



## Incremental encoders DFS60, Rotary

DFS60A-S4EC01000



**Model Name** > [DFS60A-S4EC01000](#)  
**Part No.** > [1052011](#)



*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:	± 0.03 °
Measuring step:	90 °/electronically/number of lines
Initialization time:	40 ms
Pulses per revolution:	1,000

**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 x 10 <sup>10</sup> 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: 10 V ... 32 V, HTL/Push pull, Connector M12, 8-pin, radial  
Connection type: Male connector M12, 8-pin, radial  
Maximum output frequency: 820 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)  
MTTFd: mean time to dangerous failure: 300 a (EN ISO 13849-1) <sup>1)</sup>

<sup>1)</sup> 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.

### Ambient data

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EMC: (according to EN 61000-6-2 and EN 61000-6-4)  
Working temperature range: -30 °C ... +100 °C  
Storage temperature range: -40 °C ... +100 °C, without package  
Resistance to shocks: 60 g (according to EN 60068-2-27)  
Resistance to vibration: 20 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), housing side  
Permissible relative humidity: 90 % (condensation of the optical scanning not permitted)

<sup>1)</sup> With mating connector fitted



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Drehzahlbetrachtung



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