



# SKS36-HVA0-K02

SKS/SKM36

MOTOR FEEDBACK SYSTEMS ROTARY HIPERFACE®

**SICK**  
Sensor Intelligence.

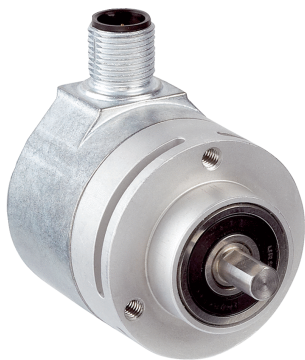


Illustration may differ



### Ordering information

Type	Part no.
SKS36-HVA0-K02	1035603

Other models and accessories → [www.sick.com/SKS\\_SKM36](http://www.sick.com/SKS_SKM36)

### Detailed technical data

#### Performance

<b>Sine/cosine periods per revolution</b>	128
<b>Number of the absolute ascertainable revolutions</b>	1
<b>Total number of steps</b>	4,096
<b>Measuring step</b>	2.5 " For interpolation of the sine/cosine signals with, e. g., 12 bits
<b>Integral non-linearity</b>	± 120 ", Error limits for evaluating sine/cosine period
<b>Differential non-linearity</b>	Non-linearity within a sine/cosine period
<b>Operating speed</b>	≤ 6,000 min <sup>-1</sup> , up to which the absolute position can be reliably produced
<b>Available memory area</b>	1,792 Byte
<b>System accuracy</b>	± 120 "

#### Interfaces

<b>Type of code for the absolute value</b>	Binary
<b>Code sequence</b>	Increasing, when turning the shaft For clockwise rotation, looking in direction "A" (see dimensional drawing), For clockwise shaft rotation, looking in direction "A" (see dimensional drawing)
<b>Communication interface</b>	HIPERFACE®

#### Electrical data

<b>Connection type</b>	Male connector, M12, 8-pin, radial
<b>Supply voltage</b>	7 V DC ... 12 V DC
<b>Recommended supply voltage</b>	8 V DC
<b>Power consumption</b>	60 mA <sup>1)</sup>
<b>Output frequency for sine/cosine signals</b>	≤ 65 kHz
<b>MTTF: mean time to dangerous failure</b>	205 years (EN ISO 13849) <sup>2)</sup>

<sup>1)</sup> Without load.

<sup>2)</sup> 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 60°C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

## Mechanical data

<b>Shaft version</b>	Solid shaft
<b>Flange type / stator coupling</b>	Servo-/face mount flange, stator coupling
<b>Dimensions</b>	See dimensional drawing
<b>Weight</b>	≤ 0.07 kg
<b>Moment of inertia of the rotor</b>	6 gcm <sup>2</sup>
<b>Operating speed</b>	12,000 min <sup>-1</sup> , 12,000 U/min
<b>Angular acceleration</b>	≤ 500,000 rad/s <sup>2</sup>
<b>Operating torque</b>	0.6 Ncm
<b>Start up torque</b>	+ 0.9 Ncm
<b>Permissible shaft loading</b>	10 N (radial) 5 N (axial)
<b>Life of ball bearings</b>	2.0 x 10 <sup>9</sup> revolutions

## Ambient data

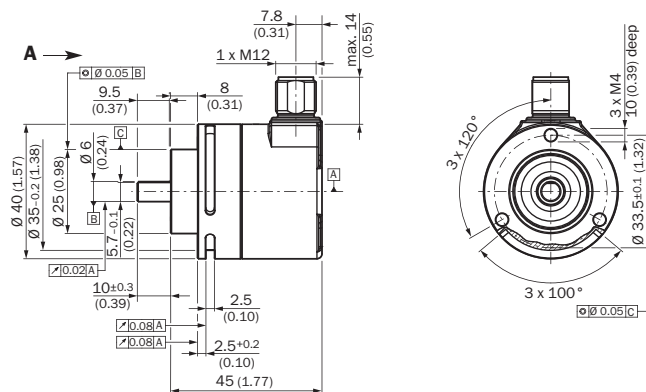
<b>Operating temperature range</b>	-20 °C ... +100 °C
<b>Storage temperature range</b>	-40 °C ... +125 °C, without package
<b>Relative humidity/condensation</b>	90 %, Condensation not permitted
<b>Resistance to shocks</b>	100 g, 6 ms, 6 ms (according to EN 60068-2-27)
<b>Frequency range of resistance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

## Classifications

<b>eCl@ss 5.0</b>	27270590
<b>eCl@ss 5.1.4</b>	27270590
<b>eCl@ss 6.0</b>	27270590
<b>eCl@ss 6.2</b>	27270590
<b>eCl@ss 7.0</b>	27270590
<b>eCl@ss 8.0</b>	27270590
<b>eCl@ss 8.1</b>	27270590
<b>eCl@ss 9.0</b>	27270590
<b>eCl@ss 10.0</b>	27273805
<b>eCl@ss 11.0</b>	27273901
<b>eCl@ss 12.0</b>	27273901
<b>ETIM 5.0</b>	EC001486
<b>ETIM 6.0</b>	EC001486
<b>ETIM 7.0</b>	EC001486
<b>ETIM 8.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

### Dimensional drawing (Dimensions in mm (inch))

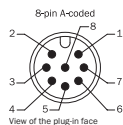
General tolerances according to DIN ISO 2768-mk



### PIN assignment

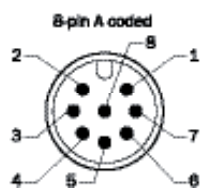
View of the plug-in face

#### Connector 8-pin



PIN	Color of wires	Signal	Explanation
1	Brown	REFSIN	Process data channel
2	White	+ SIN	Process data channel
3	Black	REFCOS	Process data channel
4	Pink	+ COS	Process data channel
5	Gray or yellow	Data +	RS-485 parameter channel
6	Green or purple	Data -	RS-485 parameter channel
7	Blue	GND	Ground connection
8	Red	+U <sub>s</sub>	Encoder supply voltage
-	-	Screen	Housing potential. Screening via plug housing.

Electrically adjustable via programming tool

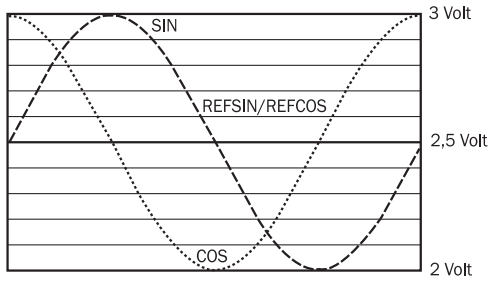


View of the plug-in face

PIN	Colour of wires	Signal	Explanation
1	brown	REFSIN	Process data channel
2	white	+ SIN	Process data channel
3	black	REFCOS	Process data channel
4	pink	+ COS	Process data channel
5	grey or yellow	Daten +	RS-485 Parameter channel
6	green or purple	Daten -	RS-485 Parameter channel
7	blue	GND	Ground connection
8	red	+ U <sub>s</sub>	Encoder Supply voltage
	Screen		Housing potential




Diagrams








Signal diagram for clockwise shaft rotation, looking in direction “A” (see dimensional drawing) 1 period = 360° : 128



Recommended accessories

Other models and accessories → [www.sick.com/SKS\\_SKM36](http://www.sick.com/SKS_SKM36)

	Brief description	Type	Part no.
<b>Programming and configuration tools</b>			
	SVip® LAN programming tool for all motor feedback systems	PGT-11-S LAN	1057324
<b>Flanges</b>			
	Flange adapter, adapts face mount flange with 20 mm centering collar to 33 mm servo flange, Aluminum	BEF-FA-020-033	2066312
	Flange adapter, adaption of 25 mm spigot face mount flange to 60s face mount flange with 36 mm centering collar, Aluminum	BEF-FA-025-036	2034226
	Flange adapter, adapts SKS/SKM36 servo/face mount flange encoder with 25 mm centering collar to size 60 mm face mount flange with 36 mm centering collar, Aluminum	BEF-FA-025-036-SK	2083558
	Flange adapter, adaption of 25 mm spigot face mount flange to 50 mm servo flange, Aluminum	BEF-FA-025-050	2032622
	Flange adapter, adapts SKS/SKM36 face mount flange encoder with 25 mm centering collar to 50 mm servo flange, Aluminum	BEF-FA-025-050-SK	2083559
	Flange adapter, adaption of 25 mm spigot face mount flange to 60 mm square installation plate, Aluminum	BEF-FA-025-060RCA	2032623
	Flange adapter, adaption of 25 mm spigot face mount flange to 60 mm square installation plate with shock-absorber, Aluminum	BEF-FA-025-060RSA	2032624
	Flange adapter, adapts face mount flange with 25 mm centering collar to 63 mm square mounting plate, Aluminum	BEF-FA-025-063-REC	2033631
	Flange adapter, adapts SKS/SKM36 servo/face mount flange encoder with 25 mm centering collar to 60 mm square mounting plate, Aluminum	BEF-FA025060R-CASK	2083560
	Flange adapter, adapts SKS/SKM36 face mount flange encoder with 25 mm centering collar to 60 mm square mounting plate with shock absorbers, Aluminum	BEF-FA025060RSASK	2083561

	Brief description	Type	Part no.
	Flange adapter, adapts SKS/SKM36 servo/face mount flange encoder with 25 mm centering collar to 63 mm square mounting plate, Aluminum	BEF-FA025063RECSK	2083562
<b>Mounting brackets and plates</b>			
	Mounting brackets for encoders with a centering spigot 25 mm, mounting kit for face mount flange included	BEF-WF-25	2032621
	Mounting bracket for SKS/SKM36 servo/face mount flange encoder with 25 mm centering collar, mounting kit for face mount flange included	BEF-WF-25-SK	2083557
<b>Other mounting accessories</b>			
	Servo clamps, small, for servo flange (clamping claws, mounting eccentric), 3 pcs, without mounting hardware, without mounting hardware	BEF-WK-RESOL	2039082
<b>Plug connectors and cables</b>			
	LTG-2708-MW	LTG-2708-MW	6028361
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: Incremental, SSI, PUR, halogen-free, shielded, 2 m	DOL-1208-G02MAC1	6032866
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: Incremental, SSI, PUR, halogen-free, shielded, 5 m	DOL-1208-G05MAC1	6032867
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: Incremental, SSI, PUR, halogen-free, shielded, 10 m	DOL-1208-G10MAC1	6032868
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: Incremental, SSI, PUR, halogen-free, shielded, 20 m	DOL-1208-G20MAC1	6032869
	Head A: female connector, M12, 8-pin, straight Cable: shielded	DOS-1208-GA	6028369
	Head A: male connector, M12, 8-pin, straight Cable: shielded	STE-1208-GA	6028370
<b>Shaft adaptation</b>			
	Bellows coupling, shaft diameter 6 mm / 6 mm, maximum shaft offset: radial $\pm$ 0.25 mm, axial $\pm$ 0.4 mm, angular $\pm$ 4°; max. speed 10,000 rpm, -30 °C to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum hub	KUP-0606-B	5312981
	Bellows coupling, shaft diameter 6 mm / 10 mm, maximum shaft offset: radial $\pm$ 0.25 mm, axial $\pm$ 0.4 mm, angular $\pm$ 4°; max. speed 10,000 rpm, -30 °C to +120 °C, max. torque 120 Ncm; material: stainless steel bellows, aluminum hub	KUP-0610-B	5312982

## 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](http://www.sick.com)