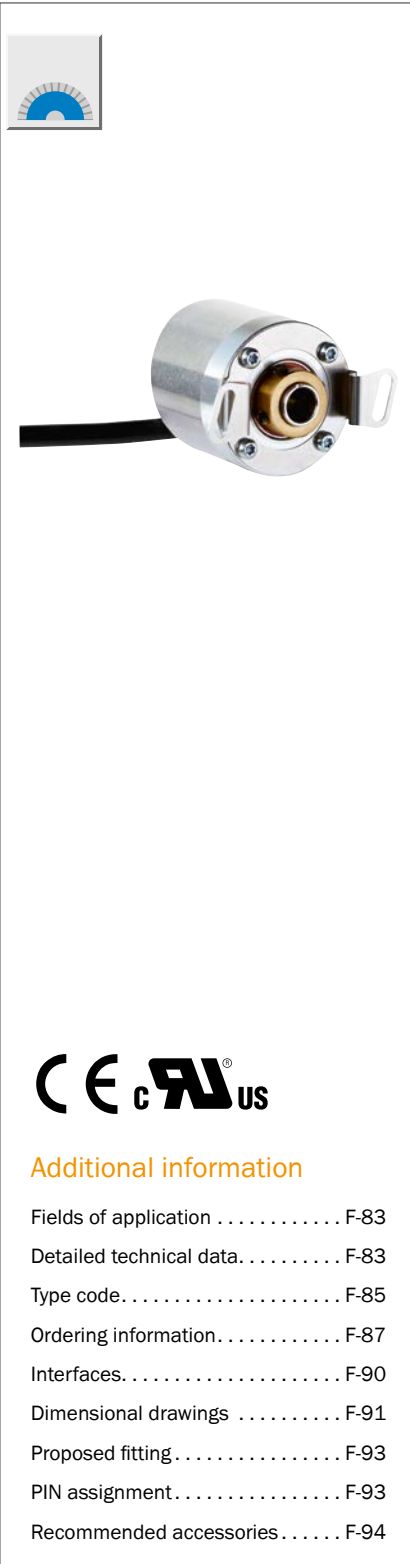


THE MULTI-FIT INCREMENTAL ENCODER



Product description

The DBS36 Core incremental encoder features impressively high mechanical flexibility, excellent technical properties, and a number of variations. A blind hollow shaft with a shaft diameter of up to 8 mm and a face mount flange with 6 mm and 1/4" solid shaft are available. The design with face mount flange offers 2 different flanges with 6 different mounting hole patterns and a servo

groove for mounting with servo clamps. The hollow shaft design has a universal stator coupling that can be used for multiple typical mounting hole circles. All models have compact dimensions and a universal cable outlet that allows for cables to run in an axial or radial direction.

At a glance

- Connection with universal cable outlet
- Designs with blind hollow shaft or face mount flange with solid shaft
- Face mount flange with 6 mounting hole patterns and servo groove
- Hollow shaft with universal stator coupling
- Compact housing diameter of 37 mm with compact construction depth,
- Electrical interfaces: TTL/RS-422, HTL/Push Pull and Open Collector NPN
- Number of lines: 10 to 2,500
- Temperature range: -20 °C... +85 °C
- Enclosure rating: IP 65

Your benefits

- The universal cable outlet allows for use in tight spaces and for flexible cabling
- Face mount flange with various mounting hole patterns provides high flexibility when mounting in existing and new applications
- Face mount flange with servo groove makes mounting with servo clamps possible
- The universal stator coupling of the DBS36 Core allows for easy device replacement without adapting the application
- Shafts in metric and US design enable worldwide use.
- The high flexibility of the mechanical interface of the encoder and the available accessories allow for the use of a single design in many applications
- Long-term and reliable operation thanks to a high enclosure rating, temperature resistance and bearing lifetime

Additional information

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Fields of application

There are numerous application possibilities for positioning and speed measurement, such as in the textile industry, propulsion

technology, storage and conveyors, packaging machines, printing presses, glass industry, and elevators

Detailed technical data

Performance

Pulses per revolution	10 ... 2,500
Measurement step	90° electric/pulse
Measurement step deviation	± 18°/pulses per revolution
Error limits	± 54°/pulses per revolution
Duty cycle	≤ 0.5 ± 5%
Initialization time	< 3 ms

Mechanical data

Mechanical design	Solid shaft, face mount flange Blind hollow shaft
Shaft diameter	
Solid shaft, face mount flange	6 mm x 12 mm 1/4" x 15.5 mm
Blind hollow shaft	8 mm (shaft diameter 1/4", 6 mm, 5 mm via collet possible – (see Accessories))
Mass	150 g (with connecting cable)
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Aluminum
Cable material	PVC
Start up torque	0.5 Ncm (+20 °C)
Operating torque	0.4 Ncm (+20 °C)
Permissible shaft movement, axial static/dynamic	
Blind hollow shaft	± 0.5 mm, ± 0.2 mm
Permissible shaft movement, radial static/dynamic	
Blind hollow shaft	± 0.3 mm, ± 0.1 mm
Permissible shaft load, radial/axial ¹⁾	
Solid shaft, face mount flange	40 N (radial) 20 N (axial)
Operating speed	6,000/min ²⁾ 6,000/min ³⁾
Maximum operating speed	8,000 rpm ⁴⁾
Rotor moment of inertia	
Solid shaft, face mount flange	0.6 gcm ²
Blind hollow shaft	0.8 gcm ²
Bearing lifetime	2 x 10 ⁹ revolutions
Max. angular acceleration	≤ 500,000 rad/s ²

¹⁾ Higher values possible by limiting the overall service life.

²⁾ Solid shaft: Self-warming 3.3 K per 1,000 rpm.

³⁾ Hollow shaft: Self-warming 4.7 K per 1,000 rpm.

⁴⁾ No continuous operation. Signal quality is degraded.

Electrical data

Electrical interface	4,5 V ... 5,5 V, TTL/RS422 7 V ... 30 V, TTL/RS422 7 V ... 30 V, HTL Push Pull 7 V... 27 V, HTL Push Pull, 3 channel 4.5 V ... 5.5 V, Open Collector NPN 4.5 V ... 30 V, Open Collector NPN
Connection type	Cable, 5 or 8-wire, universal, 0.5 m ²⁾ Cable, 5 or 8-wire, universal, 1.5 m ²⁾ Cable, 5 or 8-wire, universal, 3 m ²⁾ Cable, 5 or 8-wire, universal, 5 m ²⁾ Cable, 5 or 8-wire, universal, 10 m ²⁾ Cable, 8-wire with male connector M12, universal, 0.5 m Cable, 8-wire with male connector M23, universal, 0.5 m ¹⁾
Operating current without load	
4.5 V...5.5 V, TTL/RS422	≤ 50 mA
4.5 V ... 5.5 V, Open Collector NPN	≤ 50 mA
Max. power consumption without load	
7 V ... 30 V, TTL/RS422	< 0.5 W
7 V ... 30 V, HTL Push Pull	< 0.5 W
7 V ... 27 V, HTL Push Pull	< 0.5 W
4.5 V ... 30 V, Open Collector NPN	< 0.5 W
Max. load current	
Open Collector	≤ 30 mA
TTL/HTL	≤ 30 mA
Maximum output frequency	300 kHz
Reference signal, number	1
Reference signal, position	90° electric, logically gated with A and B
Reverse polarity protection	
4,5 V ... 5,5 V, TTL/RS422	–
7 V ... 30 V, TTL/RS422	✓
7 V ... 30 V, HTL Push Pull	✓
7 V ... 27 V, HTL Push Pull	✓
4.5 V ... 5.5 V, Open Collector NPN	✓
4.5 V ... 30 V, Open Collector NPN	✓
Short-circuit protection of outputs ³⁾	
4,5 V ... 5,5 V, TTL/RS422	✓
7 V ... 30 V, TTL/RS422	✓
7 V ... 30 V, HTL Push Pull	✓
7 V ... 27 V, HTL Push Pull	✓
4.5 V ... 5.5 V, Open Collector NPN	✓
4.5 V ... 30 V, Open Collector NPN	✓
MTTFd: mean time to dangerous failure	600 years (EN ISO 13849-1) ⁴⁾

¹⁾ M23 male connector for central mounting

²⁾ Number of wires depending on electrical interface: Interface A, C, E: 8-wire; Interface G, P, R: 5-wire.

³⁾ Short-circuit protection is only guaranteed when Us and GND are connected correctly.

⁴⁾ 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 devices, 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

EMC	According to EN 61000-6-2 and EN 61000-6-3 (class A)
Enclosure rating	IP 65
Permissible relative humidity	90% (condensation of optical surfaces not permitted)
Operating temperature range	
4,5 V ... 5,5 V, TTL/RS422	-20 °C ... +85 °C (-35 °C ... +95 °C upon request)
7 V ... 30 V, TTL/RS422	-20 °C ... +85 °C (-35 °C ... +95 °C upon request)
7 V ... 30 V, HTL Push Pull	-20 °C ... +85 °C (-35 °C ... +95 °C upon request)
7 V ... 27 V, HTL Push Pull	-20 °C ... +70 °C
4.5 V ... 5.5 V, Open Collector NPN	-20 °C ... +85 °C (-35 °C ... +95 °C upon request)
4.5 V ... 30 V, Open Collector NPN	-20 °C ... +85 °C (-35 °C ... +95 °C upon request)
Storage temperature range	-40 °C ... +100 °C, without packaging
Resistance to shocks	100 g/6 ms (EN 60068-2-27)
Resistance to vibrations	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

Type code

Solid shaft

Mechanical design

- | | |
|---|--|
| 3 | Face mount flange, solid shaft, Ø 6 mm, length 12 mm |
|---|--|
- | | |
|---|---|
| 8 | Face mount flange, solid shaft, Ø 1/4" mm, length 15.5 mm |
|---|---|

Electrical interface

- | | |
|---|--------------------------------------|
| A | 4.5 ... 5.5 V, TTL/RS-422, 6 channel |
|---|--------------------------------------|
- | | |
|---|-----------------------------------|
| C | 7 ... 30 V, TTL/RS-422, 6 channel |
|---|-----------------------------------|
- | | |
|---|--------------------------------------|
| E | 7 ... 30 V, HTL Push Pull, 6 channel |
|---|--------------------------------------|
- | | |
|---|--------------------------------------|
| G | 7 ... 27 V, HTL Push Pull, 3 channel |
|---|--------------------------------------|
- | | |
|---|--|
| P | 4.5 ... 5.5 V, Open Collector NPN, 3 channel |
|---|--|
- | | |
|---|---|
| R | 4.5 ... 30 V, Open Collector NPN, 3 channel |
|---|---|

Connection type

- | | |
|---|--|
| J | Cable, 5 or 8-wire, universal, 0.5 m ¹⁾ |
|---|--|
- | | |
|---|--|
| K | Cable, 5 or 8-wire, universal, 1.5 m ¹⁾ |
|---|--|
- | | |
|---|--|
| L | Cable, 5 or 8-wire, universal, 3 m ¹⁾ |
|---|--|
- | | |
|---|--|
| M | Cable, 5 or 8-wire, universal, 5 m ¹⁾ |
|---|--|
- | | |
|---|---|
| N | Cable, 5 or 8-wire, universal, 10 m ¹⁾ |
|---|---|
- | | |
|---|--|
| P | Cable, 8-wire universal, 0.5 m, with male connector M12, 8-pin |
|---|--|
- | | |
|---|---|
| Q | Cable, 8-wire universal, 0.5 m, with male connector M23, 12-pin |
|---|---|

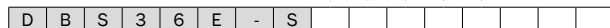
Flange design

- | | |
|---|--|
| O | Face mount flange, standard hole pattern |
|---|--|
- | | |
|---|--|
| A | Face mount flange, hole pattern A (only with shaft S3) |
|---|--|

Resolution

--

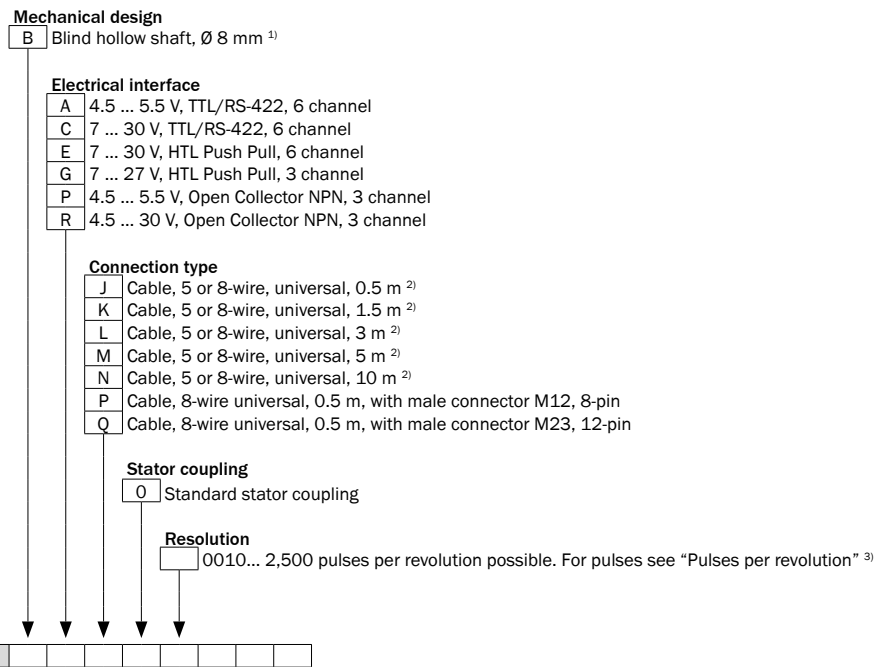
 0010... 2,500 pulses per revolution possible. For pulses see "Pulses per revolution" ²⁾



¹⁾ Number of wires depending on electrical interface: Interface A, C, E: 8-wire; Interface G, P, R: 5-wire.

²⁾ Other pulse on request.

Hollow shaft



¹⁾ Shaft diameter 1/4", 6 mm, 5 mm via collet possible (see Accessories).

²⁾ Number of wires depending on electrical interface: Interface A, C, E: 8-wire; Interface G, P, R: 5-wire.

³⁾ Other pulse on request.

F

Pulses per revolution ¹⁾

	E
	0010
	0020
	0050
	0100
	0120
	0125
	0200
	0250
	0256
	0300
	0360
	0400
	0500
	0512
	0600
	1000
	1024
	1200
	2000
	2048
	2500

¹⁾ Additional available upon request.

Ordering information

Solid shaft, face mount flange

- **Shaft diameter:** 6 mm

Electrical interface	Voltage range	Connection type	Range of pulses per revolution	Type	Part no.
TTL/RS422	4.5 V ... 5.5 V	Cable, 8-wire universal, 0.5 m	100	DBS36E-S3AJ00100	1061237
			360	DBS36E-S3AJ00360	1061238
			400	DBS36E-S3AJ00400	1061239
			500	DBS36E-S3AJ00500	1061240
			1,024	DBS36E-S3AJ01024	1060867
		Cable, 8-wire, universal, 1.5 m	100	DBS36E-S3AK00100	1060535
			360	DBS36E-S3AK00360	1060536
			400	DBS36E-S3AK00400	1060537
			500	DBS36E-S3AK00500	1060538
			1,000	DBS36E-S3AK01000	1060539
			1,024	DBS36E-S3AK01024	1060144
			2,048	DBS36E-S3AK02048	1058602
	7 V ... 30 V	Cable, 8-wire universal, 0.5 m	2,500	DBS36E-S3AK02500	1060268
			500	DBS36E-S3CJ00500	1066387
		Cable, 8-wire, universal, 1.5 m	100	DBS36E-S3CK00100	1063772
			500	DBS36E-S3CK00500	1062944
			1,000	DBS36E-S3CK01000	1064515
			1,024	DBS36E-S3CK01024	1067267
2,048	DBS36E-S3CK02048	1059906			
2,500	DBS36E-S3CK02500	1068997			
HTL/Push Pull	7 V ... 30 V	Cable, 8-wire, universal, 0.5 m	100	DBS36E-S3EJ00100	1061242
			360	DBS36E-S3EJ00360	1061243
			400	DBS36E-S3EJ00400	1061244
			500	DBS36E-S3EJ00500	1061245
			1,000	DBS36E-S3EJ01000	1061246
			1,024	DBS36E-S3EJ01024	1061247
		Cable, 8-wire, universal, 1.5 m	100	DBS36E-S3EK00100	1060540
			200	DBS36E-S3EK00200	1062679
			256	DBS36E-S3EK00256	1065241
			360	DBS36E-S3EK00360	1060541
			400	DBS36E-S3EK00400	1060542
			500	DBS36E-S3EK00500	1060543
	1,000		DBS36E-S3EK01000	1060544	
	1,024		DBS36E-S3EK01024	1060545	
	2,048		DBS36E-S3EK02048	1059907	
	2,500	DBS36E-S3EK02500	1061133		
	Cable, 8-wire with male connector M12, universal, 0.5 m	2,048	DBS36E-S3EP02048	1068156	

F

Blind hollow shaft

- **Shaft diameter:** 8 mm

Electrical interface	Voltage range	Connection type	Range of pulses per revolution	Type	Part no.
TTL/RS422	4.5 V ... 5.5 V	Cable, 8-wire universal, 0.5 m	360	DBS36E-BBAJ00360	1061249
			400	DBS36E-BBAJ00400	1061250
			500	DBS36E-BBAJ00500	1061251
			1,000	DBS36E-BBAJ01000	1061252
			1,024	DBS36E-BBAJ01024	1060868
		Cable, 8-wire, universal, 1.5 m	100	DBS36E-BBAK00100	1060524
			360	DBS36E-BBAK00360	1060525
			400	DBS36E-BBAK00400	1060526
			500	DBS36E-BBAK00500	1060527
			1,000	DBS36E-BBAK01000	1060528
	7 V ... 30 V	Cable, 8-wire, universal, 1.5 m	1,024	DBS36E-BBAK01024	1060147
			2,048	DBS36E-BBAK02048	1058603
		2,500	DBS36E-BBAK02500	1061235	
		Cable, 8-wire, universal, 1.5 m	100	DBS36E-BBCK00100	1060148
			1,000	DBS36E-BBCK01000	1065589
		Cable, 8-wire with male connector M12, universal, 0.5 m	2,048	DBS36E-BBCP02048	1062240
HTL/Push Pull	7 V ... 30 V	Cable, 8-wire universal, 0.5 m	100	DBS36E-BBEJ00100	1061253
			360	DBS36E-BBEJ00360	1061254
			400	DBS36E-BBEJ00400	1061255
			500	DBS36E-BBEJ00500	1061256
			1,000	DBS36E-BBEJ01000	1061257
			1,024	DBS36E-BBEJ01024	1061258
			2,000	DBS36E-BBEJ02000	1068715
		2,500	DBS36E-BBEJ02500	1062490	
		Cable, 8-wire, universal, 1.5 m	100	DBS36E-BBEK00100	1060529
			200	DBS36E-BBEK00200	1064320
			360	DBS36E-BBEK00360	1060530
			400	DBS36E-BBEK00400	1060531
			500	DBS36E-BBEK00500	1060532
			1,000	DBS36E-BBEK01000	1060533
	1,024		DBS36E-BBEK01024	1060534	
	Cable, 8-wire with male connector M12, universal, 0.5 m	2,048	DBS36E-BBEK02048	1059910	
		100	DBS36E-BBEP00100	1065770	
		200	DBS36E-BBEP00200	1068935	

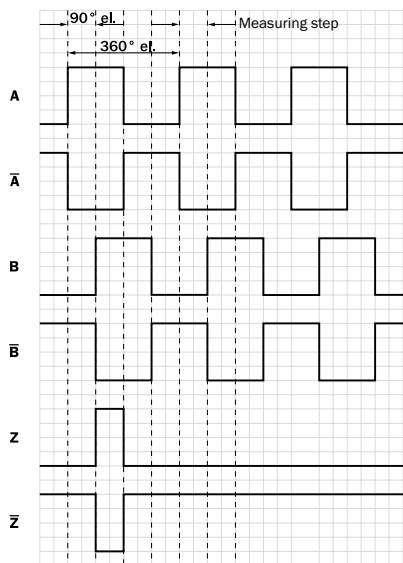
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Electrical interface	Voltage range	Connection type	Range of pulses per revolution	Type	Part no.
Open collector	4.5 V ... 5.5 V	Cable, 8-wire, universal, 1.5 m	200	DBS36E-BBPK00200	1065144
			500	DBS36E-BBPK00500	1064120
			1,000	DBS36E-BBPK01000	1067836
			2,048	DBS36E-BBPK02048	1059911
			2,500	DBS36E-BBPK02500	1065791
		Cable, 8-wire with male connector M12, universal, 0.5 m	360	DBS36E-BBAP00360	1067379
			500	DBS36E-BBAP00500	1068192
			1,000	DBS36E-BBAP01000	1066259
			1,024	DBS36E-BBAP01024	1062784
			2,500	DBS36E-BBAP02500	1062785



Interfaces

Signal outputs for electrical interfaces TTL and HTL



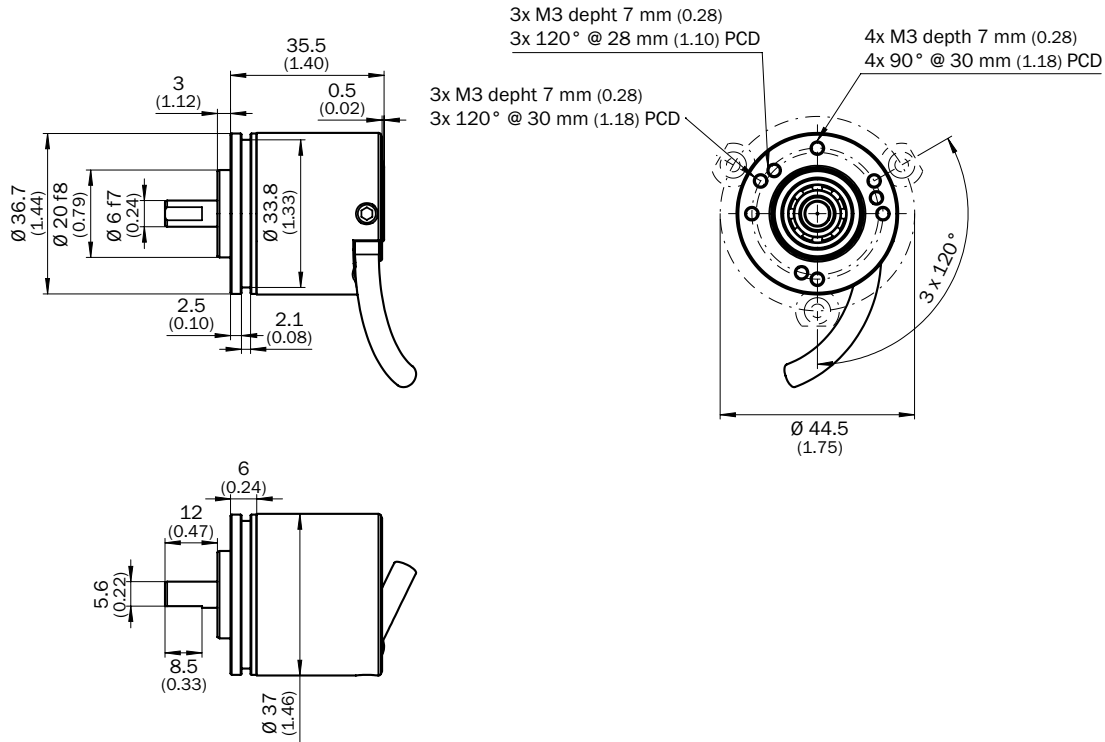
CW with view on the encoder shaft in direction “A”, compare dimensional drawing.

Interfaces G, P, R only for channels A, B, Z.

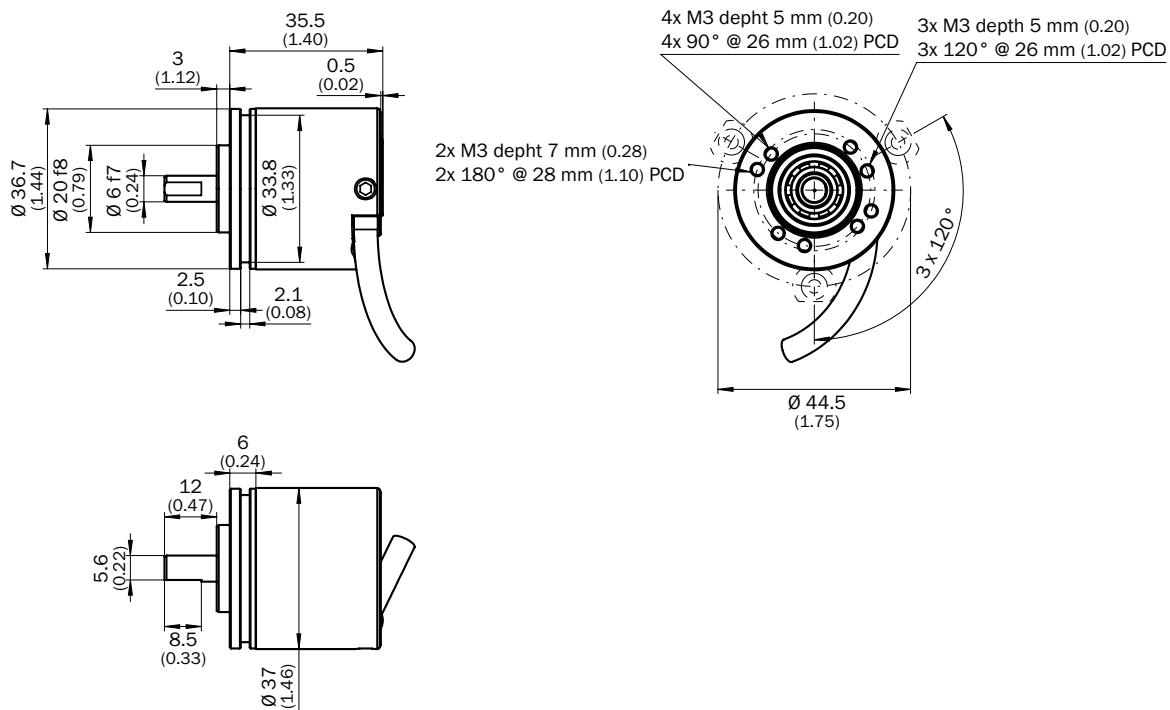
Supply voltage	Output
4.5 V ... 5.5 V	TTL/RS422
7 V ... 30 V	TTL/RS422
7 V ... 30 V	HTL Push Pull
7 V ... 27 V	HTL Push Pull, 3 channel
4.5 V ... 5.5 V	Open Collector NPN
4.5 V ... 30 V	Open Collector NPN

Dimensional drawings (dimensions in mm)

Solid shaft, face mount flange, shaft 6 mm x 12 mm, standard hole pattern

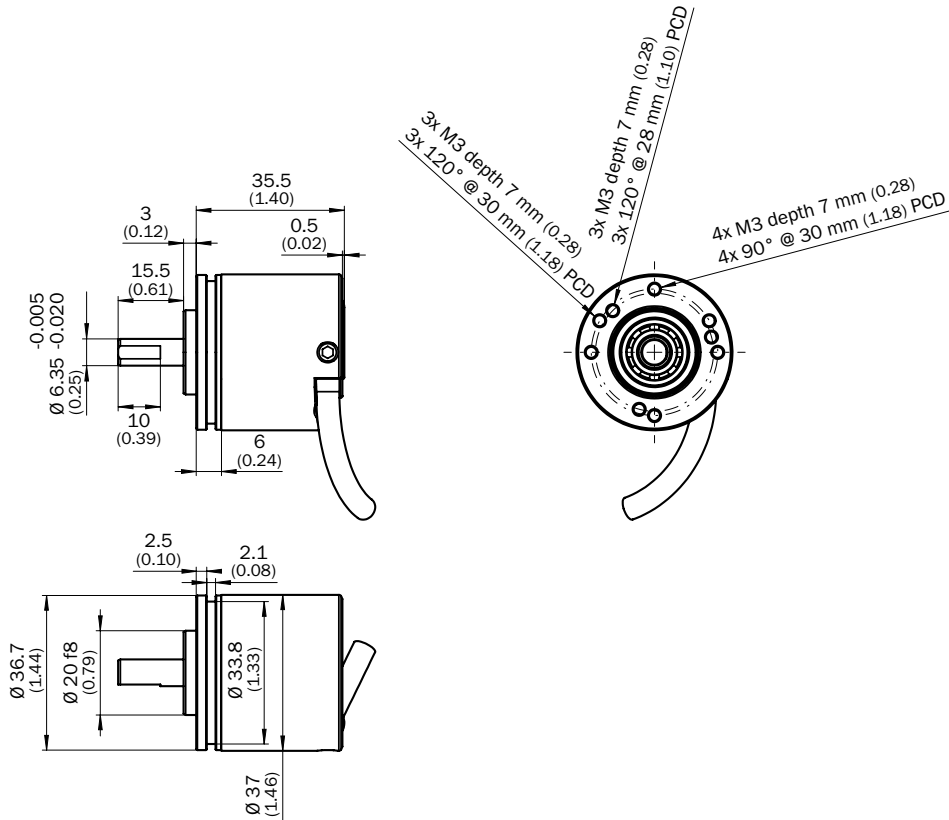


Solid shaft, face mount flange, shaft 6 mm x 12 mm, Type A flange design hole pattern



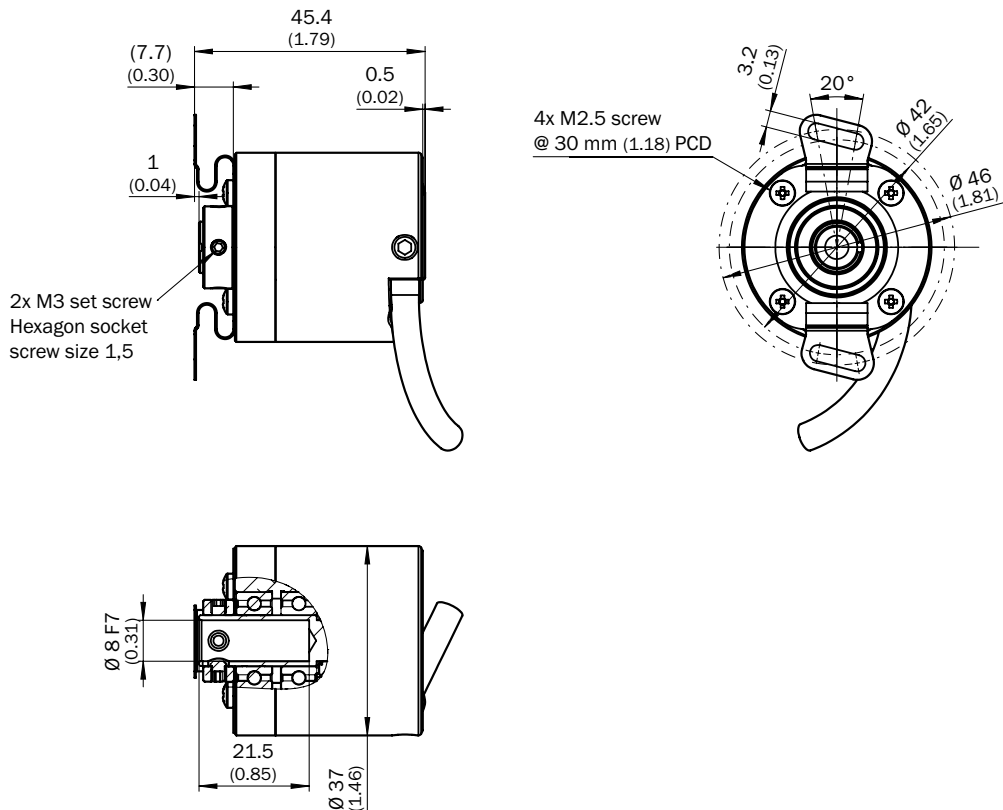
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Solid shaft, face mount flange, shaft 1/4" x 15.5 mm, standard hole pattern

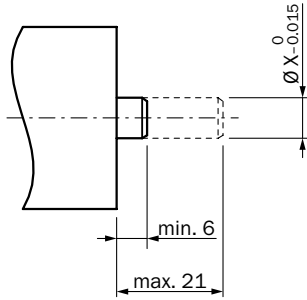


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Blind hollow shaft, cable outlet



Proposed fitting

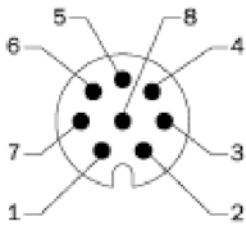


Diameter X	Encoder	Collet
5 mm	DBS36E-BB	2066991
6 mm		2056390
1/4"		upon request
8 mm		not required

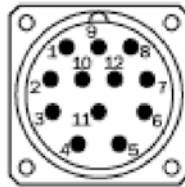
PIN assignment

8-core cable

View of M12 device connector on cable



View of M23 device connector on cable




Wire color	Pin 8-pole for M12	Pin 12-pole for M23	Signal HTL/ OC 3-channel	Signal TTL/ HTL 6-channel	Explanation
brown	1	6	Not connected	A-	Signal wire
white	2	5	A	A	Signal wire
black	3	1	Not connected	B-	Signal wire
pink	4	8	B	B	Signal wire
Yellow	5	4	Not connected	Z-	Signal wire
purple	6	3	Z	Z	Signal wire
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
Shield	Shield	Shield	Shield	Shield	Shield (connected with housing on the encoder side)

Recommended accessories

Mounting systems


Mounting brackets and plates

Mounting bracket

Figure	Brief description	Type	Part no.
	Mounting bracket for encoder with centering hub 20 mm, including mounting kit for face mount flange	BEF-WF-20	2066393


Flanges

Flange plate

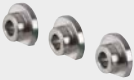
Figure	Brief description	Type	Part no.
	Flange adapter, adaption of face mount flange with centering hub 20 mm to 33 mm servo flange, aluminum	BEF-FA-020-033	2066312

Other mounting accessories


Measuring wheels and measuring wheel systems

Figure	Brief description	Type	Part no.
	Measuring wheel with O-ring (NBR70) for 6 mm solid shaft, circumference 200 mm	BEF-MR006020R	2055222
	Measuring wheel with O-ring (NBR70) for 6 mm solid shaft, circumference 300 mm	BEF-MR006030R	2055634
	O-ring for measuring wheels (circumference 200 mm)	BEF-OR-053-040	2064061
	O-ring for measuring wheels (circumference 300 mm)	BEF-OR-083-050	2064076

Servo clamps


Figure	Brief description	Type	Part no.
	Servo clamps, small, for servo flanges (clamps, eccentric fastener), 3 pcs., without mounting material	BEF-WK-RESOL	2039082

Miscellaneous

Figure	Brief description	Type	Part no.
	Two-sided stator coupling, screw hole diameter 42 - 46 mm, slot width 3.2 mm	BEF-DS-DBS36	2066301





Shaft adaptation

Collets and clamping rings

Figure	Brief description	Type	Part no.
	Collet for blind hollow shaft, shaft diameter 5 mm, external diameter 8 mm	SPZ-005-AD-A	2066991
	Collet for blind hollow shaft, shaft diameter 6 mm, external diameter 8 mm	SPZ-006-DD36-A	2056390

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Shaft couplings

Figure	Brief description	Type	Part no.
	Bellows coupling, shaft diameter 6 mm / 6 mm, maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular $\pm 4^\circ$; max. speed 10,000 rpm, -30°C to $+120^\circ\text{C}$, max. torque 80 Ncm; material: stainless steel bellows, aluminum hub	KUP-0606-B	5312981
	Bellows coupling, shaft diameter 6 mm / 10 mm, maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular $\pm 4^\circ$; max. speed 10,000 rpm, -30°C to $+120^\circ\text{C}$, max. torque 80 Ncm; material: stainless steel bellows, aluminum hub	KUP-0610-B	5312982
	Bar coupling, shaft diameter 6 mm / 6 mm, maximum shaft offset: radial ± 0.3 mm, axial ± 0.2 mm, angle $\pm 3^\circ$; max. speed 10,000 rpm, -10° to $+80^\circ\text{C}$, max. torque 80 Ncm; material: fiber-glass reinforced polyamide, aluminum hub	KUP-0606-S	2056406
	Bar coupling, shaft diameter 6 mm / 8 mm, maximum shaft offset radial ± 0.3 mm, axial ± 0.2 mm, angle $\pm 3^\circ$, max. speed 10,000 rpm, torsion spring rigidity 38 Nm/wheel; material: fiber-glass reinforced polyamide, aluminum hub	KUP-0608-S	5314179
	Double-loop coupling, shaft diameter 6 mm/10 mm, maximum shaft offset: radial ± 2.5 mm, axial ± 3 mm, angular $\pm 10^\circ$; max. speed 3,000 rpm, -30°C to $+80^\circ\text{C}$, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange	KUP-0610-D	5326697
	Spring washer coupling, shaft diameter 6 mm/10 mm, maximum shaft offset: radial ± 0.3 mm, axial ± 0.4 mm, angular $\pm 2.5^\circ$; max. speed 12,000 rpm, -10°C to $+80^\circ\text{C}$, max. torque 60 Ncm; material: aluminum flange, fiber-glass reinforced polyamide membrane and tempered steel coupling pin	KUP-0610-F	5312985

Connectivity




Plug connectors and cables

Connecting cables with female connector



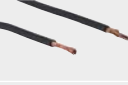
Figure	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M12, 8-pin, straight Head B: cable Cable: suitable for drag chain, PVC, shielded, 4 x 2 x 0.25 mm ² , \varnothing 7.0 mm	2 m	DOL-1208-G02MAC1	6032866
		5 m	DOL-1208-G05MAC1	6032867
		10 m	DOL-1208-G10MAC1	6032868
		20 m	DOL-1208-G20MAC1	6032869
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , \varnothing 7.8 mm ¹⁾	2 m	DOL-2312-G02MLA3	2030682
		7 m	DOL-2312-G07MLA3	2030685
		10 m	DOL-2312-G10MLA3	2030688
		15 m	DOL-2312-G15MLA3	2030692
		20 m	DOL-2312-G20MLA3	2030695
		25 m	DOL-2312-G25MLA3	2030699
	Head A: female connector, M23, 12-pin, straight Head B: cable Cable: incremental, suitable for drag chain, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , \varnothing 7.8 mm ¹⁾	1.5 m	DOL-2312-G1M5MA3	2029212
		3 m	DOL-2312-G03MMA3	2029213
		5 m	DOL-2312-G05MMA3	2029214
		10 m	DOL-2312-G10MMA3	2029215
		20 m	DOL-2312-G20MMA3	2029216
		30 m	DOL-2312-G30MMA3	2029217

¹⁾ Warning! Only in combination with electrical interfaces A, C, E and P.




Female connectors (ready to assemble)

Figure	Brief description	Type	Part no.
	Head A: female connector, M12, 8-pin, straight, A encoded, shielded, for cable diameter 4 mm ... 8 mm Head B: - Operating temperature: -40 °C ... +85 °C	DOS-1208-GA01	6045001
	Head A: female connector, M23, 12-pin, straight, shielded, for cable diameter 5.5 mm ... 10.5 mm Head B: - Operating temperature: -20 °C ... +130 °C	DOS-2312-G	6027538
	Head A: female connector, M23, 12-pin, angled, shielded, for cable diameter 4.2 mm ... 6.6 mm Head B: - Operating temperature: -20 °C ... +130 °C	DOS-2312-W01	2072580
	Head A: female connector, M23, 12-pin, straight, shielded, for cable diameter 5.5 mm ... 10.5 mm Head B: - Operating temperature: -40 °C ... +125 °C	DOS-2312-G02	2077057

Cables (ready to assemble)

Figure	Brief description	Length of cable	Type	Part no.
	Head A: cable Head B: cable Cable: suitable for drag chain, PUR, halogen-free, shielded, 4 x 2 x 0.15 mm ² , Ø 5.6 mm	By the meter	LTG-2308-MWENC	6027529
	Head A: cable Head B: cable Cable: PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , Ø 7.5 mm		LTG-2411-MW	6027530
	Head A: cable Head B: cable Cable: suitable for drag chain, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , Ø 7.8 mm		LTG-2512-MW	6027531
	Head A: cable Head B: cable Cable: suitable for drag chain, PUR, halogen-free, shielded, UV and saltwater resistant, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , Ø 7.8 mm		LTG-2612-MW	6028516

Male connector (ready to assemble)

Figure	Brief description	Type	Part no.
	Head A: male connector, M12, 8-pin, straight, A encoded, shielded, for cable diameter 4 mm ... 8 mm Head B: - Operating temperature: -40 °C ... +85 °C	STE-1208-GA01	6044892
	Head A: male connector, M23, 12-pin, straight, shielded, for cable diameter 5.5 mm ... 10.5 mm Head B: - Operating temperature: -20 °C ... +130 °C	STE-2312-G	6027537
	Head A: male connector, M23, 12-pin, straight, for cable diameter 5.5 mm ... 10.5 mm Head B: - Operating temperature: -40 °C ... +125 °C	STE-2312-G01	2077273

→ For additional accessories, please see page K-668 onwards

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