



## Incremental encoders DDS50

DDS50E-S4PR01000



**Model Name** > **DDS50E-S4PR01000**  
**Part No.** > **1038786**



*Illustration may differ*

#### At a glance

- Compact diameter of 50 mm
- Choice of various electric interfaces: TTL/RS-422, HTL/push pull and open collector NPN
- Face mount flange with solid shaft
- Connection type using axial cable outlet
- Line counts from 100 up to 2,500 possible
- Working temperature range: -10 °C ... 70 °C
- Enclosure rating: IP65

#### Your benefits

- Compact design easily fits in applications with limited installation space
- Extensive incremental encoders product portfolio means users can select the right solution for their requirements
- Excellent price-performance ratio with a rugged IP 65 enclosure rating



#### Performance

|                           |                                 |
|---------------------------|---------------------------------|
| Error limits:             | $\pm 0.03^\circ$                |
| Measuring step deviation: | $\pm 0.009^\circ$ <sup>1)</sup> |
| Measuring step:           | $0.09^\circ$ <sup>2)</sup>      |
| Pulses per revolution:    | 1,000                           |

<sup>1)</sup> Measuring step x 0.1 <sup>2)</sup>  $360^\circ / (\text{number of lines} \times 4)$

#### Mechanical data

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Mechanical interface:                   | Solid shaft, Face mount flange         |
| Shaft diameter:                         | 8 mm x 15.5 mm                         |
| Mass:                                   | 145 g                                  |
| Start up torque:                        | 1 Ncm (20 °C)                          |
| Operating torque:                       | 4 Nmm (20 °C)                          |
| Maximum operating speed:                | 6,000 U/min <sup>1)</sup>              |
| Moment of inertia of the rotor:         | 0.8 kg/mm <sup>2</sup>                 |
| Bearing lifetime:                       | 2 x 10 <sup>9</sup> revolutions        |
| Max. angular acceleration:              | 5 x 10 <sup>5</sup> rad/s <sup>2</sup> |
| Permissible shaft loading radial/axial: | 50 N, 30 N                             |

<sup>1)</sup> Self-warming 3.3 K per 1,000 1/min

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**Electrical data**

|                                        |                                                          |
|----------------------------------------|----------------------------------------------------------|
| Electrical interface:                  | 4.5 V ... 5.5 V, Open Collector NPN, Cable, axial, 1.5 m |
| Connection type:                       | Cable, axial, 1.5 m                                      |
| Operating power consumption (no load): | 100 mA                                                   |
| Supply voltage:                        | 4.5 V ... 5.5 V                                          |
| Output current:                        | 20 mA                                                    |
| Maximum output frequency:              | 300 kHz                                                  |
| Reference signal, number:              | 1                                                        |
| Reference signal, position:            | 90 °, electronically, gated with A and B                 |

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**Ambient data**

|                                                  |                                      |
|--------------------------------------------------|--------------------------------------|
| EMC:                                             | EN 61000-6-2, EN 61000-6-4           |
| Protection class housing side with cable outlet: | IP 65                                |
| Protection class shaft side:                     | IP 65                                |
| Air humidity:                                    | 90 % <sup>1)</sup>                   |
| Working temperature range:                       | -10 °C ... 70 °C                     |
| Storage temperature range:                       | -25 °C ... 85 °C, without package    |
| Resistance to shocks:                            | 100 g, 6 ms (EN 60068-2-27)          |
| Resistance to vibration:                         | 5 g, 10 Hz ... 200 Hz (EN 60068-2-6) |
| Enclosure rating:                                | IP 65                                |

<sup>1)</sup> Condensation of the optical scanning not permitted

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