



Array sensors
Ax20, Ax20E Edge

AL20E-NM111



Model Name > [AL20E-NM111](#)
Part No. > [1046460](#)



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 ¹⁾ : | 0.8 mm |
| Light source ²⁾ : | LED, white |
| Light spot size: | 30 mm x 5 mm |
| Repeatability ³⁾ : | 0.03 mm |
| Linearity ⁴⁾ : | ± 2 % |

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

Mechanics/electronics

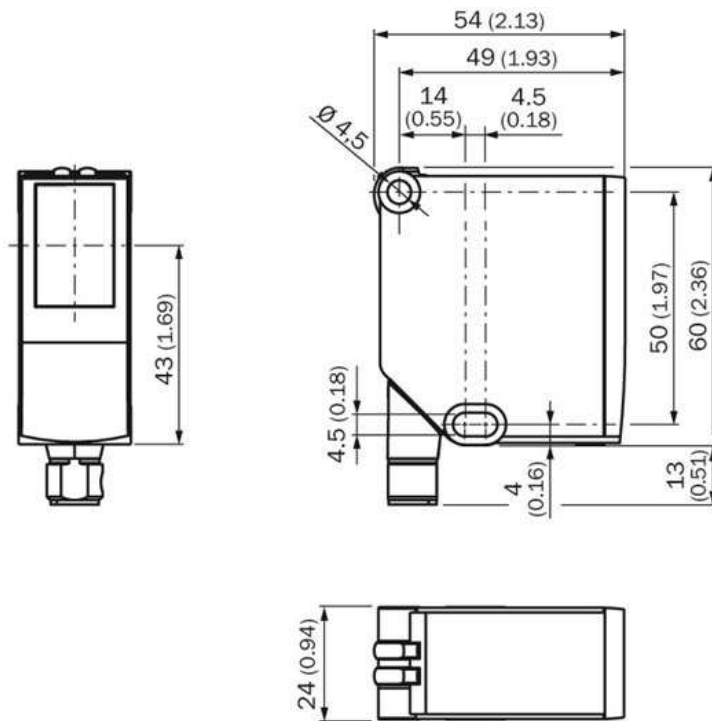
| | |
|--------------------------------------|---|
| Supply voltage V_S ¹⁾ : | DC 24 V, $\pm 20\%$ |
| Ripple ²⁾ : | ≤ 5 V |
| Power consumption ³⁾ : | < 3.1 W |
| Output type: | NPN: HIGH = approx. V_S / LOW ≤ 2 V |
| Switching mode ⁴⁾ : | Q (NPN) |
| Analog output QA: | 4 mA ... 20 mA |
| Resolution analog output: | 12 bit |
| Output rate of analog output: | 1 ms |
| Output current $I_{max.}$: | < 100 mA |
| Initialization time ⁵⁾ : | 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 |

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

Ambient data

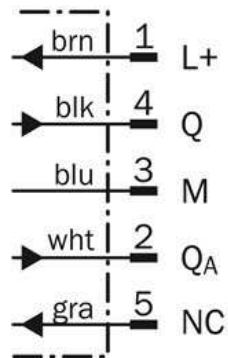
| | |
|----------------------|--|
| Ambient temperature: | Operation: $-10 \dots +55$ °C, Storage: $-25 \dots +75$ °C |
| Shock load: | According to IEC 60068 |
| UL File No.: | NRKH.E181493 & NRKH7.E181493 |

Dimensional drawing

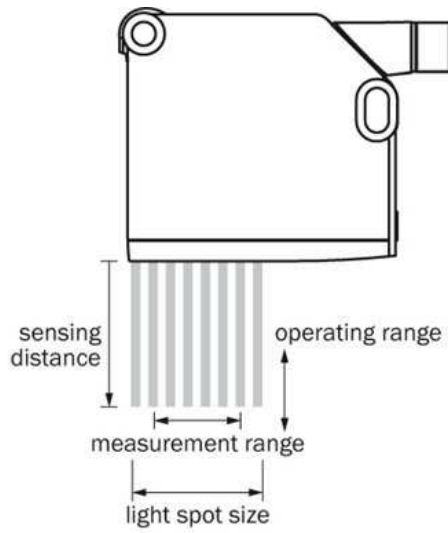


- |1| Center of optical axis
- |2| Mounting hole, $\varnothing 4.5$ mm
- |3| Connector M12
- |4| Function signal indicator (green)
- |5| Function signal indicator (yellow), switching output
- |6| Head side
- |7| Connector side

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 |

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