

Compact Catalog

Sensors | Lighting | Vision | ID





Multifunctional

VISION-SYSTEMS – with integrated, scalable VS AutoVision Software



◆ VS-05

- Autofocus
- Integrated lighting
- Compact design

◆ VS-06 with liquid lens

- Industry proven machine vision tools
- Fully integrated with processor, lens and illumination
- Liquid lens autofocus
- Integrated Ethernet network

























◆ VS-06 C-Mount

- Industry proven machine vision tools
- C-Mount version
- Integrated Ethernet network



Further information:
www.di-soric.com/en/vision-systems

Innovative products for your automation

	Page		Page
 Company	4	 Label Sensors	28
 Photoelectric Sensors	6	 Proximity Switches	30
 Laser Photoelectric Sensors	8	 Cylinder Sensors	32
 Laser Distance Sensors	10	 Ultrasonic Sensors	34
 High Performance Photoelectric Sensors	12	 Sensors for special applications	36
 Angled Light Barriers	14	 Safety	38
 Fork Light Barriers	16	 Lighting	40
 Frame and Ring Light Barriers	18	 Vision Sensors	44
 Fibre-optic Cables/ -Amplifiers	20	 Vision Systems	46
 Light Curtains	22	 ID Systems	48
 Colour Sensors	24	 Lenses & Filters	50
 Ring and Tube Sensors	26	 Accessories	52

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.



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



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.

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.

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.

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

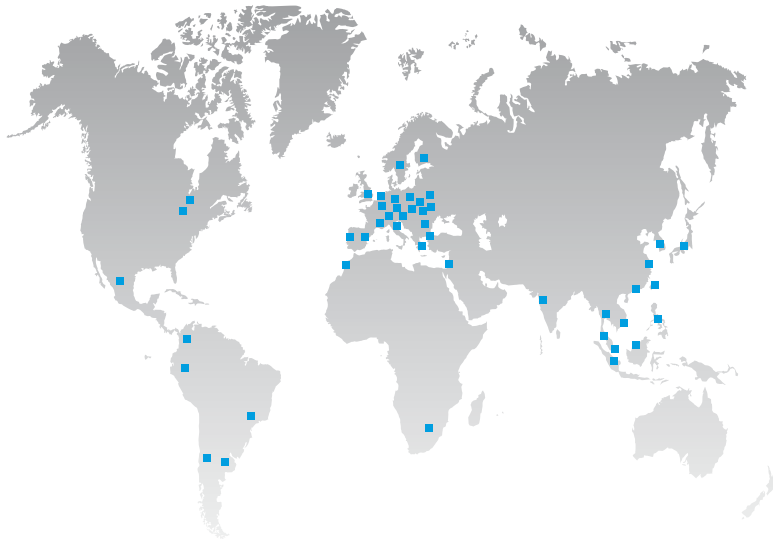


Sales, warehouse and administration in Urbach



Development and production in Lüdenscheid

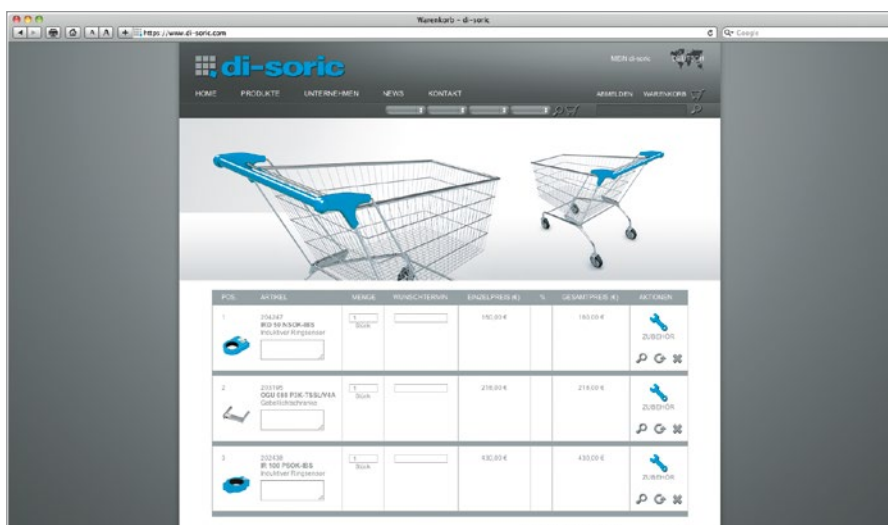
International Sales Network



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

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

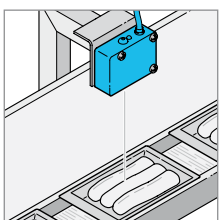
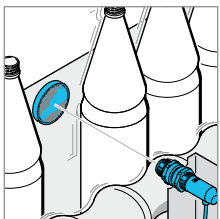
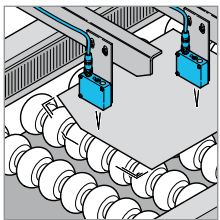
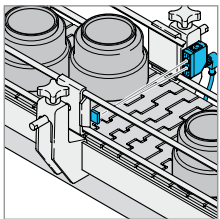
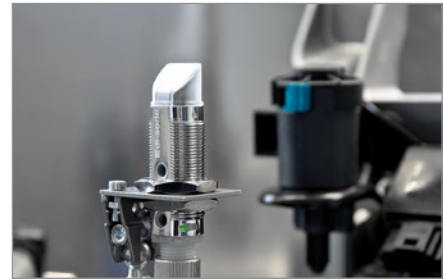
- High resolution
- Ranges up to 50 m
- Alignment aid
- Stainless steel casing with protection class IP 69K

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



Technical data (typ.)	+20 °C, 24 VDC
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*
Diffuse sensors, energetic														
	... 10	∅ 4,0	–	–	■			pnp, 100 mA, NO	0 ... +55	IP 67	Stainless steel V2A	2 m	–	OTV 4.0 V 10 P1K
	... 20	M5	–	–	■			pnp, 100 mA, NO	0 ... +55	IP 67		M8	TK ...	OTV 05 V 20 P1K-TSSL
	... 50	40x5x7	–	–	■			pnp, 100 mA, NO	0 ... +55	IP 67	Plastics	2 m	–	OTV Q5 M 50 P1LK
	... 400	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +50	IP 66	Plastics	M12	VK ... /4	OT 6-18 KR 400 P3K-BSL
	... 800	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +55	IP 67	Plastics	M12	VK ... /4	OT 18 FK 800 P3-B4
	... 600	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +55	IP 67	Plastics	M12	VK ... /4	OT 18 FKR 600 P3-B4
	... 400	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +45	IP 67	Metal	M12	VK ... /4	OT 18 FM 400 P3-B4
	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
	10 ... 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
	Diffuse sensors with background suppression													
	10 ... 120	M18	Poti	–	■			pnp, 200 mA, NO	–25 ... +55	IP 65	Ms vernickelt	M12	VK ...	OHT 18 M 120 P1K-IBSL
	15 ... 200	30x30x15	Poti	–	■			pnp, 200 mA, NO	–25 ... +55	IP 67	Plastics	M8	TK ...	OHT 31 K 200 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
	Optical contrast diffuse sensor													
	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
Retroreflective sensors														
	... 5.700 ¹⁾	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +55	IP 66	Metal	M12	VK ... /4	OR 18-1 FK 5700 P3-B4
	... 3.600 ¹⁾	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +55	IP 66	Metal	M12	VK ... /4	OR 18-1 FKR 3600 P3-B4
	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, Remote teach	–	■			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
	40 ... 9.000 ¹⁾	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
	Through beam sensors													
	... 8.000	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +55	IP 67	Plastics	M12	VK ... /4	OES 18 FKR 8000 P3-B4
	... 10.000	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +55	IP 67	Plastics	M12	VK ... /4	OES 18 FK 10000 P3-B4
	... 8.000	M18	Poti	–	■			pnp, 100 mA, NO/NC	–25 ... +50	IP 66	Plastics	M12	VK ... /4	OES 6-18 KR 8000 P3K-BSL
	0 ... 10.000	50x40x15	Poti	S	■			–	–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	■			–	–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 ¹⁾ Referring reflector: R84

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

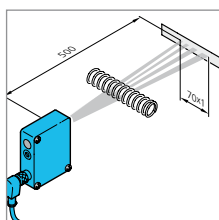
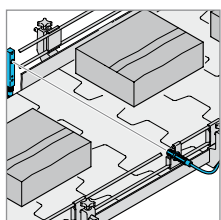
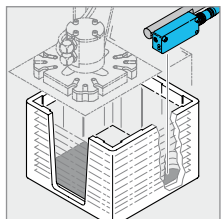
- Resolution 0,2 mm
- High switching frequency
- Collimated red light laser, clocked
- Range up to 50 m
- Robust metal casing
- Compact design

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 teach function transmit power
- Teach function



Technical data (typ.)	+20 °C, 24 VDC
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*
Lasers diffuse sensors ⚠													Product-ID*
	45 ... 300	22x13x8,5	Poti	–	pnp, 50 mA, NO/NC	1.000	15	–10 ... +55	3.000	Plastics	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	M12	VK ...	LTV 51 M 200 P3K-IBS
	100 ... 600	50x40x15	Poti	–	pnp, 200 mA, NO/NC	500	30	–10 ... +50	5.000	Die-cast zinc	M12	VK ...	LTV 51 M 600 P3K-IBS
	100 ... 600	50x40x15	Teach	–	pnp, 200 mA, NO/NC	500	30	–10 ... +50	5.000	Die-cast zinc	M12	VK ...	LTVTI 51 M 600 P3K-IBS
Lasers diffuse sensors with background suppression ⚠													
	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 ...	LHT 41 M 0.2 G3-T3 ¹⁾ LHT 41 M 0.2 FG3-T4 ¹⁾
	50 ... 200	50x40x15	Poti Teach, Remote teach	–	Push-pull, 200 mA, NO/NC	500	25	–10 ... +50	5.000	Die-cast zinc	M12	VK ...	LHT 51 M 200 G3-B4 ¹⁾ LHTTI 51 M 200 FG3-B4 ¹⁾
	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 ^{2) 3)} LHT 81 M 400 G4L-IBS ²⁾
	40 ... 400												
Lasers retroreflective sensors ⚠													
	0 ... 4.000	22x13x8,5	Poti	–	pnp, 50 mA, NO/NC	1.000	15	–10 ... +55	3.000	Plastics	2 m M8	–	LR 21 K 4000 P3 LR 21 K 4000 P3-K-T4
	200 ... 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 ...	LRT 41 M 2 G3-T3 ³⁾ LRT 41 M 2 FG3-T4 ³⁾
	100 ... 1.000	50x40x15	Poti	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M12	VK ...	LRV 51 M 1000 P3K-IBS
	100 ... 1.000	50x40x15	Teach	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M12	VK ...	LRVTI 51 M 1000 P3K-IBS
	200 ... 2.000	50x40x15	Poti	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M12	VK ...	LRV 51 M 2000 P3K-IBS
	200 ... 2.000	50x40x15	Teach	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M12	VK ...	LRVTI 51 M 2000 P3K-IBS
	1.000 ... 10.000	50x40x15	Poti	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M12	VK ...	LRV 51 M 10000 P3K-IBS
	1.000 ... 10.000	50x40x15	Teach	–	pnp, 200 mA, NO/NC	2.000	40	0 ... +50	5.000	Die-cast zinc	M12	VK ...	LRVTI 51 M 10000 P3K-IBS
Lasers through beam sensors ⚠													
	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
	0 ... 1.000	19x12x8,5	–	S/E	pnp, 50 mA, NO/NC	1.000	10	–10 ... +55	3.000	Plastics	2 m M8	–	LES 21 K 1000 P3 LES 21 K 1000 P3-K-T4

* Excerpt from our delivery programme

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

Laser Distance Sensors

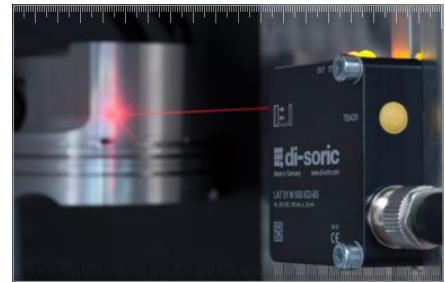
Laser distance sensors with switching and/or analog output are working with laser light. The fields of application are diverse from height and loop control on conveyor belts up to distance measurement on linear units.

Laser distance sensors LAT 51 ...

- Large detection range
- Laser triangulation principle
- 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

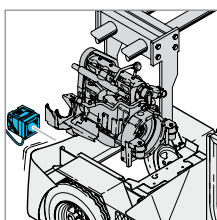
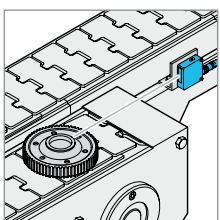
Laser distance sensors LHT 9-45 ...

- Large range; up to 10 m
- Laser light propagation
- 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 ...




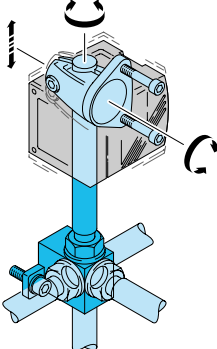
- Extremely high resolution
- Laser triangulation principle
- Integrated configuration display
- 2 analog and 3 digital outputs
- Timing- and multifunction input
- Light construction for mounting on moving parts
- High protection class



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

													Product-ID*	
		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	
	■			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 ¹⁾ LAT 61 K 50/20 IUPN ¹⁾ LAT 61 K 85/40 IUPN ¹⁾ LAT 61 K 120/120 IUPN ¹⁾
	■	■		200 ... 10.000	45x52x42	■	10 ... 30 18 ... 30	–	5 5	– 1 ... 33	∅ 6	M12	VK ... VK ... /4	LHT 9-45 M 10 P3-B4 ¹⁾ LHT 9-45 M 10 P3IU-B4 ¹⁾

¹⁾Digital display

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

* Excerpt from our delivery programme

High Performance Photoelectric Sensors

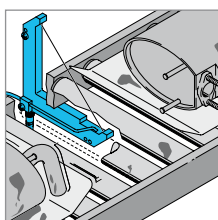
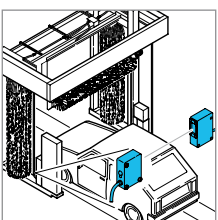
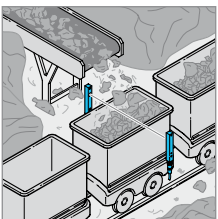
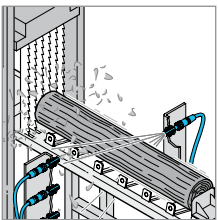
High performance photoelectric sensors are the more powerful versions of the various photoelectric sensors series. Thanks to their extremely high performance, chips, dust, oil and waste water can all be reliably penetrated.

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 (V DC)	Switching output	Operating frequency (Hz)	Internal power consumption (mA)	Ambient light immunity (Lux)	Casing material	Connector	Connecting cable	Product-ID*
High performance through beam sensors												
	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	12x12x91	S E	10 ... 35	- Push-pull, 200 mA, NO	- 40	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 ¹⁾ O EVP 50 M 50000 G3LK-IBS/H ¹⁾
High performance fork light barriers												
	30	50x60x10	-	10 ... 30	pnp, 200 mA, NO/NC	300	30	20.000	Die-cast zinc	M8	TK ...	OGUP 030 P3K-TSSL OGUP 050 P3K-TSSL OGUP 080 P3K-TSSL
	50	75x75x10	-	10 ... 35	pnp, 200 mA, NO/NC	1.000	30	20.000	Die-cast zinc Aluminium	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				OGLP 150 P3K-TSSL
High performance angled light barriers with contamination indicator/-output												
	50/31	60x83x10	-	10 ... 35	pnp, 200 mA, NO	200	45	20.000	Die-cast zinc	M12	VK ... /4	OGL 50/31 P6L-IBS OGL 55/54 P6L-IBS

* Excerpt from our delivery programme

¹⁾with heating function

Angled Light Barriers

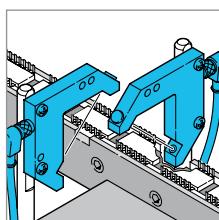
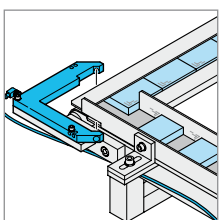
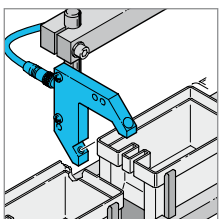
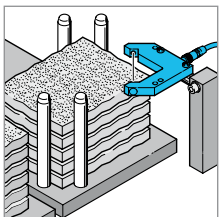
The angled light barrier is of particular use when removing workpieces or detecting parts. With high operating frequency, short response time and high resolution; exact positioning as well as the safe detection of extremely fast motion sequences of the smallest parts is possible.

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*


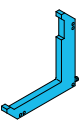



Laser angled light barriers

- 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*
 Angled light barriers													
	50	75x75x10	■	■	- pnp, 200 mA, NO/NC	< 30	∅ 0,5	4.000	80.000	0,06	M8	TK ...	OGL 051 P3K-TSSL
	80	105x105x10	■	■		< 30	∅ 0,7	4.000	25.000				OGL 050 P3K-TSSL
	120	150x150x12	■	■		< 40	∅ 1,0	2.000	70.000				OGL 081 P3K-TSSL
									20.000				OGL 080 P3K-TSSL
									80.000				OGL 121 P3K-TSSL
									50.000				OGL 120 P3K-TSSL
 Laser angled light barriers 													
	50	81x81x10		■	pnp, 200 mA, NO/NC	< 30	∅ 0,05	3.000	100.000	0,01	M8	TK ...	LGL 051 P3K-TSSL
	80	106x106x10				< 30							LGL 081 P3K-TSSL
	120	146x146x12											LGL 121 P3K-TSSL
High performance angled light barriers: see pages 12 and 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

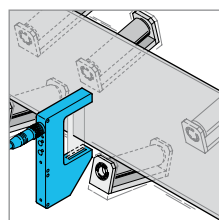
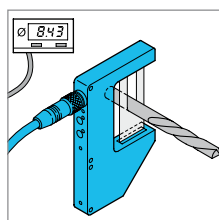
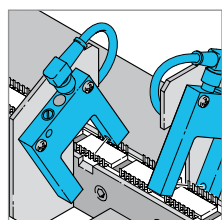
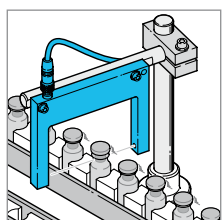
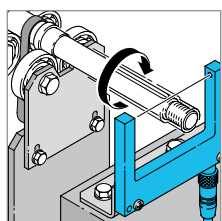
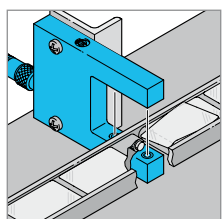
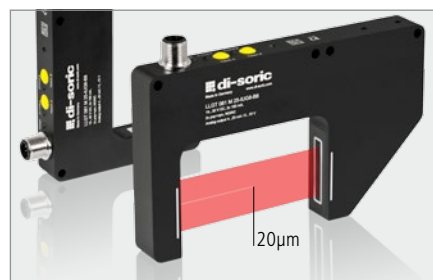
- Differential evaluation
- High resolution
- Detects transparent objects and the thinnest threads
- Fork widths from 30 to 90 mm
- 3-years function guarantee*

Laser fork light barriers

- Resolution 50 µm
- High switching frequency
- Reproducibility 10 µm
- Fork widths from 30 to 120 mm
- Class 1 laser product








Line laser fork light barriers

- Resolution 20 µm
- Teach-in for measuring area and switching outputs
- Remote teach option with key-lock function
- Current / voltage output switchable
- Switching output with window mode
- Large measuring area



* 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 ...) / 18 ... 30 VDC (only LLGT ...)
Switching output	pnp, 200 mA, NO/NC switchable / push-pull, 200 mA, NO/NC switchable (only ... G3K ...)
Analog output	4 ... 20 mA / 0 ... 10 VDC selectable / switchable (only LLGT ...)
Sensitivity adjustment	Potentiometer
Laser power	Teach key (only OGUTI .../LLGT ...)
Laser class	100 µW only LGU ...
Ambient temperature	1- EN 60825-1 (only LGU ...)
Protection class	-10 ... 60 °C / +5 ... 45 °C (only LGU ...)
Casing material	IP 67
	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	
Fork light barriers in standard version															Produktbezeichnung*
	10	25x45x10		■		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
Fork light barriers in stainless steel casing															
	30	50x60x10		■		30	∅ 0,5	2,8	4.000	0,25	0,02	30.000	M8	TK ...	OGU 031 P3K-TSSL/V4A
	50	70x80x10		■		30	∅ 0,5	2,8	4.000		0,04	15.000			OGU 051 P3K-TSSL/V4A
	80	100x80x10		■		30	∅ 0,5	2,8	4.000		0,06	25.000			OGU 081 P3K-TSSL/V4A
	120	144x90x12		■		45	∅ 0,8	2,0	2.000		0,06	20.000			OGU 121 P3K-TSSL/V4A
Fork light barriers with teach function															
	30	50x60x10		■		30	∅ 0,3	2,0	3.000	0,1	0,03	20.000	M8	TK ...	OGUTI 031 P3K-TSSL
	50	70x80x10		■		30	∅ 0,3		3.000	0,1	0,03	20.000			OGUTI 051 P3K-TSSL
	80	100x80x10		■		30	∅ 0,3		3.000	0,1	0,03	12.000			OGUTI 081 P3K-TSSL
	120	144x90x12		■		50	∅ 0,7		1.500	0,15	0,05	15.000			OGUTI 121 G3K-TSSL
Fork light barriers with teach function, dynamic evaluation and adjustable pulse stretching 5 ... 150 ms															
	30	50x60x10		■		30	∅ 0,15	2,0	100	-	-	10.000	M8	TK ...	OGUTID 031 P3K-TSSL ¹⁾
	50	70x80x10		■											OGUTID 051 P3K-TSSL ¹⁾
	80	100x80x10		■											OGUTID 081 P3K-TSSL ¹⁾
Differential fork light barriers															
	30	50x70x10		■		35	∅ 0,07	2,5	5.000	0,2	0,01	-	M8	TK ...	ODG 30 P3K-TSSL ¹⁾
	50	70x90x10		■			∅ 0,1								ODG 50 P3K-TSSL ¹⁾
	90	110x115x10		■			∅ 0,25								ODG 90 P3K-TSSL ¹⁾
Laser fork light barriers ⚠															
	30	60x60x10			■	30	50 µm	2,8	3.000	20 µm	10 µm	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
Line laser fork light barriers ⚠															
	80	150x90x18	Teach, Remote teach		■	70	20 µm	2,0	-250	0,1	-	5.000	M12	VK.../8	LLGT 081 M 25 IUG8-B8 ¹⁾
High performance fork light barriers see page 12 until 13															

* Excerpt from our delivery programme

¹⁾ without UL-approval

Frame & Ring Light Barriers

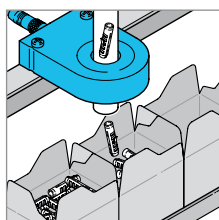
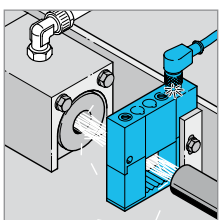
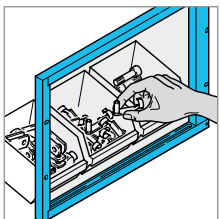
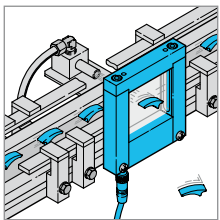
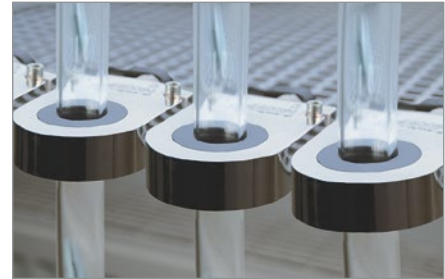
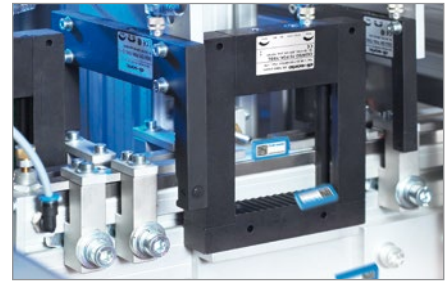
The optimum solution for detecting metallic and non-metallic parts, for counting small parts or for checking ejection or removal of workpieces in press and stamping plants.

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



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 (V DC)	External amplifier	Connector	Connecting cable	Product-ID*
Frame light barriers												
	25x23 40x49 40x49 70x62 100x92 150x142 250x242 300x397,5	60x60x15 85x80x15 80x125x20 110x123x20 140x153x20 190x203x20 290x303x20 340x458,5x20	S/D	pnp, 200 mA, NO/NC	25 30 30 30 35 45 45 50	∅ 0,7 ∅ 0,7 ∅ 0,7 ∅ 1,5 ∅ 2,5 ∅ 3,0 ∅ 5,0 ∅ 5,0	∅ 1,0 ∅ 1,0 ∅ 1,0 ∅ 2,0 ∅ 3,0 ∅ 5,0 ∅ 8,0 ∅ 10,0	30.000 20.000 20.000 20.000 20.000 20.000 10.000 8.000	10 ... 35 18 ... 35 18 ... 35 18 ... 35 18 ... 35 18 ... 35 22 ... 26 22 ... 26	■	M8 TK ...	OGWSD 25 P3K-TSSL OGWSD V 4055 P3K-TSSL OGWSD 4055 P3K-TSSL OGWSD 70 P3K-TSSL OGWSD 100 P3K-TSSL OGWSD 150 P3K-TSSL OGWSD 250 P3K-TSSL OGWSD 300 P3K-TSSL
Ring light barrier												
	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

Gain fittings for ring light barrier ORSD 20 P2K-IBS	Product-ID*
<ul style="list-style-type: none"> Set with two gain fittings ∅ 10 mm / ∅ 15 mm 	ORSD-AR-10/15

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

Plastic fibre-optic cables

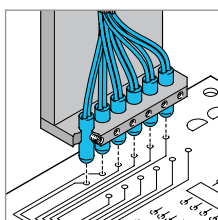
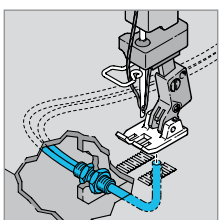
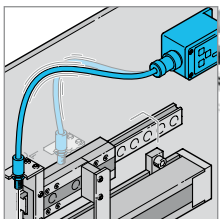
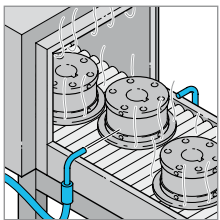
- High resolution
- Large operating distances
- Fine internal fibres
- Auxiliary optics
- Bendable sensor probe
- Versions with coaxial arrangement

Amplifiers for glass fibre-optic cables

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

Amplifiers for plastic fibre-optic cables

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



Technical data (typ.)	+20 °C, 24 VDC
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 (mW)	Connector	Connecting cable	Product-ID*
Amplifiers for plastic fibre-optic cables															Product-ID*
	Poti	10 ... 36	1.000	■	■	■	10	0,3	10.000	IP 67	15	M8	TK.../4	OLVK 31 P4K-TSSL	
	Poti	12 ... 35	750	■	■	■	15	0,3	30.000	IP 65	36	M8	TK...	OLVK 41 P3K-TSSL	
	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	
	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 ¹⁾	
	Teach	12 ... 24	4.000	■	■	■	-	0,2	3.000	IP 40	30	M8	TK.../4	OLKTD 71 P3-T4 ¹⁾	
Amplifiers for glass fibre-optic cables															
	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	
	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 ¹⁾ (mm)	Temperature resistance (°C)	Protection class	Product-ID*	
Plastic fibre-optic cables (PMMA)												Product-ID*	
	■	70	-	■	■	M3	■	■	■	■	■		WRBT 2000 K-M3-0.5
	■	140	-	■	■	M5	■	■	■	■	■		WRBT 2000 K-M5-Z8
	■	150	VA	■	■	M6	■	■	2.000 ²⁾	-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	
Glass fibre-optic cables													
	■	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	■	■	■	■	■	WRB 120S-8-2.5	
	■	1.000	VA	■	■	∅8x15	■	■	600 ³⁾	-40 ... +180	IP 67	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

¹⁾ with digital display / ²⁾ cut to length / ³⁾ 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 LI ... to be used with evaluation electronics

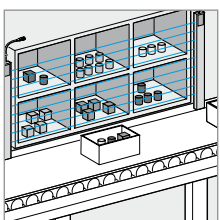
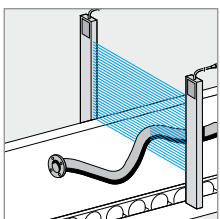
- With switching or measuring evaluation electronics
- Light beam interspace from 5 mm up to 112 mm
- Monitored height up to 3.950 mm
- Compact design
- Several profile cross sections available
- Aluminium casing
- Easy mounting

Light curtains LA ... with integrated evaluation electronics

- Transistor outputs or relais outputs
- Alarm output when being polluted
- Light beam interspace from 12,5 mm up to 112 mm
- Monitored height up to 5.775 mm
- Compact design
- Aluminium casing
- Easy mounting


Evaluation electronics for light curtains LI ...

- Switching or measuring versions available
- Up to two light curtains of type LI... to be connected
- Parameters for functions can be freely assigned
- Modular system
- Up to 16 outputs
- 2 analog outputs
- LED displaystrips to be connected
- Profibus module available
- Numerous additional modules available
- Profinet available



CE

Technical data (typ.)	+20 °C, 24 VDC
	LA.../LA-D...
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 (24x 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
Ordering example: 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							
LA 8-12.5-88-260 I-H							

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	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	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	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	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	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



All information on:

- Light curtains LI ... with external electronics
- Evaluation electronics for LI ... switching: LVB ... and measuring: LVE ... / LVX ... as well as the entire program of light curtains is available on: www.di-soric.com/en/light-curtains

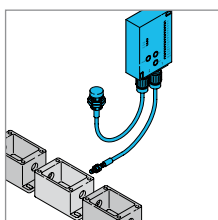
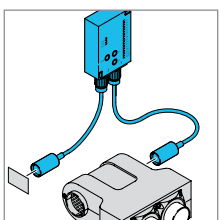
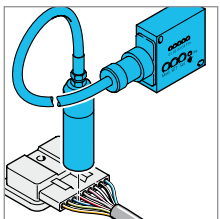
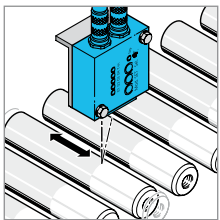


Colour Sensors



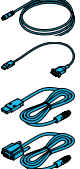
These high-quality sensors detect shades in changes to colour or surface structures and are frequently used in quality testing.

Colour sensors

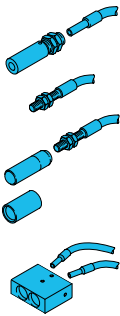
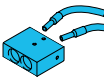
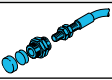
- ◆ Perceptive operating mode (depending on sensitivity)
- ◆ Measurement in colorimetric colour spaces e. g. L^*a^*b and L^*u^*v
- ◆ Differentiation of very small colour nuances ($\Delta E < 1$)
- ◆ Up to 350 channels
- ◆ 2-channel differential evaluation
- ◆ Adjustable colour tolerance
- ◆ Very short 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



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
Service voltage	18 ... 28 VDC
Internal power consumption	500 mA
Protection class	IP 54

	Operating distance (mm)	Number of sensing channels	Teach-in colour channels (nos.)	Operation via software	Button operation	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	
Farbsensoren														Produktbezeichnung
	see fibre-optic cables 30 ... 60	1	4		■	–	■		4	■		■		FSB 50 M G3-B8 FSB 50 M 60 G3-B8
	see fibre-optic cables 30 ... 60	1	4	■	■	15	■		350	■		■		FS 50 M G3-B8 FS 50 M 60 G3-B8
	see fibre-optic cables	1	12	■	■	350	■		350		■	■	■	FS 12-100-1 M G8-B8 ¹⁾
		2		■	■						■ ³⁾	FS 12-100-2 M G8-B8 ¹⁾		
		2		■	■						■ ³⁾	FS 12-100-2 M G8-B8-PB ²⁾		
	Connecting cable 5 m													BSHM-Z-5/8-A
	Adapter cable 0,25 m (USB/RS232)													RS232S-0.25-USB
	Connecting cable 2 m (USB)													BSHM-Z-2/4-USB
	Connecting cable 2 m (RS232)													BSHM-Z-2/4-RS232K

¹⁾ Versions with CANopen and fast Ethernet Feldbus interface available upon request / ²⁾ Profibus / ³⁾ 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	
Fibre-optic cables and focus optics for colour sensors with fiber-optic cable adapter														Product-ID
	■	■	–	2,5	67°	–	–	Ø 4,5x12	Ø 4,5		■		IP 67	WRB 120 S-SG-4.5-2.5
	■		2,0	–	–	10	10 ... 15	Ø 15x60	Ø 4,5	■			–	VO-M12/10-4.5-2.5
		■	–	2,5	67°	–	–	M4x20	M4		■		IP 67	WRB 120 S-SG-M4-2.5
		■	–	2,5	67°	–	–	M6x30	M6		■		IP 67	WRB 120 S-SG-M6x30-2.5
	■		6,0	–	–	35	30 ... 60	Ø 22x63	M6	■			–	VO-M6/35-M6x30-2.5
	■		6,0	–	–	50	35 ... 60	Ø 22x39	M6	■			–	VO-M6/50-M6x30-2.5
		■	–	2,5	67°	–	–	Ø 4,5x12	Ø 4,5		■		IP 67	WRB 220 S-4.5-2.5
	■		14	–	–	90	70 ... 150	40x50x22	Ø 4,5	■			–	VO-F/90-4.5-2.5
	■		20	–	–	200	150 ... 300	40x50x22	Ø 4,5	■			–	VO-F/200-4.5-2.5
Stabilisation target for external drift stabilisation and matching fibre-optic cable (only for FS 12-100-2 M ...)														
	Target colours: RAL 9003 / RAL 7046 / black			–	–	–	–	–	M6	■			–	FS-STAB
	Fibre-optic cable 300 mm			67°	–	–	–	M6x20	M6		■		IP 67	WRB 110 S-M6-2.5

Ring- & Tube Sensors

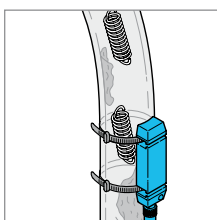
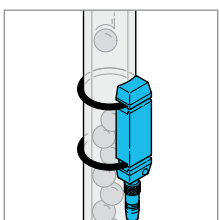
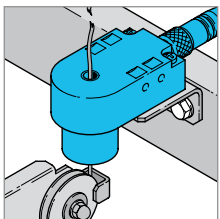
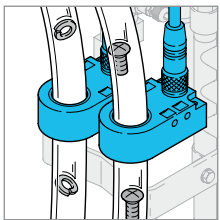
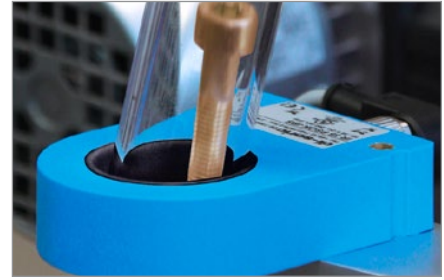
This series is featured by an easy mounting for safe detection of guided, small metal parts like, springs or screws. Versions for wire break detection complete our range.

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 _r /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*
Inductive ring sensors											
	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
Wire break sensors											
	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
Inductive tube sensors											
	-	S	15	**	-	pnp, 200 mA, NO/NC	100 ms	M8	TK...		IS 70 PSK-TSSL
					-			M12	VK...		IS 70 PSLK-K-BS
	-	D	25	**	-	pnp, 200 mA, NO/NC	100 ms	M8	TK...		ISDP 70 PSK-TSSL
					-			M12	VK...		ISDP 70 PSLK-K-BS

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

Label Sensors

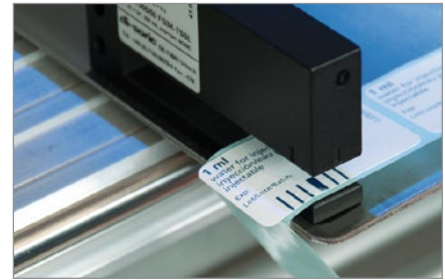
Are you a labelling machine manufacturer or do you work with labels and want to position them exactly on a product? di-soric label sensors detect all label materials and have a high repeat accuracy.

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

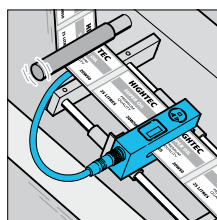
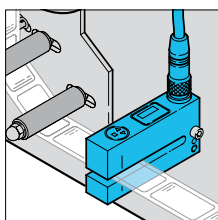
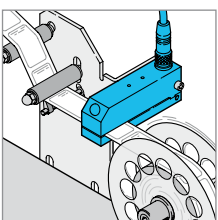
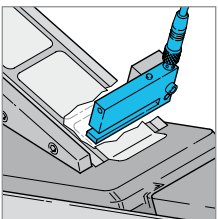
Optical label sensors

- 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














Ultrasonic label sensors

- Graphic display
- Different teach options
- Remote teach with key-lock function
- Two switching outputs independently adjustable
- Detection of metallised, transparent and paper labels
- Large fork width and fork depth
- Robust metal casing



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 ... and USGT 6/70 G6 ...)
	IP 65 (only KSSTI ...)
Casing material	Die-cast zinc, lacquered (only OGUTI ...)
	Aluminium / black anodized (only KSSTI ... and USGT 6/70 G6 ...)

	Fork-/slot width (mm)	Slot depth (mm)	Integrated memory location	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	Sensitivity adjustment by means of teach key and remote teach	Connector	Connecting cable	Product-ID*
Optical contrast diffuse sensors														
	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
Capacitive label sensors														
	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 ¹⁾ KSSTI 1000/80 FG3LK-IBS ¹⁾
	1,0	85	■		Push-pull, 200 mA, NO/NC	70	2,5	-		■		M12	VK.../4	KSSTI 1000/80 FG3LK-IBS ¹⁾ KSSTI 1000/80 FG3LK-AIBS ¹⁾
	6	70			2 independently switching outputs, push-pull, 150 mA, NO/NC	40	2,0	-		■		M12 M12 (radial)	VK.../5	USGT 6/70 G6-B5 ¹⁾ USGT 6/70 G6-RB5 ¹⁾
Accessories														
	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

¹⁾ suitable for metalized label material

Proximity Switches

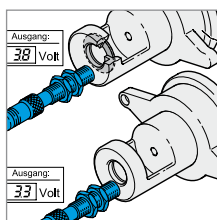
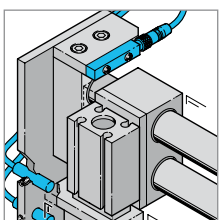
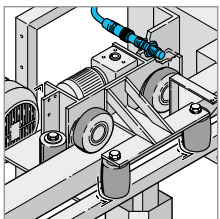
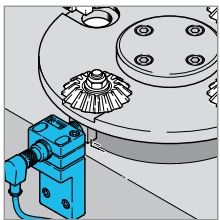
Depending on the functional principle, proximity switches detect metallic or non-metallic materials. Various designs and versions offer a diverse range of possible applications.

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
- Potentiometer and teach versions available
- 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

Technical data (typ.)	+20 °C, 24 VDC
Service voltage	10 ... 30 VDC | 18 ... 30 VDC (KDCT...) some versions with extended service voltage range 10 ... 35 VDC
Internal power consumption	< 6 ... 15 mA
Protection class	IP67 | IP65 (KDCT...)
Ambient temperature	-25 ... +70 °C

Size (mm)	Switching output	Casing material	Connector	Connecting cable	Operating distance (mm)			Product-ID*	Operating distance (mm)				
					Flush-fitted (nb)/non flush-fitted (nb)/quasi flush-fitted (qb)	Operating frequency (Hz)	Product-ID*		Flush-fitted (nb)/non flush-fitted (nb)/quasi flush-fitted (qb)	Operating frequency (Hz)			
Inductive proximity switches in cylindrical designs								Product-ID*					
	∅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
	∅4x25	pnnp, 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
	∅6.5x16	pnnp, 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	pnnp, 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	pnnp, 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	pnnp, 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	pnnp, 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	pnnp, 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	pnnp, 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
Inductive proximity switches in rectangular designs													
	5x5x25	pnnp, 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	pnnp, 200 mA, NO	AL	–	2 m, PUR	–	–	–	–	1,5	b	2.000	DCQZ 08 M 1.5 PSLK
	8x8x59	pnnp, 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	pnnp, 200 mA, NO	Ks	M8	TK ...	–	–	–	–	2,0	b	2.000	DCR 30 K 02 PSK-TSL
	30x20x11,5	pnnp, 200 mA, NO	AL	M8	TK ...	–	–	–	–	1,5	b	3.000	DCR 20 M 1.5 PSK-K-TSL
	40x26x12	pnnp, 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
Inductive proximity switches with stainless steel casing													
	M8x1	pnnp, 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	pnnp, 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	pnnp, 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	pnnp, 200 mA, NO	VA	M12	VK ...	20	b	100	D7C 30 V 20 PSK-IBSL	40	nb	100	D7C 30 V 40 PSK-IBSL
Capacitive proximity switches													
	∅6.5x54	pnnp, 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
	∅50x10	pnnp/npn, 150 mA, NO/NC	Ks	–	2 m, PUR	25	b	50	KDC 50 K 25 PINSOLK	–	–	–	–
	M8x1	pnnp, 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
	M8x1	Push-pull, 150 mA, NO/NC, switchable	VA	M8	VK .../4	0,1... 3	b	70	KDCT 08 V 02 G3-T4	–	–	–	–
	M12x1	Push-pull, 150 mA, NO/NC, switchable	VA	M12	VK .../4	0,1... 6	b	50	KDCT 12 V 04 G3-B4	–	–	–	–
	M18x1	pnnp, 200 mA, NO	VA	M12	VK ...	8	b	100	KDC 18 M 08 PSK-IBSL	–	–	–	–
	M18x1	pnnp, 200 mA, NO	Ks	M12	VK ...	–	–	–	–	15	nb	100	KDC 18 K 15 PSK-IBSL
	M30x1,5	pnnp, 300 mA, NO/NC	VA	M12	VK ...	20	b	100	KDC 30 M 20 PSOK-BSL	–	–	–	–
	34x16x8	pnnp, 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. They have the following advantages:</p> <ul style="list-style-type: none"> - Flush mounting (see installation notes) in conductive materials (metals) - Protection of the active zone from mechanical damage - Lower influence of external interference fields - Lower lateral distance to the next proximity switch 	<p>These proximity switches possess a higher operating distance than proximity switches for flush-mounting. They may be mounted into conductive materials only quasi-flush mounted, i. e. not completely flush mounted. The proximity switches must exceed a little bit over the installation surface (see installation notes). Flush mounting in non-conductive materials is permissible.</p>	<p>These proximity switches must not be flush-mounted with the surface of conductive materials. They have the greatest possible operating distance. Special installation notes are applicable for these proximity switches. Flush mounting in non-conductive materials is permissible.</p>

* Excerpt from our delivery programme

Cylinder Sensors

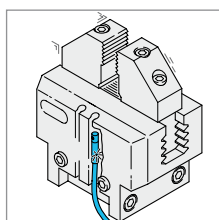
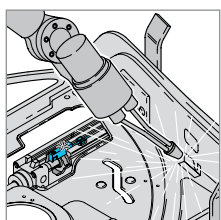
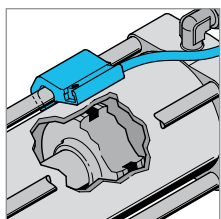
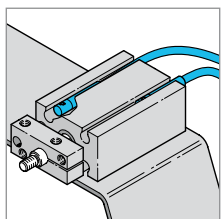
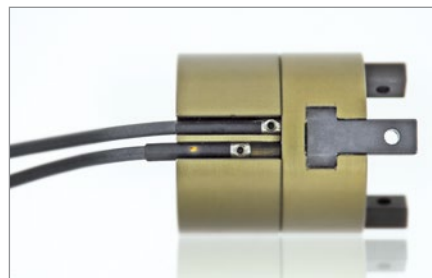
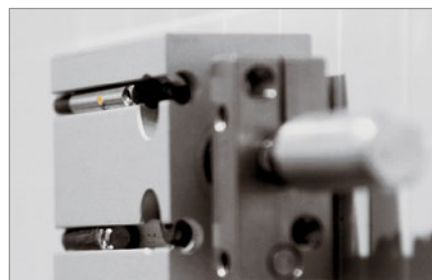
Cylinder sensors are designed for pneumatic cylinders with integrated magnets. The piston position is detected through the cylinder wall.

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



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

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

¹⁾ Allen screw included

* Excerpt from our delivery programme

Ultrasonic Sensors

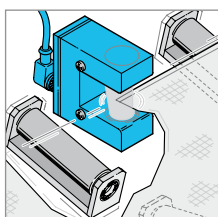
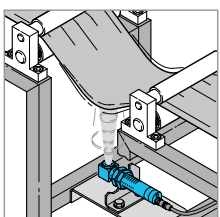
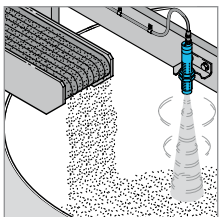
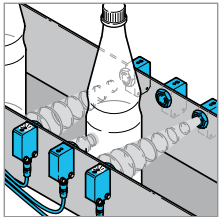
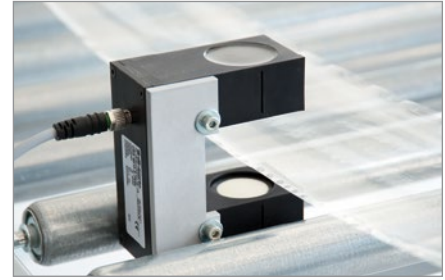
Ultrasonic sensors are used to measure distance in automation tasks. These sensors measure the duration of the noise and can thereby detect even transparent, fluid and powdery objects.

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

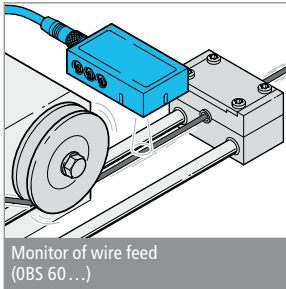
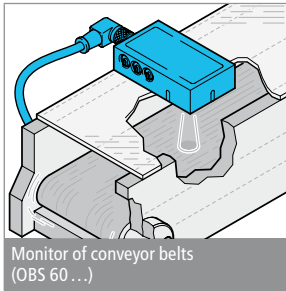
Technical data (typ.)	+20 °C, 24 VDC
Service voltage	18 ... 30 VDC
some versions are available with advanced operating range of 12 ... 36 VDC	

	Scanning distance (mm) Fork opening/ Measuring range (mm)	Size (mm)	Sound output	Switching output (Transistor pinp)	Analog output	Repeat accuracy	Ambient temperature (°C)	Protection class	Casing material	Connector	Connecting cable	Product-ID*
Ultrasonic distance sensors												
	20 ... 150	M12x91	Axial	100 mA, NO/NC – –	– 0 ... 10 V 4,0 ... 20 mA	0,5 %	–25 ... 70	IP 65	Brassnickel-plated	M12	VK.../4	USTI 12 MFB 150 PSOK-IBSL USTI 12 MFB 150 A-IBSL USTI 12 MFB 150 I-IBSL
	20 ... 200	M12x70	Axial	100 mA, NO/NC – –	– 0 ... 10 V 4,0 ... 20 mA	0,5 %	–25 ... 70	IP 65	Brassnickel-plated	M12	VK.../4	USTI 12 M 200 PSOK-IBSL USTI 12 M 200 A-IBSL USTI 12 M 200 I-IBSL
	180 ... 1.000	M18x90 M18x96	Axial Radial	100 mA, NO	–	2%/Sn max.	–20 ... 50	IP 67	Polyamide	Cable 2,0 m		US 18 K 1003 PSLK US 18 KR 1003 PSLK
	180 ... 1.000	M18x90 M18x96	Axial Radial	100 mA, NO	1,6 ... 10 V	2%/Sn max.	–20 ... 50	IP 67	Polyamide	M8	TK.../4	US 18 K 1003 PSAK-TSSL 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 M18x81,5	Axial Radial	150 mA, NO	–	1 mm	–25 ... 70	IP 67	Brassnickel-plated	M12	VK.../4	USCSTI 18 M 700 FPSK-BSL USCSTI 18 MR 700 FPSK-BSL
	150 ... 1.000	M18x101	Axial	150 mA, NO –	– 4,0 ... 20 mA	2 mm	–25 ... 70	IP 67	Brassnickel-plated	M12	VK.../4	USC 18 M 1000 IPSK-IBSL USC 18 M 1000 I4/20-IBSL
	200 ... 1.300 600 ... 6.000 600 ... 6.000	M30x131 M30x153 M30x153	Axial	300 mA, NO	– 0 ... 10 V 4,0 ... 20 mA	2 mm 9 mm 9 mm	–25 ... 70	IP 65	Brassnickel-plated	M12	VK.../4 VK/5... VK/5...	USC 30 M 1300 IPSK-BSL USC 30 M 6000 I0/10PSK-BSL 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
	80 ... 500	60x41x32	Radial	100 mA, 2xNO	–	1%/Sn max.	–20 ... 50	IP 67	Polyamide	M8	TK.../4	US 60 K 500 PSS-TSSL
	250 ... 2.500	60x41x33		100 mA, NO	5,6 ... 20 mA							US 60 K 2500 PSI-TSSL
	400 ... 5.000	60x41x38		100 mA, NO	5,3 ... 20 mA							US 60 K 5000 PSI-TSSL
Ultrasonic retroreflective sensors												
	0 ... 200	M18x63,5	Axial	150 mA, NO	–	–	–25 ... 70	IP 67	Brassnickel-plated	M12	VK.../4	USCRTI 18 M 200 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
Ultrasonic through beam sensors												
	0 ... 1.500	Receiver Transmitter	Radial	100 mA, NO –	– –	–	–20 ... 50	IP 67	Polyamide V2A	M8	TK...	USE 46 K 1500 PSKT-TSSL USS 46 K 1500-TSSL
Ultrasonic fork sensors												
	30/8 40/13 60/8 70/13	74x30x65 92x39x80 104x30x65 122x39x80	– – – –	– – – –	10 ... 0 V	0,15 mm ¹⁾	0 ... 60	IP 67	Aluminium anodised	M12	VK.../4	USGT 30/8 A-B4 USGT 40/13 A-B4 USGT 60/8 A-B4 USGT 70/13 A-B4

* Excerpt from our delivery programme

¹⁾at 50% coverage

Sensors for special applications



Optical movement sensors

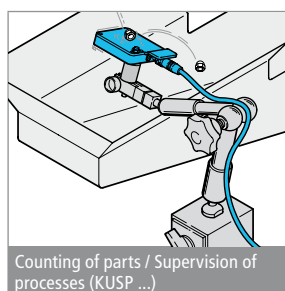
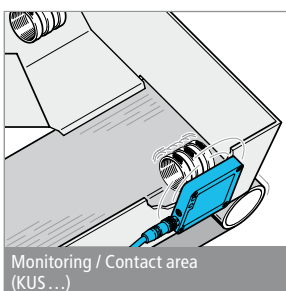
For detection of contactless movements

- For contactless feed control also suitable at reduce speed and for wires
 - Detection of metallic, non-metallic and shiny surfaces
 - Detection of movement and stand still
 - Adjustable pulse stretching
 - High protection class
 - Robust metal casing
- www.di-soric.com/en/movement-sensors

Contact and vibration sensors

Striking parts generate a structure-borne sound which will be transformed in a standard output signal

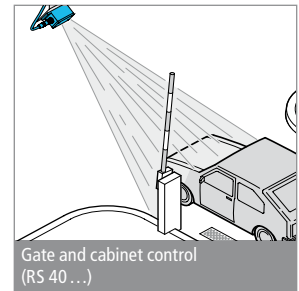
di-kus[®]



- Detection by means of direct impact during ejection or in free fall
 - For screws, rivets, springs and non-metallic parts
 - Adjustable suppression of multiple impulses
 - Up to 100 parts per second detectable
 - High lifetime thanks to exchangeable baffle plate
 - Function guarantee also under harsh conditions
- www.di-soric.com/en/contact-sensors

Radar sensors

Suitable for larger distances and outdoor applications



- ◆ Detection range up to 6 m
 - ◆ Non-contact object detection independent on direction
 - ◆ Detection range and pulse stretching adjustable
 - ◆ Mounting behind non-metallic materials possible
 - ◆ Wear-free switching outputs
 - ◆ Switching outputs for detection of approximation and distance
 - ◆ Protection class IP 67 for outdoor use
 - ◆ Robust metal casing
- www.di-soric.com/en/radar-sensors

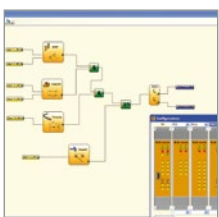
Safety light curtains / light grids offer the optimal solution for almost all tasks in the area of machine safety. Different functions and designs allow an optimal range of applications.

Safety light curtains/grids

- Compact design
- No shielded cables required
- Easy and quick setup
- No blind zone at one side
- Integrated safety functions
- 2 static pnp safety outputs
- Master/slave versions available

Modular safety system

- Compact design
- Removable terminal blocks, screw contacts
- Easy, intuitive configuration software
- Wide range of software configurable safety functions and logical operator
- Removable memory card for saving configuration data
- High-speed bus
- 14 expansion units
- 128 inputs and 16 OSSD pairs



Resolution (mm)	Profile cross section (mm)	Numbers of beams	Protected heights (mm)	Profile length approx. (mm)	Protection class	Connector	Cable				
Safety light curtain / grid*								SLB2	SLB4	SLI4	SLIH4
Safety level								Type 2	Type 4	Type 4	Type 4
Special features								For external safety functions		Integrated safety functions	
								Operating distance: up to 12 m		up to 12 m	up to 20 m
Protection of fingers 14 mm 	28x30	15	160	213	IP 65 + IP 67	M12	Transmitter CD ... Receiver CD ... / SLI... : C8D	–	SLB4-151	SLI4-151 ¹⁾	–
		45	460	513				–	SLB4-451	SLI4-451 ¹⁾	–
		75	760	813				–	SLB4-751	SLI4-751 ¹⁾	–
		105	1060	1113				–	SLB4-1051	SLI4-1051 ¹⁾	–
		150	1560	1563				–	SLB4-1501	SLI4-1501 ¹⁾	–
Protection of hands 30 mm 	28x30	8	160	213	IP 65 + IP 67	M12	Transmitter CD ... Receiver CD ... / C8D	SLB2-153	SLB4-153	SLI4-153 ¹⁾	SLIH4-153 ¹⁾
		23	460	513				SLB2-453	SLB4-453	SLI4-453 ¹⁾	SLIH4-453 ¹⁾
		38	760	813				SLB2-753	SLB4-753	SLI4-753 ¹⁾	SLIH4-753 ¹⁾
		53	1060	1113				SLB2-1053	SLB4-1053	SLI4-1053 ¹⁾	SLIH4-1053 ¹⁾
		76	1510	1563				SLB2-1503	SLB4-1503	SLI4-1503 ¹⁾	SLIH4-1503 ¹⁾
Protection of body 50 mm 	28x30	4	160	213	IP 65 + IP 67	M12	Transmitter CD ... Receiver CD ... / SLI... : C8D	SLB2-155	SLB4-155	SLI4-155	SLIH4-155
		12	460	513				SLB2-455	SLB4-455	SLI4-455	SLIH4-455
		20	760	813				SLB2-755	SLB4-755	SLI4-755	SLIH4-755
		28	1060	1113				SLB2-1055	SLB4-1055	SLI4-1055	SLIH4-1055
		40	1510	1563				SLB2-1505	SLB4-1505	SLI4-1505	SLIH4-1505
Access control Beams: 2-3-4 	28x30	2	510	653	IP 65 + IP 67	M12	Transmitter CD ... Receiver CD ... / SLI... : C8D	SLB2-2B	SLB4-2B	SLI4-2B ¹⁾	SLIH4-2B ¹⁾
		3	810	953				SLB2-3B	SLB4-3B	SLI4-3B ¹⁾	SLIH4-3B ¹⁾
		4	910	1053				SLB2-4B	SLB4-4B	SLI4-4B ¹⁾	SLIH4-4B ¹⁾

* Excerpt from our delivery programme

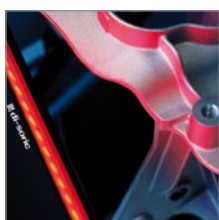
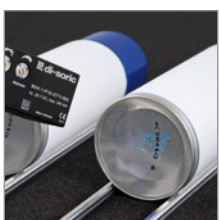
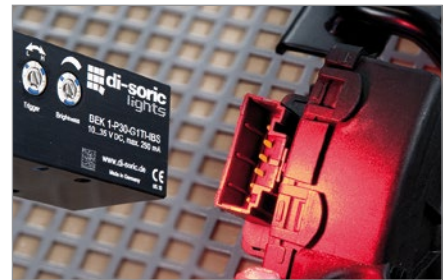
¹⁾IP 69K when being operated with protection housing WTF/WTHF

Master unit (programmable)	Expansion unit	Configuration memory for Master unit	Safety Communication for Master / expansion units	Safety inputs	Safety outputs pnp, 400 mA OSSD (number of pairs)	Signal outputs pnp, 100 mA (programmable)	Test outputs	Safety relay outputs: NO (2x) NC (1x) 6A 250 V AC NO (4x) NC (2x) 6A 250 V AC	Inputs for Start/Restart interlock and external device monitoring (EDM)	Power supply (V DC)	Protection class: Housing IP 20, terminal block IP 2X	Operating temperature (°C)	Product	
Modular safety system														
Safety level SIL 3-3 SILCL 3, according to IEC 61508-IEC 62061														
	■				8	2	2	4		2			MS-1	
		■			8	2	2	4		2			MS-I8-02	
		■			16	–	–	4		–	24V ± 10 %	■	–10... 55	MS-I16
		■			–	4	4	–		4				MS-O4
		■			–	–	–	–	■	–				MS-R4
		■			–	–	–	–		–		–	MS-M	
			■		–	–	–	–		–		–	MSC	






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
¹⁾ Version clear	BEK-R70/30-GxTI-IBS-CLR
¹⁾ Version diffuse	BEK-R70/30-GxTI-IBS-DIF
¹⁾ 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	Protection class	Casing material	Connector	Connecting cable	Light colour (refer to colour code)	
Backlights													Produktbezeichnung*
	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
Barlights SMD-LED													
	65 130 240	120°	16x20x84 16x20x144 16x20x254	24				IP 20	Aluminium	M12	VK ...	...-GxTI-...	BE 1-A65/120-Gx-K-BS BE 1-A130/120-Gx-K-BS BE 1-A240/120-Gx-K-BS
Barlights													
	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
Spotlights													
	–	10° 7° 14° 30°	30x32x60 30x32x60	10 ... 35	■	■	■	IP 67 IP 67	Aluminium Aluminium	M12 M12	VK ... VK ...	UV ...-GxTI-...	BEK 1-P10-G7TI-IBS BEK 1-P7-GxTI-IBS BEK 1-P14-GxTI-IBS BEK 1-P30-GxTI-IBS
Ringlights													
	∅ 70 ∅ 70	120° 30°	∅ 130x29 ∅ 130x29	18 ... 35 18 ... 35	■	■	■	IP 67 IP 67	Aluminium Aluminium	M12 M12	VK ... VK ...	Weiß ...-GxTI-...	BEK-R70/120-G5TI-IBS-xxx ¹⁾ BEK-R70/30-GxTI-IBS-xxx ¹⁾
Darkfield lights													
	∅ 70 ∅ 120	–	95 x 130 x 12 170 x 200 x 15	10 ... 35	■	■	■	IP 67	Aluminium	M12	VK ...	...-GxTI-...	BEK D70-GxTI-IBS BEK 1-D120-GxTI-IBS
Coaxial lights													
	50x50	–	62x58x103,5	18 ... 35	■	■	■	IP 20	Aluminium	M12	VK ...	...-GxTI-...	BEK-K50/50-GxTI-IBS
Backlights with stainless steel casing													
	50x50 70x100	–	70x70x15 90x120x15	10 ... 35	■	■	■	IP 69K	Stainless steel	M12	VK ...	...-GxTI-...	BEE-F50/50V-GxTI-IBS BEE-F70/100V-GxTI-IBS
Barlights with stainless steel casing													
	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
Spotlights with stainless steel casing													
	–	10° 14° 30°	30x32x60 30x32x60	10 ... 35 10 ... 35	■			IP 69K IP 69K	Stainless steel	M12 M12	VK ... VK ...	UV ...-GxTI-...	BEK-P10V-G7TI-IBS BEK-P14V-GxTI-IBS BEK-P30V-GxTI-IBS

* Excerpt from our delivery programme

Flash Controller & Lighting

With the di-soric flash controller BC-100-20A LED-lights can be overdriven (flashed) in performance several times and the light power is getting increased by a multiple. This way shorter exposure times for freezing an object or the selection of a higher number of aperture for more depth of field, although when having a constant exposure time, is possible. To have more light in the application is moreover reducing interfering influences from the outside like ambient light for instance.

Flash controller for flashable lighting

- Controlled flash mode for LED-Lighting
- Simple and fast setup with RS485/USB/PC
- Trigger input for external control
- Adjustable delay
- Max. pulse current 20 A
- Pulse times can be adjusted between 10 μ s ... 50 ms
- Strobe function up to 10 kHz
- Constant current of up to 1,8 A
- Stand by output
- Trigger output for camera systems and peripheral devices




Flashable lighting for flash controller

- High excess current factor
- Pulsed mode for inspection of fast moving objects
- Long life thanks to a sophisticated thermo management
- Uniform luminous field
- Protection class IP 67
- Robust metal casing












Technical data (typ.)	+20 °C, 24 VDC
Service voltage	24 V DC ± 1
Trigger input	5 ... 24V DC potential-free, optocouplers
Trigger output	12V DC, push-pull, pnp, npn configurable (max. 150 mA)
Ready output	12V DC, push-pull, pnp, npn configurable (max. 150 mA)
Input power at 24V DC	max. 55W
Protection degree	III, operation on protective low voltage
Verpolschutz	In pairs by terminal group

Short-circuit protection	In pairs by terminal group
Operating mode	LED: green, LED: yellow (Flash), LED: red (Error)
Shock-/vibration load	10 ... 55 Hz / 1,0 mm / 30 g
Ambient temperature	0 ... +40 °C
Protection class	IP 40
Casing material	Aluminium, PA 6.6 FR anodized

	Average / Peak power consumption	LED constant current (configurable)	LED Pulse current (configurable)	Pulse duration (configurable)	Pulses cycle time (configurable)	Pulse delay (configurable)	RS 485 Point to Point connection	Terminal	Product-ID
	< 2,5 A 6,0A	0,1 ... 1,8 A	0,1 ... 20,0 A	10 µs ... 50 ms	100 µs ... 60s	≥50 µs (0 ... 2A) ≥5 µs (2 ... 20A)	■	12-poled	BC-100-20A

Technical data (typ.)	+20 °C, 24 VDC
Risk group	free (DIN EN 62471)
Protection degree	III, operation on protective low voltage
Shock-/vibration load	10 ... 55 Hz / 1,0 mm / 30 g
Ambient temperature	0 ... +40 °C
Insulation voltage endurance	500 V
Casing material	Aluminium black anodized
Connecting	Cable PUR 2,5 m

Colour Code	Example
 Infrared ...-F0-...	BE-F100/100-F0-K
 Red ...-F1-...	BE-F100/100-F1-K
 White ...-F5-...	BE-F100/100-F5-K
¹⁾ Version clear	BE-R30-Fx-K-CLR
¹⁾ Version diffuse	BE-R30-Fx-K-DIF
¹⁾ Version polarized	BE-R30-Fx-K-POL

	Illuminated area / length (mm)	Angle of reflected beam (°)	Size (mm)	Pulse power consumption (W)	Pulse overload factor	Pulse current carrying capacity (mA)	Protection class	Casing material	Window material	Light colour (refer to colour code)	Product-ID*
Backlights for flash controller											
	50x50	–	80x80x13	135 24 40	18 6,4 8	6.400 1.600 1.600	IP 67	Aluminium	PC, opal	Infrared Red White	BE-F50/50-F0-K BE-F50/50-F1-K BE-F50/50-F5-K
	50x50 100x100 150x150 200x200	–	80x80x13 130x130x13 180x180x13 230x230x13	max. 135 max. 275 max. 460 max. 500	max. 18 max. 18 max. 19 max. 18	max. 6.400 max. 12.800 max. 19.200 max. 19.900	IP 67	Aluminium	PC, opal	...-Fx-...	BE-F50/50-Fx-K BE-F100/100-Fx-K BE-F150/150-Fx-K BE-F200/200-Fx-K
Barlights for flash controller											
	130	–	16x20x144	31 35	8 10	1.350 1.400	IP 20	Aluminium	PMMA	Red White	BE-A130-F1-K BE-A130-F5-K
Ringlights for flash controller											
	∅ 30	30°	∅ 69x20	max. 45	10	max. 2.000	IP 67	Aluminium	PMMA	Red White	BE-R30-F1-K-xxx ¹⁾ BE-R30-F5-K-xxx ¹⁾
	∅ 70	30°	∅ 130x20	max. 96	10	max. 6.000	IP 67	Aluminium	PMMA	Red White	BE-R70-F1-K-xxx ¹⁾ BE-R70-F5-K-xxx ¹⁾
	∅ 130	30°	∅ 200x20	max. 230	8	max. 12.000	IP 67	Aluminium	PMMA	Red White	BE-R130-F1-K-xxx ¹⁾ BE-R130-F5-K-xxx ¹⁾

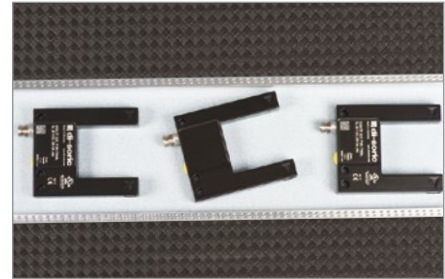
* Auszug aus unserem Lieferprogramm

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 (128x 101 pixel)	Resolution (752x 480 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)																
			IP 67 cap for Ethernet port																
	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

Vision Systems

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 scalable system even very demanding image processing applications can be easily solved.

VS-05

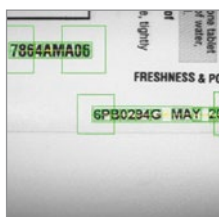
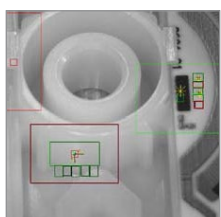
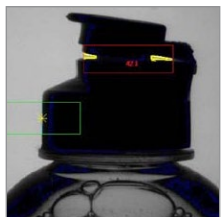
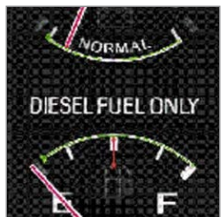
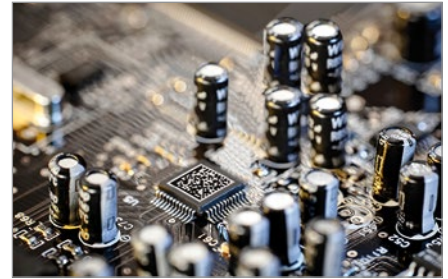
- Integrated with di-soric VS AutoVision software
- Upgradeable system – scaleable software with the same hardware
- Autofocus with wide angle optics
- Integrated lighting
- Compact design
- USB- and serial interface

VS-06 C-Mount

- Integrated with di-soric VS AutoVision software
- Upgradeable system – scaleable software with the same hardware
- Industry proven machine vision tools
- C-Mount model
- Ethernet and serial interface
- Access via web browser possible

VS-06 with liquid lens

- Integrated with di-soric VS AutoVision software
- Upgradeable system – scaleable software with the same hardware
- 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



Smart camera																	Product-ID*			
	CMOS, 752x480 pixel	CMOS, 1280x1024 pixel	CCD, 1280x960 pixel	CMOS, 2048x1088 pixel	Standard density	High density	Autofocus	Liquid lens ² autofocus	Optics	Sensor size	Images/s (max.)	Rolling shutter	Global shutter	Service voltage (V DC)	Outputs 1, 2 and 3 (VDC)	Protection class	RS 232	USB	Ethernet	
	■			■		■			fixed	1/2"	60		■	5	5...28	IP 54	■	■	VS-05-BM2-2-US	
	■				■	■			fixed	1/2"	60		■	5	5...28	IP 54	■	■	VS-05-BM2-3-US	
		■			■	■			fixed	1/2"	15	■		5	5...28	IP 54	■	■	VS-05-BM3-2-US	
		■			■	■			fixed	1/2"	15	■		5	5...28	IP 54	■	■	VS-05-BM3-3-US	
	■						■		15°							IP 65 + IP 67			VS-06-BM2-15-ES	
									30°	1/3"	60		■	5...28	1...28			■	VS-06-BM2-30-ES	
									45°										VS-06-BM2-45-ES	
			■				■		15°							IP 65 + IP 67			VS-06-BC3-15-ES	
									30°	1/3"	20		■	5...28	1...28			■	VS-06-BC3-30-ES	
									45°										VS-06-BC3-45-ES	
	■								C-Mount	1/3"	60		■	5...28	1...28	IP 65 ¹⁾	■		■	VS-06-BM2-00-ES
			■						C-Mount	1/3"	20		■	5...28	1...28	IP 65 ¹⁾	■		■	VS-06-BC3-00-ES
				■					C-Mount	2/3"	48		■	5...28	1...28	IP 65 ¹⁾	■		■	VS-06-BM4-00-ES

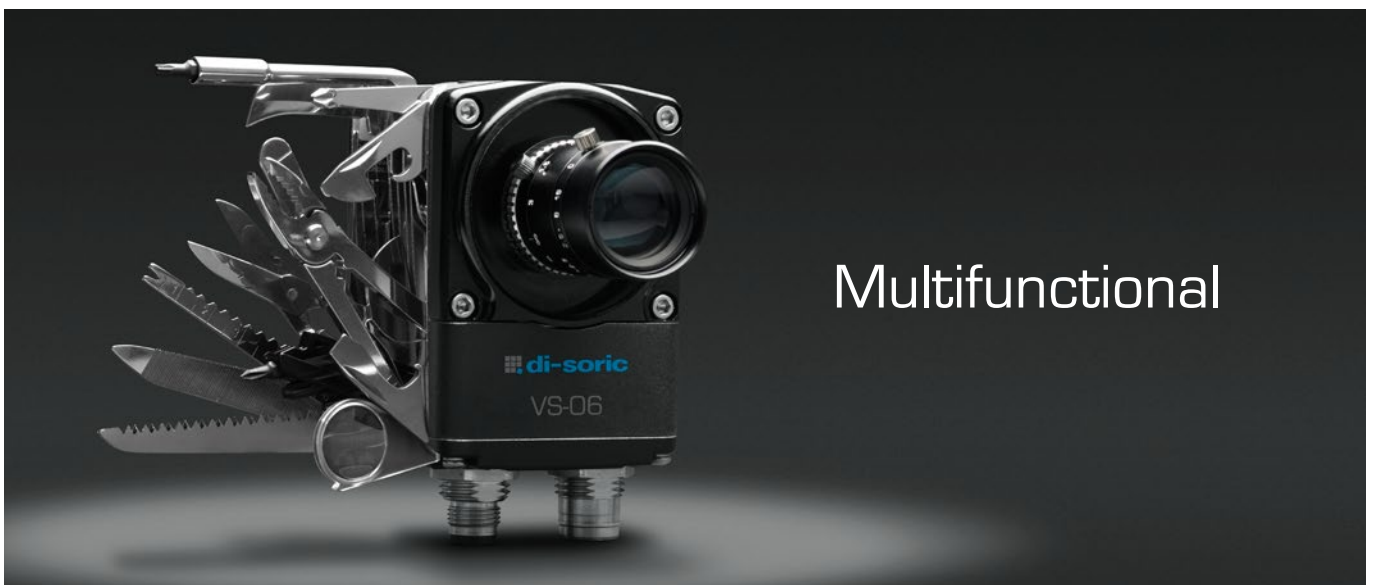
* Excerpt from our delivery programme

¹⁾ IP 65 +IP 67 when operating with VSID-LP-C-xx

Software-Extensions		Product-ID
I	Software-Upgrade (extended toolset)	VS-UP-AV/VS
II	Software-Upgrade (Symbol-Verification + OCV)	VS-UP-AV/OCV
I + II	Software-Upgrade-Complete-Package (extended toolset, Symbol-Verification + OCV)	VS-UP-AV/VS-OCV

VS

UPGRADES



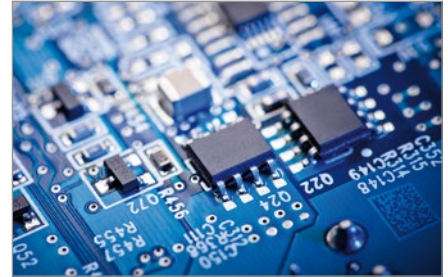
di-soric offers a wide range of laser and image-based ID systems for nearly all applications. Most different 1D and 2D codes will be safely detected independently of the marking method – our systems guarantee an absolute traceability.

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













ID-Handhelds

- Up to 10 decodes per second
- Reading distance: 0 ... 51 mm (ID-07) and 38 ... 394 mm (ID-08 | ID-09)
- Compact, robust and ergonomic design

Additionally on ID-08 / ID-09:

- Dual-field-optics for wide and high density fields
- X-Mode technology (ID-09)
- Reads 1D- and 2D-Symbologies, including DPM
- Serial- or USB-Interface



	CMOS	CCD	640x480 pixel	752x480 pixel	1280x960 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	
Laser-Scanner																							
						■		■		■		—	300 ... 1.000	5	5V TTL npn	IP 54	■	■	■			ID-01-LL-1-S ID-01-LL-3-S	
							■	■		■		—	300 ... 1.000	5	5V TTL npn	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	
Image based ID-Reader																							
	■		■				■					fixed	10	5	5V TTL npn	IP 54	■	■				ID-04-IM1-1-S ID-04-IM1-2-S	
	■		■					■				■	fixed	10	5	5V TTL npn	IP 54				■		ID-04-IM1-1-U ID-04-IM1-2-U
	■		■					■			■	fixed	60	5	5V TTL npn	IP 54	■	■				ID-05-IM2-2-S ID-05-IM2-4-S	
	■		■					■			■	fixed	60	5	5V TTL npn	IP 54					■	ID-05-IM2-2-U ID-05-IM2-4-U	
	■			■					■			■	fixed	20	5	5V TTL npn	IP 54	■	■				ID-05-IM3-2-S ID-05-IM3-3-S ID-05-IM3-4-S
	■			■					■			■	fixed	20	5	5V TTL npn	IP 54					■	ID-05-IM3-2-U ID-05-IM3-3-U ID-05-IM3-4-U
	■		■									15° 30° 45°	60	5 ... 28	10 ... 28	IP 65	■					ID-06-IM2-15-ES ID-06-IM2-30-ES ID-06-IM2-45-ES	
		■		■								15° 30° 45°	20	5 ... 28	10 ... 28	IP 65	■					ID-06-IC3-15-ES ID-06-IC3-30-ES ID-06-IC3-45-ES	
	■		■										15° 30° 45°	20	5 ... 28	10 ... 28	IP 65	■				ID-06-IC3-15-ES ID-06-IC3-30-ES ID-06-IC3-45-ES	
	■		■									C-Mount	60	5 ... 28	10 ... 28	IP 65 + IP 67 ¹⁾	■					ID-06-IM2-00-ES ID-06-IC3-00-ES	
		■											20	5 ... 28	10 ... 28	IP 65 + IP 67 ¹⁾	■					ID-06-IC3-00-ES	
ID-Handheld																							
	■				■							fixed	10	5	—	—	■ ²⁾				■	ID-07-IM3-2-US	
													fixed	10	5	—	IP 54	■					ID-08-IM3-2-S
	■				■							fixed	10	5	—	IP 54					■	ID-08-IM3-2-U	
	■				■							fixed	10	5	—	IP 54						ID-08-IM3-2-U	
	■				■							fixed	10	5	—	—	■					ID-09-IM3-2-S	
	■				■							fixed	10	5	—	—					■	ID-09-IM3-2-U	

¹⁾ IP 65 + IP 67 when being operated with optic protection housing VSID-LP-C-xx

²⁾ When being operated with ID-K-WS-2.5

Lenses & Filters

di-soric lenses are used in several applications and are distinguished by their robust mechanical design.

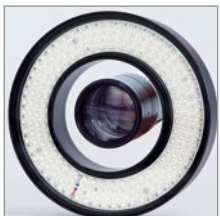
All lenses are equipped with lock screws for focus and iris adjustment and are featured by their compact design. Low distortion, high image contrasts and high light transmission characterize the di-soric lenses.

Lenses

- Standardized C-Mount connection
- Various focal lengths from 3,5 up to 100 mm
- Compact design
- Lock screws for focus and iris adjustment
- Filters attachable at all models

Filters and protection glasses for every lens

- Bandpassfilter
- Cutoff Filter
- Daylight cutoff filter
- Neutral density filter
- Polarizer
- Lens protection glasses



CE

	Focal length (mm)	Aperture ratio	Aperture (F)	Minimum Object Distance MOD (mm)	Screw thread: C-Mount	Filter thread M x pitch P (mm)	Sensor size max.	Weight (g)	Product-ID*
	3.5	1:1.4	1.4	200	■	-	1/2"	73	O-C1-S-035-14
	6	1:1.4	1.4	200	■	M27x0.5	1/2"	49	O-C1-S-06-14
	8	1:1.3	1.3	200	■	M25.5x0.5	2/3"	55	O-C1-S-08-13
	12	1:1.4	1.4	300	■	M27x0.5	1/2"	44	O-C1-S-12-14
	16	1:1.4	1.4	400	■	M27x0.5	2/3"	34	O-C1-S-16-14
	25	1:1.4	1.4	500	■	M27x0.5	1"	36	O-C1-S-25-14
	35	1:1.8	1.8	300	■	M27x0.5	2/3"	47	O-C1-S-35-18
	50	1:1.8	1.8	1000	■	M30.5x0.5	2/3"	67	O-C1-S-50-18
	75	1:2.7	2.7	1000	■	M30.5x0.5	1/2"	76	O-C1-S-75-27
	100	1:3.5	3.5	1000	■	M30.5x0.5	1/2"	79	O-C1-S-100-35
	6	1:1.4	1.4	100	■	M40.5x0.5	2/3"	145	O-C2-S-06-14
	8	1:1.4	1.4	100	■	M35.5x0.5	2/3"	125	O-C2-S-08-14
	12	1:1.4	1.4	100	■	M27x0.5	2/3"	85	O-C2-S-12-14
	16	1:1.4	1.4	100	■	M27x0.5	2/3"	85	O-C2-S-16-14
	25	1:1.4	1.4	150	■	M27x0.5	2/3"	65	O-C2-S-25-14
	50	1:2.6	2.6	500	■	M27x0.5	2/3"	53	O-C2-S-50-26
	35	1:1.4	1.4	200	■	M35.5x0.5	2/3"	150	O-C3-S-35-14
	50	1:1.4	1.4	300	■	M40.5x0.5	2/3"	170	O-C3-S-50-14

	Wave length	Transmission	Product-ID*
	Bandpassfilter	440 nm blue	O-BP440-XX
	Bandpassfilter	533 nm green	O-BP533-XX
	Cutoff Filter	>600 nm red	O-CO600-XX
	Daylight cutoff filter	>700 nm	O-DC700-XX
	Neutral density filter	25% 50%	O-ND25-XX O-ND50-XX
	Polarizer with locking screw		O-POL-XX
	Lens protection glass		O-PG-XX

Filter thread M	Product-ID
M 25.5 x 0.5	O-XXXXX-25
M 27 x 0.5	O-XXXXX-27
M 30.5 x 0.5	O-XXXXX-30
M 35.5 x 0.5	O-XXXXX-35
M 40.5 x 0.5	O-XXXXX-40

Converter	Magnification	Product-ID
	1.5	O-1.5X
	2.0	O-2.0X
	2.5	O-2.5X

Extension rings	Extension distance (mm)	Product-ID*
	0,5	
	1,0	
	5,0	
	10,0	
	20,0	O-ET-5

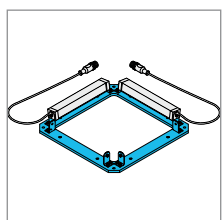
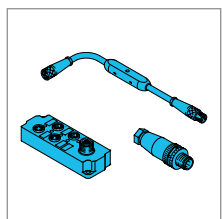
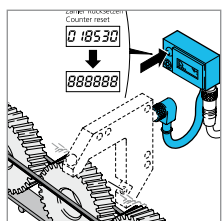
* Excerpt from our delivery programme

Accessories

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

Accessories


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

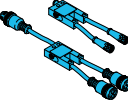


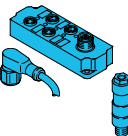
	Size	Nos./ wires	Socket	Cable length (m)	Metal nut	Maximal allowed service voltage (VAC/DC)	Connector material	Cable material PVC, PU cladding	Cable material PUR	Protection class	Product-ID*
Connecting cable											Product-ID*
	M8	3	straight	2,5	■	60	PU	■		IP 67	TKHM-Z-2,5
		4		5,0							TKHM-Z-5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

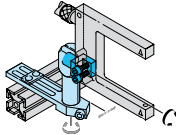
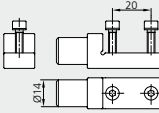
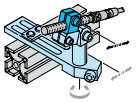
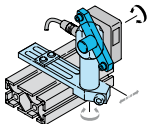
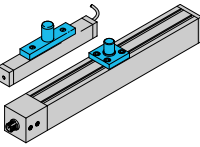
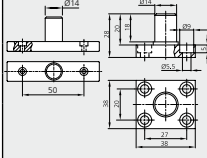
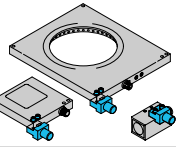
	Size (mm)	Coupling / nos. of pins	Connection diagram	Connector / nos. of pins	Mounting	Switching frequency (Hz)	Switching output	Pulse stretching 1...150 ms	Max. voltage supply (V)	Max. current-carrying capacity (A)	Heat resistant up to ... (°C)	Product-ID*
Connector												Product-ID*
	–	M8-3		M8-4	–	–	–	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
Pulse stretching												
	–	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
Reflectors for infrared and red light												
	∅ 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
Reflectors and reflective foil for laser light												
	13x17x4	–	–	–	adhesive	–	–	–	–	–	80	RL 13 x 17
	42x35x8,4	–	–	–	∅ 3,3 (2x)	–	–	–	–	–	80	RL 42 x 35
	50x230	–	–	–	adhesive	–	–	–	–	–	80	RFPL 50 x 230

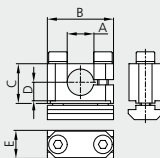
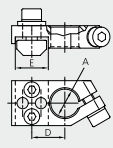
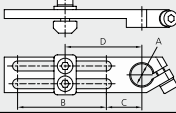
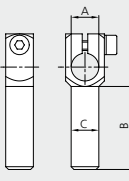
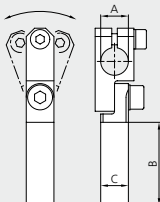
* Excerpt from our delivery programme

Counting module with reset function				
	Service voltage	10...35 VDC	Counting frequency	10.000 Hz
	Display	6 lines LCD display	Protection class	IP 40
	Input	pnp/npn	Casing material	Aluminium, black anodized
	Typ			Product-ID
	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

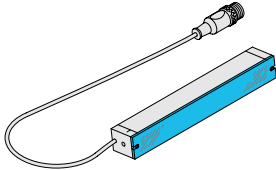
Logic distributor, 2 options				
	Supply voltage	10...35V	Switching output	pnp, 200 mA, And / ODER
			Protection class	IP 67
	Typ			Product-ID
		Logic distributor M8, AND / OR switchable			AV2-AND/OR-PS-TS
	Logic distributor M12, AND / OR switchable			AV2-AND/OR-PS-IBS

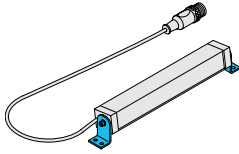
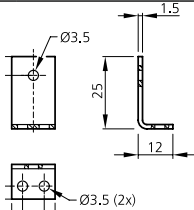
Logic distributor, 4 options					
	Supply voltage	10...30V	Switching outputs	pnp 4x, pnp-AND 1x, pnp-OR 1x	
	Current-carrying capacity AND/OR	per 300 mA / logic contact	Protection class	IP 67 (with all slots occupied)	
	Typ			Product-ID	
		Logic distributor M8, 4 options			AV4-AND/OR
		Connecting cable angled 5 m / 8-poled			VKHM-W-5/8
	AND-M8 open connection socket			BS-Z-8-AND	

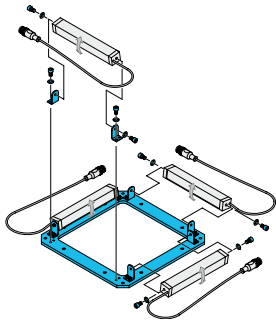
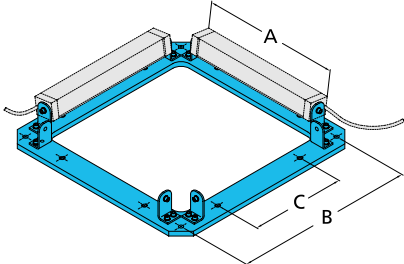
Holders	Product-ID*
	For fork- / angled light barriers hole spacing 8 mm
	SH-UGU-08-14
	For fork light barriers hole spacing 20 mm
	SH-UGU-20-14
	For cylindrically designed casings
	A D SH ...
	4 10 SH-4-10
	5 10 SH-5-10
	6,5 10 SH-6.5-10
8 10 SH-8-10	
12 10 SH-12-10	
	For photoelectric sensors series 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

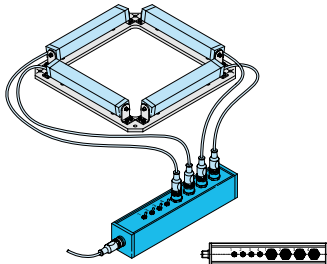
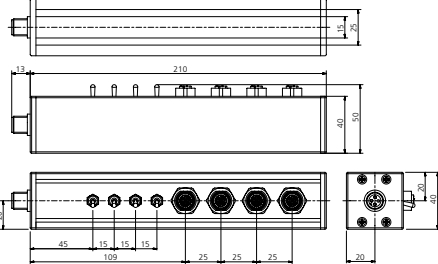

System holders	Product-ID*
	Cross connector
	A B C D E
	10 25 14 7 10 SH-KVB-L-10
	14 32 18 9 12 SH-KVB-X-14
20 38 27 12,5 15 SH-KVB-X-20	
	Angle clamp
	A B C D E
	10 - - 16 18 SH-WST-L-10-U
	14 - - 18 18 SH-WST-L-14-U
20 - - 32 40 SH-WST-JU-20-U	
	A B C D E
	10 40 16 - - SH-WSL-L-10-40-U
	14 40 18 - - 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"> PMMA Material thickness 3 mm 	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"> Smooth adjustment 		BW-BE 1-A (2 pieces)

Mounting frame for up to four BE 1-A 130 ...				
<ul style="list-style-type: none"> Smooth adjustment Mounting bracket for four illuminations included 				
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"> M12 sockets, individually switchable Trigger signal looped 			
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 0.6 m, connector / coupling M12		VSHM-Z-0.6/VKM-Z/4

* Excerpt from our delivery programme

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