

# DGS35-1H402048

DGS35

INCREMENTAL ENCODERS

**SICK**  
Sensor Intelligence.

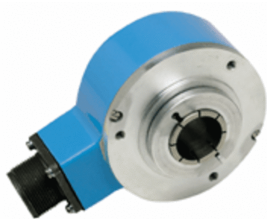


Illustration may differ



### Ordering information

Type	Part no.
DGS35-1H402048	7101654

Other models and accessories → [www.sick.com/DGS35](http://www.sick.com/DGS35)

### 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>	120 mA (without load)
<b>4.5 V... 5.5 V, TTL/RS-422</b>	
Load current	40 mA
Operating current	120 mA (without load)
<b>4.5 V ... 5.5 V, Open Collector</b>	
Load current	40 mA
Operating current	120 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>	4.5 ... 5.5 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>	1" <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> Order collets for 1/2", 3/4", 5/8", 7/8", 10 mm, 12 mm, 14 mm, 15 mm, 18 mm, 20 mm, 22 mm, 24 mm and 25 mm separately as accessories.

<sup>2)</sup> Relates to devices with male connector connection.

### Ambient data

<b>EMC</b>	EN 61000-6-2, EN 61000-6-3
<b>Enclosure rating</b>	IP66, housing side, male connector connection <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.

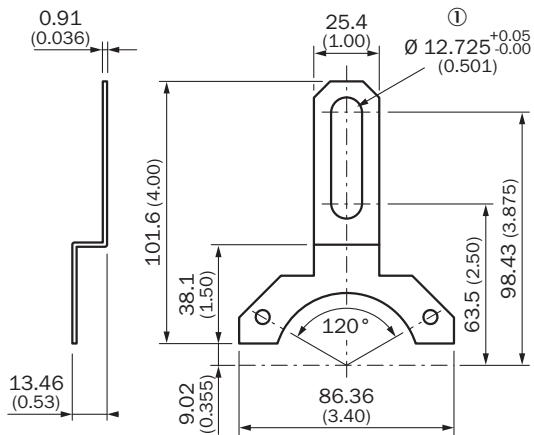
### Classifications

<b>ECl@ss 5.0</b>	27270501
<b>ECl@ss 5.1.4</b>	27270501
<b>ECl@ss 6.0</b>	27270590
<b>ECl@ss 6.2</b>	27270590
<b>ECl@ss 7.0</b>	27270501
<b>ECl@ss 8.0</b>	27270501
<b>ECl@ss 8.1</b>	27270501
<b>ECl@ss 9.0</b>	27270501
<b>ECl@ss 10.0</b>	27270501

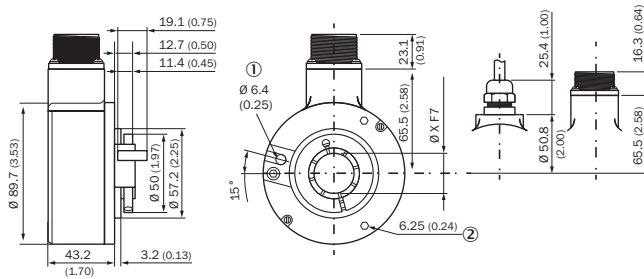
<b>ECl@ss 11.0</b>	27270501
<b>ETIM 5.0</b>	EC001486
<b>ETIM 6.0</b>	EC001486
<b>ETIM 7.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

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

T1 stator coupling



① Slotted hole for 3/8" bolt



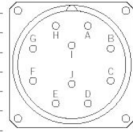
① Register pin

② Depth

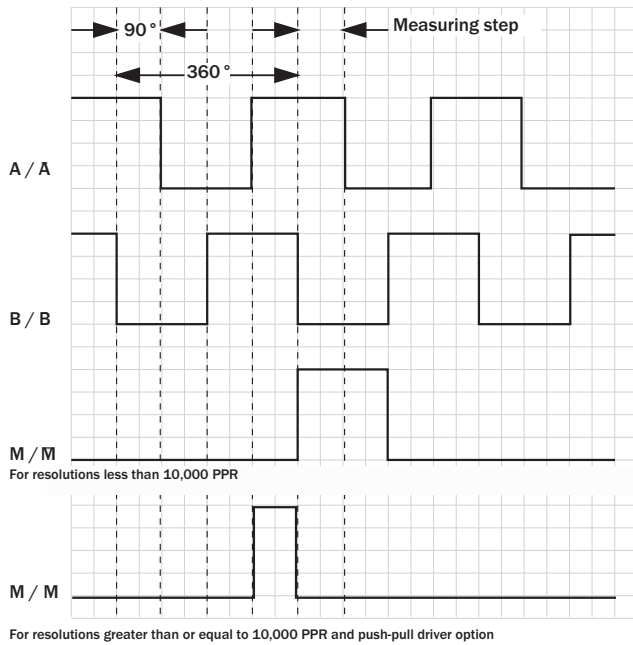
Type	Shaft diameter X F7
DGS3x-xxHxxxxx DGS3x-xxJxxxxx	1"
DGS3x-xxKxxxxx DGS3x-xxLxxxxx	30 mm

## 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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)