

DGS80

Incremental encoders



Described product

DGS80

Manufacturer

SICK AG
Erwin-Sick-Str. 1
79183 Waldkirch
Germany

Legal information

This work is protected by copyright. Any rights derived from the copyright shall be reserved for SICK AG. Reproduction of this document or parts of this document is only permissible within the limits of the legal determination of Copyright Law. Any modification, abridgment or translation of this document is prohibited without the express written permission of SICK AG.

The trademarks stated in this document are the property of their respective owner.

© SICK AG. All rights reserved.

Original document

This document is an original document of SICK AG.



For use in NFPA 79 applications only.
Interconnection cables and accessories are available from SICK.
Certifications not valid for all types. See type label on the product or product data sheet
on www.sick.com.

1 About this document

1.1 Generally applicable notes

Precise alignment and centering of the encoder during installation reduces shaft misalignment and side-loading which decreases the stress on the encoder bearings and stator coupling.

To avoid straining the tether assembly, always mount the encoder stator coupling assembly first and then tighten the hollow shaft clamping ring on the encoder.

In the case of encoders with a cable outlet, the braided screen is connected to the housing.

EMC considerations make it mandatory to connect the device housing or cable screen to ground. This is achieved by connecting the cable's braided screen to ground. The braided screen should be connected over a large area.

Please obey the maximum ambient temperature in the application. The product has a maximum ambient temperature rating of +85 °C / +185 °F.



CAUTION

Encoder cleaning practices (pressure, distance, temperature) must not exceed the IP rating of the device.

2 Safety information

2.1 Safety notes



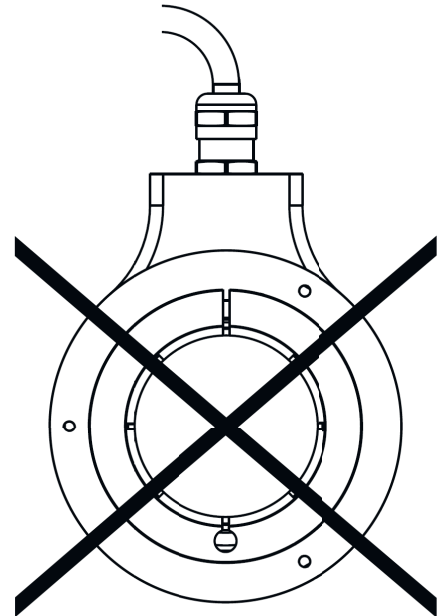
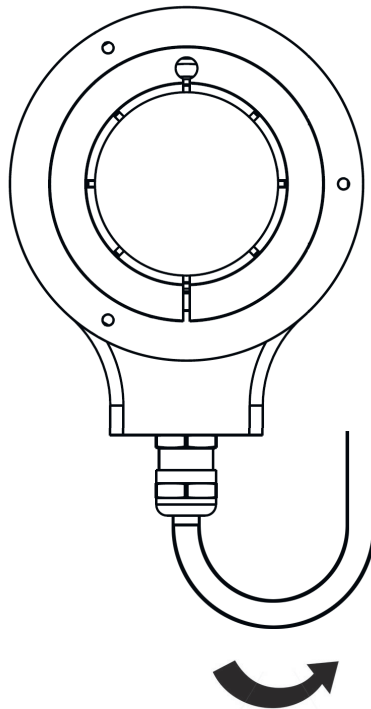
NOTICE

- The encoders should only be mounted by a specialist with electrical engineering knowledge.
 - The encoder may only be used for the purpose for which it was intended.
 - Observe the relevant national work safety regulations as specified by trade associations.
 - During mounting, disconnect all applicable devices, machinery, and systems from the supply voltage.
 - Never modify electrical connections while the encoder is powered on as this may damage the equipment.
 - Avoid shocks or impacts to the encoder shaft to prevent ball bearing damage.
 - Provide cables with strain relief, otherwise the encoder and cables could become damaged.
 - Keep the area around the encoder clear to avoid collisions with objects as these can damage the encoder.
 - To ensure the encoders function properly, they must be connected to an EMC screen (fitted on both sides). encoder.
 - The device is intended to be powered by an industrial SELV or PELV power supply.
 - The sensors have been qualified up to a maximum cable length of 30 meters according to standard EN 62000-6-2. Larger cable lengths are technically possible, but were not assessed under EMC aspects.
-

3 Mounting

3.1 Cable Routing

- Align cable outlet / connector downwards to avoid moisture/liquid ingress into connector.
- Loop the cable back upwards to create a drip loop to carry liquids away from the encoder connection.
- Mind the permissible bending radius of the cable, 51mm.



3.2 Mounting the encoder

- Lock the shaft the encoder is to be mounted on (1) to prevent rotation.
- Loosen the M4 x 16 UNI5931 screw (2) on the clamping ring (3).
- If required, insert the collet (4) into the encoder shaft (5), check the diameter of the drive shaft (1).
- Check the shaft length on which the encoder is to be mounted (1).
- Slide the encoder (6) onto the drive shaft (1).
- Ensure that the encoder shaft (5) or the collet (4) does not touch the customer application.
- If required, mount stator coupling accessories (see figure 3 and figure 4) to the encoder housing using the M3 x 5 DIN7500 screws, tighten M3 screws.
Tightening torque = 1.1Nm
- Ensure that stator coupling is attached to the application in such a way that it is not possible for the encoder to rotate.
- Ensure that the stator coupling is not pre-stressed.
- Tighten the M4 screw (2) slightly on the clamping ring (3) (**tightening torque 0.2 Nm**), then tighten fully.
Tightening torque = 2.5 Nm
- With the power disconnected/switched off, connect encoder signals to application.
- Switch on the power and check encoder functionality.

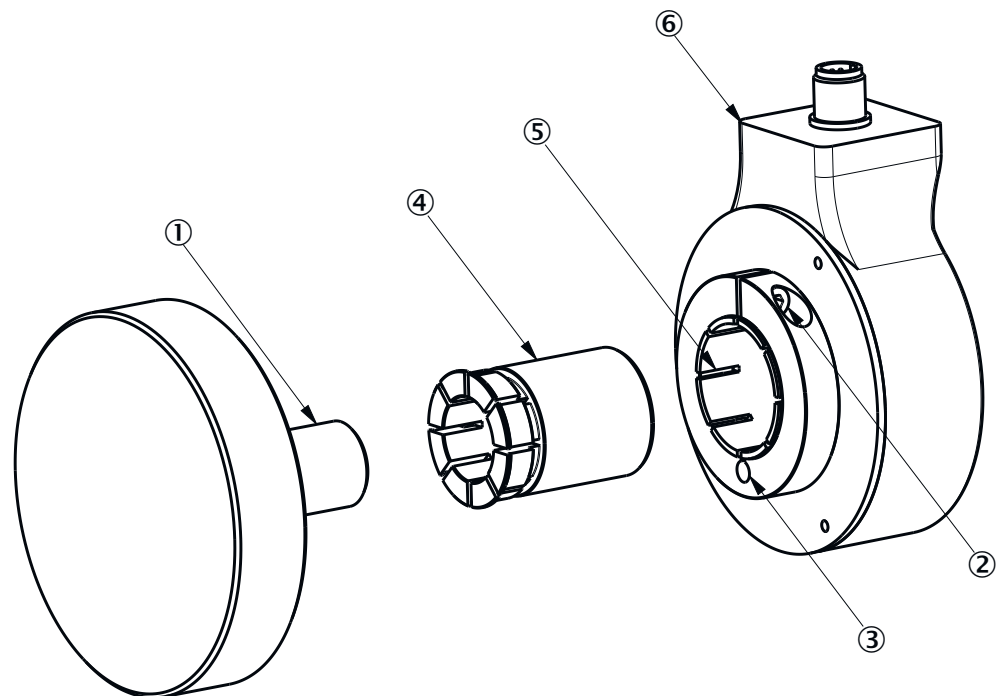


Figure 1: Encoder installation

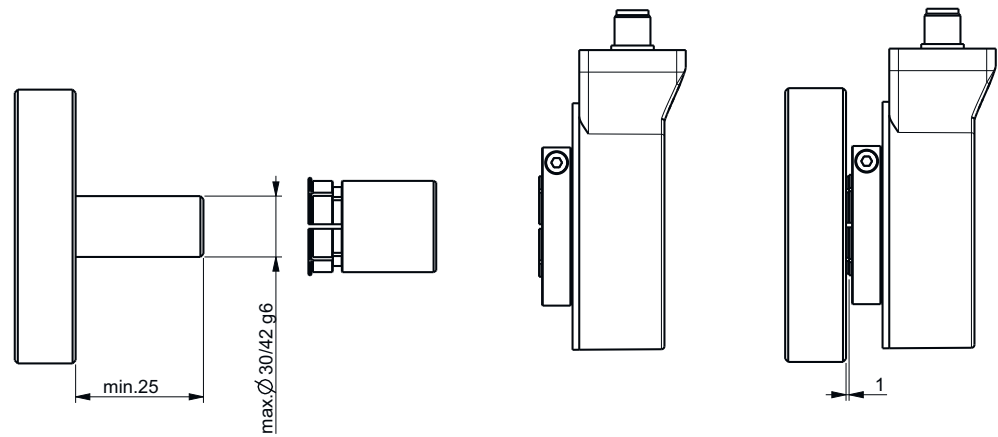


Figure 2: Mounting distances

3.3 Stator couplings

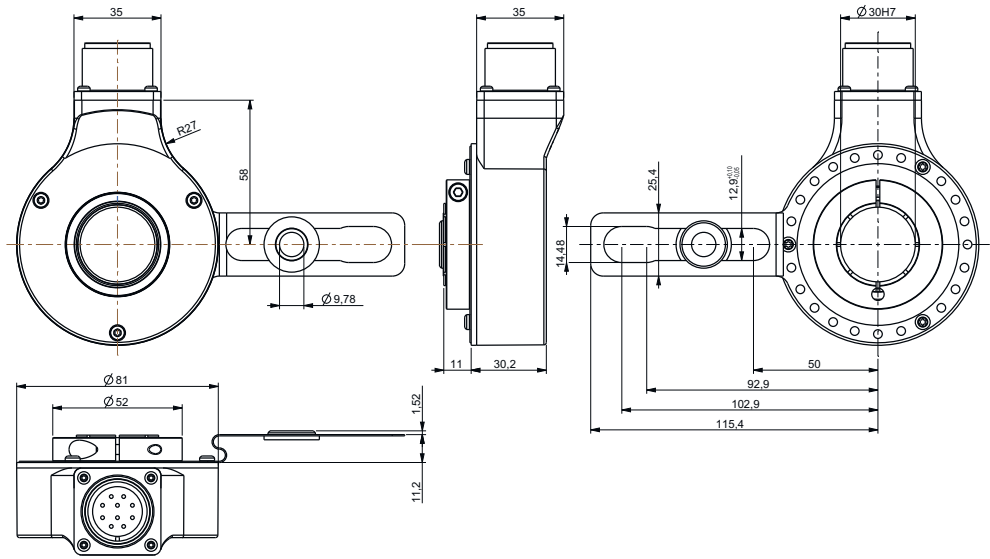


Figure 3: 8.5" C-Face stator coupling option A

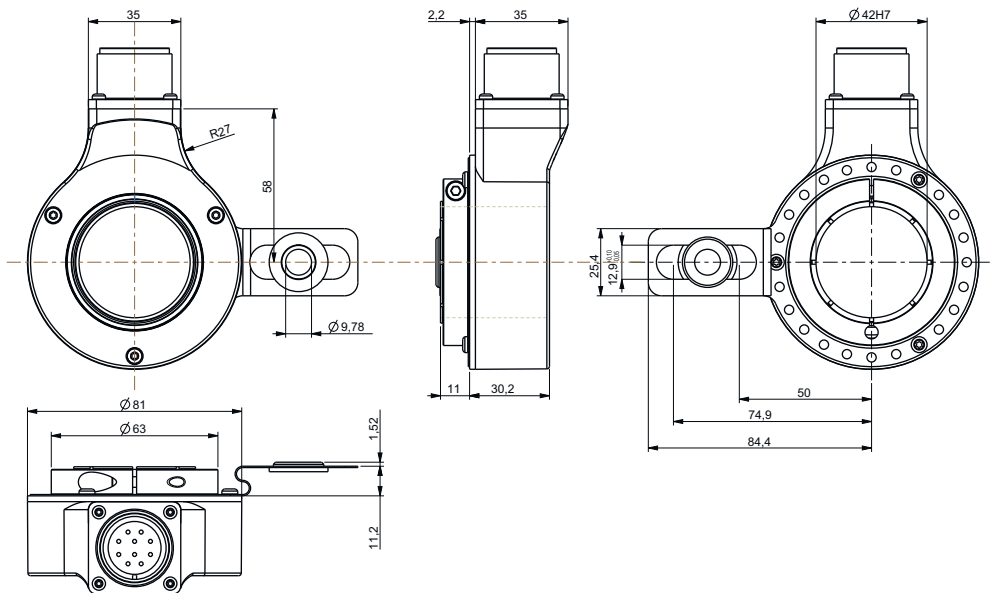


Figure 4: 4.5" C-Face stator coupling option B

4 Electrical installation

4.1 PIN and wire assignment

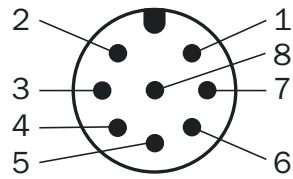


Figure 5: Male connector M12, 8-pin

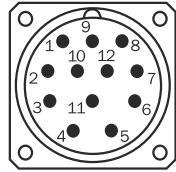


Figure 6: Male connector M23, 12-pin

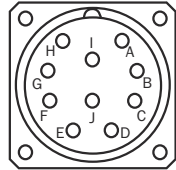


Figure 7: Male connector MS, 10-pin

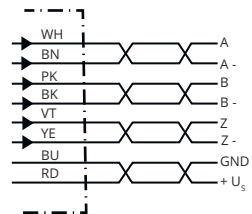


Figure 8: Cable



CAUTION

Check whether the signal quality of the encoder is sufficient depending on the output frequency and supply voltage of the encoder as well as the input wiring of the operating concept.

Table 1: PIN assignment

wire colors (cable connection)	PIN Male connector M12, 8-pin	PIN Male connector M23, 12-pin CCW	PIN Male connector MS, 10-pin	Signal TTL / Universal 6-channel	Explanation
Brown	1	6	H	A-	Signal wire
White	2	5	A	A	Signal wire
Black	3	1	I	B-	Signal wire
Pink	4	8	B	B	Signal wire
Yellow	5	4	J	Z-	Signal wire
Purple	6	3	C	Z	Signal wire
Blue	7	10	F	GND	Ground connection of the encoder
Red	8	12	D	+U _S	Supply voltage
-	-	2	E	n.c.	Not connected
-	-	7	-	n.c.	Not connected
-	-	-	G	Case	Encoder housing
-	-	9	-	n.c.	Not connected
-	-	11	-	n.c.	Not connected
Shield				Shield	Shield (connected with housing on the encoder side)



DANGER

PIN assignment valid for standard encoders only. Please use the appropriate data sheet for customer-specific encoders.

- In order to achieve a high signal quality, we recommend a differential evaluation of the encoder signals.
- For encoders with connector, the unused signals must not be connected to the customer cabling.

5 Annex

5.1 Conformities and certificates

You can obtain declarations of conformity, certificates, and the current operating instructions for the product at www.sick.com. To do so, enter the product part number in the search field (part number: see the entry in the “P/N” or “Ident. no.” field on the type label).

Australia

Phone +61 (3) 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Austria

Phone +43 (0) 2236 62288-0
E-Mail office@sick.at

Belgium/Luxembourg

Phone +32 (0) 2 466 55 66
E-Mail info@sick.be

Brazil

Phone +55 11 3215-4900
E-Mail comercial@sick.com.br

Canada

Phone +1 905.771.1444
E-Mail cs.canada@sick.com

Czech Republic

Phone +420 234 719 500
E-Mail sick@sick.cz

Chile

Phone +56 (2) 2274 7430
E-Mail chile@sick.com

China

Phone +86 20 2882 3600
E-Mail info.china@sick.net.cn

Denmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Finland

Phone +358-9-25 15 800
E-Mail sick@sick.fi

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Germany

Phone +49 (0) 2 11 53 010
E-Mail info@sick.de

Greece

Phone +30 210 6825100
E-Mail office@sick.com.gr

Hong Kong

Phone +852 2153 6300
E-Mail ghk@sick.com.hk

Hungary

Phone +36 1 371 2680
E-Mail ertekezes@sick.hu

India

Phone +91-22-6119 8900
E-Mail info@sick-india.com

Israel

Phone +972 97110 11
E-Mail info@sick-sensors.com

Italy

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 3 5309 2112
E-Mail support@sick.jp

Malaysia

Phone +603-8080 7425
E-Mail enquiry.my@sick.com

Mexico

Phone +52 (472) 748 9451
E-Mail mexico@sick.com

Netherlands

Phone +31 (0) 30 229 25 44
E-Mail info@sick.nl

New Zealand

Phone +64 9 415 0459
0800 222 278 – tollfree
E-Mail sales@sick.co.nz

Norway

Phone +47 67 81 50 00
E-Mail sick@sick.no

Poland

Phone +48 22 539 41 00
E-Mail info@sick.pl

Romania

Phone +40 356-17 11 20
E-Mail office@sick.ro

Russia

Phone +7 495 283 09 90
E-Mail info@sick.ru

Singapore

Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovakia

Phone +421 482 901 201
E-Mail mail@sick-sk.sk

Slovenia

Phone +386 591 78849
E-Mail office@sick.si

South Africa

Phone +27 10 060 0550
E-Mail info@sickautomation.co.za

South Korea

Phone +82 2 786 6321/4
E-Mail infokorea@sick.com

Spain

Phone +34 93 480 31 00
E-Mail info@sick.es

Sweden

Phone +46 10 110 10 00
E-Mail info@sick.se

Switzerland

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Taiwan

Phone +886-2-2375-6288
E-Mail sales@sick.com.tw

Thailand

Phone +66 2 645 0009
E-Mail marcom.th@sick.com

Turkey

Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 (0) 4 88 65 878
E-Mail contact@sick.ae

United Kingdom

Phone +44 (0)17278 31121
E-Mail info@sick.co.uk

USA

Phone +1 800.325.7425
E-Mail info@sick.com

Vietnam

Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Detailed addresses and further locations at www.sick.com