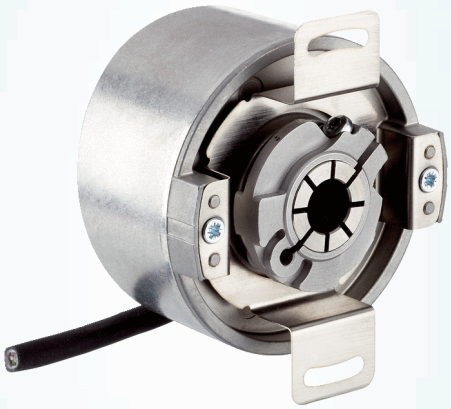
Online data sheet



# VFS60B-T4EK02048

## VFS60

**MOTOR FEEDBACK SYSTEMS ROTARY INCREMENTAL**

SICK
Sensor Intelligence.



Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| VFS60B-T4EK02048 | 1036020 |

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

## 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 |
| **Error limits** | ± 0.05° |
| **Measuring step deviation** | ± 0.01° |
| **Maximum initialisation time** | ≤ 40 ms |

### Interfaces

| | |
|---|---|
| **Communication interface** | HTL/Push pull |

### Electrical data

| | |
|---|---|
| **Supply voltage range** | 10 V ... 32 V |
| **Operating power consumption (no load)** | ≤ 40 mA [1] |
| **Maximum output frequency** | ≤ 600 kHz |
| **Maximum load current** | ≤ 30 mA |

[1] Without load.

### Mechanical data

| | |
|---|---|
| **Shaft material** | Plastic |
| **Flange type / stator coupling** | Standard |
| **Dimensions** | See dimensional drawing |
| **Weight** | 0.2 kg |
| **Moment of inertia of the rotor** | 40 gcm² |
| **Operating speed** | 12,000 $min^{-1}$ [1] |
| **Angular acceleration** | ≤ 500,000 rad/s² |
| **Operating torque** | 0.6 Ncm (+20 °C) |
| **Start up torque** | 0.8 Ncm (+20 °C) |

[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.

| | |
|---|---|
| **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

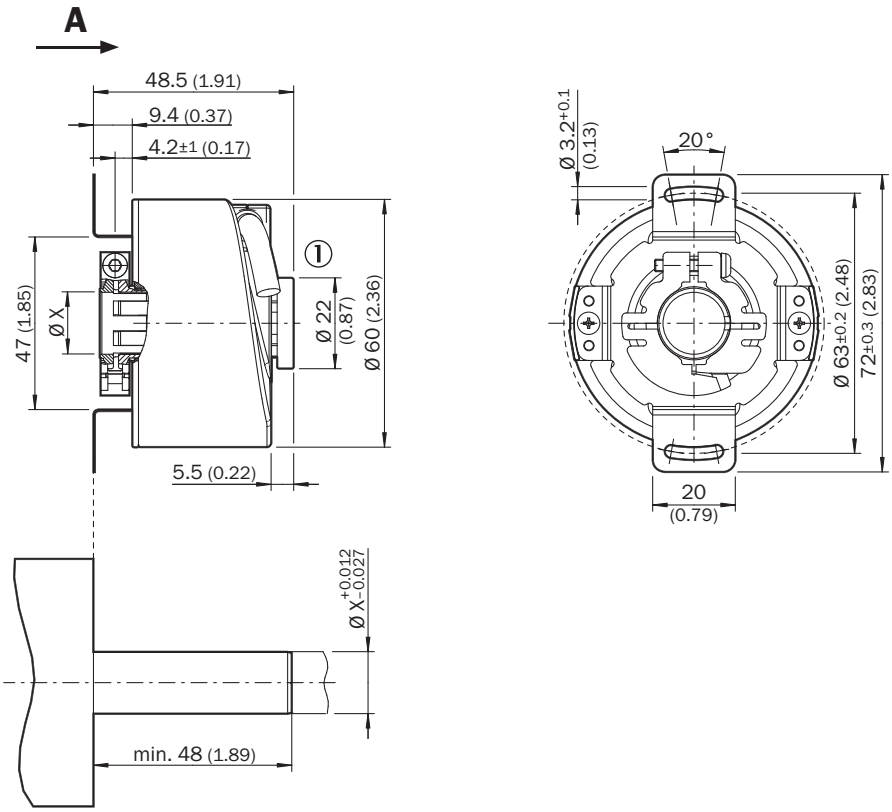
| | |
|---|---|
| **Operating temperature range** | –30 °C ... +100 °C |
| **Storage temperature range** | –40 °C ... +100 °C, without package |
| **Relative humidity/condensation** | 90 %, condensation of the optical scanning not permitted |
| **Resistance to shocks** | 70 g, 6 ms (according to EN 60068-2-27) |
| **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 61000-6-4 |
| **Enclosure rating** | IP65, shaft side (according to IEC 60529)<br>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 |

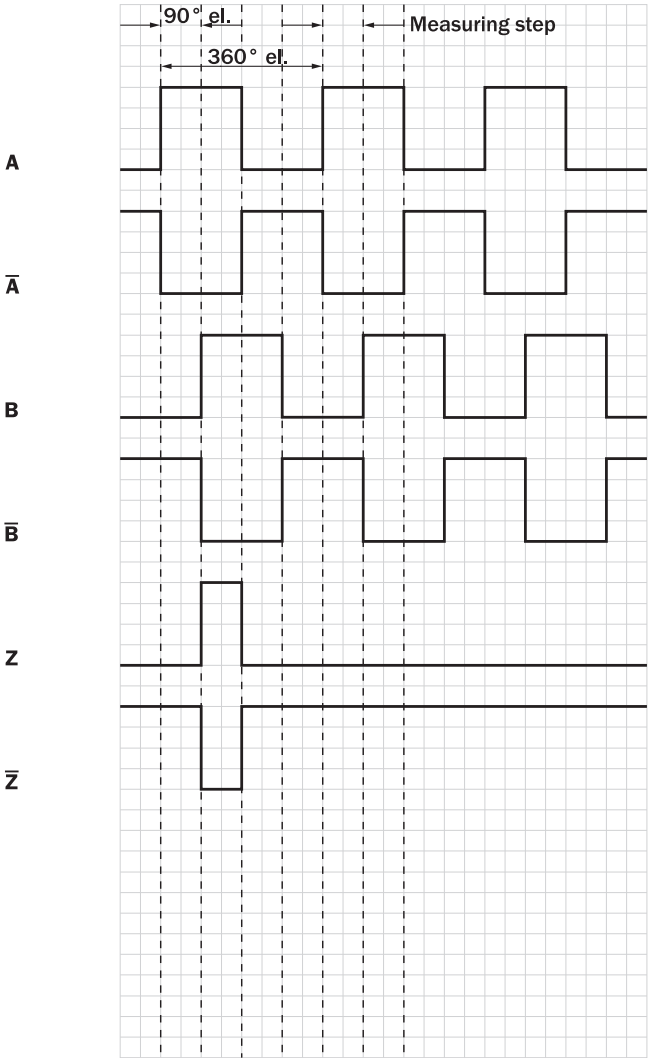
## Dimensional drawing (Dimensions in mm (inch))

Through hollow shaft, plastic, cable outlet




General tolerances according to DIN ISO 2768-mk

## 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 |

| | Brief description | Type | Part no. |
|---|---|---|---|
| Plug connectors and cables | | | |
|  | Head A: cable<br>Head B: cable<br>Cable: SSI, drag chain use, PUR, halogen-free, shielded | LTG-2308-MWENC | 6027529 |
|  | Head A: cable<br>Head B: cable<br>Cable: SSI, PUR, shielded | LTG-2411-MW | 6027530 |
|  | Head A: cable<br>Head B: cable<br>Cable: SSI, drag chain use, PUR, halogen-free, shielded | LTG-2512-MW | 6027531 |
|  | | LTG-2612-MW | 6028516 |
|  | Head A: female connector, JST, 8-pin, straight<br>Head B: cable<br>Cable: Incremental, drag chain use, PUR, halogen-free, shielded, 3 m | DOL-0J08-G03MAA3 | 2046875 |
| | Head A: female connector, JST, 8-pin, straight<br>Head B: cable<br>Cable: Incremental, SSI, drag chain use, PUR, halogen-free, shielded, 5 m | DOL-0J08-G05MAA3 | 2046876 |
| | Head A: female connector, JST, 8-pin, straight<br>Head B: cable<br>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<br>Head B: cable<br>Cable: Incremental, SSI, drag chain use, PUR, halogen-free, shielded, 10 m | DOL-0J08-G10MAA3 | 2046877 |
| | Head A: female connector, JST, 8-pin, straight<br>Head B: cable<br>Cable: Incremental, drag chain use, PUR, halogen-free, shielded, 1.5 m | DOL-0J08-G1M5AA3 | 2046874 |
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, PUR, shielded, 2 m | DOL-2312-G02MLA3 | 2030682 |
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, drag chain use, PUR, shielded, 3 m | DOL-2312-G03MMA3 | 2029213 |
| | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, drag chain use, PUR, shielded, 5 m | DOL-2312-G05MMA3 | 2029214 |
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, PUR, shielded, 7 m | DOL-2312-G07MLA3 | 2030685 |
| | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, PUR, shielded, 10 m | DOL-2312-G10MLA3 | 2030688 |
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, drag chain use, PUR, shielded, 10 m | DOL-2312-G10MMA3 | 2029215 |
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, PUR, shielded, 15 m | DOL-2312-G15MLA3 | 2030692 |
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, drag chain use, PUR, shielded, 1.5 m | DOL-2312-G1M5MA3 | 2029212 |
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, PUR, shielded, 20 m | DOL-2312-G20MLA3 | 2030695 |

| | Brief description | Type | Part no. |
|---|---|---|---|
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, drag chain use, PUR, shielded, 20 m | DOL-2312-G20MMA3 | 2029216 |
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, PUR, shielded, 25 m | DOL-2312-G25MLA3 | 2030699 |
| | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, PUR, shielded, 30 m | DOL-2312-G30MLA3 | 2030702 |
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: cable<br>Cable: Incremental, drag chain use, PUR, shielded, 30 m | DOL-2312-G30MMA3 | 2029217 |
|  | Head A: male connector, M12, 5-pin, angled, B-coded<br>Head B: cable<br>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<br>Head B: cable<br>Cable: PROFIBUS DP, drag chain use, twisted pair, PUR, shielded, 10 m | STL-1205-W10MQ | 6041427 |
|  | Head A: female connector, JST, 8-pin, straight<br>Head B: male connector, M23, 17-pin, straight<br>Cable: Incremental, unshielded, 1 m | DSL-2317-G01MJB7 | 2071332 |
|  | Head A: female connector, terminal box, 8-pin, straight<br>Head B: male connector, M23, 17-pin, straight<br>Cable: Incremental, unshielded, 1 m | DSL-2317-G01MJC7 | 2071331 |
| | Head A: female connector, JST, 8-pin, straight<br>Head B: male connector, M23, 12-pin, straight<br>Cable: Incremental, drag chain use, PUR, halogen-free, shielded, 1 m | STL-2312-G01MAA3 | 2061622 |
|  | Head A: female connector, JST, 8-pin, straight<br>Head B: male connector, M23, 12-pin, straight<br>Cable: Incremental, drag chain use, PUR, halogen-free, shielded, 2 m | STL-2312-G02MAA3 | 2061504 |
| | Head A: female connector, JST, 8-pin, straight<br>Head B: male connector, M23, 12-pin, straight<br>Cable: Incremental, drag chain use, PUR, halogen-free, shielded, 0.35 m | STL-2312-GM35AA3 | 2061621 |
|  | Head A: female connector, M23, 12-pin, straight<br>Head B: -<br>Cable: HIPERFACE®, SSI, Incremental, shielded | DOS-2312-G | 6027538 |
|  | Head A: female connector, M23, 12-pin, angled<br>Head B: -<br>Cable: HIPERFACE®, SSI, Incremental, shielded | DOS-2312-W01 | 2072580 |
|  | Head A: male connector, M23, 12-pin, straight<br>Head B: -<br>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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