



DLS40E-BDGV00500

DLS40

INCREMENTAL ENCODERS

SICK
Sensor Intelligence.

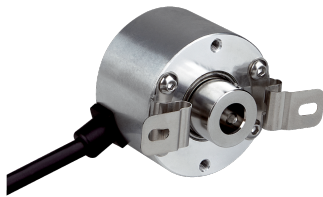


Illustration may differ



Ordering information

Type	part no.
DLS40E-BDGV00500	1132513

Other models and accessories → www.sick.com/DLS40

Detailed technical data

Safety-related parameters

MTTF_D (mean time to dangerous failure)	600 years (EN ISO 13849-1) ¹⁾
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¹⁾ 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.

Performance

Pulses per revolution	500
Measuring step	90°, electric/pulses per revolution
Duty cycle	≤ 0.5 ± 10 %

Interfaces

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

Electronics

Connection type	Cable, 5-wire, radial, 2 m
Supply voltage	10 ... 27 V
Reference signal, number	1
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓ ¹⁾

¹⁾ Protection against short circuit to GND and U_S. Short-circuit resistance is only guaranteed when U_S and GND are connected correctly.

Mechanics

Mechanical design	Blind hollow shaft
Shaft diameter	10 mm Front clamp

¹⁾ Relates to encoders with 2 m cable connection.

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

³⁾ No permanent operation. Decreasing signal quality.

Weight	Approx. 170 g ¹⁾
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Aluminum
Material, cable	PVC
Start up torque	0.5 Ncm
Operating torque	0.3 Ncm
Permissible movement static	± 0.3 mm (radial) ± 0.5 mm (axial)
Permissible movement dynamic	± 0.1 mm (radial) ± 0.2 mm (axial)
Operating speed	6,000 min ⁻¹ ²⁾
Maximum operating speed	≤ 8,000 min ⁻¹ ³⁾
Moment of inertia of the rotor	24.6 gcm ²
Bearing lifetime	2.0 x 10 ⁹ revolutions
Angular acceleration	≤ 500,000 rad/s ²

¹⁾ Relates to encoders with 2 m cable connection.

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

³⁾ No permanent operation. Decreasing signal quality.

Ambient data

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

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Classifications

ECLASS 5.0	27270501
ECLASS 5.1.4	27270501
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270501
ECLASS 8.0	27270501
ECLASS 8.1	27270501

Dimensional drawing Blind hollow shaft

Type	Blind hollow shaft	Shaft diameter XF7
	DLS40E-BAxxxxxxx	6 mm
	DLS40E-BBxxxxxxx	8 mm
	DLS40E-BDxxxxxxx	10 mm
	DLS40E-BExxxxxxx	12 mm

Figure 1 shows the pin assignment of the 5-pin connector. The pins are numbered 1 to 5, and the corresponding signal names are A, B, Z, GND, and U_s .

Pin	Signal Name
1	A
2	B
3	Z
4	GND
5	U_s

Figure 1 shows the pin assignment of the 5-pin connector. The pins are numbered 1 to 5, and the corresponding signal names are A, B, Z, GND, and U_s .

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|-----|-------------|
| 1 | A |
| 2 | B |
| 3 | Z |
| 4 | GND |
| 5 | U_s |

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:

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