



Mid range distance sensors Dx50-2, DT50-2 Pro

DT50-2B215252



Type > [DT50-2B215252](#)
Part No. > [1065661](#)

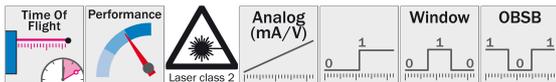


At a glance

- Measuring range up to 10 m on black targets and up to 30 m on white targets within a compact housing
- Output rate up to 3,000/s
- Repeatability: 0.5 mm to 5 mm
- Reliable, patented HDDM™ time-of-flight technology
- Withstands extreme temperatures from -40 °C to +65 °C thanks to rugged metal housing
- Shape comparison integrated in sensor
- IO-Link, analog and switching output
- Display with intuitive menu structure and easy teach option or WiFi for configuration with the SOPASair app
- Enclosure rating IP 65 and IP 67

Your benefits

- A wide measuring range and a compact housing increase the number of application possibilities
- Very high throughput thanks to a high measuring frequency
- Precise and reliable measurement regardless of object color improves uptime and process quality
- Withstands harsh ambient conditions thanks to ruggedness, a wide operating temperature, and ambient light immunity
- Integrated shape comparison for straightforward checking and sorting of objects
- Fast and easy commissioning via intuitive menu structure, easy teach option, WiFi, multifunctional input, or IO-Link saves time
- Full process control with IO-Link from commissioning to maintenance
- Three switching modes provide a simple solution for demanding applications



Performance

Measuring range ^{1), 2)} :	200 mm ... 10,000 mm, 6 % remission 200 mm ... 17,000 mm, 18 % remission 200 mm ... 30,000 mm, 90 % remission
Resolution:	0.1 mm
Repeatability ^{3), 4), 5)} :	0.5 mm ... 5 mm
Accuracy ⁶⁾ :	± 7 mm
Response time ^{7), 8)} :	0.83 ms/3.33 ms/8.33 ms/25 ms/75 ms
Switching frequency ^{9), 10)} :	1,000 Hz/250 Hz/100 Hz/33 Hz/11 Hz
Light source ¹¹⁾ :	Laser, Red

Typ. light spot size (distance):	10 mm x 10 mm (at 10 m)
Additional function:	Set speed: Super Fast ... Super Slow Reset to factory default Teach-in, scaling and inversion of analog output Teach-in, scaling and inversion of switching output Multifunctional input: laser off/external teach/deactivated Switch-off or lock display Output Q ₂ , selectable: 4 mA ... 20 mA/0 V ... 10 V/switching output/Q ₁ not/ deactivated Easy teach option Shape comparison: based on the distance measured over a period of time IO-Link V1.1 (incl. data storage) Hold measurement value Switching mode: Distance to Object (DtO)/switching window/object between sensor and background (ObSB)
Laser class:	2 (EN 60825-1)
Laser service life (MTTF at 25 °C):	100,000 h
Output time ¹²⁾ , ¹³⁾ :	0.33 ms/1.33 ms/3.33 ms/10 ms/30 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 ($\leq 450 \Omega$)/1 x 0 V ... 10 V ($\geq 50 \text{ k}\Omega$)/-
Resolution analog output:	16 bit
Output type ²⁾ , ³⁾ , ⁴⁾ :	1 x/2 x complementary/2 x push-pull: PNP/NPN (100 mA), IO-Link
Hysteresis:	0 mm ... 29,950 mm
Data interface:	IO-Link
Multifunctional input (MF) ⁵⁾ :	1 x
IO-Link:	✓
Function (IO-Link):	Process data, parameterization, diagnosis, data storage
Data transmission rate (IO-Link):	230.4 kbit/s
Protocol (IO-Link):	V1.1
¹⁾ ⁴⁾ Output Q ₂ , selectable: 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 ⁵⁾ Response time $\leq 60 \text{ ms}$	

Mechanics/electronics

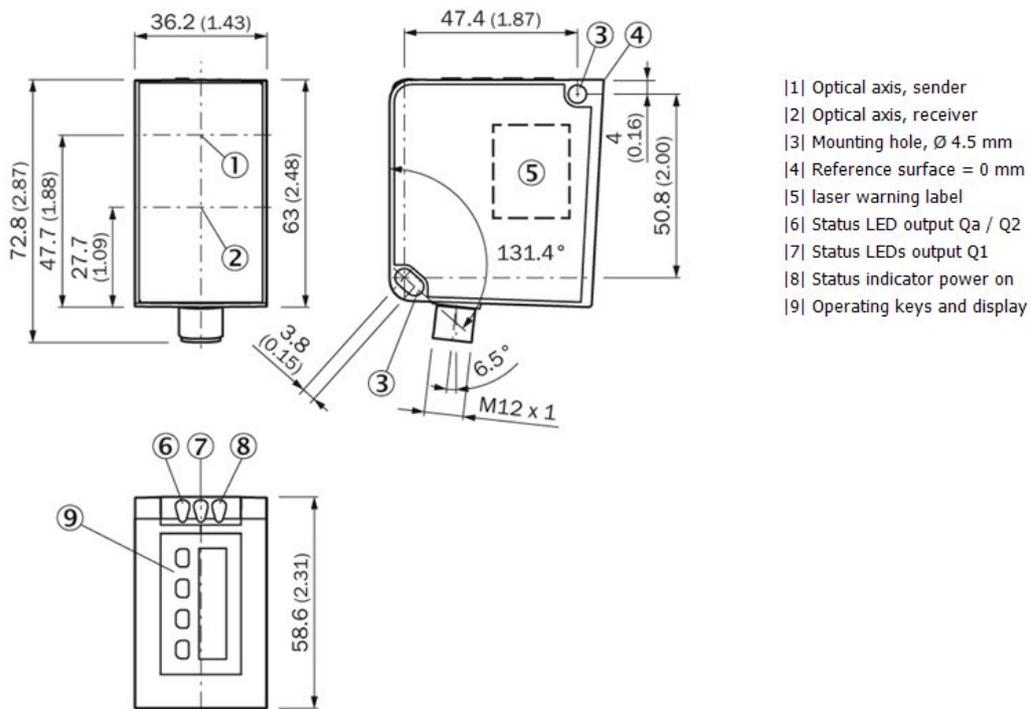
Supply voltage V _s ¹⁾ , ²⁾ :	DC 10 V ... 30 V
Ripple ³⁾ :	$\leq 5 \text{ Vpp}$
Power consumption ⁴⁾ , ⁵⁾ :	$\leq 1.7 \text{ W}$
Initialization time:	$\leq 300 \text{ ms}$
Warm-up time:	$\leq 15 \text{ min}$
Housing material:	Die-cast zinc acrylic glass (PMMA)
Connection type:	Male connector, M12, 5-pin
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 $\geq 0^\circ\text{C}$ ⁵⁾ Without load	

Ambient data

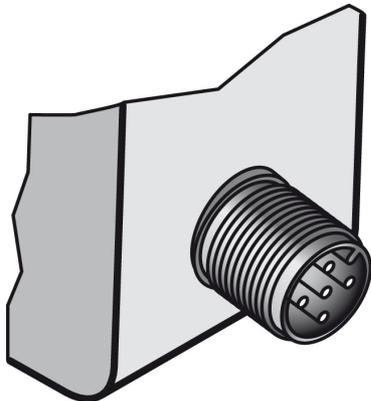
Enclosure rating:	IP 65, IP 67
Protection class:	III
Ambient temperature ¹⁾ :	Operation: -40 ... +65 °C, Storage: -40 ... +75 °C
Vibration resistance:	EN 60068-2-6/EN 60068-2-64
Shock resistance:	EN 60068-2-27
Typ. Ambient light immunity:	40 klx

¹⁾ $U_V \leq 24 \text{ V}$

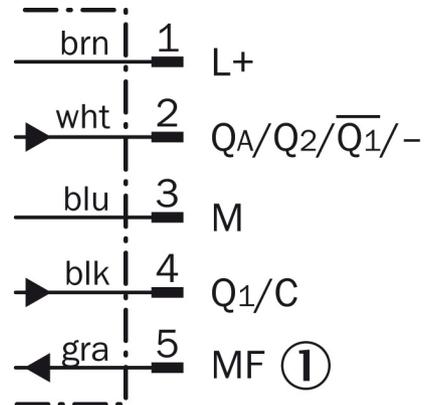
Dimensional drawing



Connection type

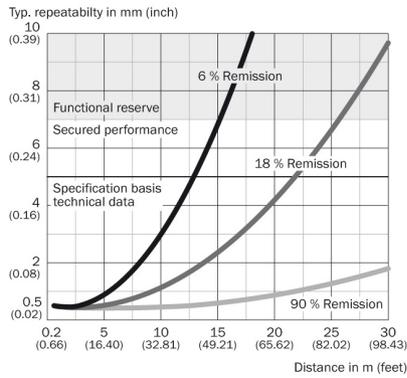


Connection diagram



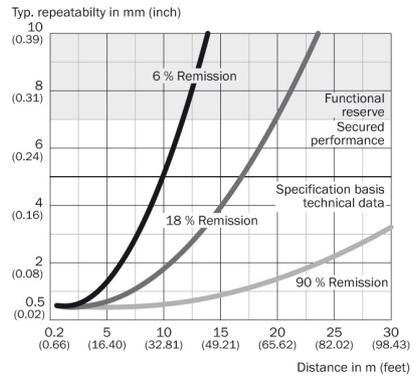
Characteristic curve 1) Super Slow

Super Slow



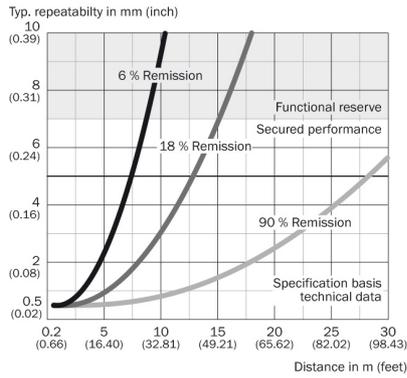
Characteristic curve 2) Slow

Slow



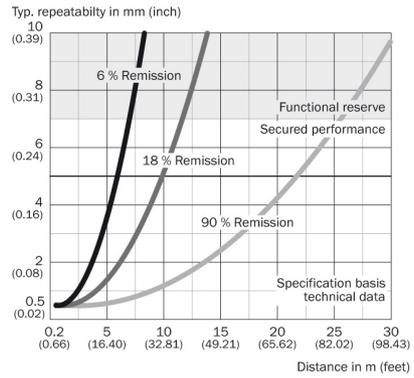
Characteristic curve 3) Medium

Medium



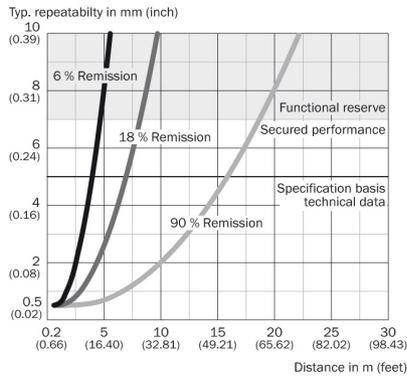
Characteristic curve 4) Fast

Fast



Characteristic curve 5) Super Fast

Super Fast



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