

CKS36-PFBPROGR

CKS36

MOTOR FEEDBACK SYSTEMS ROTARY INCREMENTAL WITH COMMUTATION

SICK
Sensor Intelligence.

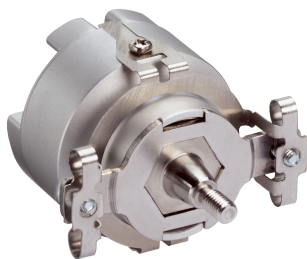


Illustration may differ

Ordering information

| Type | Part no. |
|----------------|----------|
| CKS36-PFBPROGR | 1035370 |

Other models and accessories → www.sick.com/CKS36

Detailed technical data

Performance

| | |
|---|---|
| Number of the absolute ascertainable revolutions | 1 |
| Number of lines per revolution | 2,048 |
| Measuring step | 90° /number of lines |
| Commutation signals | 32 pole pairs, 1 ... 32 pole pairs adjustable (according to EIA 422) |
| Zero pulse width | 90° (90° or 180° programmable) |
| Reference signal, number | 1 |
| Reference signal, position | 90° or 180° configurable, electric, gated with A and B |
| Measuring step deviation | ± 0.035° (binary number of lines) ± 0.07° (non-binary number of lines) |
| Operating speed | ≤ 12,000 min ⁻¹ , working speed up to which the output signals are correct |

Interfaces

| | |
|--------------------------------|-------------|
| Communication interface | Incremental |
|--------------------------------|-------------|

Electrical data

| | |
|---------------------------------|-------------------------------|
| Connection type | Male connector, 14-pin, axial |
| Supply voltage range | 4.5 V DC ... 5.5 V DC |
| Power consumption | < 60 mA ¹⁾ |
| Maximum output frequency | ≤ 400 kHz |

¹⁾ Without load.

Mechanical data

| | |
|---------------------------------------|---|
| Shaft version | Tapered shaft |
| Flange type / stator coupling | Spring mounting plate |
| Dimensions | See dimensional drawing |
| Weight | 0.065 kg |
| Moment of inertia of the rotor | 4.5 gcm ² |
| Operating speed | 120,000 min ⁻¹ ¹⁾ |
| Angular acceleration | ≤ 500,000 rad/s ² |
| Operating torque | 0.2 Ncm |

¹⁾ Allow for self-heating of 1.1 K per 1,000 rpm when designing the operating temperature range.

| | |
|---|-----------------------------------|
| Start up torque | 0.3 Ncm |
| Permissible movement of the drive element, static | ± 0.5 mm radial ± 0.2 mm axial |
| Permissible movement of the drive element, dynamic | ± 0.1 mm radial ± 0.1 mm axial |
| Life of ball bearings | 3.6 x 10 ⁹ revolutions |

¹⁾ Allow for self-heating of 1.1 K per 1,000 rpm when designing the operating temperature range.

Ambient data

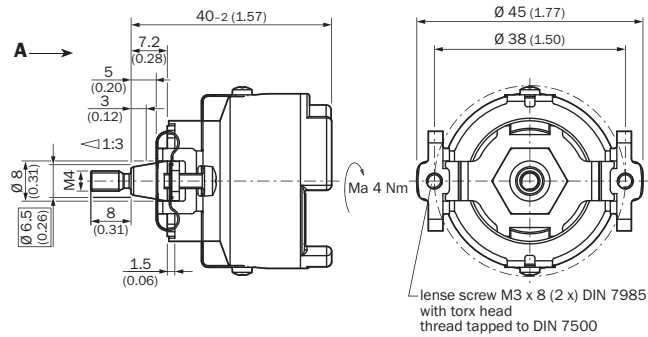
| | |
|--|--|
| Operating temperature range | -20 °C ... +110 °C |
| Storage temperature range | -40 °C ... +125 °C, without package |
| Relative humidity/condensation | 90 %, Condensation not permitted |
| Resistance to shocks | 100 g, 6 ms (according to EN 60068-2-27) |
| Frequency range of resistance to vibrations | 50 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6) |
| EMC | According to EN 61000-6-2 and EN 61000-6-3 ¹⁾ |
| Enclosure rating | IP50, with mating connector inserted and closed cover (according to IEC 60529) |

¹⁾ The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. The GND-(0 V) connection of the supply voltage is also grounded here. If other shielding concepts are used, users must perform their own tests.

Classifications

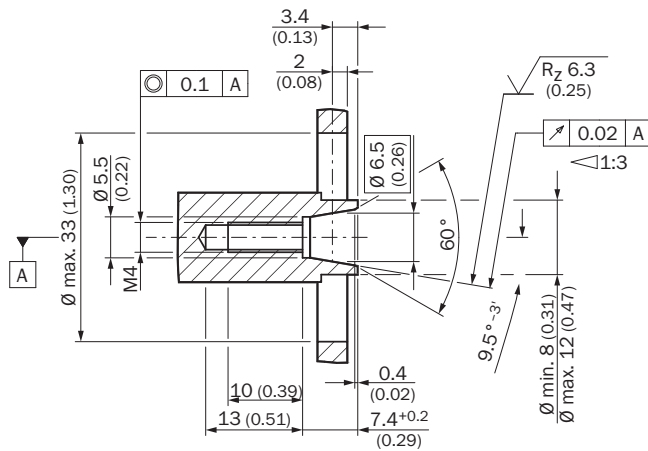
| | |
|-----------------------|----------|
| ECI@ss 5.0 | 27270501 |
| ECI@ss 5.1.4 | 27270501 |
| ECI@ss 6.0 | 27270590 |
| ECI@ss 6.2 | 27270590 |
| ECI@ss 7.0 | 27270501 |
| ECI@ss 8.0 | 27270501 |
| ECI@ss 8.1 | 27270501 |
| ECI@ss 9.0 | 27270501 |
| ETIM 5.0 | EC001486 |
| ETIM 6.0 | EC001486 |
| UNSPSC 16.0901 | 41112113 |

General tolerances according to DIN ISO 2768-mk



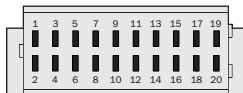
Proposed fitting

General tolerances according to DIN ISO 2768-mk



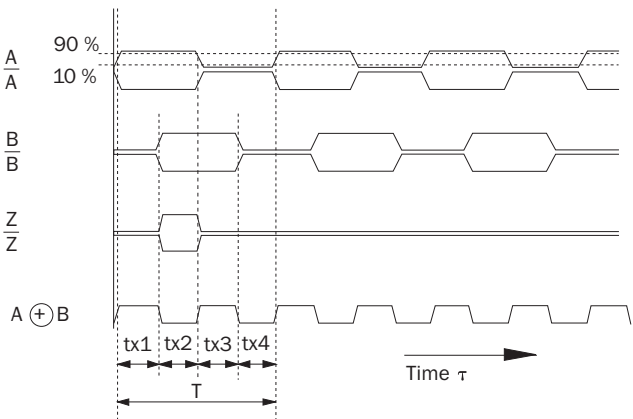
All dimensions in mm (inch)

PIN assignment



Diagrams

At constant speed, looking at the input shaft, and clockwise rotation



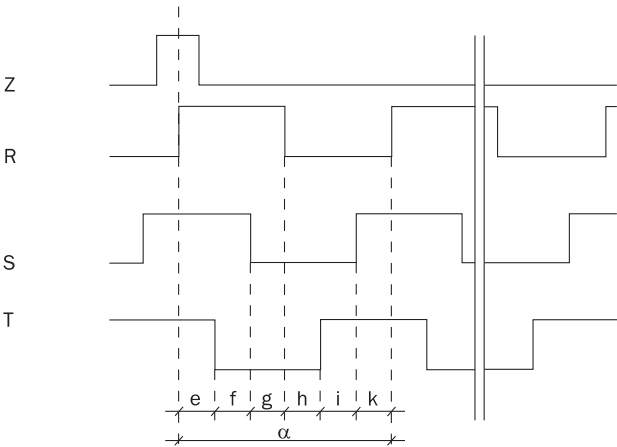
At constant rotational speed with regard to the input shaft and rotation in clockwise direction.

By connecting the two signals A and B, an output signal arises whose period durations tx1 ... tx4 have varying lengths.

The differences are determined:

- by the pulse/pause ratio tolerance of the individual channels
- by the tolerance in the 90° phase shift between A and B
- by the frequency




The times tx1 ... tx4 ideally have to amount to 1/4 of the particular period duration T. The typical output frequency of the encoder is defined so that the max. time tx is smaller than $1.5 \times T/4$.



Recommended accessories

Other models and accessories → www.sick.com/CKS36

| | Brief description | Type | Part no. |
|----------------------------|-------------------|--------------|----------|
| Other mounting accessories | | | |
| | Mounting tools | BEF-MW-SKX36 | 2031079 |

| | Brief description | Type | Part no. |
|---|---|------------------|----------|
| Plug connectors and cables | | | |
| | Head A: female connector, stranded cable, 14-pin, straight Head B: Flying leads Cable: Incremental, unshielded, 0.2 m | DOL-1J14-G0M2XB7 | 6030948 |
|  | Head A: female connector, JST, 8-pin, straight Head B: male connector, M23, 17-pin, straight Cable: Incremental, unshielded, 1 m | DSL-2317-G01MJB7 | 2071332 |
|  | Head A: female connector, terminal box, 8-pin, straight Head B: male connector, M23, 17-pin, straight Cable: Incremental, unshielded, 1 m | DSL-2317-G01MJC7 | 2071331 |
| Programming and configuration tools | | | |
|  | Programming tool, USB | PGT-06-S | 1035236 |
| | SVip® LAN programming tool for all motor feedback systems | PGT-11-S LAN | 1057324 |
| | SVip® WLAN programming tool for all motor feedback systems | PGT-11-S WLAN | 1067474 |

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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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