



## Incremental encoders DDS50

DDS50E-S4CR01000



**Model Name** > **DDS50E-S4CR01000**  
**Part No.** > **1038702**



*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

## Electrical data

---

|                                        |                                              |
|----------------------------------------|----------------------------------------------|
| Electrical interface:                  | 7 V ... 24 V, TTL/RS422, Cable, axial, 1.5 m |
| Connection type:                       | Cable, axial, 1.5 m                          |
| Operating power consumption (no load): | 100 mA                                       |
| Supply voltage:                        | 7 V ... 24 V                                 |
| Output current:                        | 20 mA                                        |
| Maximum output frequency:              | 300 kHz                                      |
| Reference signal, number:              | 1                                            |
| Reference signal, position:            | 90 °, electronically, gated with A and B     |

## 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

**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)