



## Incremental encoders DFS60, Rotary

DFS60B-S4EK01510



**Model Name** > [DFS60B-S4EK01510](#)  
**Part No.** > [1051222](#)



*Illustration may differ*

#### At a glance

- Compact installation depth
- High resolution up to 16 bits
- Optionally programmable: Output voltage, zero pulse position, zero pulse width and number of pulses
- Connection: Radial or axial cable outlet, M23 or M12 connector, axial or radial
- Electrical interfaces: 5V & 24V TTL/RS-422, 24 V HTL/push pull
- Mechanical interfaces: face mount or servo flange, blind or through hollow shaft
- Remote zero set possible

#### Your benefits

- Reduced storage costs and downtime due to customer-specific programming
- Variety of different mechanical and electrical interfaces enable the encoder to be optimally adjusted to fit the installation situation
- Excellent concentricity even at high speeds
- High resolution of up to 16 bits ensures precise measurements
- Permanent and safe operation due to a high enclosure rating, temperature resistance and a long bearing lifetime
- Programmability via the PGT-08 programming software and the PGT-10-S display programming tool allow the encoder to be adapted flexibly and quickly according to customer needs
- Programmable zero pulse position simplifies installation



#### Performance

|                        |                                                    |
|------------------------|----------------------------------------------------|
| Error limits:          | $\pm 0.05^\circ$                                   |
| Measuring step:        | $90^\circ / \text{electronically/number of lines}$ |
| Initialization time:   | 40 ms                                              |
| Pulses per revolution: | 1,510                                              |

#### Mechanical data

|                                 |                                  |
|---------------------------------|----------------------------------|
| Mechanical interface:           | Solid shaft, Face mount flange   |
| Shaft diameter:                 | 10 mm x 19 mm                    |
| Mass:                           | 0.3 kg                           |
| Start up torque:                | 0.5 Ncm (20 °C)                  |
| Operating torque:               | 0.3 Ncm (20 °C)                  |
| Maximum operating speed:        | 10,000 /min                      |
| Moment of inertia of the rotor: | 6.2 gcm <sup>2</sup>             |
| Bearing lifetime:               | $3.6 \times 10^{10}$ revolutions |

|                                         |                             |
|-----------------------------------------|-----------------------------|
| Max. angular acceleration:              | 500,000 rad/s <sup>2</sup>  |
| Permissible shaft loading radial/axial: | 40 N (axial), 80 N (radial) |

#### Electrical data

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|                             |                                               |
|-----------------------------|-----------------------------------------------|
| Electrical interface:       | HTL/Push pull, Cable, 8-pin, universal, 1.5 m |
| Connection type:            | Cable, 8-pin, universal, 1.5 m <sup>1)</sup>  |
| Maximum output frequency:   | 600 kHz                                       |
| Reference signal, number:   | 1                                             |
| Reference signal, position: | 90 °, electronically, gated with A and B      |
| Operating voltage range:    | 10 V ... 32 V                                 |
| Load current max.:          | 30 mA                                         |
| Power consumption:          | 0.5 W (without load)                          |

This product is a standard product and does not constitute a

safety component as defined in the Machinery Directive.

Calculation based on nominal load of components, average ambient

temperature 40°C, frequency of use 8760 h/a. All

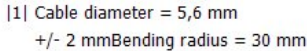
electronic failures are considered hazardous. For more information, see document no. 8015532.;

<sup>1)</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

#### Ambient data

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|                                |                                                                            |
|--------------------------------|----------------------------------------------------------------------------|
| EMC:                           | (according to EN 61000-6-2 and EN 61000-6-3)                               |
| Working temperature range:     | -30 °C ... 100 °C                                                          |
| Storage temperature range:     | -40 °C ... 100 °C, without package                                         |
| Resistance to shocks:          | 70 g (according to EN 60068-2-27)                                          |
| Resistance to vibration:       | 30 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6)                       |
| Enclosure rating:              | IP 65 (according to IEC 60529), shaft side, IP 67 (according to IEC 60529) |
| Permissible relative humidity: | 90 % (condensation of the optical scanning not permitted)                  |



## View of M12 device connector on encoder

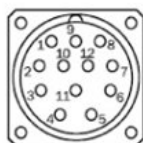
<sup>a</sup> Only at 4.5 ... 32 V, TTL/HTL programmable

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Drehzahlbetrachtung



#### **Australia**

Phone +61 3 9457 0600  
1800 334 802 – tollfree  
E-Mail sales@sick.com.au

#### **Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

#### **Brasil**

Phone +55 11 3215-4900  
E-Mail sac@sick.com.br

#### **Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

#### **Ceská Republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

#### **China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

#### **Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

#### **Deutschland**

Phone +49 211 5301-301  
E-Mail kundenservice@sick.de

#### **España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

#### **France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

#### **Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

#### **India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

#### **Israel**

Phone +972-4-6801000  
E-Mail info@sick-sensors.com

#### **Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

#### **Japan**

Phone +81 (0)3 3358 1341  
E-Mail support@sick.jp

#### **Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

#### **Nederlands**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

#### **Norge**

Phone +47 67 81 50 00  
E-Mail austefjord@sick.no

#### **Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

#### **Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

#### **România**

Phone +40 356 171 120  
E-Mail office@sick.ro

#### **Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

#### **Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

#### **Singapore**

Phone +65 6744 3732  
E-Mail admin@sicksgp.com.sg

#### **Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

#### **South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

#### **South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

#### **Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

#### **Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

#### **Taiwan**

Phone +886-2-2375-6288  
E-Mail sales@sick.com.tw

#### **Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

#### **United Arab Emirates**

Phone +971 (0) 4 8865 878  
E-Mail info@sick.ae

#### **USA/México**

Phone +1(952) 941-6780  
1 800-325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)