

# DLS40E-S3GV00S03

DLS40

INCREMENTAL ENCODERS

**SICK**  
Sensor Intelligence.

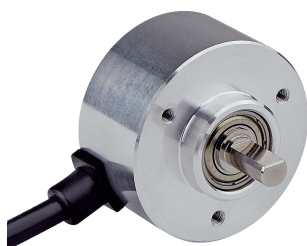


Illustration may differ



## Ordering information

Type	Part no.
DLS40E-S3GV00S03	1119059

Other models and accessories → [www.sick.com/DLS40](http://www.sick.com/DLS40)

## Detailed technical data

### Features

<b>Special device</b>	✓
<b>Specialty</b>	Zero pulse not connected
<b>Standard reference device</b>	1109612, DLS40E-S3GV00360

### Performance

<b>Pulses per revolution</b>	360
<b>Measuring step</b>	90°, electric/pulses per revolution
<b>Duty cycle</b>	≤ 0.5 ± 10 %

### Interfaces

<b>Communication interface</b>	Incremental
<b>Communication Interface detail</b>	HTL / Push pull
<b>Number of signal channels</b>	3 channel
<b>Output frequency</b>	≤ 150 kHz
<b>Load current</b>	≤ 30 mA
<b>Power consumption</b>	≤ 2 W (without load)

### Electrical data

<b>Connection type</b>	Cable, 5-wire, radial, 2 m
<b>Supply voltage</b>	10 ... 27 V
<b>Reference signal, number</b>	1
<b>Reverse polarity protection</b>	✓
<b>Short-circuit protection of the outputs</b>	✓ <sup>1)</sup>
<b>MTTFd: mean time to dangerous failure</b>	600 years (EN ISO 13849-1) <sup>2)</sup>

<sup>1)</sup> Protection against short circuit to GND and U<sub>S</sub>. Short-circuit resistance is only guaranteed when U<sub>S</sub> and GND are connected correctly.

<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>	6 mm
<b>Shaft length</b>	12 mm
<b>Shaft material</b>	Stainless steel
<b>Flange material</b>	Aluminum
<b>Housing material</b>	Aluminum
<b>Material, cable</b>	PVC
<b>Start up torque</b>	0.3 Ncm
<b>Operating torque</b>	0.2 Ncm
<b>Permissible shaft loading</b>	40 N (radial) <sup>1)</sup> 20 N (axial)
<b>Operating speed</b>	6,000 min <sup>-1</sup> <sup>2)</sup>
<b>Maximum operating speed</b>	≤ 8,000 min <sup>-1</sup> <sup>3)</sup>
<b>Moment of inertia of the rotor</b>	2.3 gcm <sup>2</sup>
<b>Bearing lifetime</b>	2.0 x 10 <sup>9</sup> revolutions
<b>Angular acceleration</b>	≤ 500,000 rad/s <sup>2</sup>

<sup>1)</sup> Higher values are possible using limited bearing life.

<sup>2)</sup> Allow for self-heating of 1.3 K per 1,000 rpm when designing the operating temperature range.

<sup>3)</sup> No permanent operation. Decreasing signal quality.

## Ambient data

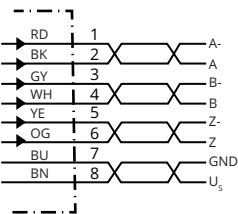
<b>EMC</b>	According to EN 61000-6-2 and EN 61000-6-3
<b>Enclosure rating</b>	IP50
<b>Permissible relative humidity</b>	90 % (Condensation not permitted)
<b>Operating temperature range</b>	-10 °C ... +70 °C
<b>Storage temperature range</b>	-25 °C ... +85 °C
<b>Resistance to shocks</b>	100 g, 6 ms (EN 60068-2-27)
<b>Resistance to vibration</b>	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

## Classifications

<b>ECLASS 5.0</b>	27270501
<b>ECLASS 5.1.4</b>	27270501
<b>ECLASS 6.0</b>	27270590
<b>ECLASS 6.2</b>	27270590
<b>ECLASS 7.0</b>	27270501
<b>ECLASS 8.0</b>	27270501
<b>ECLASS 8.1</b>	27270501
<b>ECLASS 9.0</b>	27270501
<b>ECLASS 10.0</b>	27270501
<b>ECLASS 11.0</b>	27270501
<b>ECLASS 12.0</b>	27270501
<b>ETIM 5.0</b>	EC001486

ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

PIN assignment



Wire colors (cable connection)	Signal	Description	Type
Brown	U <sub>s</sub>	Supply voltage	DLS40E-*
Blue	GND	Ground connection	DLS40E-*
Black	A	Signal cable	DLS40E-*
White	B	Signal cable	DLS40E-*
Orange	Z	Signal cable	DLS40E-*
Red	A-	Signal cable	DLS40E-AV*
Gray	B-	Signal cable	DLS40E-AV*
Yellow	Z-	Signal cable	DLS40E-AV*

## 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)