



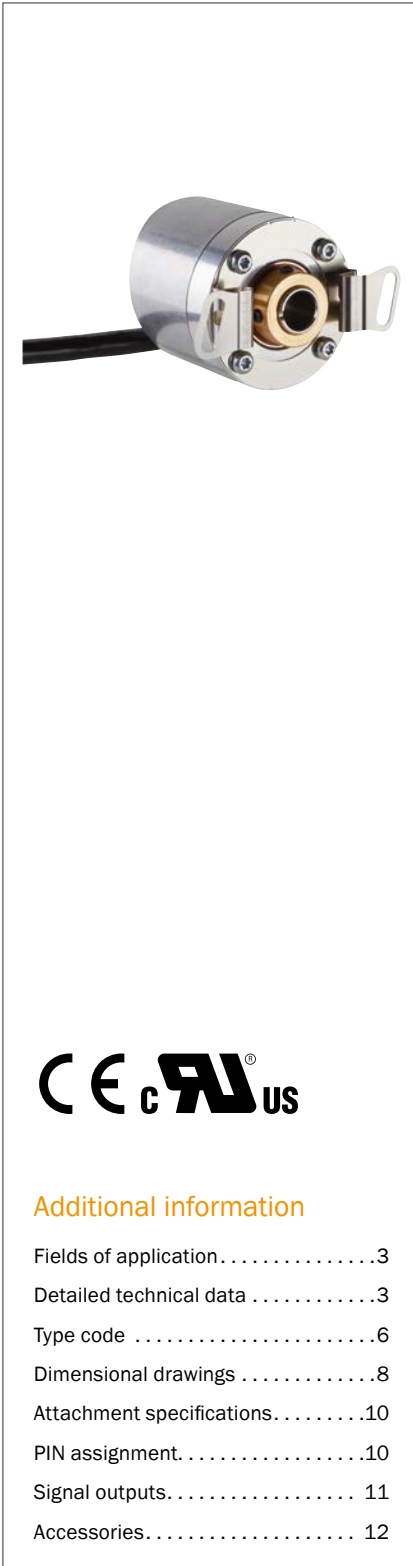
DBS36 Core / DBS50 Core

THE MULTI-FIT INCREMENTAL ENCODER

Incremental encoders

SICK
Sensor Intelligence.

THE MULTIFIT 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 connection that allows for cables to run in an axial or radial direction.

At a glance

- Universal cable connection
- Designs with blind hollow shaft or face mount flange with solid shaft
- Face mount flange with 6 mounting hole patterns and servo groove
- Communication interfaces: TTL/RS-422, HTL/push pull, Open Collector
- Number of lines from 10 to 2,500 possible
- Temperature range: -20 °C ... +85 °C
- Enclosure rating: IP65

Your benefits

- The universal cable connection enables the device to be used in tight spaces and provides cable routing flexibility
- Different flanges and the universal stator coupling provides mounting 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

Fields of application	3
Detailed technical data	3
Type code	6
Dimensional drawings	8
Attachment specifications	10
PIN assignment	10
Signal outputs	11
Accessories	12

→ www.sick.com/DBS36_Core

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.



Fields of application

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

propulsion technology, storage and conveyor, packaging machines, printing presses, glass industry, and elevators

Detailed technical data

Performance

Pulses per revolution	0 ... 2,500
Measuring step	90° electric/pulses per revolution
Measuring step deviation	± 18° / pulses per revolution
Error limits	± 54° / pulses per revolution
Duty cycle	≤ 0.5 ± 5 %

Interfaces

Communication interface	Incremental
Communication Interface detail	TTL / RS-422 HTL / Push pull Open Collector (depending on type)
Number of signal channels	
TTL / RS-422	6-channel
HTL / Push pull	6-channel / 3 channel (depending on type)
Open Collector	3 channel
Initialization time	< 3 ms
Output frequency	≤ 300 kHz
4.5 V... 5.5 V, TTL/RS-422	
Load current	≤ 30 mA
Operating current	≤ 50 mA (without load)
4.5 V ... 5.5 V, Open Collector	
Load current	≤ 30 mA
Operating current	≤ 50 mA (without load)
TTL/RS-422	
Load current	≤ 30 mA
Power consumption	≤ 0.5 W (without load)
HTL/Push pull	
Load current	≤ 30 mA
Power consumption	≤ 0.5 W (without load)
Open Collector	
Load current	≤ 30 mA
Power consumption	≤ 0.5 W (without load)

Electrical data

Connection type	Cable, 8-wire, universal, 0.5 m Cable, 8-wire, universal, 1.5 m Cable, 8-wire, universal, 3 m Cable, 8-wire, universal, 5 m Cable, 8-wire, universal, 10 m Cable, 5-wire, universal, 0.5 m Cable, 5-wire, universal, 1.5 m Cable, 5-wire, universal, 3 m Cable, 5-wire, universal, 5 m Cable, 5-wire, universal, 10 m Cable, 8-wire, with male connector, M12, 8-pin, universal, 0.5 m Cable, 8-wire, with male connector, M23, 12-pin, universal, 0.5 m ¹⁾ (depending on type)
Supply voltage	4.5 ... 5.5 V 7 ... 30 V 7 ... 27 V 4.5 ... 30 V (depending on type)
Reference signal, number	1
Reference signal, position	90°, electric, logically gated with A and B
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓ ²⁾
MTTFd: mean time to dangerous failure	600 years (EN ISO 13849-1) ³⁾

¹⁾ M23 male connector for central mounting.

²⁾ The short-circuit rating is only given if Us and GND are connected correctly.

³⁾ 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

	Solid shaft	Blind hollow shaft
Mechanical design	Solid shaft, face mount flange	Blind hollow shaft
Shaft diameter	1/4" 6 mm (depending on type)	6 mm 8 mm ¹⁾ (depending on type)
Shaft length Solid shaft, face mount flange	15.5 mm 12 mm (depending on type)	-
Weight	+ 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 shaft movement, axial static/dynamic	-	± 0.5 mm / ± 0.2 mm ²⁾
Permissible shaft movement, radial static/dynamic	-	± 0.3 mm / ± 0.1 mm ²⁾

	Solid shaft	Blind hollow shaft
Permissible shaft loading radial/axial	40 N (radial) ²⁾ 20 N (axial)	–
Operating speed	6,000 min ⁻¹ ³⁾	6,000 min ⁻¹ ⁴⁾
Maximum operating speed	≤ 8,000 min ⁻¹ ⁵⁾	
Moment of inertia of the rotor	0.6 gcm ²	0.8 gcm ²
Bearing lifetime	2 x 10 ⁹ revolutions	
Angular acceleration	≤ 500,000 rad/s ²	

¹⁾ Collets for 5 mm and 6 mm and 1/4" as accessories, separate order item.

²⁾ Higher values are possible using limited bearing life.

³⁾ Allow for self-heating of 3.3 K per 1,000 rpm when designing the operating temperature range.

⁴⁾ Self warming of 4.7 K per 1000 revolutions/min when applying note working temperature range.

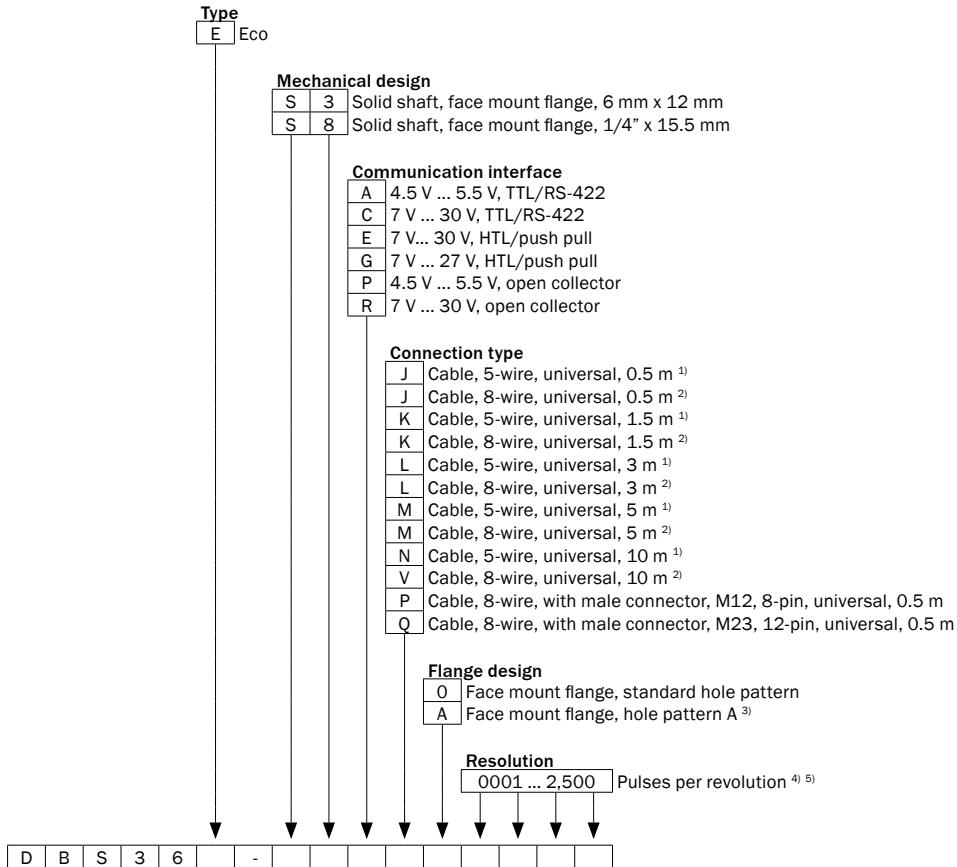
⁵⁾ No permanent operation. Decreasing signal quality.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3 (class A)
Enclosure rating	IP65
Permissible relative humidity	90 % (condensation of the optical scanning not permitted)
Operating temperature range	
4.5 V ... 5.5 V, TTL, RS-422	-20 °C ... +85 °C, -35 °C ... +95 °C on request
7 V ... 30 V, TTL, RS-422	-20 °C ... +85 °C, -35 °C ... +95 °C on request
7 V ... 30 V, HTL, Push pull	-20 °C ... +85 °C, -35 °C ... +95 °C on request
7 V ... 27 V, HTL, Push pull	-20 °C ... +70 °C
4.5 V ... 5.5 V, Open Collector	-20 °C ... +85 °C, -35 °C ... +95 °C on request
4.5 V ... 30 V, Open Collector	-20 °C ... +85 °C, -35 °C ... +95 °C on request
Storage temperature range	-40 °C ... +100 °C, without package
Resistance to shocks	100 g, 6 ms (EN 60068-2-27)
Resistance to vibration	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

Type code

Solid shaft



¹⁾ Only for G, P and R communication interface.

²⁾ Only for A, C and E communication interface.

³⁾ Only for mechanical version S3.

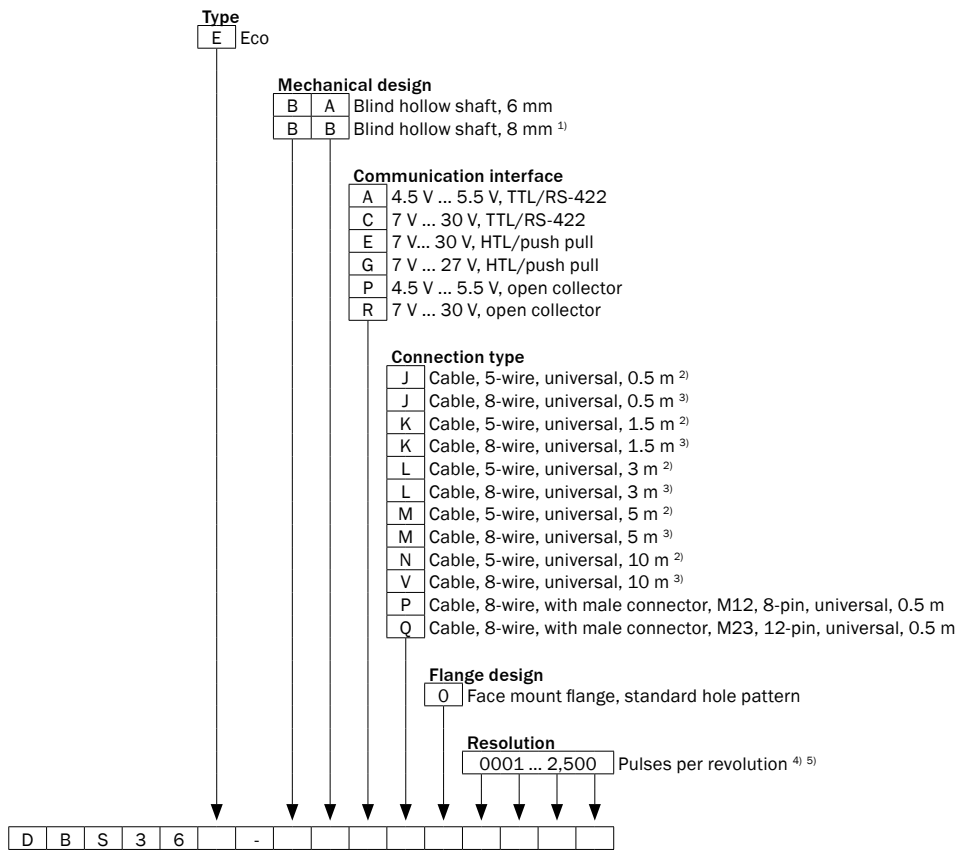
⁴⁾ See "Pulses per revolution" table.

⁵⁾ Other pulses upon request.

Pulses per revolution (other pulses upon request)

DBS36		
010	0250	0600
020	0256	1000
050	0300	1024
0100	0360	1200
0120	0400	2000
0125	0500	2048
0200	0512	2500

Hollow shaft



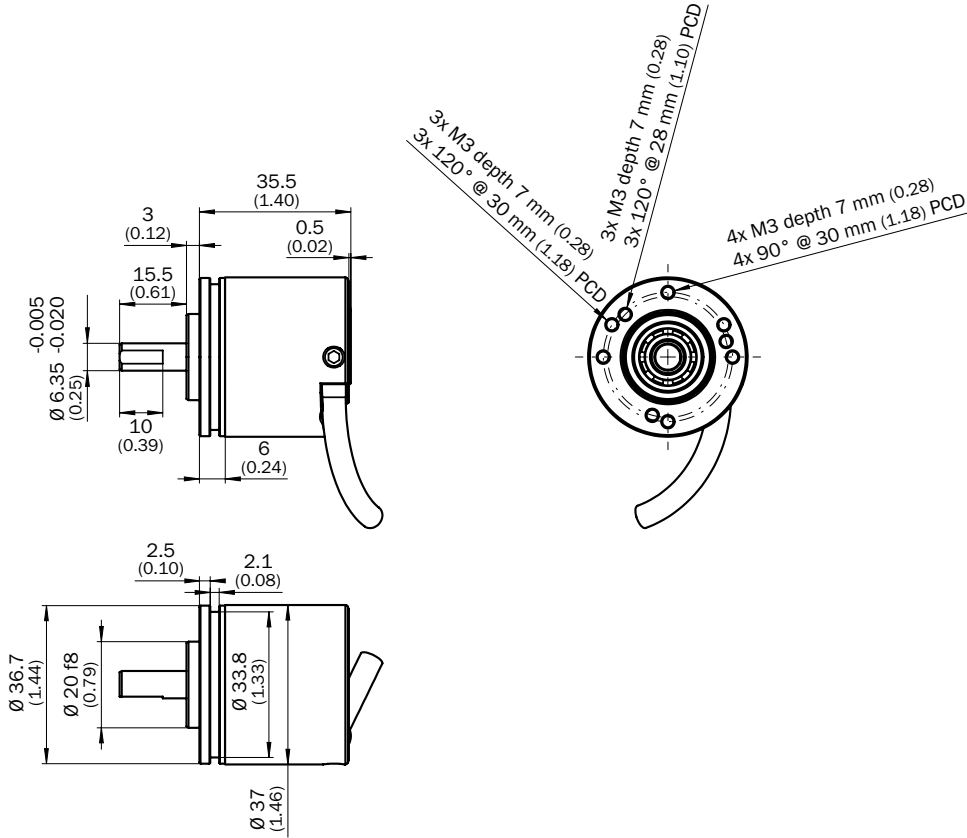
¹⁾ Collets for 5 mm and 6 mm and 1/4" as accessories, separate order item.
²⁾ Only for G, P and R communication interface.
³⁾ Only for A, C and E communication interface.
⁴⁾ See "Pulses per revolution" table.
⁵⁾ Other pulses upon request.

Pulses per revolution (other pulses upon request)

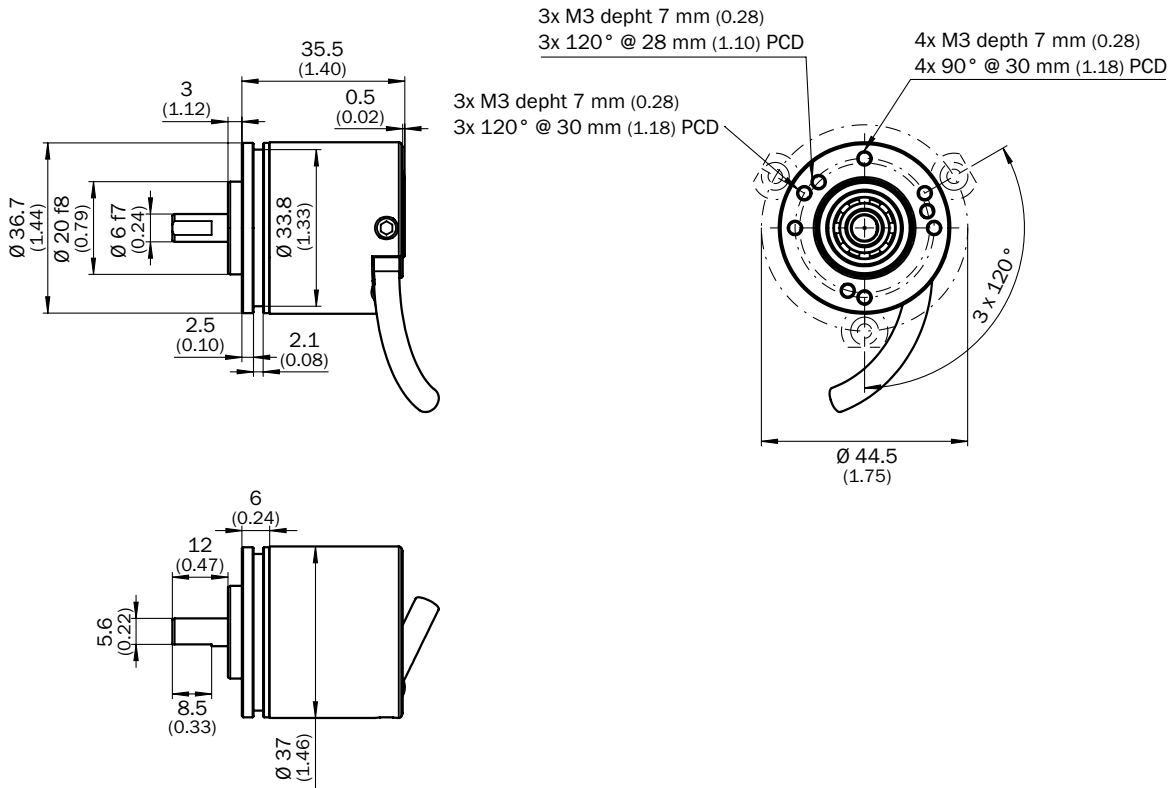
DBS36		
010	0250	0600
020	0256	1000
050	0300	1024
0100	0360	1200
0120	0400	2000
0125	0500	2048
0200	0512	2500

Dimensional drawings (Dimensions in mm (inch))

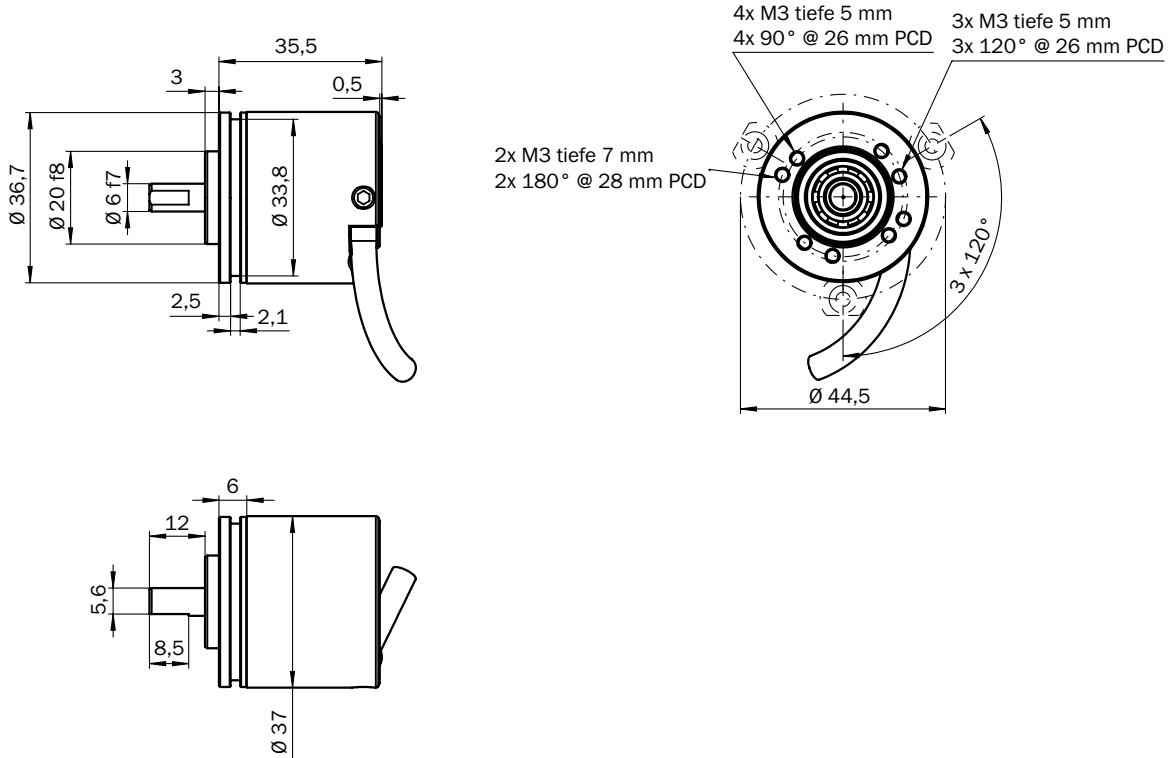
Solid shaft, face mount flange, shaft 1/4" x 15.5 mm



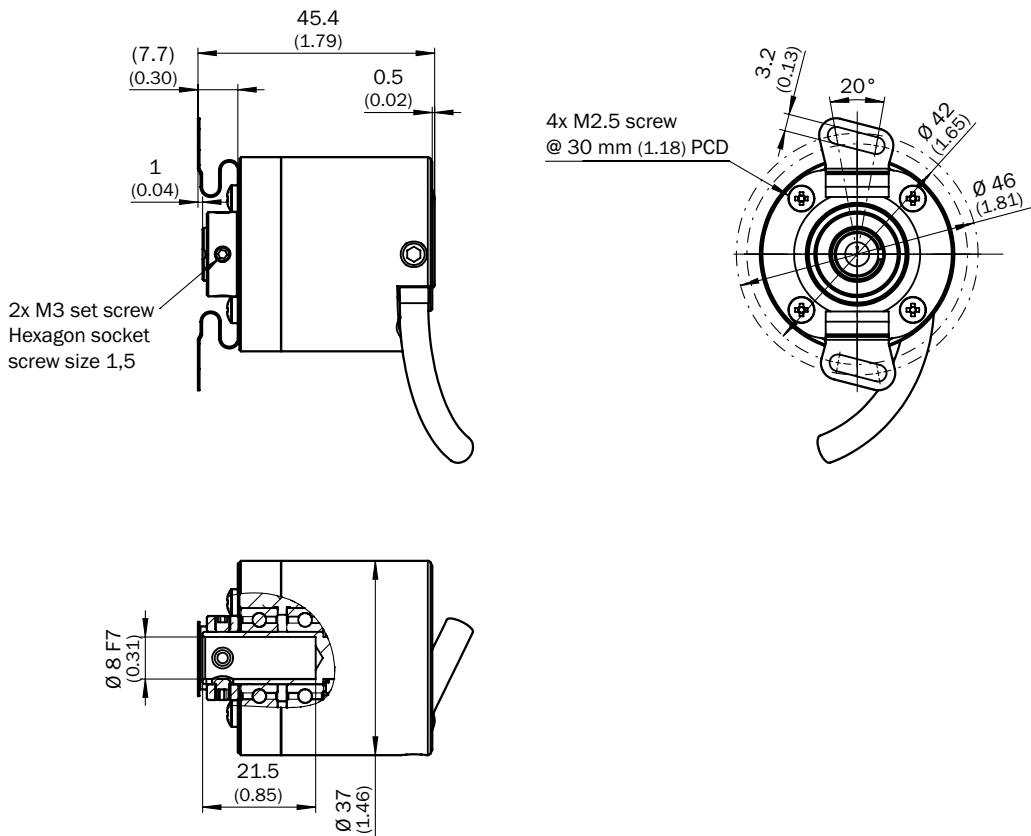
Solid shaft, face mount flange, shaft 6 mm x 12 mm, type 0 flange design hole pattern



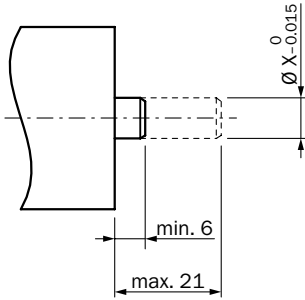
Solid shaft, face mount flange, shaft 6 mm x 12 mm, type A flange design hole pattern



Blind hollow shaft, cable outlet

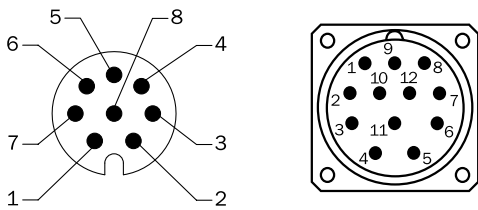


Attachment specifications



	Encoder	
6 mm	DBS36E-BA	2056390 Premounted
5 mm	DBS36E-BB	2066991
6 mm		2056390
1/4"		On request
8 mm		Not required

PIN assignment

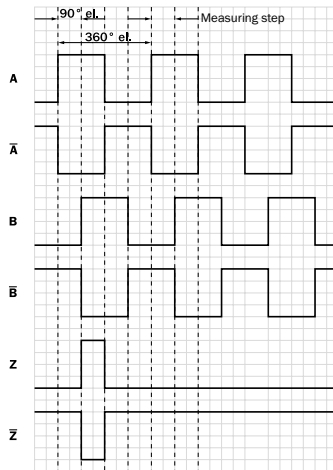


View of M12 / M23 male device connector on cable / housing

Wire colors (cable connection)	Male connector M12, 8-pin	Male connector M23, 12-pin	HTL/OC 3-channel signal	TTL/HTL 6-channel signal	Explanation
Brown	1	6	N.C.	A-	Signal wire
White	2	5	A	A	Signal wire
Black	3	1	N.C.	B-	Signal wire
Pink	4	8	B	B	Signal wire
Yellow	5	4	N.C.	Z-	Signal wire
Purple	6	3	Z	Z	Signal wire
Blue	7	10	GND	GND	Ground connection
Red	8	12	U _s	U _s	Supply voltage
-	-	9	N.C.	N.C.	Not assigned
-	-	2	N.C.	N.C.	Not assigned
-	-	11	N.C.	N.C.	Not assigned

Signal outputs

Signal outputs for electrical interfaces TTL and HTL



Cw with view on the encoder shaft in direction "A", compare dimensional drawing.

① 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, 3 channel
4.5 V...30 V	Open Collector NPN, 3 channel

Accessories

Mounting systems

Flanges

Flange plates

Figure	Brief description	Type	Part no.
	Flange adapter, adapts face mount flange with 20 mm centering collar to 33 mm servo flange, Aluminum	BEF-FA-020-033	2066312

Dimensional drawings → [page 16](#)

Mounting brackets and plates






Mounting brackets

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

Dimensional drawings → [page 16](#)


Other mounting accessories

Measuring wheels and measuring wheel systems

Figure	Brief description	Type	Part no.
	Aluminium 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
	Aluminium measuring wheel with O-ring (NBR70) for 6 mm solid shaft, circumference 500 mm	BEF-MR006050R	2055225
	Aluminum measuring wheel with cross-knurled surface for 6 mm solid shaft, circumference 200 mm	BEF-MR06200AK	4084745
	Aluminum measuring wheel with smooth polyurethane surface for 6 mm solid shaft, circumference 200 mm	BEF-MR06200AP	4084746
	Aluminum measuring wheel with ridged polyurethane surface for 6 mm solid shaft, circumference 200 mm	BEF-MR06200APG	4084748
	Aluminum measuring wheel with studded polyurethane surface for 6 mm solid shaft, circumference 200 mm	BEF-MR06200APN	4084747
	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
	O-ring for measuring wheels (circumference 500 mm)	BEF-OR-145-050	2064074

Dimensional drawings → [page 16](#)


Others

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

Dimensional drawings → [page 17](#)







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, outer diameter 8 mm	SPZ-006-DD36-A	2056390

Dimensional drawings → [page 17](#)

Shaft couplings



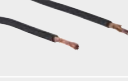

Figure	Brief description	Type	Part no.
	Bellows coupling, shaft diameter 6 mm / 6 mm, maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular +/- 4°; max. speed 10,000 rpm, -30 °C to +120 °C, max. torque 80 Ncm; material: stainless steel bellows, aluminum hub	KUP-0606-B	5312981
	Bar coupling, shaft diameter 6 mm / 6 mm, maximum shaft offset: radial ± 0.3 mm, axial ± 0.2 mm, angle ± 3°; max. speed 10,000 rpm, -10° to +80 °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 ± 3°, max. speed 10,000 rpm, torsion spring rigidity 38 Nm/wheel; material: fiber-glass reinforced polyamide, aluminum hub	KUP-0608-S	5314179
	Bellows coupling, shaft diameter 6 mm / 10 mm, maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular +/- 4°; max. speed 10,000 rpm, -30 °C to +120 °C, max. torque 80 Ncm; material: stainless steel bellows, aluminum hub	KUP-0610-B	5312982
	Double loop coupling, shaft diameter 6 mm / 10 mm, max. shaft offset: radially +/- 2,5 mm, axially +/-3 mm, angle +/- 10 degrees;max. speed 3.000 rpm, -30 to +80 degrees Celsius, torsional spring stiffness of 25 Nm/rad	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 +/- 2.5°; max. speed 12,000 rpm, -10° to +80 °C, max. torque 60 Ncm; material: aluminum flange, glass fiber-reinforced polyamide membrane and hardened steel coupling pin	KUP-0610-F	5312985
	Bar coupling, shaft diameter 6 mm / 10 mm, max. shaft offset: radial ± 0,3 mm, axial ± 0,3 mm, angular ± 3°; max. speed 10.000 rpm, -10° to +80 °C, max. torque: 80 Ncm, material: fiber-glass reinforced polyamide, aluminum hub	KUP-0610-S	2056407

Dimensional drawings → [page 17](#)

Connection systems




Plug connectors and cables

Cables (ready to assemble)

Figure	Brief description	Type	Part no.
	Head A: cable Head B: Flying leads Cable: SSI, Incremental, HIPERFACE®, PUR, halogen-free, shielded, 4 x 2 x 0.15 mm², 5.6 mm	LTG-2308-MWENC	6027529
	Head A: cable Head B: Flying leads Cable: SSI, PUR, shielded, 4 x 2 x 0.25 mm² + 2 x 0.5 mm² + 1 x 0.14 mm², 7.5 mm	LTG-2411-MW	6027530
	Head A: cable Head B: Flying leads Cable: SSI, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm² + 2 x 0.5 mm² + 2 x 0.14 mm², 7.8 mm	LTG-2512-MW	6027531
	Head A: cable Head B: Flying leads Cable: SSI, TTL, HTL, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm² + 2 x 0.5 mm² + 2 x 0.14 mm², 7.8 mm, UV and saltwater-resistant	LTG-2612-MW	6028516







Connecting cables

Figure	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, Power, PUR, halogen-free, shielded, 5 x 0.34 mm ² , 5.3 mm	1.5 m	DOL-1205-W1M5ACSCO	6049455
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² , 7 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
		25 m	DOL-1208-G25MAC1	6067859
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	2 m	DOL-2312-G02MLA3	2030682
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	3 m	DOL-2312-G03M-MA3	2029213
		5 m	DOL-2312-G05M-MA3	2029214
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	7 m	DOL-2312-G07MLA3	2030685
		10 m	DOL-2312-G10MLA3	2030688
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	10 m	DOL-2312-G10MMA3	2029215
		15 m	DOL-2312-G15MLA3	2030692
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	1.5 m	DOL-2312-G1M5MA3	2029212
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	20 m	DOL-2312-G20MLA3	2030695
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	20 m	DOL-2312-G20M-MA3	2029216

Figure	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	25 m	DOL-2312-G25MLA3	2030699
		30 m	DOL-2312-G30MLA3	2030702
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	30 m	DOL-2312-G30M-MA3	2029217
	Head A: female connector, M23, 12-pin, straight Head B: male connector, M23, 12-pin, straight Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	3 m	DSL-M2312-G03M-MA3	2118590
		5 m	DSL-M2312-G05M-MA3	2118591
	Head A: female connector, M23, 12-pin, straight Head B: male connector, M23, 12-pin, straight Cable: Incremental, 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	1.5 m	DSL-M2312-G1M-5MA3	2118589
	Head A: female connector, M23, 12-pin, straight Head B: male connector, M12, 12-pin, straight Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	30 m	DSL-M2312-G30M-MA3	2118592

Dimensional drawings → [page 18](#)

Field-attachable connectors

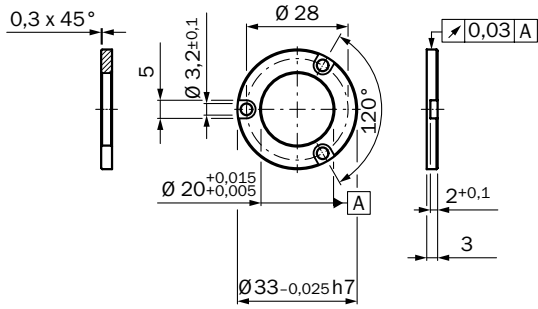
Figure	Brief description	Type	Part no.
	Head A: female connector, M12, 8-pin, straight, A-coded Head B: - Cable: Incremental, SSI, shielded, CAT5, CAT5e	DOS-1208-GA01	6045001
	Head A: female connector, M23, 12-pin, straight Head B: - Cable: HIPERFACE®, SSI, Incremental, shielded	DOS-2312-G	6027538
		DOS-2312-G02	2077057
	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, CAT5, CAT5e	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
	Head A: male connector, M23, 12-pin, straight Head B: - Cable: HIPERFACE®, SSI, Incremental, shielded	STE-2312-G01	2077273
		STE-2312-GX	6028548

Dimensional drawings → [page 18](#)

Dimensional drawings for accessories (Dimensions in mm (inch))

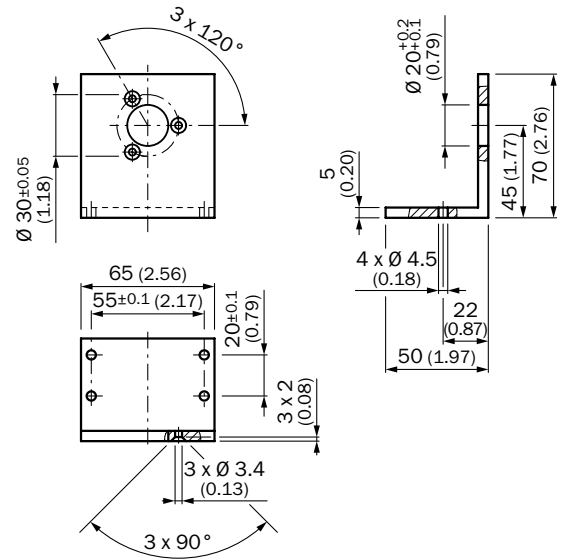
Flanges

BEF-FA-020-033



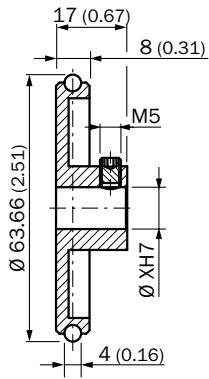
Mounting brackets and plates

BEF-WF-20

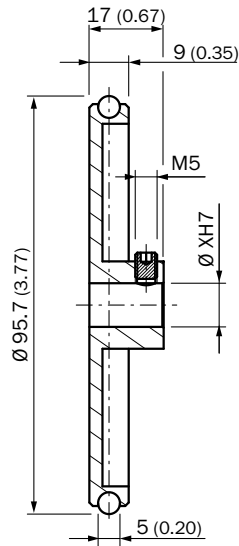


Other mounting accessories

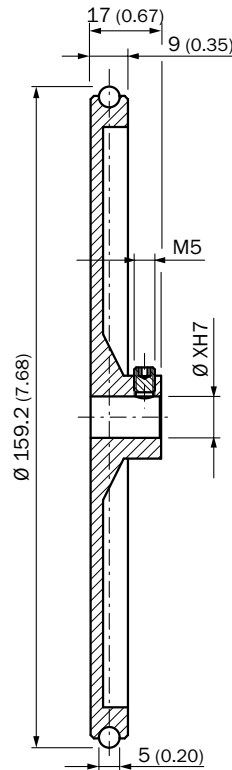
BEF-MR006020R



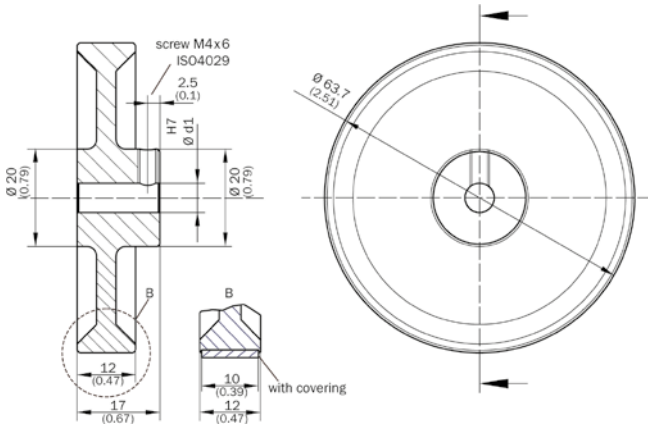
BEF-MR006030R



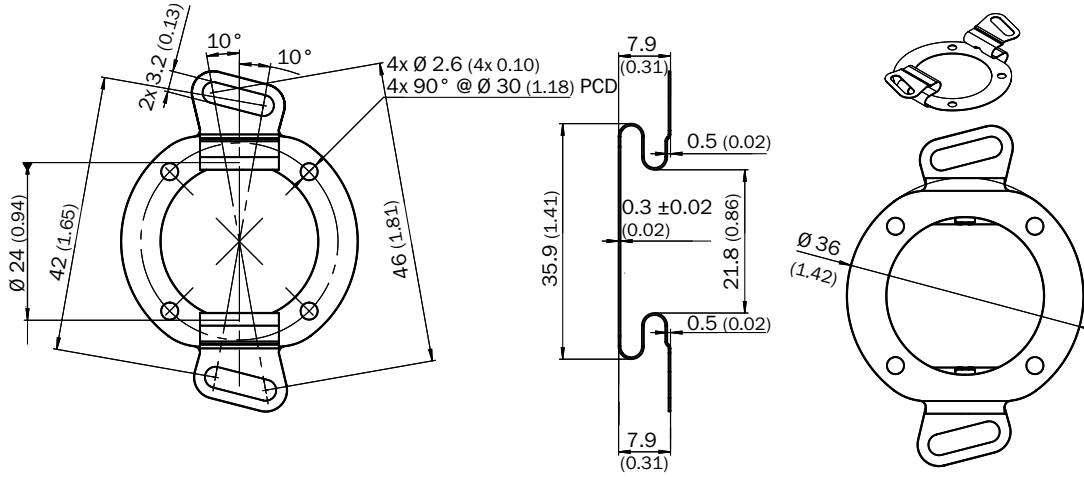
BEF-MR006050R



BEF-MR06200AK
 BEF-MR06200AP
 BEF-MR06200APG
 BEF-MR06200APN

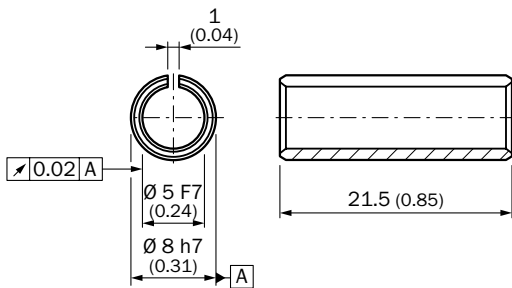


BEF-DS-DBS36

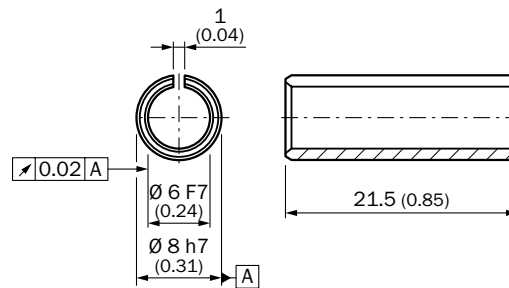


Shaft adaptation

SPZ-005-AD-A

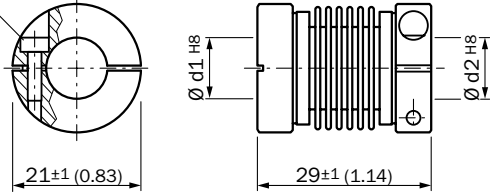


SPZ-006-DD36-A

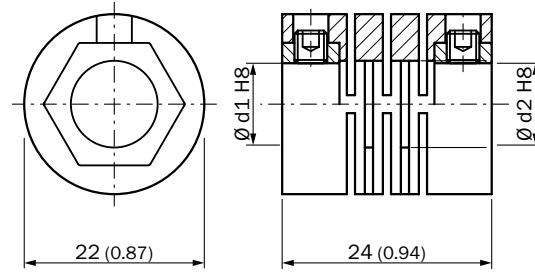


KUP-06xx-B

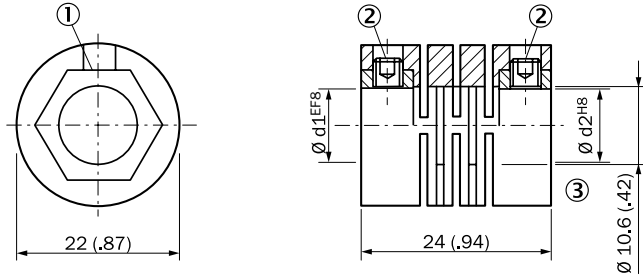
Cheese-head screw
M2.5 x 8, DIN 912 A2



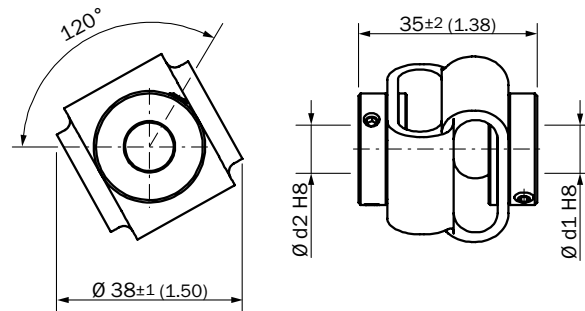
KUP-06xx-S



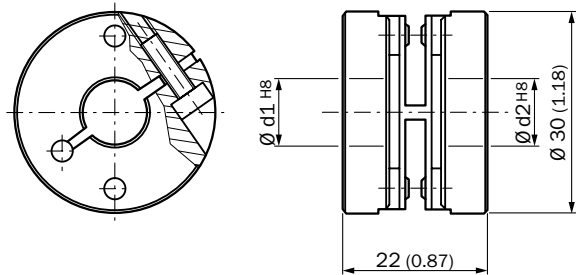
KUP-0608-S



KUP-0610-D

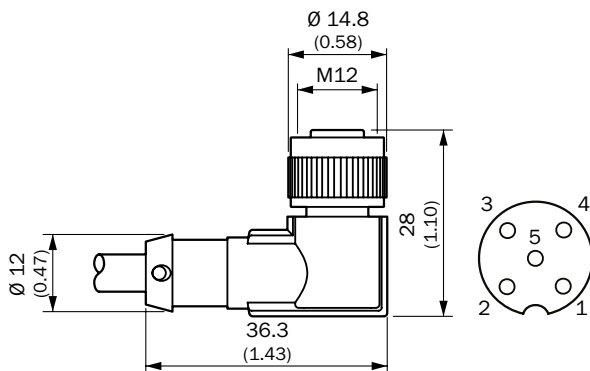


KUP-0610-F



Plug connectors and cables

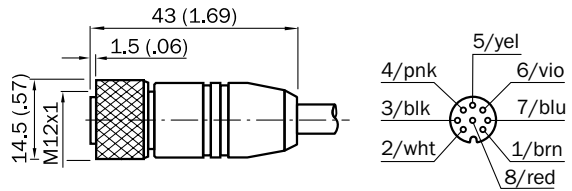
DOL-1205-W1M5ACSCO



female connector M 12 x 1, angled, screened

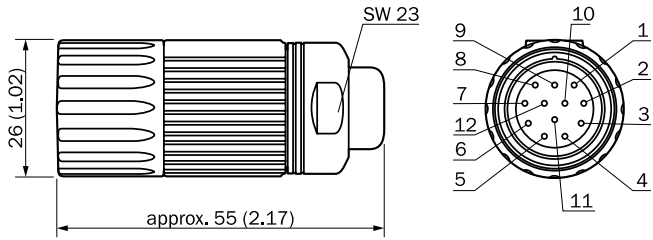
- ① Brown
- ② White
- ③ Blue
- ④ Black
- ⑤ Gray

DOL-1208-GxxMAC1



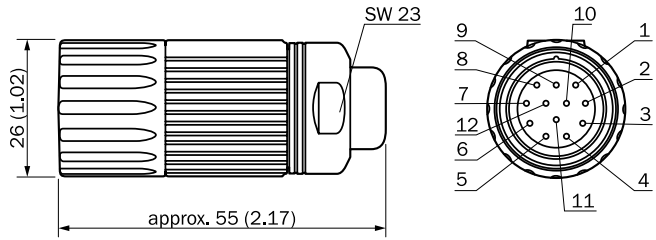
All dimensions in mm (inch)

DOL-2312-G02MLA3



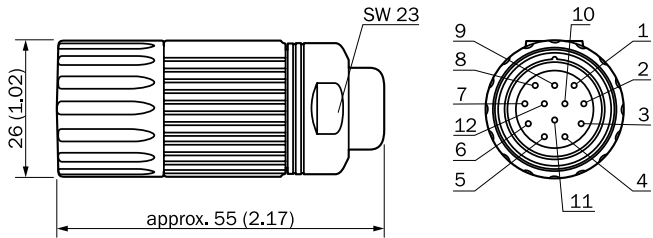
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G03MMA3



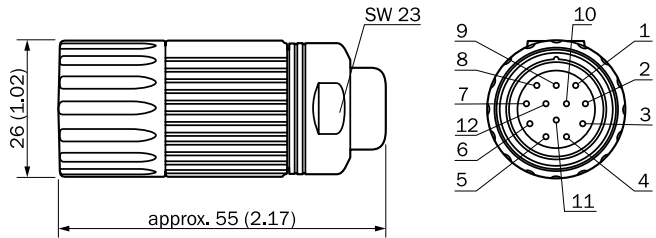
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G05MMA3



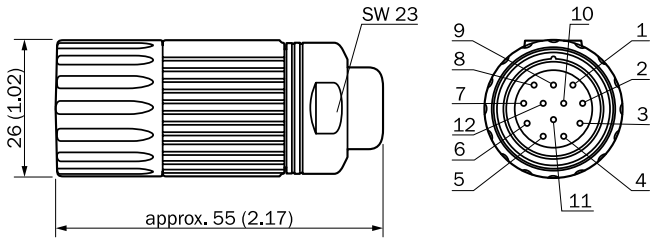
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G07MLA3



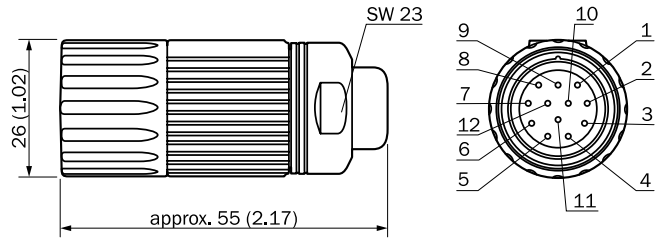
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G10MLA3



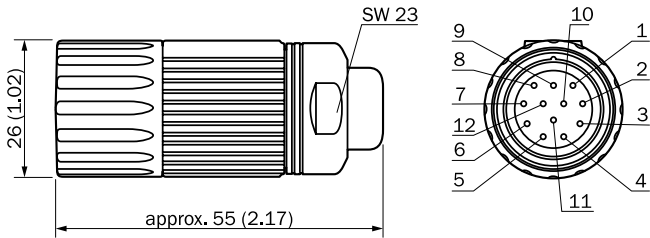
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G10MMA3



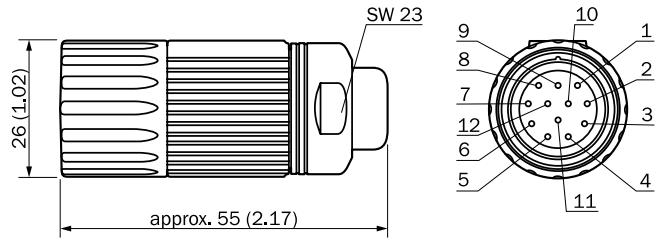
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G15MLA3



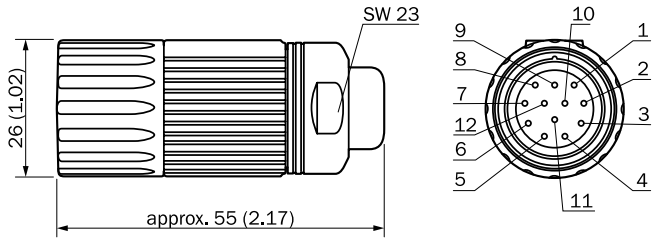
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G1M5MA3



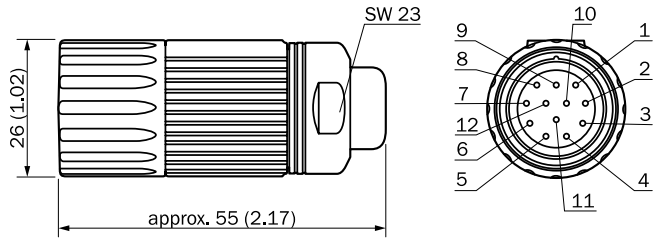
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G20MLA3



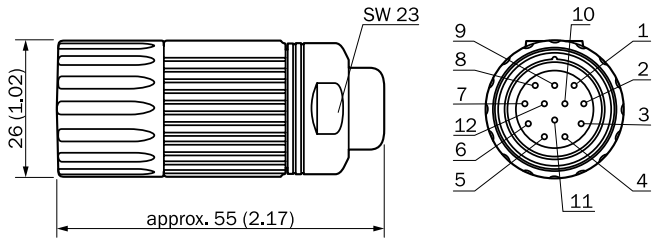
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G20MMA3



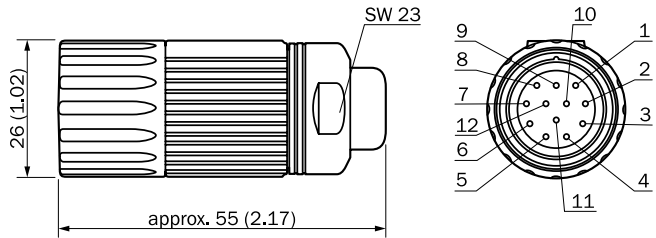
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G25MLA3



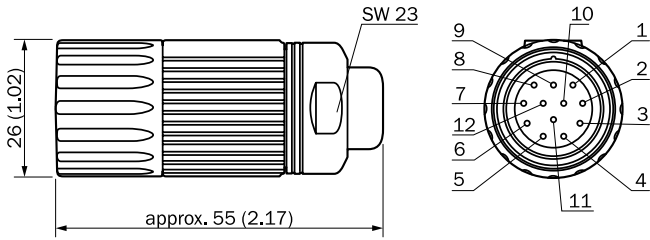
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G30MLA3



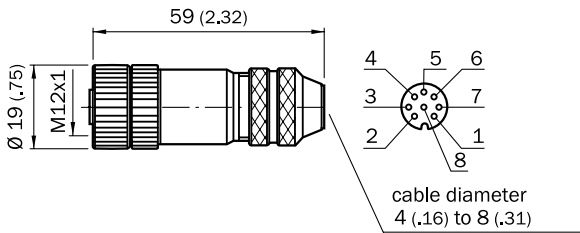
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G30MMA3

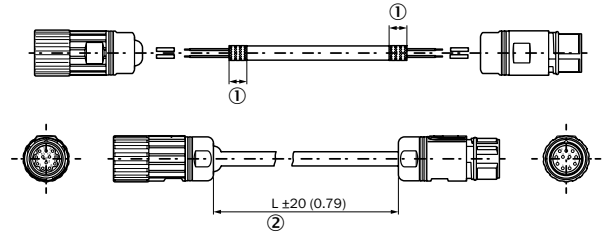


- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOS-1208-GA01

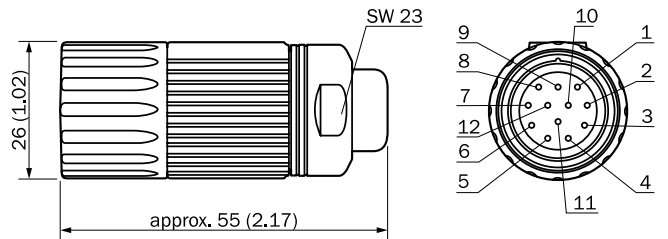


DOL-2312-G30MMA3



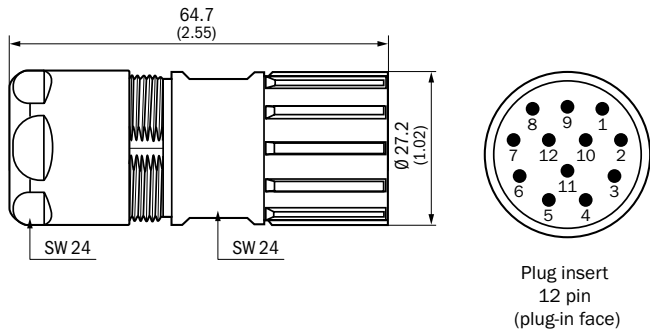
- ① Screen, folded
- ② Length of cable

DOS-2312-G

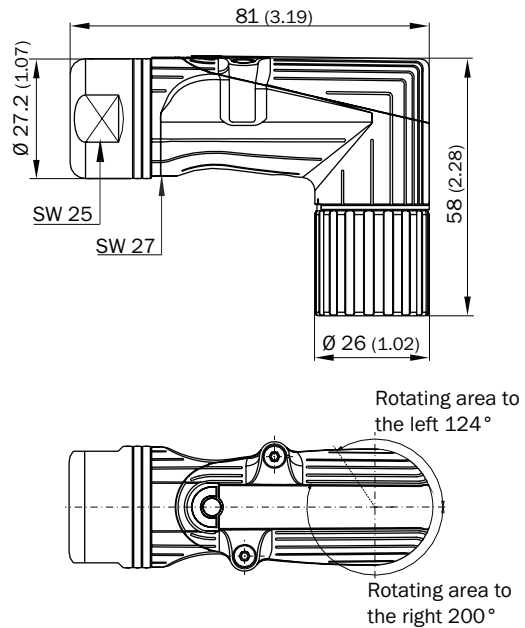


- ① Blue
- ② White
- ③ Yellow
- ④ Gray
- ⑤ Green
- ⑥ Pink
- ⑦ Black
- ⑧ Red
- ⑨ Orange
- ⑩ Brown
- ⑪ Purple
- ⑫ Orange/black

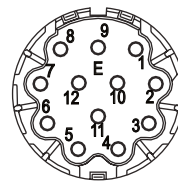
DOS-2312-G02



DOS-2312-W01

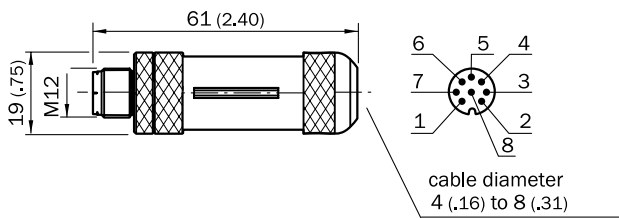


Main dimensions
Plug

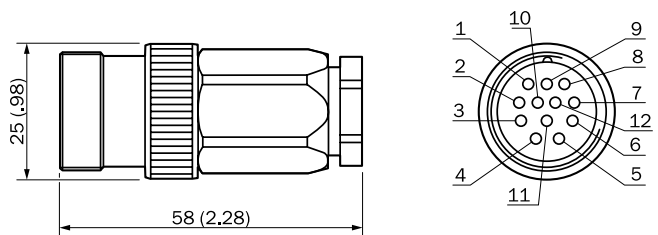


Contact arrangement
Mating view

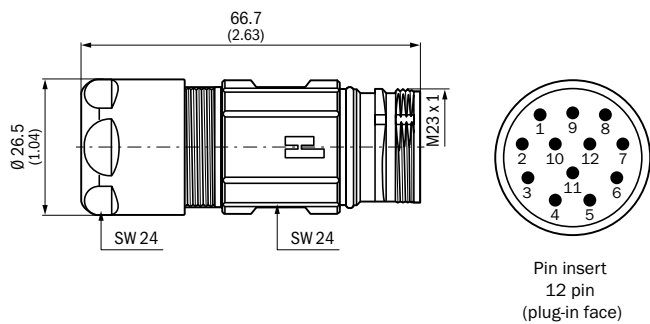
STE-1208-GA01



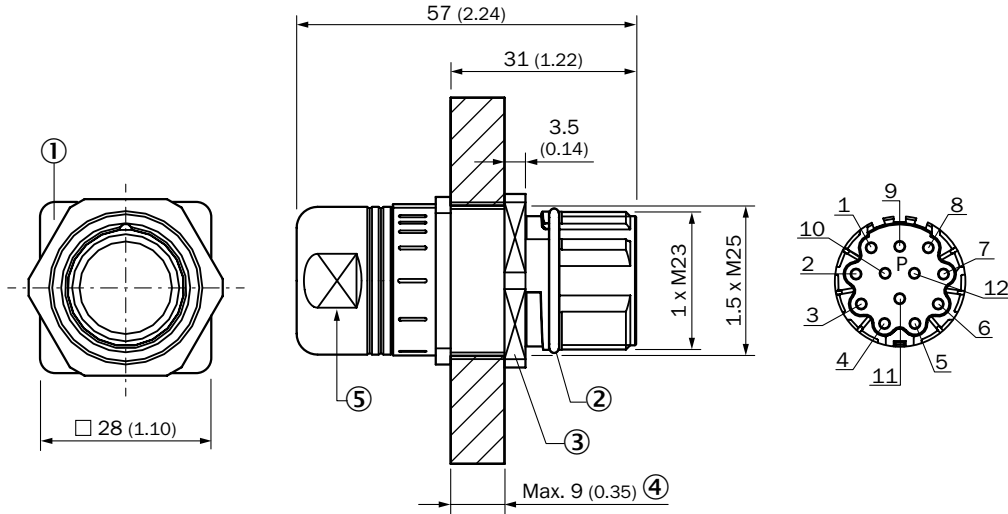
STE-2312-G



STE-2312-G01

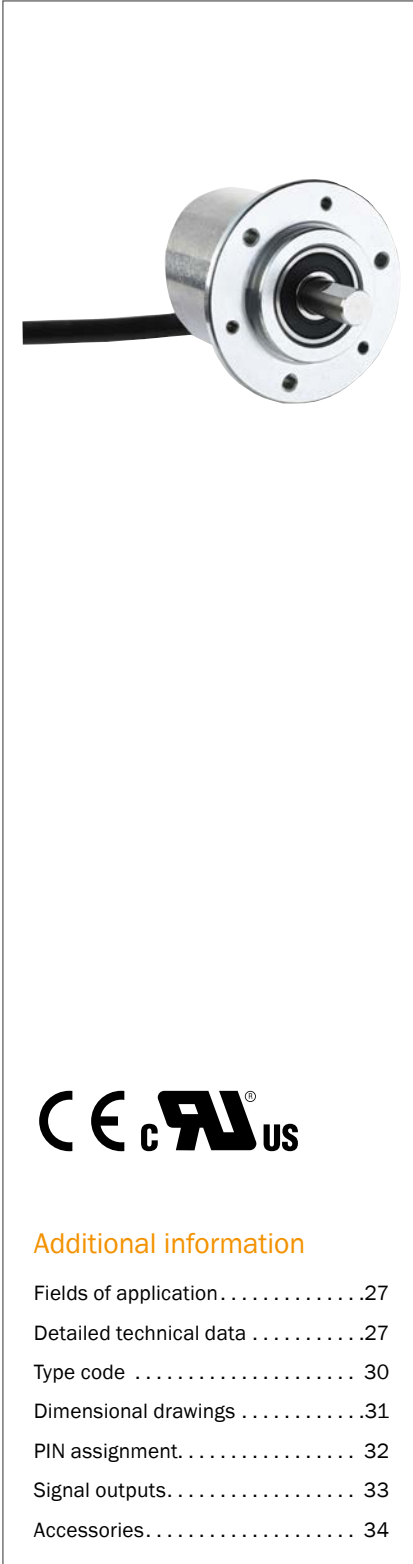


STE-2312-GX



- ① Fixed stop position
- ② Vibration protection
- ③ Fixing nut SW30
- ④ Max. wall thickness
- ⑤ SW23

THE MULTIFIT INCREMENTAL ENCODER



Product description

The DBS50 Core incremental encoder features impressively high mechanical flexibility, excellent technical properties, and a number of variations. The DBS50E has a 50 mm diameter face mount flange and an 8 mm diameter solid shaft. The housing, which measures 37 mm in diameter and less than 36 mm in length, is extremely compact

and saves valuable installation space. The DBS50E offers a comprehensive range of mounting options thanks to its numerous mounting hole patterns, servo clamps, servo grooves, and triangular servo clamps. The encoder has compact dimensions and a universal cable connection that allows for cables to run in an axial or radial direction.

At a glance

- Universal cable connection
- Face mount flange with 8 mm solid shaft
- Face mount flange with 2 mounting hole patterns, servo clamps with servo grooves or triangular servo clamps
- Communication interfaces: TTL/RS-422, HTL/push pull, Open Collector
- Number of lines from 10 to 2,500 possible
- Temperature range: -20 °C ... +85 °C
- Enclosure rating: IP65

Your benefits

- The universal cable connection enables the device to be used in tight spaces and provides cable routing flexibility
- The different flanges allow the device to be mounted with servo clamps, or mounted at the front or rear side. This enables the device to be replaced without modifying the application
- 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
- The compact housing diameter saves valuable space
- Long-term and reliable operation thanks to a high enclosure rating, temperature resistance and bearing lifetime

Additional information

Fields of application	27
Detailed technical data	27
Type code	30
Dimensional drawings	31
PIN assignment	32
Signal outputs	33
Accessories	34

→ www.sick.com/DBS50_Core

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.



Fields of application

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

propulsion technology, storage and conveyor, packaging machines, printing presses, glass industry, and elevators

Detailed technical data

Performance

Pulses per revolution	0 ... 2,500
Measuring step	90° electric/pulses per revolution
Measuring step deviation	± 18° / pulses per revolution
Error limits	± 54° / pulses per revolution
Duty cycle	≤ 0.5 ± 5 %

Interfaces

Communication interface	Incremental
Communication Interface detail	TTL / RS-422 HTL / Push pull Open Collector (depending on type)
Number of signal channels	
TTL / RS-422	6-channel
HTL / Push pull	6-channel / 3 channel (depending on type)
Open Collector	3 channel
Initialization time	< 3 ms
Output frequency	≤ 300 kHz
4.5 V... 5.5 V, TTL/RS-422	
Load current	≤ 30 mA
Operating current	≤ 50 mA (without load)
4.5 V ... 5.5 V, Open Collector	
Load current	≤ 30 mA
Operating current	≤ 50 mA (without load)
TTL/RS-422	
Load current	≤ 30 mA
Power consumption	< 0.5 W (without load)
HTL/Push pull	
Load current	≤ 30 mA
Power consumption	< 0.5 W (without load)
Open Collector	
Load current	≤ 30 mA
Power consumption	< 0.5 W (without load)

Electrical data

Connection type	Cable, 8-wire, universal, 0.5 m Cable, 8-wire, universal, 1.5 m Cable, 8-wire, universal, 3 m Cable, 8-wire, universal, 5 m Cable, 8-wire, universal, 10 m Cable, 5-wire, universal, 0.5 m Cable, 5-wire, universal, 1.5 m Cable, 5-wire, universal, 3 m Cable, 5-wire, universal, 5 m Cable, 5-wire, universal, 10 m Cable, 8-wire, with male connector, M12, 8-pin, universal, 0.5 m Cable, 8-wire, with male connector, M23, 12-pin, universal, 0.5 m ¹⁾ (depending on type)
Supply voltage	4.5 ... 5.5 V 7 ... 30 V 7 ... 27 V 4.5 ... 30 V (depending on type)
Reference signal, number	1
Reference signal, position	90°, electric, logically gated with A and B
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓ ²⁾
MTTFd: mean time to dangerous failure	600 years (EN ISO 13849-1) ³⁾

¹⁾ M23 male connector for central mounting.

²⁾ The short-circuit rating is only given if Us and GND are connected correctly.

³⁾ 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 design	Solid shaft, face mount flange Solid shaft, face mount flange 3xM4 (depending on type)
Shaft diameter	8 mm
Shaft length	Solid shaft, face mount flange 15.5 mm Solid shaft, face mount flange 3xM4 13 mm
Weight	+ 180 g (with connecting cable)
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Aluminum
Material, cable	PVC
Start up torque	+ 0.9 Ncm (+20 °C)
Operating torque	0.6 Ncm (+20 °C)
Permissible shaft loading radial/axial	30 N (axial) 50 N (radial)
Operating speed	6,000 min ⁻¹ ¹⁾
Maximum operating speed	8,000 min ⁻¹ ²⁾
Moment of inertia of the rotor	0.65 gcm ²

Bearing lifetime	2 x 10 ⁹ revolutions
Angular acceleration	≤ 500,000 rad/s ²

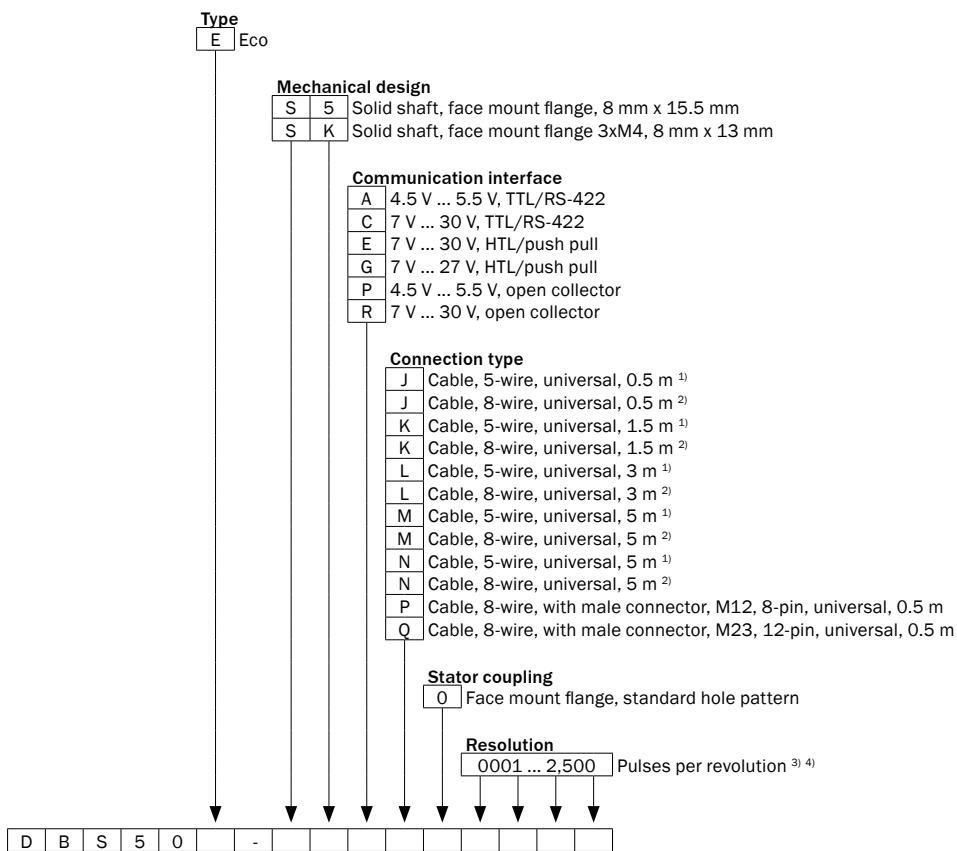
¹⁾ Allow for self-heating of 3.3 K per 1,000 rpm when designing the operating temperature range.

²⁾ No permanent operation. Decreasing signal quality.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3 (class A)
Enclosure rating	IP65
Permissible relative humidity	90 % (condensation of the optical scanning not permitted)
Operating temperature range	
4.5 V ... 5.5 V, TTL, RS-422	-20 °C ... +85 °C, -35 °C ... +95 °C on request
7 V ... 30 V, TTL, RS-422	-20 °C ... +85 °C, -35 °C ... +95 °C on request
7 V ... 30 V, HTL, Push pull	-20 °C ... +85 °C, -35 °C ... +95 °C on request
7 V ... 27 V, HTL, Push pull	-20 °C ... +70 °C
4.5 V ... 5.5 V, Open Collector	-20 °C ... +85 °C, -35 °C ... +95 °C on request
4.5 V ... 30 V, Open Collector	-20 °C ... +85 °C, -35 °C ... +95 °C on request
Storage temperature range	-40 °C ... +100 °C, without package
Resistance to shocks	100 g, 6 ms (EN 60068-2-27)
Resistance to vibration	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

Type code



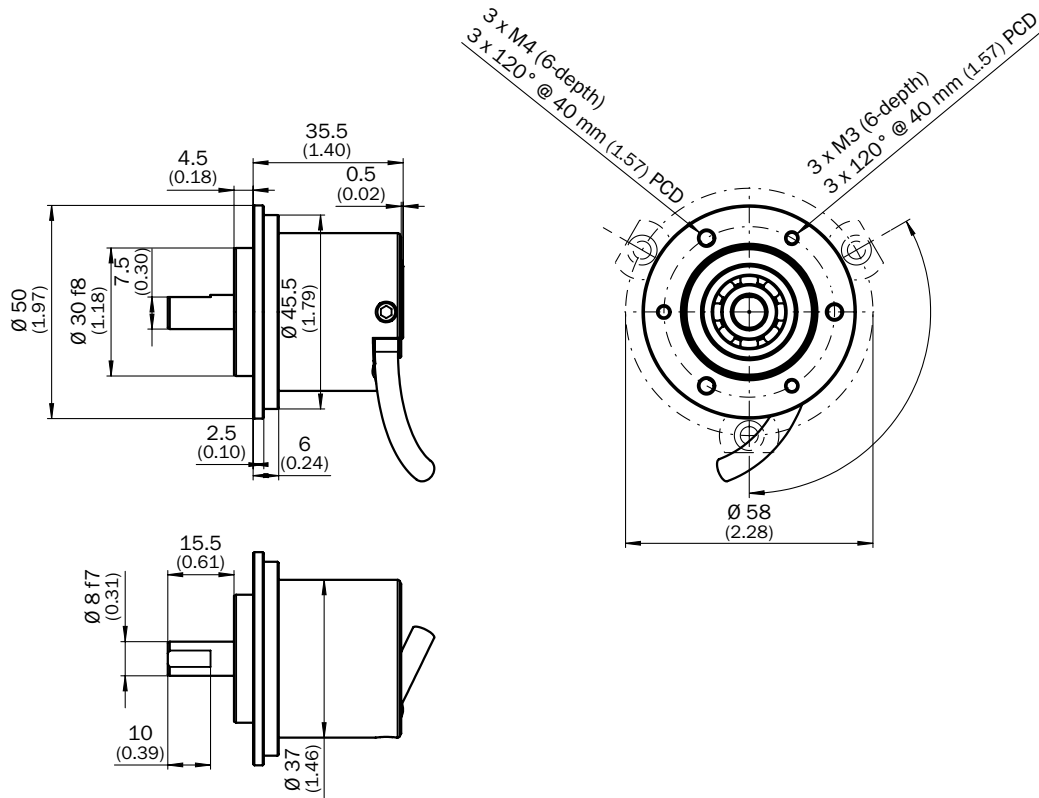
¹⁾ Only for G, P and R communication interface.
²⁾ Only for A, C and E communication interface.
³⁾ See "Pulses per revolution" table.
⁴⁾ Other pulses upon request.

Pulses per revolution (other pulses upon request)

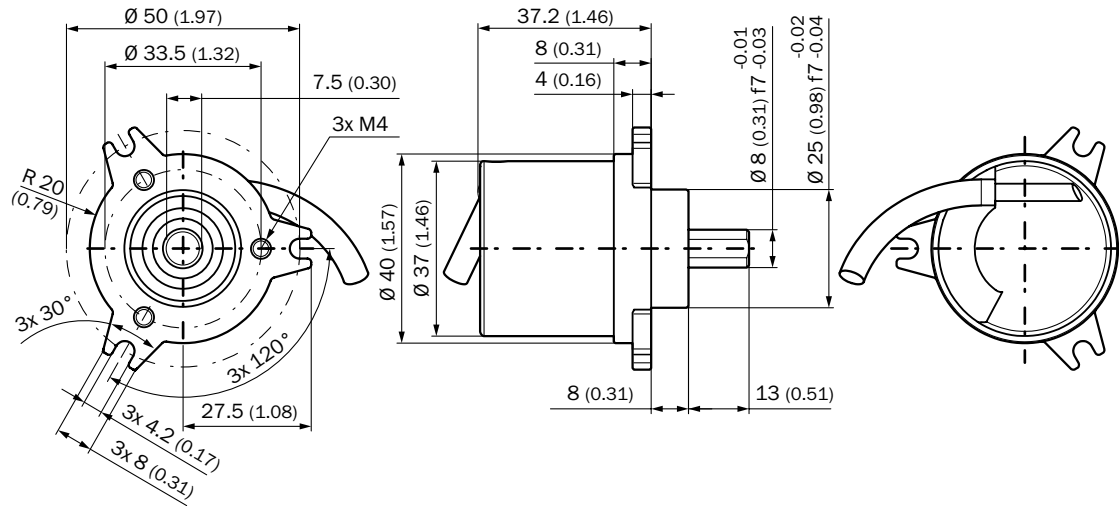
DBS50E		
0010	0250	0600
0020	0256	1000
0050	0300	1024
0100	0360	1200
0120	0400	2000
0125	0500	2048
0200	0512	2500

Dimensional drawings (Dimensions in mm (inch))

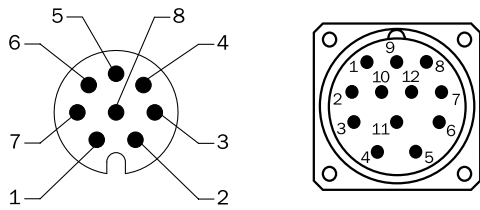
Face mount flange



Face mount flange 3xM4



PIN assignment

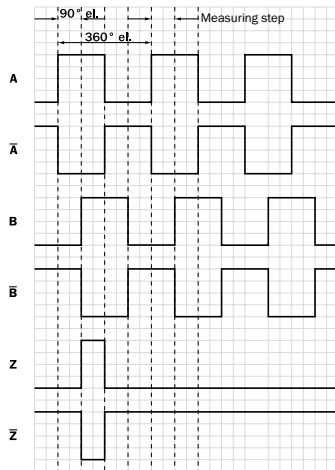


View of M12 / M23 male device connector on cable / housing

Wire colors (cable connection)	Male connector M12, 8-pin	Male connector M23, 12-pin	HTL/OC 3-channel signal	TTL/HTL 6-channel signal	Explanation
Brown	1	6	N.C.	A-	Signal wire
White	2	5	A	A	Signal wire
Black	3	1	N.C.	B-	Signal wire
Pink	4	8	B	B	Signal wire
Yellow	5	4	N.C.	Z-	Signal wire
Purple	6	3	Z	Z	Signal wire
Blue	7	10	GND	GND	Ground connection
Red	8	12	U _s	U _s	Supply voltage
-	-	9	N.C.	N.C.	Not assigned
-	-	2	N.C.	N.C.	Not assigned
-	-	11	N.C.	N.C.	Not assigned
-	-	7	N.C.	N.C.	Not assigned
Screen	Screen	Screen	Screen	Screen	Screen connected to encoder housing

Signal outputs

Signal outputs for electrical interfaces TTL and HTL



Cw with view on the encoder shaft in direction "A", compare dimensional drawing.

① 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, 3 channel
4.5 V...30 V	Open Collector NPN, 3 channel

Accessories

Mounting systems

Flanges


Flange plates

Figure	Brief description	Type	Part no.
	Flange adapter, adaption of 25 mm spigot face mount flange to 60s face mount flange with 36 mm centering collar, Aluminum	BEF-FA-025-036	2034226
	Flange adapter, adaption of 25 mm spigot face mount flange to 50 mm servo flange, Aluminum	BEF-FA-025-050	2032622
	Flange adapter, adaption of 25 mm spigot face mount flange to 60 mm square installation plate, Aluminum	BEF-FA-025-060RCA	2032623
	Flange adapter, adaption of 25 mm spigot face mount flange to 60 mm square installation plate with shock-absorber, Aluminum	BEF-FA-025-060RSA	2032624
	Flange adapter, adapts face mount flange with 25 mm centering collar to 63 mm square mounting plate, Aluminum	BEF-FA-025-063-REC	2033631

Dimensional drawings → [page 38](#)

Mounting brackets and plates







Mounting brackets

Figure	Brief description	Type	Part no.
	Mounting brackets for encoders with a centering spigot 25 mm, mounting kit for face mount flange included	BEF-WF-25	2032621

Dimensional drawings → [page 39](#)


Other mounting accessories

Measuring wheels and measuring wheel systems

Figure	Brief description	Type	Part no.
	Aluminum measuring wheel with cross-knurled surface for 8 mm solid shaft, circumference 200 mm	BEF-MR08200AK	4084741
	Aluminum measuring wheel with smooth polyurethane surface for 8 mm solid shaft, circumference 200 mm	BEF-MR08200AP	4084742
	Aluminum measuring wheel, ground PUR ring covering for greater circumference accuracy, spare parts package consisting of 10 measuring wheels, circumference 200 mm +/-0.2 mm; for shaft with Ø 8 mm	BEF-MR08200APA	2109902
	Aluminum measuring wheel with ridged polyurethane surface for 8 mm solid shaft, circumference 200 mm	BEF-MR08200APG	4084744
	Aluminum measuring wheel with studded polyurethane surface for 8 mm solid shaft, circumference 200 mm	BEF-MR08200APN	4084743
	Aluminum measuring wheel with cross-knurled surface for 10 mm solid shaft, circumference 300 mm	BEF-MR10300AK	2115703





Dimensional drawings → [page 39](#)

Modular measuring wheel system

Figure	Brief description	Type	Part no.
	SICK modular measuring wheel system for DBS50E-S5; spare part for DBV50, Measuring wheel for 8 series shaft Spring arm M6 serrated lock washer M6 counter nut 3 M4x10 screws Positioning disc	BEF-MRS-08-U	2087085

Shaft adaptation

Shaft couplings

Figure	Brief description	Type	Part no.
	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
	Bar coupling, shaft diameter 8 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-0808-S	5314177
	Double loop coupling, shaft diameter 8 mm / 10 mm, max. shaft offset: radially ± 0.25 mm, axially ± 0.4 mm, angle ± 4 degrees; max. speed 10,000 rpm, -30 to $+120$ degrees Celsius, torsional spring stiffness of 150 Nm/rad	KUP-0810-D	5326704
	Bar coupling, shaft diameter 8 mm / 10 mm, max. shaft offset: radial ± 0.3 mm, axial ± 0.3 mm, angular $\pm 3^\circ$; max. speed 10,000 rpm, -10° to $+80^\circ$ C, max. torque: 80 Ncm, material: fiber-glass reinforced polyamide, aluminum hub	KUP-0810-S	5314178

Dimensional drawings → [page 40](#)

Connection systems

Plug connectors and cables

Cables (ready to assemble)

Figure	Brief description	Type	Part no.
	Head A: cable Head B: Flying leads Cable: SSI, Incremental, HIPERFACE®, PUR, halogen-free, shielded, 4 x 2 x 0.15 mm ² , 5.6 mm	LTG-2308-MWENC	6027529
	Head A: cable Head B: Flying leads Cable: SSI, Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	LTG-2411-MW	6027530
	Head A: cable Head B: Flying leads Cable: SSI, Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	LTG-2512-MW	6027531
	Head A: cable Head B: Flying leads Cable: SSI, TTL, HTL, Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm, UV and saltwater-resistant	LTG-2612-MW	6028516

Connecting cables









Figure	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² , 7 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
		25 m	DOL-1208-G25MAC1	6067859

Figure	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	2 m	DOL-2312-G02MLA3	2030682
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	3 m	DOL-2312-G03M-MA3	2029213
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	5 m	DOL-2312-G05M-MA3	2029214
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	7 m	DOL-2312-G07MLA3	2030685
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	10 m	DOL-2312-G10MLA3	2030688
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	10 m	DOL-2312-G10MMA3	2029215
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	15 m	DOL-2312-G15MLA3	2030692
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	1.5 m	DOL-2312-G1M5MA3	2029212
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	20 m	DOL-2312-G20MLA3	2030695
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	20 m	DOL-2312-G20M-MA3	2029216
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	25 m	DOL-2312-G25MLA3	2030699
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 1 x 0.14 mm ² , 7.5 mm	30 m	DOL-2312-G30MLA3	2030702
	Head A: female connector, M23, 12-pin, straight Head B: Flying leads Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	30 m	DOL-2312-G30M-MA3	2029217

Figure	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M23, 12-pin, straight Head B: male connector, M23, 12-pin, straight	3 m	DSL-M2312-G03M-MA3	2118590
	Cable: Incremental, PUR, halogen-free, shielded, 4 x 2 x 0.25 mm ² + 2 x 0.5 mm ² + 2 x 0.14 mm ² , 7.8 mm	5 m	DSL-M2312-G05M-MA3	2118591
	Head A: female connector, M23, 12-pin, straight Head B: male connector, M23, 12-pin, straight	1.5 m	DSL-M2312-G1M-5MA3	2118589
	Cable: Incremental, 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	30 m	DSL-M2312-G30M-MA3	2118592

Dimensional drawings → [page 41](#)

Field-attachable connectors

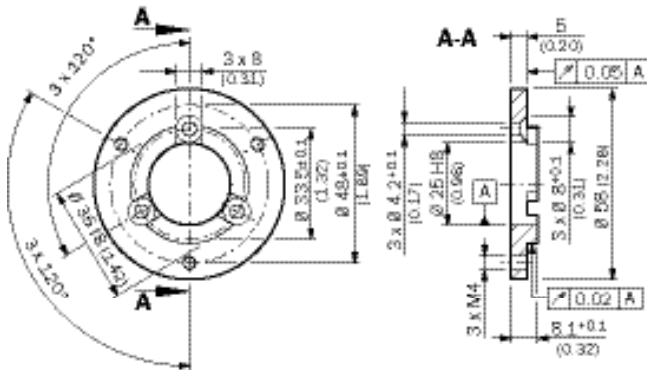
Figure	Brief description	Type	Part no.
	Head A: female connector, M12, 8-pin, straight, A-coded Head B: - Cable: Incremental, SSI, shielded, CAT5, CAT5e	DOS-1208-GA01	6045001
	Head A: female connector, M23, 12-pin, straight Head B: - Cable: HIPERFACE®, SSI, Incremental, shielded	DOS-2312-G	6027538
		DOS-2312-G02	2077057
	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, CAT5, CAT5e	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
	Head A: male connector, M23, 12-pin, straight Head B: - Cable: HIPERFACE®, SSI, Incremental, shielded	STE-2312-G01	2077273
		STE-2312-GX	6028548

Dimensional drawings → [page 41](#)

Dimensional drawings for accessories (Dimensions in mm (inch))

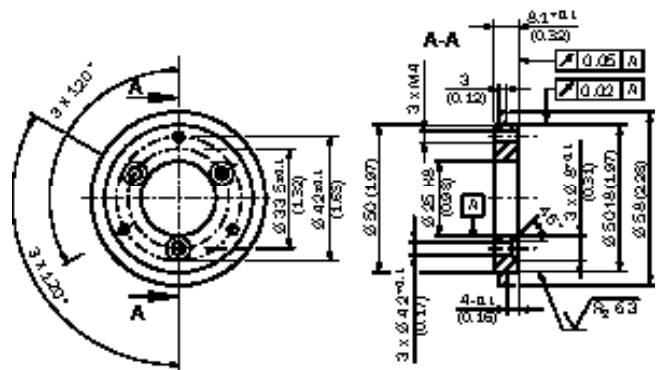
Flanges

BEF-FA-025-036



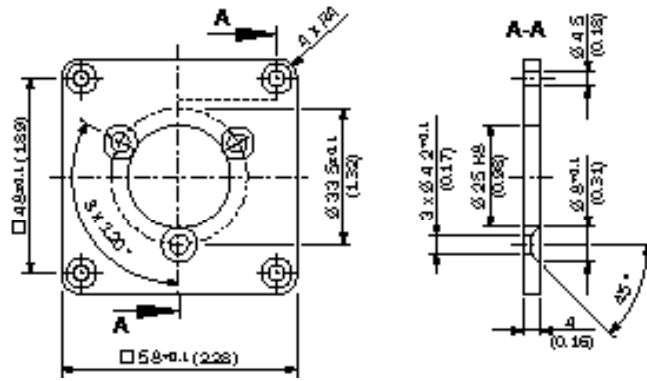
General tolerances according to DIN ISO 2768-mk

BEF-FA-025-050



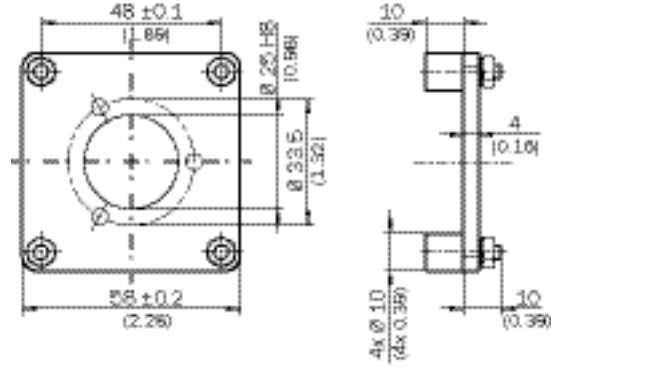
General tolerances according to DIN ISO 2768-mk

BEF-FA-025-060RCA

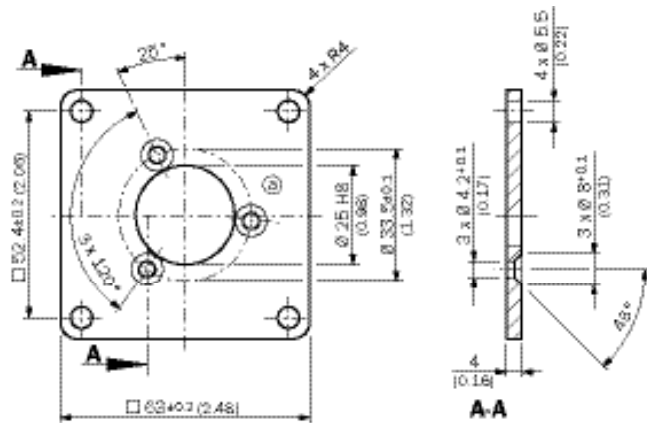


General tolerances according to DIN ISO 2768-mk

BEF-FA-025-060RSA



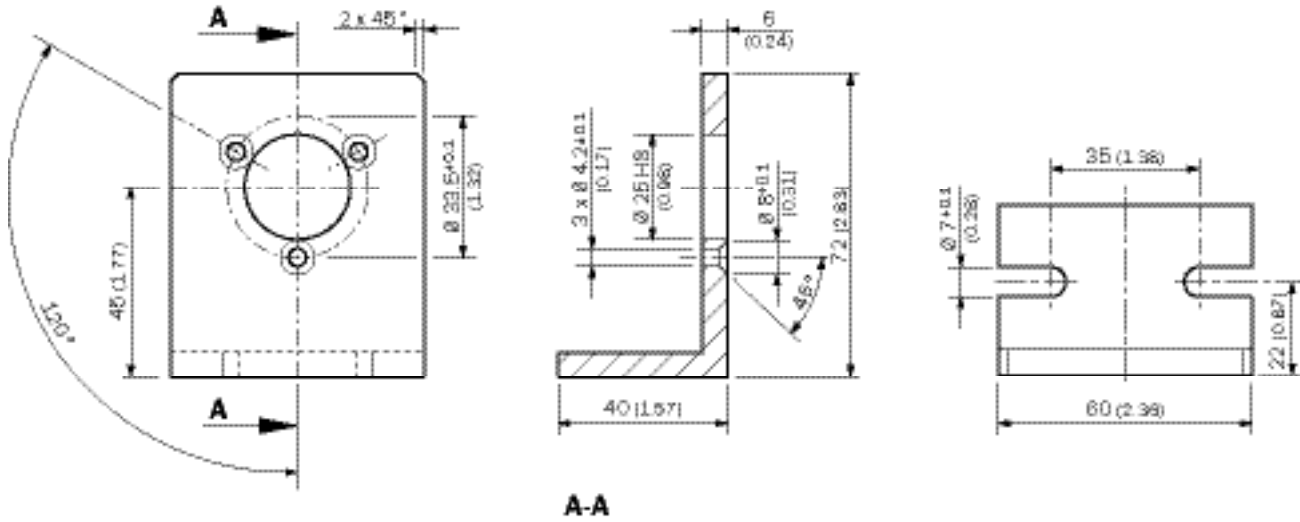
BEF-FA-025-063-REC



General tolerances according to DIN ISO 2768-mk

Mounting brackets and plates

BEF-WF-25



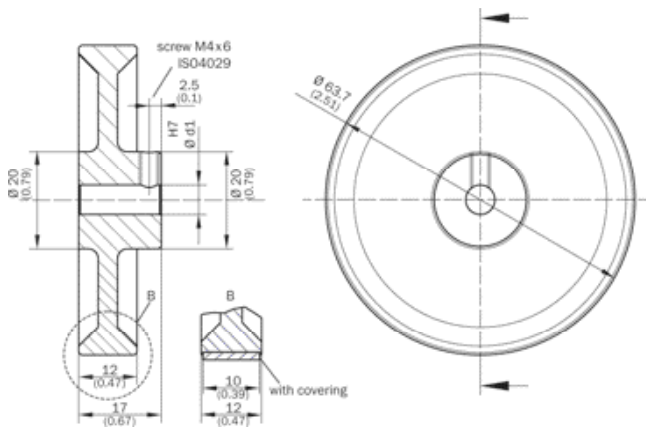
Other mounting accessories

BEF-MR08200AK

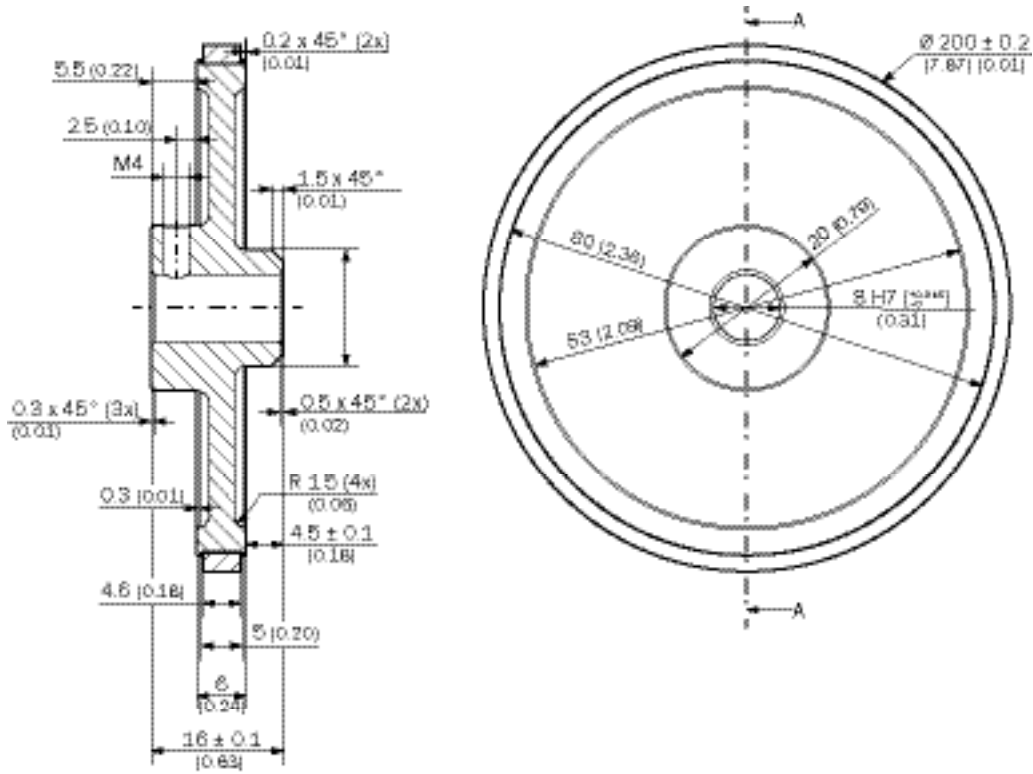
BEF-MR08200AP

BEF-MR08200APG

BEF-MR08200APN

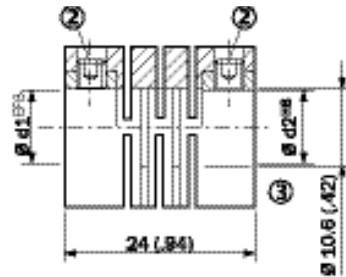
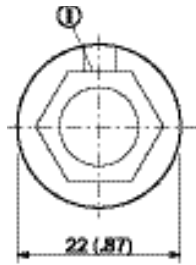


BEF-MR08200APA

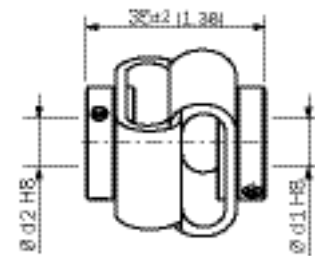
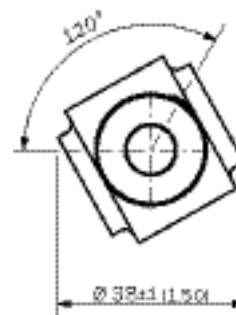


Shaft adaptation

KUP-0xxx-S

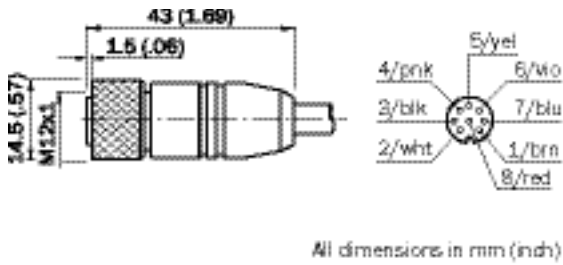


KUP-0810-D

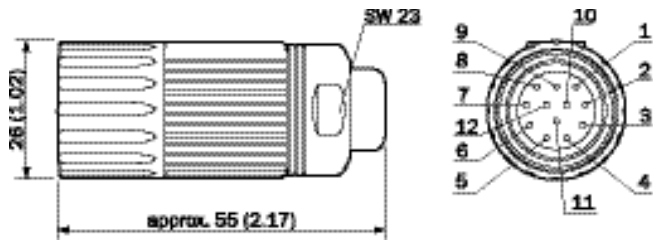


Plug connectors and cables

DOL-1208-GxxMAC1

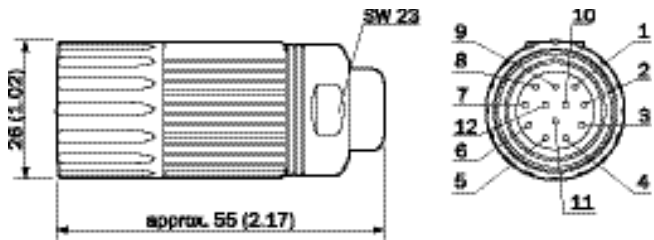


DOL-2312-G02MLA3



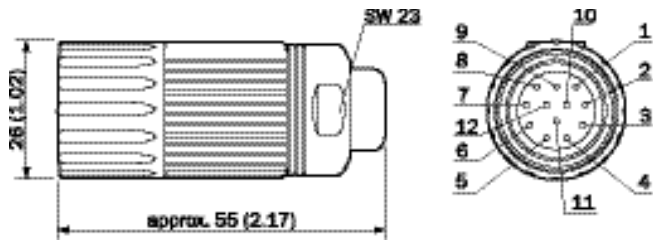
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G03MMA3



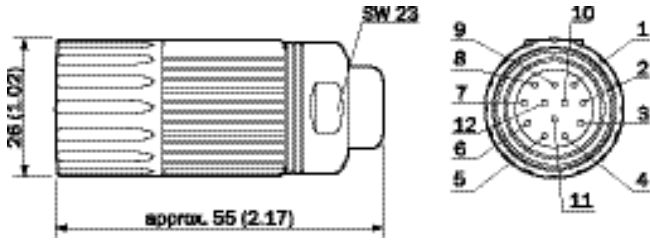
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G05MMA3



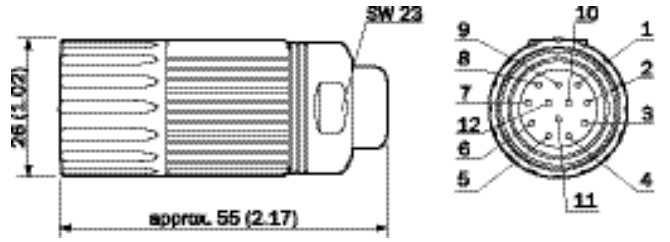
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G07MLA3



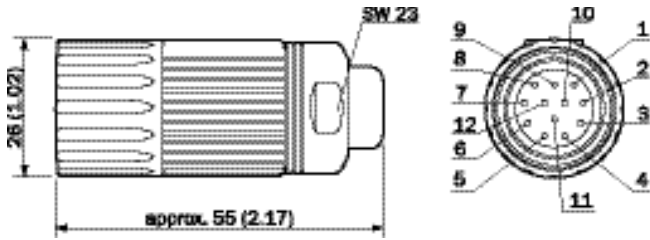
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G10MLA3



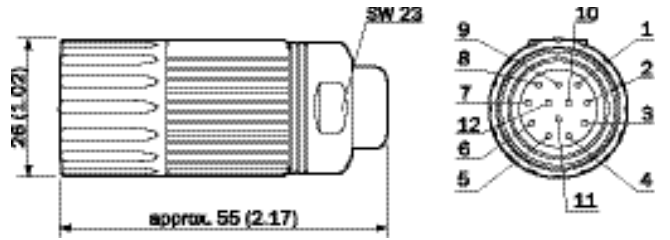
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G10MMA3



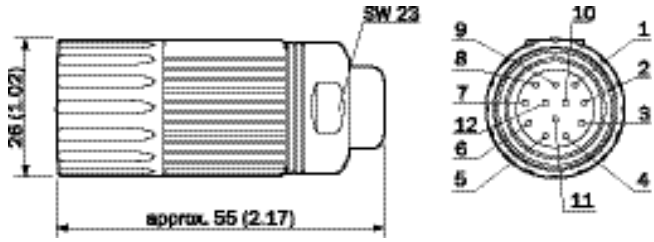
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G15MLA3



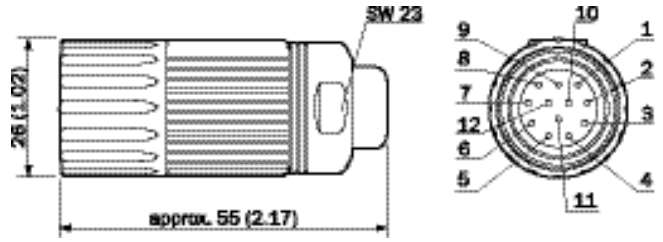
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G1M5MA3



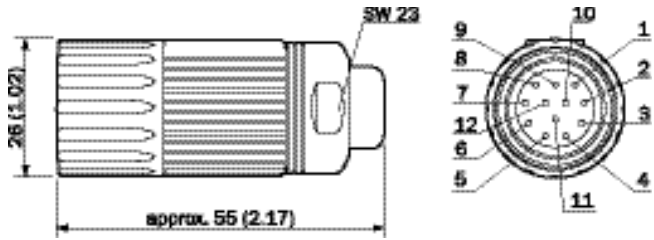
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G20MLA3



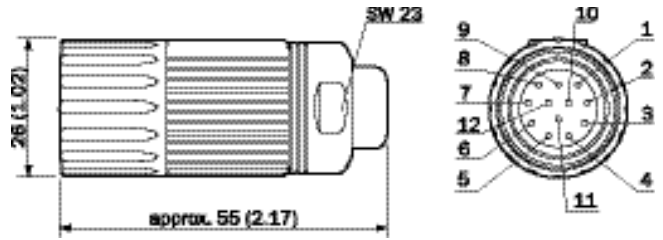
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G20MMA3



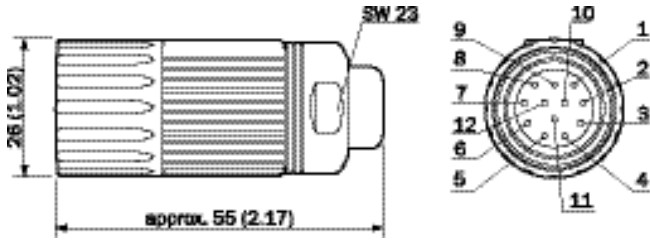
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G25MLA3



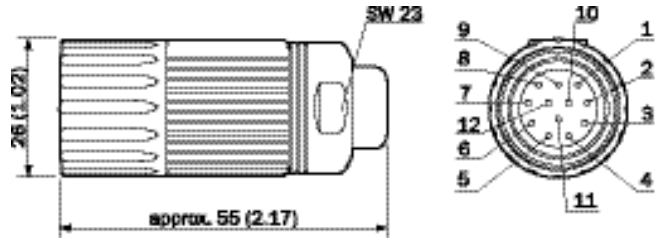
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G30MLA3



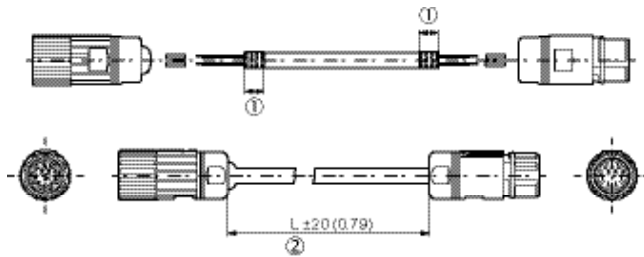
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DOL-2312-G30MMA3



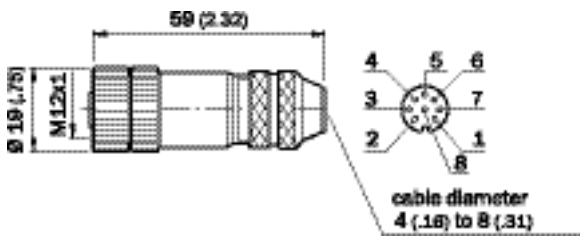
- ① Black
- ② Gray
- ③ Purple
- ④ Yellow
- ⑤ White
- ⑥ Brown
- ⑧ Pink
- ⑨ Screen
- ⑩ Blue
- ⑪ Green
- ⑫ Red

DSL-M2312-GxxxMA3

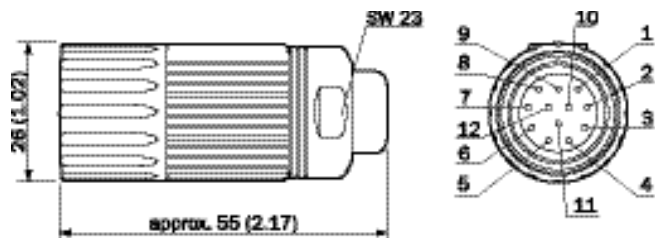


- ① Screen, folded
- ② Length of cable

DOS-1208-GA01

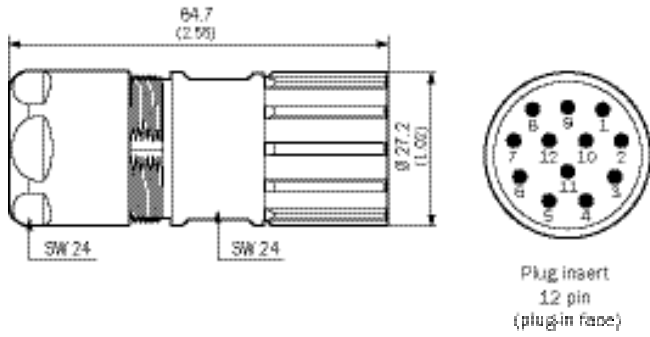


DOS-2312-G

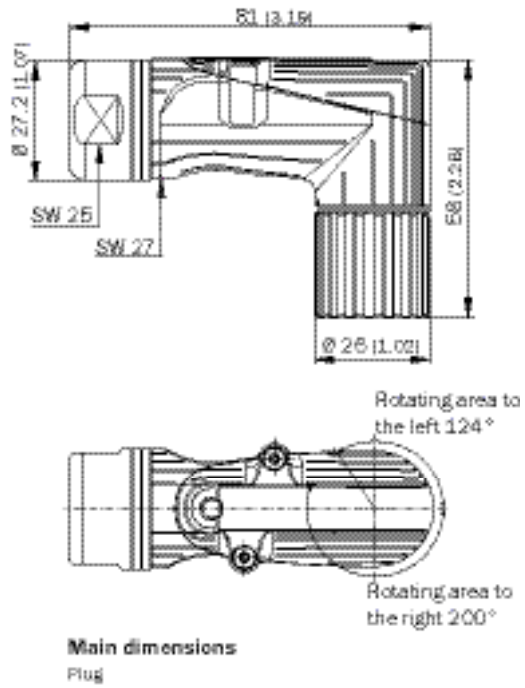


- ① Blue
- ② White
- ③ Yellow
- ④ Gray
- ⑤ Green
- ⑥ Pink
- ⑦ Black
- ⑧ Red
- ⑨ Orange
- ⑩ Brown
- ⑪ Purple
- ⑫ Orange/black

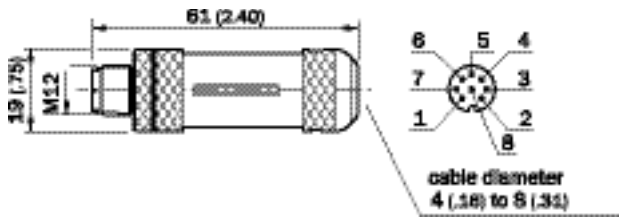
DOS-2312-G02



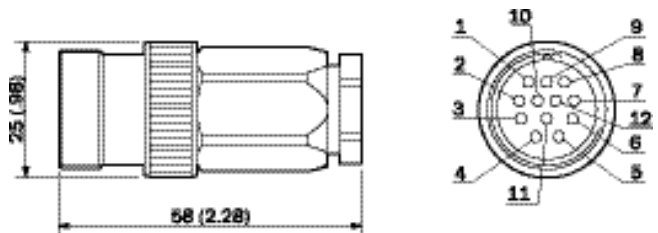
DOS-2312-W01



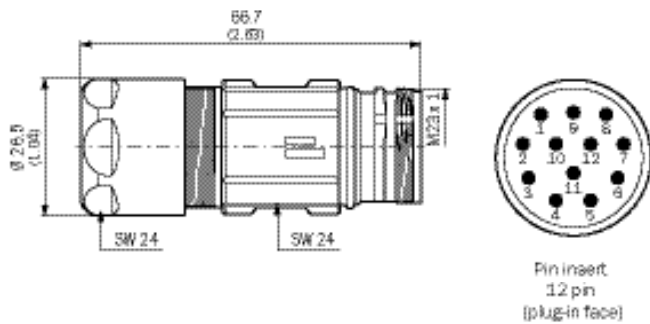
STE-1208-GA01



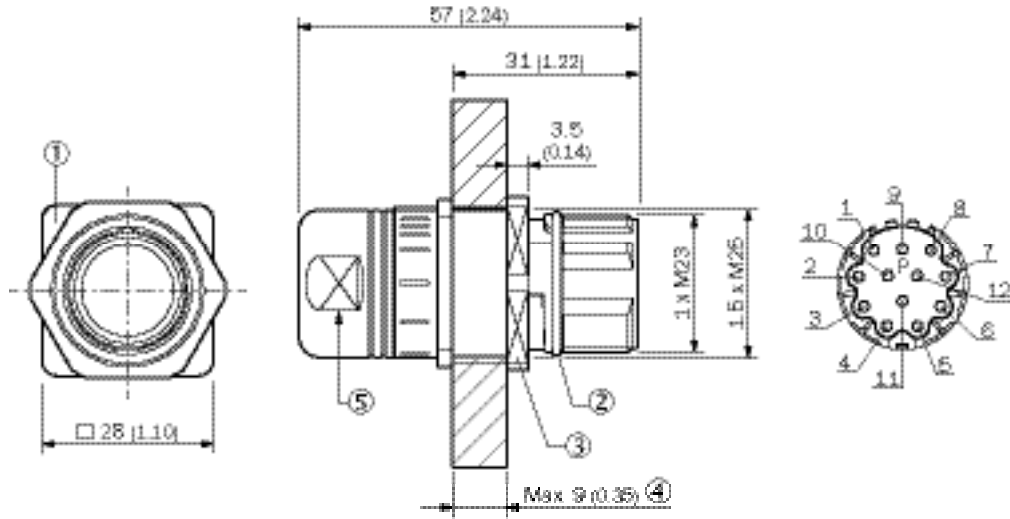
STE-2312-G



STE-2312-G01



STE-2312-GX



- ① Fixed stop position
- ② Vibration protection
- ③ Fixing nut SW30
- ④ Max. wall thickness
- ⑤ SW23

REGISTER AT WWW.SICK.COM TO TAKE ADVANTAGE OF OUR FOLLOWING SERVICES FOR YOU






- ✔ Access information on net prices and individual discounts.
- ✔ Easily order online and track your delivery.
- ✔ Check your history of all your orders and quotes.
- ✔ Create, save, and share as many wish lists as you want.
- ✔ Use the direct order to quickly order a big amount of products.
- ✔ Check the status of your orders and quotes and get information on status changes by e-mail.
- ✔ Save time by using past orders.
- ✔ Easily export orders and quotes, suited to your systems.



SERVICES FOR MACHINES AND PLANTS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.



- 
Consulting and design
 Safe and professional
- 
Product and system support
 Reliable, fast, and on-site
- 
Verification and optimization
 Safe and regularly inspected
- 
Upgrade and retrofits
 Easy, safe, and economical
- 
Training and education
 Practical, focused, and professional

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 10,000 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents, and preventing damage to the environment.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the customers need. In application centers in Europe, Asia, and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes SICK a reliable supplier and development partner.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

That is “Sensor Intelligence.”

Worldwide presence:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → www.sick.com