Mid range distance sensors
Dx35, DT35

DT35-B15251

SICK
Sensor Intelligence.

**Type**   **> DT35-B15251**
Part No.   **> 1057652**

At a glance

- Maximum reliability, immunity to ambient light, and best price/performance ratio thanks to HDDM™ technology
- Reliable detection and broad measuring range of 0.05 m to 12 m
- Very good accuracy of ±10 mm
- Fast measurement with a output rate of down to 1 ms or 2 ms
- Small housing size
- IO-Link as well as analog and switching output
- Choice of infrared or red lasers in class 1 or class 2

Your benefits

- Precise and reliable measurement regardless of object color extends run time and process quality
- Optimum application solution thanks to flexible settings for speed, range and repeatability
- A small size and blind zone make flexible mounting possible when space is limited
- Many interfaces available in one device, reducing stock-keeping: 4 mA to 20 mA, 0 V to 10 V, PNP output, NPN output, and IO-Link
- Offering easy alignment, optimal performance or inconspicuous measurement, versatile light senders make it an ideal solution for all scenarios
- Low investment costs and high performance levels guarantee a quick return on investment
- A wide variety of control options ensures rapid commissioning and fast batch changes
- IO-Link offers full process control, from commissioning to service
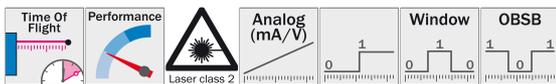
Performance

Measuring range [1], [2]:	50 mm ... 12,000 mm, 90 % remission 50 mm ... 3,100 mm, 6 % remission 50 mm ... 5,300 mm, 18 % remission
Resolution:	0.1 mm
Repeatability [3], [4], [5]:	0.5 mm ... 5 mm
Accuracy [6]:	Typ. ± 10 mm
Response time [7], [8]:	2.5 ms / 6.5 ms / 12.5 ms / 24.5 ms / 96.5 ms
Switching frequency [9], [10]:	333 Hz / 100 Hz / 50 Hz / 25 Hz / 6 Hz
Light source [11]:	Laser, Red
Typ. light spot size (distance):	15 mm x 15 mm (at 2 m)

Additional function:	Set speed: Super Fast ... Super Slow
	IO-Link
	Reset to factory default
	Output Q2, selectable: 4 mA ... 20 mA ∕ 0 V … 10 V ∕ switching output
	Multifunctional input: laser off ∕ external teach ∕ deactivated
	Switching mode: Distance to Object (DtO) ∕ switching window ∕ object between sensor and background (ObSB)
	Teach-in of analog output and invertible analog output
	Teach-in of switching output and switching output invertible
Laser class:	2 (EN 60825-1)
Laser service life (MTTF at 25 °C):	100,000 h
Output time [12) 13)]:	1 ms ∕ 2 ms ∕ 4 ms ∕ 8 ms ∕ 32 ms

[1)] For speed setting Slow [2) 4)] See characteristic curves repeatability [3)] Equivalent to 1 σ [5) 6)] 6 % ... 90 % remission [7) 9) 13)] Dependent on the set speed: Super Fast ... Super Slow [8) 10)] Lateral entry of object into measuring range [11)] Wavelength: 658 nm; max. output: 250 mW; pulse duration: 3 ns; duty cycle: 1/250 [12)] Continuous change of distance in measuring range.

Interfaces

Analog output [1)]:	1 x 4 mA ... 20 mA (≤ 450 Ω) ∕ 1 x 0 V … 10 V (≥ 50 kΩ) ∕ -
Resolution analog output:	12 bit
Output type [2) 3) 4)]:	1 x ∕ 2 x push-pull: PNP/NPN (100 mA), IO-Link
Hysteresis [5)]:	0 mm ... 11,950 mm
Data interface:	IO-Link
Multifunctional input (MF) [6)]:	1 x

[1) 4)] Output Q2, selectable: 4 mA ... 20 mA ∕ 0 V … 10 V ∕ switching output [2)] Output Q short-circuit protected [3)] Voltage drop < 3 V [5)] Adjustable via IO-Link [6)] Response time ≤ 60 ms
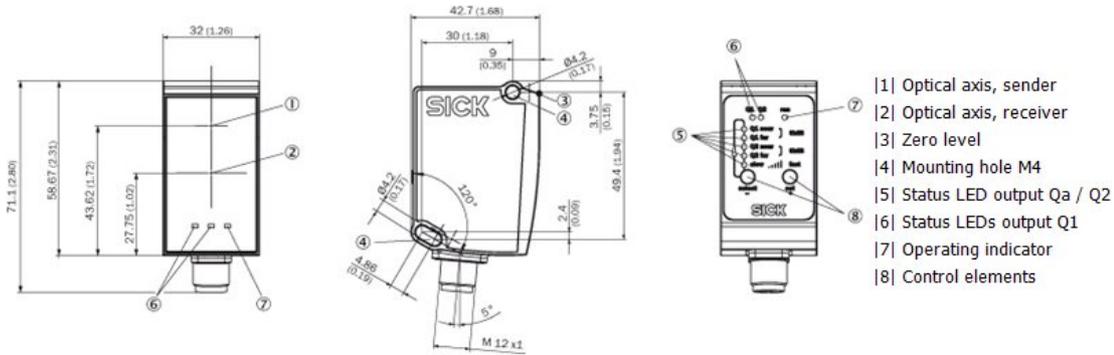
Mechanics/electronics

Supply voltage Vs [1) 2)]:	DC 12 V ... 30 V
Ripple [3)]:	≤ 5 Vpp
Power consumption [4) 5)]:	≤ 1.7 W
Initialization time:	≤ 500 ms
Warm-up time:	≤ 20 min
Housing material:	Plastic (ABS and PC) acrylic glass (PMMA)
Connection type:	Male connector, M12, 5-pin
Indication:	LEDs
Weight:	65 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 voltage output V_s > 13 V. [3)] May not fall short of or exceed V_S tolerances [4)] At 20°C [5)] Without load
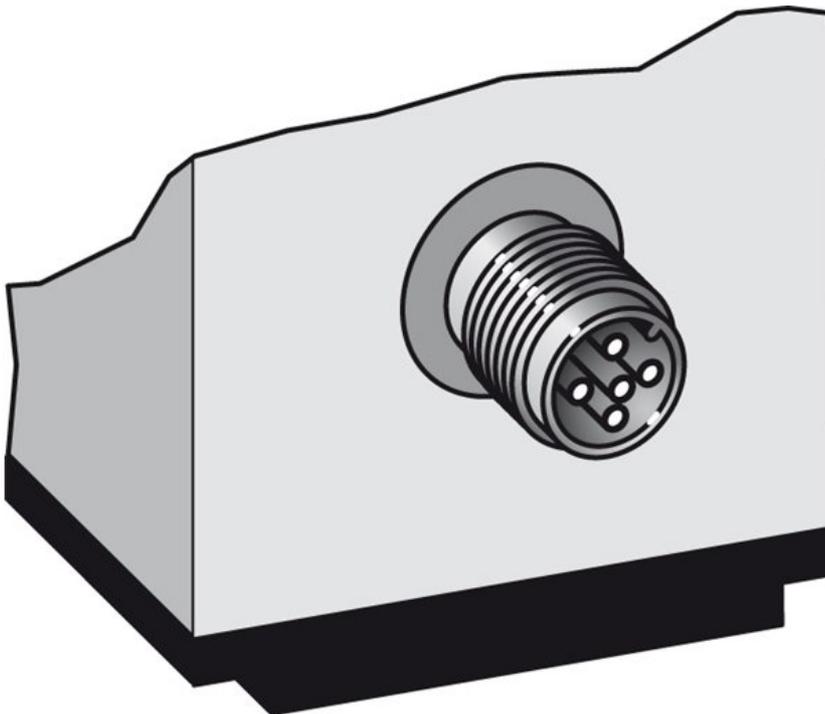
Ambient data

Enclosure rating:	IP 65, IP 67
Protection class:	III
Ambient temperature [1)]:	Operation: -30 ... +55 °C, Storage: -40 ... +75 °C
Vibration resistance:	EN 60068-2-6 ∕ EN 60068-2-64
Shock resistance:	EN 60068-2-27
Typ. Ambient light immunity:	40 klx

Dimensional drawing

|1| Optical axis, sender
|2| Optical axis, receiver
|3| Zero level
|4| Mounting hole M4
|5| Status LED output Qa / Q2
|6| Status LEDs output Q1
|7| Operating indicator
|8| Control elements

Connection type

Connection diagram

brn	1	L+
wht	2	Q_A/Q2
blu	3	M
blk	4	Q1/C
gra	5	MF ①

|1| Multifunctional input (MF)
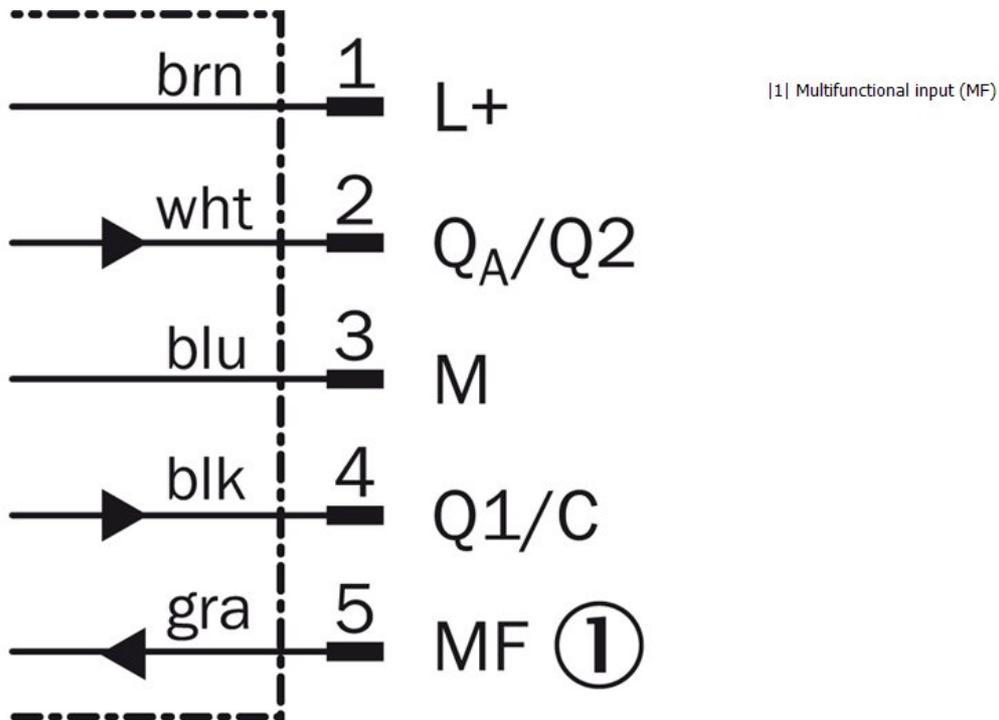
Characteristic curve 1) Super Slow

Super Slow

Repeatabilty in mm (inch)

6 % Remission
18 % Remission
Functional reserve
Secured performance
90 % Remission
Specification basis technical data

Distance in m (feet)
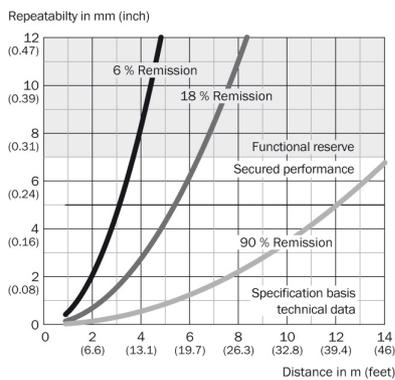
Characteristic curve 2) Slow

Slow

Repeatability in mm (inch)

6 % Remission
18 % Remission
Functional reserve
Secured performance
90 % Remission
Specification basis technical data

Distance in m (feet)
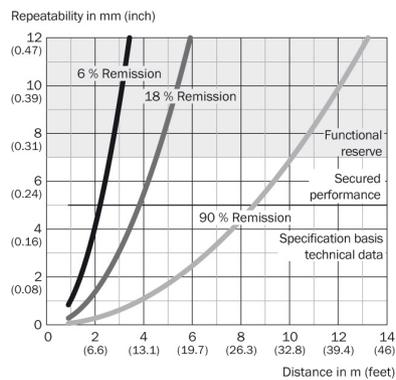
Characteristic curve 3) Medium

Medium

Repeatability in mm (inch)

6 % Remission
18 % Remission
90 % Remission
Functional reserve
Secured performance
Specification basis technical data

Distance in m (feet)
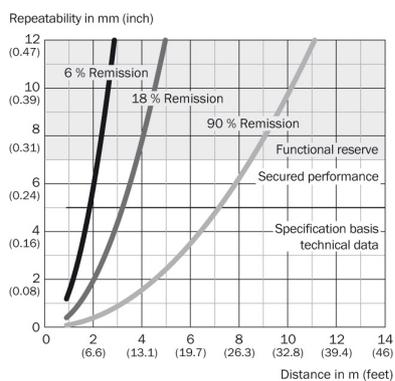
Characteristic curve 4) Fast

Fast

Repeatability in mm (inch)

6 % Remission
18 % Remission
90 % Remission
Functional reserve
Secured performance
Specification basis technical data

Distance in m (feet)
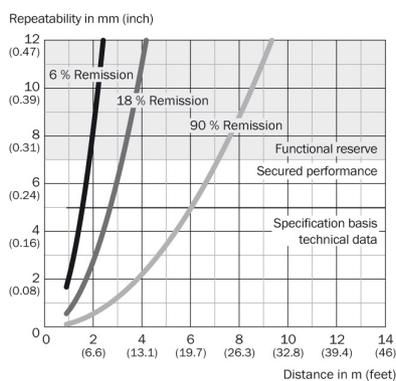
Characteristic curve 5) Super Fast

Super Fast

Repeatability in mm (inch)

6 % Remission

18 % Remission

90 % Remission

Functional reserve

Secured performance

Specification basis
technical data

y-axis: 0, 2 (0.08), 4 (0.16), 6 (0.24), 8 (0.31), 10 (0.39), 12 (0.47)

x-axis: 0, 2 (6.6), 4 (13.1), 6 (19.7), 8 (26.3), 10 (32.8), 12 (39.4), 14 (46)

Distance in m (feet)

A4 4c int43
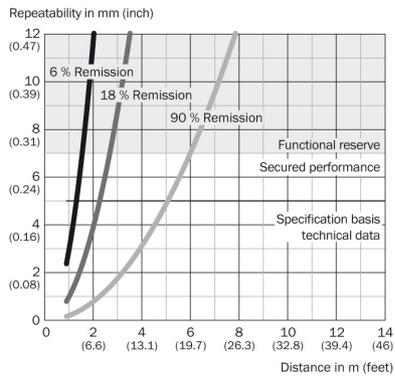
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