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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# 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

#### 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>
<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: 4 mA ... 20 mA/0 V ... 10 V/switching 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 switching output, Multifunctional input: laser off / external teach / deactivated, reset to factory default, Shape comparison: based on the dis-

<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.

	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

- 1) For speed setting Slow.
- 2) See repeatability characteristic lines.
- 3) Equivalent to 1  $\sigma$ .
- 4) 6 % ... 90 % remission.
- 5) Depending on the set speed: Super Fast ... Super Slow.
- 6) Lateral entry of the object into the measuring range.
- 7) Continuous change of distance in measuring range.
- 8) Wavelength: 658 nm; max. output: 250 mW; pulse duration: 3 ns; duty cycle: 1/250.

## Interfaces

<b>IO-Link</b>	✓, V1.1, COM3 (230,4 kBaud)
Function	Process data, parameterization, diagnosis, data storage
<b>Analog output</b>	1 x 4 mA ... 20 mA ( $\leq 450 \Omega$ ) / 1 x 0 V ... 10 V ( $\geq 50 \text{ k}\Omega$ ) / - <sup>1)</sup>
<b>Resolution analog output</b>	16 bit
<b>Switching output</b>	1 x / 2 x complementary / 2 x push-pull: PNP/NPN (100 mA) <sup>1) 2) 3)</sup>
<b>Multifunctional input (MF)</b>	1 x <sup>4)</sup>
<b>Hysteresis</b>	0 mm ... 29,950 mm

- 1) Output Q<sub>2</sub>, adaptable: 4 mA ... 20 mA/0 V ... 10 V/switching output/Q<sub>1</sub> not/deactivated.
- 2) Output Q short-circuit protected.
- 3) Voltage drop < 3 V.
- 4) Response time  $\leq 60$  ms.

## Mechanics/electronics

<b>Supply voltage V<sub>s</sub></b>	DC 10 V ... 30 V <sup>1) 2)</sup>
<b>Ripple</b>	$\leq 5 V_{pp}$ <sup>3)</sup>
<b>Power consumption</b>	$\leq 1.7 \text{ W}$ <sup>4) 5)</sup>
<b>Initialization time</b>	$\leq 300$ ms
<b>Warm-up time</b>	$\leq 15$ min
<b>Housing material</b>	Die-cast zinc Acrylic glass (PMMA)
<b>Connection type</b>	Male connector, M12, 5-pin
<b>Indication</b>	3 x LED, LC display
<b>Weight</b>	235 g
<b>Enclosure rating</b>	IP65 IP67
<b>Protection class</b>	III

- 1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.
- 2) When using IO-Link output V<sub>s</sub> > 18 V. When using analog output V<sub>s</sub> > 13 V.
- 3) May not fall short of or exceed V<sub>s</sub> tolerances.
- 4) At  $\geq 0^\circ\text{C}$ .
- 5) Without load.

## Ambient data

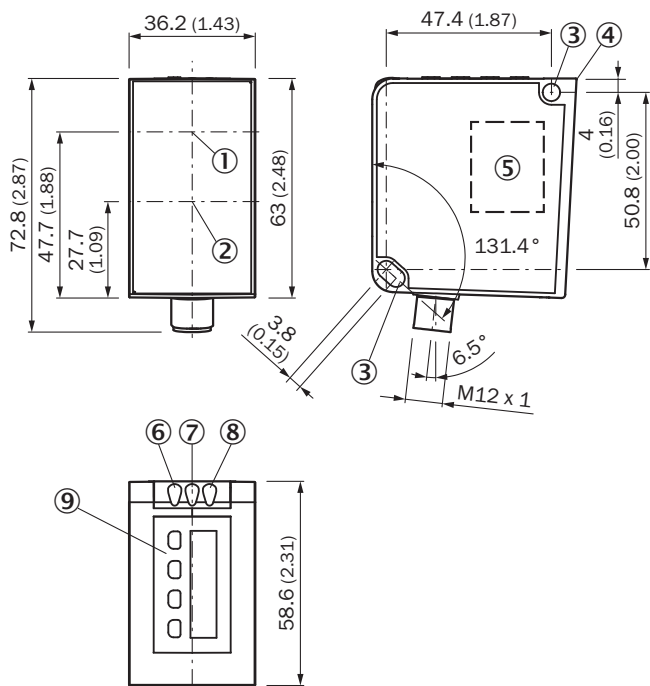
<b>Ambient temperature operation</b>	-40 °C ... +65 °C, U <sub>v</sub> $\leq 24$ V -30 °C ... +80 °C -30 °C ... +140 °C
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<b>Ambient storage temperature</b>	-40 °C ... +75 °C
<b>Typ. Ambient light immunity</b>	40,000 lx
<b>Vibration resistance</b>	EN 60068-2-6, EN 60068-2-64
<b>Shock resistance</b>	EN 60068-2-27

## Classifications

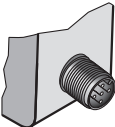
<b>ECl@ss 5.0</b>	27270801
<b>ECl@ss 5.1.4</b>	27270801
<b>ECl@ss 6.0</b>	27270801
<b>ECl@ss 6.2</b>	27270801
<b>ECl@ss 7.0</b>	27270801
<b>ECl@ss 8.0</b>	27270801
<b>ECl@ss 8.1</b>	27270801
<b>ECl@ss 9.0</b>	27270801
<b>ETIM 5.0</b>	EC001825
<b>ETIM 6.0</b>	EC001825
<b>UNSPSC 16.0901</b>	41111613

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

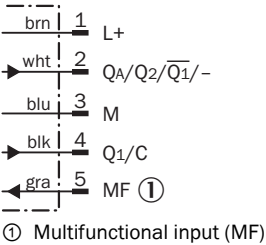


- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Mounting hole,  $\varnothing$  4.5 mm
- ④ Reference surface = 0 mm
- ⑤ Laser warning label
- ⑥ Status indicator output Qa/Q2
- ⑦ Status LEDs output Q<sub>1</sub>
- ⑧ Status indicator power on
- ⑨ Operating keys and display

Connection type



Connection diagram

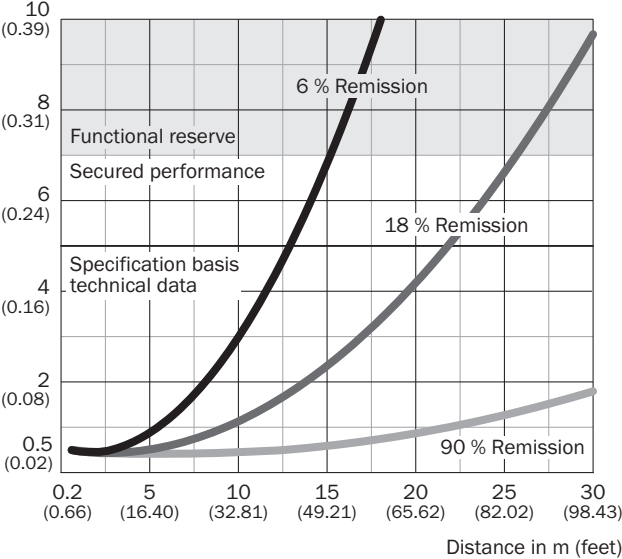


Repeatability

DT50-2 Pro

Super Slow

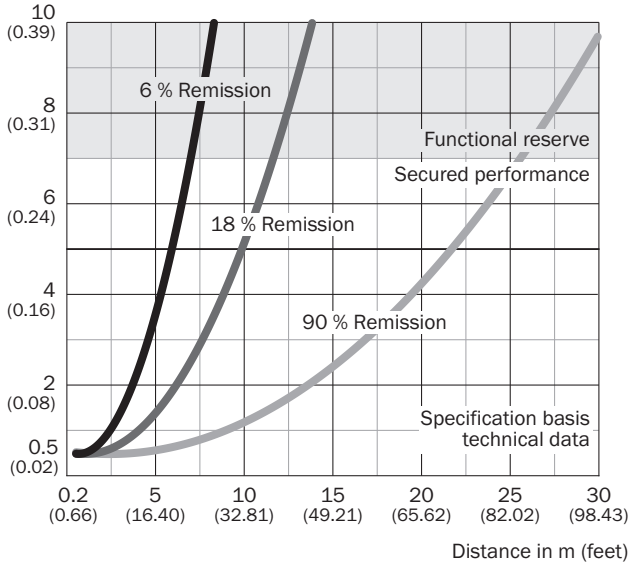
Typ. repeatability in mm (inch)



DT50-2 Pro

**Fast**

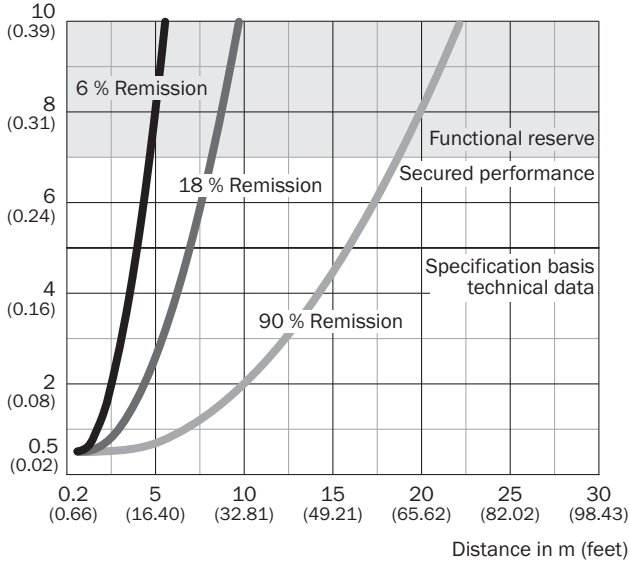
Typ. repeatability in mm (inch)



DT50-2 Pro

**Super Fast**

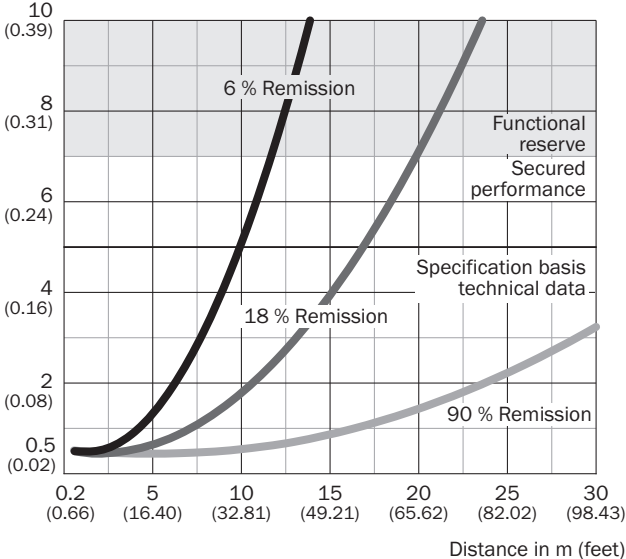
Typ. repeatability in mm (inch)



DT50-2 Pro

Slow

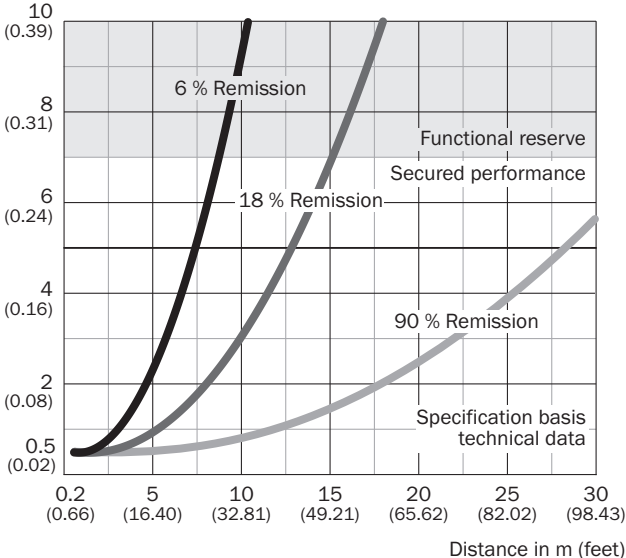
Typ. repeatability in mm (inch)



DT50-2 Pro

Medium






Typ. repeatability in mm (inch)





Recommended accessories

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

	Brief description	Type	Part no.
<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>Terminal and alignment brackets</b>			
	Alignment unit, steel, zinc coated, mounting hardware for the sensor included	BEF-AH-DX50	2048397
<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

## 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)