

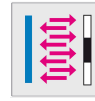


Array sensors  
Ax20, Ax20D Diameter

AT20D-NM111



**Model Name** > [AT20D-NM111](#)  
**Part No.** > [1046466](#)



**At a glance**

- Detection of diameter and width
- 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**

- Very high application flexibility - even opaque materials can be detected reliably
- As compared to vision solutions, due to its advanced sensing technology, it can be mounted over the target with less hardware and integration costs
- 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:	Diameter detection, proximity and 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**

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:	NPN: HIGH = approx. $V_S$ / LOW $\leq 2$ V
Switching mode <sup>4)</sup> :	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 <sup>5)</sup> :	0.48 s
Connection type:	Connector M12, 5-pin
Protection class:	III
Circuit protection:	$V_S$ connections reverse-polarity protected Output Q short-circuit protected Interference suppression
Enclosure rating:	IP 67
Weight:	Ca. 135 g
Housing material:	Metal

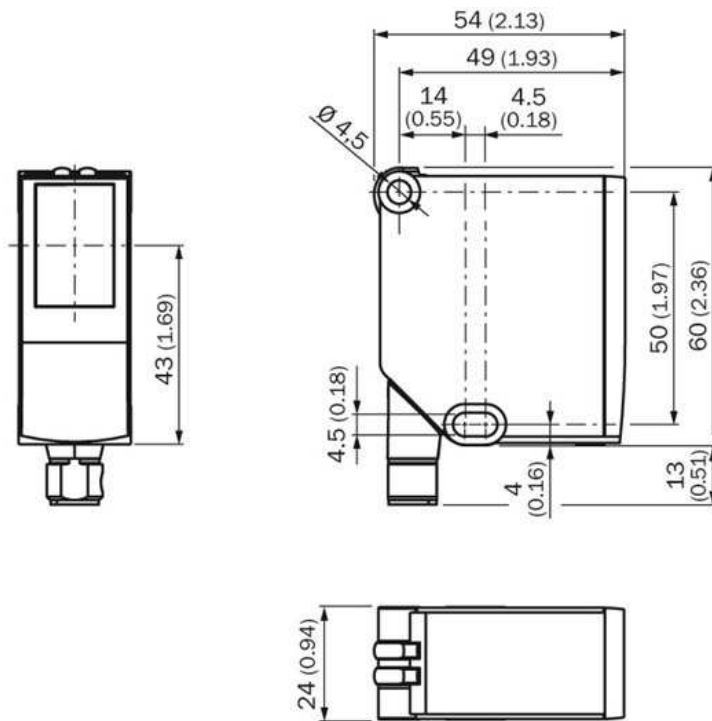
<sup>1)</sup> Operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup> Active when object detected <sup>5)</sup> Typ. max.  
1.6 s

#### Ambient data

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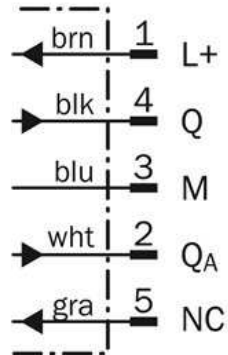
Ambient temperature:	Operation: $-10 \dots +55$ °C, Storage: $-25 \dots +75$ °C
Shock load:	According to IEC 60068
UL File No.:	NRKH.E181493 & NRKH7.E181493

**Dimensional drawing**

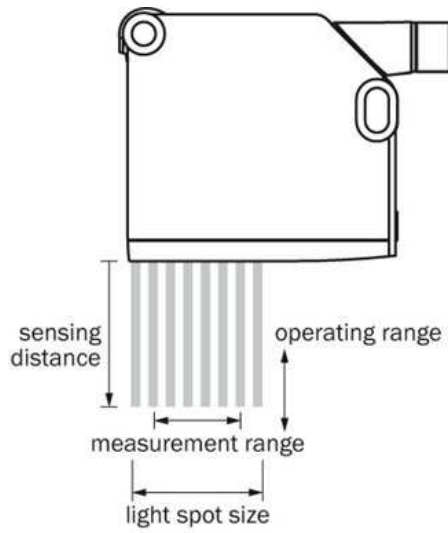


- |1| Center of optical axis
- |2| Mounting hole,  $\varnothing$  4.5 mm
- |3| Connector M12
- |4| Function signal indicator (green)
- |5| Function signal indicator (yellow), switching output
- |6| Head side
- |7| Connector side

**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

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