

VFS60E-THNK01024

VFS60

MOTOR FEEDBACK SYSTEMS ROTARY INCREMENTAL

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
VFS60E-THNK01024	1053168

Other models and accessories → www.sick.com/VFS60

Detailed technical data

Performance

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

Interfaces

Communication interface	Sinus 0.5 V _{pp}
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Electrical data

Supply voltage range	4.5 V ... 5.5 V
Operating power consumption (no load)	≤ 40 mA ¹⁾
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 %

¹⁾ Without load.

Mechanical data

Shaft version	Through hollow shaft
Shaft material	Metal
Flange type / stator coupling	Standard
Dimensions	See dimensional drawing

¹⁾ Self-warming 3.3 K/1,000 1/min, when applying note working temperature range.

²⁾ 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.

Weight	0.2 kg
Moment of inertia of the rotor	40 gcm ²
Operating speed	9,000 min ⁻¹ ¹⁾
Angular acceleration	≤ 500,000 rad/s ²
Operating torque	0.6 Ncm (+20 °C)
Start up torque	0.8 Ncm (+20 °C)
Permissible shaft movement, radial static/dynamic	± 0.3 mm / ± 0.1 mm
Permissible shaft movement, axial static/dynamic	± 0.5 mm / ± 0.2 mm
Life of ball bearings	3.0 x 10 ⁹ revolutions
Connection type	Cable, 8-wire, radial, 1.5 m ²⁾

¹⁾ Self-warming 3.3 K/1,000 1/min, when applying note working temperature range.

²⁾ 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.

Ambient data

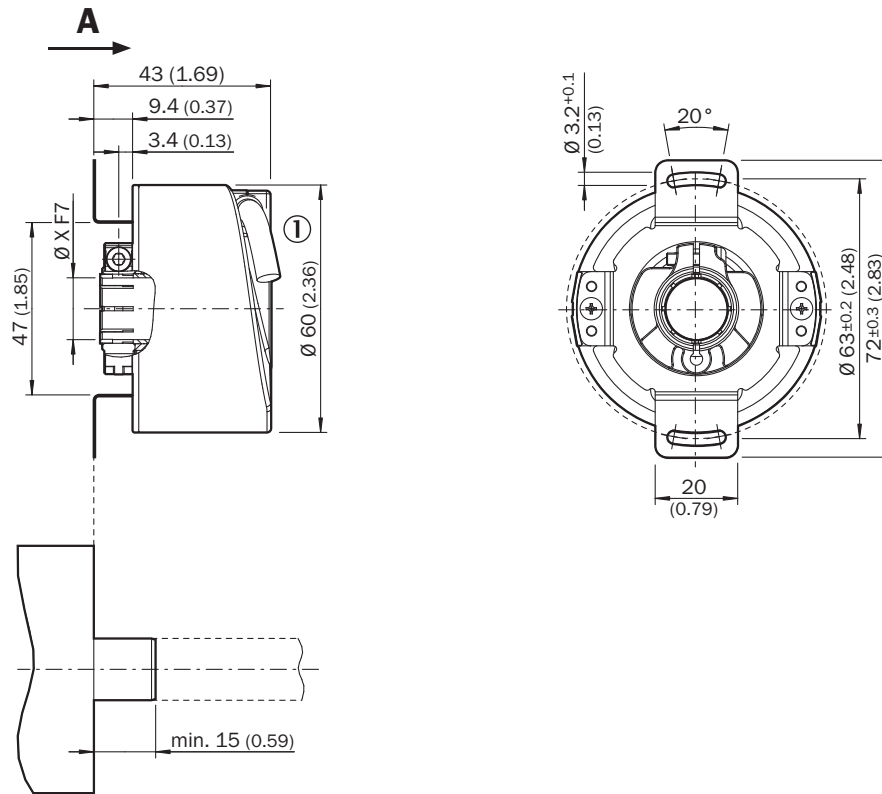
Operating temperature range	-30 °C ... +100 °C
Storage temperature range	-40 °C ... +100 °C, without package
Relative humidity/condensation	90 %, condensation of the optical scanning not permitted
Resistance to shocks	70 g, 6 ms (according to EN 60068-2-27)
Frequency range of resistance to vibrations	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	IP65, shaft side (according to IEC 60529) IP65, housing side, cable outlet (according to IEC 60529)

Classifications

ECl@ss 5.0	27270501
ECl@ss 5.1.4	27270501
ECl@ss 6.0	27270590
ECl@ss 6.2	27270590
ECl@ss 7.0	27270501
ECl@ss 8.0	27270501
ECl@ss 8.1	27270501
ECl@ss 9.0	27270501
ETIM 5.0	EC001486
ETIM 6.0	EC001486
UNSPSC 16.0901	41112113

Dimensional drawing (Dimensions in mm (inch))

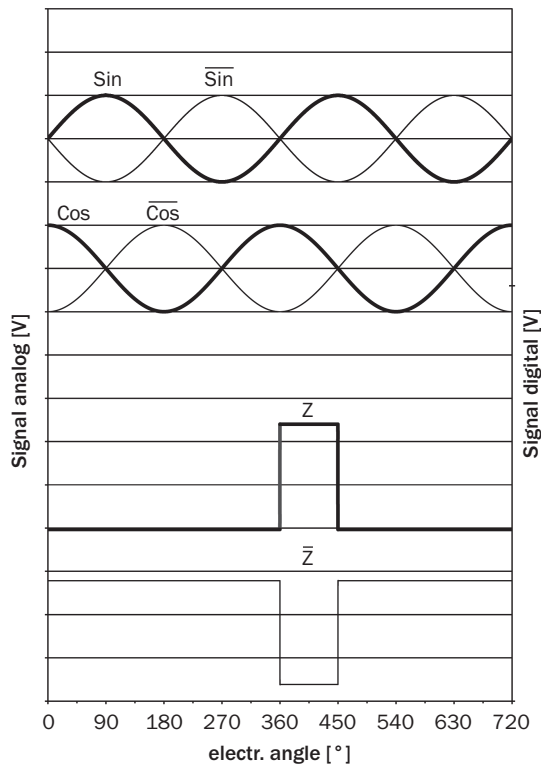
Through hollow shaft, cable outlet



General tolerances according to DIN ISO 2768-mk







① Cable diameter = 5.6 mm +/- 0.2 mm bend radius = 30 mm

Diagram












Recommended accessories

Other models and accessories → www.sick.com/VFS60

	Brief description	Type	Part no.
Flanges			
	One-sided stator coupling, slot, slot radius 33 mm to 48.5 mm, slot width 5.1 mm	BEF-DS01DFS/VFS	2047428
	One-sided stator coupling, slot, slot radius 32.25 mm to 141.75 mm, slot width 5.1 mm	BEF-DS02DFS/VFS	2047430
	One-sided stator coupling, slot, slot radius 33 mm to 211.9 mm, slot width 5.1 mm	BEF-DS03DFS/VFS	2047431
Plug connectors and cables			
	Head A: cable Head B: cable Cable: SSI, drag chain use, PUR, halogen-free, shielded	LTG-2308-MWENC	6027529
	Head A: cable Head B: cable Cable: SSI, PUR, shielded	LTG-2411-MW	6027530
	Head A: cable Head B: cable	LTG-2512-MW	6027531

	Brief description	Type	Part no.
	Cable: SSI, drag chain use, PUR, halogen-free, shielded	LTG-2612-MW	6028516
	Head A: female connector, JST, 8-pin, straight Head B: cable Cable: Incremental, drag chain use, PUR, halogen-free, shielded, 3 m	DOL-0J08-G03MAA3	2046875
	Head A: female connector, JST, 8-pin, straight Head B: cable Cable: Incremental, SSI, drag chain use, PUR, halogen-free, shielded, 5 m	DOL-0J08-G05MAA3	2046876
	Head A: female connector, JST, 8-pin, straight Head B: cable Cable: Incremental, SSI, drag chain use, PUR, halogen-free, shielded, 0.5 m	DOL-0J08-G0M5AA3	2046873
	Head A: female connector, JST, 8-pin, straight Head B: cable Cable: Incremental, SSI, drag chain use, PUR, halogen-free, shielded, 10 m	DOL-0J08-G10MAA3	2046877
	Head A: female connector, JST, 8-pin, straight Head B: cable Cable: Incremental, drag chain use, PUR, halogen-free, shielded, 1.5 m	DOL-0J08-G1M5AA3	2046874
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, PUR, shielded, 2 m	DOL-2312-G02MLA3	2030682
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, drag chain use, PUR, shielded, 3 m	DOL-2312-G03MMA3	2029213
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, drag chain use, PUR, shielded, 5 m	DOL-2312-G05MMA3	2029214
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, PUR, shielded, 7 m	DOL-2312-G07MLA3	2030685
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, PUR, shielded, 10 m	DOL-2312-G10MLA3	2030688
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, drag chain use, PUR, shielded, 10 m	DOL-2312-G10MMA3	2029215
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, PUR, shielded, 15 m	DOL-2312-G15MLA3	2030692
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, drag chain use, PUR, shielded, 1.5 m	DOL-2312-G1M5MA3	2029212
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, PUR, shielded, 20 m	DOL-2312-G20MLA3	2030695
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, drag chain use, PUR, shielded, 20 m	DOL-2312-G20MMA3	2029216
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, PUR, shielded, 25 m	DOL-2312-G25MLA3	2030699
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, PUR, shielded, 30 m	DOL-2312-G30MLA3	2030702

	Brief description	Type	Part no.
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: Incremental, drag chain use, PUR, shielded, 30 m	DOL-2312-G30MMA3	2029217
	Head A: male connector, M12, 5-pin, angled, B-coded Head B: cable Cable: PROFIBUS DP, drag chain use, twisted pair, PUR, shielded, 5 m	STL-1205-W05MQ	6041426
	Head A: male connector, M12, 5-pin, angled, B-coded Head B: cable Cable: PROFIBUS DP, drag chain use, twisted pair, PUR, shielded, 10 m	STL-1205-W10MQ	6041427
	Head A: female connector, JST, 8-pin, straight Head B: male connector, M23, 17-pin, straight Cable: Incremental, unshielded, 1 m	DSL-2317-G01MJB7	2071332
	Head A: female connector, terminal box, 8-pin, straight Head B: male connector, M23, 17-pin, straight Cable: Incremental, unshielded, 1 m	DSL-2317-G01MJC7	2071331
	Head A: female connector, JST, 8-pin, straight Head B: male connector, M23, 12-pin, straight Cable: Incremental, drag chain use, PUR, halogen-free, shielded, 1 m	STL-2312-G01MAA3	2061622
	Head A: female connector, JST, 8-pin, straight Head B: male connector, M23, 12-pin, straight Cable: Incremental, drag chain use, PUR, halogen-free, shielded, 2 m	STL-2312-G02MAA3	2061504
	Head A: female connector, JST, 8-pin, straight Head B: male connector, M23, 12-pin, straight Cable: Incremental, drag chain use, PUR, halogen-free, shielded, 0.35 m	STL-2312-GM35AA3	2061621
	Head A: female connector, M23, 12-pin, straight Head B: - Cable: HIPERFACE®, SSI, Incremental, shielded	DOS-2312-G	6027538
	Head A: female connector, M23, 12-pin, angled Head B: - Cable: HIPERFACE®, SSI, Incremental, shielded	DOS-2312-W01	2072580
	Head A: male connector, M23, 12-pin, straight Head B: - Cable: HIPERFACE®, SSI, Incremental, RS-422, shielded	STE-2312-G	6027537
Programming and configuration tools			
	SVip® LAN programming tool for all motor feedback systems	PGT-11-S LAN	1057324
	SVip® WLAN programming tool for all motor feedback systems	PGT-11-S WLAN	1067474

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