Online data sheet

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

Detailed technical data

Performance

Measuring range	200 mm ... 30,000 mm, 90 % remission [1) 2)] 200 mm ... 17,000 mm, 18 % remission 200 mm ... 10,000 mm, 6 % remission
Resolution	0.1 mm
Repeatability	0.5 mm ... 5 mm [3) 2) 4)]
Accuracy	± 7 mm [4)]
Response time	0.83 ms / 3.33 ms / 8.33 ms / 25 ms / 75 ms [5) 6)]
Switching frequency	1,000 Hz/250 Hz/100 Hz/33 Hz/11 Hz [5) 6)]
Output time	0.33 ms/1.33 ms/3.33 ms/10 ms/30 ms [7) 5)]
Light source	Laser, red [8)]
Laser class	2 (EN 60825-1)
Typ. light spot size (distance)	10 mm x 10 mm (at 10 m)
Additional function	Set speed: Super Fast ... Super Slow, teach-in, scaling and inversion of analog output, Output Q_2, adaptable: 4 mA ... 20 mA/0 V ... 10 V/switching output/Q_1 not/deactivated, Switching mode: Distance to Object (DtO) / switching window / object between sensor and background (ObSB), teach-in, scaling and inversion of switching output, IO-Link V1.1 (incl. data storage), 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

1) For speed setting Slow.
2) See characteristic curves repeatability.
3) Equivalent to 1 σ.
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.

Laser service life (MTTF at 25 °C)	100,000 h

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Interfaces

Analog output	1 x 4 mA ... 20 mA (≤ 450 Ω) / 1 x 0 V ... 10 V (≥ 50 kΩ) / – [1]
Resolution analog output	16 bit
Switching output	1 x / 2 x complementary / 2 x push-pull: PNP/NPN (100 mA), IO-Link [2] [3] [1]
Multifunctional input (MF)	1 x [4]
Hysteresis	0 mm ... 29,950 mm
Data interface	IO-Link
IO-Link	✓
Function	Process data, parameterization, diagnosis, data storage
Data transmission rate	230.4 kbit/s
Protocol	V1.1

[1] Output Q_2, adaptable: 4 mA ... 20 mA/0 V ... 10 V/switching output/Q_1 not/deactivated.
[2] Output Q short-circuit protected.
[3] Voltage drop < 3 V.
[4] Response time ≤ 60 ms.

Mechanics/electronics

Supply voltage V_S	DC 10 V ... 30 V [1] [2]
Ripple	≤ 5 V_{pp} [3]
Power consumption	≤ 1.7 W [4] [5]
Initialization time	≤ 300 ms
Warm-up time	≤ 15 min
Housing material	Die-cast zinc Acrylic glass (PMMA)
Connection type	Male connector, M12, 5-pin
Indication	3 x LED, LC display
Weight	235 g

[1] Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.
[2] When using IO-Link output V_S > 18 V. When using analog output V_S > 13 V.
[3] May not fall short of or exceed V_S tolerances.
[4] At ≥ 0 °C.
[5] Without load.

Ambient data

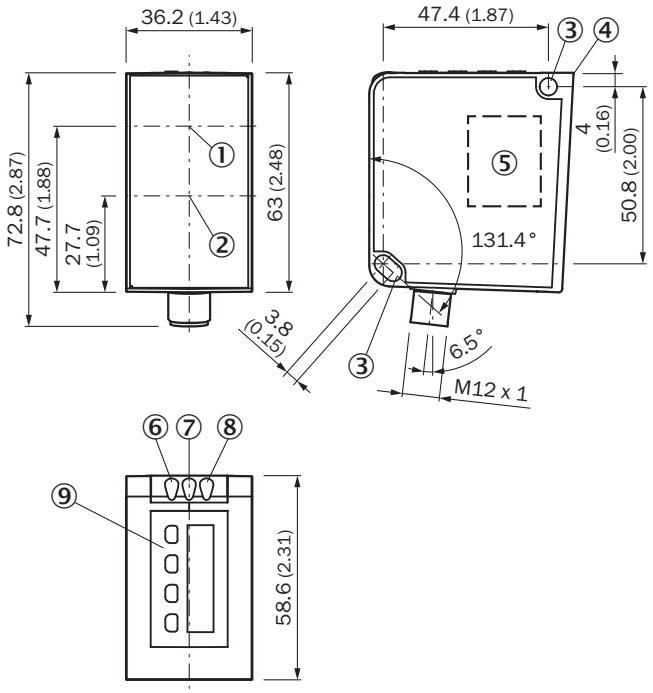
Enclosure rating	IP 65, IP 67
Protection class	III

[1] U_V ≤ 24 V.

Ambient temperature	Operation: –40 °C ... +65 °C [1)] Storage: –40 °C ... +75 °C
Typ. Ambient light immunity	40 klx
Vibration resistance	EN 60068-2-6 / EN 60068-2-64
Shock resistance	EN 60068-2-27

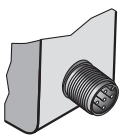
[1)] U_V ≤ 24 V.

Dimensional drawing (Dimensions in mm (inch))

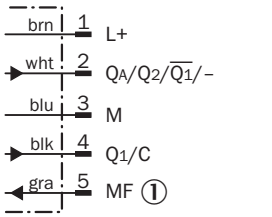


① Optical axis, sender
② Optical axis, receiver
③ Mounting hole, Ø 4.5 mm
④ Reference surface = 0 mm
⑤ Laser warning label
⑥ Status indicator output Qa/Q2
⑦ Status LEDs output Q_1
⑧ Status indicator power on
⑨ Operating keys and display

Connection type



Connection diagram



① Multifunctional input (MF)

Repeatability

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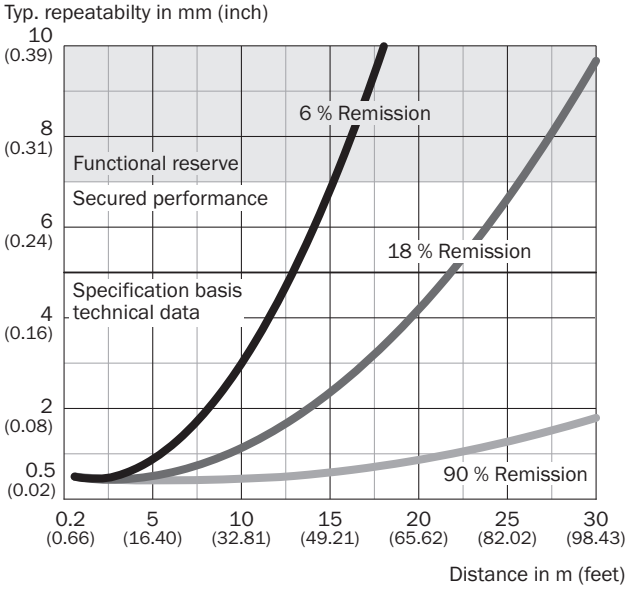
Super Slow

Typ. repeatabilty in mm (inch)



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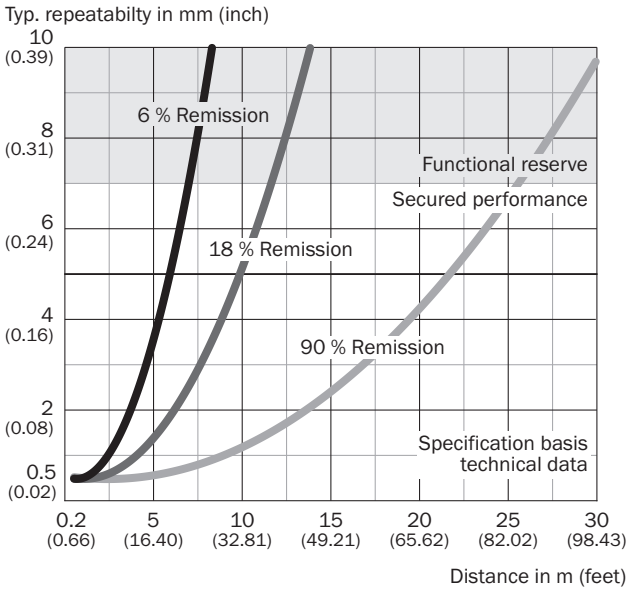
Fast



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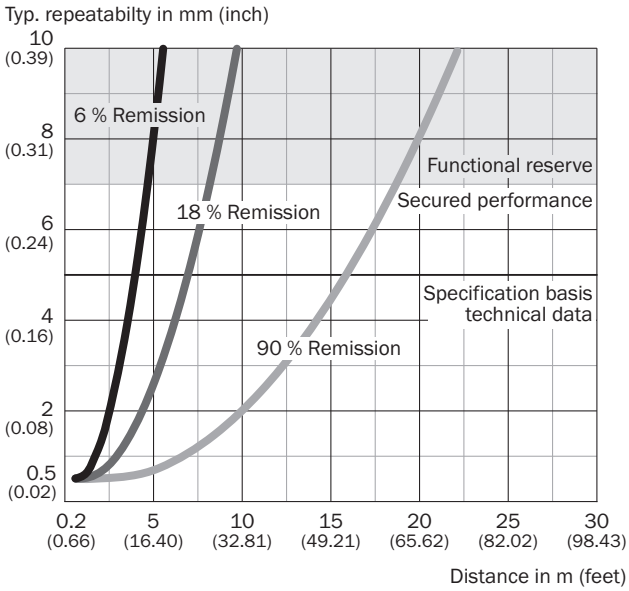
Super Fast



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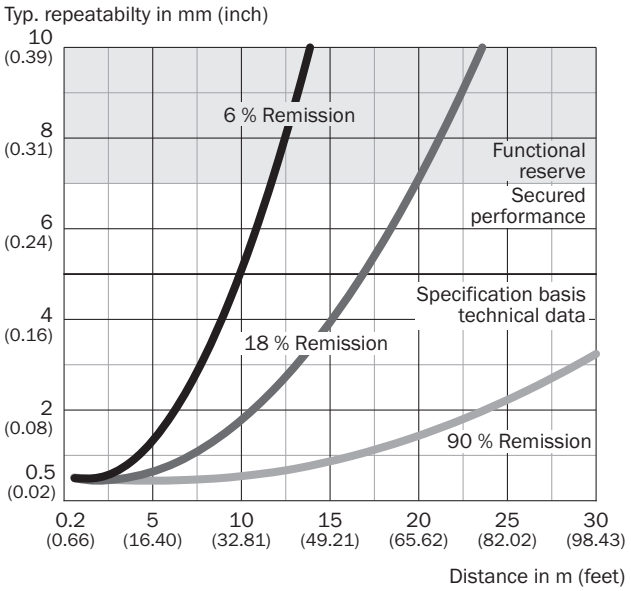
Slow



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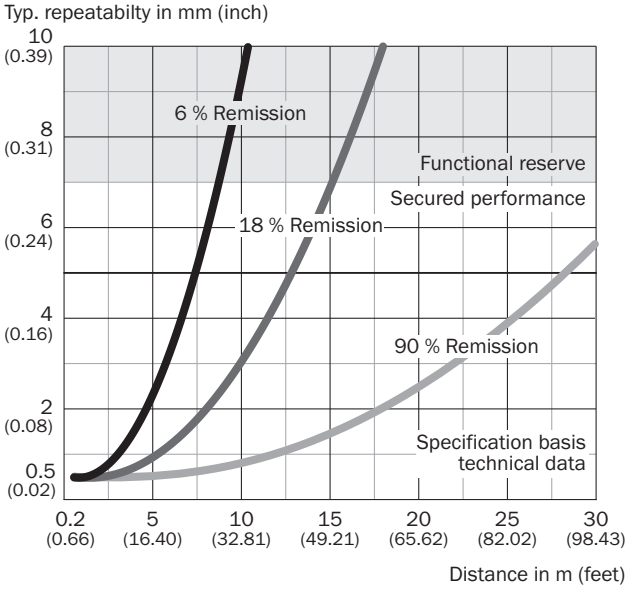
Medium



Recommended accessories

Other models and accessories ➜ www.sick.com/Dx50-2

	Brief description	Type	Part no.
Mounting brackets and mounting plates			

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	Mounting bracket, steel, zinc coated, steel, zinc coated, mounting hardware for the sensor included	BEF-WN-DX50	2048370
Terminal and alignment brackets			
	Alignment unit, steel, zinc coated, mounting hardware for the sensor included	BEF-AH-DX50	2048397
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded, 2 m	DOL-1205-G02M	6008899
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: PVC, unshielded, 2 m	DOL-1205-W02M	6008900
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: digital I/Os, drag chain use, PUR, halogen-free, unshielded, 2 m	DSL-1205-G02MC	6025931

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