



## Mid range distance sensors Dx50, DT50

DT50-P1124



**Model Name** > [DT50-P1124](#)  
**Part No.** > [1047616](#)



#### 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<br>200 mm ... 2,500 mm, 6 % remission<br>200 mm ... 5,000 mm, 18 % remission |
| Resolution:                            | 1 mm                                                                                                              |
| Repeatability <sup>1), 2), 3)</sup> :  | 5 mm/2.5 mm                                                                                                       |
| Accuracy <sup>4)</sup> :               | ± 10 mm                                                                                                           |
| Response time <sup>5), 6)</sup> :      | 20 ms/30 ms                                                                                                       |
| Output rate <sup>7)</sup> :            | 4 ms                                                                                                              |
| Light source:                          | Laser, red                                                                                                        |
| Laser protection class <sup>8)</sup> : | 1 (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

<sup>1)</sup> Equivalent to 1  $\sigma$  <sup>2)</sup> 6 % ... 90 % remission <sup>3) 5)</sup> Dependent on the set average: fast/slow <sup>4)</sup> 90 % remission <sup>6)</sup> Lateral entry of object into measuring range <sup>7)</sup>  
Continuous change of distance in measuring range <sup>8)</sup> Wavelength: 658 nm; max. output: 120 mW; pulse duration: 2.5 ns; pulse repetition rate: 1/400

## Interfaces

Analog output: 1 x 0 V ... 10 V ( $\geq 5 \text{ k}\Omega$ )  
Resolution analog output: 16 bit  
Output type: 1 x PNP (100 mA) <sup>1) 2)</sup>  
Multifunctional input <sup>3) 4)</sup>: 1 x PNP  
Hysteresis: 10 mm ... 1,000 mm

<sup>1)</sup> Output Q short-circuit protected <sup>2)</sup> PNP: HIGH =  $V_S - (< 2.5 \text{ V})$  / LOW = 0 V <sup>3)</sup> Response time  $\leq 15 \text{ ms}$  <sup>4)</sup> PNP: HIGH =  $V_S$  / LOW =  $\leq 2.5 \text{ V}$

## Mechanics/electronics

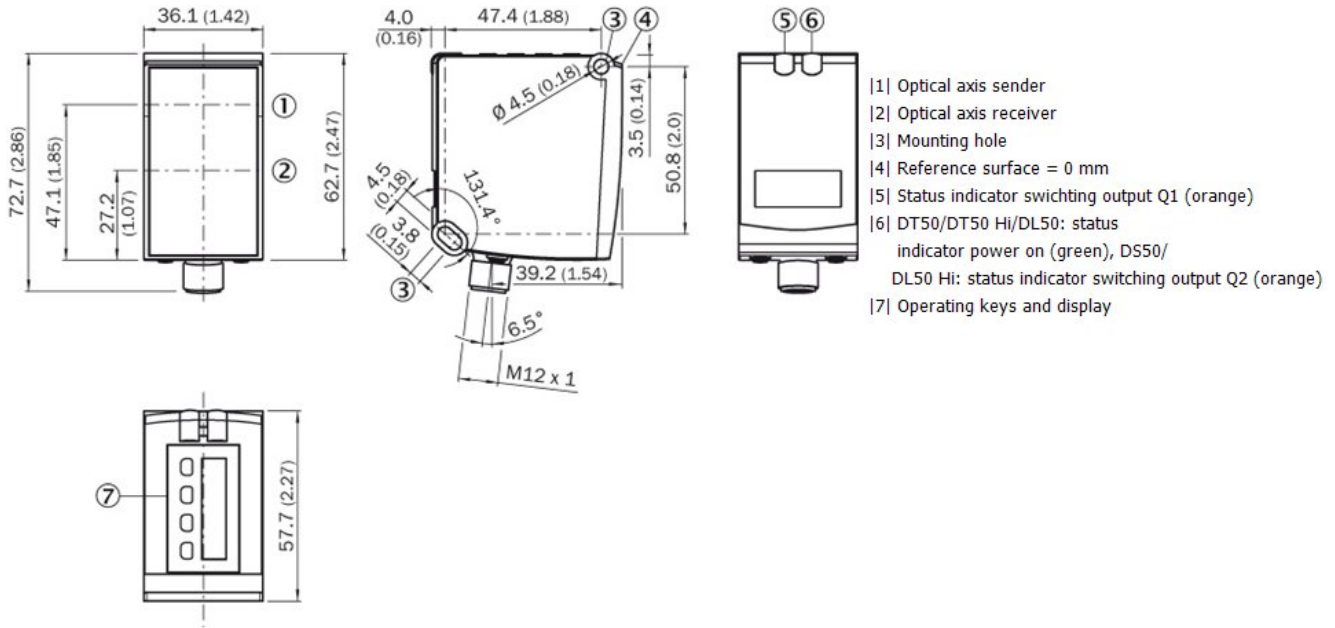
Supply voltage  $V_S$  <sup>1) 2)</sup>: DC 15 V ... 30 V  
Ripple <sup>3)</sup>:  $\leq 5 \text{ Vpp}$   
Power consumption <sup>4)</sup>:  $\leq 2.1 \text{ W}$   
Initialization time:  $\leq 250 \text{ ms}$   
Warm-up time:  $\leq 15 \text{ min}$   
Housing material: Die-cast zinc housing (ZNAL4CU1)  
acrylic glass (PMMA)  
Connection type: Connector M12, 5-pin  
Indication: 2 x LED, LC display  
Weight: 200 g

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network, max. 8 A <sup>2)</sup> For DT50-xxxx4:  $V_S > 15 \text{ V}$  <sup>3)</sup> May not fall short of or exceed  $V_S$   
tolerances <sup>4)</sup> Without load

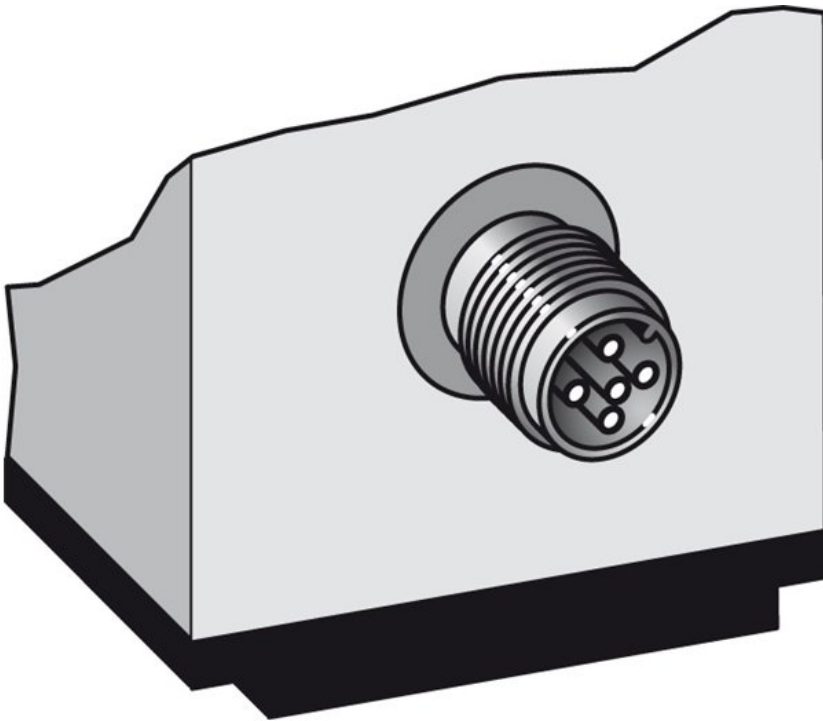
## Ambient data

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/-2-64  
Shock resistance: EN 60068-2-27  
Typ. ambient light safety: 40 klx

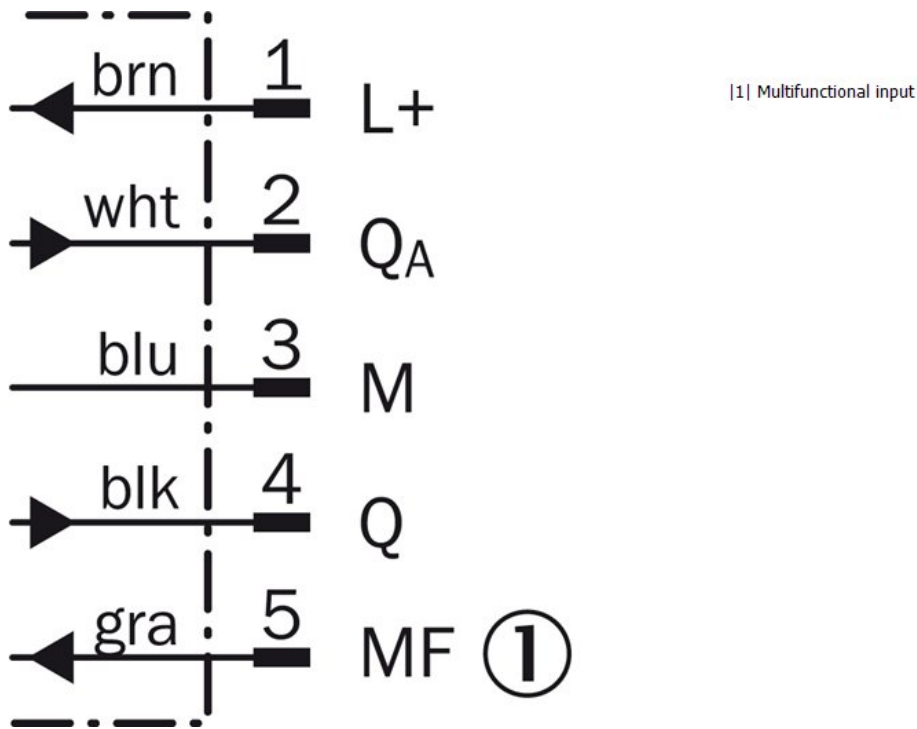
## Dimensional drawing



## Connection type



Connection diagram



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