



W16

The highflier in object detection

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Advantages



Easy and quick sensor alignment using BluePilot

Using the innovative BluePilot alignment aid, the sensors in the W16 product family can be commissioned in seconds. The blue LED display provides direct feedback to assist you with optimally aligning the sensors and reflectors as well as senders and receivers. In the case of the photoelectric proximity sensors, a push-and-turn mechanism enables the sensor to be adjusted quickly and precisely, thereby eliminating the customary time-consuming fine adjustment using rotary controls.

BluePilot also reports any change in detection quality, e.g., due to contamination or vibrations, which ensures faults are detected in a timely manner, long before a production downtime occurs.

Faster, convenient start-up



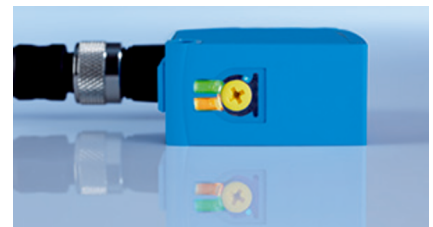
Through-beam and photoelectric retro-reflective sensors

The blue LED alignment aid speeds up the process of optimally aligning the sensors and reflectors as well as senders and receivers. Any changes in the operational safety due to contamination or vibrations can be recognized at a glance.



Photoelectric retro-reflective sensor for detecting transparent objects

The appropriate detection mode for the object characteristics can be set by means of a rotary control. The LED display of the W16 and W26 indicates immediately what mode the sensor is in.



Photoelectric retro-reflective sensor for detecting transparent objects

The appropriate detection mode for the object characteristics can be set by means of a rotary control. The LED display of the W16 and W26 indicates immediately what mode the sensor is in.



With the new BluePilot operating concept, you will save valuable time commissioning the sensor, and avoid production downtimes thanks to the timely reporting of faults.



Rugged and reliable

The sensors from the W16 product family are particularly rugged and reliable.

If optical contamination exists on the sensor or reflector and after cleaning, the sensors automatically adjust their switching thresholds thanks to AutoAdapt, meaning they always keep a clear view. With the OptoFilter, the sensors see what they have to see: they are immune to LED lights, reflections from safety vests and the influence of depolarizing objects.

The sensors can also withstand many chemical, thermal and mechanical environmental influences thanks to the ultra-rugged VISTAL housing.

Everything reliably detected



Thanks to the OptoFilter, the sensors feature high ambient light immunity.



If there is contamination, the W16 sensors automatically adjust their switching thresholds.



Thanks to the VISTAL housing, the sensors can also withstand extreme loads.



The rugged design ensures high system availability and reduces down-times.



Smart sensors for efficient machine communication

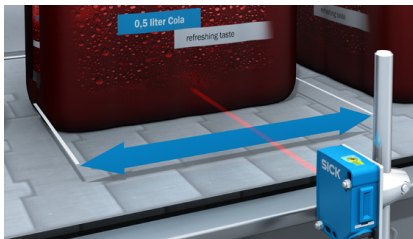
Smart Sensors provide essential input for every process chain. They support dynamic, real-time-optimized, and self-organized industry processes. The W16 range of smart sensors capture real-life situations, and generate and receive data and information beyond traditional switching signals or measured process parameters.

Link to www.sick.com/smart-sensors

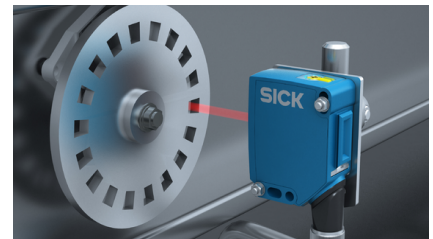
From raw signals to customized information



Base logic: User-definable logic functions with trigger sensors and switching signal delays



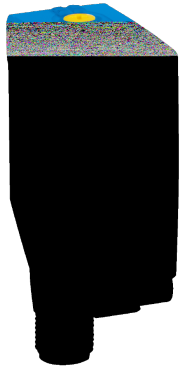
Time measurement and debouncing with the aid of the Time Measurement and Debouncing Smart Task



W16 with the Counter and Debouncing Smart Task counts and evaluates detection signals



Interconnectivity and efficient processing of data ensure leaner structures and cost benefits for your process.



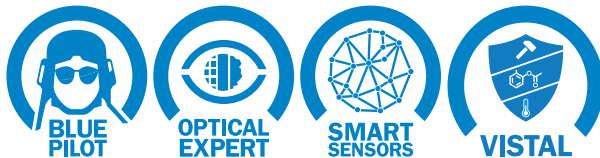
Technical data overview

Dimensions (W x H x D)	20 mm x 55.7 mm x 42 mm
Light source	PinPoint LED / LED (depending on type)
Type of light	Visible red light / Infrared light (depending on type)
Enclosure rating	IP66 / IP67 / IP69 / IP65 (depending on type)
Housing material	Plastic
Adjustment	Teach-in button Cable Potentiometer Teach-Turn adjustment None (depending on type)



Product description

The W16 is equipped with new technologies such as TwinEye, LineSpot, ClearSens and OptoFilter for reliable object detection. It can be quickly and conveniently adjusted via the BluePilot operating and display concept. Since every W16 is designed as a Smart Sensor, it can be configured to fit the application via IO-Link and offers additional diagnostic functions and Smart Tasks. It is therefore a trailblazer on the path to Industry 4.0. The highly-visible PinPoint LED and the infrared LED are available as the light source. The durable laser inscription ensures device identification in the long run. Thanks to the very rugged VISTAL® housing and the predictive maintenance, the W16 offers very high reliability and prevents unplanned machine downtimes.



At a glance

- Technologies: ClearSens, LineSpot, TwinEye, OptoFilter
- BluePilot: Optical alignment aid, adjustment of the sensing range via Teach-Turn adjustment with optical sensing range indicator or via IO-Link
- PinPoint LED: Light-intensive red sender LED
- Smart Sensor: Enhanced Sensing, IO-Link, Diagnostics, Smart Tasks
- Vistal housing: High chemical, thermal and mechanical resistance

Your benefits

- Usability and uniform operation thanks to optical quality display on the housing or conveniently via IO-Link
- Simplification when aligning the light beam to the reflector, the receiver or to an object thanks to the highly-visible light spot of the PinPoint LED combined with the optical LED display
- Very high reliability thanks to new detection technologies as well as high optical ruggedness
- The Smart Sensor makes machine processes quicker, more efficient and transparent, enables predictive maintenance and is thereby a trailblazer for Industry 4.0 applications

Fields of application

- Packaging
- Food and beverage
- Handling and assembly
- Machine tools
- Storage and conveyor
- Rubber and plastics
- Wood
- Textile

Ordering information

Other models and accessories → www.sick.com/W16

- **Sensing range min. / max.:** 10 mm / 1,000 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression
- **Light source:** PinPoint LED
- **Type of light:** visible red light

Switching output	Connection type	Setting Method	Type	Part no.
PNP	Male connector M12, 4-pin	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16P-24861120A00	1115767
	Cable with M12 male connector, 4-pin, 317 mm		WTB16P-34161120A00	1218817
Cable, 4-wire, 10 m	WTB16P-7H161120A00		1222715	
Cable, 4-wire, 2 m	WTB16P-1H161120A00		1218816	
Cable, 4-wire, 5 m	WTB16P-1H162120A00		1221725	
Male connector M12, 4-pin	Male connector M12, 4-pin		WTB16P-6H161120A00	1222716
			WTB16P-24161120A00	1218626
			WTB16P-24161120A00	1220992
			WTB16P-24162120A00	1220916
			WTB16P-24167120A00	1124855
		For setting the sensing range, for configuring the sensor parameters and Smart Task functions, for activating the test input	WTB16P-24168120A00	1222721
		For setting the sensing range, for configuring the time function, for configuring the sensor parameters and Smart Task functions	WTB16P-24161122A00	1111626

- **Sensing range min. / max.:** 10 mm / 300 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression
- **Switching output:** push-pull: PNP/NPN
- **Light source:** PinPoint LED
- **Type of light:** visible red light
- **Setting Method:** for configuring the sensor parameters and Smart Task functions

Connection type	Type	Part no.
Cable with M12 male connector, 4-pin, 187 mm	WTB16P-84161120A00	1222714
Male connector M12, 4-pin	WTB16P-24161120A00	1222723

- **Sensing range min. / max.:** 10 mm / 900 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression
- **Switching output:** push-pull: PNP/NPN

Light source	Type of light	Connection type	Setting Method	Type	Part no.
PinPoint LED	Visible red light	Male connector M12, 4-pin	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16P-24161A20A00	1120338

- **Sensing range min. / max.:** 10 mm / 500 mm
- **Functional principle:** Photoelectric proximity sensor
- **Switching output:** push-pull: PNP/NPN
- **Light source:** PinPoint LED
- **Type of light:** visible red light
- **Setting Method:** For setting the sensing range, for configuring the sensor parameters and Smart Task functions

Functional principle detail	Connection type	Type	Part no.
Background suppression	Male connector M12, 4-pin	WTB16P-24161B20A00	1120339
Background suppression, LineSpot technology	Cable with M12 male connector, 4-pin, 317 mm	WTL16P-34161120A00	1218945
	Cable, 4-wire, 2 m	WTL16P-1H161120A00	1218946
	Male connector M12, 4-pin	WTL16P-24161120A00	1218670
		WTL16P-24162120A00	1131249
Background suppression, NarrowBeam	Cable with M12 male connector, 4-pin, 317 mm	WTB16P-34161220A00	1218821
	Cable, 4-wire, 2 m	WTB16P-1H161220A00	1218820
	Male connector M12, 4-pin	WTB16P-24161220A00	1218698

- **Sensing range min. / max.:** 10 mm / 1,600 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression
- **Switching output:** push-pull: PNP/NPN
- **Light source:** PinPoint LED
- **Type of light:** visible red light
- **Setting Method:** For setting the sensing range, for configuring the sensor parameters and Smart Task functions

Connection type	Type	Part no.
Cable with M12 male connector, 4-pin, 317 mm	WTB16P-34161420A00	1222717
Male connector M12, 4-pin	WTB16P-24161420A00	1222722
	WTB16P-2416N420A00	1222718

- **Sensing range min. / max.:** 10 mm / 1,500 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression
- **Switching output:** push-pull: PNP/NPN
- **Light source:** LED
- **Type of light:** Infrared light

Connection type	Setting Method	Type	Part no.
Cable with M12 male connector, 4-pin, 187 mm	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16I-84161120A00	1222720
Cable with M12 male connector, 4-pin, 317 mm	For setting the sensing range	WTB16I-34115120ZZZ	1222799
	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16I-34161120A00	1218819
Cable, 4-wire, 2 m		WTB16I-1H161120A00	1218818
		WTB16I-1H162120A00	1221723
Cable, 4-wire, 5 m		WTB16I-6H161120A00	1222719
Cable with connector Q6, 6-pin, DC-coding, 298 mm	For setting the sensing range	WTB16I-39111120ZZZ	1222708
		WTB16I-39112120ZZZ	1222674
Male connector M12, 4-pin	For setting the sensing range	WTB16I-24114120ZZZ	1222795
	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16I-24161120A00	1218669
		WTB16I-24162120A00	1221724
	For setting the sensing range, for configuring the time function, for configuring the sensor parameters and Smart Task functions	WTB16I-24161122A00	1222794
	For setting the sensing range, for inverting the switching function (light/dark switching), for configuring the sensor parameters and Smart Task functions	WTB16I-24161121A00	1103234
WTB16I-2416A121A00		1223231	

- **Sensing range min. / max.:** 10 mm / 400 mm
- **Functional principle:** Photoelectric proximity sensor
- **Switching output:** push-pull: PNP/NPN
- **Light source:** LED
- **Connection type:** male connector M12, 4-pin

Functional principle detail	Type of light	Setting Method	Type	Part no.
Background suppression	Infrared light	For configuring the sensor parameters and Smart Task functions	WTB16I-24161120A00	1222706
Background suppression, TwinEye technology	Visible red light	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTS16G-24161920A00	1128823

- **Sensing range min. / max.:** 10 mm / 650 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression
- **Switching output:** push-pull: PNP/NPN

Light source	Type of light	Connection type	Setting Method	Type	Part no.
LED	Infrared light	Male connector M12, 4-pin	For configuring the sensor parameters and Smart Task functions	WTB16I-24162120A00	1222181

- **Sensing range min. / max.:** 10 mm / 1,900 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression
- **Switching output:** push-pull: PNP/NPN

Light source	Type of light	Connection type	Setting Method	Type	Part no.
LED	Infrared light	Male connector M12, 4-pin	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16I-24161420A00	1222707

- **Sensing range min. / max.:** 0 mm / 250 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Foreground suppression
- **Switching output:** push-pull: PNP/NPN

Light source	Type of light	Connection type	Setting Method	Type	Part no.
PinPoint LED	Visible red light	Male connector M12, 4-pin	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTF16P-24162620A00	1113469

- **Sensing range min. / max.:** 0 mm / 400 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Foreground suppression, NarrowBeam
- **Switching output:** push-pull: PNP/NPN
- **Light source:** PinPoint LED
- **Type of light:** visible red light
- **Setting Method:** For setting the sensing range, for configuring the sensor parameters and Smart Task functions

Connection type	Type	Part no.
Cable with M12 male connector, 4-pin, 317 mm	WTF16P-34161220A00	1121520
Male connector M12, 4-pin	WTF16P-24161220A00	1113467

- **Sensing range min. / max.:** 0 mm / 600 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Foreground suppression
- **Switching output:** push-pull: PNP/NPN

Light source	Type of light	Connection type	Setting Method	Type	Part no.
PinPoint LED	Visible red light	Male connector M12, 4-pin	For setting the sensing range, for configuring the sensor	WTF16P-24161420A00	1113468

Light source	Type of light	Connection type	Setting Method	Type	Part no.
			parameters and Smart Task functions		

- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression, LineSpot technology
- **Switching output:** PNP

Light source	Type of light	Connection type	Setting Method	Type	Part no.
PinPoint LED	Visible red light	Male connector M12, 4-pin	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTL16P-24861120A00	1125468

- **Sensing range min. / max.:** 10 mm / 750 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression, TwinEye technology
- **Switching output:** push-pull: PNP/NPN
- **Light source:** PinPoint LED
- **Type of light:** visible red light
- **Setting Method:** For setting the sensing range, for configuring the sensor parameters and Smart Task functions

Connection type	Type	Part no.
Cable with M12 male connector, 4-pin, 317 mm	WTS16P-34161120A00	1218943
Cable, 4-wire, 2 m	WTS16P-1H161120A00	1218944
Cable, 4-wire, 5 m	WTS16P-6H161120A00	1125378
Male connector M12, 4-pin	WTS16P-24161120A00	1218663

- **Sensing range min. / max.:** 50 mm / 500 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression, TwinEye technology
- **Switching output:** push-pull: PNP/NPN

Light source	Type of light	Connection type	Setting Method	Type	Part no.
PinPoint LED	Visible red light	Male connector M12, 4-pin	For setting the sensing range	WTS16P-24101020B02	1096872

- **Sensing range min. / max.:** 50 mm / 750 mm
- **Functional principle:** Photoelectric proximity sensor
- **Functional principle detail:** Background suppression, TwinEye technology, MultiPulse
- **Switching output:** push-pull: PNP/NPN
- **Light source:** PinPoint LED
- **Type of light:** visible red light
- **Connection type:** male connector M12, 4-pin

Setting Method	Type	Part no.
For setting the sensing range	WTS16P-24161320CZZ	1111636
	WTS16P-24162320CZZ	1113997

Setting Method	Type	Part no.
For configuring the sensor parameters and Smart Task functions	WTS16P-24161300CZZ	1111622
		1111623
		1111624
		1111625

- **Sensing range min. / max.:** 0 m / 10 m
- **Functional principle:** Photoelectric retro-reflective sensor
- **Functional principle detail:** autocollimation
- **Light source:** PinPoint LED
- **Type of light:** visible red light

Switching output	Connection type	Setting Method	Type	Part no.
PNP	Male connector M12, 4-pin	For sensitivity adjustment, for configuring the sensor parameters and Smart Task functions	WLA16P-24862130A00	1115762

Switching output	Connection type	Setting Method	Type	Part no.	
Push-pull: PNP/NPN	Cable with M12 male connector, 4-pin, 187 mm	For configuring the sensor parameters and Smart Task functions	WLA16P-84162100A00	1222698	
			WLA16P-34161100A00	1221729	
	WLA16P-34162100A00		1218815		
	WLA16P-34165100A00		1222786		
	WLA16P-3416N100A00		1222673		
	Cable, 4-wire, 2 m		WLA16P-1H161100A00	1221728	
			WLA16P-1H162100A00	1218826	
	Cable, 4-wire, 5 m		WLA16P-6H162100A00	1222699	
	Cable with connector Q6, 6-pin, DC-coding, 298 mm		For activating the test input	WLA16P-39421100ZZZ	1222700
				WLA16P-39722100ZZZ	1222789
	Cable, 5-wire, 2 m	For activating the test input	WLA16P-1I421100ZZZ	1222704	
			WLA16P-1I722100ZZZ	1222787	
	Male connector M12, 4-pin	For configuring the sensor parameters and Smart Task functions	WLA16P-24161100A00	1220993	
				1221053	
			WLA16P-24162100A00	1218660	
				1220904	
			WLA16P-24165100A00	1222703	
		WLA16P-2416A100A00	1222702		
		For configuring the sensor parameters and Smart Task functions, for activating the test input	WLA16P-2416L100A00	1222701	
	For sensitivity adjustment, for configuring the sensor parameters and Smart Task functions	WLA16P-24162130A00	1223080		

- **Functional principle:** Photoelectric retro-reflective sensor
- **Functional principle detail:** autocollimation
- **Switching output:** PNP

Light source	Type of light	Connection type	Setting Method	Type	Part no.
PinPoint LED	Visible red light	Male connector M12, 4-pin	For configuring the sensor parameters and Smart Task functions	WLA16P-2486A100A00	1125598

- **Sensing range min. / max.:** 0 m / 10 m
- **Sensing range max.:** 0 m ... 10 m
- **Functional principle:** Photoelectric retro-reflective sensor
- **Functional principle detail:** autocollimation
- **Switching output:** push-pull: PNP/NPN

Light source	Type of light	Connection type	Setting Method	Type	Part no.
PinPoint LED	Visible red light	Cable with connector Q6, 6-pin, DC-coding, 298 mm	For activating the test input	WLA16P-39X22100SZZ	1113465

- **Sensing range min. / max.:** 0 m / 5 m
- **Functional principle:** Photoelectric retro-reflective sensor
- **Functional principle detail:** autocollimation, ClearSens
- **Light source:** PinPoint LED
- **Type of light:** visible red light

Switching output	Connection type	Setting Method	Type	Part no.	
PNP	Male connector M12, 4-pin	Teach-in plus user mode selector	WLG16P-24812122ZZZ	1134225	
		Teach-in plus user mode selector, for configuring the sensor parameters and Smart Task functions	WLG16P-24862120A00	1130258	
Push-pull: PNP/NPN	Cable with M12 male connector, 4-pin, 187 mm		WLG16P-84161120A00	1222693	
			WLG16P-84162120A00	1222694	
			WLG16P-34162120A00	1218947	
	Cable with M12 male connector, 4-pin, 317 mm		WLG16P-1H162120A00	1218948	
			Cable, 4-wire, 2 m	WLG16P-24162120A00	1218661
				WLG16P-24165120A00	1222733
Male connector M12, 4-pin	WLG16P-2416H120A71	1220929			

- **Sensing range min. / max.:** 0.25 m / 14 m
- **Functional principle:** Photoelectric retro-reflective sensor
- **Functional principle detail:** Dual lens
- **Switching output:** push-pull: PNP/NPN
- **Light source:** PinPoint LED
- **Type of light:** visible red light
- **Setting Method:** –

Connection type	Type	Part no.
Cable with M12 male connector, 4-pin, 317 mm	WLD16P-341121A0ZZZ	1221731
Cable, 4-wire, 2 m	WLD16P-1H1121A0ZZZ	1221730
Male connector M12, 4-pin	WLD16P-241121A0ZZZ	1218662

- **Sensing range min. / max.:** 0.4 m / 9.5 m
- **Functional principle:** Photoelectric retro-reflective sensor
- **Functional principle detail:** Dual lens
- **Switching output:** push-pull: PNP/NPN

Light source	Type of light	Connection type	Setting Method	Type	Part no.
PinPoint LED	Visible red light	Male connector M12, 4-pin	–	WLD16P-241125A0ZZZ	1120335

- **Sensing range min. / max.:** 0 m / 45 m
- **Functional principle:** Through-beam photoelectric sensor
- **Switching output:** push-pull: PNP/NPN

Light source	Type of light	Connection type	Setting Method	Type	Part no.
LED	Infrared light	Cable with M12 male connector, 4-pin, 317 mm	For configuring the sensor parameters and Smart Task functions, for activating the test input	WSE16I-34162100A00	1088327
		Cable, 4-wire, 2 m		WSE16I-1H161100A00	1099455
				WSE16I-1H162100A00	1088328
		Male connector M12, 4-pin		WSE16I-24162100A00	1088326

Light source	Type of light	Connection type	Setting Method	Type	Part no.		
PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 317 mm		WSE16P-34161100A00	1099456		
				WSE16P-34162100A00	1088330		
				WSE16P-1H161100A00	1099442		
				WSE16P-1H162100A00	1088331		
		Cable, 4-wire, 2 m				WSE16P-39112100ZZZ	1102908
						WSE16P-24161100A00	1129966
		Cable with connector Q6, 6-pin, DC-coding, 298 mm			For activating the test input	WSE16P-24162100A00	1116792
						WSE16P-24162100A00	1088329
						WSE16P-24162100A00	1129966
						WSE16P-24163100A00	1110738
Male connector M12, 4-pin			For configuring the sensor parameters and Smart Task functions	WSE16P-24162100A00	1129966		
				WSE16P-24162100A00	1116792		
			For configuring the sensor parameters and Smart Task functions, for activating the test input	WSE16P-24162100A00	1088329		
				WSE16P-24163100A00	1110738		

- **Sensing range min. / max.:** 2 m / 60 m
- **Functional principle:** Through-beam photoelectric sensor

Switching output	Light source	Type of light	Connection type	Setting Method	Type	Part no.
Push-pull: PNP/NPN	LED	Visible red light	Male connector M12, 4-pin	For configuring the sensor parameters and Smart Task functions, for activating the test input	WSE16G-24162400A00	1127146

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

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

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

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com