



WLG16P-24812122ZZZ

W16

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

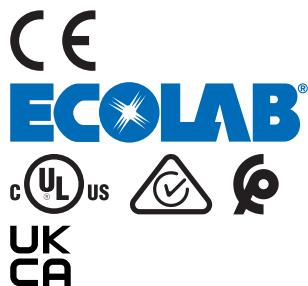


Ordering information

Type	part no.
WLG16P-24812122ZZZ	1134225

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

Illustration may differ



Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Without reflector minimum distance (autocollimation/coaxial optics), ClearSens
Sensing range	
Sensing range min.	0 m
Sensing range max.	5 m
Maximum distance range from reflector to sensor (operating reserve 1)	0 m ... 5 m
Reference reflector	Reflector P250F
Recommended sensing range for the best performance	0 m ... 5 m
Polarisation filters	Yes
Emitted beam	
Light source	PinPoint LED
Type of light	Visible red light
Shape of light spot	Point-shaped
Light spot size (distance)	Ø 80 mm (5 m)
Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle)	< +/- 1.0° (at Ta = +23 °C)
Key LED figures	
Normative reference	EN 62471:2008-09 IEC 62471:2006, modified
LED risk group marking	Free group

Adjustment	Wave length	635 nm
	Average service life	100,000 h at $T_a = +25^\circ\text{C}$
Teach-Turn adjustment	BluePilot: Teach-in plus user mode selector	
Display	LED blue 1	BluePilot: Mode display
	LED blue 2	BluePilot: Time function display
	LED green	Operating indicatorStatic on: power on
	LED yellow	Status of received light beamStatic on: object not presentStatic off: object present
Special applications	Detecting transparent objects	

Safety-related parameters

MTTF_D	548 years
DC_{avg}	0 %
T_M (mission time)	20 years

Electronics

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	$\leq 5 \text{ V}_{\text{pp}}$
Usage category	DC-12 (According to EN 60947-5-2) DC-13 (According to EN 60947-5-2)
Current consumption	$\leq 30 \text{ mA}$, without load. At $U_B = 24 \text{ V}$
Protection class	III
Digital output	Number
	2 (Complementary)
	Type
	PNP
	Switching mode
	Light/dark switching
	Signal voltage PNP HIGH/LOW
	Approx. $U_B - 2.5 \text{ V} / 0 \text{ V}$
	Output current $I_{\text{max.}}$
	$\leq 100 \text{ mA}$
Switching frequency	Circuit protection outputs
	Reverse polarity protected
	Overcurrent and short-circuit protected
	Response time
	$\leq 500 \mu\text{s}$ ²⁾
Repeatability (response time)	150 μs
	Switching frequency
	1,000 Hz ³⁾
	Time functions
Pin/Wire assignment	Deactivated (factory setting), switch-on delay, off delay, ON and OFF delay, Impulse (one shot)
	Delay time
Teach-turn adjustment, 0 ms ... 30,000 ms, 0 ms (factory setting)	
Function of pin 4/black (BK)	Digital output, light switching, object present \rightarrow output Q LOW
	Digital output, dark switching, object present \rightarrow output \bar{Q} HIGH

¹⁾ Limit values.²⁾ Signal transit time with resistive load in switching mode.³⁾ With light/dark ratio 1:1.

Mechanics

Housing	Rectangular
Dimensions (W x H x D)	20 mm x 55.7 mm x 42 mm
Connection	Male connector M12, 4-pin
Material	Housing Plastic, VISTAL®
	Front screen Plastic, PMMA
	Male connector Plastic, VISTAL®
Weight	Approx. 50 g
Maximum tightening torque of the fixing screws	1.3 Nm

Ambient data

Enclosure rating	IP66 (EN 60529) IP67 (EN 60529) IP69 (EN 60529) ¹⁾
Ambient operating temperature	-40 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +75 °C
Shock resistance	50 g, 11 ms (25 positive and 25 negative shocks per axis, for X, Y, Z axes, 150 shocks in total (EN60068-2-27)) 50 g, 6 ms (5,000 positive and 5,000 negative shocks per axis, for X, Y, Z axes, 30,000 shocks in total (EN60068-2-27))
Vibration resistance	10 Hz ... 2,000 Hz (Amplitude 0.5 mm / 10 g, 20 sweeps per axis, for X, Y, Z axes, 1 octave/min, (EN60068-2-6))
Air humidity	35 % ... 95 %, relative humidity (no condensation)
Electromagnetic compatibility (EMC)	EN 60947-5-2
Resistance to cleaning agent	ECOLAB
UL File No.	NRKH.E181493 & NRKH7.E181493

¹⁾ Replaces IP69K with ISO 20653: 2013-03.

Classifications

ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717

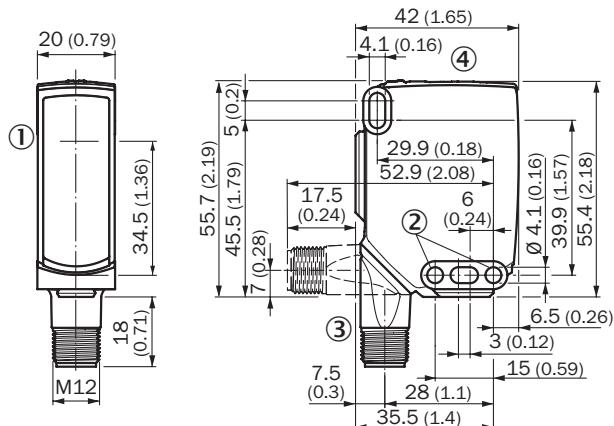
UNSPSC 16.0901

39121528

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
ECOLAB certificate	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

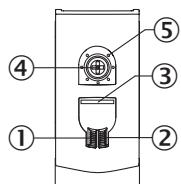
Dimensional drawing, sensor



Dimensions in mm (inch)

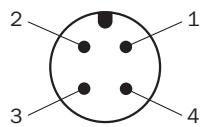
- ① Center of optical axis
- ② Mounting hole, Ø 4.1 mm
- ③ Connection
- ④ display and adjustment elements

display and adjustment elements

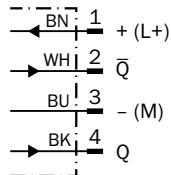


- ① LED indicator green
- ② LED indicator yellow
- ③ LED blue 1
- ④ Teach-Turn adjustment
- ⑤ LED blue 2

Connection type M12 male connector, 4-pin



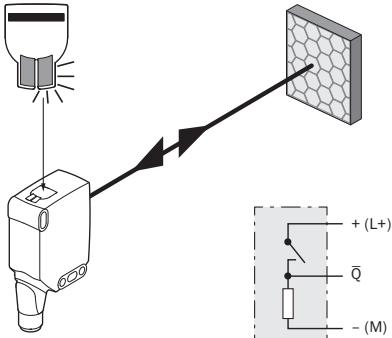
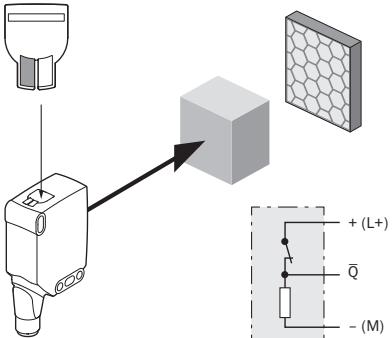
Connection diagram Cd-414



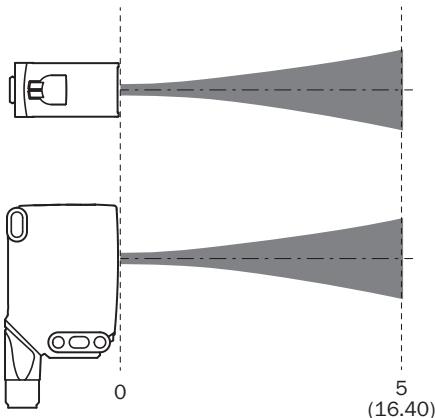
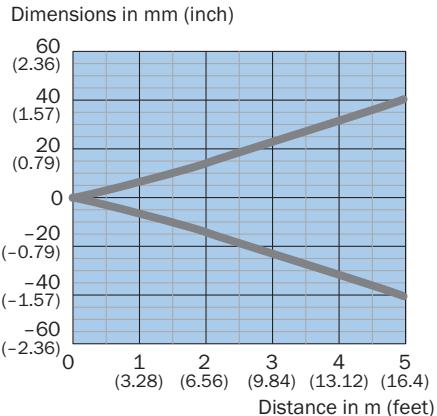
Truth table PNP - light switching Q

Light switching Q (normally closed)		
	Object not present → Output HIGH	Object present → Output LOW
Light receive	✓	✗
Light receive indicator	●	✗
Load resistance to M	⚡	✗

Truth table PNP - dark switching \bar{Q}

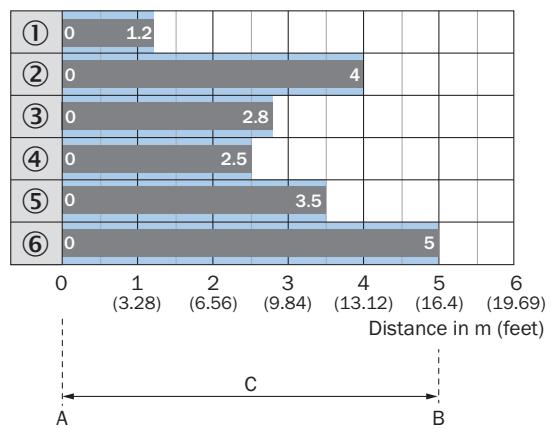
Dark switching Q (normally open)		
	Object not present → Output LOW	Object present → Output HIGH
Light receive	✓	✗
Light receive indicator	✗	✗
Load resistance to M	✗	⚡
		

Light spot size WLG16P-xxxxx1xx



Recommended sensing range for the best performance

Sensing range diagram WLG16P-xxxxx1xx



Recommended sensing range for the best performance

1	PL10F CHEM reflector
2	Reflective tape REF-AC1000 (50 x 50 mm)
3	PL10FH-1 reflector
4	PL10F reflector
5	Reflector PL20F
6	Reflector P250F
A	Sensing range min. in m
B	Sensing range max. in m
C	Maximum distance range from reflector to sensor (operating reserve 1)

Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none">Description: Plate N02 for universal clamp bracketMaterial: Steel, zinc diecastDetails: Zinc plated steel (sheet), Zinc die cast (clamping bracket)Items supplied: Universal clamp (5322626), mounting hardwareUsable for: W4S-3 Glass, W10, W4SLG-3, W4S-3 Inox, W4S-3 Inox Glass, W9, W11-2, W12-3, W12-2 Laser, W12G, W12 Teflon, W16, W250, W250-2, PowerProx, W11G-2, TranspaTect, WTT12, UC12, P250, G6 Inox, W4S, W4SL-3V, W4SLG-3V, W4SL-3H	BEF-KHS-N02	2051608
	<ul style="list-style-type: none">Description: Adapter for mounting W16 sensors in existing W14-2/W18-3 installations or L25 sensors in existing L28 installationsMaterial: PlasticDetails: PlasticItems supplied: Fastening screws included	BEF-AP-W16	2095677
	<ul style="list-style-type: none">Description: Universal mounting bracket for reflectorsDimensions (W x H x L): 85 mm x 90 mm x 35 mmMaterial: SteelDetails: Steel, zinc coatedSuitable for: C110A, P250, PL20, PL30A, PL40A, PL80A	BEF-WN-REFX	2064574
reflectors and optics			
	<ul style="list-style-type: none">Description: Fine triple reflector, screw connection, suitable for laser sensorsDimensions: 52 mm 62 mmAmbient operating temperature: -30 °C ... +65 °C	P250F	5308843
connectors and cables			
	<ul style="list-style-type: none">Connection type head A: Female connector, M12, 4-pin, straight, A-codedConnection type head B: Flying leadsSignal type: Sensor/actuator cableCable: 5 m, 4-wire, PVCDescription: Sensor/actuator cable, unshieldedApplication: Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235

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