



Array sensors  
Ax20, Ax20E Edge

AL20E-PM111



**Model Name** > [AL20E-PM111](#)  
**Part No.** > [1046463](#)



**At a glance**

- Detect position of edge of material
- Reflector mode version also available
- Compact, metal housing
- Reproducibility of 0.03 mm
- Sensing distance 25 mm or 100 mm
- Measurement range up to 30 mm
- Analog output 4 mA ... 20 mA

**Your benefits**

- Cost-effective solution to reliably determine edge position
- Easy-to-integrate, compact housing can be mounted over the web so less downtime is required for maintenance
- No reflector is required, reducing maintenance and providing greater product reliability. Reduces downtime. Only array sensors available in diffuse mode, making them ideal for environments where dirt and dust can interfere with other types of solutions that require a reflector.
- High reproducibility of 0.03 mm and industry-leading resolution enable greater accuracy and quality control
- Highly visible white LED light spot ensures fast and accurate alignment, reducing time-consuming fine adjustment
- No teach, program or menu activities make setup virtually hassle free



**Features**

Dimensions (L x W x H):	54.1 mm x 24.3 mm x 59.8 mm
Functional principle:	Edge detection, reflector
Sensing distance:	25 mm
Operating range:	20 mm 30 mm
Measurement range:	20 mm
MDO <sup>1)</sup> :	0.8 mm
Light source <sup>2)</sup> :	LED, white
Light spot size:	30 mm x 5 mm
Repeatability <sup>3)</sup> :	0.03 mm
Linearity <sup>4)</sup> :	± 2 %

<sup>1)</sup> Minimum detectable object    <sup>2)</sup> Wave length: 400 nm ... 700 nm    <sup>3)</sup> With respect to sensing distance    <sup>4)</sup> Analog current range (16 mA)

## Mechanics/electronics

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Supply voltage $V_s$ <sup>1)</sup> :	DC 24 V, $\pm 20\%$
Ripple <sup>2)</sup> :	$\leq 5$ V
Power consumption <sup>3)</sup> :	$< 3.1$ W
Output type:	PNP: HIGH = $V_S - \leq 2$ V / LOW approx. 0 V
Switching mode <sup>4)</sup> :	Q (PNP)
Analog output QA:	4 mA ... 20 mA
Resolution analog output:	12 bit
Output rate of analog output:	1 ms
Output current $I_{max.}$ :	$< 100$ mA
Initialization time <sup>5)</sup> :	0.48 s
Connection type:	Connector M12, 5-pin
Protection class:	III
Circuit protection:	VS connections reverse-polarity protected Output Q short-circuit protected Interference suppression
Enclosure rating:	IP 67
Weight:	Ca. 135 g
Housing material:	Metal

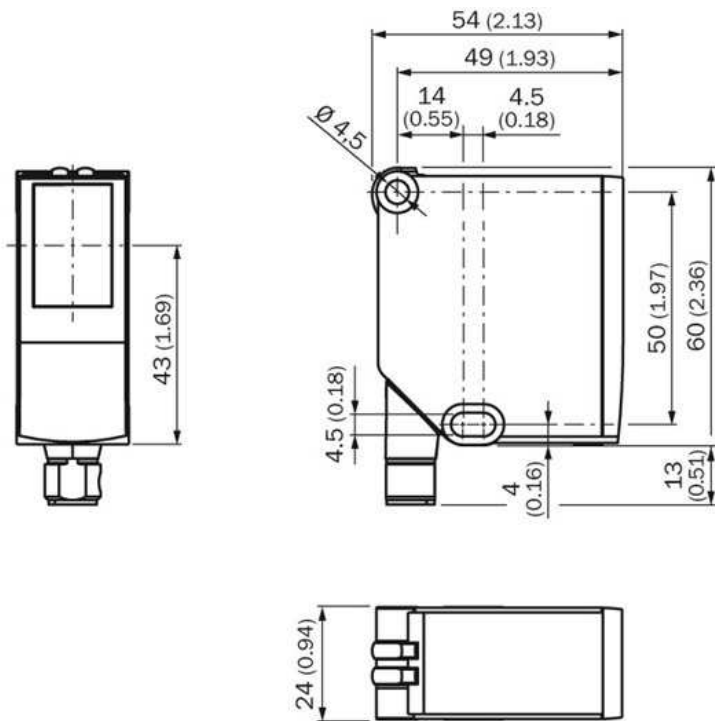
<sup>1)</sup> Operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup> Active when object detected <sup>5)</sup> Typ. max.  
1.6 s

## Ambient data

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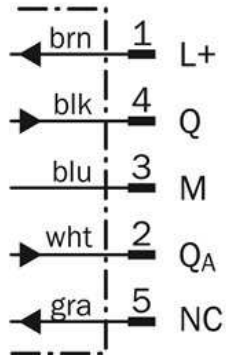
Ambient temperature:	Operation: $-10 \dots +55$ °C, Storage: $-25 \dots +75$ °C
Shock load:	According to IEC 60068
UL File No.:	NRKH.E181493 & NRKH7.E181493

**Dimensional drawing**

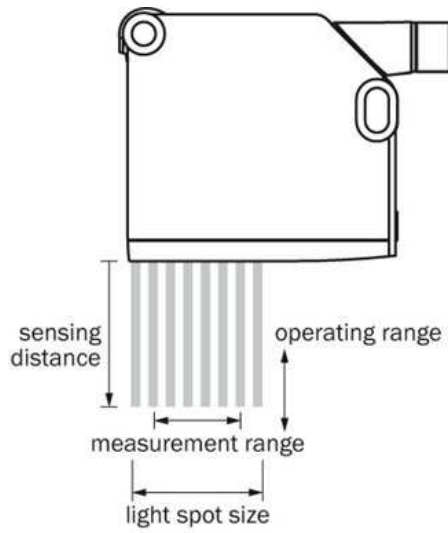


- |1| Center of optical axis
- |2| Mounting hole,  $\varnothing$  4.5 mm
- |3| Connector M12
- |4| Function signal indicator (green)
- |5| Function signal indicator (yellow), switching output
- |6| Head side
- |7| Connector side

**Anschlussart und -schema**



## 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

**Australia**

Phone +61 3 9457 0600  
1800 33 48 02 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail marketing@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Česká republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail info@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6881000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 5309 2112  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederland**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail sick@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail sales.gsg@sick.com

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886 2 2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 88 65 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 (800) 325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)