



DBS60E-RECZGS345

DBS60

INCREMENTAL ENCODERS

SICK
Sensor Intelligence.

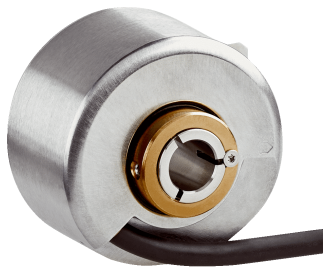


Illustration may differ



Ordering information

| Type | part no. |
|------------------|----------|
| DBS60E-RECZGS345 | 1112080 |

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

Detailed technical data

Features

| | |
|----------------------------------|---|
| Special device | ✓ |
| Specialty | Cable, with male connector, M12, 8-pin, radial, 0.3 m, enclosure rating IP66, customer-specific encoder label with Getriebbau NORD part number: 19651823 Second and identical encoder label fastened to packaging, customer-specific packaging label, no operating instructions (can be accessed digitally), device is exclusively for GBN |
| Standard reference device | DBS60E-RECKG4096 |
| Additional information | Getriebbau NORD part number: 19651823 |

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 | 4,096 |
| Measuring step | ≤ 90 °, electric/pulses per revolution |
| Measuring step deviation | ± 36 ° / pulses per revolution |
| Error limits | Measuring step deviation x 3 |
| Duty cycle | ≤ 0.5 ± 10 % |

Interfaces

| | |
|---------------------------------------|-------------------------|
| Communication interface | Incremental |
| Communication Interface detail | TTL / RS-422 |
| Number of signal channels | 6-channel |
| Initialization time | < 5 ms ¹⁾ |
| Output frequency | + 300 kHz ²⁾ |
| Load current | ≤ 30 mA, per channel |

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

²⁾ Up to 450 kHz on request.

| | |
|--------------------------|------------------------|
| Power consumption | ≤ 0.5 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, with male connector, M12, 8-pin, radial, 0.3 m, enclosure rating IP66, customer-specific encoder label with Getriebebau NORD part number: 19651823 |
| Supply voltage | 10 ... 30 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 or GND permissible for max. 60 s. No protection signal against U_S .

Mechanics

| | |
|---------------------------------------|---|
| Mechanical design | Through hollow shaft |
| Shaft diameter | 12 mm Rear clamping |
| Flange type / stator coupling | 1-sided stator coupling, slot, screw hole circle radius 32.1 mm–37.6 mm |
| Weight | + 0.25 kg ¹⁾ |
| Shaft material | Stainless steel |
| Flange material | Aluminum |
| Housing material | Aluminum |
| Material, cable | PUR |
| Start up torque | + 2.6 Ncm (+20 °C) |
| Operating torque | 2.5 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 | IP66, housing side (IEC 60529) ¹⁾ IP66, shaft side (IEC 60529) |
| Permissible relative humidity | 90 % (Condensation not permitted) |
| Operating temperature range | -25 °C ... +80 °C, at maximum 3,000 pulses per revolution 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.

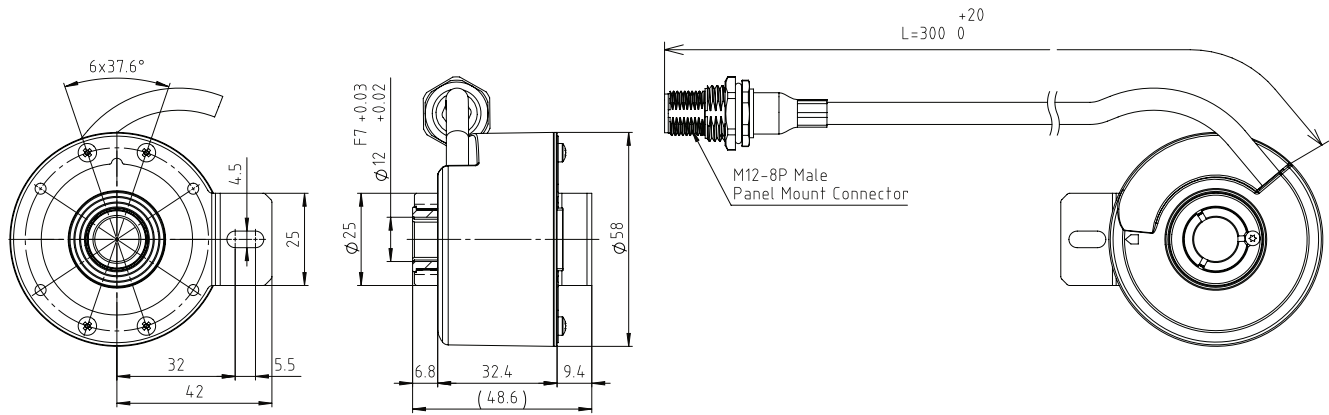
Certificates

| | |
|--|---|
| 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

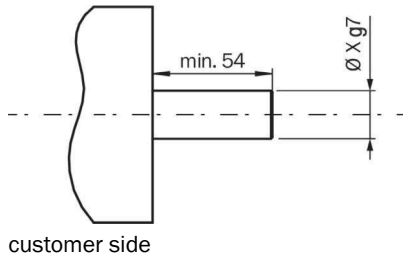
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|-----------------------|----------|
| ECLASS 5.0 | 27270501 |
| ECLASS 5.1.4 | 27270501 |
| ECLASS 6.0 | 27270590 |
| ECLASS 6.2 | 27270590 |
| ECLASS 7.0 | 27270501 |
| ECLASS 8.0 | 27270501 |
| ECLASS 8.1 | 27270501 |
| ECLASS 9.0 | 27270501 |
|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

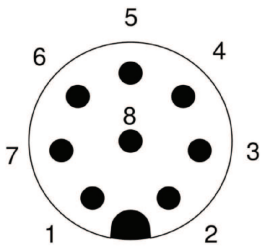


Dimensions in mm (inch)

Attachment specifications Through hollow shaft with rear clamping








PIN assignment



| Pin | Signal |
|-----|--------|
| 1 | GND |
| 2 | +Us |
| 3 | A |
| 4 | A- |
| 5 | B |
| 6 | B- |
| 7 | Z |
| 8 | Z- |

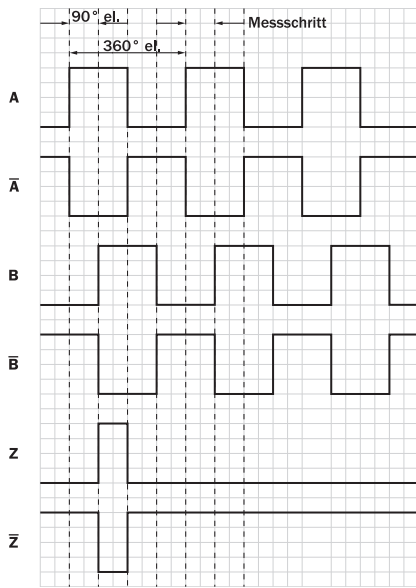
Type label Encoder label

|  <p>Mat. Nr.: 19651823</p> <p>DRIVESYSTEMS</p> <p>SICK Incr. Encoder DBS60E- RECZGS345</p> <p>Ident. Nr. YYWW - cn 1112080 SERIALNO</p>  <p>Made in Malaysia</p> | <p>Lines LINE VDC VL VT</p> <p>UL ^{®Class 2} low-voltage limited energy circuit </p> <p>EAC CE  </p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Signal</th> <th>Pin Number</th> <th>Signal</th> <th>Pin Number</th> </tr> </thead> <tbody> <tr> <td>+ US</td> <td>2</td> <td>A</td> <td>3</td> </tr> <tr> <td>GND</td> <td>1</td> <td>A-</td> <td>4</td> </tr> <tr> <td>Z</td> <td>7</td> <td>B</td> <td>5</td> </tr> <tr> <td>Z-</td> <td>8</td> <td>B-</td> <td>6</td> </tr> </tbody> </table> | Signal | Pin Number | Signal | Pin Number | + US | 2 | A | 3 | GND | 1 | A- | 4 | Z | 7 | B | 5 | Z- | 8 | B- | 6 |
|---|--|--------|------------|--------|------------|------|---|---|---|-----|---|----|---|---|---|---|---|----|---|----|---|
| Signal | Pin Number | Signal | Pin Number | | | | | | | | | | | | | | | | | | |
| + US | 2 | A | 3 | | | | | | | | | | | | | | | | | | |
| GND | 1 | A- | 4 | | | | | | | | | | | | | | | | | | |
| Z | 7 | B | 5 | | | | | | | | | | | | | | | | | | |
| Z- | 8 | B- | 6 | | | | | | | | | | | | | | | | | | |

Type label Packaging label

| | |
|--|--|
| <p>Getriebebau NORD GmbH & Co. KG www.nord.com</p>  <p>DRIVESYSTEMS</p> <p>SICK</p> <p>Sick, D-79183 Waldkirch</p> | <p>Mat. Nr.: 19651823</p> <p>Lines LINE VDC VL VT</p> <p>Incr. Encoder</p> <p>DBS60E- RECZGS345</p> <p>Ident. Nr. YYWW - cn 1112080 SERIALNO</p>  <p>Made in Malaysia</p> |
|--|--|

Diagrams Signal outputs for electrical interfaces TTL and HTL

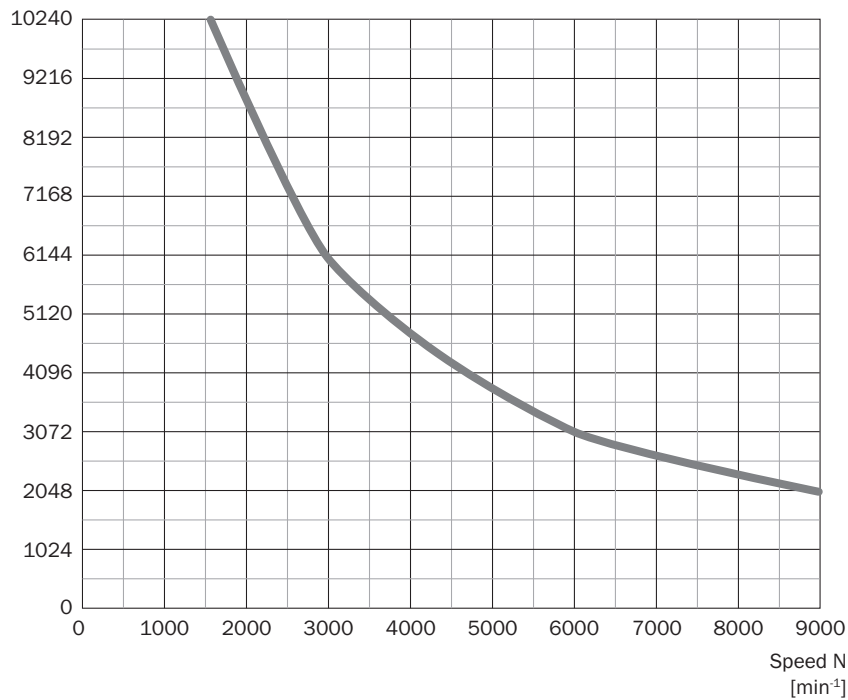


Cw with view on the encoder shaft in direction "A", compare dimensional drawing.

| Supply voltage | Output |
|----------------|--------|
| 10 V ... 30 V | TTL |

Diagrams

Pulses per revolution



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.

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