



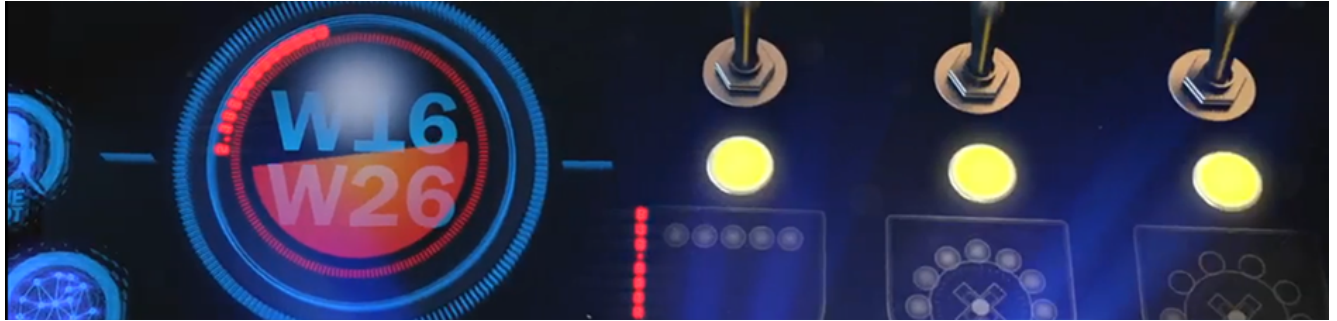
W16

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



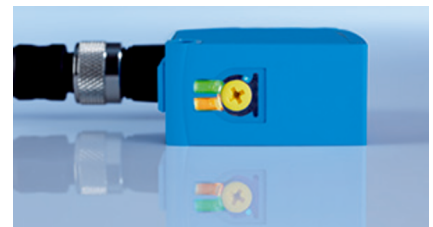
Through-beam and photoelectric retro-reflective sensors

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

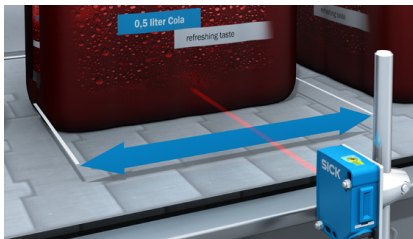
Smart Sensors provide essential input for every process chain. They support dynamic, real-time-optimized, and self-organized industry processes. The W16 range of smart sensors capture real-life situations, and generate and receive data and information beyond traditional switching signals or measured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

Link to www.sick.com/smart-sensors

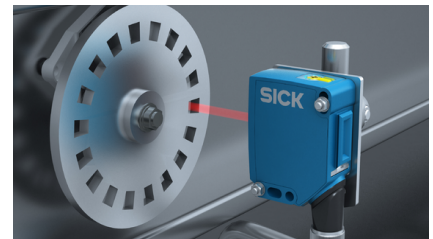
From raw signals to customized information



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.



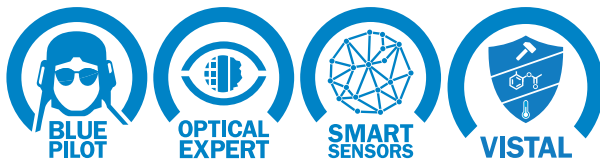
Technical data overview

Dimensions (W x H x D)	20 mm x 55.7 mm x 42 mm
Sensing range max.	10 mm ... 1,000 mm ¹⁾ 10 mm ... 900 mm ¹⁾ 10 mm ... 500 mm ¹⁾ 10 mm ... 1,600 mm ¹⁾ 10 mm ... 1,500 mm ¹⁾ 10 mm ... 1,900 mm ¹⁾ 0 mm ... 250 mm ¹⁾ 0 mm ... 400 mm ¹⁾ 0 mm ... 600 mm ¹⁾ 10 mm ... 750 mm ¹⁾ 50 mm ... 500 mm ¹⁾ 50 mm ... 750 mm ¹⁾ 0 m ... 10 m ²⁾ 0 m ... 5 m ³⁾ 0.25 m ... 14 m ²⁾ 0.4 m ... 9.5 m ²⁾ 0 m ... 45 m
Light source	PinPoint LED / LED (depending on type)
Type of light	Visible red light / Infrared light (depending on type)
Enclosure rating	IP66 (According to EN 60529) IP67 (According to EN 60529) IP69 (According to EN 60529) ⁴⁾ IP65 (According to EN 60529)
Housing material	Plastic VISTAL®

- ¹⁾ Object with 90 % reflectance (referred to standard white, DIN 5033).
- ²⁾ Reflector PL80A.
- ³⁾ Reflector P250F.
- ⁴⁾ Replaces IP69K with ISO 20653: 2013-03.

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

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Switching output:** push-pull: PNP/NPN

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.
10 mm ... 1,000 mm	Dark switching	PinPoint LED	Visible red light	Male connector M12, 4-pin	For setting the sensing range, for configuring the sensor parameters and Smart Task functions, for activating the test input	WTB16P-24168120A00	1222721
	Dark/light switching	PinPoint LED	Visible red light	Cable, 4-wire, 2 m ¹⁾	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16P-1H162120A00	1221725
				Male connector M12, 4-pin		WTB16P-24162120A00	1220916
	Light/dark switching	LED	Visible red light	Male connector M12, 4-pin	For setting the sensing range, for configuring the time function, for configuring the sensor parameters and Smart Task functions	WTB16P-24161122A00	1111626
				PinPoint LED		Visible red light	For setting the sensing range, for configuring the sensor parameters and Smart Task functions
		Cable with M12 male connector, 4-pin, 140 mm ¹⁾	WTB16P-34161120A00	1218817			
		Cable with M12 male connector, 4-pin, 270 mm ¹⁾	WTB16P-7H161120A00	1222715			
		Cable, 4-wire, 10 m ¹⁾	WTB16P-1H161120A00	1218816			
		Cable, 4-wire, 2 m ¹⁾	WTB16P-6H161120A00	1222716			
		Cable, 4-wire, 5 m ¹⁾	WTB16P-24161120A00	1218626			
		Male connector M12, 4-pin	WTB16P-24161120A00	1220992			
			WTB16P-24161120A00	1222723			
			WTB16P-24167120A00	1124855			

¹⁾ Do not bend below 0 °C.

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.		
10 mm ... 1,500 mm	Dark switching	LED	Infrared light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾	For setting the sensing range	WTB16I-34115120ZZZ	1222799		
	Dark/light switching	LED	Infrared light	Cable, 4-wire, 2 m ¹⁾	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16I-1H162120A00	1221723		
				Cable with connector Q6, 6-pin, DC-coding, 270 mm ¹⁾	For setting the sensing range	WTB16I-39112120ZZZ	1222674		
				Male connector M12, 4-pin	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16I-24162120A00	1221724		
						WTB16I-24162120A00	1222181		
	Light switching	LED	Infrared light	Male connector M12, 4-pin	For setting the sensing range	WTB16I-24114120ZZZ	1222795		
					For setting the sensing range, for inverting the switching function (light/dark switching), for configuring the sensor parameters and Smart Task functions	WTB16I-2416A121A00	1223231		
	Light/dark switching	LED	Infrared light	Cable with M12 male connector, 4-pin, 140 mm ¹⁾	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16I-84161120A00	1222720		
						WTB16I-34161120A00	1218819		
						WTB16I-1H161120A00	1218818		
						WTB16I-6H161120A00	1222719		
				Cable with connector Q6, 6-pin, DC-coding, 270 mm ¹⁾	For setting the sensing range	WTB16I-39111120ZZZ	1222708		
						Male connector M12, 4-pin	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTB16I-24161120A00	1218669
								WTB16I-24161120A00	1222706
						For setting the sensing range, for configuring the time function, for configuring the	WTB16I-24161122A00	1222794	

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.
					for inverting the switching function (light/dark switching), for configuring the sensor parameters and Smart Task functions		
10 mm ... 1,600 mm	Dark switching	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-2416N420A00	1222718
	Light/dark switching	PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾		WTB16P-34161420A00	1222717
				Male connector M12, 4-pin		WTB16P-24161420A00	1222722
10 mm ... 1,900 mm	Light/dark switching	LED	Infrared light	Male connector M12, 4-pin		WTB16I-24161420A00	1222707
10 mm ... 500 mm	Light/dark switching	PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾		WTB16P-34161220A00	1218821
				Cable, 4-wire, 2 m ¹⁾		WTB16P-1H161220A00	1218820
				Male connector M12, 4-pin		WTB16P-24161220A00	1218698
						WTB16P-24161B20A00	1120339
10 mm ... 900 mm	Light/dark switching	PinPoint LED	Visible red light	Male connector M12, 4-pin		WTB16P-24161A20A00	1120338

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Switching output:** PNP

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.
10 mm ... 1,000 mm	Light/dark switching	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-24861120A00	1115767

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Foreground suppression
- **Switching output:** push-pull: PNP/NPN

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.
0 mm ... 250 mm	Dark/light switching	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
0 mm ... 400 mm	Light/dark switching	PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾		WTF16P-34161220A00	1121520
				Male connector M12, 4-pin		WTF16P-24161220A00	1113467
0 mm ... 600 mm	Light/dark switching	PinPoint LED	Visible red light	Male connector M12, 4-pin		WTF16P-24161420A00	1113468

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression, LineSpot technology
- **Switching output:** push-pull: PNP/NPN

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.
10 mm ... 500 mm	Light/dark switching	PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTL16P-34161120A00	1218945
				Cable, 4-wire, 2 m ¹⁾		WTL16P-1H161120A00	1218946
				Male connector M12, 4-pin		WTL16P-24161120A00	1218670

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression, TwinEye technology
- **Switching output:** push-pull: PNP/NPN

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.
10 mm ... 750 mm	Dark switching	PinPoint LED	Visible red light	Male connector M12, 4-pin	For setting the sensing range, for configuring the sensor parameters and Smart Task functions	WTS16P-2416N120A00	1105762
	Light/dark switching	PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾		WTS16P-34161120A00	1218943
				Cable, 4-wire, 2 m ¹⁾		WTS16P-1H161120A00	1218944
				Male connector M12, 4-pin		WTS16P-24161120A00	1218663
50 mm ... 500 mm	Light/dark switching	PinPoint LED	Visible red light	Male connector M12, 4-pin	For setting the sensing range	WTS16P-24101020B02	1096872
50 mm ... 750 mm	Light/dark switching	PinPoint LED	Visible red light	Male connector M12, 4-pin	For setting the sensing range	WTS16P-24161320CZZ	1111636
						WTS16P-24162320CZZ	1113997
					For configuring the sensor parameters and Smart Task functions	WTS16P-24161300CZZ	1111622
						WTS16P-24161300CZZ	1111623
						WTS16P-24161300CZZ	1111624
WTS16P-24161300CZZ	1111625						

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** autocollimation
- **Switching output:** push-pull: PNP/NPN

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.
0 m ... 10 m	Dark switching	PinPoint LED	Visible red light	Male connector M12, 4-pin	For configuring the sensor	WLA16P-2416A100A00	1222702

¹⁾ Do not bend below 0 °C.

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.	
	Dark/light switching	PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾	parameters and Smart Task functions	WLA16P-34161100A00	1221729	
				Cable, 4-wire, 2 m ¹⁾		WLA16P-1H161100A00	1221728	
				Cable with connector Q6, 6-pin, DC-coding, 270 mm ¹⁾	For activating the test input	WLA16P-39421100ZZZ	1222700	
				Cable, 5-wire, 2 m ¹⁾	For activating the test input	WLA16P-1I421100ZZZ	1222704	
				Male connector M12, 4-pin	For configuring the sensor parameters and Smart Task functions	WLA16P-24161100A00	1220993	
	WLA16P-24161100A00	1221053						
	Light switching	PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾		WLA16P-34165100A00	1222786	
						WLA16P-3416N100A00	1222673	
				Male connector M12, 4-pin		WLA16P-24165100A00	1222703	
						For configuring the sensor parameters and Smart Task functions, for activating the test input	WLA16P-2416L100A00	1222701
				Light/dark switching		PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 140 mm ¹⁾
	WLA16P-34162100A00	1218815						
	Cable with M12 male connector, 4-pin, 270 mm ¹⁾	WLA16P-1H162100A00	1218826					
		WLA16P-6H162100A00	1222699					
	Cable, 4-wire, 2 m ¹⁾	For activating the test input	WLA16P-39722100ZZZ		1222789			
	Cable, 4-wire, 5 m ¹⁾		WLA16P-39X22100SZZ		1113465			
	Cable with connector Q6, 6-pin, DC-coding, 270 mm ¹⁾	For activating the test input	WLA16P-1I722100ZZZ		1222787			
	Cable, 2 m ¹⁾		For configuring the sensor parameters and Smart Task functions		WLA16P-24162100A00			1218660
	Male connector M12, 4-pin	WLA16P-24162100A00			1220904			
			For sensitivity adjustment,		WLA16P-24162130A00			1223080

¹⁾ Do not bend below 0 °C.

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.
					for configuring the sensor parameters and Smart Task functions		
0 m ... 5 m	-	PinPoint LED	Visible red light	Male connector M12, 4-pin	Teach-in plus user mode selector, for configuring the sensor parameters and Smart Task functions	WLG16P-2416H120A71	1220929
	Dark/light switching	PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 140 mm ¹⁾		WLG16P-84161120A00	1222693
	Light switching	PinPoint LED	Visible red light	Male connector M12, 4-pin		WLG16P-2416S120A00	1222733
	Light/dark switching	PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 140 mm ¹⁾		WLG16P-84162120A00	1222694
				Cable with M12 male connector, 4-pin, 270 mm ¹⁾		WLG16P-34162120A00	1218947
				Cable, 4-wire, 2 m ¹⁾		WLG16P-1H162120A00	1218948
				Male connector M12, 4-pin		WLG16P-24162120A00	1218661

¹⁾ Do not bend below 0 °C.

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** autocollimation
- **Switching output:** PNP

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.
0 m ... 10 m	Light/dark switching	PinPoint LED	Visible red light	Male connector M12, 4-pin	For sensitivity adjustment, for configuring the sensor parameters and Smart Task functions	WLA16P-24862130A00	1115762

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** Dual lens
- **Switching output:** push-pull: PNP/NPN

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.
0.25 m ... 14 m	Light/dark switching	PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 270 mm	-	WLD16P-341121A0ZZZ	1221731
				Cable, 4-wire, 2 m	-	WLD16P-1H1121A0ZZZ	1221730
				Male connector M12, 4-pin	-	WLD16P-241121A0ZZZ	1218662
0.4 m ... 9.5 m	Light/dark switching	PinPoint LED	Visible red light	Male connector M12, 4-pin	-	WLD16P-241125A0ZZZ	1120335

- **Sensor principle:** Through-beam photoelectric sensor
- **Switching output:** push-pull: PNP/NPN

Sensing range max.	Switching mode	Light source	Type of light	Connection type	Setting Method	Type	Part no.	
0 m ... 45 m	Dark switching	PinPoint LED	Visible red light	Male connector M12, 4-pin	For configuring the sensor parameters and Smart Task functions, for activating the test input	WSE16P-24163100A00	1110738	
	Dark/light switching	LED	Infrared light	Cable, 4-wire, 2 m ¹⁾		WSE16I-1H161100A00	1099455	
		PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾		WSE16P-34161100A00	1099456	
	Cable, 4-wire, 2 m ¹⁾					WSE16P-1H161100A00	1099442	
	Light/dark switching	LED	Infrared light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾		WSE16I-34162100A00	1088327	
						Cable, 4-wire, 2 m ¹⁾	WSE16I-1H162100A00	1088328
						Male connector M12, 4-pin	WSE16I-24162100A00	1088326
		PinPoint LED	Visible red light	Cable with M12 male connector, 4-pin, 270 mm ¹⁾		WSE16P-34162100A00	1088330	
						Cable with M12 male connector, 6-pin, 270 mm ¹⁾	WSE16P-39112100ZZZ	1102908
						Cable, 4-wire, 2 m ¹⁾	WSE16P-1H162100A00	1088331
					Male connector M12, 4-pin	WSE16P-24162100A00	1088329	
						WSE16P-24162100A00	1116792	
					For activating the test input			

¹⁾ Do not bend below 0 °C.

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