



Mid range distance sensors  
Dx50, DS50

DS50-P1122



**Model Name** > [DS50-P1122](#)  
**Part No.** > [1047405](#)

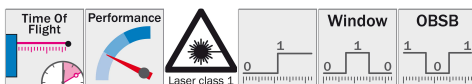


**At a glance**

- HDDM™ technology provides the best reliability, safety to ambient light and price/performance ratio
- Reliable detection up to 10 m
- High switching repeatability (2.5 mm)
- Two discrete outputs with up to 50 Hz switching frequency
- Three switching modes: “Distance to Object,” “Window” or “Object Between Sensor and Background” - detect any object
- Immune to cross talk for use with multiple sensors
- Superior background suppression

**Your benefits**

- Precise detection at a safe distance reduces scrap and increases throughput
- Immune to any type of ambient light - allows for use in optically challenging environments
- Widest temperature range allows for outdoor use without additional cooling or heating
- Intuitive setup via display or remote teach reduces installation time and costs
- Red light and an optional alignment bracket reduces installation time
- Metal housing withstands harsh environments, saving replacement costs
- Dx50 product family is based on a common platform, which offers multiple performance levels, making it easy to accommodate future changes
- Low investment costs and high performance guarantee short return on investment



**Performance**

Measurement range:	200 mm ... 10,000 mm, 90 % remission 200 mm ... 4,000 mm, 6 % remission 200 mm ... 6,000 mm, 18 % remission
Resolution <sup>1)</sup> :	1 mm
Repeatability <sup>2)</sup> , <sup>3)</sup> , <sup>4)</sup> :	5 mm/2.5 mm
Accuracy <sup>5)</sup> , <sup>6)</sup> :	± 10 mm
Response time <sup>7)</sup> :	20 ms/100 ms
Switching frequency <sup>8)</sup> :	25 Hz/5 Hz
Light source:	Laser, red
Typ. light spot size (distance):	15 mm x 15 mm (10 m)

Additional function:	Switch-off display Unique measurement value Set switching mode: Distance to object (DtO)/switching window (Wnd)/ Object Between Sensor and Background (ObSB) Set moving average: fast/slow Set hysteresis Crosstalk safety Lock user interface Reset to factory default Teach-in, scaling and inversion of switching output Multifunctional input: laser off/external teach/deactivated
Laser class:	1 (EN 60825-1) <sup>9)</sup>
Laser service life (MTTF at 25 °C):	100,000 h
1) 5) Related to distance value on the display 2) Equivalent to 1 $\sigma$ 3) 6 % ... 90 % remission 4) 7) 8) Dependent on the set average: fast/slow 6) 90 % remission 9)	
Wavelength: 658 nm; max. output: 120 mW; pulse duration: 2.5 ns; pulse repetition rate: 1/400	

## Interfaces

Output type <sup>1), 2)</sup> :	2 x PNP (100 mA)
Hysteresis:	1 mm ... 9,999 mm
Multifunctional input (MF) <sup>3), 4)</sup> :	1 x
1) Output Q short-circuit protected 2) PNP: HIGH = $V_S$ - (< 2.5 V)/LOW = 0 V 3) Response time $\leq$ 60 ms 4) PNP: HIGH = $V_S$ / LOW = $\leq$ 2.5 V	

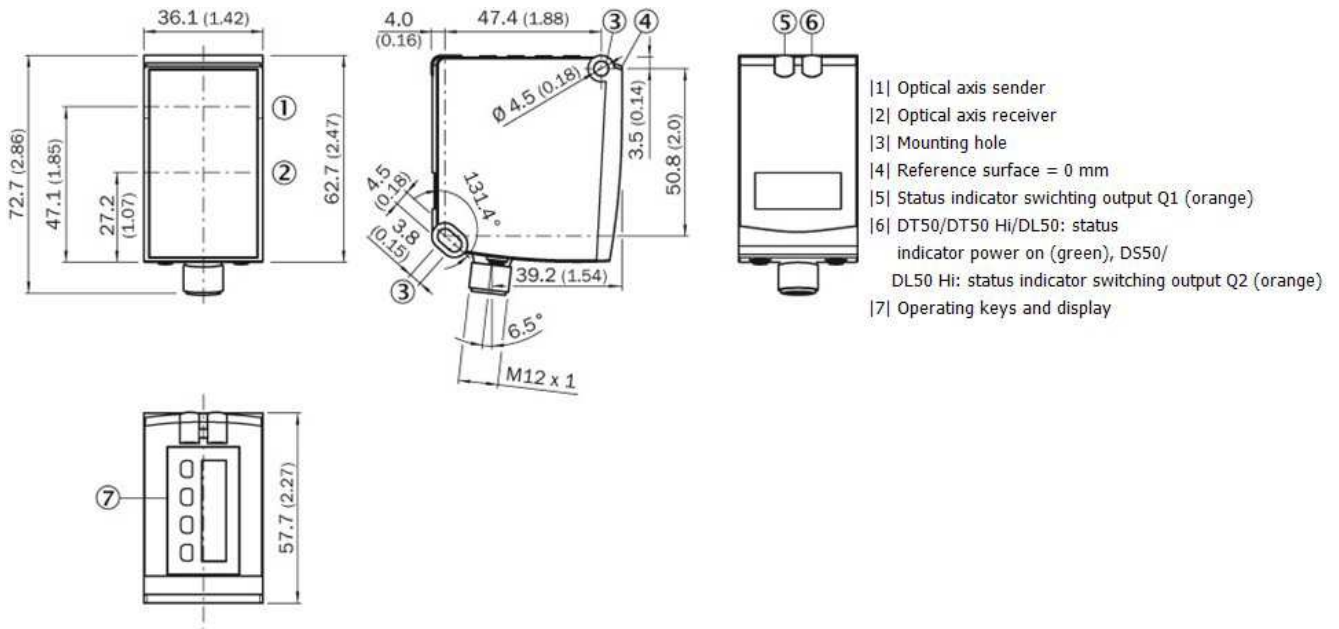
## Mechanics/electronics

Supply voltage $V_S$ <sup>1)</sup> :	DC 10 V ... 30 V
Ripple <sup>2)</sup> :	$\leq$ 5 Vpp
Power consumption <sup>3)</sup> :	$\leq$ 1.85 W
Initialization time:	$\leq$ 350 ms
Warm-up time:	$\leq$ 15 min
Housing material:	Die-cast zinc housing (ZNAL4CU1) acrylic glass (PMMA)
Connection type:	Male connector, M12, 5-pin
Indication:	2 x LED, LC display
Weight:	200 g
1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A 2) May not fall short of or exceed $V_S$ tolerances 3) Without load	

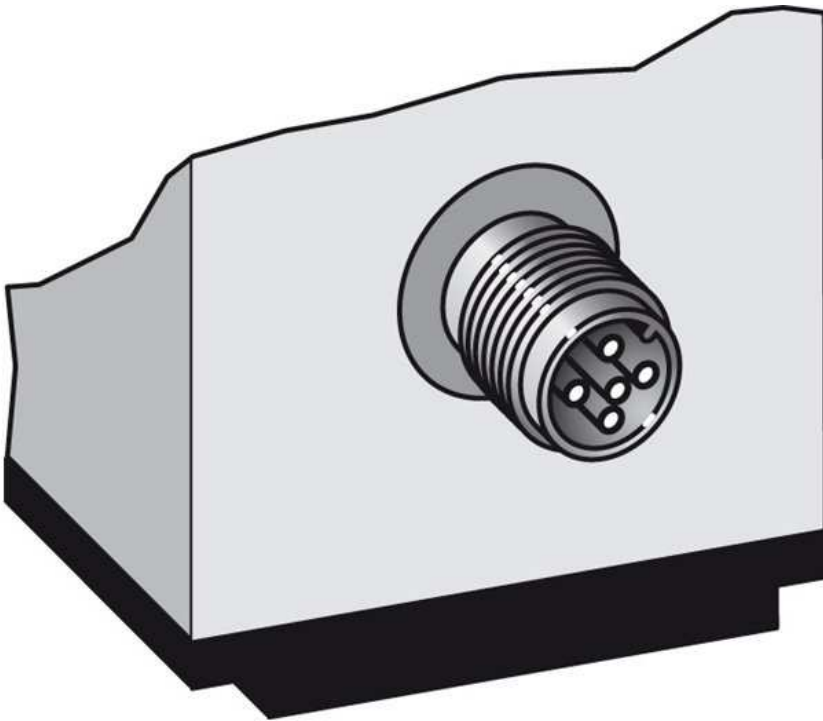
## Ambient data

Enclosure rating:	IP 65
Protection class:	III
Ambient temperature:	Operation: -30 ... +65 °C, Storage: -40 ... +75 °C
Max. rel. humidity (not condensing):	$\leq$ 95 %
Vibration resistance:	EN 60068-2-6/EN 60068-2-64
Shock resistance:	EN 60068-2-27
Typ. ambient light safety:	40 klx

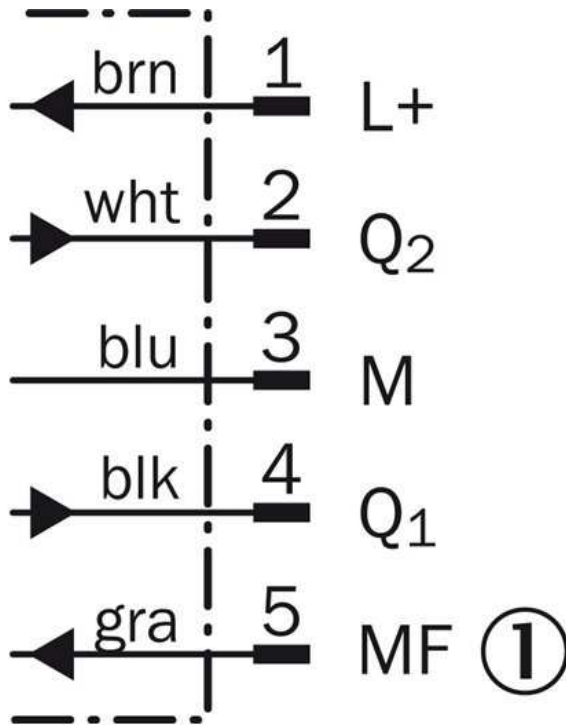
## Dimensional drawing



## Connection type



Connection diagram



[1] Multifunctional input (MF)

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