



AL20E-PM331S01

Ax20

ARRAY SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	part no.
AL20E-PM331S01	1048152

Other models and accessories → www.sick.com/Ax20

Detailed technical data

Features

Functional principle	Edge detection, reflector
Dimensions (W x H x D)	24.3 mm x 59.8 mm x 54.1 mm
Sensing distance	≤ 100 mm
Housing design	Rectangular
Working range	90 mm ... 110 mm
Measurement range	30 mm
Minimum detectable object (MDO)	1.6 mm
Light source	LED, White
Wave length	400 nm ... 700 nm
Light spot size	50 mm x 10 mm
Repeatability	0.05 mm ¹⁾
Linearity	± 2 % ²⁾
Special features	Teach-in on reflector

¹⁾ With respect to sensing distance.

²⁾ Analog current range (16 mA).

Mechanics/electronics

Supply voltage	≤ 24 V DC ¹⁾
Ripple	≤ 5 V ²⁾
Power consumption	< 3.1 W ³⁾
Switching output	PNP
Switching output (voltage)	PNP: HIGH = U _V ≤ 2 V / LOW approx. 0 V
Analog output	4 mA ... 20 mA

¹⁾ ± 20 %. Operation in short-circuit protected network max. 8 A.

²⁾ May not exceed or fall below U_V tolerances.

³⁾ Without load.

⁴⁾ Typ. max. 1.6 s.

Resolution of analog output	12 bit
Output rate of analog output	1 ms
Output current $I_{\max}$	< 100 mA
Initialization time	0.48 s ⁴⁾
Connection type	Male connector M12, 5-pin
Protection class	III
Circuit protection	U _V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Enclosure rating	IP67
Weight	135 g
Housing material	Metal, metal

¹⁾ ± 20 %. Operation in short-circuit protected network max. 8 A.

²⁾ May not exceed or fall below U_V tolerances.

³⁾ Without load.

⁴⁾ Typ. max. 1.6 s.

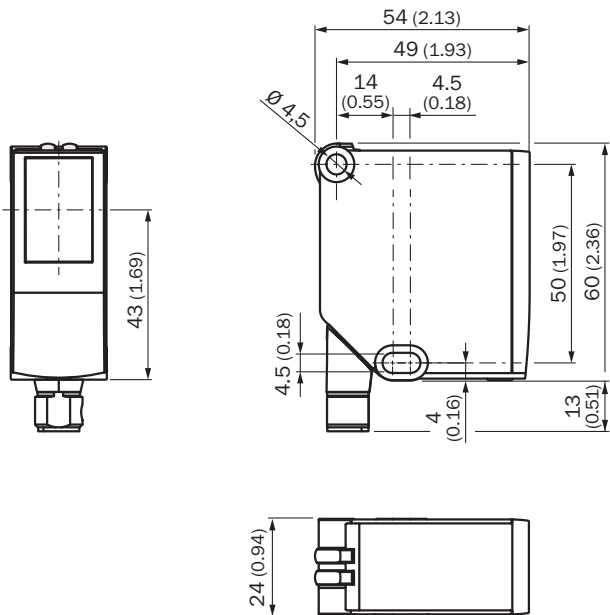
Ambient data

Ambient operating temperature	-10 °C ... +55 °C
Ambient temperature, storage	-25 °C ... +75 °C
Shock load	According to IEC 60068
UL File No.	NRKH.E181493 & NRKH7.E181493

Classifications

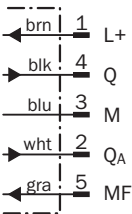
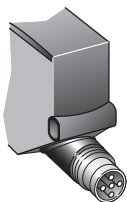
ECLASS 5.0	27270906
ECLASS 5.1.4	27270906
ECLASS 6.0	27270906
ECLASS 6.2	27270906
ECLASS 7.0	27270906
ECLASS 8.0	27270906
ECLASS 8.1	27270906
ECLASS 9.0	27270906
ECLASS 10.0	27270906
ECLASS 11.0	27270906
ECLASS 12.0	27270906
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
ETIM 8.0	EC001820
UNSPSC 16.0901	39121528

Dimensional drawing

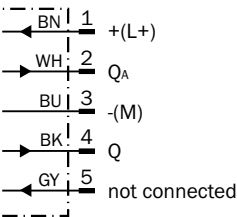


Dimensions in mm (inch)

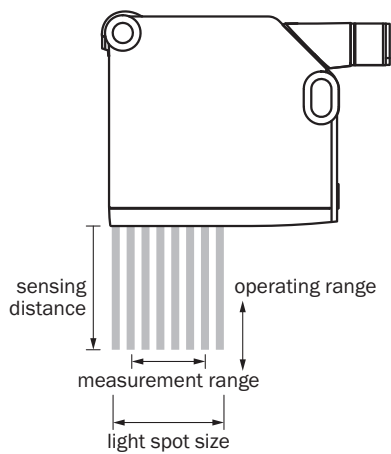
Connection type and diagram



Connection diagram Cd-315

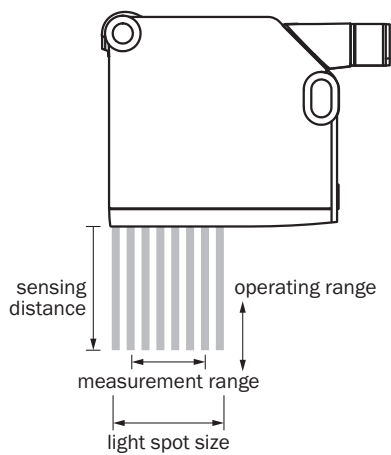


Concept of operation



Sensing distance	Operating range	Measurement range	Light spot size
25 mm	20 mm ... 30 mm	20 mm	30 mm x 5 mm

Explanation of parameters



Sensing distance	Operating range	Measurement range	Light spot size
25 mm	20 mm ... 30 mm	20 mm	30 mm x 5 mm
100 mm	90 mm ... 110 mm	30 mm	50 mm x 10 mm

Recommended accessories

Other models and accessories → www.sick.com/Ax20

	Brief description	Type	part no.
Mounting systems			
	• Description: Mounting bracket, stainless steel, without mounting material, for DT20 Hi • Items supplied: Without mounting hardware	BEF-WN-DT20	4043524

	Brief description	Type	part no.
connectors and cables			
	Description: Unshielded Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm²	DOS-1205-G	6009719
	Description: Unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm²	DOS-1205-W	6009720
	Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals	YG2A15-020VB5XLEAX	2096215
	Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals	YG2A15-050VB5XLEAX	2096216
	Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 10 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals	YG2A15-100VB5XLEAX	2096217
	Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals	YF2A15-020VB5XLEAX	2096239
	Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals	YF2A15-050VB5XLEAX	2096240
	Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 10 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals	YF2A15-100VB5XLEAX	2096241
	Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals	YG2A15-C60VB5XLEAX	2145573
	Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 5-wire, PVC Application: Uncontaminated zones, Zones with chemicals	YG2A15-010VB5XLEAX	2145574
	Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 3 m, 5-wire, PVC	YG2A15-030VB5XLEAX	2145575

	Brief description	Type	part no.
 	• Application: Untaminated zones, Zones with chemicals	YF2A15- C60VB5XLEAX	2145570
	• Description: Sensor/actuator cable, unshielded • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 0.6 m, 5-wire, PVC • Application: Untaminated zones, Zones with chemicals		
	• Description: Sensor/actuator cable, unshielded • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 3 m, 5-wire, PVC • Application: Untaminated zones, Zones with chemicals	YF2A15-030VB5XLEAX	2145572

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