



# DGS35-3K402048

DGS3x

INCREMENTAL ENCODERS

**SICK**  
Sensor Intelligence.

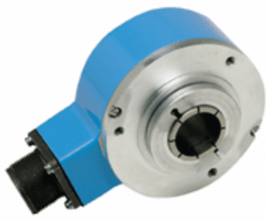


Illustration may differ



## Ordering information

| Type           | Part no. |
|----------------|----------|
| DGS35-3K402048 | 1060264  |

Other models and accessories → [www.sick.com/DGS3x](http://www.sick.com/DGS3x)

## Detailed technical data

### Performance

|                                 |                                    |
|---------------------------------|------------------------------------|
| <b>Pulses per revolution</b>    | 2,048                              |
| <b>Measuring step</b>           | 90° electric/pulses per revolution |
| <b>Measuring step deviation</b> | ± 45° / pulses per revolution      |
| <b>Error limits</b>             | ± 45° / pulses per revolution      |

### Interfaces

|                                        |                       |
|----------------------------------------|-----------------------|
| <b>Communication interface</b>         | Incremental           |
| <b>Communication Interface detail</b>  | TTL / RS-422          |
| <b>Output frequency</b>                | 300 kHz               |
| <b>Load current</b>                    | 40 mA                 |
| <b>Operating current</b>               | 100 mA (without load) |
| <b>4.5 V... 5.5 V, TTL/RS-422</b>      |                       |
| Load current                           | 40 mA                 |
| Operating current                      | 100 mA (without load) |
| <b>4.5 V ... 5.5 V, Open Collector</b> |                       |
| Load current                           | 40 mA                 |
| Operating current                      | 100 mA (without load) |
| <b>TTL/RS-422</b>                      |                       |
| Load current                           | 40 mA                 |
| <b>HTL/Push pull</b>                   |                       |
| Load current                           | 40 mA                 |
| <b>TTL/HTL</b>                         |                       |
| Load current                           | 40 mA                 |
| <b>Open Collector</b>                  |                       |
| Load current                           | 40 mA                 |

### Electrical data

|                                 |                                    |
|---------------------------------|------------------------------------|
| <b>Connection type</b>          | Male connector, MS, 10-pin, radial |
| <b>Supply voltage</b>           | 8 ... 24 V                         |
| <b>Reference signal, number</b> | 1                                  |

|                                    |                                             |
|------------------------------------|---------------------------------------------|
| <b>Reference signal, position</b>  | 180°, electronically, gated with B negative |
| <b>Reverse polarity protection</b> | ✓                                           |

## Mechanical data

|                                                          |                                   |
|----------------------------------------------------------|-----------------------------------|
| <b>Mechanical design</b>                                 | Through hollow shaft              |
| <b>Shaft diameter</b>                                    | 30 mm <sup>1)</sup>               |
| <b>Flange type / stator coupling</b>                     | T1 stator coupling                |
| <b>Weight</b>                                            | 1.1 kg <sup>2)</sup>              |
| <b>Shaft material</b>                                    | Brass                             |
| <b>Flange material</b>                                   | Aluminum                          |
| <b>Housing material</b>                                  | Aluminum                          |
| <b>Start up torque</b>                                   | 9 Ncm (+20 °C)                    |
| <b>Operating torque</b>                                  | 7 Ncm (+20 °C)                    |
| <b>Permissible shaft movement, axial static/dynamic</b>  | 0.5 mm / 0.5 mm                   |
| <b>Permissible shaft movement, radial static/dynamic</b> | 0.5 mm / 0.1 mm                   |
| <b>Operating speed</b>                                   | 3,000 min <sup>-1</sup>           |
| <b>Moment of inertia of the rotor</b>                    | 490 gcm <sup>2</sup>              |
| <b>Bearing lifetime</b>                                  | 4.5 x 10 <sup>9</sup> revolutions |
| <b>Angular acceleration</b>                              | ≤ 100,000 rad/s <sup>2</sup>      |

<sup>1)</sup> Separately order collets for 24 mm and 25 mm as accessories.

<sup>2)</sup> Based on devices with male connector.

## Ambient data

|                                      |                                                           |
|--------------------------------------|-----------------------------------------------------------|
| <b>EMC</b>                           | EN 61000-6-2, EN 61000-6-3                                |
| <b>Enclosure rating</b>              | IP66, Housing side, male connector <sup>1)</sup>          |
| <b>Permissible relative humidity</b> | 95 % (condensation of the optical scanning not permitted) |
| <b>Operating temperature range</b>   | -20 °C ... +70 °C                                         |
| <b>Storage temperature range</b>     | -30 °C ... +85 °C, without package                        |
| <b>Resistance to shocks</b>          | 50 g, 11 ms                                               |
| <b>Resistance to vibration</b>       | 20 g, 5 Hz ... 2,000 Hz                                   |

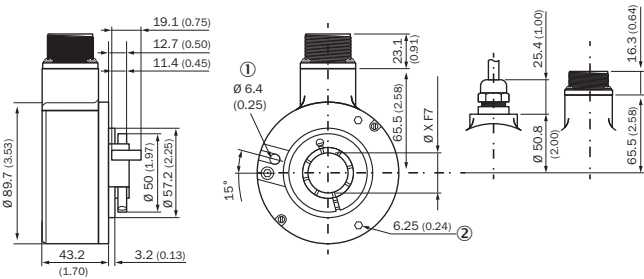
<sup>1)</sup> With mating connector inserted.

## 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>ECI@ss 10.0</b>  | 27270501 |

|                |          |
|----------------|----------|
| ECI@ss 11.0    | 27270501 |
| ETIM 5.0       | EC001486 |
| ETIM 6.0       | EC001486 |
| ETIM 7.0       | EC001486 |
| UNSPSC 16.0901 | 41112113 |

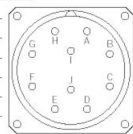
Dimensional drawing (Dimensions in mm (inch))



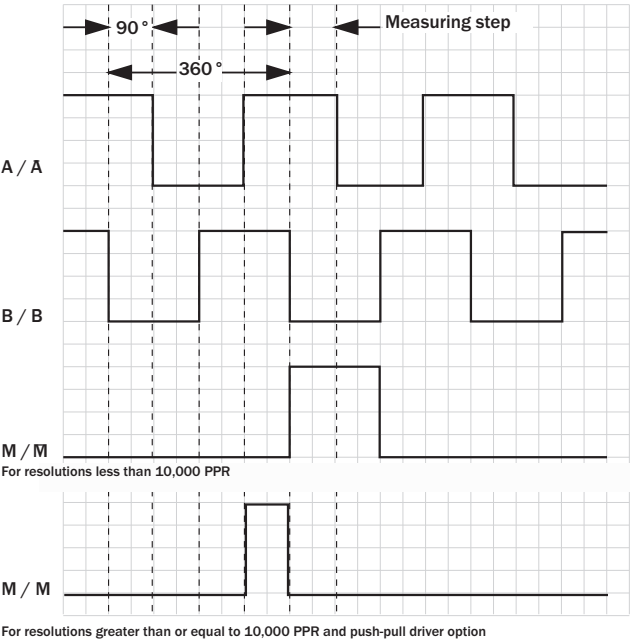
- ① Dowel pin
- ② Depth

PIN assignment

| Function    | 10 pin | Cable  |
|-------------|--------|--------|
| A           | A      | White  |
| B           | B      | Pink   |
| M           | C      | Lilac  |
| A not       | H      | Brown  |
| B not       | I      | Black  |
| M not       | J      | Yellow |
| +Vs         | D      | Red    |
| Common      | F      | Blue   |
| Case ground | G      | N/A    |
| Shield      | N/A    | N/A    |



Diagrams



## 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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