



## Incremental encoders DFS60, Rotary

DFS60E-S4AA01000



**Model Name** > DFS60E-S4AA01000  
**Part No.** > 1038820



*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**

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Error limits:	± 0.3 °
Measuring step deviation:	± 0.2 °
Measuring step:	90 °/electronically/number of lines
Initialization time:	40 ms
Pulses per revolution:	1,000

**Mechanical data**

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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:	4.5 V ... 5.5 V, TTL/RS422, Connector M23, 12-pin, radial
Connection type:	Connector M23, 12-pin, radial
Maximum output frequency:	300 kHz
Reference signal, number:	1
Reference signal, position:	90 °, electronically, gated with A and B
Operating voltage range:	4.5 V ... 5.5 V
Load current max.:	30 mA
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 61000-6-3)
Working temperature range:	0 °C ... +85 °C
Storage temperature range:	-40 °C ... +100 °C, without package
Resistance to shocks:	50 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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