



# DT20-N254B

DT20 Hi

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



Ordering information

Type	Part no.
DT20-N254B	1041279

Other models and accessories → [www.sick.com/DT20\\_Hi](http://www.sick.com/DT20_Hi)



Detailed technical data

Features

<b>Measuring range</b>	50 mm ... 150 mm <sup>1)</sup>				
<b>Target</b>	Natural objects				
<b>Repeatability</b>	≥ 0.125 mm <sup>1) 2) 3)</sup>				
<b>Linearity</b>	± 0.5 mm <sup>3) 4)</sup>				
<b>Response time</b>	≥ 2.5 ms <sup>2)</sup>				
<b>Output time</b>	≥ 2.5 ms				
<b>Light source</b>	Laser, red visible red light				
<b>Type of light</b>	Visible red light				
<b>Laser class</b>	2 (IEC 60825-1:2014, EN 60825-1:2014)				
<b>Typ. light spot size (distance)</b>	2 mm x 4 mm (150 mm)				
<b>Additional function</b>	Set moving average fast/medium/slow Switching mode: distance to object (DtO) Teach-in of digital output Invertable digital output Teach-in of analog output Invertable analog output Multifunctional input: laser off / external teach-in / deactivated Switch-off display Lock user interface				
<b>Safety-related parameters</b>	<table border="0"> <tr> <td style="text-align: right;">MTTF<sub>D</sub></td> <td>101 years</td> </tr> <tr> <td style="text-align: right;">DC<sub>avg</sub></td> <td>0%</td> </tr> </table>	MTTF <sub>D</sub>	101 years	DC <sub>avg</sub>	0%
MTTF <sub>D</sub>	101 years				
DC <sub>avg</sub>	0%				

<sup>1)</sup> 6% ... 90% remission factor.

<sup>2)</sup> Dependent on the set average or sensitivity.

<sup>3)</sup> When calibrated in the application regularly.

<sup>4)</sup> 90% remission factor.

## Interfaces

<b>Digital output</b>	Number	1 <sup>1)</sup>
	Type	NPN
	Maximum output current $I_A$	$\leq 100$ mA
<b>Analog output</b>	Number	1
	Type	Current output
	Current	4 mA ... 20 mA, $\leq 300 \Omega$
	Resolution	12 bit
<b>Multifunctional input (MF)</b>		1 x MF <sup>2)</sup>

<sup>1)</sup> PNP: HIGH =  $V_S - (< 2 V)$  / LOW =  $< 2 V$ ; NPN: HIGH =  $< 2 V$  / LOW =  $V_S$ .

<sup>2)</sup> MF can be used as laser-off, external teach-in or deactivated.

## Electronics

<b>Supply voltage <math>U_B</math></b>	DC 10 V ... 30 V <sup>1)</sup>
<b>Power consumption</b>	$\leq 1.8$ W <sup>2)</sup>
<b>Ripple</b>	$\leq 5$ V <sub>pp</sub> <sup>3)</sup>
<b>Warm-up time</b>	$\leq 10$ min
<b>Indication</b>	LC display, 2 x LED
<b>Enclosure rating</b>	IP65 (EN 60529)
<b>Protection class</b>	II

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

<sup>2)</sup> Without load.

<sup>3)</sup> May not fall short of or exceed  $V_S$  tolerances.

## Mechanics

<b>Dimensions (W x H x D)</b>	24.3 mm x 72.4 mm x 54.1 mm
<b>Housing material</b>	Metal (zinc diecast)
<b>Window material</b>	Plastic (PMMA)
<b>Weight</b>	135 g
<b>Connection type</b>	Male connector, M12, 5-pin, swivel connector unit

## Ambient data

<b>Ambient temperature, operation</b>	-20 °C ... +55 °C, Operating temperature at $V_S = 24 V$
<b>Ambient temperature, storage</b>	-20 °C ... +60 °C
<b>Temperature drift</b>	0.25 mm/K <sup>1)</sup>
<b>Typ. Ambient light immunity</b>	Artificial light: $\leq 3,000$ lx Sunlight: $\leq 10,000$ lx
<b>Vibration resistance</b>	EN 60068-2-6, EN 60068-2-64
<b>Shock resistance</b>	EN 60068-2-27

<sup>1)</sup> 0,5 mm/K: for distances > 600 mm.

## Classifications

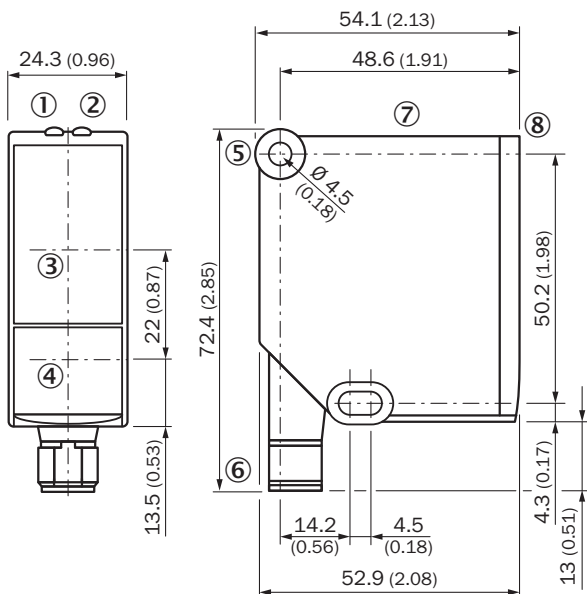
<b>ECLASS 5.0</b>	27270801
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# DT20-N254B | DT20 Hi

## DISPLACEMENT MEASUREMENT SENSORS

<b>ECLASS 5.1.4</b>	27270801
<b>ECLASS 6.0</b>	27270801
<b>ECLASS 6.2</b>	27270801
<b>ECLASS 7.0</b>	27270801
<b>ECLASS 8.0</b>	27270801
<b>ECLASS 8.1</b>	27270801
<b>ECLASS 9.0</b>	27270801
<b>ECLASS 10.0</b>	27270801
<b>ECLASS 11.0</b>	27270801
<b>ECLASS 12.0</b>	27270916
<b>ETIM 5.0</b>	EC001825
<b>ETIM 6.0</b>	EC001825
<b>ETIM 7.0</b>	EC001825
<b>ETIM 8.0</b>	EC001825
<b>UNSPSC 16.0901</b>	41111613

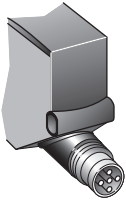
### Dimensional drawing (Dimensions in mm (inch))



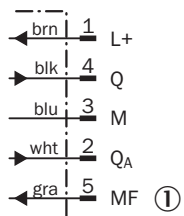
- ① Status display for supply voltage active (green)
- ② Status indicator digital output (orange)
- ③ Optical axis, receiver
- ④ Optical axis, sender
- ⑤ Fixing hole
- ⑥ Connector M12, 5-pin, turnable
- ⑦ Control elements and display
- ⑧ Reference surface = 0 mm

## Connection type

Male connector M12, 5-pin

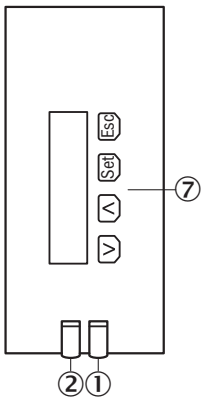


## Connection diagram



① Multifunctional input (MF)



## Adjustment possible



- ① Status display for supply voltage active (green)
- ② Status indicator digital output (orange)
- ⑦ Control elements and display

### Recommended accessories

Other models and accessories → [www.sick.com/DT20\\_Hi](http://www.sick.com/DT20_Hi)

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket, stainless steel, without mounting material, for DT20 Hi, without mounting hardware	BEF-WN-DT20	4043524
Others			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A15-020VB5XLEAX	2096239

### Recommended services

Additional services → [www.sick.com/DT20\\_Hi](http://www.sick.com/DT20_Hi)

	Type	Part no.
Commissioning		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> Displacement measurement sensors</li> <li>• <b>Range of services:</b> Inspection of connection and mounting, optimization of parameters of SICK product as well as tests, set-up of previously defined functions of the scaling of the analog measuring range, switching point position, hysteresis, measuring frequency, measured value filter, signal quality, evaluation function, or communication interface</li> <li>• <b>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li> <li>• <b>Duration:</b> Additional work will be invoiced separately</li> </ul>	DT20 Hi/OD/OL commissioning	1612241

## 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](http://www.sick.com)