



# DT50-2B215252

Dx50-2

MID RANGE DISTANCE SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
DT50-2B215252	1065661

Other models and accessories → [www.sick.com/Dx50-2](http://www.sick.com/Dx50-2)



### Detailed technical data

#### Mechanics/electronics

<b>Supply voltage <math>V_s</math></b>	DC 10 V ... 30 V <sup>1) 2)</sup>
<b>Ripple</b>	$\leq 5 V_{pp}$ <sup>3)</sup>
<b>Power consumption</b>	$\leq 1.7 W$ <sup>4)</sup>
<b>Initialization time</b>	$\leq 300 ms$
<b>Warm-up time</b>	$\leq 15 min$
<b>Housing material</b>	Metal (zinc diecast)
<b>Window material</b>	Plastic (PMMA)
<b>Connection type</b>	Male connector, M12, 5-pin
<b>Indication</b>	3 x LED, LC display
<b>Weight</b>	235 g
<b>Dimensions (W x H x D)</b>	36.2 mm x 63 mm x 58.6 mm
<b>Enclosure rating</b>	IP65 IP67
<b>Protection class</b>	III

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

<sup>2)</sup> When using IO-Link output  $V_s > 18 V$ . When using analog output  $V_s > 13 V$ .

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

<sup>4)</sup> Without load, at  $\geq 0 ^\circ C$ .

## Performance

<b>Measuring range</b>	200 mm ... 30,000 mm, 90 % remission <sup>1) 2)</sup> 200 mm ... 17,000 mm, 18 % remission 200 mm ... 10,000 mm, 6 % remission
<b>Target</b>	Natural objects
<b>Resolution</b>	0.1 mm
<b>Repeatability</b>	≥ 0.5 mm <sup>2) 3) 4)</sup>
<b>Accuracy</b>	± 7 mm <sup>4)</sup>
<b>Response time</b>	0.83 ms ... 75 ms, 0.83 ms / 3.33 ms / 8.33 ms / 25 ms / 75 ms <sup>5) 6)</sup>
<b>Switching frequency</b>	1,000 Hz/250 Hz/100 Hz/33 Hz/11 Hz <sup>5) 6)</sup>
<b>Output time</b>	0.33 ms/1.33 ms/3.33 ms/10 ms/30 ms <sup>5) 7)</sup>
<b>Light source</b>	Laser, red <sup>8)</sup> visible red light
<b>Laser class</b>	2 (IEC 60825-1:2014, EN 60825-1:2014)
<b>Typ. light spot size (distance)</b>	10 mm x 10 mm (at 10 m)
<b>Additional function</b>	Set speed: Super Fast ... Super Slow, teach-in, scaling and inversion of analog output, Output Q <sub>2</sub> adaptable: Current output / Voltage output / Digital output / Q <sub>1</sub> not / deactivated, Switching mode: Distance to Object (DtO) / switching window / object between sensor and background (ObSB), teach-in, scaling and inversion of digital output, Multifunctional input: laser off / external teach / deactivated, reset to factory default, Shape comparison: based on the distance measured over a period of time, Hold measurement value, switch-off or lock display, easy teach option
<b>Average laser service life (at 25 °C)</b>	100,000 h

<sup>1)</sup> For speed setting Slow.

<sup>2)</sup> See repeatability characteristic lines.

<sup>3)</sup> Equivalent to 1  $\sigma$ .

<sup>4)</sup> 6 % ... 90 % remission.

<sup>5)</sup> Depending on the set speed: Super Fast ... Super Slow.

<sup>6)</sup> Lateral entry of the object into the measuring range.

<sup>7)</sup> Continuous change of distance in measuring range.

<sup>8)</sup> Wavelength: 658 nm; max. output: 250 mW; pulse duration: 3 ns; duty cycle: 1/250.

## Interfaces

<b>IO-Link</b>	✓, IO-Link V1.1, COM3 (230,4 kBaud)
Function	Process data, parameterization, diagnosis, data storage
<b>Digital output</b>	
Number	1 ... 2 <sup>1) 2) 3)</sup>
Type	Push-pull: PNP/NPN
Function	Complementary digital outputs (Q, $\bar{Q}$ ) Output Q <sub>2</sub> adaptable: Current output / Voltage output / Digital output / Q <sub>1</sub> not / deactivated
Maximum output current I <sub>A</sub>	≤ 100 mA
<b>Analog output</b>	
Number	1
Type	Current output / voltage output

<sup>1)</sup> Output Q short-circuit protected.

<sup>2)</sup> Voltage drop < 3 V.

<sup>3)</sup> Max. total output current < 200 mA.

<sup>4)</sup> Response time ≤ 60 ms.

Function	Output Q <sub>2</sub> adaptable: Current output / Voltage output / Digital output / Q <sub>1</sub> not / deactivated
Current	4 mA ... 20 mA, ≤ 450 Ω
Voltage	0 V ... 10 V, ≥ 50 Ω
Resolution	16 bit
<b>Multifunctional input (MF)</b>	1 x <sup>4)</sup>
<b>Hysteresis</b>	0 mm ... 29,950 mm

<sup>1)</sup> Output Q short-circuit protected.

<sup>2)</sup> Voltage drop < 3 V.

<sup>3)</sup> Max. total output current < 200 mA.

<sup>4)</sup> Response time ≤ 60 ms.

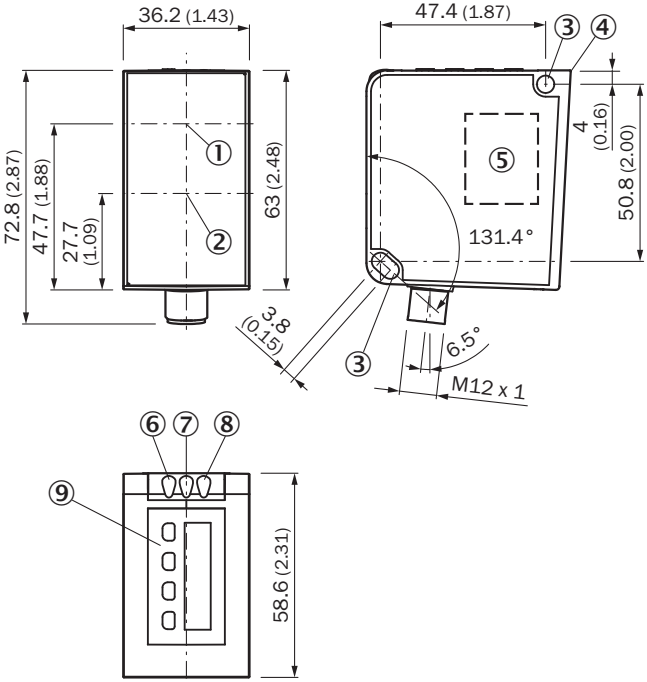
### Ambient data

<b>Ambient temperature, operation</b>	-40 °C ... +65 °C, U <sub>v</sub> ≤ 24 V -30 °C ... +80 °C, operation with 2 cooling plates -30 °C ... +140 °C, operation with 2 cooling plates and protection filter
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>Typ. Ambient light immunity</b>	40,000 lx
<b>Vibration resistance</b>	EN 60068-2-6, EN 60068-2-64
<b>Shock resistance</b>	EN 60068-2-27

### Classifications

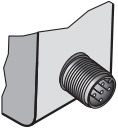
<b>eCl@ss 5.0</b>	27270801
<b>eCl@ss 5.1.4</b>	27270801
<b>eCl@ss 6.0</b>	27270801
<b>eCl@ss 6.2</b>	27270801
<b>eCl@ss 7.0</b>	27270801
<b>eCl@ss 8.0</b>	27270801
<b>eCl@ss 8.1</b>	27270801
<b>eCl@ss 9.0</b>	27270801
<b>eCl@ss 10.0</b>	27270801
<b>eCl@ss 11.0</b>	27270801
<b>eCl@ss 12.0</b>	27270916
<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))

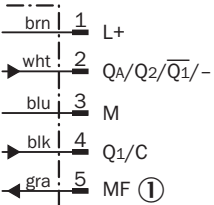


- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Mounting hole, Ø 4.5 mm
- ④ Reference surface = 0 mm
- ⑤ Laser warning label
- ⑥ Status indicator output Qa/Q2
- ⑦ Status LEDs output Q<sub>1</sub>
- ⑧ Supply voltage status display
- ⑨ Control elements and display

Connection type



Connection diagram



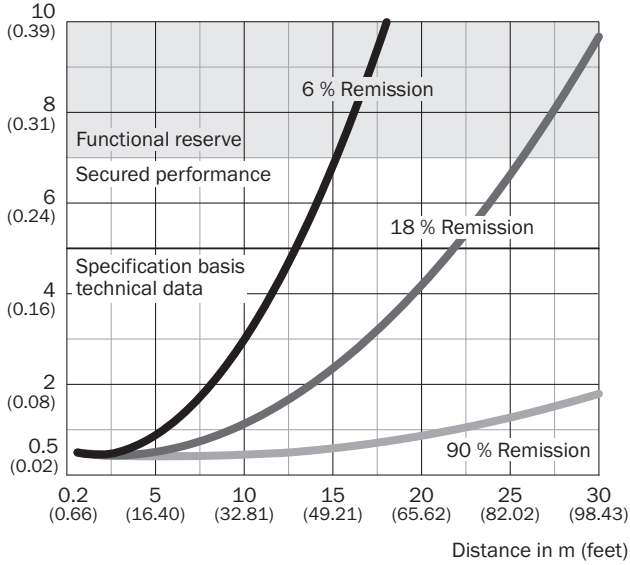
① Multifunctional input (MF)

**Repeatability**

Characteristic curve 1) Super Slow

**Super Slow**

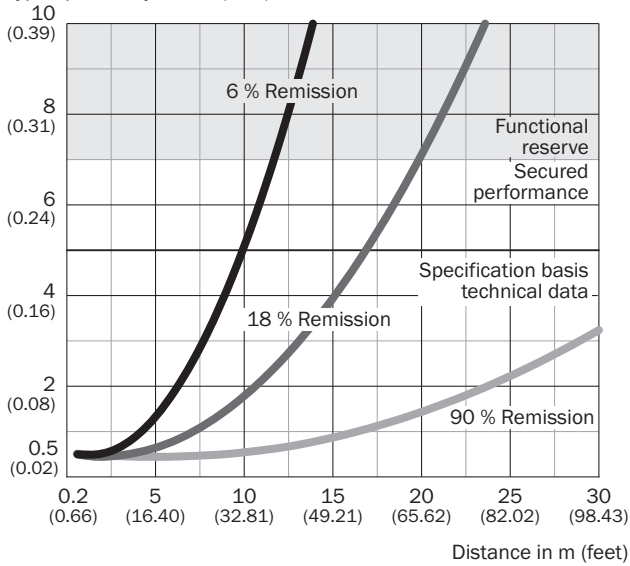
Typ. repeatability in mm (inch)



Characteristic curve 2) Slow

**Slow**

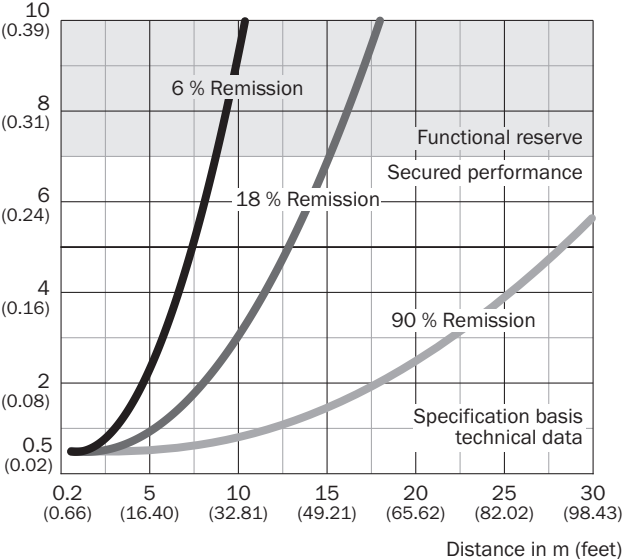
Typ. repeatability in mm (inch)



Characteristic curve 3) Medium

Medium

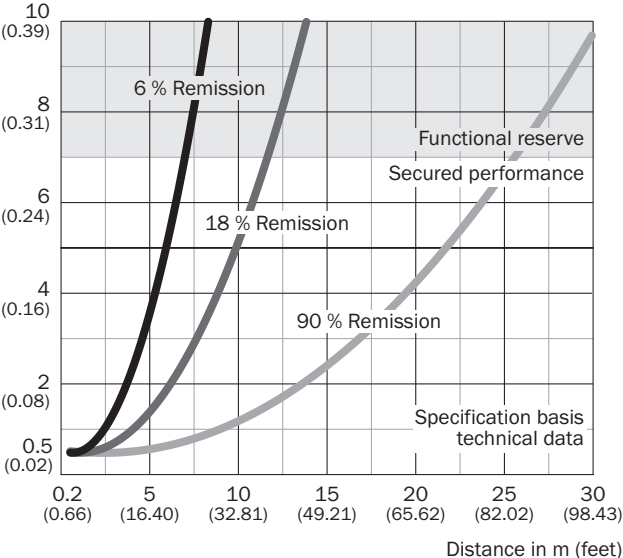
Typ. repeatability in mm (inch)



Characteristic curve 4) Fast

Fast

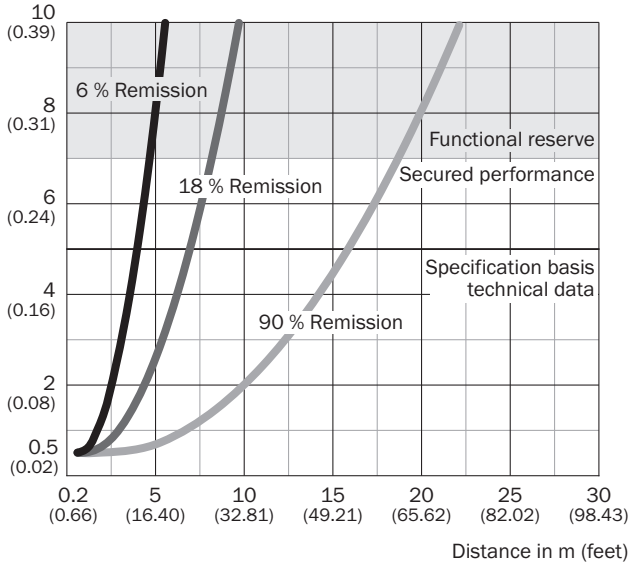
Typ. repeatability in mm (inch)



Characteristic curve 5) Super Fast






**Super Fast**

Typ. repeatability in mm (inch)



**Recommended accessories**

Other models and accessories → [www.sick.com/Dx50-2](http://www.sick.com/Dx50-2)

	<b>Brief description</b>	<b>Type</b>	<b>Part no.</b>
<b>Mounting brackets and plates</b>			
	Mounting bracket, steel, zinc coated, steel, zinc coated, mounting hardware for the sensor included	BEF-WN-DX50	2048370
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A15-020VB5XLEAX	2096239
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG2A15-020VB5XLEAX	2096215
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m	YF2A15-020UB5M2A15	2096009
<b>Terminal and alignment brackets</b>			
	Alignment unit, steel, zinc coated, mounting hardware for the sensor included	BEF-AH-DX50	2048397



Recommended services

Additional services → [www.sick.com/Dx50-2](http://www.sick.com/Dx50-2)

	Type	Part no.
Warranty extensions		
<ul style="list-style-type: none"><li>• <b>Product area:</b> Identification solutions, machine vision, Distance sensors, Detection and ranging solutions</li><li>• <b>Range of services:</b> The services correspond to the scope of the statutory manufacturer warranty (SICK general terms and conditions of purchase)</li><li>• <b>Duration:</b> Five-year warranty from delivery date.</li></ul>	Extended warranty for a total of five years from delivery date	1680671

## 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)