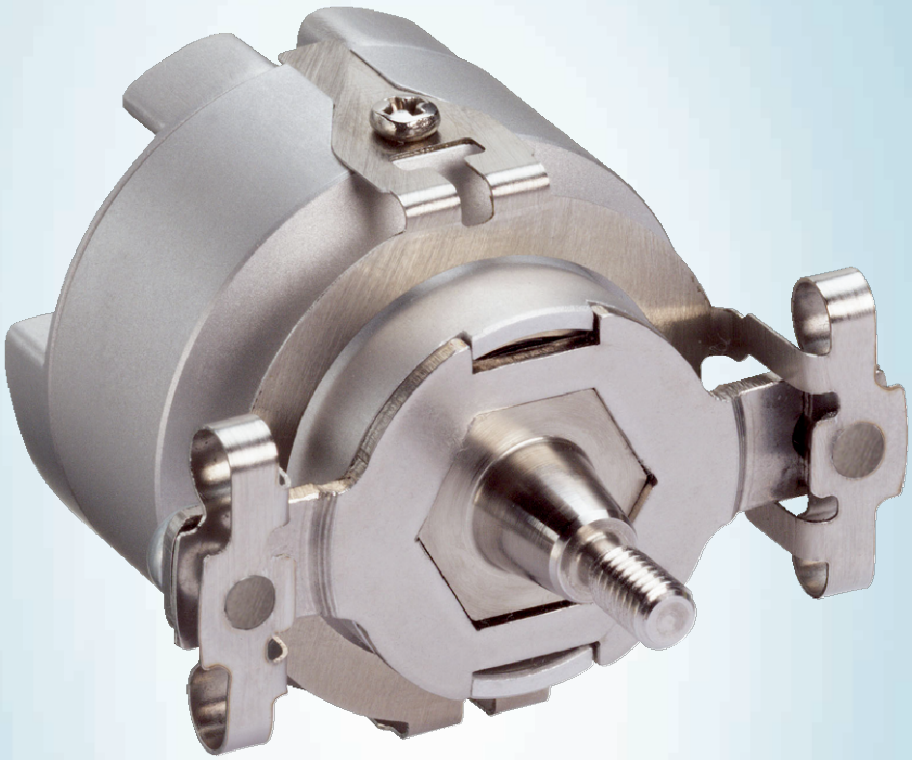
Data sheet



# CKS36-AFB08001

## CKS36

MOTOR FEEDBACK SYSTEMS

SICK
Sensor Intelligence.

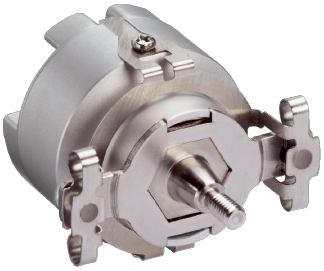


Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| CKS36-AFB08001 | 1060520 |

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

## Detailed technical data

### Performance

| | |
|---|---|
| **Number of the absolute ascertainable revolutions** | 1 |
| **Number of lines per revolution** | 128 |
| **Measuring step** | 90° /number of lines |
| **Commutation signals** | 1 pole pair (according to EIA 422) |
| **Zero pulse width** | 90° |
| **Reference signal, number** | 1 |
| **Reference signal, position** | 90° or 180° configurable, electric, gated with A and B |
| **Measuring step deviation** | ± 0.035° |
| **Operating speed** | ≤ 12,000 $min^{-1}$, working speed up to which the output signals are correct |

### Interfaces

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

### Electronics

| | |
|---|---|
| **Connection type** | Male connector, 20-pin, axial |
| **Supply voltage** | 4.5 V DC ... 5.5 V DC |
| **Current consumption** | < 60 mA [1] |
| **Maximum output frequency** | ≤ 400 kHz |

[1] Without load.

### Mechanics

| | |
|---|---|
| **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 gcm² |

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

| | |
|---|---|
| **Operating speed** | 12,000 $min^{-1}$ [1] |
| **Angular acceleration** | ≤ 500,000 $rad/s^2$ |
| **Operating torque** | 0.2 Ncm |
| **Start up torque** | + 0.3 Ncm |
| **Permissible movement static** | ± 0.5 mm, ± 0.2 mm radial, axial |
| **Permissible movement dynamic** | ± 0.1 mm radial<br>± 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 (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 (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.

## Certificates

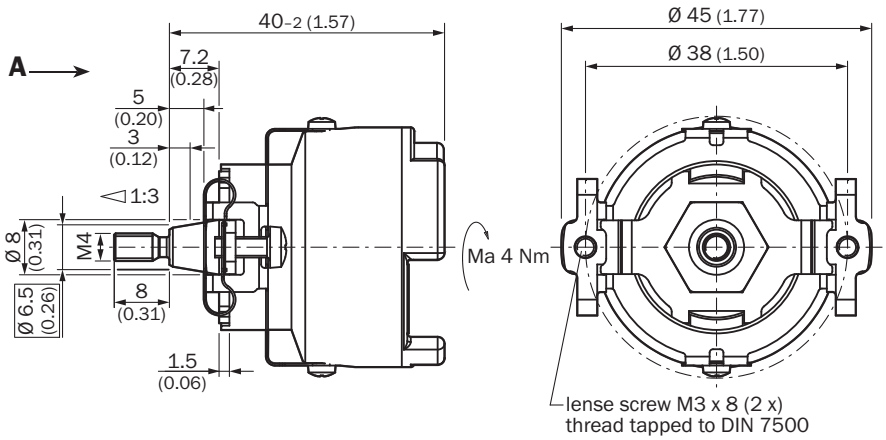
| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **ACMA declaration of conformity** | ✓ |
| **Moroccan declaration of conformity** | ✓ |
| **China RoHS** | ✓ |

## 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** | 27273805 |
| **ECLASS 11.0** | 27273901 |
| **ECLASS 12.0** | 27273901 |
| **ETIM 5.0** | EC001486 |
| **ETIM 6.0** | EC001486 |
| **ETIM 7.0** | EC001486 |

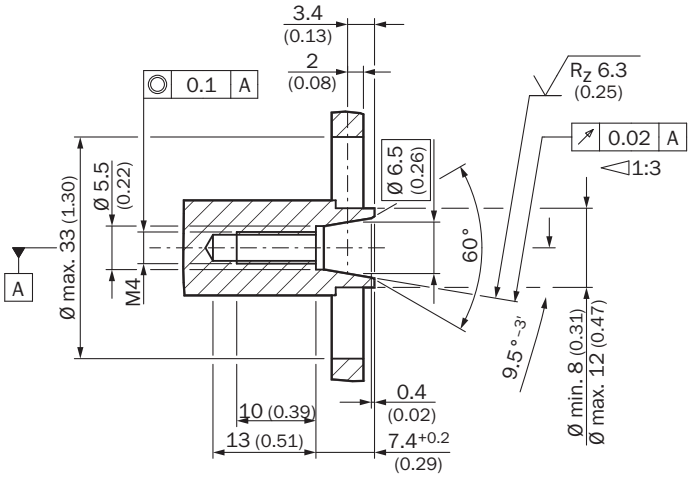
| | |
|---|---|
| **ETIM 8.0** | EC001486 |
| **UNSPSC 16.0901** | 41112113 |

## Dimensional drawing General tolerances according to DIN ISO 2768-mk



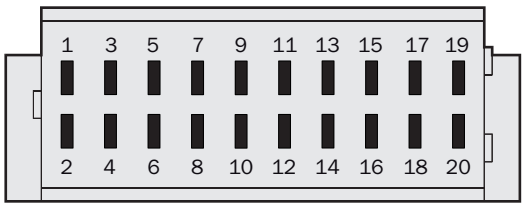

Dimensions in mm (inch)

## Attachment specifications General tolerances according to DIN ISO 2768-mk

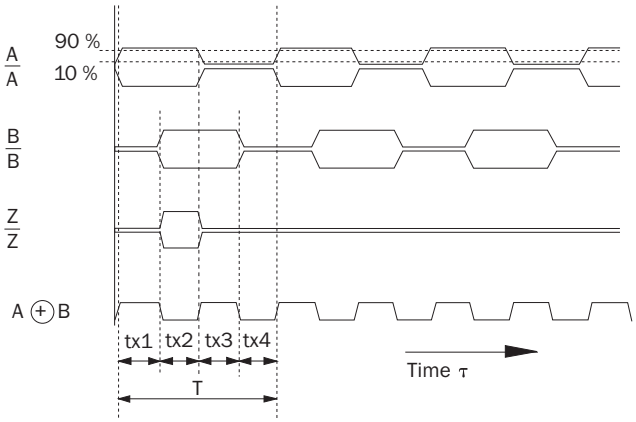



All dimensions in mm (inch)

## 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.

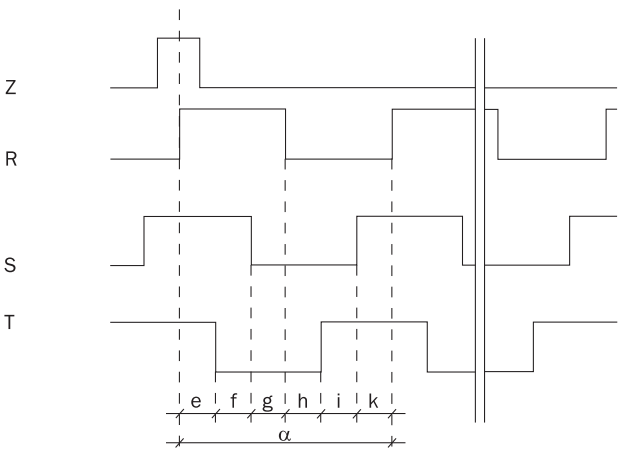
By connecting the two signals A and B, an output signal arises whose period durations tx1 ... tx4 have varying lengths.

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 x T/4.

## Diagrams



## Recommended accessories

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

| | Brief description | Type | part no. |
|---|---|---|---|
| connectors and cables | | | |
|  | • **Connection type head A:** Female connector, JST, 8-pin, straight<br>• **Connection type head B:** Male connector, M23, 17-pin, straight<br>• **Signal type:** Incremental<br>• **Cable:** 1 m, 8-wire<br>• **Description:** Incremental, unshielded | DSL-2317-G01MJB7 | 2071332 |
|  | • **Connection type head A:** Female connector, terminal box, 8-pin, straight<br>• **Connection type head B:** Male connector, M23, 17-pin, straight<br>• **Signal type:** Incremental<br>• **Cable:** 1 m, 8-wire<br>• **Description:** Incremental, unshielded | DSL-2317-G01MJC7 | 2071331 |
| | • **Connection type head A:** Female connector, stranded wire, 14-pin, straight<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Incremental<br>• **Cable:** 0.2 m, 14-wire<br>• **Description:** Incremental, unshielded | DOL-1J14-G0M2XB7 | 6030948 |
| Mounting systems | | | |
| | • **Description:** Mounting tools | BEF-MW-SKX36 | 2031079 |
| programming devices | | | |
|  | • **Product segment:** Programming devices<br>• **Product family:** PGT-11-S<br>• **Description:** SVip® LAN programming tool for all motor feedback systems<br>• **Items supplied:** 1x programming tool PGT-11-S LAN, 1x power supply unit 100-240 V AC / 12 V DC, primary adapter (Europe, UK, USA/Japan, Australia), Ethernet cable 3 m | PGT-11-S LAN | 1057324 |

# 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



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