



## Motor feedback systems rotary HIPERFACE® SKS/SKM36

SKS36-HVA0-K02



**Model Name** > SKS36-HVA0-K02  
**Part No.** > 1035603



*Illustration may differ*

#### At a glance

- Motor feedback systems for the standard performance range
- 128 sine/cosine periods per revolution
- Absolute position with a resolution of 4,096 increments per revolution and 4,096 revolutions with the multiturn system
- Programming of the position value and electronic type label
- HIPERFACE® interface
- Integrated version and stand-alone design
- Certified according to SIL2/PL d (only valid for SKS36S/SKM36S-H...)
- Conforms to RoHs

#### Your benefits

- The small dimension allows manufacturers of low-power and minimal-power motors to considerably reduce the size of their motors
- The stand-alone version is ideally suited as a master and path encoders
- The SKS/SKM36 motor feedback systems have strongly penetrated the drive technology market
- The consistent mechanical components in SEK/SEL37 allow for a high degree of flexibility with various encoder systems



#### Performance

|                                                   |                                                                                    |
|---------------------------------------------------|------------------------------------------------------------------------------------|
| Number of sine/cosine periods per revolution:     | 128                                                                                |
| Number of the absolute ascertainable revolutions: | 1 (Singleturn)                                                                     |
| Total number of steps:                            | 4,096                                                                              |
| Measuring step:                                   | 2.5 angular seconds (at interpolation of the sine/cosine signals with e.g. 12 Bit) |
| Error limits for the digital absolute value:      | ± 320 angular seconds (via RS485)                                                  |
| Integral non-linearity typ.:                      | ± 120 angular seconds (Error limits for evaluating sine/cosine period)             |
| Differential non-linearity:                       | (Non-linearity within a sine/cosine period)                                        |
| Operating speed:                                  | 6,000 /min, up to which the absolute position can be reliably produced             |
| Available memory area:                            | 1,792 Byte (EEPROM 2048)                                                           |

#### Mechanical data

|                                 |                          |
|---------------------------------|--------------------------|
| Shaft diameter:                 | 6 mm                     |
| Flange type/stator coupling:    | Servo-/face mount flange |
| Dimensions:                     | See dimensional drawing  |
| Mass:                           | 0.14 kg                  |
| Moment of inertia of the rotor: | 6 gcm <sup>2</sup>       |

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| Maximum angular acceleration:       | 500,000 rad/s <sup>2</sup>        |
| Operating torque:                   | 0.6 Ncm                           |
| Start up torque:                    | 0.9 Ncm                           |
| Life of ball bearings:              | 2.0 x 10 <sup>9</sup> revolutions |
| Connection type:                    | Connector M12, 8-pin, radial      |
| Shaft version:                      | Solid shaft                       |
| Permissible Load capacity of shaft: | 10 N (radial)<br>5 N (axial)      |

#### Electrical data

---

|                                           |                    |
|-------------------------------------------|--------------------|
| Electrical interface:                     | HIPERFACE          |
| Operating voltage range/supply Voltage:   | 7 V DC ... 12 V DC |
| Recommended supply voltage:               | 8 V DC             |
| Operating current:                        | 60 mA              |
| Output frequency for sine/cosine signals: | 0 kHz ... 65 kHz   |

Without load;

#### Interfaces

---

|                                      |                                                                                                          |
|--------------------------------------|----------------------------------------------------------------------------------------------------------|
| Type of code for the absolute value: | Binary                                                                                                   |
| Code sequence:                       | Increasing, for clockwise shaft rotation, looking in direction "A" (see dimensional drawing)             |
| Interface signals:                   | Process data channel SIN, REFSIN, COS, REFCOS: analog, differential<br>parameter channel RS 485: digital |

#### Ambient data

---

|                                 |                                                               |
|---------------------------------|---------------------------------------------------------------|
| Working temperature range:      | -20 °C ... 100 °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                    |
| Enclosure rating:               | IP 65, according to IEC 60529, with mating connector inserted |

Technical drawing of a mechanical part (Fig. 10.10) showing a cross-section with various dimensions and tolerances. The part has a total length of 45 mm and a maximum height of 14 mm. Key features include a 1 x M12 thread, a 6 mm diameter hole, and several surface finish requirements (Ra 0.02, Ra 0.08, Ra 0.05). Dimensions are given in mm with tolerances in parentheses.

Dimensions and Tolerances:

- Total length: 45 (1.77)
- Top flange width: 8 (0.31)
- Top flange thickness: 1.4 (0.055)
- Thread: 1 x M12
- Distance from left face to thread center: 9.5 (0.37)
- Distance from thread center to right face: 8 (0.31)
- Left face to center of 6 mm hole: 6 (0.24)
- Left face to center of 25 mm hole: 25 (0.98)
- Left face to center of 35 mm hole: 35 ± 0.2 (1.38)
- Left face to center of 40 mm hole: 40 (1.57)
- Distance from 6 mm hole to 25 mm hole: 5.7 ± 0.1 (0.22)
- Distance from 25 mm hole to 35 mm hole: 10 ± 0.3 (0.39)
- Distance from 35 mm hole to 40 mm hole: 2.5 (0.10)
- Distance from 40 mm hole to right face: 2.5 ± 0.2 (0.10)
- Surface finish requirements:
  - Top flange:  $R_a 0.05$
  - Left face:  $R_a 0.02$
  - Inner hole:  $R_a 0.08$
  - Bottom face:  $R_a 0.08$



**Australia**

Phone +61 3 9457 0600  
1800 334 802 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail sac@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Ceská Republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail kundenservice@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6801000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 3358 1341  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederlands**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail austefjord@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail admin@sicksgp.com.sg

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886-2-2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 8865 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 800-325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)