



# DME4000-215

## DME4000

TIME-OF-FLIGHT SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type        | part no. |
|-------------|----------|
| DME4000-215 | 1029803  |

Other models and accessories → [www.sick.com/DME4000](http://www.sick.com/DME4000)



### Detailed technical data

#### Features

|                                        |                                                                                                                                                                  |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Measuring range</b>                 | 0.15 m ... 130 m, on "diamond grade" reflective tape                                                                                                             |
| <b>Target</b>                          | Reflector                                                                                                                                                        |
| <b>Resolution</b>                      | 0.05 mm ... 5 mm                                                                                                                                                 |
| <b>Repeatability</b>                   | 2 mm <sup>1) 2)</sup>                                                                                                                                            |
| <b>Measurement accuracy</b>            | ± 5 mm                                                                                                                                                           |
| <b>Response time</b>                   | 6 ms                                                                                                                                                             |
| <b>Output time</b>                     | 2 ms                                                                                                                                                             |
| <b>Light source</b>                    | Laser, red <sup>3)</sup> visible red light                                                                                                                       |
| <b>Type of light</b>                   | Visible red light                                                                                                                                                |
| <b>Laser class</b>                     | 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) |
| <b>Typ. light spot size (distance)</b> | 130 mm (at 70 m)<br>270 mm (at 150 m)<br>360 mm (at 220 m)                                                                                                       |
| <b>Max. movement speed</b>             | 10 m/s                                                                                                                                                           |
| <b>Safety-related parameters</b>       | MTTF <sub>D</sub> 101 years                                                                                                                                      |
|                                        | DC <sub>avg</sub> 0%                                                                                                                                             |

<sup>1)</sup> On "diamond grade" reflective tape.

<sup>2)</sup> Statistical error 1  $\sigma$ , environmental conditions constant, min. warm-up time 10 min.

<sup>3)</sup> Average service life of 50,000 h at T<sub>A</sub> = +25 °C.

## Interfaces

|                                   |                                        |
|-----------------------------------|----------------------------------------|
| <b>DeviceNet™</b>                 | ✓                                      |
| <b>Digital output</b>             |                                        |
| Number                            | 2                                      |
| Type                              | Push-pull: PNP/NPN                     |
| Maximum output current $I_A$      | $\leq 100 \text{ mA}$ <sup>1) 2)</sup> |
| <b>Multifunctional input (MF)</b> | 1 x MF <sup>3) 4)</sup>                |

<sup>1)</sup> Max. 100 nF/20 mH.

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

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

<sup>4)</sup> Not reverse-polarity protected.

## Electronics

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

<sup>1)</sup> May not fall short of or exceed  $V_S$  tolerances.

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

<sup>3)</sup> Reference voltage DC 32 V.

## Mechanics

|                               |                                |
|-------------------------------|--------------------------------|
| <b>Dimensions (W x H x D)</b> | 61 mm x 85 mm x 166 mm         |
| <b>Housing material</b>       | Metal (zinc diecast)           |
| <b>Window material</b>        | Glass                          |
| <b>Weight</b>                 | Approx. 1,650 g                |
| <b>Connection type</b>        | Male connector, 1 x M16, 8-pin |

## Ambient data

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

## Certificates

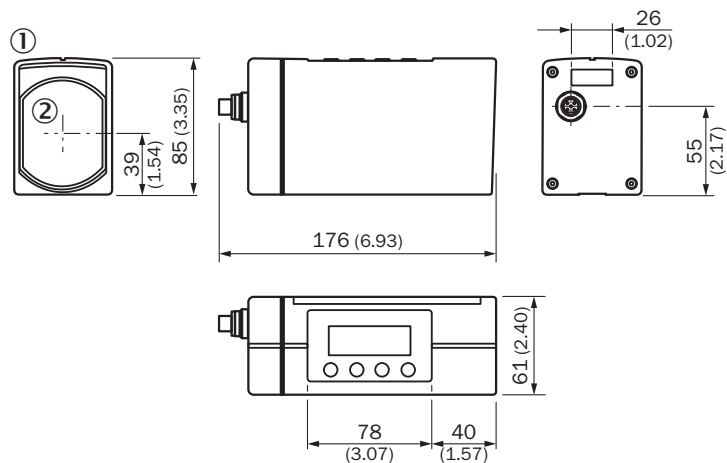
|                                     |   |
|-------------------------------------|---|
| <b>EU declaration of conformity</b> | ✓ |
|-------------------------------------|---|

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

### Classifications

|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.0</b>     | 27270801 |
| <b>ECLASS 5.1.4</b>   | 27270801 |
| <b>ECLASS 6.0</b>     | 27270801 |
| <b>ECLASS 6.2</b>     | 27270801 |
| <b>ECLASS 7.0</b>     | 27270801 |
| <b>ECLASS 8.0</b>     | 27270801 |
| <b>ECLASS 8.1</b>     | 27270801 |
| <b>ECLASS 9.0</b>     | 27270801 |
| <b>ECLASS 10.0</b>    | 27270801 |
| <b>ECLASS 11.0</b>    | 27270801 |
| <b>ECLASS 12.0</b>    | 27270916 |
| <b>ETIM 5.0</b>       | EC001825 |
| <b>ETIM 6.0</b>       | EC001825 |
| <b>ETIM 7.0</b>       | EC001825 |
| <b>ETIM 8.0</b>       | EC001825 |
| <b>UNSPSC 16.0901</b> | 41111613 |

### Dimensional drawing DME4000-xx5 DeviceNet

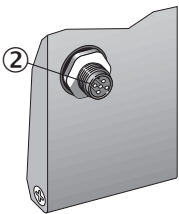


Dimensions in mm (inch)

① LC display

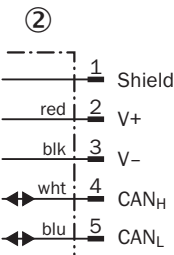
② Center of optical axis

Connection type DME4/5xxx-xx5 DeviceNet Connector M12, 5-pin, A-coded



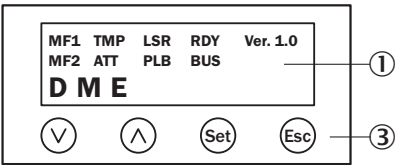
② Connector M12, 5-pin, A-coded

Connection diagram DMExxx-xx5 DeviceNet



② Connector M12, 5-pin, A-coded

Adjustment possible



① LC display

③ Keypad

Recommended accessories

Other models and accessories → [www.sick.com/DME4000](http://www.sick.com/DME4000)

|                                                                                     | Brief description                                                                                                                                                         | Type                           | part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                           |                                |          |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Alignment unit</li><li>• <b>Material:</b> Stainless steel</li><li>• <b>Details:</b> Stainless steel</li></ul> | BEF-DME align-<br>ment bracket | 2040695  |

|                                                                                   | Brief description                                                                                                                                                                                                                                          | Type    | part no. |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|
| reflectors and optics                                                             |                                                                                                                                                                                                                                                            |         |          |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Reflector plate, "diamond grade" reflective tape, 665 mm x 665 mm, base plate material: aluminum, screw connection</li><li>• <b>Ambient operating temperature:</b> -25 °C ... +65 °C</li></ul> | PL560DG | 1016806  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Type               | part no. |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |          |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 5-pin, straight, B-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> PROFIBUS DP</li> <li><b>Cable:</b> 15 m, 2-wire, PUR, halogen-free</li> <li><b>Description:</b> PROFIBUS DP, twisted pair, shielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation</li> </ul>                                                                                  | STL-1205-G15MQ     | 6036898  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 5-pin, straight, B-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> PROFIBUS DP</li> <li><b>Cable:</b> 10 m, 2-wire, PUR, halogen-free</li> <li><b>Description:</b> PROFIBUS DP, twisted pair, shielded</li> <li><b>Note:</b> Wire shield Al-Pt film, overall shield C-screen tin-plated</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation</li> </ul> | STL-1205-G10MQ     | 6026007  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, B-coded</li> <li><b>Signal type:</b> PROFIBUS DP</li> <li><b>Description:</b> PROFIBUS DP, terminal resistor</li> </ul>                                                                                                                                                                                                                                                                                     | STE-END-Q          | 6021156  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 5-pin, straight, B-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> PROFIBUS DP</li> <li><b>Cable:</b> 5 m, 2-wire, PUR, halogen-free</li> <li><b>Description:</b> PROFIBUS DP, twisted pair, shielded</li> <li><b>Note:</b> Wire shield Al-Pt film, overall shield C-screen tin-plated</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation</li> </ul>  | STL-1205-G05MQ     | 6026005  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> CANopen</li> <li><b>Cable:</b> 6 m</li> <li><b>Description:</b> CANopen, shielded</li> </ul>                                                                                                                                                                                                                             | DOL-1205-G06MK     | 6028326  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, 7/8", 5-pin, straight</li> <li><b>Signal type:</b> DeviceNet™, CANopen</li> <li><b>Description:</b> DeviceNet™, terminal resistor, shielded CANopen</li> <li><b>Permitted cross-section:</b> ≤ 1.5 mm<sup>2</sup></li> <li><b>Note:</b> For field bus technology</li> </ul>                                                                                                                                                     | DOS-7805-GKEND     | 6028329  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, B-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> PROFIBUS DP</li> <li><b>Cable:</b> 15 m, 2-wire, PUR, halogen-free</li> <li><b>Description:</b> PROFIBUS DP, twisted pair, shielded</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Application:</b> Zones with oils and lubricants</li> </ul>                                                     | DOL-1205-G15MQ     | 6032637  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, B-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> PROFIBUS DP</li> <li><b>Cable:</b> 10 m, 2-wire, PUR, halogen-free</li> <li><b>Description:</b> PROFIBUS DP, twisted pair, shielded</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Application:</b> Zones with oils and lubricants</li> </ul>                                                     | DOL-1205-G10MQ     | 6026008  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, B-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> PROFIBUS DP</li> <li><b>Cable:</b> 5 m, 2-wire, PUR, halogen-free</li> <li><b>Description:</b> PROFIBUS DP, twisted pair, shielded</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Application:</b> Zones with oils and lubricants</li> </ul>                                                      | DOL-1205-G05MQ     | 6026006  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Cable:</b> 10 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Shielded</li> </ul>                                                                                                                                                                                                                                               | YF2A68-100XXXXLEAX | 6032450  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> </ul>                                                                                                                                                                                                                                                                                      | YF2A68-050XXXXLEAX | 6032449  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Type               | part no. |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Shielded</li> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Shielded</li> <li>• <b>Connection systems:</b> Flying leads</li> </ul>                                                                                                     | YF2A68-020XXXLEAX  | 6032448  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Power, CAN</li> <li>• <b>Cable:</b> 5 m, 5-wire</li> <li>• <b>Description:</b> Power, unshieldedCAN</li> </ul>                                                                                                                                                              | DOL-1205-G05M_Can  | 6021166  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M16, 8-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 10 m, PUR, halogen-free</li> <li>• <b>Description:</b> Shielded</li> </ul>                                                                                                                                                                                                       | YF2Z18-100XXXLE-BX | 2027193  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M16, 8-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 5 m, PUR, halogen-free</li> <li>• <b>Description:</b> Shielded</li> </ul>                                                                                                                                                                                                        | YF2Z18-050XXXLE-BX | 2026742  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Fieldbus, CANopen, DeviceNet™</li> <li>• <b>Cable:</b> 10 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Fieldbus, shieldedCANopenDeviceNet™</li> <li>• <b>Connection systems:</b> Flying leads</li> <li>• <b>Note:</b> Shielded on pin 1</li> </ul> | 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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