



Mid range distance sensors Dx50, DL50 Hi

DL50-P2228



Model Name > [DL50-P2228](#)
Part No. > [1058986](#)

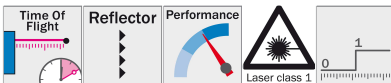


At a glance

- HDDM™ technology provides the best reliability, safety to ambient light and price/performance ratio
- Up to 50 m range on diamond grade reflector
- World's smallest sensor for high precision positioning with SSI or RS-422 interfaces
- Highest repeatability in its class, with 0.5 mm
- Fast output rate - an updated value every 2.5 ms
- Immune to cross talk for use with multiple sensors
- Superior background suppression

Your benefits

- Precise positioning enables greater speed and accuracy, which increases throughput
- Highest performance at reasonable investment costs guarantee a short return on investment
- 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 accessories
- SSI or RS-422 interfaces allow a fast and easy integration into any control or positioning application
- Red light and an optional alignment bracket reduces installation time
- Metal housing withstands harsh environments, saving replacement costs
- World's smallest sensor for high precision positioning for use in applications with limited space



Performance

Measurement range ¹⁾ :	200 mm ... 50,000 mm, on reflective tape "Diamond Grade"
Resolution:	0.1 mm
Repeatability ²⁾ : ³⁾ : ⁴⁾ :	0.5 mm/0.3 mm/0.25 mm
Accuracy ⁵⁾ :	± 3 mm
Response time ⁶⁾ : ⁷⁾ :	10 ms/40 ms/160 ms
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 moving average fast/medium/slow Set hysteresis Crosstalk safety Switching mode: distance to object (DtO) Serial data output: continuous, on request Lock user interface Reset to factory default Set data transmission rate: 19,200, 38,400, 57,600, 115,200 bps Set distance resolution for the SSI data output: 0.0625 mm/0.1 mm/ 0.125 mm/1 mm Teach-in, scaling and inversion of switching output Multifunctional in- and output: laser off, external teach, switching output 2, inactive
Laser class:	1 (EN 60825-1) ⁸⁾
Laser service life (MTTF at 25 °C):	100,000 h
Output time ⁹⁾ :	2.5 ms

¹⁾ On reflective tape "Diamond Grade" ²⁾ Equivalent to 1σ ^{3) 6)} Dependent on the set average: fast/medium/slow ⁴⁾ Typical value ⁵⁾ 200 mm ... 4,000 mm: $\leq \pm 5$ mm ⁷⁾ Lateral entry of object into measuring range ⁸⁾ Wavelength: 658 nm; max. output: 80 mW; pulse duration: 2.5 ns; pulse repetition rate: 1/240 ⁹⁾ Continuous change of distance in measuring range

Interfaces

Output type ^{1), 2), 3)} :	2 x / 1 x PNP (100 mA)
Hysteresis:	1 mm ... 1,000 mm
Data interface:	SSI
Multifunctional input (MF) ^{4), 5), 6)} :	- / 1 x

¹⁾ Output Q short-circuit protected ²⁾ PNP: HIGH = $V_S - (< 2.5 V)$ / LOW = 0 V ^{3) 4)} Dependent on the set function MF: switching output 2 / laser off, external teach ⁵⁾
Response time ≤ 60 ms ⁶⁾ PNP: HIGH = V_S / LOW = ≤ 2.5 V

Mechanics/electronics

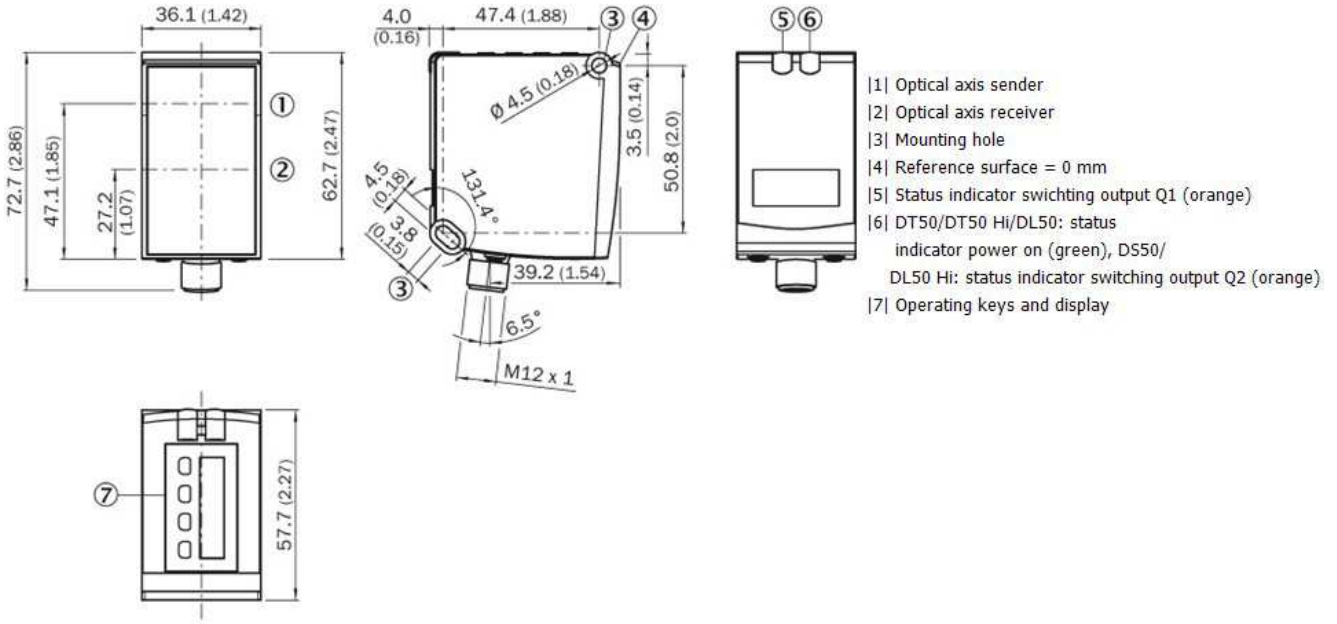
Supply voltage V_S ¹⁾ :	DC 10 V ... 30 V
Ripple ²⁾ :	≤ 5 Vpp
Power consumption ³⁾ :	≤ 2.1 W
Initialization time:	≤ 250 ms
Warm-up time:	≤ 15 min
Housing material:	Die-cast zinc housing (ZNAL4CU1) acrylic glass (PMMA)
Connection type:	Male connector, M12, 8-pin
Indication:	2 x LED, LC display
Weight:	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

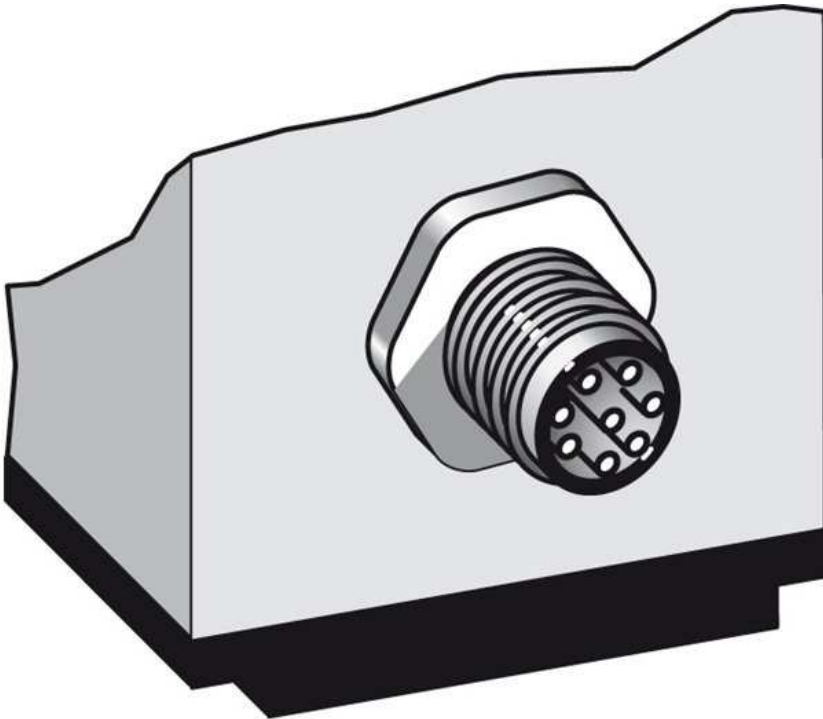
Ambient data

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

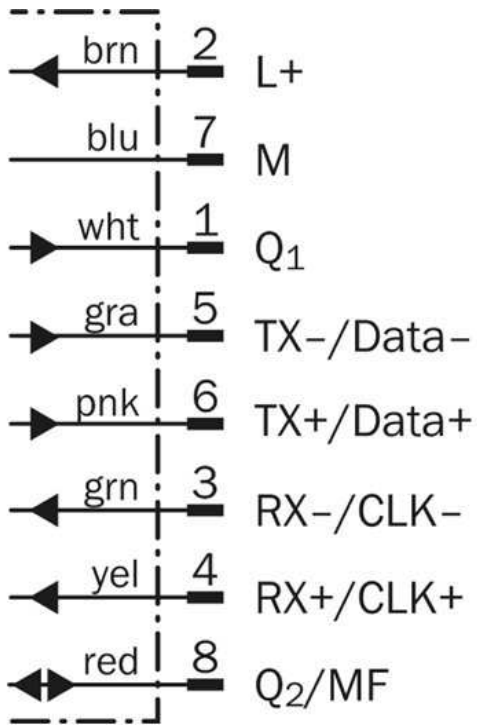
Dimensional drawing



Connection type



Connection diagram



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