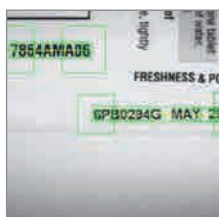
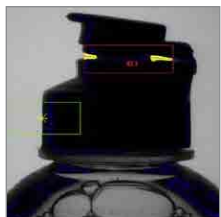
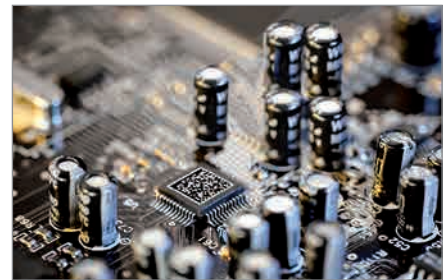
- di-soric VS software included in the scope of delivery
- Extended software set optionally available
- Autofocus with wide angle optics
- Integrated lighting
- Compact design
- USB- and serial interface

## VS-06 C-Mount




- di-soric VS software included in the scope of delivery
- Extended software set optionally available
- Industry proven machine vision tools
- C-Mount model
- Ethernet and serial interface
- Access via web browser possible

## VS-06 with liquid lens

- di-soric VS software included in the scope of delivery
- Extended software set optionally available
- Industry proven machine vision tools
- Fully integrated with processor, lens and illumination
- Liquid lens autofocus
- Ethernet and serial interface
- Integrated lighting
- Access via web browser possible





		CMOS, 752 x 480 pixel	CMOS, 1280 x 1024 pixel	CCD, 1280 x 960 pixel	CMOS, 2048 x 1088 pixel	Standard density	High density	Autofocus	Liquid lens autofocus	Optics	Sensor size	Extended toolset	Images/s (max.)	Rolling shutter	Global shutter	Service voltage (V DC)	Outputs 1, 2 and 3 (V DC)	Protection class	RS 232	USB	Ethernet	Product-ID*	
	■				■		■		fixed	1/2"	■	60		■	5,0	5 ... 28	IP 54	■	■			VS-05-BM2-2-US VS-05E-BM2-2-US	
	■					■	■		fixed	1/2"	■	60		■	5,0	5 ... 28	IP 54	■	■			VS-05-BM2-3-US VS-05E-BM2-3-US	
		■				■		■	fixed	1/2"	■	15	■		5,0	5 ... 28	IP 54	■	■			VS-05-BM3-2-US VS-05E-BM3-2-US	
		■				■		■	fixed	1/2"	■	15	■		5,0	5 ... 28	IP 54	■	■			VS-05-BM3-3-US VS-05E-BM3-3-US	
	■							■	15° 30° 45°	1/3"		60		■	5,0 ... 28	1,0 ... 28	IP 65 + IP 67	■				VS-06-BM2-15-ES VS-06-BM2-30-ES VS-06-BM2-45-ES	
	■							■	15° 30° 45°	1/3"	■	60		■	5,0 ... 28	1,0 ... 28	IP 65 + IP 67	■				VS-06E-BM2-15-ES VS-06E-BM2-30-ES VS-06E-BM2-45-ES	
			■					■	15° 30° 45°	1/3"		20		■	5,0 ... 28	1,0 ... 28	IP 65 + IP 67	■				VS-06-BC3-15-ES VS-06-BC3-30-ES VS-06-BC3-45-ES	
			■					■	15° 30° 45°	1/3"	■	20		■	5,0 ... 28	1,0 ... 28	IP 65 + IP 67	■				VS-06E-BC3-15-ES VS-06E-BC3-30-ES VS-06E-BC3-45-ES	
		■								C-Mount	1/3"	■	60		■	5,0 ... 28	1,0 ... 28	IP 65 <sup>1)</sup>	■				VS-06-BM2-00-ES VS-06E-BM2-00-ES
				■						C-Mount	1/3"	■	20		■	5,0 ... 28	1,0 ... 28	IP 65 <sup>1)</sup>	■				VS-06-BC3-00-ES VS-06E-BC3-00-ES
					■					C-Mount	2/3"	■	48		■	5,0 ... 28	1,0 ... 28	IP 65 <sup>1)</sup>	■				VS-06-BM4-00-ES VS-06E-BM4-00-ES

\* Excerpt from our delivery programme

<sup>1)</sup> IP 65 + IP 67 when operating with VSID-LP-C-xx

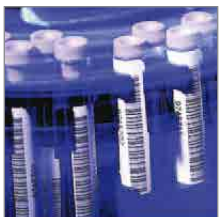
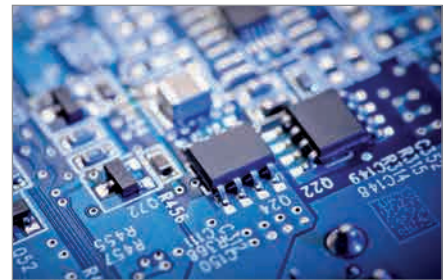
di-soric offers a wide range of laser and image-based ID systems for nearly all applications. Most different 1D and 2D codes will be safely detected independently of the marking method – our systems guarantee an absolute traceability.








## Laser-Scanner

- Up to 1.400 scans per second
- Reading distance 25 to 940 mm
- di-soric ID software included in the scope of delivery
- X-Mode technology
- Visual display
- Real-time control
- Compact design
- High protection class
- Various interfaces

## Image based ID-Reader

- Up to 60 decodes per second
- Autofocus & modular zoom
- di-soric ID software included in the scope of delivery
- Integrated lighting
- C-Mount Ausführung
- X-Mode technology
- Compact design
- High protection class
- Various interfaces



	CMOS	CCD	640 x 480 pixel	752 x 480 pixel	1280 x 960 pixel	Single-Line	Raster-Line	Low density	Standard density	High density	Extremely high density	Optics	Decoding /s (max.)	Service voltage (V DC)	Outputs 1, 2 and 3 (V DC)	Protection class	RS 232	RS 422	RS 485	USB	Ethernet	Product-ID	
<b>Laser-Scanner</b>																							
						■	■				—		300 ... 1.000	5,0	3 ... 24	IP 54	■	■	■			ID-01-LL-1-S ID-01-LL-3-S	
						■	■		■		—		300 ... 1.000	5,0	3 ... 24	IP 54	■	■	■			ID-01-LR-1-S ID-01-LR-3-S	
						■			■		—		300 ... 1.400	10 ... 28	4,5 ... 28	IP 65	■	■	■		■	ID-02-LL-1-ES ID-02-LL-2-ES ID-02-LL-3-ES	
							■		■		—		300 ... 1.400	10 ... 28	4,5 ... 28	IP 65	■	■	■		■	ID-02-LR-1-ES ID-02-LR-2-ES ID-02-LR-3-ES	
							■		■		—		300 ... 1.400	10 ... 28	4,5 ... 28	IP 65	■	■	■		■	ID-03-LR-1-ES ID-03-LR-2-ES ID-03-LR-3-ES	
								■		■		—	300 ... 1.400	10 ... 28	4,5 ... 28	IP 65	■	■	■		■	ID-03-LR-2-ES ID-03-LR-3-ES	
<b>Image based ID-Reader</b>																							
	■		■				■					fixed	10	5,0	5 ... 29,9	IP 54	■	■				ID-04-IM1-1-S ID-04-IM1-2-S	
	■		■				■					■	fixed	10	5,0	5 ... 29,9	IP 54				■		ID-04-IM1-1-U ID-04-IM1-2-U
	■		■					■				fixed	60	5,0	5 ... 28	IP 54	■	■				ID-05-IM2-2-S ID-05-IM2-4-S	
	■		■					■				fixed	60	5,0	5 ... 28	IP 54				■		ID-05-IM2-2-U ID-05-IM2-4-U	
	■			■					■			■	fixed	20	5,0	5 ... 28	IP 54	■	■				ID-05-IM3-2-S ID-05-IM3-3-S ID-05-IM3-4-S
	■			■					■			■	fixed	20	5,0	5 ... 28	IP 54				■		ID-05-IM3-2-U ID-05-IM3-3-U ID-05-IM3-4-U
	■			■								15° 30° 45°	60	5,0 ... 28	4,5 ... 28	IP 65 + IP 67	■	■	■		■	ID-06-IM2-15-ES ID-06-IM2-30-ES ID-06-IM2-45-ES	
		■			■							15° 30° 45°	20	5,0 ... 28	4,5 ... 28	IP 65 + IP 67	■	■	■		■	ID-06-IC3-15-ES ID-06-IC3-30-ES ID-06-IC3-45-ES	
	■			■									C-Mount	60 20	5,0 ... 28	4,5 ... 28	IP 65 <sup>1)</sup>	■	■	■		■	ID-06-IM2-00-ES ID-06-IC3-00-ES
<b>ID-Handheld</b>																							
	■				■							fixed	10	5,0	—	—	■				■	ID-07-IM3-2-US	

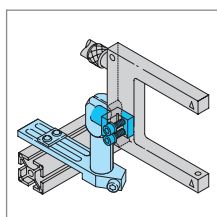
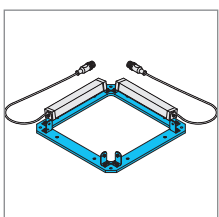
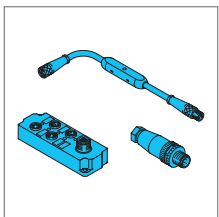
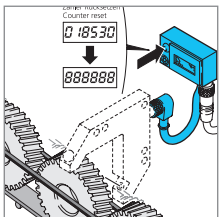
<sup>1)</sup> IP 65 + IP 67 bei Betrieb mit Optik-Schutzgehäuse VSID-LP-C-xx


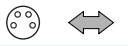




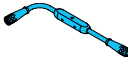
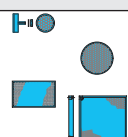
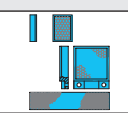
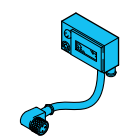
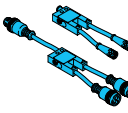
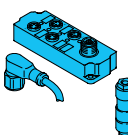
# Accessories

A comprehensive range of accessories rounds off the wide range of sensors and offers you virtually all the options possible.

## Accessories

- ◆ Adapter plugs
- ◆ Connector
- ◆ M8 and M12 multifunctional adapter:
  - pnp threshold switch
  - npn/pnp converter, pnp/npn converter
  - pnp inverter
  - pnp antivalent signal
  - pnp pulse stretcher
- ◆ Counting module with reset function in M8 and M12 versions
- ◆ Logic distributor
- ◆ Reflectors
- ◆ Assembly systems
- ◆ Connecting cables
- ◆ Sensor tester
- ◆ Sensor clamp
- ◆ Power supply with relay
- ◆ Optical accessories



	Size (mm)	Coupling / nos. of pins	Connection diagram	Connector / nos. of pins	Mounting	Switching frequency (Hz)	Switching output	Pulse stretching 1 ... 150 ms	Max. voltage supply (V)	Max. current-carrying capacity (A)	Heat resistant up to ... (°C)	
<b>Connector</b>												<b>Product-ID*</b>
	–	M8-3		M8-4	–	–	–	24	4,0	–		M8K3/M8S4
	–	M8-4		M8-3	–	–	–	24	4,0	–		M8K4/M8S3
	–	M8-3		M12-3	–	–	–	24	4,0	–		M8K/M12S
	–	M8-4		M12-4	–	–	–	24	4,0	–		M8K/M12S/4
	–	M12-3		M8-3	–	–	–	24	4,0	–		M12K/M8S
	–	M12-4		M8-4	–	–	–	24	4,0	–		M12K/M8S/4
<b>Pulse stretching</b>												
	–	M8-3	–	M8-3	clamp	< 500 Hz	pnp	■	–	–	–	TKHM-Z/TSM-Z/T
	–	M12-3	–	M12-3	clamp	< 500 Hz	pnp	■	–	–	–	VKHM-Z/VSM-Z/T
<b>Reflectors for infrared and red light</b>												
	∅ 19x6	–	–	–	M3x9	–	–	–	–	–	80	R 21 M3
	∅ 50x8	–	–	–	adhesive	–	–	–	–	–	80	R 50
	50 x 80x7	–	–	–	adhesive	–	–	–	–	–	80	R 50 x 80
	100 x 100x9	–	–	–	∅ 3,8 (2x)	–	–	–	–	–	80	R 100 x 100
<b>Reflectors and reflective foil for laser light</b>												
	13x17x4	–	–	–	adhesive	–	–	–	–	–	80	RL 13 x 17
	42x35x8,4	–	–	–	∅ 3,3 (2x)	–	–	–	–	–	80	RL 42 x 35
	50x230	–	–	–	adhesive	–	–	–	–	–	80	RFPL 50 x 230
<b>Counting module with reset function</b>												
	Service voltage	10 ... 35 V DC			Counting frequency	10.000 Hz						
	Display	6 lines LCD display			Protection class	IP 40						
	Input	pnp/npn			Casing material	Aluminium, black anodized						
	<b>Typ</b>											
	Counting module with reset button, connector / socket M8, 3-poled											ZR 06B-TSSL
	Counting module with reset button and remote reset, connector / socket M12, 4-poled											ZRR 06B-IBS
<b>Logic distributor, 2 options</b>												
	Supply voltage	10 ... 35V			Switching output	pnp, 200 mA, And / ODER						
					Protection class	IP 67						
	<b>Typ</b>											
	Logic distributor M8, AND / OR switchable											AV2-AND/OR-PS-TS
	Logic distributor M12, AND / OR switchable											AV2-AND/OR-PS-IBS
<b>Logic distributor, 4 options</b>												
	Supply voltage	10 ... 30V			Switching outputs	pnp 4x, pnp-AND 1x, pnp-OR 1x						
	Current-carrying capacity AND/OR	per 300 mA / logic contact			Protection class	IP 67 (with all slots occupied)						
	<b>Typ</b>											
		Logic distributor M8, 4 options										
	Connecting cable angled 5 m / 8-poled											VKHM-W-5/8
	AND-M8 open connection socket											BS-Z-8-AND

\* Excerpt from our delivery programme

Further information and types will be found under [www.di-soric.com](http://www.di-soric.com)

# Accessories

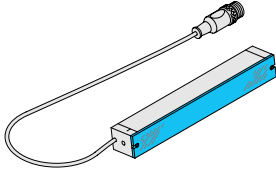
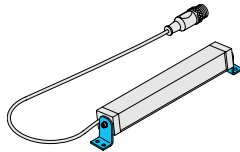
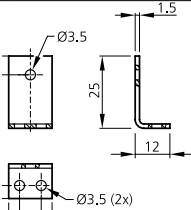
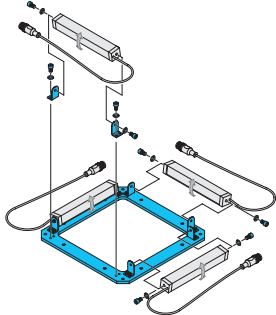
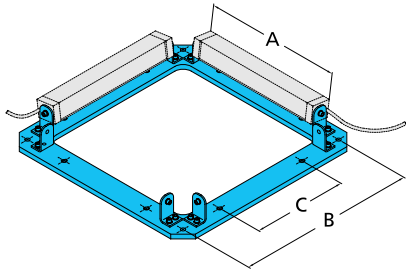
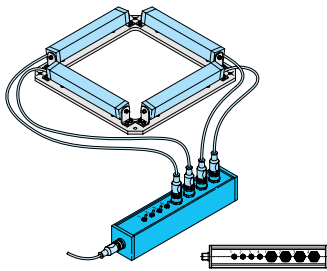
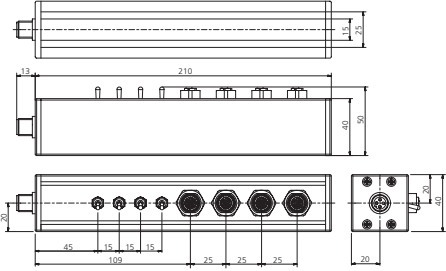
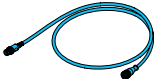
	Size	Nosl wires	Socket	Cable length (m)	Metal nut	Maximal allowed service voltage (VAC/DC)	Connector material	Cable material PVC, PU cladding	Cable material PUR	Protection class	Product-ID*
<b>Connecting cable</b>											
	M8	3	straight	2,5	■	60	PU	■		IP 67	TKHM-Z-2,5
		4		5,0							TKHM-Z-5
	M8	3	angled	2,5	■	60	PU	■		IP 67	TKHM-W-2,5
		4		5,0							TKHM-W-5
	M12	4	straight	2,5	■	250	TPU	■		IP 68	VKHM-Z-2,5/4
				5,0							VKHM-Z-5/4
	M12	4	angled	10,0	■	250	TPU	■		IP 69K	VKHM-Z-10/4
				2,5							VKHM-W-2,5/4
		5,0	VKHM-W-5/4								
		10,0	VKHM-W-10/4								

Holders	Product-ID*
	For fork- / angled light barriers hole spacing 8 mm  SH-UGU-08-14
	For fork light barriers hole spacing 20 mm  SH-UGU-20-14
	For cylindrically designed casings A D SH ... 4 10 SH-4-10 5 10 SH-5-10 6,5 10 SH-6.5-10 8 10 SH-8-10 12 10 SH-12-10
	For photoelectric sensors series 50  SH-S50-34-44-14
	For barlight BE 1-A ...  SH-BE 1-A
	For barlight BEK 1-A ...  SH-BEK 1-A
	For back-spot- and darkfield light BEK 1 F.../BEK 1-P.../BEK 1-D 120...  SH-BEK

System holders	Product-ID*
	Cross connector A B C D E 10 25 14 7 10 SH-KVB-L-10 14 32 18 9 12 SH-KVB-X-14 20 38 27 12,5 15 SH-KVB-X-20
	Angle clamp A B C D E 10 - - 16 18 SH-WST-L-10-U 14 - - 18 18 SH-WST-L-14-U 20 - - 25 40 SH-WST-JU-20-U
	A B C D E 10 40 16 - - SH-WSL-L-10-40-U 14 40 18 - - SH-WSL-L-14-40-U 20 60 24 - - SH-WSL-X-20-60-U
	Angle arm A B C D E 10 30 10 - - SH-WKA-10-10-30 10 60 10 - - SH-WKA-10-10-60 10 90 10 - - SH-WKA-10-10-90 14 80 14 - - SH-WKA-14-14-80 14 120 14 - - SH-WKA-14-14-120
	Articulated arm A B C D E 10 30 10 - - SH-GLA-10-10-30 10 60 10 - - SH-GLA-10-10-60 10 90 10 - - SH-GLA-10-10-90 14 80 14 - - SH-GLA-14-14-80 14 120 14 - - SH-GLA-14-14-120

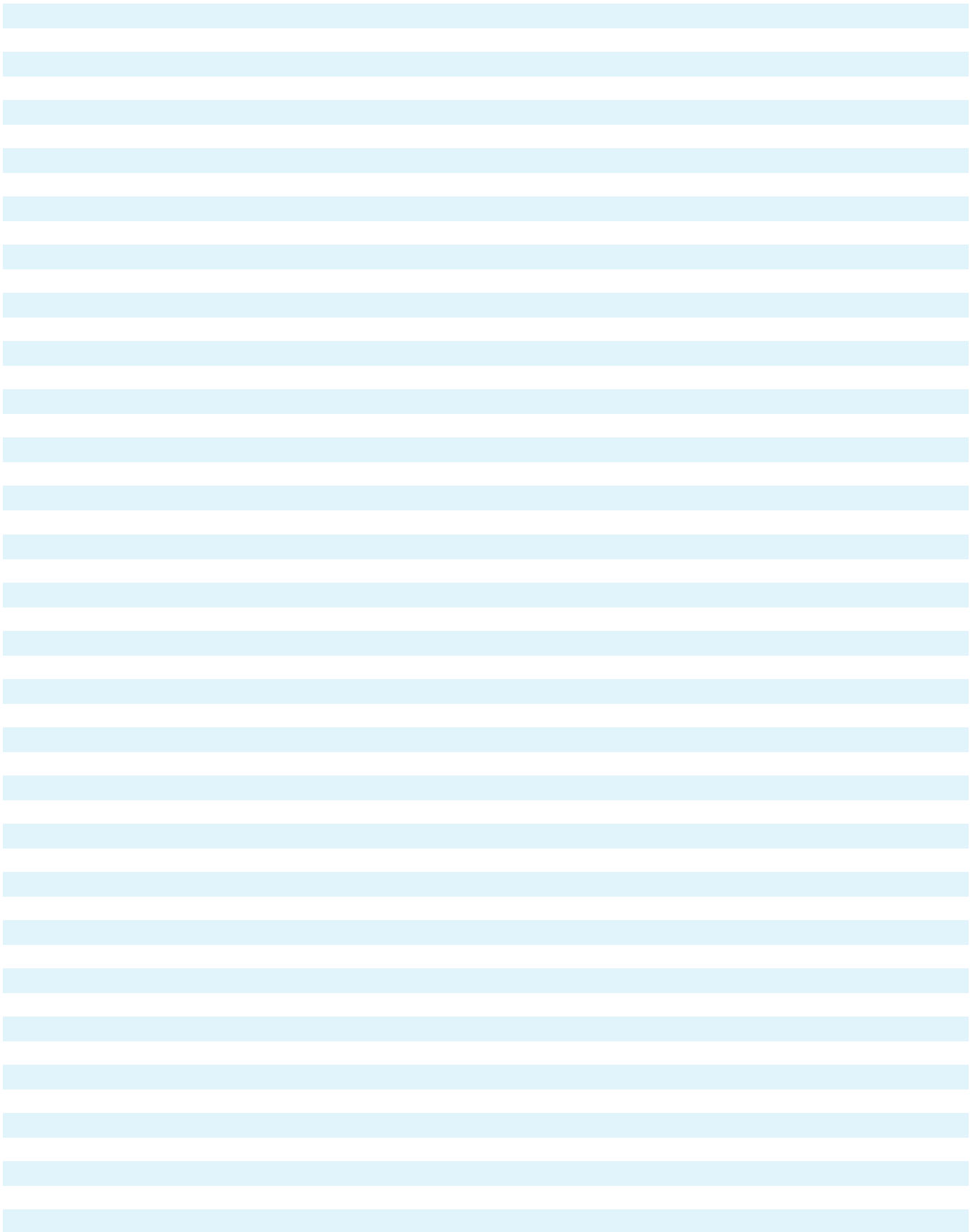
\* Excerpt from our delivery programme



Accessories for barlights BE 1-A ...				
Optical accessories			Length (mm)	Product-ID*
<ul style="list-style-type: none"> <li>PMMA</li> <li>Material thickness 3 mm</li> </ul> 	Diffusor	65	BE 1-A65-DIF	
	Polarisator	65	BE 1-A65-POL	
	Diffusor	130	BE 1-A130-DIF	
	Polarisator	130	BE 1-A130-POL	
	Diffusor	240	BE 1-A240-DIF	
	Polarisator	240	BE 1-A240-POL	
Mounting bracket				
<ul style="list-style-type: none"> <li>Smooth adjustment</li> </ul> 				BW-BE 1-A (2 pieces)
Mounting frame for up to four BE 1-A 130 ...				
<ul style="list-style-type: none"> <li>Smooth adjustment</li> <li>Mounting bracket for four illuminations included</li> </ul> 				
Typ	A	B	C	
For up to four BE1-A 65 ...	84,4	129	50	BE1-A65-FRAMESET
For up to four BE1-A 130 ...	144,4	189	100	BE1-A130-FRAMESET
For up to four BE1-A 240 ...	254,4	299	200	BE1-A240-FRAMESET
Distributor box, switchable for connection of up to four bar lights BE 1-A ... / BEK ...				
<ul style="list-style-type: none"> <li>M12 sockets, individually switchable</li> <li>Trigger signal looped</li> </ul> 				
Service voltage	24V			
Current carrying capacity	4.000 mA			
Protection class	IP 30			
Shock/vibration loading	30g / 10 - 55 Hz, 1 mm			
Ambient temperature	0 ... +60 °C			
Casing material	Aluminium, anodised			
For up to four BE1-A ...				BEV-200/4-IBS
Extension cable for connection of lighting element BE1-A ..., BEK ... and distributor box BEV ...				
	Length 0.6m, connector / coupling M12			VSHM-Z-0.6/VKM-Z/4

\* Excerpt from our delivery programme

A series of 25 horizontal light blue lines spaced evenly down the page, intended for writing notes.



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