



## Motor feedback systems rotary incremental VFS60

VFS60E-BCNJ01024



**Model Name** > [VFS60E-BCNJ01024](#)  
**Part No.** > -\*



*Illustration may differ*

\* When ordering for the first time, please use the information in "Model Name" instead of "Part No."

**At a glance**

- TTL, HTL or sine 0.5 VSS interfaces
- Resolution of up to 65,536 lines per revolution
- Individual programming of the interface, line count and of the zero pulse
- Direct programming via RS485
- Excellent concentricity through large distance between the ball bearings
- Exceptional robustness and protection class IP 65
- Mechanical flexibility through blind hollow shaft and through hollow shafts with diameters of 8 to 15 mm, available with various torque supports
- Temperature range from -30 °C to +100 °C

**Your benefits**

- Programmable version for a reduced product variety
- Various programming tools designed to take into account your own programming requirements
- High performance and reliability even in rough ambient conditions
- Large ball bearing distances reduce uneven wear and minimize vibration on the motor feedback housing, which increases the motor feedback system's service life
- High vibration resistance and extended temperature range through nickel code disk



**Performance**

Number of lines per revolution:	1,024
Reference signal, number:	1
Reference signal, position:	90 ° electronically, gated with Sin. and Cos.
Error limits:	± 0.3 °
Measuring step deviation:	± 0.2 °
Maximum initialisation time:	40 ms

**Mechanical data**

Shaft version:	Blind hollow shaft
Shaft diameter:	3/8 "
Shaft material:	Metal
Shaft plug-in length:	15 mm ... 42 mm
Flange type/stator coupling:	Standard

Dimensions:	See dimensional drawing
Mass:	0.2 kg
Moment of inertia of the rotor:	40 gcm <sup>2</sup>
Maximum operating speed:	6,000 /min <sup>1)</sup>
Maximum angular acceleration:	500,000 rad/s <sup>2</sup>
Operating torque:	0.6 Ncm (20 °C)
Start up torque:	0.8 Ncm (20 °C)
Permissible shaft movement, radial, dynamic:	± 0.1 mm
Permissible shaft movement, axial, dynamic:	± 0.2 mm
Life of ball bearings:	3.0 x 10 <sup>9</sup> revolutions
Connection type:	Cable, 8-pin, radial, 0.5 m <sup>2)</sup>

<sup>1)</sup> Self-warming 3.3 K/1,000 1/min, when applying note working temperature range <sup>2)</sup> The universal cable outlet is positioned in such a way, that it is possible to lay the cable in a radial or axial direction without kinking it

### Electrical data

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Electrical interface:	Sinus 0.5 VPP
Operating voltage range/supply Voltage:	4.5 V ... 5.5 V
Maximum output frequency:	200 kHz
Load resistance:	120 Ω
Signal SIN COS before differential generation:	0.5 V ± 20 %
Signal Z before differential generation LOW:	1.6 V ± 15 %
Signal Z before differential generation HIGH:	2.9 V ± 15 %
Signal offset Z:	2.5 V ± 10 %
Operating power consumption (no load):	40 mA <sup>1)</sup>

<sup>1)</sup> Without load

### Interfaces

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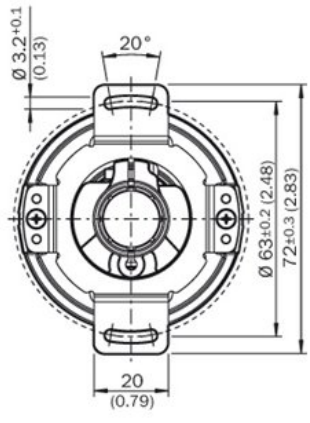
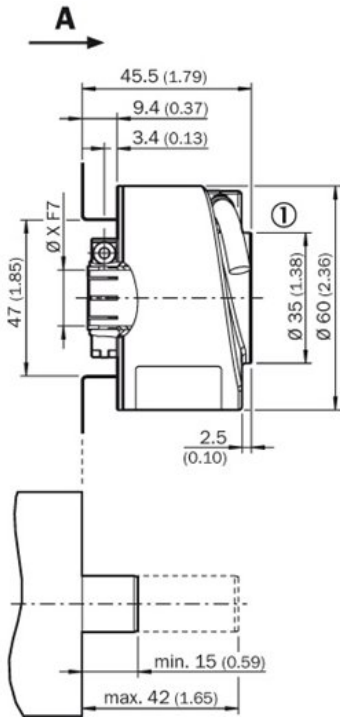
Interface signals:	Process data channel SIN, SIN <sub>-</sub> , COS, COS <sub>-</sub> : analog, differential, Process data channel Z, Z <sub>-</sub> : digital differential
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### Ambient data

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Working temperature range:	-30 °C ... 100 °C
Storage temperature range:	-40 °C ... 100 °C, without package
Relative humidity/Condensation:	90 %, condensation of the optical scanning not permitted
Resistance to shocks:	70 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)
Enclosure rating:	IP 65 (according to IEC 60529), shaft side, IP 67 (according to IEC 60529), housing side cable outlet

Dimensional drawing



[1] Cable diameter = 5,6 mm  
+/- 2 mm Bending radius = 30 mm

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