



DT50-P1113

Dx50

MID RANGE DISTANCE SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|------------|----------|
| DT50-P1113 | 1044369 |

Other models and accessories → www.sick.com/Dx50



Detailed technical data

Mechanics/electronics

| | |
|--|-----------------------------------|
| Supply voltage V_s | DC 10 V ... 30 V ^{1) 2)} |
| Ripple | $\leq 5 V_{pp}$ ³⁾ |
| Power consumption | $\leq 2.1 W$ ⁴⁾ |
| Initialization time | $\leq 250 ms$ |
| Warm-up time | $\leq 15 min$ |
| Housing material | Metal (zinc diecast) |
| Window material | Plastic (PMMA) |
| Connection type | Male connector, M12, 5-pin |
| Indication | LC display, 2 x LED |
| Weight | 200 g |
| Dimensions (W x H x D) | 36.1 mm x 62.7 mm x 57.7 mm |
| Enclosure rating | IP65 |
| Protection class | III |

¹⁾ Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

²⁾ For DT50-xxx4: $V_s > 15 V$.

³⁾ May not fall short of or exceed V_s tolerances.

⁴⁾ Without load.

Performance

| | |
|------------------------|---|
| Measuring range | 200 mm ... 10,000 mm, 90 % remission 200 mm ... 6,500 mm, 18 % remission 200 mm ... 4,000 mm, 6 % remission |
|------------------------|---|

¹⁾ Equivalent to 1σ .

²⁾ 6 % ... 90 % remission.

³⁾ Dependent on the averaging setting: fast/slow.

⁴⁾ 90 % remission.

⁵⁾ Lateral entry of the object into the measuring range.

⁶⁾ Continuous change of distance in measuring range.

⁷⁾ Wavelength: 658 nm; max. output: 180 mW; pulse duration: 5 ns; duty cycle: 1/200.

| | |
|--|--|
| Target | Natural objects |
| Resolution | 1 mm |
| Repeatability | ≥ 2.5 mm ^{1) 2) 3)} |
| Accuracy | ± 10 mm ⁴⁾ |
| Response time | 20 ms ... 30 ms, 20 ms / 30 ms ^{3) 5)} |
| Output time | ≥ 4 ms ⁶⁾ |
| Light source | Laser, red visible red light |
| Laser class | 2 (IEC 60825-1:2014, EN 60825-1:2014) ⁷⁾ |
| Typ. light spot size (distance) | 15 mm x 15 mm (10 m) |
| Additional function | Set moving average: fast/slow, switching mode: distance to object (DtO), teach-in, scaling and inversion of digital output, set hysteresis, teach-in, scaling and inversion of analog output, Multifunctional input: laser off / external teach / deactivated, switch-off display, reset to factory default, lock user interface |
| Average laser service life (at 25 °C) | 100,000 h |

¹⁾ Equivalent to 1 σ .

²⁾ 6 % ... 90 % remission.

³⁾ Dependent on the averaging setting: fast/slow.

⁴⁾ 90 % remission.

⁵⁾ Lateral entry of the object into the measuring range.

⁶⁾ Continuous change of distance in measuring range.

⁷⁾ Wavelength: 658 nm; max. output: 180 mW; pulse duration: 5 ns; duty cycle: 1/200.

Interfaces

| | | |
|-----------------------------------|------------------------------|--------------------------------|
| Digital output | Number | 1 ^{1) 2)} |
| | Type | PNP |
| | Maximum output current I_A | ≤ 100 mA |
| Analog output | Number | 1 |
| | Type | Current output |
| | Current | 4 mA ... 20 mA, ≤ 300 Ω |
| | Resolution | 16 bit |
| Multifunctional input (MF) | | 1 x ^{3) 4)} |
| Hysteresis | | 10 mm ... 1,000 mm |

¹⁾ Output Q short-circuit protected.

²⁾ PNP: HIGH = $V_S - (< 2.5 V)$ / LOW = 0 V.

³⁾ Response time ≤ 15ms.

⁴⁾ PNP: HIGH = V_S / LOW = ≤ 2.5 V.

Ambient data

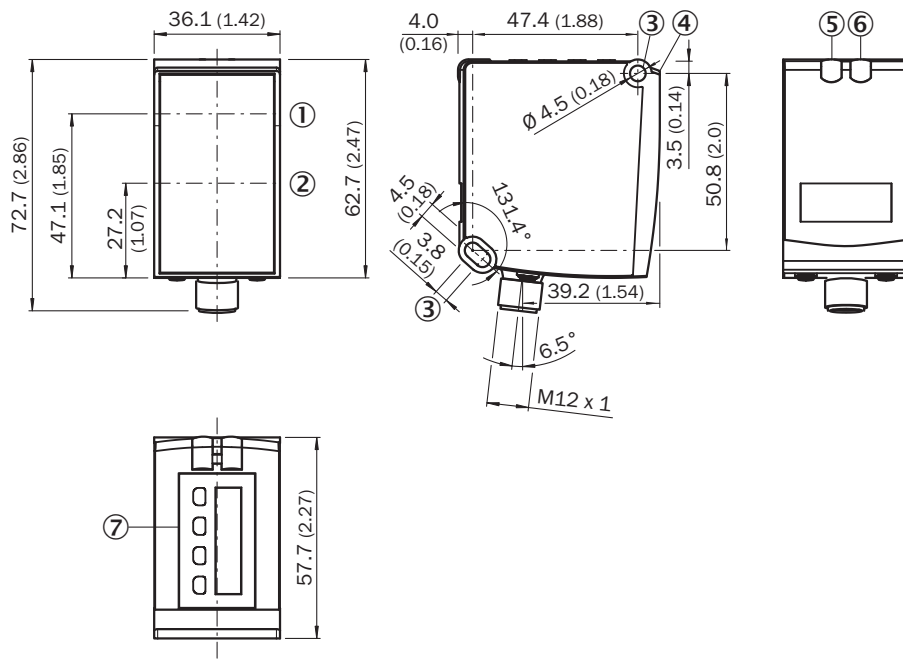
| | |
|--|--|
| Ambient temperature, operation | -30 °C ... +65 °C -30 °C ... +80 °C, operation with 2 cooling plates -30 °C ... +140 °C, operation with 2 cooling plates and protection filter |
| Ambient temperature, storage | -40 °C ... +75 °C |
| Max. rel. humidity (not condensing) | ≤ 95 % |
| Typ. Ambient light immunity | 40,000 lx |

| | |
|-----------------------------|-----------------------------|
| Vibration resistance | EN 60068-2-6, EN 60068-2-64 |
| Shock resistance | EN 60068-2-27 |

Classifications

| | |
|-----------------------|----------|
| eCl@ss 5.0 | 27270801 |
| eCl@ss 5.1.4 | 27270801 |
| eCl@ss 6.0 | 27270801 |
| eCl@ss 6.2 | 27270801 |
| eCl@ss 7.0 | 27270801 |
| eCl@ss 8.0 | 27270801 |
| eCl@ss 8.1 | 27270801 |
| eCl@ss 9.0 | 27270801 |
| eCl@ss 10.0 | 27270801 |
| eCl@ss 11.0 | 27270801 |
| eCl@ss 12.0 | 27270916 |
| ETIM 5.0 | EC001825 |
| ETIM 6.0 | EC001825 |
| ETIM 7.0 | EC001825 |
| ETIM 8.0 | EC001825 |
| UNSPSC 16.0901 | 41111613 |

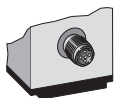
Dimensional drawing (Dimensions in mm (inch))



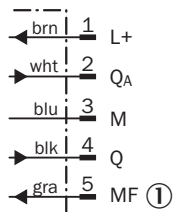
- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Fixing hole
- ④ Reference surface = 0 mm
- ⑤ Status indicator digital output Q₁ (orange)
- ⑥ DT50/DT50 Hi/DL50: Status display for supply voltage active (green), DS50/DL50 Hi: Status display of digital output Q₂ (orange)
- ⑦ Control elements and display

Connection type

Male connector M12, 5-pin



Connection diagram



- ① Multifunctional input (MF)

Recommended accessories

Other models and accessories → www.sick.com/Dx50

| | Brief description | Type | Part no. |
|---|---|--------------------|----------|
| Plug connectors and cables | | | |
|  | Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: HIPERFACE®, PUR, halogen-free, shielded, 5 m Sensor/actuator cable | DOL-1205-W05MAC | 6041751 |
|  | Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m | YF2A15-020UB5XLEAX | 2095617 |
|  | Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m | YF2A15-020VB5XLEAX | 2096239 |
|  | Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m | YG2A15-020UB5XLEAX | 2095772 |
|  | Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m | YG2A15-020VB5XLEAX | 2096215 |

Recommended services

Additional services → www.sick.com/Dx50

| | Type | Part no. |
|--|--|----------|
| Extended warranty | | |
| <ul style="list-style-type: none"> • Product area: Identification solutions, machine vision, Distance sensors, Detection and ranging solutions • Range of services: The services correspond to the scope of the statutory manufacturer warranty (SICK general terms of delivery). • Duration: Five-year warranty from delivery date. | Extended warranty for a total of five years from delivery date | 1680671 |

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

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