



Mid range distance sensors Dx50, DT50

DT50-N1114



Model Name > [DT50-N1114](#)
Part No. > [1047582](#)



At a glance

- HDDM™ technology provides the best reliability, safety to ambient light and price/performance ratio
- Reliable measurement and detection up to 10 m
- Wide choice of models: 4 mA ... 20 mA or 0 V .. 10 V; PNP or NPN and laser class 1 or 2
- High switching repeatability (2.5 mm)
- Display with intuitive operating concept
- Tough die-cast zinc metal housing
- Wide operating temperature range from -30 °C to +65 °C

Your benefits

- Wide measurement range allows easy and fast integration in any production environment
- Intuitive setup via display or remote teach reduces installation time and costs
- Widest temperature range allows for outdoor use without additional cooling or heating accessories
- Immune to any type of ambient light - allows for use in optically challenging environments
- Increased process stability is achieved thanks to the small black/white shift
- Metal housing withstands harsh environments, saving replacement costs
- Low investment costs and high performance guarantee quick return on investment
- Dx50 family is based on a common platform, which offers multiple performance levels, making it easy to accommodate future changes



Performance

Measuring range:	200 mm ... 10,000 mm, 90 % remission 200 mm ... 4,000 mm, 6 % remission 200 mm ... 6,500 mm, 18 % remission
Resolution:	1 mm
Repeatability ^{1), 2), 3)} :	5 mm/2.5 mm
Accuracy ⁴⁾ :	± 10 mm
Response time ^{5), 6)} :	20 ms/30 ms
Output rate ⁷⁾ :	4 ms
Light source:	Laser, red
Laser protection class ⁸⁾ :	2 (EN 60825-1)
Typ. light spot size (distance):	15 mm x 15 mm (10 m)

Additional function:

Switch-off display
Teach-in of analog output
Invertible analog output
Teach-in of switching output
Inverted switching output
Set moving average: fast/slow
Set hysteresis
Scaling of analog outputs
Set levels of switching outputs
Lock user interface
Reset to factory default
Multifunctional input: laser off/external teach/inactive
Switching mode Distance to object (DtO)

Service life laser (MTTF at 25 °C): 100,000 h

¹⁾ Equivalent to 1σ ²⁾ 6 % ... 90 % remission ^{3) 5)} Dependent on the set average: fast/slow ⁴⁾ 90 % remission ⁶⁾ Lateral entry of object into measuring range ⁷⁾
Continuous change of distance in measuring range ⁸⁾ Wavelength: 658 nm; max. output: 180 mW; pulse duration: 5 ns; pulse repetition rate: 1/200

Interfaces

Analog output: 1 x 0 V ... 10 V ($\geq 5\text{ k}\Omega$)

Resolution analog output: 16 bit

Output type: 1 x NPN (100 mA) ^{1) 2)}

Multifunctional input ^{3) 4)}: 1 x NPN

Hysteresis: 10 mm ... 1,000 mm

¹⁾ Output Q short-circuit protected ²⁾ NPN: HIGH = $< 2.5\text{ V}$ /LOW = V_S ³⁾ Response time $\leq 15\text{ ms}$ ⁴⁾ NPN: HIGH = $\leq 2.5\text{ V}$ /LOW = V_S

Mechanics/electronics

Supply voltage V_S ^{1) 2)}: DC 15 V ... 30 V

Ripple ³⁾: $\leq 5\text{ Vpp}$

Power consumption ⁴⁾: $\leq 2.1\text{ W}$

Initialization time: $\leq 250\text{ ms}$

Warm-up time: $\leq 15\text{ min}$

Housing material: Die-cast zinc housing (ZNAL4CU1)
acrylic glass (PMMA)

Connection type: 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⁾ For DT50-xxx4: $V_S > 15\text{ V}$ ³⁾ May not fall short of or exceed V_S tolerances ⁴⁾ Without load

Ambient data

Enclosure rating: IP 65

Protection class: III

Ambient temperature: Operation: $-30 \dots 65\text{ }^\circ\text{C}$, Storage: $-40 \dots 75\text{ }^\circ\text{C}$

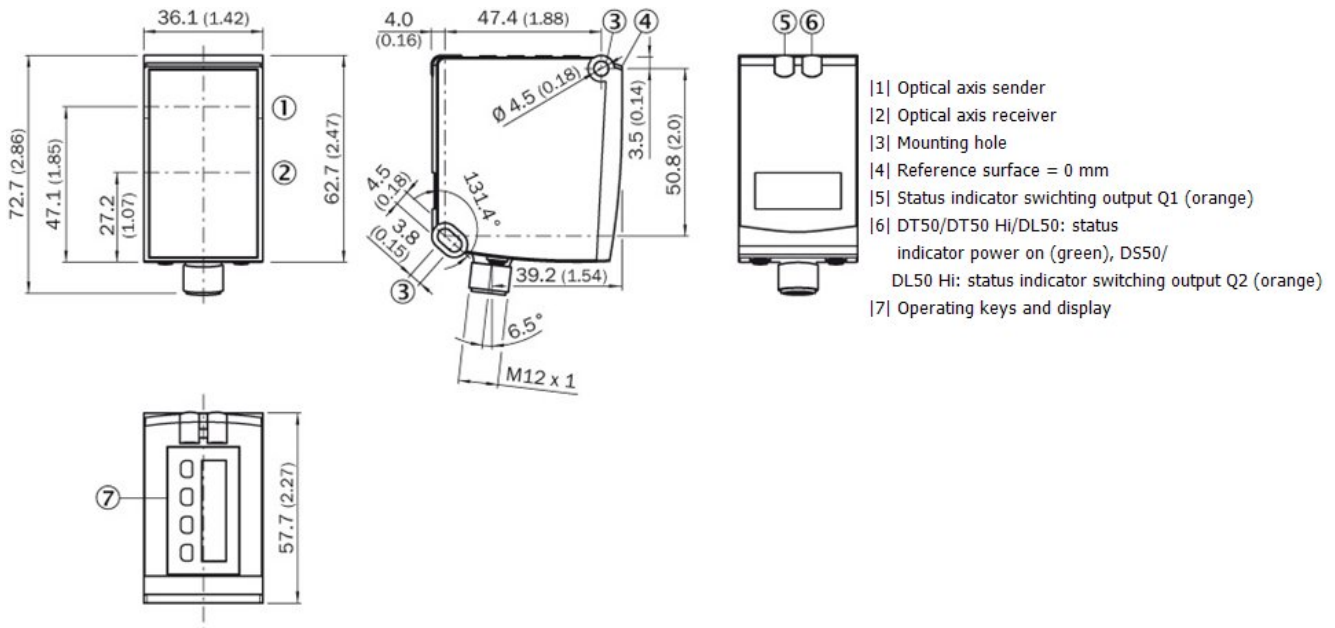
Max. rel. humidity (not condensing): $\leq 95\%$

Vibration resistance: EN 60068-2-6/-2-64

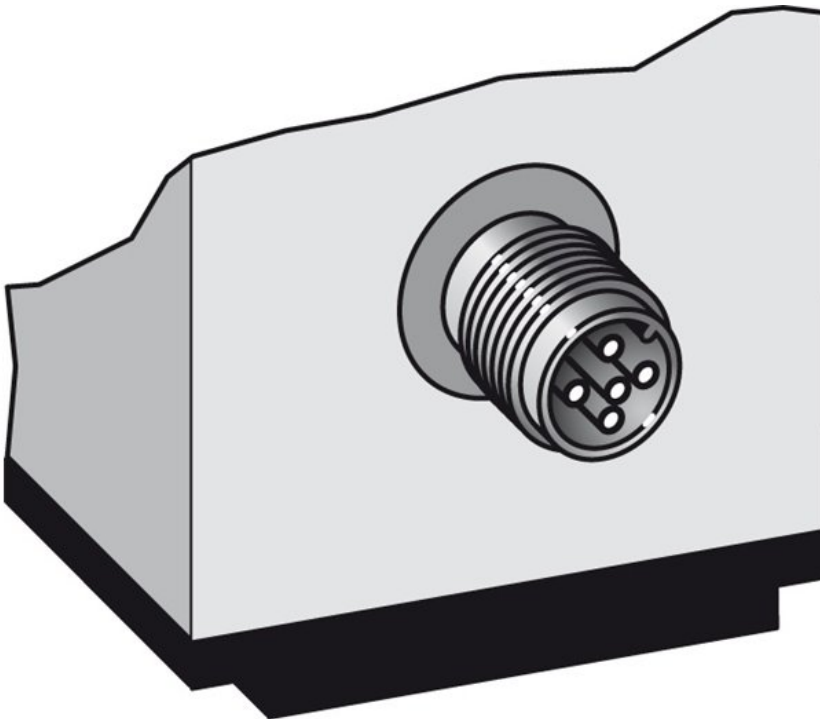
Shock resistance: EN 60068-2-27

Typ. ambient light safety: 40 klx

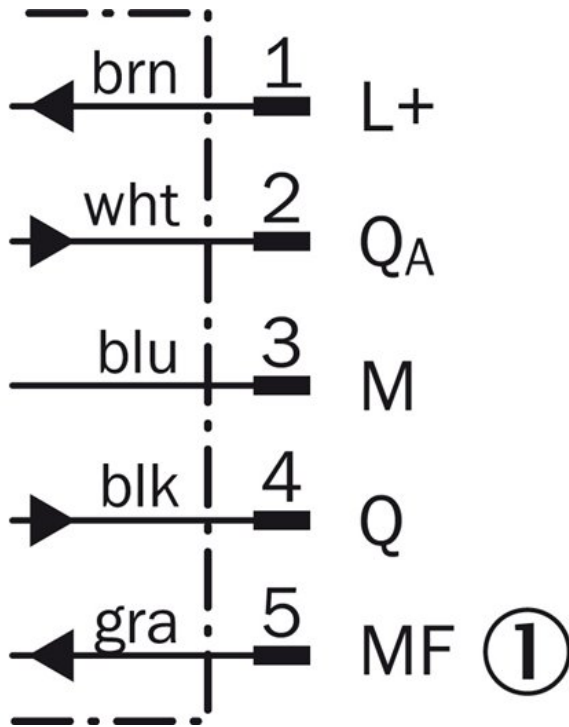
Dimensional drawing



Connection type



Connection diagram



[1] Multifunctional input

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