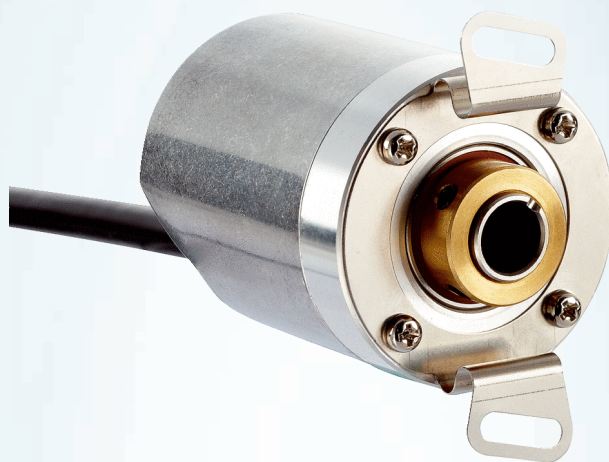




DBS36E-BBAP00200

DBS36 Core

INCREMENTAL ENCODERS

SICK
Sensor Intelligence.

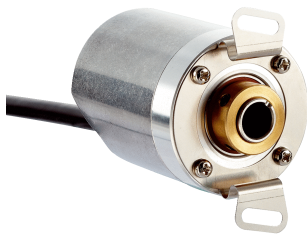


Illustration may differ



Ordering information

Type	Part no.
DBS36E-BBAP00200	1066075

Other models and accessories → www.sick.de/DBS36_Core

Detailed technical data

Performance

Pulses per revolution	200
Measuring step	90° / electronically/pulses
Measuring step deviation	± 18° /pulses per revolution
Error limits	± 54° /pulses per revolution
Duty cycle	≤ 0.5 ± 5 %
Initialization time	< 3 ms

Electrical data

Electrical interface	4.5 V ... 5.5 V, open collector
Initialisation time after power on	< 3 ms
Connection type	Cable, 8-wire with male connector M12, universal, 0.5 m
Operating power consumption (no load)	50 mA
Power consumption max. without load	Without load
Operating voltage range	4.5 V ... 5.5 V
Load current max.	≤ 20 mA
Maximum output frequency	300 kHz
Reference signal, number	1
Reference signal, position	90°, electronically, gated with A and B
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓ ¹⁾
MTTFd: mean time to dangerous failure	600 years (EN ISO 13849-1) ²⁾

¹⁾ The short-circuit rating is only given if Us and GND are connected correctly.

²⁾ 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.

Mechanical data

Mechanical interface	Blind hollow shaft
Shaft diameter	8 mm

¹⁾ Self-warming 4.7 K per 1,000 1/min.

²⁾ No permanent operation. Decreasing signal quality.

Mass	150 g (with connecting cable)
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Aluminum
Material, cable	PVC
Start up torque	0.5 Ncm (+20 °C)
Operating torque	0.4 Ncm (+20 °C)
Permissible movement axial static/dynamic	± 0.5 mm, ± 0.2 mm
Permissible movement radial static/dynamic	± 0.3 mm, ± 0.1 mm
Operating speed	6,000 /min ¹⁾
Maximum operating speed	8,000 U/min ²⁾
Moment of inertia of the rotor	0.8 gcm ²
Bearing lifetime	2 x 10 ⁹ revolutions
Max. angular acceleration	≤ 500,000 rad/s ²

¹⁾ Self-warming 4.7 K per 1,000 1/min.

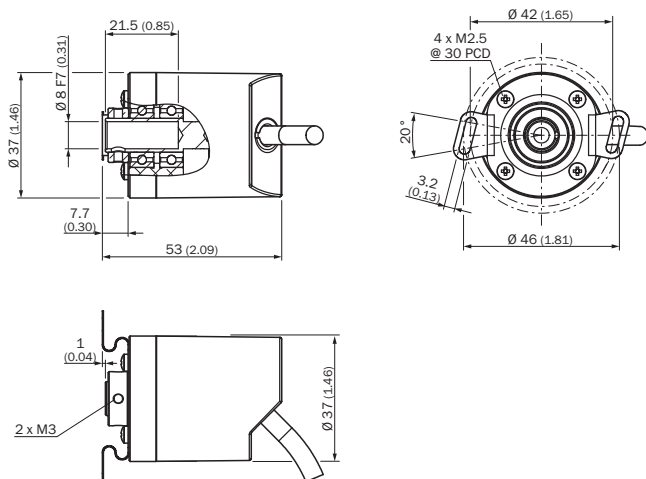
²⁾ No permanent operation. Decreasing signal quality.

Ambient data

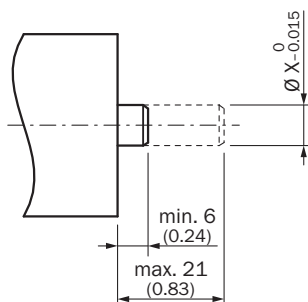
EMC	According to EN 61000-6-2 and EN 61000-6-4 (class A)
Enclosure rating	IP 65
Permissible relative humidity	90 % (condensation of the optical scanning not permitted)
Working temperature range	-20 °C ... +85 °C
Storage temperature range	-40 °C ... +100 °C, without package
Resistance to shocks	100 g (EN 60068-2-27)
Resistance to vibration	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

Dimensional drawing (dimensions in mm (inch))

Blind hollow shaft, cable outlet



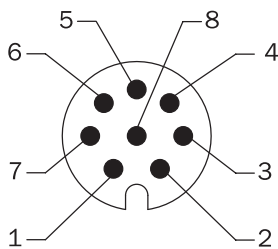
Proposed fitting



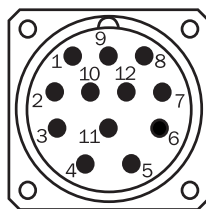
PIN assignment

8-core cable

View of M12 device connector on cable/housing



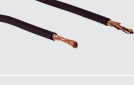
View of M23 device connector on cable/housing



Colour of wires	Pin 12-pole in M12	Pin 12-pole in M23	Signal OC	Signal TTL; HTL	Explanation
Brown	1	6	Not connected	A-	Signal line
White	2	5	A	A	Signal line
Black	3	1	Not connected	B-	Signal line
Pink	4	8	B	B	Signal line
Yellow	5	4	Not connected	Z-	Signal line
Lilac	6	3	Z	Z	Signal line
Blue	7	10	GND	GND	Ground connection of the Encoder
Red	8	12	+Us	+Us	Supply voltage
-	-	9	Not connected	Not connected	Not connected
-	-	2	Not connected	Not connected	Not connected
-	-	11	Not connected	Not connected	Not connected
-	-	7	Not connected	Not connected	Not connected
Screen	Screen	Screen	Screen	Screen	Screen (Screen connected to Encoder housing.

Recommended accessories

Other models and accessories → www.sick.de/DBS36_Core

	Brief description	Type	Part no.
Flanges			
	Flange adapter, adapts face mount flange with 20 mm centering collar to 33 mm servo flange, Aluminum	BEF-FA-020-033	2066312
Other mounting accessories			
	Measuring wheel, circumference 0.2 m, hole ø 6mm, NBR70 O-ring surface	BEF-MR006020R	2055222
	Measuring wheel, circumference 0.3 m, hole ø 6mm, NBR70 O-ring surface	BEF-MR006030R	2055634
	Measuring wheel, circumference 0.2 m, hole ø 6mm, NBR70 O-ring surface	BEF-OR-053-040	2064061
		BEF-OR-083-05	2064076
	Torque support 2-sided	BEF-DS-DBS36	2066301
	Servo clamps, small, for servo flange (clamping claws, mounting eccentric), (3 pcs), without mounting hardware	BEF-WK-RESOL	2039082
Shaft adaptation			
	Collet for blind hollow shaft, shaft diameter 6 mm, outer diameter 8 mm	SPZ-006-DD36-A	2056390
Plug connectors and cables			
	Head A: Cable Head B: Cable Cable: SSI, drag chain use, PUR, halogen-free, shielded	LTG-2308-MWENC	6027529
	Head A: Cable Head B: Cable Cable: SSI, PUR, shielded	LTG-2411-MW	6027530
	Head A: Cable Head B: Cable Cable: SSI, drag chain use, PUR, halogen-free, shielded	LTG-2512-MW	6027531
	Head A: female connector, M12, 8-pin, straight Head B: Cable Cable: drag chain use, PUR, shielded, 2 m	DOL-1208-G02MAC1	6032866
	Head A: female connector, M12, 8-pin, straight Head B: Cable Cable: drag chain use, PUR, shielded, 5 m	DOL-1208-G05MAC1	6032867
	Head A: female connector, M12, 8-pin, straight Head B: Cable Cable: drag chain use, PUR, shielded, 10 m	DOL-1208-G10MAC1	6032868
	Head A: female connector, M12, 8-pin, straight Head B: Cable Cable: drag chain use, PUR, shielded, 20 m	DOL-1208-G20MAC1	6032869
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, PUR, shielded, 2 m	DOL-2312-G02MLA3	2030682
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, drag chain use, PUR, shielded, 3 m	DOL-2312-G03MMA3	2029213

	Brief description	Type	Part no.
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, drag chain use, PUR, shielded, 5 m	DOL-2312-G05MMA3	2029214
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, PUR, shielded, 7 m	DOL-2312-G07MLA3	2030685
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, PUR, shielded, 10 m	DOL-2312-G10MLA3	2030688
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, drag chain use, PUR, shielded, 10 m	DOL-2312-G10MMA3	2029215
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, PUR, shielded, 15 m	DOL-2312-G15MLA3	2030692
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, drag chain use, PUR, shielded, 1.5 m	DOL-2312-G1M5MA3	2029212
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, PUR, shielded, 20 m	DOL-2312-G20MLA3	2030695
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, drag chain use, PUR, shielded, 20 m	DOL-2312-G20MMA3	2029216
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, PUR, shielded, 25 m	DOL-2312-G25MLA3	2030699
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, PUR, shielded, 30 m	DOL-2312-G30MLA3	2030702
	Head A: female connector, M23, 12-pin, straight Head B: Cable Cable: Incremental, Incremental, drag chain use, PUR, shielded, 30 m	DOL-2312-G30MMA3	2029217
	Head A: female connector, M12, 8-pin, straight, A-coded Head B: - Cable: Incremental, SSI, shielded	DOS-1208-GA01	6045001
	Head A: female connector, M23, 12-pin, straight Head B: - Cable: HIPERFACE®, SSI, Incremental, shielded	DOS-2312-G	6027538
	Head A: female connector, M23, 12-pin, angled Head B: - Cable: HIPERFACE®, SSI, Incremental, shielded	DOS-2312-W01	2072580
	Head A: male connector, M12, 8-pin, straight, A-coded Head B: - Cable: Incremental, shielded	STE-1208-GA01	6044892
	Head A: male connector, M23, 12-pin, straight Head B: - Cable: HIPERFACE®, SSI, Incremental, RS-422, shielded	STE-2312-G	6027537

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