

DBS60E-RGEZ00S85

DBS60

INCREMENTAL ENCODERS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

| Type | part no. |
|------------------|----------|
| DBS60E-RGEZ00S85 | 1091574 |

Other models and accessories → www.sick.com/DBS60



Detailed technical data

Features

| | |
|----------------------------------|--|
| Special device | ✓ |
| Specialty | Cable, 5-wire, with male connector, SUB-D, 5.2 m (-0/+80 mm), cable shielding connected to the SUB-D connector PUR cable for flexible use Customer-specific pin assignment 5 mm spacer enclosed to fix the encoder in the application |
| Standard reference device | DBS60E-RGEN00100 |

Safety-related parameters

| | |
|--|--|
| MTTF_D (mean time to dangerous failure) | 500 years (EN ISO 13849-1) ¹⁾ |
|--|--|

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 | 100 |
| Measuring step | ≤ 90°, electric/pulses per revolution |
| Measuring step deviation | ± 18° / pulses per revolution |
| Error limits | Measuring step deviation x 3 |
| Duty cycle | ≤ 0.5 ± 5 % |

Interfaces

| | |
|---------------------------------------|-------------------------|
| Communication interface | Incremental |
| Communication Interface detail | HTL / Push pull |
| Number of signal channels | 6-channel |
| Initialization time | < 5 ms ¹⁾ |
| Output frequency | + 300 kHz ²⁾ |
| Load current | ≤ 30 mA, per channel |
| Power consumption | ≤ 1 W (without load) |

¹⁾ Valid signals can be read once this time has elapsed.

²⁾ Up to 450 kHz on request.

Electronics

| | |
|--|--|
| Connection type | Special version |
| Connection type Detail | Cable, 5-wire, with male connector, SUB-D, 5.2 m (-0/+80 mm), cable shielding connected to the SUB-D connector |
| Supply voltage | 10 ... 27 V |
| Reference signal, number | 1 |
| Reference signal, position | 90°, electric, logically gated with A and B |
| Reverse polarity protection | ✓ |
| Short-circuit protection of the outputs | ✓ ¹⁾ |

¹⁾ Short-circuit opposite to another channel, US or GND permissible for maximum 30 s.

Mechanics

| | |
|---|--|
| Mechanical design | Through hollow shaft |
| Shaft diameter | 14 mm Rear clamping |
| Flange type / stator coupling | Special version |
| Flange type / stator coupling detail | 2-sided stator coupling 2-sided, elongated hole, bolt hole circle 63 mm - 83 mm, with enclosed 5 mm spacer |
| Weight | + 0.25 kg ¹⁾ |
| Shaft material | Stainless steel |
| Flange material | Aluminum |
| Housing material | Aluminum |
| Material, cable | PUR |
| Start up torque | + 0.5 Ncm (+20 °C) |
| Operating torque | 0.4 Ncm (+20 °C) |
| Permissible movement static | ± 0.3 mm (radial) ± 0.5 mm (axial) ²⁾ |
| Permissible movement dynamic | ± 0.1 mm (radial) ± 0.2 mm (axial) ²⁾ |
| Operating speed | 6,000 min ⁻¹ ³⁾ |
| Maximum operating speed | 9,000 min ⁻¹ ⁴⁾ |
| Moment of inertia of the rotor | 50 gcm ² |
| Bearing lifetime | 3.6 x 10 ⁹ revolutions |
| Angular acceleration | ≤ 500,000 rad/s ² |

¹⁾ Based on encoder with male connector or cable with male connector.

²⁾ Not applicable for stator coupling type C and K.

³⁾ Allow for self-heating of 2.6 K per 1,000 rpm when designing the operating temperature range.

⁴⁾ Maximum speed which does not cause mechanical damage to the encoder. Impact on the service life and signal quality is possible. Please note the maximum output frequency.

Ambient data

| | |
|-------------------------|--|
| EMC | According to EN 61000-6-2 and EN 61000-6-3 |
| Enclosure rating | IP65, housing side (IEC 60529) ¹⁾ IP65, shaft side (IEC 60529) |

¹⁾ With mating connector fitted.

²⁾ These values relate to all mechanical versions including recommended accessories unless otherwise noted.

| | |
|--------------------------------------|---|
| Permissible relative humidity | 90 % (Condensation not permitted) |
| Operating temperature range | -20 °C ... +85 °C ²⁾ |
| Storage temperature range | -40 °C ... +100 °C, without package |
| Resistance to shocks | 250 g, 3 ms (EN 60068-2-27) |
| Resistance to vibration | 30 g, 10 Hz ... 2,000 Hz (EN 60068-2-6) |

¹⁾ With mating connector fitted.

²⁾ These values relate to all mechanical versions including recommended accessories unless otherwise noted.

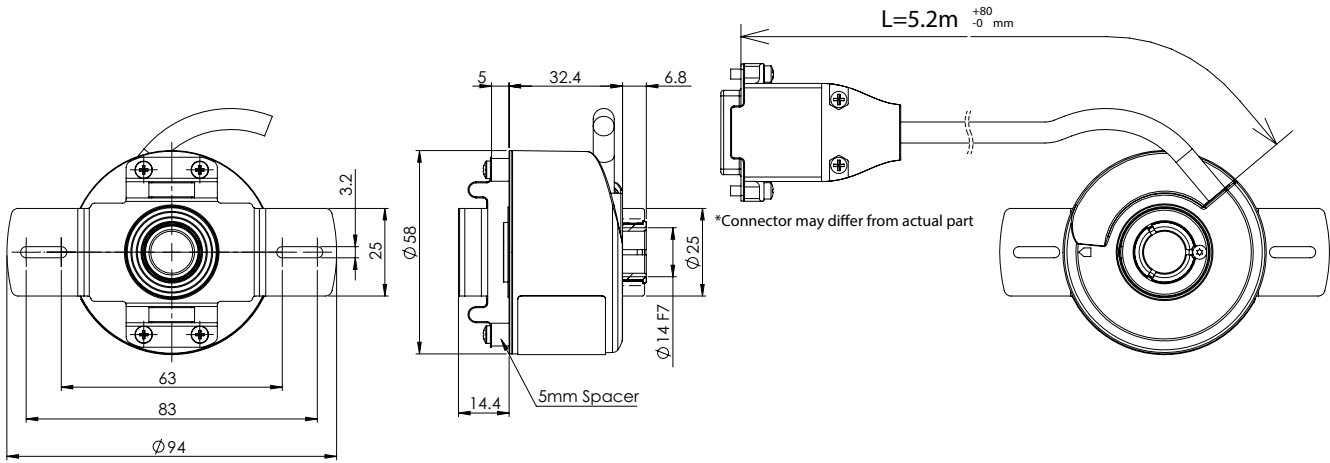
Certificates

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

Classifications

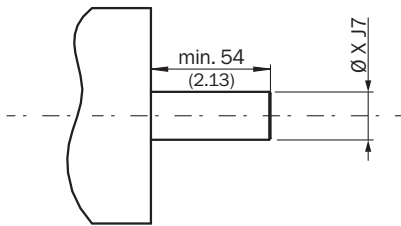
| | |
|-----------------------|----------|
| ECLASS 5.0 | 27270501 |
| ECLASS 5.1.4 | 27270501 |
| ECLASS 6.0 | 27270590 |
| ECLASS 6.2 | 27270590 |
| ECLASS 7.0 | 27270501 |
| ECLASS 8.0 | 27270501 |
| ECLASS 8.1 | 27270501 |
| ECLASS 9.0 | 27270501 |
| ECLASS 10.0 | 27270501 |
| ECLASS 11.0 | 27270501 |
| ECLASS 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)

Attachment specifications Through hollow shaft with rear clamping



customer side

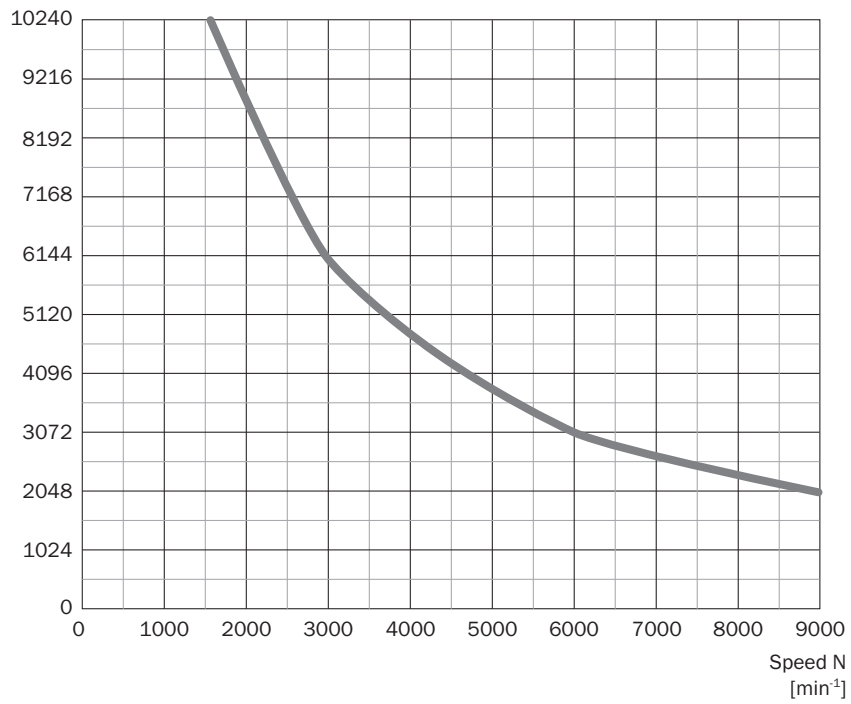
| Type | Through hollow shaft with rear clamping | Shaft diameter xj7 |
|------------------|---|--------------------|
| DBS60x-RAxxxxxxx | | 6 mm |
| DBS60x-R1xxxxxxx | | |
| DBS60x-RBxxxxxxx | | 8 mm |
| DBS60x-R2xxxxxxx | | |
| DBS60x-RCxxxxxxx | | 3/8" |
| DBS60x-R3xxxxxxx | | |
| DBS60x-RDxxxxxxx | | 10 mm |
| DBS60x-R4xxxxxxx | | |
| DBS60x-RExxxxxxx | | 12 mm |
| DBS60x-R5xxxxxxx | | |
| DBS60x-RFxxxxxxx | | 1/2" |
| DBS60x-R6xxxxxxx | | |
| DBS60x-RGxxxxxxx | | 14 mm |
| DBS60x-R7xxxxxxx | | |
| DBS60x-RHxxxxxxx | | 15 mm |
| DBS60x-R8xxxxxxx | | |
| DBS60x-RJxxxxxxx | | 5/8" |

PIN assignment

| | |
|-------|-----|
| Pin 1 | A |
| Pin 2 | B |
| Pin 3 | Z |
| Pin 5 | +US |
| Pin 9 | GND |

Diagrams

Pulses per revolution



Recommended accessories

Other models and accessories → www.sick.com/DBS60

| | Brief description | Type | part no. |
|---|---|----------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded Connection type head A: Male connector, M12, 8-pin, straight, A-coded Signal type: Incremental Cable: CAT5, CAT5e Connection systems: IDC quick connection Permitted cross-section: 0.14 mm² ... 0.34 mm² | STE-1208-GA01 | 6044892 |
|  | <ul style="list-style-type: none"> Description: HIPERFACE[®], shielded, SSI, Incremental Connection type head A: Male connector, M23, 12-pin, straight, A-coded Signal type: HIPERFACE[®], SSI, Incremental Connection systems: Solder connection | STE-2312-GX | 6028548 |
|  | <ul style="list-style-type: none"> Description: HIPERFACE[®], shielded, SSI, Incremental Connection type head A: Male connector, M23, 12-pin, straight, A-coded Signal type: HIPERFACE[®], SSI, Incremental Connection systems: Solder connection | STE-2312-G01 | 2077273 |
|  | <ul style="list-style-type: none"> Description: SSI, shielded, Incremental, HIPERFACE[®] Connection type head A: Flying leads Connection type head B: Flying leads Signal type: SSI, Incremental, HIPERFACE[®] Items supplied: By the meter Cable: 8-wire, PUR, halogen-free | LTG-2308-MWENC | 6027529 |
|  | <ul style="list-style-type: none"> Description: SSI, shielded, Incremental Connection type head A: Flying leads Connection type head B: Flying leads Signal type: SSI, Incremental Items supplied: By the meter Cable: 11-wire, PUR | LTG-2411-MW | 6027530 |
|  | <ul style="list-style-type: none"> Description: SSI, shielded, Incremental Connection type head A: Flying leads Connection type head B: Flying leads Signal type: SSI, Incremental Items supplied: By the meter Cable: 12-wire, PUR, halogen-free | LTG-2512-MW | 6027531 |
|  | <ul style="list-style-type: none"> Description: SSI, shielded, TTL, HTL, Incremental Connection type head A: Flying leads Connection type head B: Flying leads Signal type: SSI, TTL, HTL, Incremental Items supplied: By the meter Cable: 12-wire, UV and saltwater-resistant, PUR, halogen-free | LTG-2612-MW | 6028516 |

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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