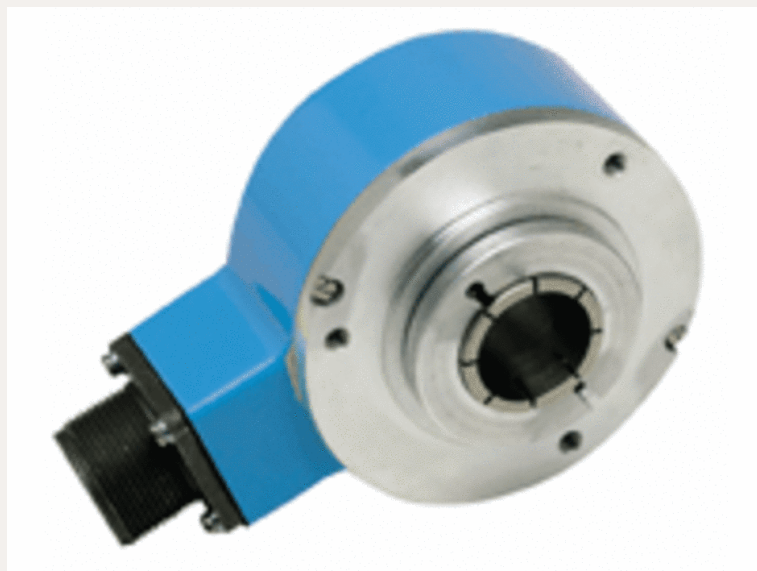




DATA SHEET

**DGS34-5L404096**

DGS3x  
Incremental encoders

**SICK** Sensor Intelligence



Illustration may differ

# INCREMENTAL ENCODERS

## DGS34-5L404096

### ORDERING INFORMATION

| Type           | part no. |
|----------------|----------|
| DGS34-5L404096 | 7101750  |

Further device versions and accessories at [www.sick.com/DGS3x](http://www.sick.com/DGS3x)

### DETAILED TECHNICAL DATA

#### PERFORMANCE

|                          |                                    |
|--------------------------|------------------------------------|
| Pulses per revolution    | 4,096                              |
| Measuring step           | 90° electric/pulses per revolution |
| Measuring step deviation | ± 45° / pulses per revolution      |
| Error limits             | ± 45° / pulses per revolution      |

#### INTERFACES

|                                |                       |
|--------------------------------|-----------------------|
| Communication interface        | Incremental           |
| Communication Interface detail | HTL / Push pull       |
| Output frequency               | 300 kHz               |
| Load current                   | 40 mA                 |
| Operating current              | 100 mA (without load) |

#### ELECTRICAL DATA

|                                         |                                             |
|-----------------------------------------|---------------------------------------------|
| Connection type                         | Male connector, MS, 10-pin, radial          |
| Supply voltage                          | 8 ... 24 V                                  |
| Reference signal, number                | 1                                           |
| Reference signal, position              | 180°, electronically, gated with B negative |
| Reverse polarity protection             | ✓                                           |
| Short-circuit protection of the outputs | ✓                                           |

#### MECHANICAL DATA

|                   |                    |
|-------------------|--------------------|
| Mechanical design | Blind hollow shaft |
|-------------------|--------------------|

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

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

|                                |                                                     |
|--------------------------------|-----------------------------------------------------|
| Shaft diameter                 | 30 mm <sup>1)</sup>                                 |
| Flange type / stator coupling  | Stator coupling over dowel pin supplied by customer |
| Weight                         | 1.1 kg <sup>2)</sup>                                |
| Shaft material                 | Brass                                               |
| Flange material                | Aluminum                                            |
| Housing material               | Aluminum                                            |
| Start up torque                | 9 Ncm (+20 °C)                                      |
| Operating torque               | 7 Ncm (+20 °C)                                      |
| Operating speed                | 3,000 min <sup>-1</sup>                             |
| Moment of inertia of the rotor | 490 gcm <sup>2</sup>                                |
| Bearing lifetime               | 4.5 x 10 <sup>9</sup> revolutions                   |
| Angular acceleration           | ≤ 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

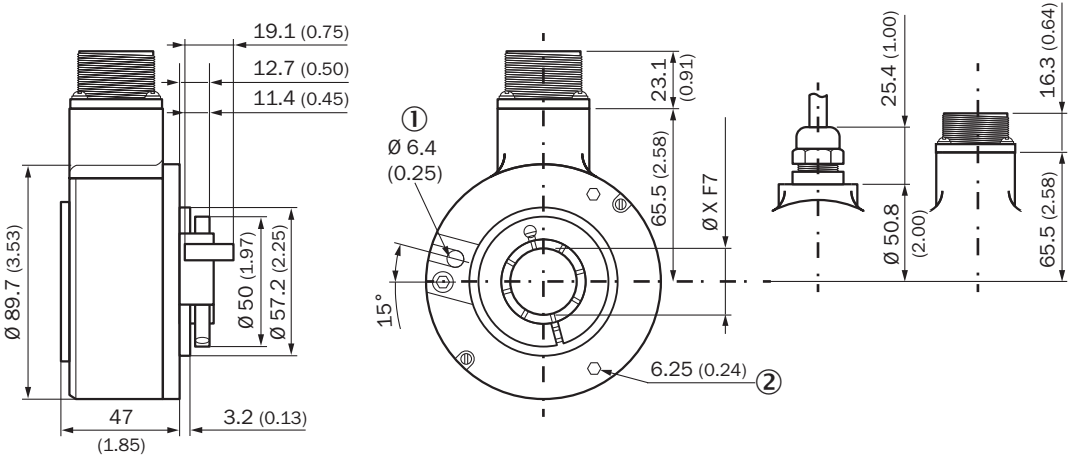
|                               |                                    |
|-------------------------------|------------------------------------|
| EMC                           | EN 61000-6-2, EN 61000-6-3         |
| Enclosure rating              | IP66 <sup>1)</sup>                 |
| Permissible relative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

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

## CLASSIFICATIONS

|                |          |
|----------------|----------|
| eCl@ss 5.0     | 27270501 |
| eCl@ss 5.1.4   | 27270501 |
| eCl@ss 6.0     | 27270590 |
| eCl@ss 6.2     | 27270590 |
| eCl@ss 7.0     | 27270501 |
| eCl@ss 8.0     | 27270501 |
| eCl@ss 8.1     | 27270501 |
| eCl@ss 9.0     | 27270501 |
| eCl@ss 10.0    | 27270501 |
| eCl@ss 11.0    | 27270501 |
| eCl@ss 12.0    | 27270501 |
| ETIM 5.0       | EC001486 |
| ETIM 6.0       | EC001486 |
| ETIM 7.0       | EC001486 |
| ETIM 8.0       | EC001486 |
| UNSPSC 16.0901 | 41112113 |

DIMENSIONAL DRAWING

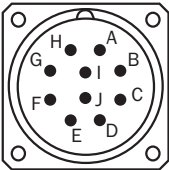


Dimensions in mm (inch)

- ① Dowel pin
- ② depth

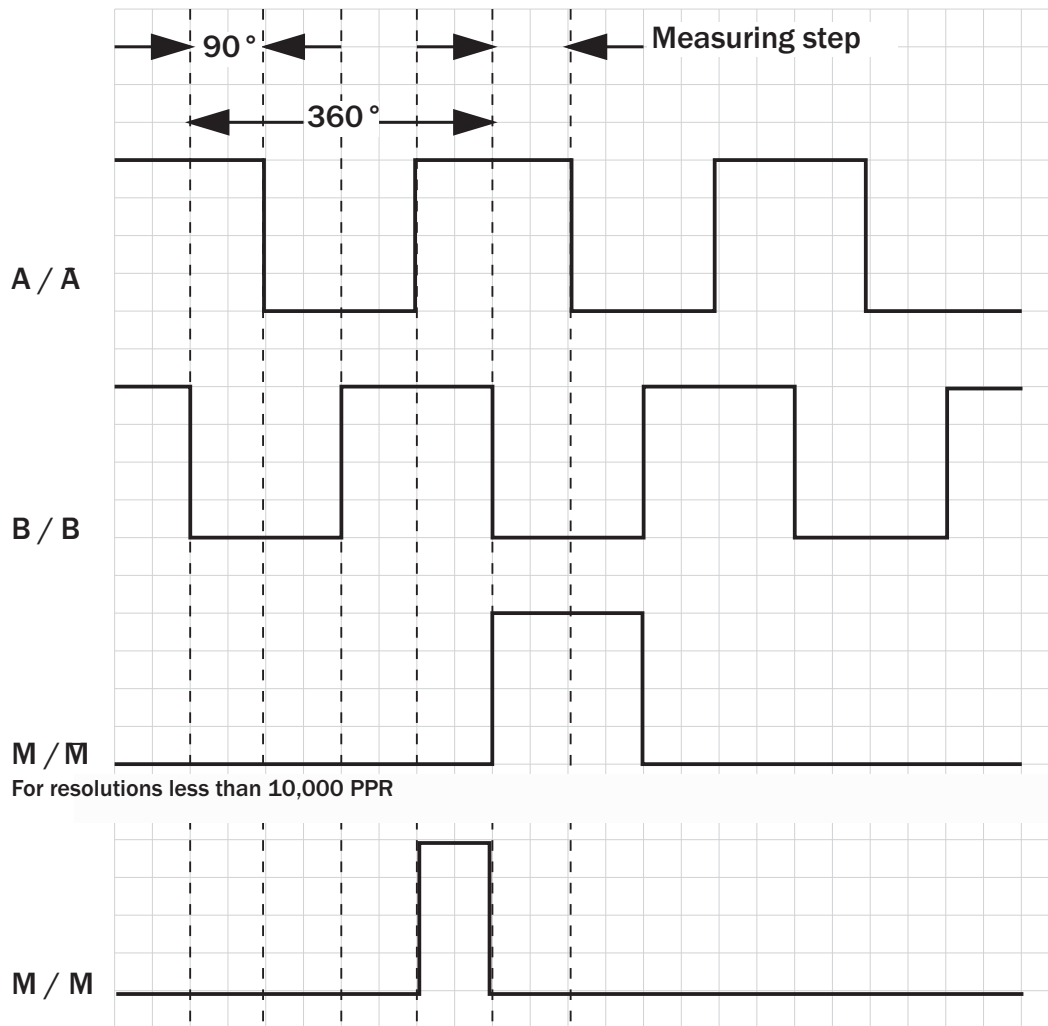
| Type                               | Shaft diameterX F7 |
|------------------------------------|--------------------|
| DGS3x-xxHxxxxxx<br>DGS3x-xxJxxxxxx | 1"                 |
| DGS3x-xxKxxxxxx<br>DGS3x-xxLxxxxxx | 30 mm              |

PIN ASSIGNMENT



| PIN10-pin | Wire colors (cable connection) | Explanation               |
|-----------|--------------------------------|---------------------------|
| A         | White                          | A                         |
| B         | Pink                           | B                         |
| C         | Purple                         | M                         |
| H         | Brown                          | A-                        |
| I         | Black                          | B-                        |
| J         | Yellow                         | M-                        |
| D         | Red                            | +V <sub>s</sub>           |
| F         | Blue                           | GND                       |
| G         | N/A                            | Earthing point on housing |
| N/A       | N/A                            | Screen                    |

## DIAGRAMS



| Supply voltage  | Output         |
|-----------------|----------------|
| 4,5 V ... 5,5 V | TTL            |
| 8 V ... 24 V    | TTL            |
| 8 V ... 24 V    | HTL            |
| 8 V ... 24 V    | Open Collector |
| 5 V ... 15 V    | TTL / HTL      |

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at [www.sick.com/7101750](http://www.sick.com/7101750)



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# SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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