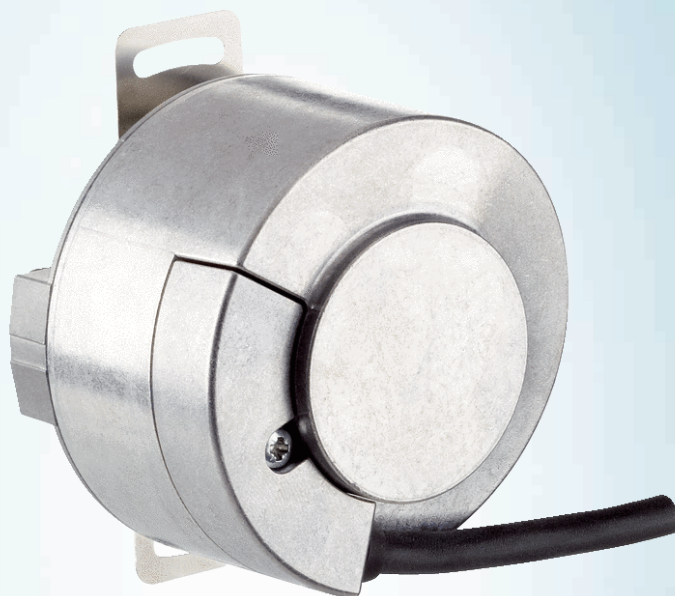


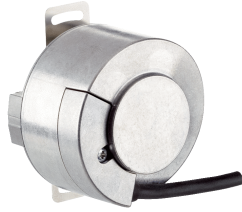


VFS60E-T4AK02048

VFS60

MOTOR FEEDBACK SYSTEMS

SICK
Sensor Intelligence.

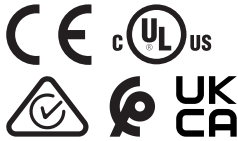


Ordering information

Type	part no.
VFS60E-T4AK02048	1036093

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

Illustration may differ



Detailed technical data

Performance

Number of lines per revolution	2,048
Reference signal, number	1
Reference signal, position	90° electric, logically gated with A and B
Measuring step deviation	± 0.2°

Interfaces

Communication interface	Incremental
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Electronics

Connection type	Cable, 8-wire, radial, 1.5 m ¹⁾
Supply voltage	4.5 V ... 5.5 V
Current consumption	40 mA ²⁾
Maximum output frequency	≤ 300 kHz
Maximum load current	≤ 30 mA

¹⁾ The universal cable connection is positioned so that it is possible to lay it without bends in a radial or axial direction.

²⁾ Without load.

Mechanics

Shaft diameter	10 mm
Shaft material	Plastic
Flange type / stator coupling	Standard
Dimensions	See dimensional drawing
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

¹⁾ Allow for self-heating of 3.3 K per 1,000 rpm when designing the operating temperature range.

Operating torque	0.6 Ncm (+20 °C)
Start up torque	+ 0.8 Ncm (+20 °C)
Permissible movement static	± 0.3 mm, radial ± 0.5 mm, axial
Permissible movement dynamic	± 0.05 mm, radial ± 0.2 mm, axial
Life of ball bearings	3.0 x 10 ⁹ revolutions

¹⁾ Allow for self-heating of 3.3 K per 1,000 rpm when designing the operating temperature range.

Ambient data

Operating temperature range	-30 °C ... +100 °C
Storage temperature range	-40 °C ... +100 °C, without package
Relative humidity/condensation	90 %, Condensation 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 (EN 60068-2-6)
EMC	According to EN 61000-6-2 and EN 61000-6-4
Enclosure rating	IP65, shaft side (IEC 60529) IP65, housing side, cable connection (IEC 60529)

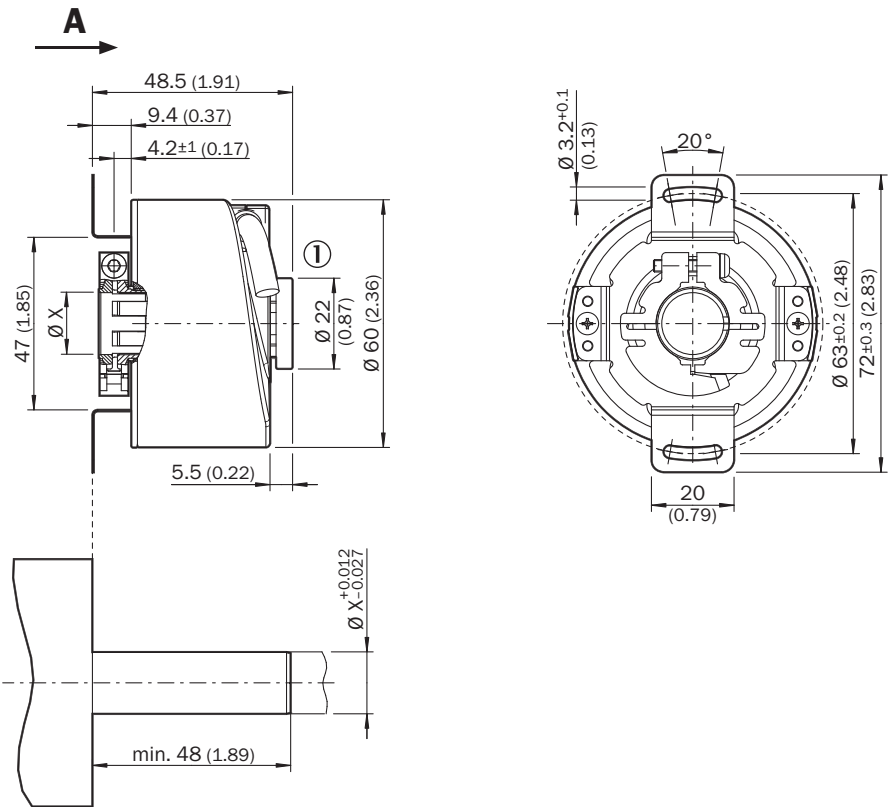
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Classifications

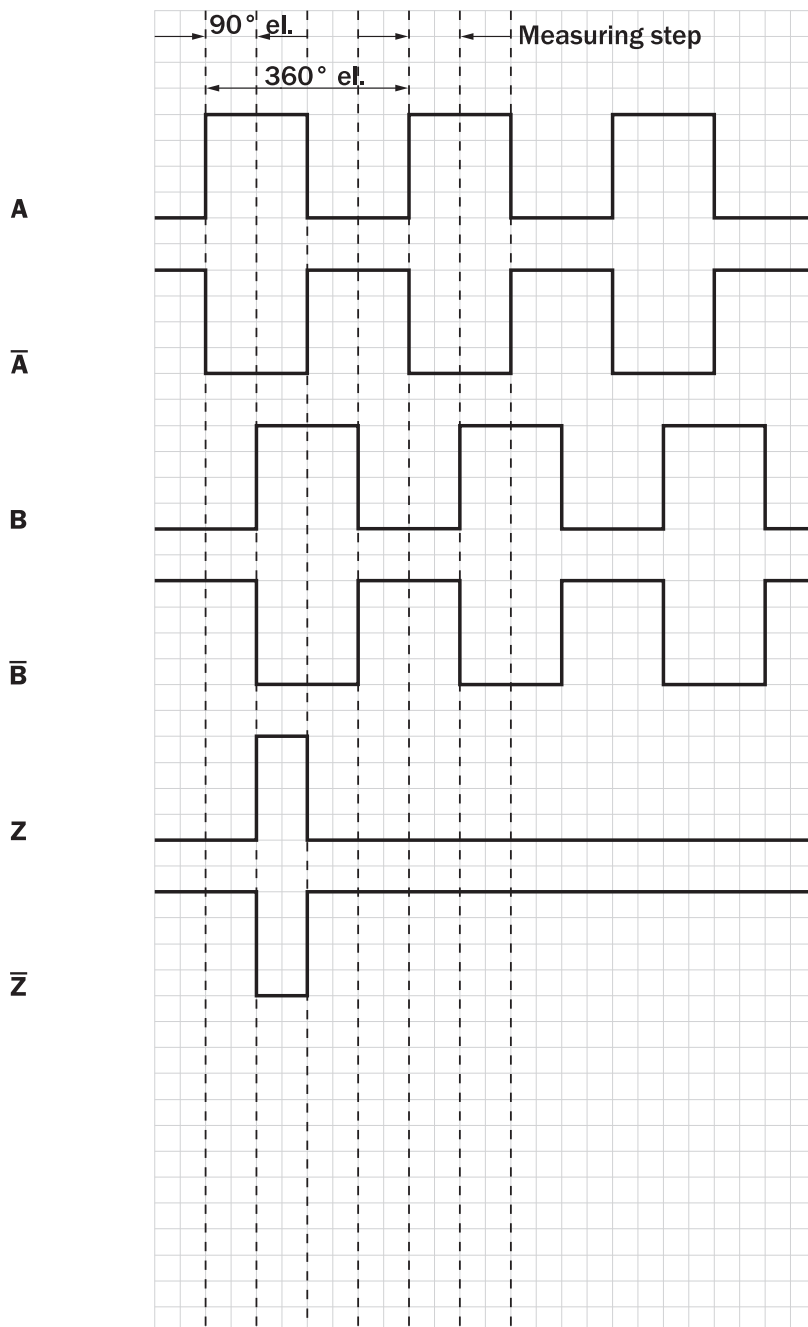
ECLASS 5.0	27270501
ECLASS 5.1.4	27270501
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270501
ECLASS 8.0	27270501
ECLASS 8.1	27270501
ECLASS 9.0	27270501
ECLASS 10.0	27273805
ECLASS 11.0	27273901
ECLASS 12.0	27273901
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486

Dimensional drawing Through hollow shaft, plastic hollow shaft clamping, cable



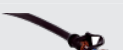
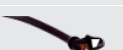
Dimensions in mm (inch)
General tolerances according to DIN ISO 2768-mk

Diagrams



Recommended accessories

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

	Brief description	Type	part no.
connectors and cables			
	• Connection type head A: Female connector, JST, 8-pin, straight • Connection type head B: Male connector, M23, 17-pin, straight • Signal type: Incremental • Cable: 1 m, 8-wire • Description: Incremental, unshielded	DSL-2317-G01MJB7	2071332
	• Connection type head A: Female connector, terminal box, 8-pin, straight • Connection type head B: Male connector, M23, 17-pin, straight • Signal type: Incremental • Cable: 1 m, 8-wire • Description: Incremental, unshielded	DSL-2317-G01MJC7	2071331
	• Connection type head A: Flying leads • Connection type head B: Flying leads • Signal type: SSI, Incremental, HIPERFACE® • Items supplied: By the meter • Cable: 8-wire, PUR, halogen-free • Description: SSI, shielded, Incremental, HIPERFACE®	LTG-2308-MWENC	6027529
	• Connection type head A: Flying leads • Connection type head B: Flying leads • Signal type: SSI, Incremental • Items supplied: By the meter • Cable: 11-wire, PUR • Description: SSI, shielded, Incremental	LTG-2411-MW	6027530
	• Connection type head A: Flying leads • Connection type head B: Flying leads • Signal type: SSI, Incremental • Items supplied: By the meter • Cable: 12-wire, PUR, halogen-free • Description: SSI, shielded, Incremental	LTG-2512-MW	6027531
	• Connection type head A: Flying leads • Connection type head B: Flying leads • Signal type: SSI, TTL, HTL, Incremental • Items supplied: By the meter • Cable: 12-wire, UV and saltwater-resistant, PUR, halogen-free • Description: SSI, shielded, TTL, HTL, Incremental	LTG-2612-MW	6028516
	• Connection type head A: Female connector, JST, 8-pin, straight • Connection type head B: Flying leads • Signal type: Incremental, SSI • Items supplied: JST including sealing • Cable: 0.5 m, 8-wire, PUR, halogen-free • Description: Incremental, shielded, SSI	DOL-0J08-G0M5AA3	2046873
	• Connection type head A: Female connector, JST, 8-pin, straight • Connection type head B: Flying leads • Signal type: Incremental • Items supplied: JST including sealing • Cable: 1.5 m, 8-wire, PUR, halogen-free • Description: Incremental, shielded	DOL-0J08-G1M5AA3	2046874
	• Connection type head A: Female connector, JST, 8-pin, straight • Connection type head B: Flying leads • Signal type: Incremental • Items supplied: JST including sealing • Cable: 3 m, 8-wire, PUR, halogen-free • Description: Incremental, shielded	DOL-0J08-G03MAA3	2046875
	• Connection type head A: Female connector, JST, 8-pin, straight • Connection type head B: Flying leads • Signal type: Incremental, SSI • Items supplied: JST including sealing • Cable: 5 m, 8-wire, PUR, halogen-free • Description: Incremental, shielded, SSI	DOL-0J08-G05MAA3	2046876
	• Connection type head A: Female connector, JST, 8-pin, straight • Connection type head B: Flying leads • Signal type: Incremental, SSI • Items supplied: JST including sealing • Cable: 10 m, 8-wire, PUR, halogen-free	DOL-0J08-G10MAA3	2046877

	Brief description	Type	part no.
	Description: Incremental, shielded, SSI	DOS-2312-G	6027538
	Description: HIPERFACE[®], shielded, SSI, Incremental Connection type head A: Female connector, M23, 12-pin, straight, A-coded Signal type: HIPERFACE[®], SSI, Incremental Connection systems: Solder connection	STE-2312-G	6027537
	Description: HIPERFACE[®], shielded, SSI, Incremental, RS-422 Connection type head A: Male connector, M23, 12-pin, straight, A-coded Signal type: HIPERFACE[®], SSI, Incremental, RS-422 Connection systems: Solder connection	DOL-2312-G02MLA3	2030682
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 2 m, 11-wire, PUR Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G07MLA3	2030685
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 7 m, 11-wire, PUR Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G10MLA3	2030688
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 10 m, 11-wire, PUR Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G15MLA3	2030692
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 15 m, 11-wire, PUR Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G20MLA3	2030695
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 20 m, 11-wire, PUR Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G25MLA3	2030699
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 25 m, 11-wire, PUR Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G30MLA3	2030702
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 30 m, 11-wire, PUR Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G1M5MA3	2029212
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 1.5 m, 12-wire, PUR, halogen-free Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G03MMA3	2029213
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 3 m, 12-wire, PUR, halogen-free Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G05MMA3	2029214

	Brief description	Type	part no.
	Application: Zones with oils and lubricants Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 10 m, 12-wire, PUR, halogen-free Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G10MMA3	2029215
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 20 m, 12-wire, PUR, halogen-free Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G20MMA3	2029216
	Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 30 m, 12-wire, PUR, halogen-free Description: Incremental, shielded Application: Zones with oils and lubricants	DOL-2312-G30MMA3	2029217
	Connection type head A: Female connector, JST, 8-pin, straight Connection type head B: Male connector, M23, 12-pin, straight Signal type: Incremental Cable: 2 m, 8-wire, PUR, halogen-free Description: Incremental, shielded	STL-2312-G02MAA3	2061504
	Connection type head A: Female connector, JST, 8-pin, straight Connection type head B: Male connector, M23, 12-pin, straight Signal type: Incremental Cable: 0.35 m, 8-wire, PUR, halogen-free Description: Incremental, shielded	STL-2312-GM35AA3	2061621
	Connection type head A: Female connector, JST, 8-pin, straight Connection type head B: Male connector, M23, 12-pin, straight Signal type: Incremental Cable: 1 m, 8-wire, PUR, halogen-free Description: Incremental, shielded	STL-2312-G01MAA3	2061622
	Description: HIPERFACE[®], shielded, SSI, Incremental Connection type head A: Female connector, M23, 12-pin, angled, A-coded Signal type: HIPERFACE[®], SSI, Incremental Connection systems: Solder connection	DOS-2312-W01	2072580
	Description: HIPERFACE[®], shielded, SSI, Incremental Connection type head A: Female connector, M23, 9-pin, straight, A-coded Signal type: HIPERFACE[®], SSI, Incremental Connection systems: Solder connection	DOS-2309-G	6028533
	Connection type head A: Male connector, M12, 2-pin, angled, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 5 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants	YN2B22-050P-B1XLEAX	2106277
	Connection type head A: Male connector, M12, 2-pin, angled, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 10 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants	YN2B22-100P-B1XLEAX	2106278

	Brief description	Type	part no.
Mounting systems			
	Product family: Stator couplings Description: One-sided stator coupling, slot, slot radius 33 mm to 48.5 mm, slot width 5.1 mm	BEF-DS01DFS/VFS	2047428
	Product family: Stator couplings Description: One-sided stator coupling, slot, slot radius 32.25 mm to 141.75 mm, slot width 5.1 mm	BEF-DS02DFS/VFS	2047430
	Product family: Stator couplings Description: One-sided stator coupling, slot, slot radius 33 mm to 211.9 mm, slot width 5.1 mm	BEF-DS03DFS/VFS	2047431
programming devices			
	Product segment: Programming devices Product family: PGT-11-S Description: SVip® LAN programming tool for all motor feedback systems Items supplied: 1x programming tool PGT-11-S LAN, 1x power supply unit 100-240 V AC / 12 V DC, primary adapter (Europe, UK, USA/Japan, Australia), Ethernet cable 3 m	PGT-11-S LAN	1057324

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.

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