



Mid range distance sensors
Dx35, DS35

DS35-B15521



Model Name > [DS35-B15521](#)
Part No. > [1057654](#)

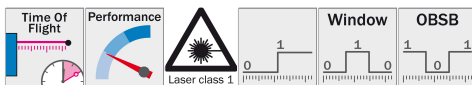


At a glance

- Maximum reliability, immunity to ambient light, and best price/performance ratio thanks to HDDM™ technology
- Reliable detection and wide measuring range up to 12 m
- Very good accuracy of ±10 mm
- Fast detection with a switching frequency of up to 333 Hz or 166 Hz
- Small housing size
- IO-Link as well as two switching outputs offering three switching modes
- Choice of infrared or red lasers in class 1 or class 2

Your benefits

- Two switching outputs, each with three switching modes, provide a simple solution for demanding applications
- 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
- Precise and reliable measurement regardless of object color extends run time and process quality
- Offering easy alignment, optimal performance or inconspicuous detection, 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

Measurement 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)} :	4.5 ms/12.5 ms/24.5 ms/48.5 ms/192.5 ms
Switching frequency ^{9), 10)} :	166 Hz/50 Hz/25 Hz/12 Hz/3 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 Multifunctional input: laser off/external teach/deactivated Switching mode: Distance to Object (DtO)/switching window/object between sensor and background (ObSB) Teach-in of switching output and switching output invertible
Laser class:	1 (EN 60825-1)
Laser service life (MTTF at 25 °C):	100,000 h
Output time ¹²⁾ , ¹³⁾ :	2 ms/4 ms/8 ms/16 ms/64 ms
¹⁾ For speed setting Slow ²⁾ ⁴⁾ See characteristic curves repeatability ³⁾ Equivalent to 1σ 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; pulse repetition rate: 1/500 ¹²⁾ Continuous change of distance in measuring range.	

Interfaces

Output type ¹⁾ , ²⁾ , ³⁾ :	2 x push-pull: PNP/NPN (100 mA), IO-Link
Hysteresis ⁴⁾ :	0 mm ... 11,950 mm
Data interface:	IO-Link
Multifunctional input (MF) ⁵⁾ :	1 x
¹⁾ Output Q short-circuit protected ²⁾ Voltage drop < 3 V ³⁾ Output Q ₂ , selectable: 4 mA ... 20 mA/0 V ... 10 V/switching output/Q ₁ not/ deactivated ⁴⁾ Adjustable via IO-Link ⁵⁾ Response time ≤ 60 ms	

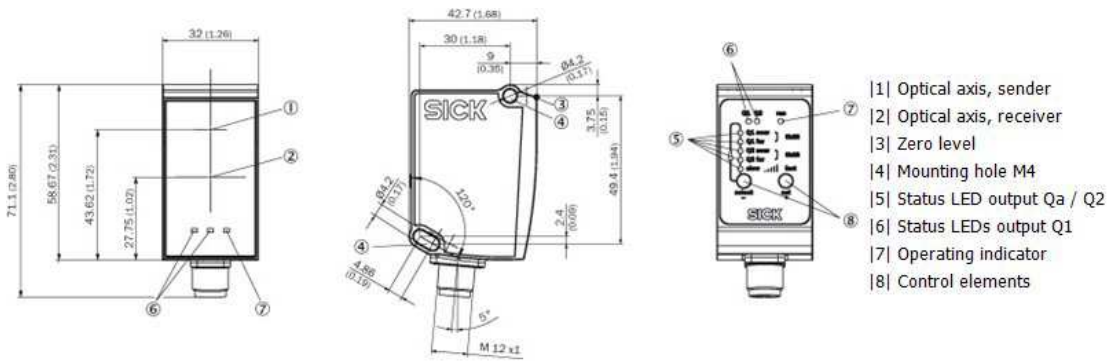
Mechanics/electronics

Supply voltage V_s 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. ³⁾ May not fall short of or exceed V_s tolerances ⁴⁾ At 20°C ⁵⁾ Without load	

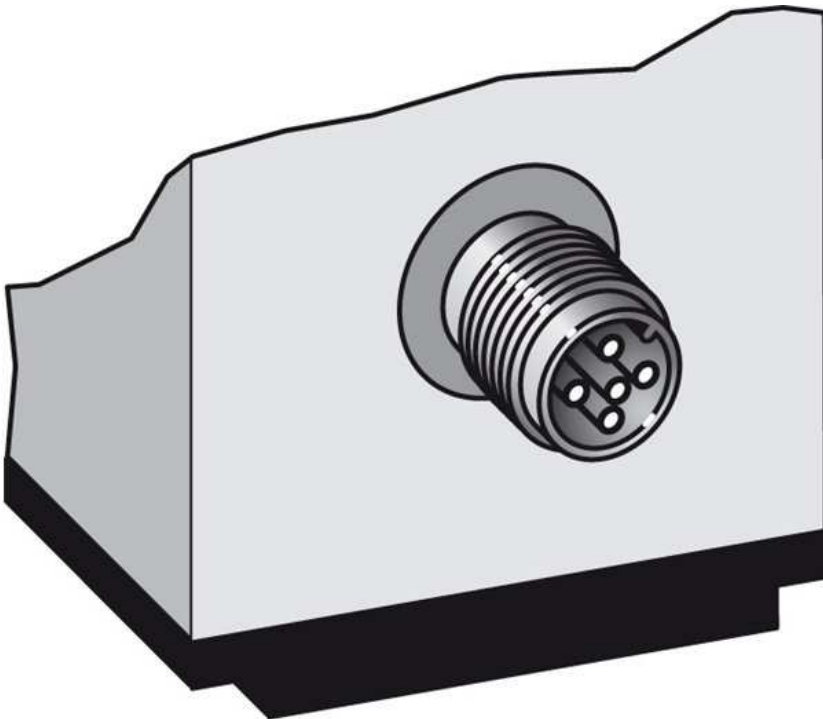
Ambient data

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 safety:	40 klx
¹⁾ $U_v \leq 24$ V	

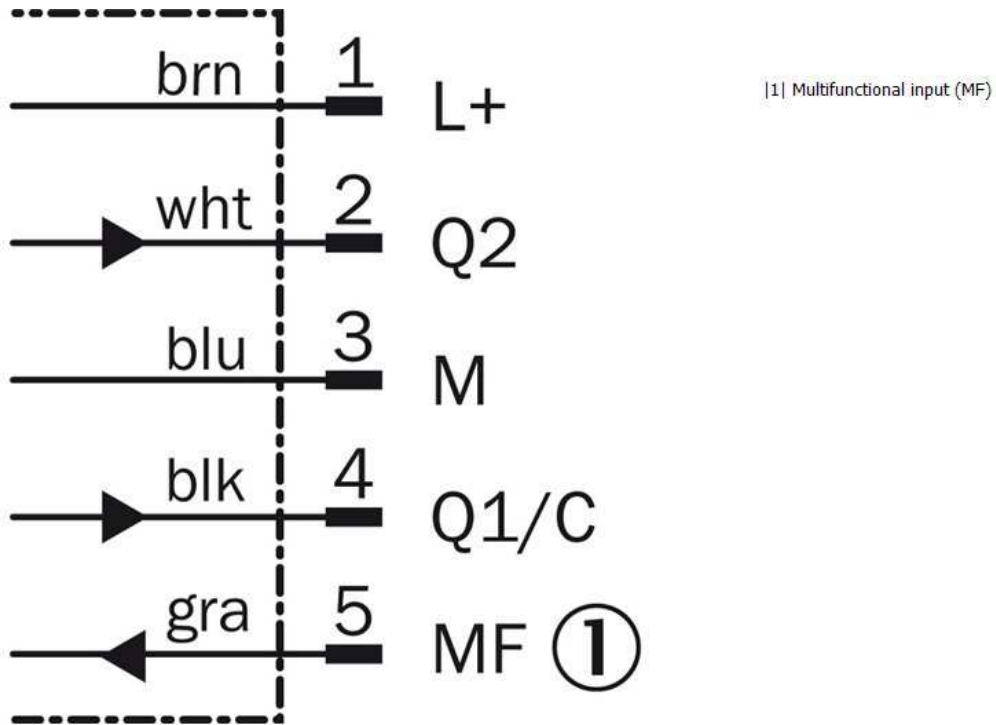
Dimensional drawing



Connection type

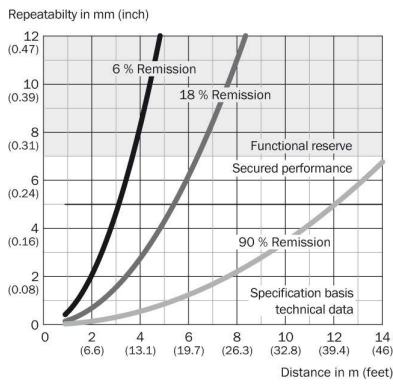


Connection diagram



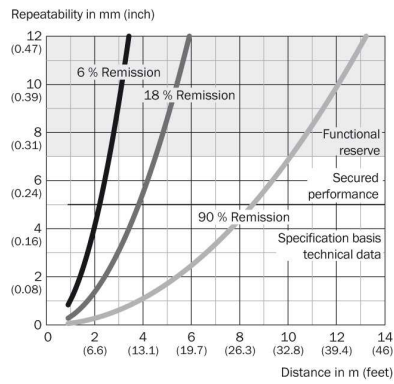
Characteristic curve 1) Super Slow

Super Slow



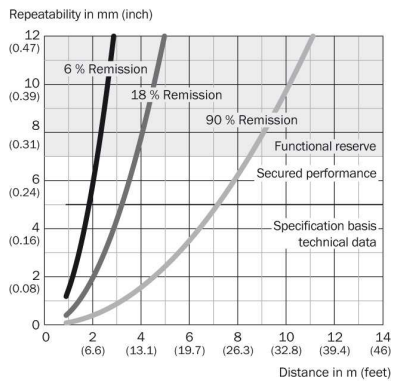
Characteristic curve 2) Slow

Slow



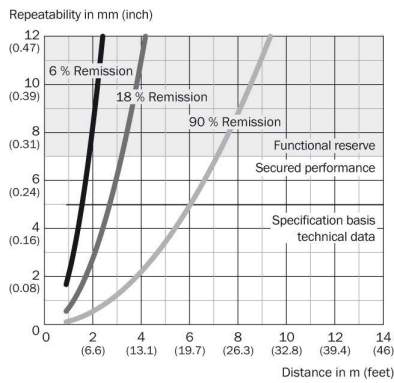
Characteristic curve 3) Medium

Medium



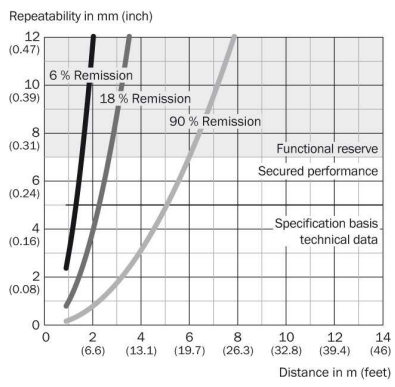
Characteristic curve 4) Fast

Fast



Characteristic curve 5) Super Fast

Super Fast



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