



VFS60B-T5EK02048

VFS60

MOTOR FEEDBACK SYSTEMS

SICK
Sensor Intelligence.



Ordering information

| Type | part no. |
|------------------|----------|
| VFS60B-T5EK02048 | 1036081 |

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 | ± 0.01° |

Interfaces

| | |
|--------------------------------|-------------|
| Communication interface | Incremental |
|--------------------------------|-------------|

Electronics

| | |
|---------------------------------|--|
| Connection type | Cable, 8-wire, radial, 1.5 m ¹⁾ |
| Supply voltage | 10 V ... 32 V |
| Current consumption | 40 mA ²⁾ |
| Maximum output frequency | ≤ 600 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 | 12 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 | 12,000 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 | ± 0.5 mm, radial ± 0.5 mm, axial |
| Permissible movement dynamic | ± 0.1 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 |

UNSPSC 16.0901

41112113

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 | | | |
|  | <ul style="list-style-type: none"> Description: Incremental, unshielded 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 | DSL-2317-G01MJB7 | 2071332 |
|  | <ul style="list-style-type: none"> Description: Incremental, unshielded 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 | DSL-2317-G01MJC7 | 2071331 |
|  | <ul style="list-style-type: none"> Description: SSI, shielded, Incremental, HIPERFACE® 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 | LTG-2308-MWENC | 6027529 |
|  | <ul style="list-style-type: none"> Description: SSI, shielded, Incremental 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 | LTG-2411-MW | 6027530 |
|  | <ul style="list-style-type: none"> Description: SSI, shielded, Incremental 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 | LTG-2512-MW | 6027531 |
|  | <ul style="list-style-type: none"> Description: SSI, shielded, TTL, HTL, Incremental 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 | LTG-2612-MW | 6028516 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded, SSI 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 | DOL-0J08-G0M5AA3 | 2046873 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 | DOL-0J08-G1M5AA3 | 2046874 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 | DOL-0J08-G03MAA3 | 2046875 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded, SSI 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 | DOL-0J08-G05MAA3 | 2046876 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded, SSI 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 | DOL-0J08-G10MAA3 | 2046877 |

| | Brief description | Type | part no. |
|---|--|------------------|----------|
|  | <ul style="list-style-type: none"> Cable: 10 m, 8-wire, PUR, halogen-free 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 | DOS-2312-G | 6027538 |
|  | <ul style="list-style-type: none"> 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 | STE-2312-G | 6027537 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G02MLA3 | 2030682 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G07MLA3 | 2030685 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G10MLA3 | 2030688 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G15MLA3 | 2030692 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G20MLA3 | 2030695 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G25MLA3 | 2030699 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G30MLA3 | 2030702 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G1M5MA3 | 2029212 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G03MMA3 | 2029213 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded Connection type head A: Female connector, M23, 12-pin, straight Connection type head B: Flying leads Signal type: Incremental Cable: 5 m, 12-wire, PUR, halogen-free | DOL-2312-G05MMA3 | 2029214 |

| | Brief description | Type | part no. |
|---|---|---------------------|----------|
|  | <ul style="list-style-type: none"> Application: Zones with oils and lubricants Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G10MMA3 | 2029215 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G20MMA3 | 2029216 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 Application: Zones with oils and lubricants | DOL-2312-G30MMA3 | 2029217 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 | STL-2312-G02MAA3 | 2061504 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 | STL-2312-GM35AA3 | 2061621 |
|  | <ul style="list-style-type: none"> Description: Incremental, shielded 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 | STL-2312-G01MAA3 | 2061622 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 | | | |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 | | | |
|  | <ul style="list-style-type: none"> Product segment: Programming devices Product: 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.

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For us, that is “Sensor Intelligence.”

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