



## Motor feedback systems rotary incremental with commutation CKS36

CKS36-AFB08001



**Model Name** > **CKS36-AFB08001**  
**Part No.** > **1060520**



*Illustration may differ*

#### At a glance

- Output driver for incremental and commutation signals as per EIA 422
- Resolution of up to 2,048 lines per revolution
- Commutation signals up to 32 pole pairs
- Individual programming of the line count, pole pair number and zero pulse width
- High resistance to shock and vibration
- System compensates for eccentricity errors due to holistic scanning
- Allows for high angular speeds

#### Your benefits

- The CKS36's small dimensions allows manufacturers to considerably reduce the size of their motors
- Programmable version for a reduced product variety
- High level of compatibility thanks to standard interface

#### Performance

|                                                   |                                                                       |
|---------------------------------------------------|-----------------------------------------------------------------------|
| Number of the absolute ascertainable revolutions: | 1 (Singleturn)                                                        |
| 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, electronically, gated with A and B        |
| Error limits:                                     | ± 0.09 °                                                              |
| Measuring step deviation:                         | ± 0.035 °                                                             |
| Operating speed:                                  | 12,000 /min, working speed up to which the output signals are correct |

#### Mechanical data

|                                              |                            |
|----------------------------------------------|----------------------------|
| Shaft version:                               | Tapered shaft              |
| Flange type/stator coupling:                 | Spring mounting plate      |
| Dimensions:                                  | See dimensional drawing    |
| Mass:                                        | 0.065 kg                   |
| Moment of inertia of the rotor:              | 4.5 gcm <sup>2</sup>       |
| Maximum operating speed:                     | 120,000 /min <sup>1)</sup> |
| Maximum angular acceleration:                | 500,000 rad/s <sup>2</sup> |
| Operating torque:                            | 0.2 Ncm                    |
| Start up torque:                             | 0.3 Ncm                    |
| Permissible shaft movement, radial, static:  | ± 0.1 mm                   |
| Permissible shaft movement, radial, dynamic: | ± 0.05 mm                  |

|                                             |                                   |
|---------------------------------------------|-----------------------------------|
| Permissible shaft movement, axial, static:  | ± 0.2 mm                          |
| Permissible shaft movement, axial, dynamic: | ± 0.1 mm                          |
| Life of ball bearings:                      | 3.6 x 10 <sup>9</sup> revolutions |
| Connection type:                            | Connector, 14-pin, axial          |

<sup>1)</sup> Self warming of 1.1 K per 1000 revolutions/min when applying note working temperature range

## Electrical data

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|                                         |                       |
|-----------------------------------------|-----------------------|
| Electrical interface:                   | TTL/RS422             |
| Operating voltage range/supply Voltage: | 4.5 V DC ... 5.5 V DC |
| Maximum output frequency:               | 400 kHz               |
| Operating power consumption (no load):  | < 60 mA <sup>1)</sup> |

<sup>1)</sup> Without load

## Ambient data

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|                                 |                                                                                 |
|---------------------------------|---------------------------------------------------------------------------------|
| Working 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)                                        |
| Resistance to vibration:        | 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) <sup>1)</sup>                      |
| Enclosure rating:               | IP 50 (according to IEC 60529), with mating connector inserted and closed cover |

<sup>1)</sup> 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. This is also where the GND (0 V) connection of the power supply voltage is linked to earth. Users must perform their own tests when other screen designs are used.



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