



# DKS40-E5J00100

DKS40

INCREMENTAL ENCODERS

**SICK**  
Sensor Intelligence.

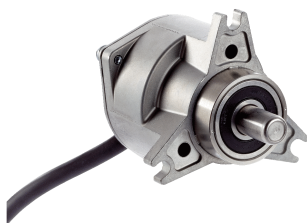


Illustration may differ



### Ordering information

| Type           | Part no. |
|----------------|----------|
| DKS40-E5J00100 | 1034650  |

Other models and accessories → [www.sick.com/DKS40](http://www.sick.com/DKS40)

### Detailed technical data

#### Performance

|                                                               |                                     |
|---------------------------------------------------------------|-------------------------------------|
| <b>Pulses per revolution</b>                                  | 100                                 |
| <b>Measuring step</b>                                         | 90°, electric/pulses per revolution |
| <b>Measuring step deviation at non binary number of lines</b> | 0.07°                               |
| <b>Measuring step deviation at binary number of lines</b>     | 0.035°                              |
| <b>Initialization time</b>                                    | 40 ms                               |

#### Interfaces

|                                       |                 |
|---------------------------------------|-----------------|
| <b>Communication interface</b>        | Incremental     |
| <b>Communication Interface detail</b> | HTL / Push pull |
| <b>Number of signal channels</b>      | 6-channel       |

#### Electrical data

|                                              |                                               |
|----------------------------------------------|-----------------------------------------------|
| <b>Connection type</b>                       | Cable, 8-wire, universal, 0.5 m <sup>1)</sup> |
| <b>Operating current</b>                     | ≤ 40 mA (without load)                        |
| <b>Supply voltage</b>                        | 10 V ... 30 V                                 |
| <b>Output frequency</b>                      | ≤ 200 kHz                                     |
| <b>Reference signal, number</b>              | 1                                             |
| <b>Reference signal, position</b>            | 90°, electric, logically gated with A and B   |
| <b>MTTFd: mean time to dangerous failure</b> | 600 years (EN ISO 13849-1) <sup>2)</sup>      |

<sup>1)</sup> The universal cable connection is positioned so that it is possible to lay it without bends in a radial or axial direction.

<sup>2)</sup> This product is a standard product and does not constitute a safety component as defined in the Machinery Directive. Calculation based on nominal load of components, average ambient temperature 40 °C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

#### Mechanical data

|                          |                                |
|--------------------------|--------------------------------|
| <b>Mechanical design</b> | Solid shaft, face mount flange |
| <b>Shaft diameter</b>    | 8 mm x 13 mm                   |
| <b>Weight</b>            | 0.18 kg                        |
| <b>Start up torque</b>   | 0.6 Ncm (+20 °C)               |
| <b>Operating torque</b>  | 0.4 Ncm (+20 °C)               |

|                                       |                                 |
|---------------------------------------|---------------------------------|
| <b>Operating speed</b>                | 6,000 U/min                     |
| <b>Moment of inertia of the rotor</b> | 6 gcm <sup>2</sup>              |
| <b>Bearing lifetime</b>               | 2 x 10 <sup>9</sup> revolutions |

#### Ambient data

|                                    |                                         |
|------------------------------------|-----------------------------------------|
| <b>EMC</b>                         | EN 61000-6-2<br>EN 61000-6-3            |
| <b>Enclosure rating</b>            | IEC 60529                               |
| <b>Operating temperature range</b> | 0 °C ... +60 °C                         |
| <b>Storage temperature range</b>   | -40 °C ... +70 °C, without package      |
| <b>Resistance to shocks</b>        | 50 g, 7 ms (EN 60068-2-27)              |
| <b>Resistance to vibration</b>     | 20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6) |
| <b>Air humidity</b>                | 90 % <sup>1)</sup>                      |

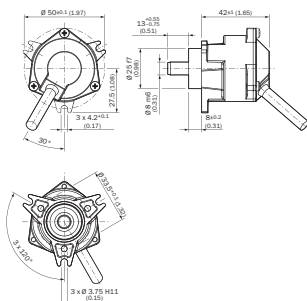
<sup>1)</sup> Condensation of the optical scanning not permitted.

#### Classifications

|                       |          |
|-----------------------|----------|
| <b>ECI@ss 5.0</b>     | 27270501 |
| <b>ECI@ss 5.1.4</b>   | 27270501 |
| <b>ECI@ss 6.0</b>     | 27270590 |
| <b>ECI@ss 6.2</b>     | 27270590 |
| <b>ECI@ss 7.0</b>     | 27270501 |
| <b>ECI@ss 8.0</b>     | 27270501 |
| <b>ECI@ss 8.1</b>     | 27270501 |
| <b>ECI@ss 9.0</b>     | 27270501 |
| <b>ETIM 5.0</b>       | EC001486 |
| <b>ETIM 6.0</b>       | EC001486 |
| <b>UNSPSC 16.0901</b> | 41112113 |

#### Dimensional drawing (Dimensions in mm (inch))

Face mount flange, cable connection

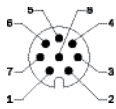


General tolerances according to DIN ISO 2768-mk

### PIN assignment

#### 8-core cable

View of the connector side of housing



| PIN, 8-pole in M12 | Color of wires | Signal OC       | Signal TTL, HTL | Explanation                                                          |
|--------------------|----------------|-----------------|-----------------|----------------------------------------------------------------------|
| 1                  | Brown          | Not connected   | A               | Signal line                                                          |
| 2                  | White          | A               | A               | Signal line                                                          |
| 3                  | Black          | Not connected   | B               | Signal line                                                          |
| 4                  | Pink           | B               | B               | Signal line                                                          |
| 5                  | Yellow         | Not connected   | Z               | Signal line                                                          |
| 6                  | Lilac          | Z               | Z               | Signal line                                                          |
| 7                  | Blue           | GND             | GND             | Ground connection of the encoder                                     |
| 8                  | Red            | +U <sub>E</sub> | +U <sub>E</sub> | Supply voltage                                                       |
| Screen             | Screen         | Screen          | Screen          | Screen connected to encoder housing, Connect screen on control side. |

### Recommended accessories

Other models and accessories → [www.sick.com/DKS40](http://www.sick.com/DKS40)

|                              | Brief description                                                                                                                                                                                                                 | Type               | Part no. |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Flanges                      |                                                                                                                                                                                                                                   |                    |          |
|                              | Flange adapter, adaption of 25 mm spigot face mount flange to 60s face mount flange with 36 mm centering collar, Aluminum                                                                                                         | BEF-FA-025-036     | 2034226  |
|                              | Flange adapter, adaption of 25 mm spigot face mount flange to 50 mm servo flange, Aluminum                                                                                                                                        | BEF-FA-025-050     | 2032622  |
|                              | Flange adapter, adaption of 25 mm spigot face mount flange to 60 mm square installation plate, Aluminum                                                                                                                           | BEF-FA-025-060RCA  | 2032623  |
|                              | Flange adapter, adaption of 25 mm spigot face mount flange to 60 mm square installation plate with shock-absorber, Aluminum                                                                                                       | BEF-FA-025-060RSA  | 2032624  |
|                              | Flange adapter, adapts face mount flange with 25 mm centering collar to 63 mm square mounting plate, Aluminum                                                                                                                     | BEF-FA-025-063-REC | 2033631  |
| Mounting brackets and plates |                                                                                                                                                                                                                                   |                    |          |
|                              | Mounting brackets for encoders with a centering spigot 25 mm, mounting kit for face mount flange included                                                                                                                         | BEF-WF-25          | 2032621  |
| Shaft adaptation             |                                                                                                                                                                                                                                   |                    |          |
|                              | Bar coupling, shaft diameter 6 mm / 8 mm, maximum shaft offset radial ± 0.3 mm, axial ± 0.2 mm, angle ± 3°, max. speed 10,000 rpm, torsion spring rigidity 38 Nm/wheel; material: fiber-glass reinforced polyamide, aluminum hub  | KUP-0608-S         | 5314179  |
|                              | Bar coupling, shaft diameter 8 mm / 8 mm, maximum shaft offset radial ± 0.3 mm, axial ± 0.2 mm, angle ± 3°, max. speed 10,000 rpm, torsion spring rigidity 38 Nm/wheel; material: fiber-glass reinforced polyamide, aluminum hub  | KUP-0808-S         | 5314177  |
|                              | Double loop coupling, shaft diameter 8 mm / 10 mm, max. shaft offset: radially +/- 0,25 mm, axially +/- 0,4 mm, angle +/- 4 degrees; max. speed 10.000 rpm, -30 to +120 degrees Celsius, torsional spring stiffness of 150 Nm/rad | KUP-0810-D         | 5326704  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                  | Type             | Part no. |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|
|  | Bar coupling, shaft diameter 8 mm / 10 mm, max. shaft offset: radial $\pm 0,3$ mm, axial $\pm 0,3$ mm, angular $\pm 3^\circ$ ; max. speed 10.000 rpm, $-10^\circ$ to $+80^\circ$ °C, max. torque: 80 Ncm, material: fiber-glass reinforced polyamide, aluminum hub | KUP-0810-S       | 5314178  |
| Plug connectors and cables                                                        |                                                                                                                                                                                                                                                                    |                  |          |
|  | Head A: cable<br>Head B: Flying leads<br>Cable: SSI, Incremental, HIPERFACE®, PUR, halogen-free, shielded                                                                                                                                                          | LTG-2308-MWENC   | 6027529  |
|  | Head A: cable<br>Head B: Flying leads<br>Cable: SSI, PUR, shielded                                                                                                                                                                                                 | LTG-2411-MW      | 6027530  |
|  | Head A: cable<br>Head B: Flying leads<br>Cable: SSI, PUR, halogen-free, shielded                                                                                                                                                                                   | LTG-2512-MW      | 6027531  |
|  | Head A: cable<br>Head B: Flying leads<br>Cable: SSI, TTL, HTL, PUR, halogen-free, shielded                                                                                                                                                                         | LTG-2612-MW      | 6028516  |
|  | Head A: female connector, M12, 8-pin, straight<br>Head B: Flying leads<br>Cable: PUR, halogen-free, shielded, 2 m                                                                                                                                                  | DOL-1208-G02MAC1 | 6032866  |
|                                                                                   | Head A: female connector, M12, 8-pin, straight<br>Head B: Flying leads<br>Cable: PUR, halogen-free, shielded, 5 m                                                                                                                                                  | DOL-1208-G05MAC1 | 6032867  |
|                                                                                   | Head A: female connector, M12, 8-pin, straight<br>Head B: Flying leads<br>Cable: PUR, halogen-free, shielded, 10 m                                                                                                                                                 | DOL-1208-G10MAC1 | 6032868  |
|                                                                                   | Head A: female connector, M12, 8-pin, straight<br>Head B: Flying leads<br>Cable: PUR, halogen-free, shielded, 20 m                                                                                                                                                 | DOL-1208-G20MAC1 | 6032869  |

## 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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