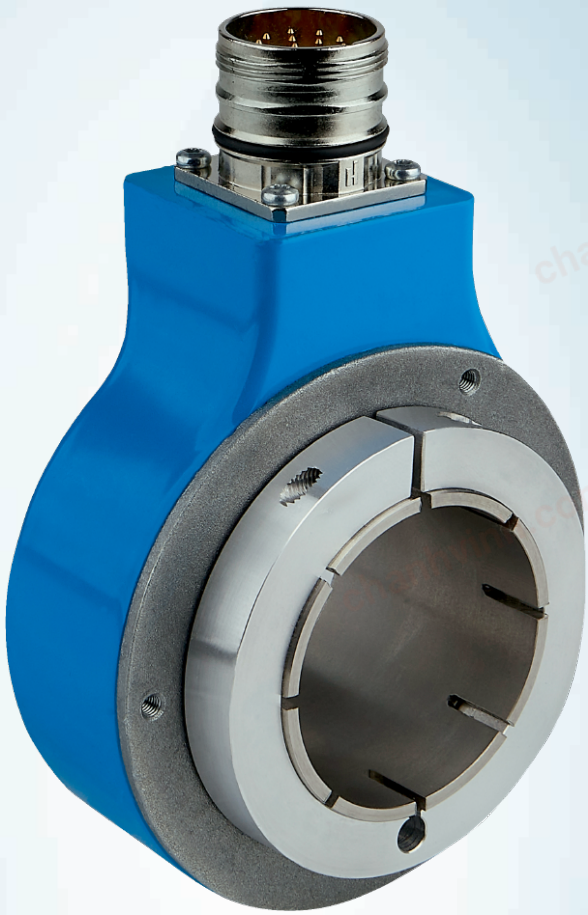
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Product data sheet



DGS80B-TYLA01024

DGS80

INCREMENTAL ENCODERS

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DGS80B-TYLA01024 | DGS80

INCREMENTAL ENCODERS



Illustration may differ

Ordering information

Type	Part no.
DGS80B-TYLA01024	1118744

Other models and accessories → www.sick.com/DGS80

Detailed technical data

Performance

Pulses per revolution	1,024
Measuring step	90° electric/pulses per revolution
Measuring step deviation	± 15° electrical
Duty cycle	≤ 0.5 ± 15 %

Interfaces

Communication interface	Incremental
Communication Interface detail	HTL / Push pull
Number of signal channels	6-channel
Initialization time	< 50 ms
Output frequency	≤ 300 kHz
Load current	≤ 40 mA, per channel
Operating current	≤ 50 mA (without load)
Power consumption	≤ 0.85 W

Electrical data

Connection type	Male connector, M23, 12-pin, radial
Supply voltage	4.5 ... 30 V DC
Reference signal, position	90°, electric, logically gated with A and B
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓
MTTFd: mean time to dangerous failure	518 years (EN ISO 13849-1) [1]

[1] 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.

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Mechanical data

Mechanical design	Through hollow shaft
Shaft diameter	42 mm [1]
Flange type / stator coupling	1-sided stator coupling with slot available for order as accessory
Weight	650 g
Shaft material	Aluminum
Flange material	ZAMAC die cast
Housing material	ZAMAC die cast
Shaft sealing ring material	FKM70
Start up torque	6 Ncm (+20 °C)
Operating torque	5 Ncm (+20 °C)
Permissible shaft load	160 N
Operating speed	≤ 3,600 min^{-1}
Moment of inertia of the rotor	877 gcm^2
Bearing lifetime	10^9 revolutions

[1] Collets (shaft reducer) available as accessories to reduce shaft sizes under 30 mm / 42 mm.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3
Enclosure rating	IP65 (IEC 60529)
Permissible relative humidity	98 % (Condensation not permitted)
Operating temperature range	–25 °C ... +85 °C
Storage temperature range	–25 °C ... +85 °C, without package
Resistance to shocks	250 g, 6 ms (EN 60068-2-27)
Resistance to vibration	10 g, 5 Hz ... 2,000 Hz (EN 60068-2-6)

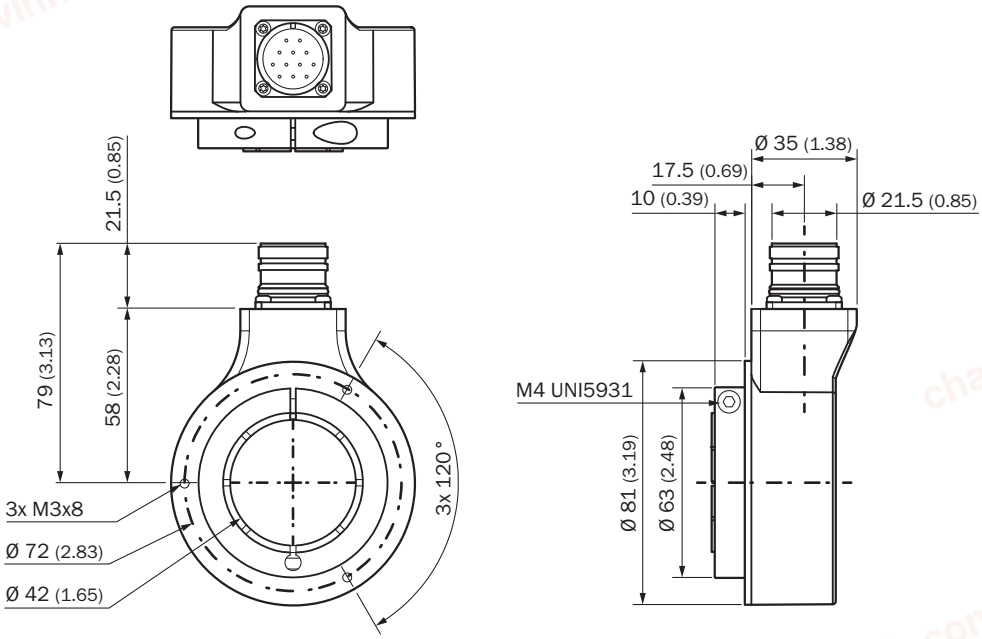
Classifications

eCl@ss 5.0	27270501
eCl@ss 5.1.4	27270501
eCl@ss 6.0	27270590
eCl@ss 6.2	27270590
eCl@ss 7.0	27270501
eCl@ss 8.0	27270501
eCl@ss 8.1	27270501
eCl@ss 9.0	27270501
eCl@ss 10.0	27270501
eCl@ss 11.0	27270501
eCl@ss 12.0	27270501
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
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UNSPSC 16.0901	41112113

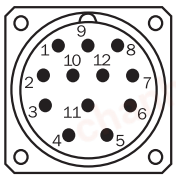
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Dimensional drawing (Dimensions in mm (inch))

Bore hole size 42 mm, M23 male connector



PIN assignment



Wire colors (cable connection)	PIN Male connector M12, 8-pin	PIN Male connector M23, 12-pin	PIN MS male connector, 10-pin	Signal	Explanation
Brown	1	6	H	A-	Signal cable
White	2	5	A	A	Signal cable
Black	3	1	I	B-	Signal cable
Pink	4	8	B	B	Signal cable
Yellow	5	4	J	Z-	Signal cable
Purple	6	3	C	Z	Signal cable
Blue	7	10	F	GND	Ground connection
Red	8	12	D	$+U_S$	Supply voltage
-	-	2	E	N.c.	Not connected
-	-	7	-	N.c.	Not connected
-	-	-	G	Housing	Housing
-	-	9	-	N.c.	Not connected
-	-	11	-	N.c.	Not connected

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Wire colors (cable connection)	PIN Male connector M12, 8-pin	PIN Male connector M23, 12-pin	PIN MS male connector, 10-pin	Signal	Explanation
Screen				Screen	Screen connected to housing on encoder side

Recommended accessories

Other models and accessories ➜ www.sick.com/DGS80

	Brief description	Type	Part no.
Flanges			
	1-sided stator coupling, slot, 115 mm, stainless steel 1.4301 (AISI 304), 1 x stator coupling, 3 x M3 screws, 1 x insulating washer for stator coupling	DGS80-TETHER-A	2122697
	1-sided stator coupling, slot, 84 mm, stainless steel 1.4301 (AISI 304), 1 x stator coupling, 3 x M3 screws, 1 x insulating washer for stator coupling	DGS80-TETHER-B	2122698
Shaft adaptation			
	Collet for through hollow shaft, shaft diameter 30 mm, external diameter 42 mm	SPZ-042-030-M	2123008
	Collet for through hollow shaft, shaft diameter 32 mm, external diameter 42 mm	SPZ-042-032-M	2123009
	Collet for through hollow shaft, shaft diameter 35 mm, external diameter 42 mm	SPZ-042-035-M	2123010
	Collet for through hollow shaft, shaft diameter 38 mm, external diameter 42 mm	SPZ-042-038-M	2123011
	Collet for through hollow shaft, shaft diameter 40 mm, external diameter 42 mm	SPZ-042-040-M	2123012

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