



DME4000-312

DME4000

TIME-OF-FLIGHT SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
DME4000-312	1041950

Other models and accessories → www.sick.com/DME4000



Detailed technical data

Features

Measuring range	0.15 m ... 220 m, on "diamond grade" reflective tape
Target	Reflector
Resolution	0.05 mm ... 5 mm
Repeatability	3 mm ^{1) 2)}
Measurement accuracy	± 6 mm
Response time	6 ms
Output time	2 ms
Light source	Laser, red ³⁾ visible red light
Type of light	Visible red light
Laser class	2, complies with 21 CFR 1040.10 and 1040.11 except for the conformance according to "Laser Notice No. 50" from June 24, 2007 (IEC 60825-1:2014, EN 60825-1:2014)
Typ. light spot size (distance)	130 mm (at 70 m) 270 mm (at 150 m) 360 mm (at 220 m)
Max. movement speed	10 m/s
Safety-related parameters	MTTF _D 101 years
	DC _{avg} 0%

¹⁾ On "diamond grade" reflective tape.

²⁾ Statistical error 1 σ , environmental conditions constant, min. warm-up time 10 min.

³⁾ Average service life of 50,000 h at T_A = +25 °C.

Interfaces

PROFIBUS DP	✓
Digital output	
Number	2
Type	Push-pull: PNP/NPN
Maximum output current I_A	$\leq 100 \text{ mA}$ ^{1) 2)}
Multifunctional input (MF)	1 x MF ^{3) 4)}

¹⁾ Max. 100 nF/20 mH.

²⁾ HIGH = $> V_S - 3 \text{ V}$ / LOW = $< 2 \text{ V}$.

³⁾ HIGH = $> 12 \text{ V}$ / LOW = $< 3 \text{ V}$.

⁴⁾ Not reverse-polarity protected.

Electronics

Supply voltage U_B	DC 18 V ... 30 V, limit values
Current consumption	At 24 V DC $< 250 \text{ mA}$
Ripple	$< 5 \text{ V}_{pp}$ ¹⁾
Initialization time	1.5 s ²⁾
Indication	Display
Enclosure rating	IP65
Protection class	II ³⁾

¹⁾ May not fall short of or exceed V_S tolerances.

²⁾ After loss of reflector $< 1 \text{ s}$ at max. speed $V_{\max} < 1 \text{ m/s}$.

³⁾ Reference voltage DC 32 V.

Mechanics

Dimensions (W x H x D)	61 mm x 85 mm x 166 mm
Housing material	Metal (zinc diecast)
Window material	Glass
Weight	Approx. 1,650 g
Connection type	Male connector, 2 x M12, 5-pin, B-coded, 1 x M16, 8-pin, B-coded

Ambient data

Ambient temperature, operation	-10 °C ... +55 °C -10 °C ... +75 °C, operation with cooling case
Ambient temperature, storage	-25 °C ... +75 °C
Effect of air pressure	0.3 ppm/hPa
Effect of air temperature	1 ppm/K
Temperature drift	Typ. 0.1 mm/K
Typ. Ambient light immunity	$\leq 40,000 \text{ lx}$
Mechanical load	Shock: (EN 600 68-2-27 / -2-29) Sine: (EN 600 68-2-6) Noise: (EN 600 68-2-64)
Electromagnetic compatibility (EMC)	EN 61000-6-2, EN 55011: Class B

Certificates

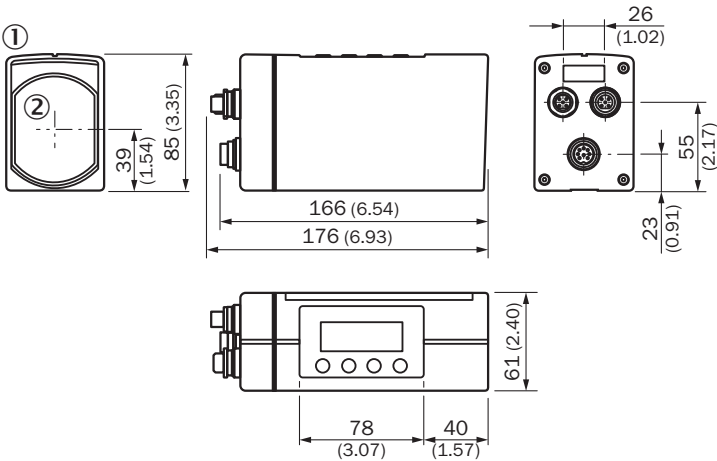
EU declaration of conformity	✓
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UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓

Classifications

ECLASS 5.0	27270801
ECLASS 5.1.4	27270801
ECLASS 6.0	27270801
ECLASS 6.2	27270801
ECLASS 7.0	27270801
ECLASS 8.0	27270801
ECLASS 8.1	27270801
ECLASS 9.0	27270801
ECLASS 10.0	27270801
ECLASS 11.0	27270801
ECLASS 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

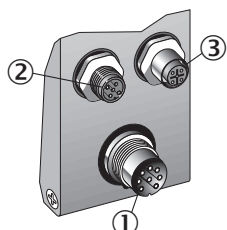
Dimensional drawing DME4000 PROFIBUS



Dimensions in mm (inch)

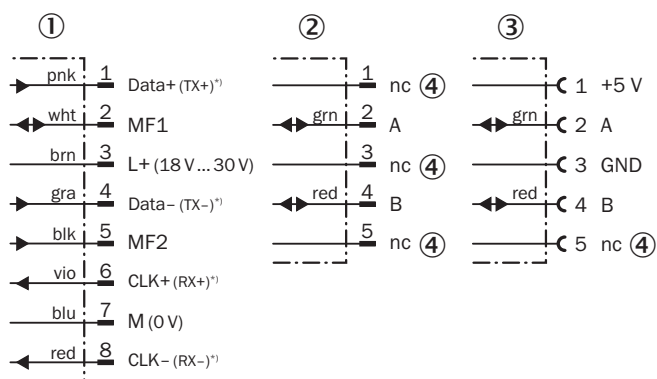
- ① LC display
- ② Center of optical axis

Connection type DME4/5xxx PROFIBUS Connector 2 x M12, 5-pin, B-coded, BUS IN, BUS OUT, 1 x M16, 8-pin



- ① Connector M16, 8-pin
- ② Connector M12, 5-pin, B-coded, BUS IN
- ③ Connector M12, 5-pin, B-coded, BUS OUT

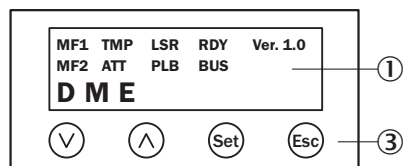
Connection diagram



^{*)} Internal interface, for production use only.

- ① Connector M16, 8-pin
- ② Connector M12, 5-pin, B-coded, BUS IN
- ③ Connector M12, 5-pin, B-coded, BUS OUT
- ④ Not assigned

Adjustment possible



- ① LC display
- ③ Keypad

Recommended accessories

Other models and accessories → www.sick.com/DME4000

	Brief description	Type	part no.
Mounting systems			
	• Description: Alignment unit • Material: Stainless steel • Details: Stainless steel	BEF-DME alignment bracket	2040695
reflectors and optics			
	• Description: Reflector plate, "diamond grade" reflective tape, 665 mm x 665 mm, base plate material: aluminum, screw connection • Ambient operating temperature: -25 °C ... +65 °C	PL560DG	1016806

	Brief description	Type	part no.
connectors and cables			
	Connection type head A: Male connector, M12, 5-pin, straight, B-coded Connection type head B: Flying leads Signal type: PROFIBUS DP Cable: 15 m, 2-wire, PUR, halogen-free Description: PROFIBUS DP, twisted pair, shielded Application: Zones with oils and lubricants, Drag chain operation	STL-1205-G15MQ	6036898
	Connection type head A: Male connector, M12, 5-pin, straight, B-coded Connection type head B: Flying leads Signal type: PROFIBUS DP Cable: 10 m, 2-wire, PUR, halogen-free Description: PROFIBUS DP, twisted pair, shielded Note: Wire shield Al-Pt film, overall shield C-screen tin-plated Application: Zones with oils and lubricants, Drag chain operation	STL-1205-G10MQ	6026007
	Connection type head A: Male connector, M12, 4-pin, straight, B-coded Signal type: PROFIBUS DP Description: PROFIBUS DP, terminal resistor	STE-END-Q	6021156
	Connection type head A: Male connector, M12, 5-pin, straight, B-coded Connection type head B: Flying leads Signal type: PROFIBUS DP Cable: 5 m, 2-wire, PUR, halogen-free Description: PROFIBUS DP, twisted pair, shielded Note: Wire shield Al-Pt film, overall shield C-screen tin-plated Application: Zones with oils and lubricants, Drag chain operation	STL-1205-G05MQ	6026005
	Connection type head A: Female connector, M12, 5-pin, straight Connection type head B: Flying leads Signal type: CANopen Cable: 6 m Description: CANopen, shielded	DOL-1205-G06MK	6028326
	Connection type head A: Female connector, 7/8", 5-pin, straight Signal type: DeviceNet™, CANopen Description: DeviceNet™, terminal resistor, shielded CANopen Permitted cross-section: ≤ 1.5 mm² Note: For field bus technology	DOS-7805-GKEND	6028329
	Connection type head A: Female connector, M12, 5-pin, straight, B-coded Connection type head B: Flying leads Signal type: PROFIBUS DP Cable: 15 m, 2-wire, PUR, halogen-free Description: PROFIBUS DP, twisted pair, shielded Connection systems: Flying leads Application: Zones with oils and lubricants	DOL-1205-G15MQ	6032637
	Connection type head A: Female connector, M12, 5-pin, straight, B-coded Connection type head B: Flying leads Signal type: PROFIBUS DP Cable: 10 m, 2-wire, PUR, halogen-free Description: PROFIBUS DP, twisted pair, shielded Connection systems: Flying leads Application: Zones with oils and lubricants	DOL-1205-G10MQ	6026008
	Connection type head A: Female connector, M12, 5-pin, straight, B-coded Connection type head B: Flying leads Signal type: PROFIBUS DP Cable: 5 m, 2-wire, PUR, halogen-free Description: PROFIBUS DP, twisted pair, shielded Connection systems: Flying leads Application: Zones with oils and lubricants	DOL-1205-G05MQ	6026006
	Connection type head A: Female connector, M12, 8-pin, straight Connection type head B: Flying leads Cable: 10 m, 8-wire, PUR, halogen-free Description: Shielded	YF2A68-100XXXXLEAX	6032450
	Connection type head A: Female connector, M12, 8-pin, straight Connection type head B: Flying leads Cable: 5 m, 8-wire, PUR, halogen-free	YF2A68-050XXXXLEAX	6032449

	Brief description	Type	part no.
	Description: Shielded Connection type head A: Female connector, M12, 8-pin, straight Connection type head B: Flying leads Cable: 2 m, 8-wire, PUR, halogen-free Description: Shielded Connection systems: Flying leads	YF2A68-020XXXLEAX	6032448
	Connection type head A: Female connector, M12, 5-pin, A-coded Connection type head B: Flying leads Signal type: Power, CAN Cable: 5 m, 5-wire Description: Power, unshieldedCAN	DOL-1205-G05M_Can	6021166
	Connection type head A: Female connector, M16, 8-pin, straight Connection type head B: Flying leads Cable: 10 m, PUR, halogen-free Description: Shielded	YF2Z18-100XXXLE-BX	2027193
	Connection type head A: Female connector, M16, 8-pin, straight Connection type head B: Flying leads Cable: 5 m, PUR, halogen-free Description: Shielded	YF2Z18-050XXXLE-BX	2026742
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Fieldbus, CANopen, DeviceNet™ Cable: 10 m, 5-wire, PUR, halogen-free Description: Fieldbus, shieldedCANopenDeviceNet™ Connection systems: Flying leads Note: Shielded on pin 1	YF2A14-100C1BXLEAX	6021175

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.”

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