Motor feedback systems rotary HIPERFACE®
SEK160

SEK160-HN110AK02

Model Name	**> SEK160-HN110AK02**
Part No.	**> 1038272**

Illustration may differ

At a glance

- HIPERFACE® motor feedback systems for large hollow shaft and torque motors
- 128 sine/cosine periods per revolution
- Absolute position with a resolution of 4,096 increments per revolution
- Programming of the position value and electronic type label
- HIPERFACE® interface
- Turn & play - for simple assembly without tools
- High resistance to shock and vibration due to holistic scanning
- Bearingless motor feedback system

Your benefits

- Direct seat on the drive shaft renders transmission elements such as toothed belt or coupling superfluous
- The simplified, compact design is wear-free, thus helping to reduce maintenance costs
- Measuring accuracy is no longer affected by magnetic fields thanks to the capacitive measuring principle
- Time-saving mounting, since no mounting tools are required: simply fit it on, turn it and start
- The minimal dimensions enable you to save space and weight, allowing for a more efficient use of space.

HIPERFACE®
by SICK

Performance

Number of sine/cosine periods per revolution:	128
Number of the absolute ascertainable revolutions:	1 (Singleturn)
Total number of steps:	4,096 via RS485
Measuring step:	2.5 angular seconds at interpolation of the sine/cosine signals with e.g. 12 Bit
Differential non-linearity:	± 21 angular seconds (Non-linearity within a sine/cosine period) typical values at nominal position ± 0,1 mm and + 20 °C
Operating speed:	1,500 /min, up to which the absolute position can be reliably produced
Available memory area:	1,792 Byte, 1,792 Byte (EEPROM 2048)
Latency:	100 µs
Integral non-linearity typ.:	± 36 angular seconds (Error limits for evaluating sine/cosine period) typical values at nominal position ± 0,1 mm and + 20 °C

Mechanical data

Shaft diameter:	110 mm
Dimensions:	See dimensional drawing

Mass:	0.27 kg
Moment of inertia of the rotor:	2,860 gcm²
Maximum operating speed:	1,500 /min
Maximum angular acceleration:	28,000 rad/s²
Permissible shaft movement, radial, static:	± 0.2 mm
Permissible shaft movement, radial, dynamic:	± 0.05 mm
Connection type:	Connector, 8-pin
Permissible axial shaft movement:	± 0.5 mm [1]
Shaft version:	Through hollow shaft

[1] Relative to the installation position, as described in the assembly instructions (order nr. 8013609) and in the proposed customer fitting
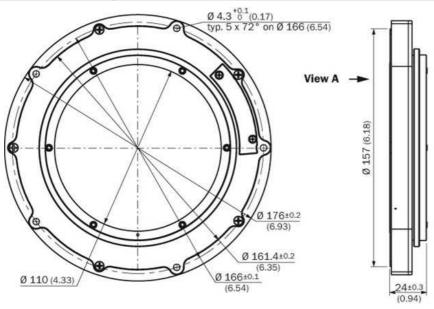
Electrical data

Electrical interface:	HIPERFACE
Operating voltage range/supply Voltage:	7 V DC ... 12 V DC
Recommended supply voltage:	8 V DC
Operating power consumption (no load):	150 mA [1]

[1] 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:	Parameter channel RS 485: digital, Process data channel SIN, REFSIN, COS, REFCOS: analog, differential

Ambient data

Working temperature range:	-30 °C ... 115 °C
Storage temperature range:	-50 °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:	30 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:	IP 40 (according to IEC 60529), with mating connector inserted and closed cover

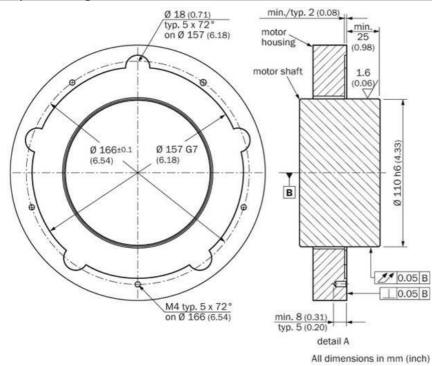[1] The EMC according to the standards quoted is achieved when the motor feedback system is mounted in an electrically conductive housing, which is connected to the central earthing point of the motor controller via a cable screen. Users must perform their own tests when other screen designs are used.

Dimensional drawing

Ø 4.3 $^{+0.1}_{0}$ (0.17)
typ. 5 x 72° on Ø 166 (6.54)

View A →

Ø 157 (6.18)

Ø 176±0.2
(6.93)

Ø 161.4±0.2
(6.35)

Ø 110 (4.33)

Ø 166±0.1
(6.54)

24±0.3
(0.94)

All dimensions in mm (inch)

Proposed fitting

Ø 18 (0.71)
typ. 5 x 72°
on Ø 157 (6.18)

min./typ. 2 (0.08)

motor
housing

min.
25
(0.98)

motor shaft

1.6
(0.06)

Ø 166±0.1
(6.54)

Ø 157 G7
(6.18)

Ø 110 h6 (4.33)

B

M4 typ. 5 x 72°
on Ø 166 (6.54)

0.05 B

0.05 B

min. 8 (0.31)
typ. 5 (0.20)

detail A

All dimensions in mm (inch)

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