



## Incremental encoders DFV60 measuring wheel encoder

DFV60A-22PC65536



**Model Name** > [DFV60A-22PC65536](#)  
**Part No.** > [1051309](#)



*Illustration may differ*

#### At a glance

- Rotatable spring arm for universal use
- 300 mm wheel circumference with o-ring made from NBR70
- Mounting arm and measurement wheels made from aluminum
- Programmable output voltage, zero pulse position, zero pulse width and number of pulses
- Connection: radial M12 connector outlet or radial/axial cable outlet
- Electrical interfaces: 5V & 24V TTL/RS-422, 24 V HTL/push pull
- Remote zero setting possible

#### Your benefits

- Universal-use spring arm ensures fast and simple mounting
- The high level of spring tension enables use in harsh environmental conditions
- Reduced storage costs and downtime due to programmability
- Connector-in cable outlet in radial or axial direction enables customer-specific cable solutions
- Excellent concentricity even at high speeds
- 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

|                                |                   |
|--------------------------------|-------------------|
| Measuring step deviation:      | $\pm 0.002^\circ$ |
| Initialization time:           | 30 s              |
| Error limits 'O' ring surface: | $\pm 0.03$ mm     |
| Pulses per revolution:         | 65,536            |

#### Mechanical data

|                               |                                      |
|-------------------------------|--------------------------------------|
| Mechanical interface:         | 2 measuring wheels, 'O' ring surface |
| Mass:                         | 0.5 kg                               |
| Maximum operating speed:      | 3,000 U/min <sup>1)</sup>            |
| Bearing lifetime:             | $3 \times 10^9$ revolutions          |
| Spring deflection spring arm: | 40 mm                                |
| Preload spring arm:           | 20 mm                                |

<sup>1)</sup> Self-warming 3.3 K/1,000 1/min, when applying note working temperature range

## Electrical data

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|                                        |                                                                      |
|----------------------------------------|----------------------------------------------------------------------|
| Electrical interface:                  | 4.5 V ... 5.5 V, TTL/HTL programmable, Connector, M12, 8-pin, radial |
| Connection type:                       | Connector, M12, 8-pin, radial                                        |
| Supply voltage:                        | 4.5 V ... 5.5 V                                                      |
| Output current:                        | 30 mA                                                                |
| Maximum output frequency:              | 820 kHz                                                              |
| Reference signal, number:              | 1                                                                    |
| Reference signal, position:            | 90 °, electronically, gated with A and B                             |
| 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.

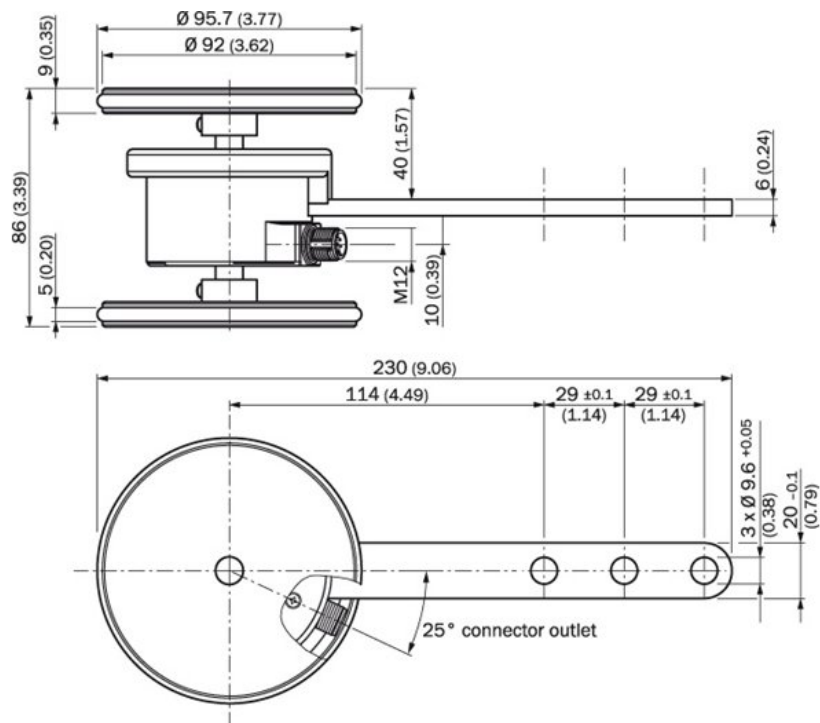
## Ambient data

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|                            |                                         |
|----------------------------|-----------------------------------------|
| EMC:                       | EN 61000-6-2, EN 61000-6-3              |
| Protection class standard: | IEC 60529                               |
| Air humidity:              | 90 % <sup>1)</sup>                      |
| Working temperature range: | -20 °C ... 100 °C                       |
| Storage temperature range: | -40 °C ... 100 °C, without package      |
| Resistance to shocks:      | 70 g, 6 ms (EN 60068-2-27)              |
| Resistance to vibration:   | 30 g, 2,000 Hz ... 10 Hz (EN 60068-2-6) |
| Enclosure rating:          | IP 65                                   |

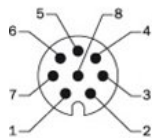
<sup>1)</sup> Condensation of the optical scanning not permitted

Dimensional drawing

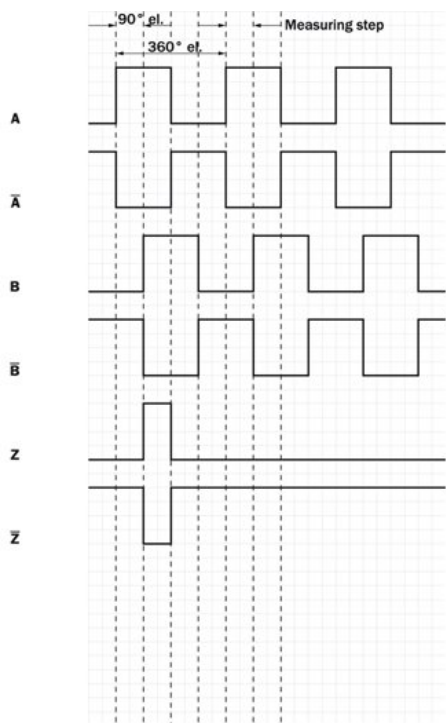


PIN assignment

Cable 8-core  
View to the connector M12 fitted to the encoder body



| PIN, 8-pin, connector M12 | Color of wires for encoders with cable outlet | Signal TTL, HTL | Explanation                                                                     |
|---------------------------|-----------------------------------------------|-----------------|---------------------------------------------------------------------------------|
| 1                         | Brown                                         | $\overline{A}$  | Signal line                                                                     |
| 2                         | White                                         | A               | Signal line                                                                     |
| 3                         | Black                                         | $\overline{B}$  | Signal line                                                                     |
| 4                         | Pink                                          | B               | Signal line                                                                     |
| 5                         | Yellow                                        | $\overline{Z}$  | Signal line                                                                     |
| 6                         | Lilac                                         | Z               | Signal line                                                                     |
| 7                         | Blue                                          | GND             | Ground connection of the encoder                                                |
| 8                         | Red                                           | +U <sub>s</sub> | Supply voltage (potential free to housing)                                      |
| Screen                    | Screen                                        | Screen          | Screen connected to encoder housing.<br>On the control side connected to earth. |



#### **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)