



AHS/AHM36 SSI

FLEXIBLE, SMART, COMPACT

Absolute encoders

SICK
Sensor Intelligence.

FLEXIBLE, SMART, COMPACT



Product description

The AHS/AHM36 SSI absolute encoder product family provides increased flexibility due to its mechanical adaptation, electrical connectivity, and SSI communication. With their rotatable male connector or cable connection as well as the various mounting hole patterns and adapter flanges, these encoders are suitable for nearly any application. The AHS/AHM36 SSI encoders are able to connect to a wide range of controls due to a programming tool that can be used to make individual adjustments to the

structure of the SSI protocol, in addition to adjusting the singleturn/multiturn resolution, the counting direction, and other parameters. Thanks to the large operating temperature range from -40°C to $+100^{\circ}\text{C}$ and the protection class up to IP 67, this encoder family can be used in harsh ambient conditions. The rugged, reliable, fully magnetic sensor system provides a maximum resolution of 14 bits for the singleturn variant and 26 bits for the multiturn variant.

At a glance

- Compact 36 mm absolute encoder with max. 26 bits (singleturn: 14 bits, multiturn: 12 bits)
- Face mount flange, servo flange, blind hollow shaft
- Rotatable M12 male connector or rotatable cable connection
- SSI interface
- Programmable SSI version: Resolution, preset value, etc. can be programmed (depending on the type)
- Protection class up to IP 67 (depending on the type)
- Operating temperature: -40°C to $+100^{\circ}\text{C}$ (depending on the type)

Your benefits

- Simple, time-saving mechanical installation due to a rotatable male connector or rotatable cable connection, various mounting hole patterns, and many different shafts
- Simple and flexible electrical installation with various configuration options and adjustable SSI protocol structure (programmable SSI version)
- Easy setup for various applications allowing binary, non-binary, and non-integer resolutions with the round axis functionality (programmable SSI version)
- Reliable operation in harsh environments thanks to the rugged, reliable, fully magnetic sensor system
- Space-efficient and cost-effective design that is suitable for applications where space is tight
- High performance at a cost-efficient price



Additional information

Fields of application.....	3
Detailed technical data	3
Type code	6
Ordering information	7
Dimensional drawings	12
Attachment specifications.....	14
PIN assignment.....	16
Accessories.....	17

→ www.sick.com/AHS_AHM36_SSI

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

- Measures the absolute position in various industries, machines, and tools, including automated guided vehicles (AGV), industrial vehicles, commercial vehicles, packaging

machines, logistics applications, machine construction and medical technology

Detailed technical data

Performance

	Singleturn	Multiturn
Number of steps per revolution (max. resolution)		
Basic, non programmable	4,096 (12 bit) 3,600 360 512 (9 bit)	–
Advanced, non programmable	8,192 (13 bit) 16,384 (14 bit) 4,096 (12 bit) 2,048 (11 bit)	–
Advanced, programmable	16,384 (14 bit) 4,096 (12 bit)	–
Max. resolution (number of steps per revolution x number of revolutions)		
Non programmable	–	12 bit x 12 bit (4,096 x 4,096) 13 bit x 12 bit (8,192 x 4,096) 14 bit x 12 bit (16,384 x 4,096) 9 bit x 12 bit (512 x 4,096) 10 bit x 12 bit (1,024 x 4,096)
Programmable	–	14 bit x 12 bit (16,384 x 4,096) 13 bit x 12 bit (8,192 x 4,096)
Error limits G	0.35° (at 20 °C) ¹⁾	
Repeatability standard deviation σ_r		
Basic	0.25° (at 20 °C) ²⁾	
Advanced	0.2° (at 20 °C) ²⁾	

¹⁾ In accordance with DIN ISO 1319-1, position of the upper and lower error limit depends on the installation situation, specified value refers to a symmetrical position, i.e. deviation in upper and lower direction is the same.

²⁾ In accordance with DIN ISO 55350-13; 68.3% of the measured values are inside the specified area.

Interfaces

	Basic	Advanced
Communication interface	SSI	
Process data	Position	
Parameterising data		
Multiturn	–	Number of steps per revolution Number of revolutions PRESET Counting direction Code type Offset of position bits Position error bit Round axis functionality SSI mode

¹⁾ Valid positional data can be read once this time has elapsed.

²⁾ Minimum, LOW level (Clock +): 250 ns.

	Basic	Advanced
Singleturn	-	Number of steps per revolution PRESET Counting direction Code type Offset of position bits Position error bit SSI mode
Initialization time	100 ms ¹⁾	
Position forming time	125 µs	
SSI		
Code type	Gray	Gray Gray, binary
Code sequence parameter adjustable	CW/CCW (V/R _I) configurable via cable	CW/CCW (V/R _I) configurable via cable CW/CCW (V/R _I) configurable via programming tool or cable
Clock frequency	2 MHz ²⁾	
Set (electronic adjustment)	H-active (L = 0 - 3 V, H = 4,0 - U _s V)	
CW/CCW (counting sequence when turning)	L-active (L = 0 - 1 V, H = 2,0 - U _s V)	

¹⁾ Valid positional data can be read once this time has elapsed.

²⁾ Minimum, LOW level (Clock +): 250 ns.

Electrical data

	Basic	Advanced
Connection type	Male connector, M12, 8-pin, universal 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	
Supply voltage	4.5 V DC ... 32 V DC	
Power consumption	≤ 1.5 W (without load)	
Reverse polarity protection	✓	
MTTFd: mean time to dangerous failure	230 years (EN ISO 13849-1) ¹⁾	

¹⁾ This product is a standard product and does not constitute a safety component as defined in the Machinery Directive. Calculation based on nominal load of components, average ambient temperature 40°C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

Mechanical data

	Basic	Advanced
Shaft diameter	6 mm 8 mm 10 mm 1/4" 3/8" 6 mm ¹⁾ 10 mm ²⁾	
Wavelength		
Solid shaft, face mount flange	12 mm 24 mm	
Solid shaft, Servo flange	12 mm	
Weight	0.12 kg ³⁾	

¹⁾ For use with the adapters 2072298 and 2072295.

²⁾ For adapting to 1.25 m Ecoline wire draw mechanism; only available for multiturn variants.

³⁾ Relates to devices with male connector connection.

⁴⁾ Allow for self-heating of 3.5 K per 1,000 rpm when designing the operating temperature range.

	Basic	Advanced
Shaft material	Stainless steel	
Flange material	Aluminum	
Housing material	Zinc	
Material, cable	PUR	
Start up torque	0.5 Ncm	1 Ncm
Operating torque	< 0.5 Ncm	< 1 Ncm
Permissible shaft movement, static (for hollow shafts only)	± 0.3 mm (radial) ± 0.3 mm (axial)	
Permissible shaft movement, dynamic (for hollow shafts only)	± 0.1 mm (radial) ± 0.1 mm (axial)	
Permissible shaft movement (for solid shafts only)	40 N / radial 20 N / axial	
Moment of inertia of the rotor		
Solid shaft, face mount flange	2.5 gcm ²	
Solid shaft, Servo flange	2.5 gcm ²	
Blind hollow shaft	15 gcm ²	
Bearing lifetime		
Solid shaft, face mount flange	3.6 x 10 ⁸ revolutions	
Solid shaft, Servo flange	3.6 x 10 ⁸ revolutions	
Blind hollow shaft	2.0 x 10 ⁹ revolutions	
Angular acceleration	≤ 500,000 rad/s ²	
Operating speed		
Singleturn	≤ 9,000 min ^{-1 4)}	≤ 6,000 min ^{-1 4)}
Multiturn	≤ 6,000 min ^{-1 4)}	

¹⁾ For use with the adapters 2072298 and 2072295.

²⁾ For adapting to 1.25 m Ecoline wire draw mechanism; only available for multiturn variants.

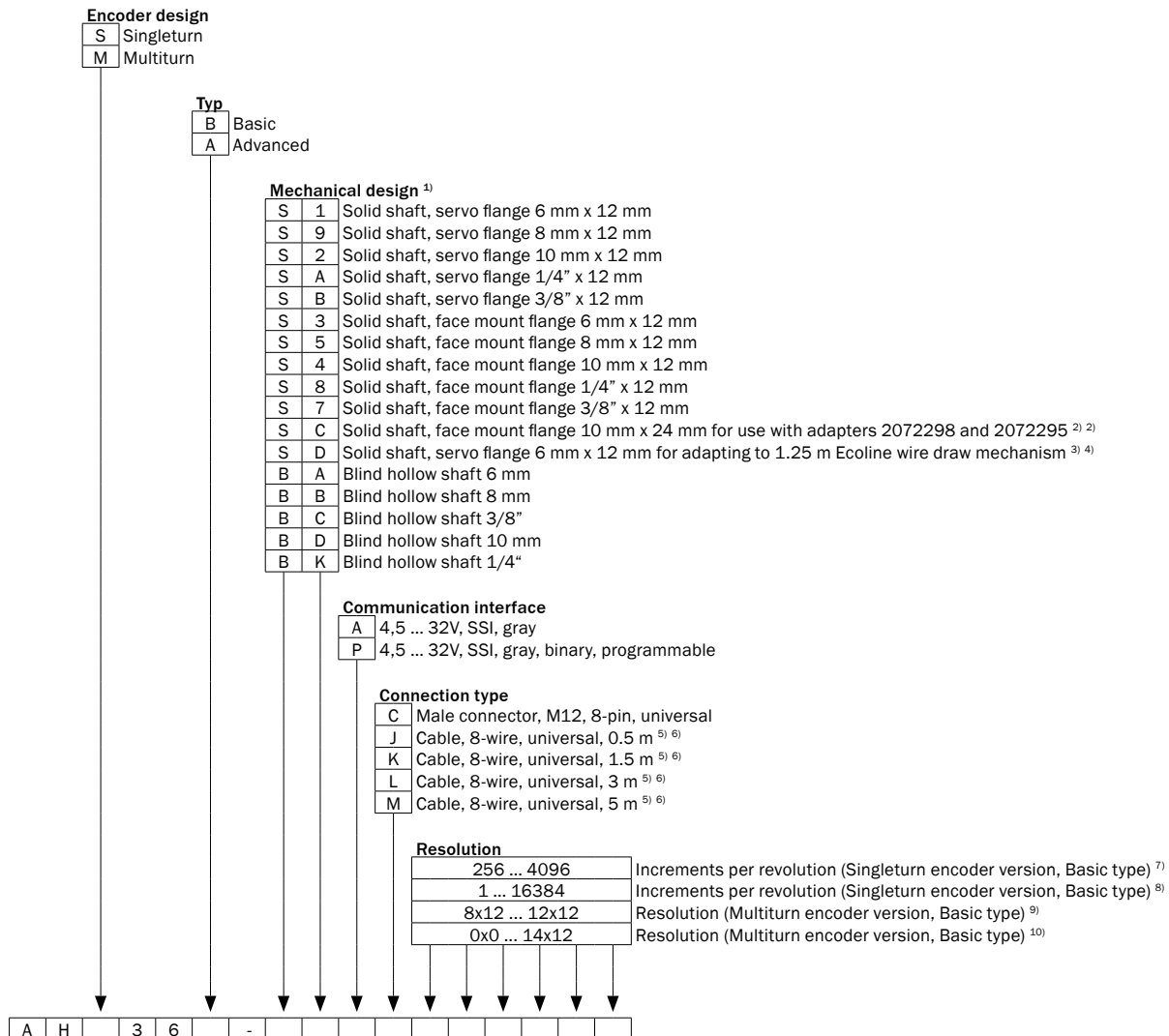
³⁾ Relates to devices with male connector connection.

⁴⁾ Allow for self-heating of 3.5 K per 1,000 rpm when designing the operating temperature range.

Ambient data

	Basic	Advanced
EMC	According to EN 61000-6-2 and EN 61000-6-3	
Enclosure rating	IP65 (according to IEC 60529)	IP66 (according to IEC 60529) IP67 (according to IEC 60529)
Permissible relative humidity	90 % (Condensation not permitted)	
Operating temperature range	-20 °C ... +70 °C	-40 °C ... +100 °C
Storage temperature range	-40 °C ... +100 °C, without package	
Resistance to shocks	100 g, 6 ms (according to EN 60068-2-27)	
Resistance to vibration	20 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6)	

Type code



¹⁾ Additional mechanical interfaces can be implemented using flange adapters, see attachment suggestions.

²⁾ Permissible shaft load lower than specified in the technical data.

³⁾ Only for Multiturn encoder versions.

⁴⁾ Enclosure rating on shaft side always IP65.

⁵⁾ The universal cable outlet is positioned so that it is possible to lay it without bends in a radial or axial direction.

⁶⁾ NRTL certification is only valid for operating temperatures of - 40 ° C to + 85 ° C.

⁷⁾ Non-programmable: Increments per revolution 256, 360, 512, 720, 1.024, 2.048, 3.600, 4.096.

⁸⁾ Non-programmable: Increments per revolution 256, 360, 512, 720, 1.024, 2.048, 3.600, 4.096, 8.192, 16.384. programmable devices: Increments per revolution 1 ... 16.384, programmable via programming tool.

⁹⁾ Non-programmable: Resolution 8x12, 9x12, 10x12, 11x12, 12x12.

¹⁰⁾ Non-programmable: resolution 8x12, 9x12, 10x12, 11x12, 12x12, 13x12, 14x12. programmable: resolution 0x0 ... 14x12, programmable via programming tool.

Ordering information

Singleturn, Solid shaft, face mount flange

Shaft diameter	Wavelength	Connection type	Number of steps per revolution	Programmable/ configurable	Type	Part no.
1/4"	12 mm	Male connector, M12, 8-pin, universal	4,096 (12 bit)	–	AHS36B-S8AC004096	1107214
10 mm	12 mm	Cable, 8-wire, universal, 3 m	4,096 (12 bit)	–	AHS36B-S4AL004096	1074228
		Cable, 8-wire, universal, 5 m	4,096 (12 bit)	–	AHS36A-S4AM004096	1098009
		Male connector, M12, 8-pin, universal	16,384 (14 bit)	–	AHS36A-S4AC016384	1086254
			4,096 (12 bit)	–	AHS36B-S4AC004096	1075451
10 mm ¹⁾	24 mm	Cable, 8-wire, universal, 1.5 m	4,096 (12 bit)	✓	AHS36A-SCPK016384	1079918
		Male connector, M12, 8-pin, universal	3,600	–	AHS36B-SCAC003600	1102314
3/8"	12 mm	Cable, 8-wire, universal, 5 m	16,384 (14 bit)	✓	AHS36A-S7PM016384	1087443
		Male connector, M12, 8-pin, universal	16,384 (14 bit)	–	AHS36A-S7AC016384	1074140
			4,096 (12 bit)	–	AHS36B-S7AC004096	1090432
6 mm	12 mm	Cable, 8-wire, universal, 0.5 m	4,096 (12 bit)	–	AHS36A-S3AJ016384	1092110
		Cable, 8-wire, universal, 1.5 m	4,096 (12 bit)	✓	AHS36A-S3PK016384	1079916
		Cable, 8-wire, universal, 3 m	4,096 (12 bit)	–	AHS36B-S3AL004096	1073331
		Male connector, M12, 8-pin, universal	16,384 (14 bit)	✓	AHS36A-S3PC016384	1105307
			3,600	–	AHS36B-S3AC003600	1088142
			4,096 (12 bit)	–	AHS36B-S3AC004096	1085664
			8,192 (13 bit)	–	AHS36A-S3AC008192	1104566
8 mm	12 mm	Cable, 8-wire, universal, 3 m	4,096 (12 bit)	–	AHS36B-S5AL004096	1090294
		Cable, 8-wire, universal, 5 m	4,096 (12 bit)	–	AHS36A-S5AM016384	1078517
		Male connector, M12, 8-pin, universal	16,384 (14 bit)	–	AHS36A-S5AC016384	1067269

¹⁾ For use with the adapters 2072298 and 2072295.

Multiturn, Solid shaft, face mount flange

Shaft diameter	Wavelength	Connection type	Max. resolution	Programmable/ configurable	Type	Part no.
1/4"	12 mm	Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S8AC012x12	1099668
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S8AC014x12	1106045
10 mm	12 mm	Cable, 8-wire, universal, 0.5 m	10 bit x 12 bit (1,024 x 4,096)	-	AHM36B-S4AJ010x12	1094275
		Cable, 8-wire, universal, 1.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36A-S4AK012x12	1073473
			14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S4PK014x12	1072584
		Cable, 8-wire, universal, 3 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S4AL012x12	1090222
			14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S4PL014x12	1082738
		Cable, 8-wire, universal, 5 m	14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S4PM014x12	1104594
		Male connector, M12, 8-pin, universal	10 bit x 12 bit (1,024 x 4,096)	-	AHM36B-S4AC010x12	1081994
			12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S4AC012x12	1075032
			13 bit x 12 bit (8,192 x 4,096)	-	AHM36A-S4AC013x12	1095132
			14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S4PC014x12	1074761
				-	AHM36A-S4AC014x12	1074215
			9 bit x 12 bit (512 x 4,096)	-	AHM36B-S4AC009x12	1077836
10 mm ¹⁾	24 mm	Cable, 8-wire, universal, 0.5 m	14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-SCPJ014x12	1097559
		Cable, 8-wire, universal, 1.5 m	14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-SCPK014x12	1079920
		Cable, 8-wire, universal, 3 m	14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-SCPL014x12	1082889
		Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36A-SCAC012x12	1084315
			14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-SCPC014x12	1074753
3/8"	12 mm	Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S7AC012x12	1076401
6 mm	12 mm	Cable, 8-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S3AJ012x12	1075183
		Cable, 8-wire, universal, 1.5 m	14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S3PK014x12	1066006
		Cable, 8-wire, universal, 3 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S3AL012x12	1075386
			14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S3PL014x12	1075268
		Cable, 8-wire, universal, 5 m	13 bit x 12 bit (8,192 x 4,096)	✓	AHM36A-S3PM013x12	1097369
		Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S3AC012x12	1076917
			13 bit x 12 bit (8,192 x 4,096)	✓	AHM36A-S3PC013x12	1068330
				-	AHM36A-S3AC013x12	1104567
			14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S3PC014x12	1066007

¹⁾ For use with the adapters 2072298 and 2072295.

Shaft diameter	Wavelength	Connection type	Max. resolution	Programmable/ configurable	Type	Part no.
8 mm	12 mm	Cable, 8-wire, universal, 0.5 m	14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S5PJ014x12	1091707
		Cable, 8-wire, universal, 1.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S5AK012x12	1079094
			14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S5PK014x12	1111362
		Cable, 8-wire, universal, 3 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S5AL012x12	1098633
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S5AL014x12	1098635
		Cable, 8-wire, universal, 5 m	14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S5PM014x12	1098634
		Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S5AC012x12	1084453
			14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S5PC014x12	1072258

¹⁾ For use with the adapters 2072298 and 2072295.

Singleturn, Solid shaft, Servo flange

- **Wavelength:** 12 mm

Shaft diameter	Connection type	Number of steps per revolution	Programmable/ configurable	Type	Part no.
10 mm	Male connector, M12, 8-pin, universal	16,384 (14 bit)	✓	AHS36A-S2PC016384	1100140
			-	AHS36A-S2AC016384	1086255
3/8"	Male connector, M12, 8-pin, universal	16,384 (14 bit)	✓	AHS36A-SBPC016384	1107174
6 mm	Cable, 8-wire, universal, 0.5 m	4,096 (12 bit)	-	AHS36A-S1AJ004096	1101997
		16,384 (14 bit)	✓	AHS36A-S1PK016384	1066013
	Cable, 8-wire, universal, 1.5 m	3,600	-	AHS36B-S1AK003600	1091279
		360	-	AHS36B-S1AK000360	1091259
	Male connector, M12, 8-pin, universal	16,384 (14 bit)	✓	AHS36A-S1PC016384	1066014
		4,096 (12 bit)	-	AHS36A-S1AC004096	1101995
8 mm	Cable, 8-wire, universal, 3 m	16,384 (14 bit)	-	AHS36B-S1AC004096	1066017
				AHS36A-S9AL016384	1099652

Multiturn, Solid shaft, Servo flange

- **Wavelength:** 12 mm

Shaft diameter	Connection type	Max. resolution	Programmable/ configurable	Type	Part no.
1/4"	Cable, 8-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-SAAJ012x12	1102315
10 mm	Cable, 8-wire, universal, 3 m	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-S2AL012x12	1101264
		12 bit x 12 bit (4,096 x 4,096)	–	AHM36A-S2AC012x12	1088596
	Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-S2AC012x12	1075615
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S2PC014x12	1097262
		14 bit x 12 bit (16,384 x 4,096)	–	AHM36A-S2AC014x12	1108168
3/8"	Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-SBAC012x12	1084189
6 mm	Cable, 8-wire, universal, 1.5 m	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-S1AK012x12	1097915
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S1PK014x12	1066008
	Cable, 8-wire, universal, 3 m	12 bit x 12 bit (4,096 x 4,096)	–	AHM36A-S1AL012x12	1079336
		12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-S1AL012x12	1096879
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S1PL014x12	1075269
	Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-S1AC012x12	1066012
		13 bit x 12 bit (8,192 x 4,096)	–	AHM36A-S1AC013x12	1082682
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-S1PC014x12	1066009
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-SDPC014x12	1068020
6 mm ¹⁾	Male connector, M12, 8-pin, universal	13 bit x 12 bit (8,192 x 4,096)	✓	AHM36A-SDPC013x12	1068328
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-SDPC014x12	1068020
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-SDPC014x12	1068020

¹⁾ For adapting to 1.25 m Ecoline wire draw mechanism; only available for multiturn variants.

Singleturn, Blind hollow shaft

Shaft diameter	Connection type	Number of steps per revolution	Programmable/ configurable	Type	Part no.
1/4"	Cable, 8-wire, universal, 3 m	16,384 (14 bit)	–	AHS36A-BKAL016384	1100081
	Male connector, M12, 8-pin, universal	4,096 (12 bit)	–	AHS36B-BKAC004096	1075479
10 mm	Cable, 8-wire, universal, 1.5 m	16,384 (14 bit)	✓	AHS36A-BDPK016384	1079917
		8,192 (13 bit)	–	AHS36A-BDAK008192	1110309
	Cable, 8-wire, universal, 3 m	16,384 (14 bit)	✓	AHS36A-BDPL016384	1096206
		16,384 (14 bit)	–	AHS36A-BDAL016384	1089419
		16,384 (14 bit)	–	AHS36A-BDAM016384	1106421
	Male connector, M12, 8-pin, universal	16,384 (14 bit)	✓	AHS36A-BDPC016384	1100141
		16,384 (14 bit)	–	AHS36A-BDAC016384	1073484
		4,096 (12 bit)	–	AHS36B-BDAC004096	1075904
6 mm	Cable, 8-wire, universal, 1.5 m	16,384 (14 bit)	✓	AHS36A-BAPK016384	1066015
		4,096 (12 bit)	–	AHS36B-BAAK004096	1073320
	Male connector, M12, 8-pin, universal	16,384 (14 bit)	✓	AHS36A-BAPC016384	1066016
		2,048 (11 bit)	–	AHS36A-BAAC002048	1078973
		3,600	–	AHS36B-BAAC003600	1113315

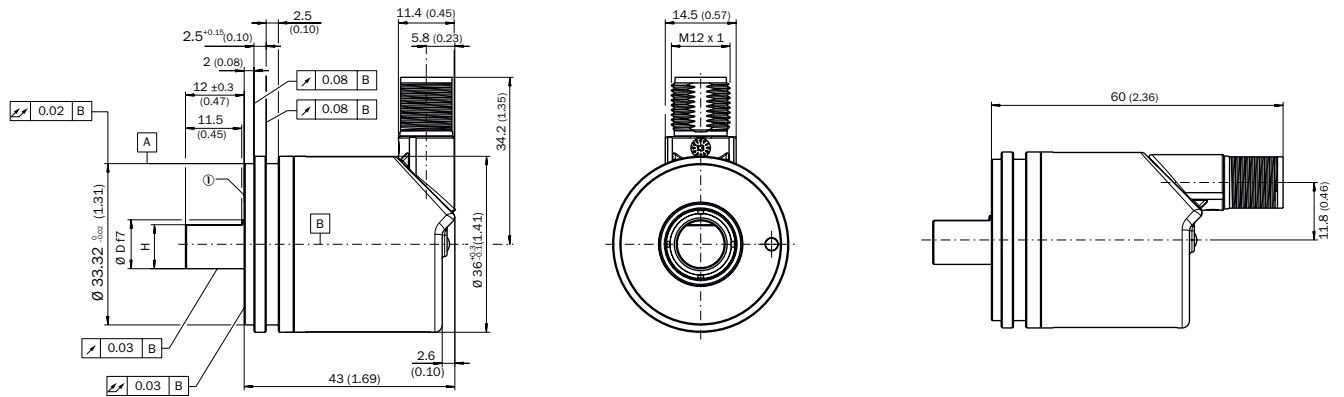
Shaft diameter	Connection type	Number of steps per revolution	Programmable/ configurable	Type	Part no.
8 mm	Cable, 8-wire, universal, 1.5 m	16,384 (14 bit)	–	AHS36A-BBAK016384	1079115
	Male connector, M12, 8-pin, universal	512 (9 bit)	–	AHS36B-BBAC000512	1104092

Multiturn, Blind hollow shaft

Shaft diameter	Connection type	Max. resolution	Programmable/ configurable	Type	Part no.
1/4"	Cable, 8-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-BKAJ012x12	1100303
	Cable, 8-wire, universal, 1.5 m	14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-BKPK014x12	1110973
10 mm	Cable, 8-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	–	AHM36A-BKAK014x12	1110974
		10 bit x 12 bit (1,024 x 4,096)	–	AHM36B-BDAJ010x12	1093669
	Cable, 8-wire, universal, 1.5 m	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-BDAK012x12	1097801
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-BDPK014x12	1072583
	Cable, 8-wire, universal, 3 m	14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-BDPL014x12	1093426
		12 bit x 12 bit (4,096 x 4,096)	–	AHM36A-BDAL014x12	1104546
	Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-BDAC012x12	1075223
		13 bit x 12 bit (8,192 x 4,096)	–	AHM36A-BDAC013x12	1082683
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-BDPC014x12	1075084
		12 bit x 12 bit (4,096 x 4,096)	–	AHM36A-BDAC014x12	1075905
6 mm	Cable, 8-wire, universal, 1.5 m	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-BAAK012x12	1093910
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-BAPK014x12	1066010
	Cable, 8-wire, universal, 3 m	10 bit x 12 bit (1,024 x 4,096)	–	AHM36B-BAAL010x12	1079830
	Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	–	AHM36A-BAAC012x12	1075366
		12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-BAAC012x12	1078400
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-BAPC014x12	1066011
8 mm	Cable, 8-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-BBAJ012x12	1093273
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-BBPJ014x12	1080816
		12 bit x 12 bit (4,096 x 4,096)	–	AHM36A-BBAJ014x12	1080370
	Cable, 8-wire, universal, 1.5 m	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-BBAK012x12	1100910
		14 bit x 12 bit (16,384 x 4,096)	–	AHM36A-BBAK014x12	1092503
	Cable, 8-wire, universal, 5 m	14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-BBPM014x12	1082280
	Male connector, M12, 8-pin, universal	12 bit x 12 bit (4,096 x 4,096)	–	AHM36B-BBAC012x12	1082645
		14 bit x 12 bit (16,384 x 4,096)	✓	AHM36A-BBPC014x12	1087168

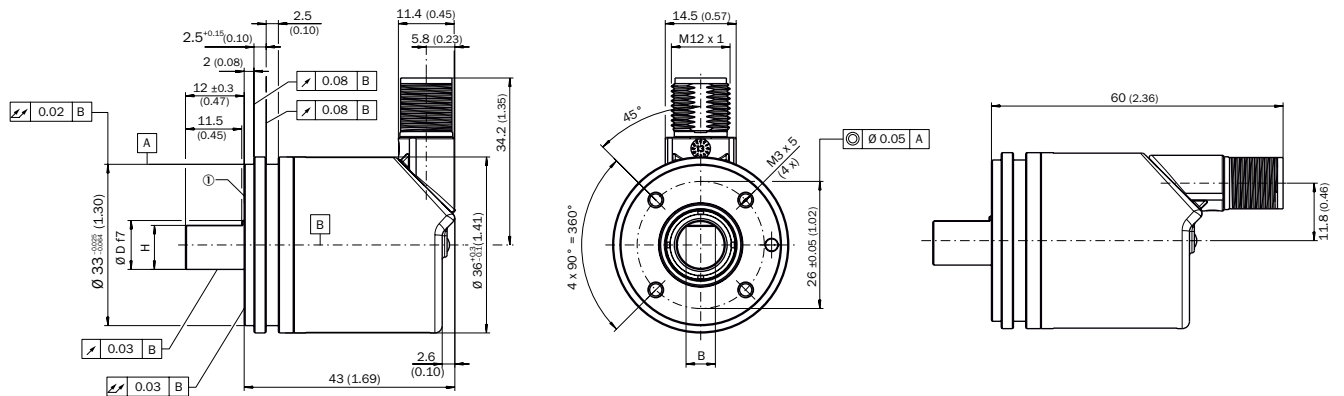
Dimensional drawings (Dimensions in mm (inch))

Solid shaft, servo flange, male connector, for adapting to 1.25 m Ecoline wire draw mechanism



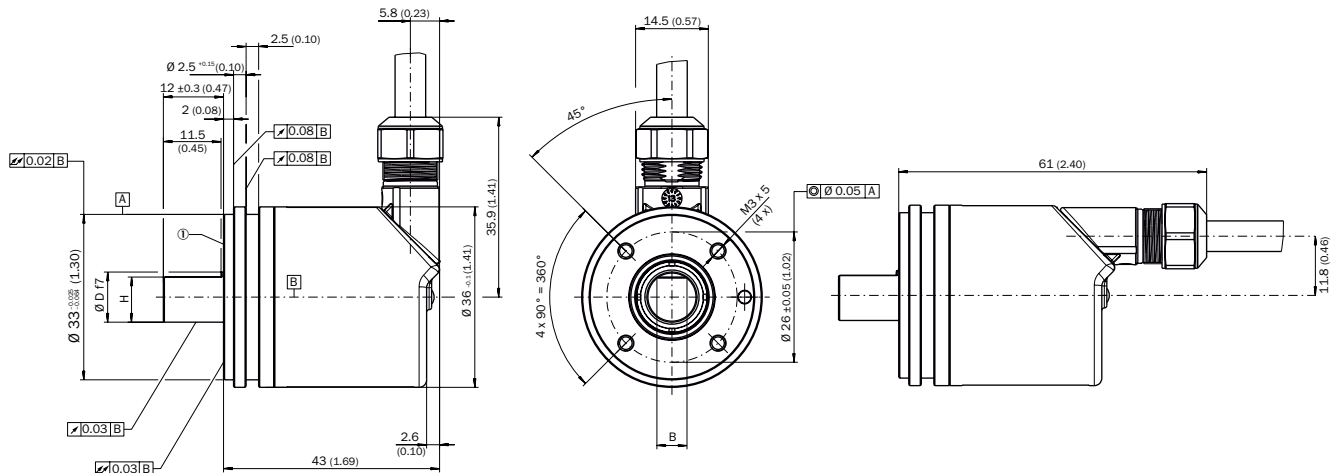
① Measuring point for operating temperature

Solid shaft, servo flange, male connector



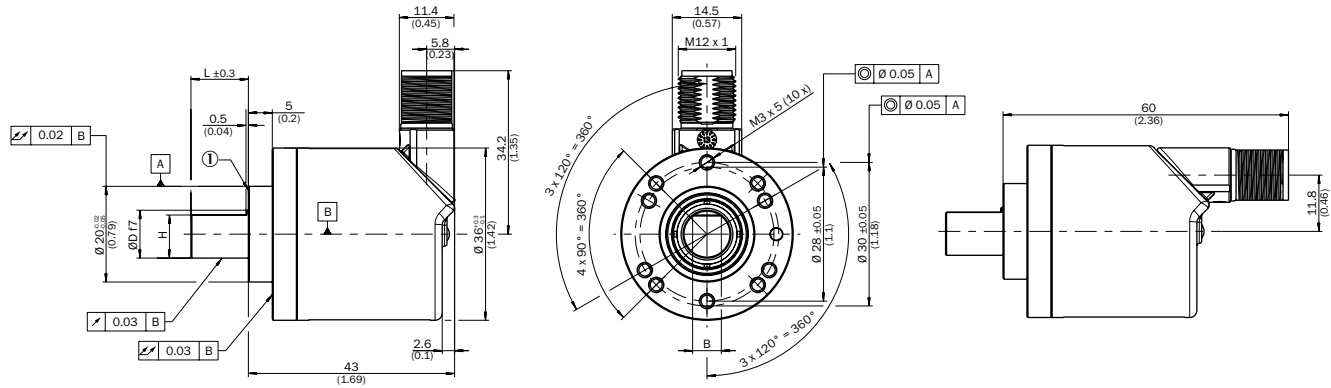
① Measuring point for operating temperature

Solid shaft, servo flange, cable



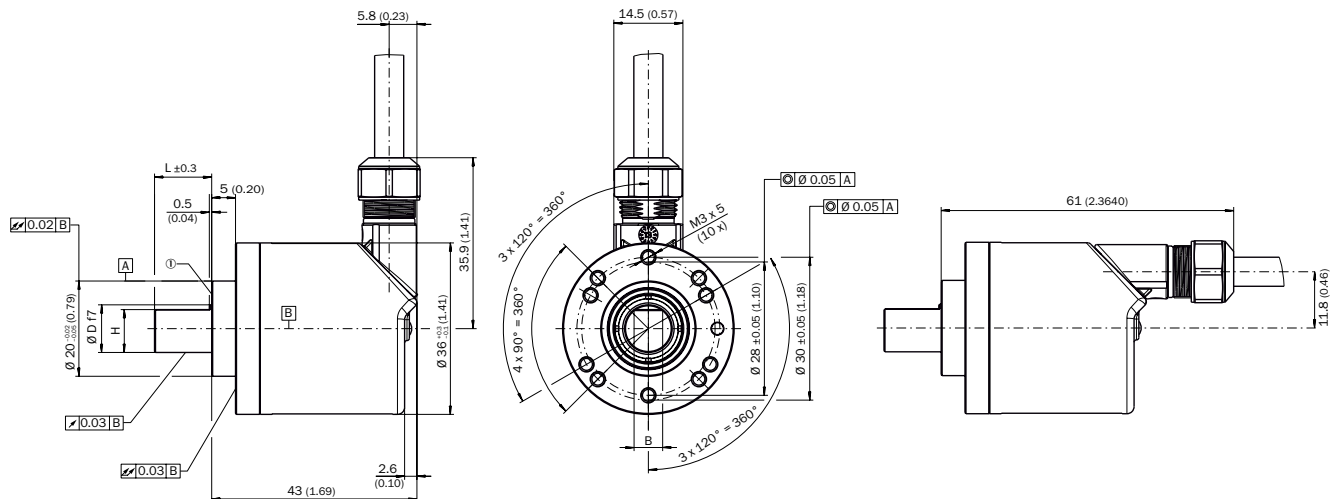
① Measuring point for operating temperature

Solid shaft, face mount flange, male connector



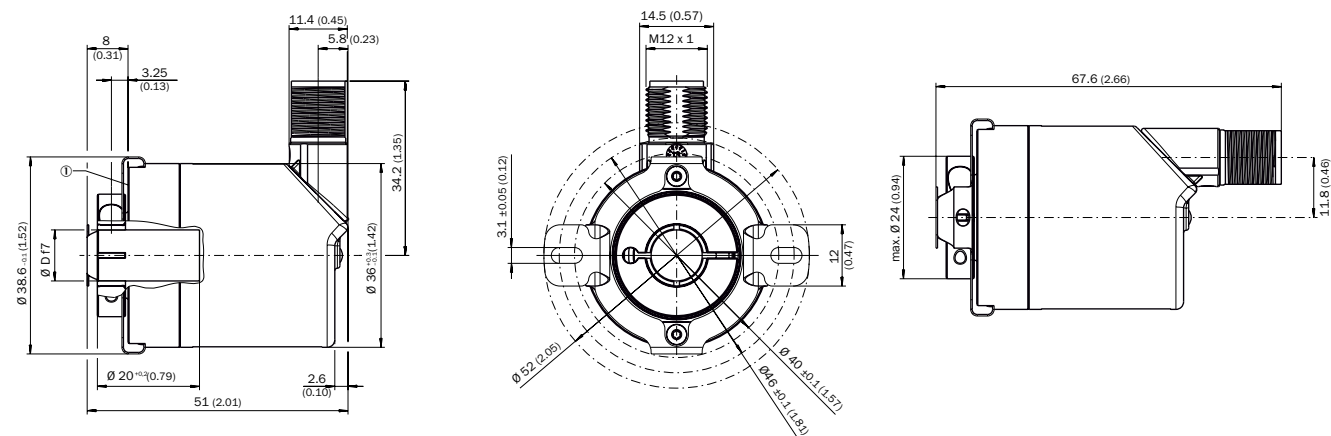
① Measuring point for operating temperature

Solid shaft, face mount flange, cable



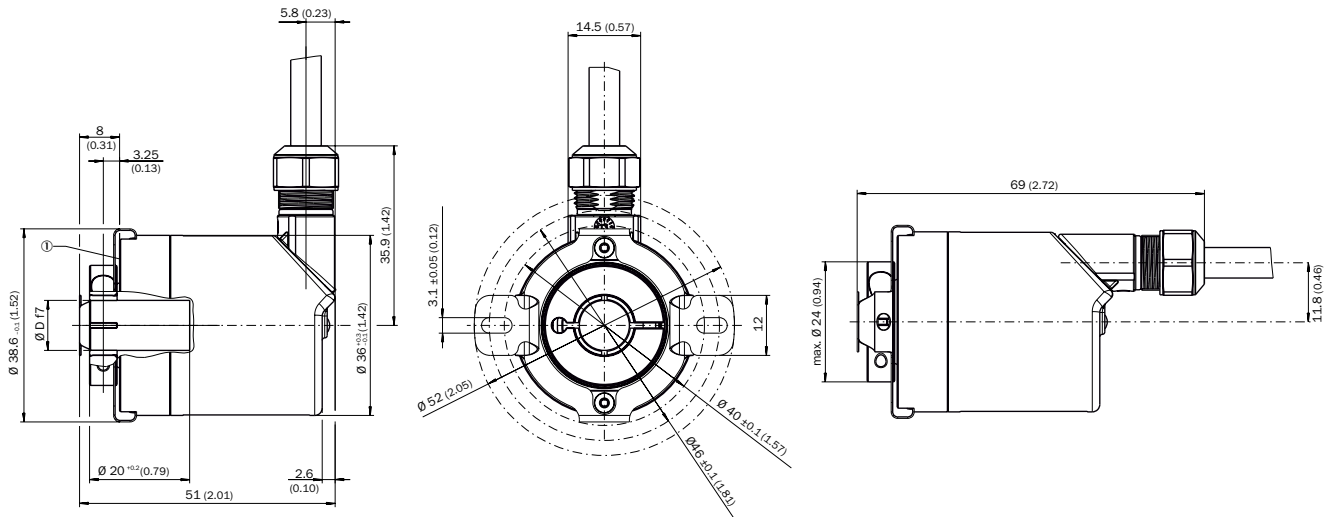
① Measuring point for operating temperature

Blind hollow shaft, male connector



① Measuring point for operating temperature

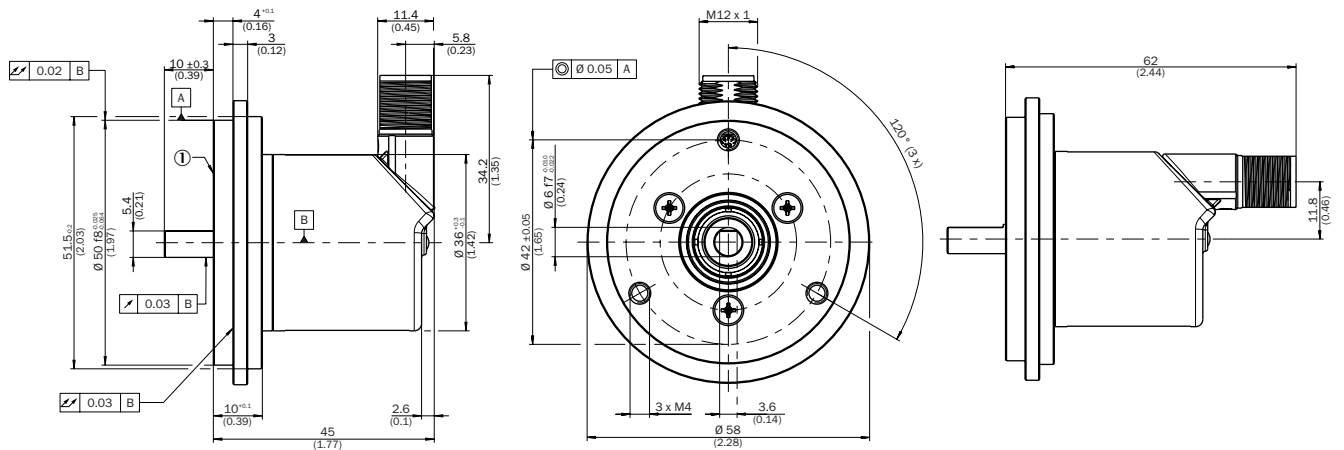
Blind hollow shaft, cable



① Measuring point for operating temperature

Attachment specifications

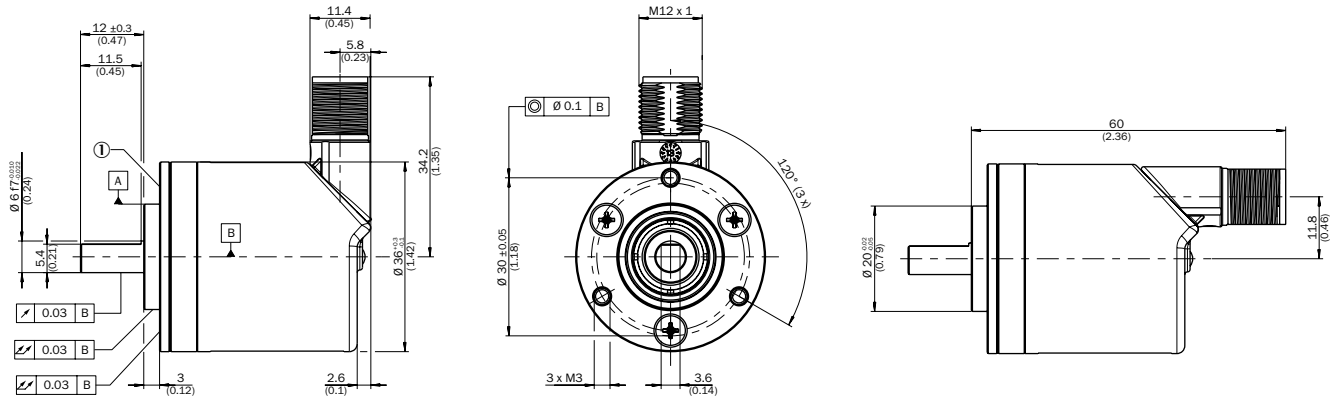
Solid shaft, face mount flange with flange adapter, centering collar D20 on D50 (BEF-FA-020-050, 2072297)



Order example for 6 mm shaft diameter: AHx36x-S3xx0xxxxx + BEF-FA-020-050 (adapter is not pre-assembled)

① Measuring point for operating temperature

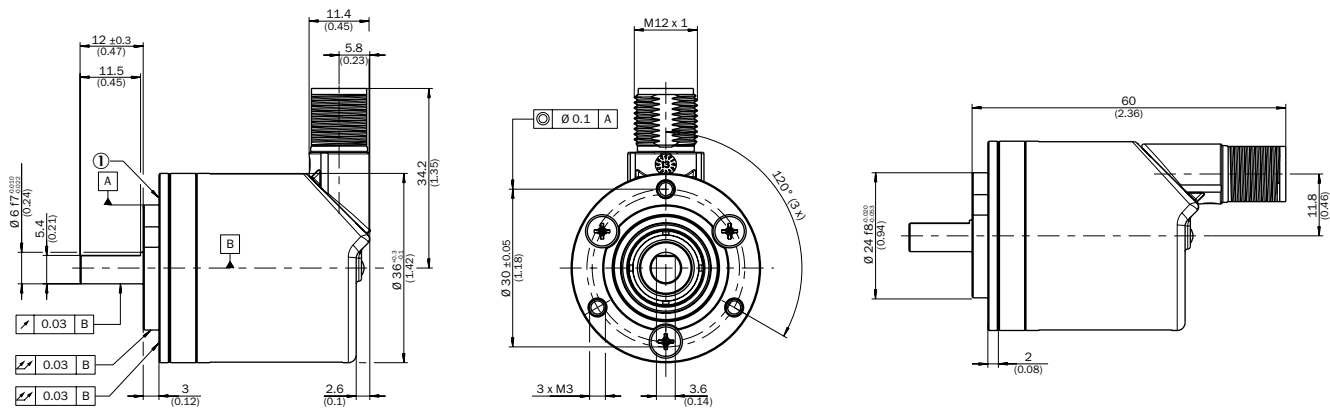
Solid shaft, face mount flange with flange adapter, centering collar D20 on D36, 2 mm high (BEF-FA-020-036-002, 2072296)



Order example for 6 mm shaft diameter: AHx36x-S3xx0xxxxx + BEF-FA-020-036-002 (adapter is not pre-assembled)

① Measuring point for operating temperature

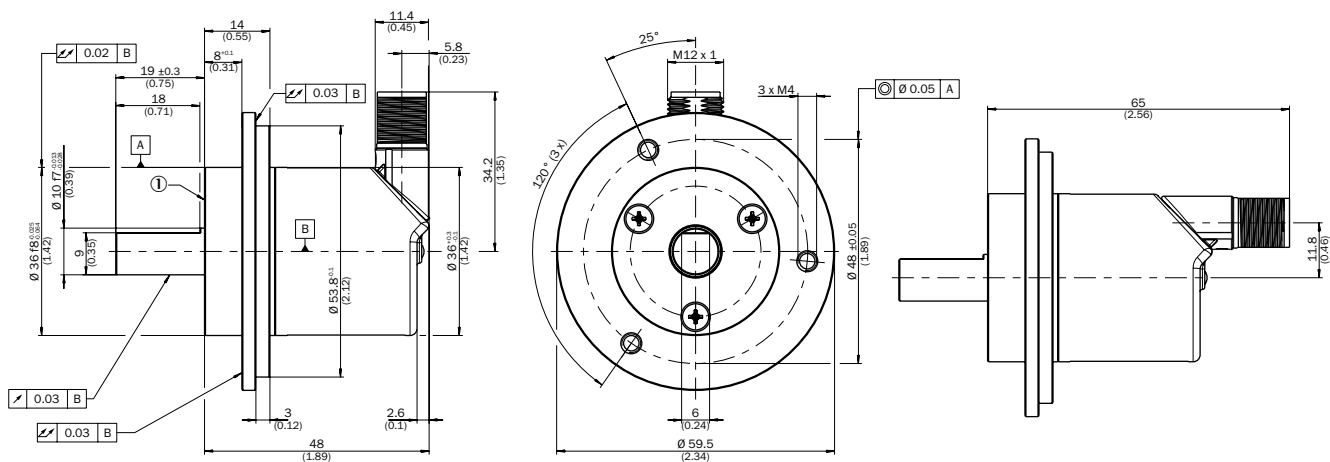
Solid shaft, face mount flange with flange adapter, centering collar D20 on D24 (BEF-FA-020-024, 2072294)



Order example for 6 mm shaft diameter: AHx36x-S3xx0xxxxx + BEF-FA-020-024 (adapter is not pre-assembled)

① Measuring point for operating temperature

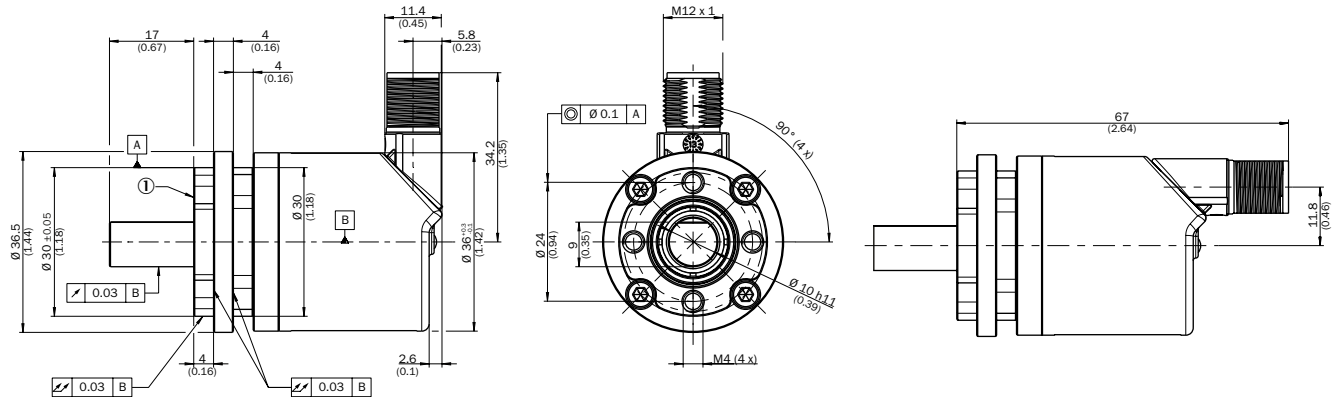
Solid shaft, face mount flange with flange adapter, centering collar D20 on D36 (BEF-FA-020-036, 2072298)



Order example for 10 mm shaft diameter: AHx36x-SCxx0xxxxx + BEF-FA-020-036 (adapter is not pre-assembled)

① Measuring point for operating temperature

Solid shaft, face mount flange with flange adapter, centering collar D20 on D30 (BEF-FA-020-030, 2072295)

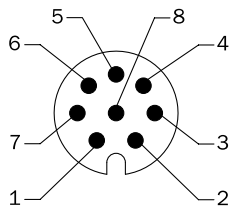


Order example for 10 mm shaft diameter: AHx36x-SCxx0xxxxx + BEF-FA-020-030 (adapter is not pre-assembled)

① Measuring point for operating temperature

PIN assignment








M12 male connector, 8-pin
and cable, 8-wire, SSI/Gray




View of M12 male device connector
on encoder

PIN	Wire colors (cable connection)	Signal	Explanation
1	Brown	Data -	Interface signals
2	White	Data +	Interface signals
3	Black	V/R	Sequence in direction of rotation
4	Pink	SET	Electronic adjustment Interface signals
5	Yellow	Clock +	Interface signals
6	Purple	Clock -	Interface signals
7	Blue	GND	Ground connection
8	Red	U _s	Operating voltage
		Screen	Screen connected to housing on encoder side. Connected to ground on control side.


Accessories**Mounting systems****Flanges****Flange plates**

Figure	Brief description	Type	Part no.
	Stator coupling on hole circle 63 mm	BEF-DS08	2072206
	Standard stator coupling, AHS/AHM36	BEF-DS16-AHX	2108615
	Flange adapter centering collar D20 to D24	BEF-FA-020-024	2072294
	Flange adapter, adapts face mount flange with 20 mm centering collar to face mount flange with 30 mm centering collar	BEF-FA-020-030	2072295
	Flange adapter, adapts face mount flange with 20 mm centering collar to 36 mm servo flange	BEF-FA-020-036	2072298
	Flange adapter centering collar D20 to D36, 2 mm high	BEF-FA-020-036-002	2072296
	Flange adapter, adapts face mount flange with 20 mm centering collar to 50mm servo flange	BEF-FA-020-050	2072297

Dimensional drawings → [page 21](#)**Mounting brackets and plates****Mounting brackets**

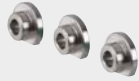
Figure	Brief description	Type	Part no.
	Mounting bracket for encoder with centering hub 20 mm, including mounting kit for face mount flange, mounting kit for face mount flange included	BEF-WF-20	2066393

Dimensional drawings → [page 24](#)**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
	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

Dimensional drawings → [page 24](#)











Servo clamps

Figure	Brief description	Type	Part no.
	Servo clamps, small, for servo flange (clamping claws, mounting eccentric), 3 pcs, without mounting hardware, without mounting hardware	BEF-WK-RESOL	2039082

Dimensional drawings → [page 24](#)

Shaft adaptation

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
	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 $\pm 2.5^\circ$; max. speed 12,000 rpm, -10° to $+80^\circ\text{C}$, max. torque 60 Ncm; material: aluminum flange, glass fiber-reinforced polyamide membrane and hardened steel coupling pin	KUP-0610-F	5312985
	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
	Bellows coupling, shaft diameter 10 mm/10 mm; maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular $\pm 4^\circ$; max. revolutions 10,000 rpm, -30° to $+120^\circ\text{C}$, max. torque 80 Ncm; material: stainless steel bellows, aluminum clamping hubs	KUP-1010-B	5312983
	Double loop coupling, shaft diameter 10 mm / 10 mm, Maximum shaft offset: radial ± 2.5 mm, axial ± 3 mm, angular $\pm 10^\circ$; max. speed 3,000 rpm, -30° to $+80^\circ\text{C}$, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange	KUP-1010-D	5326703
	Spring washer coupling, shaft diameter 10 mm / 10 mm, maximum shaft offset, radial ± 0.3 mm, axial ± 0.4 mm, angle $\pm 2.5^\circ$, torsion spring stiffness 30 Nm/rad; material: aluminum flange, glass-fiber reinforced polyamide membrane and hardened steel coupling pin	KUP-1010-F	5312986
	10 mm / 12 mm; maximum shaft offset: radial ± 0.25 mm, axial ± 0.4 mm, angular $\pm 4^\circ$; max. revolutions 10,000 rpm, -30° to $+120^\circ\text{C}$, max. torque 80 Ncm; material: stainless steel bellows, aluminum clamping hubs	KUP-1012-B	5312984
	Double loop coupling, shaft diameter 10 mm / 12 mm, Maximum shaft offset: radial ± 2.5 mm, axial ± 3 mm, angular $\pm 10^\circ$; max. speed 3,000 rpm, -30° to $+80^\circ\text{C}$, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange	KUP-1012-D	5326702

Dimensional drawings → [page 25](#)

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




Figure	Brief description	Type	Part no.
	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: Incremental, SSI, 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

Dimensional drawings → [page 25](#)

Connection cables

Figure	Brief description	Length of cable	Type	Part no.
	Head A: female connector, terminal box, 8-pin, straight Head B: male connector, D-Sub, 9-pin, straight Cable: SSI + incremental, PVC, shielded Details: programming adapter cable for programming tool PGT-10-Pro and PGT-08-S	0.5 m	DSL-0D08-G0M5AC3	2061739
	Head A: female connector, M12, 8-pin, straight Head B: male connector, D-Sub, 9-pin, straight Cable: SSI, PUR, halogen-free, shielded, 4 x 2 x 0.15 mm ² Details: suitable for use with SSI interfaces, not suitable for use with SSI + Incremental interface or SSI + Sin/Cos., programming adapter cable for programming tool PGT-10-Pro and PGT-08-S	0.5 m	DSL-2D08-G0M5AC2	2048439
	Head A: female connector, M23, 12-pin, straight Head B: male connector, D-Sub, 9-pin, straight Cable: SSI + incremental, SSI + Sin/Cos, PUR, halogen-free, shielded, 4 x 2 x 0.15 mm ² Details: programming adapter cable for programming tool PGT-10-Pro and PGT-08-S	0.5 m	DSL-3D08-G0M5AC4	2059270

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-G02	2077057
	Head A: male connector, M12, 8-pin, straight, A-coded Head B: - Cable: Incremental, shielded, CAT5, CAT5e	STE-1208-GA01	6044892

Figure	Brief description	Type	Part no.
	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 25](#)

Further accessories

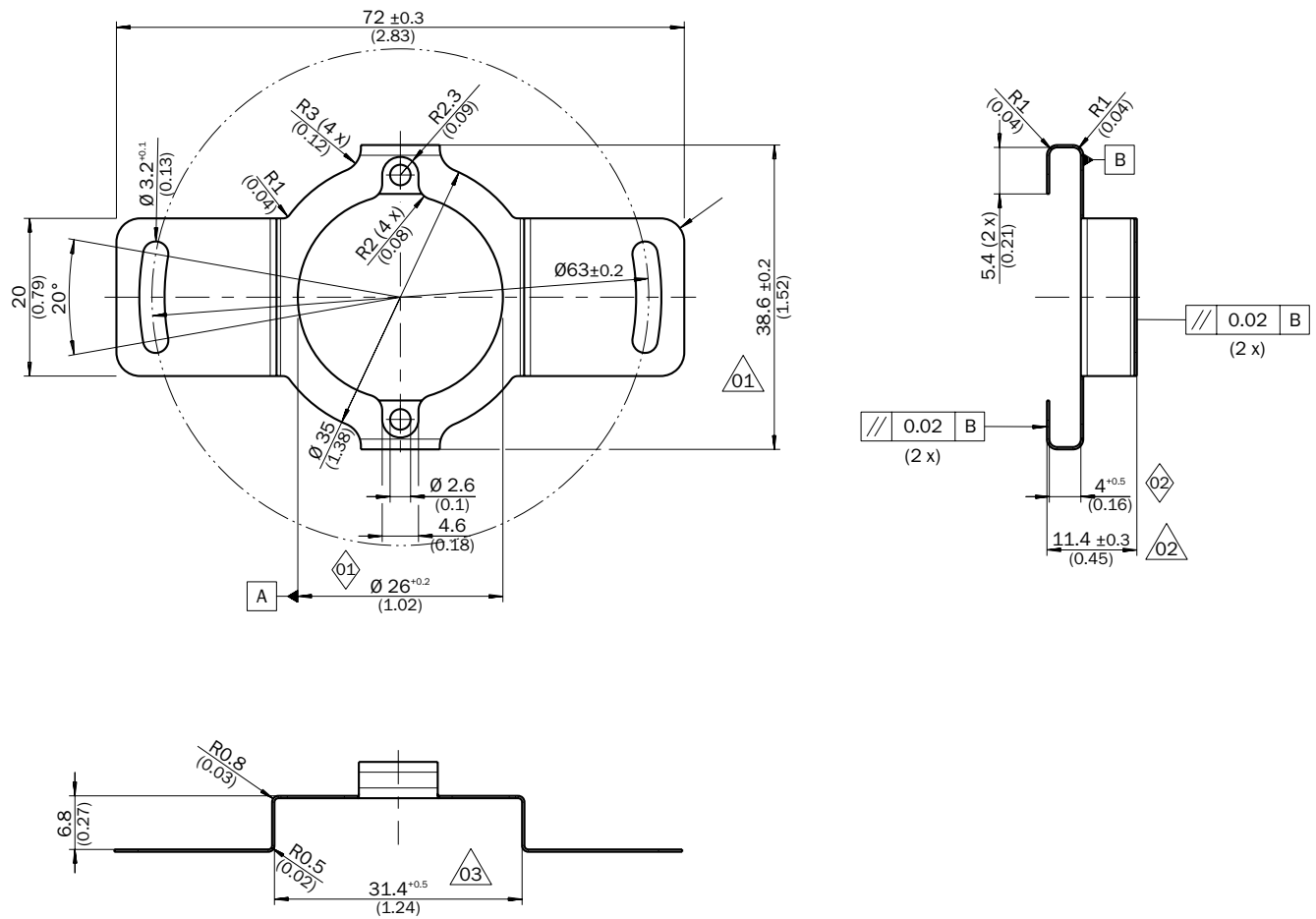
Programming and configuration tools

Figure	Brief description	Type	Part no.
	USB programming unit, for programmable SICK encoders AFS60, AFM60, DFS60, VFS60, DFV60 and wire draw encoders with programmable encoders	PGT-08-S	1036616
	Programming unit display for programmable SICK DFS60, DFV60, AFS/AFM60, AHS/AHM36 encoders, and wire draw encoder with DFS60, AFS/AFM60 and AHS/AHM36. Compact dimensions, low weight, and intuitive operation.	PGT-10-Pro	1072254

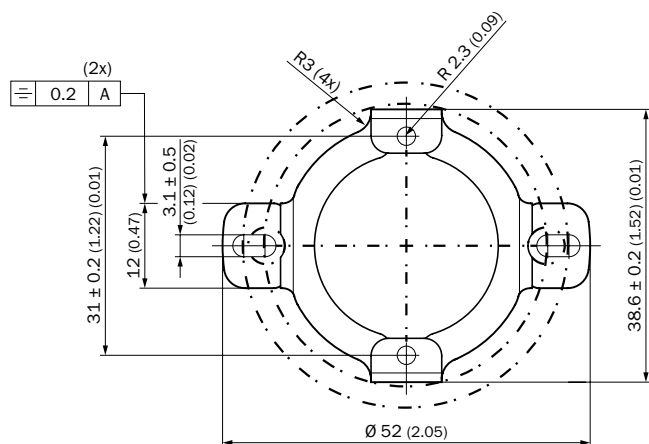
Dimensional drawings for accessories (Dimensions in mm (inch))

Flanges

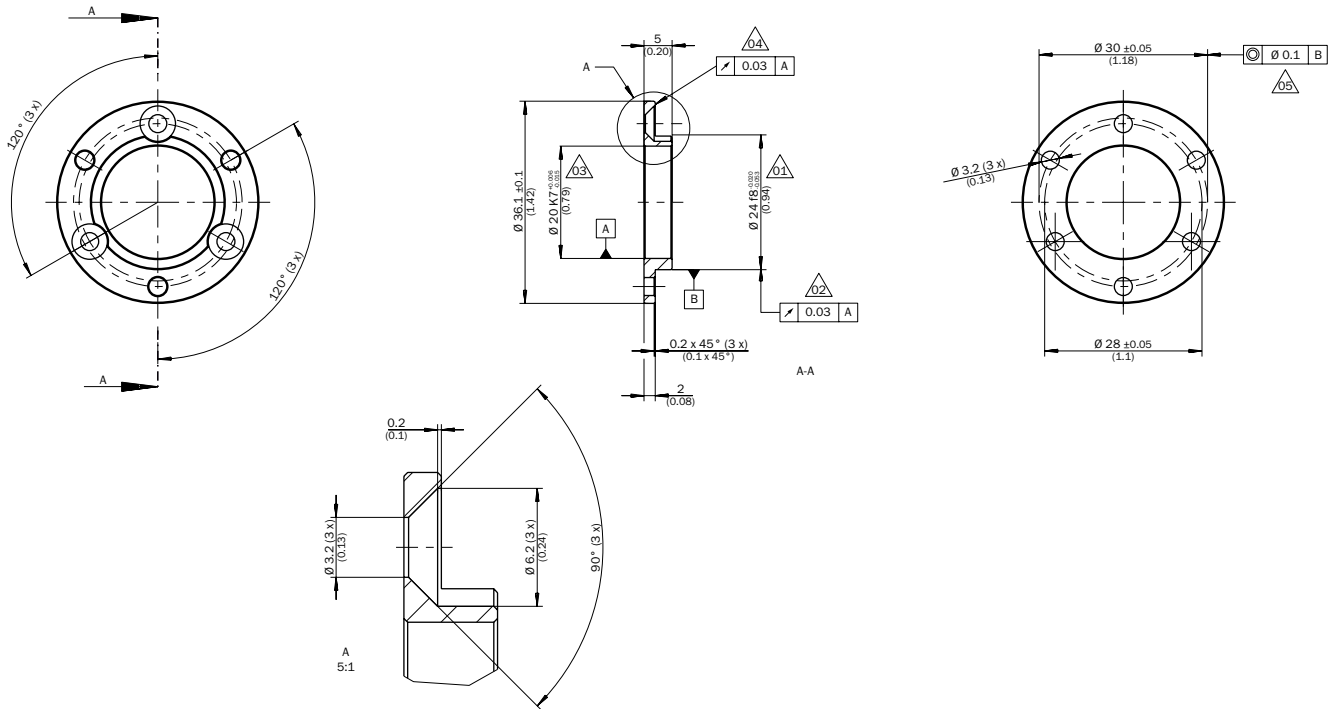
BEF-DS08



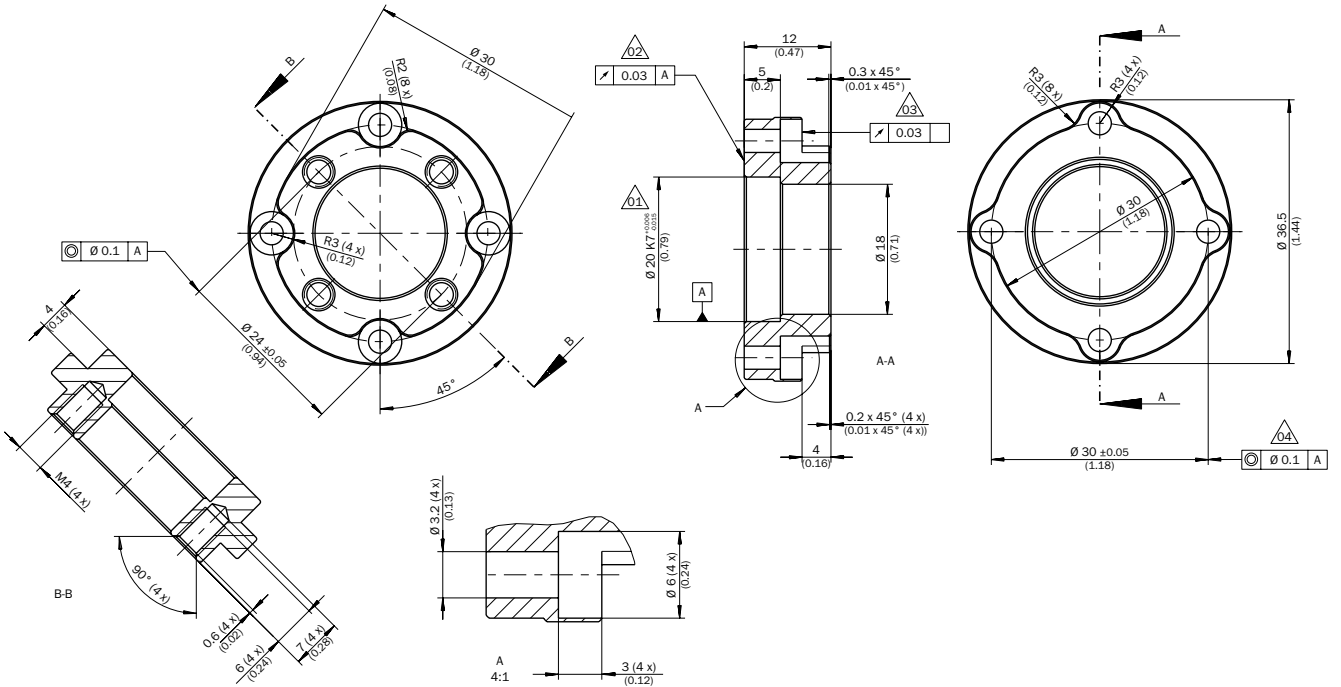
BEF-DS16-AHX



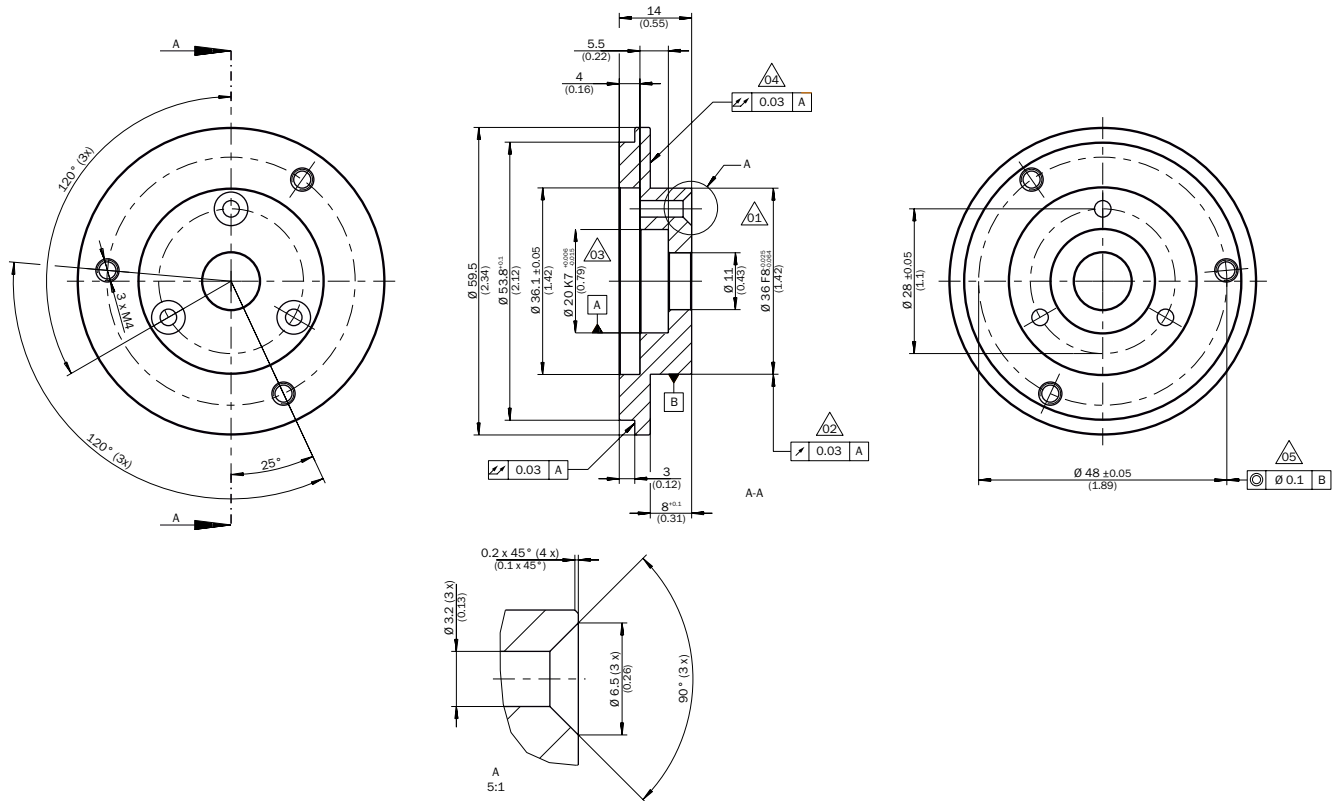
BEF-FA-020-024



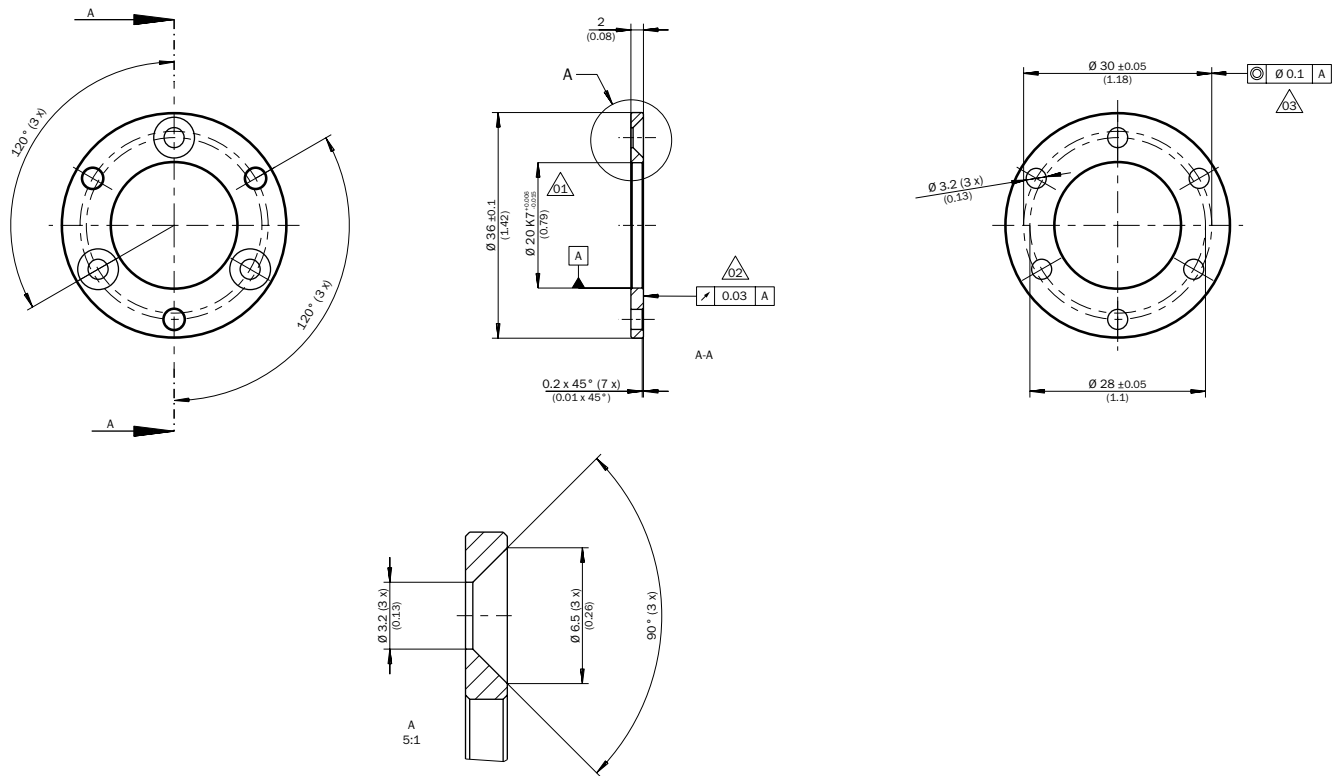
BEF-FA-020-030



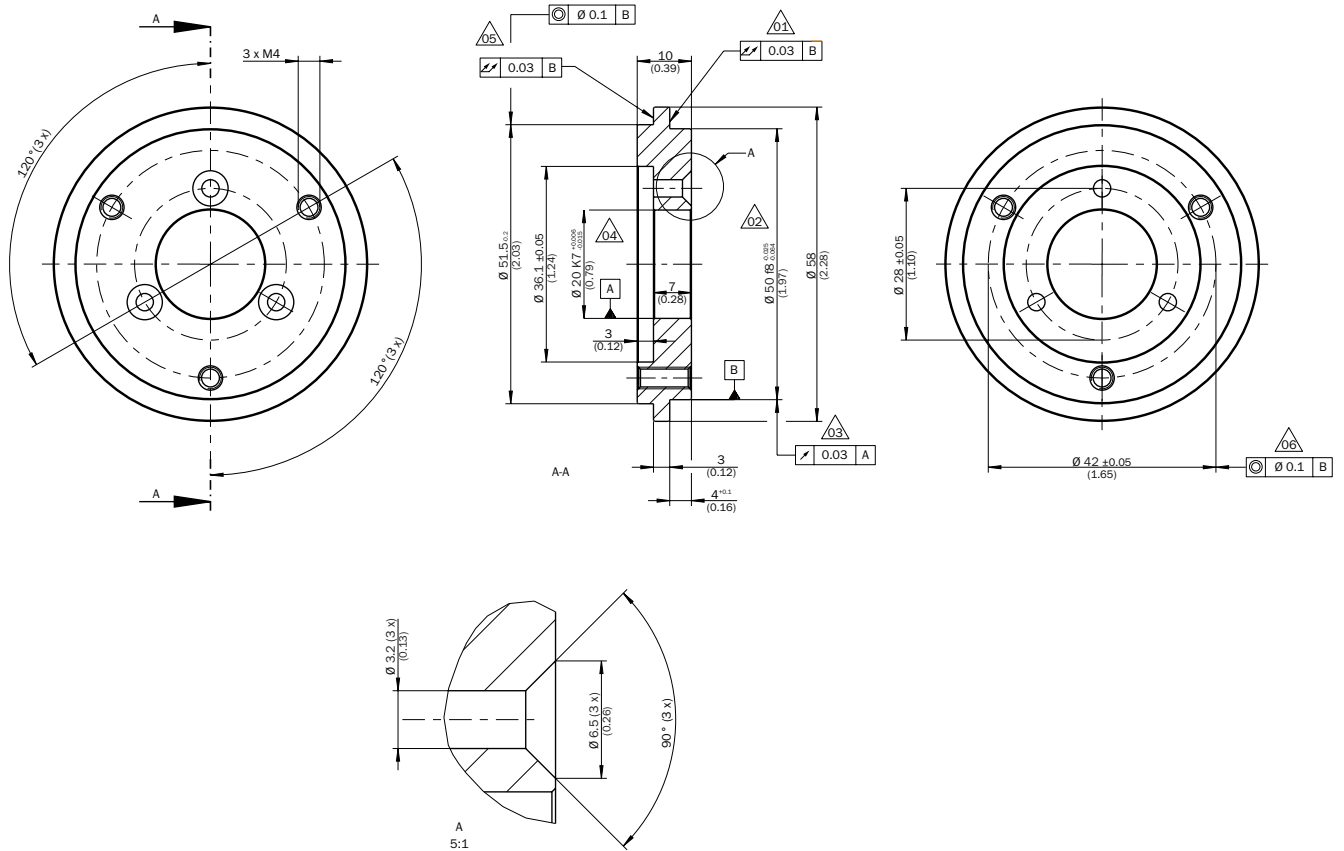
BEF-FA-020-036



BEF-FA-020-036-002

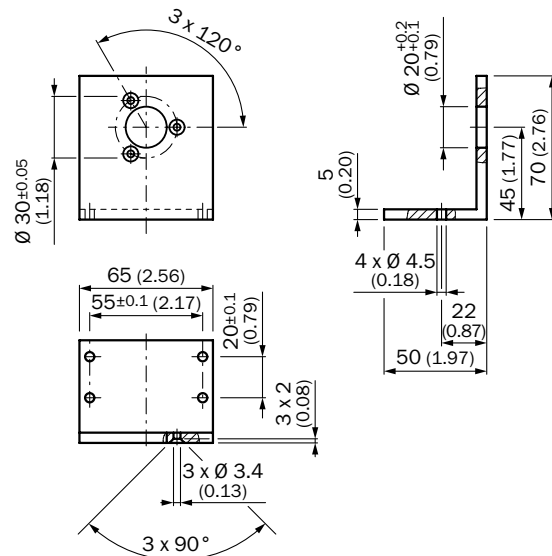


BEF-FA-020-050



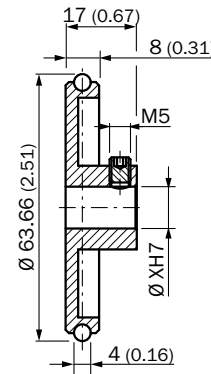
Mounting brackets and plates

BEF-WF-20

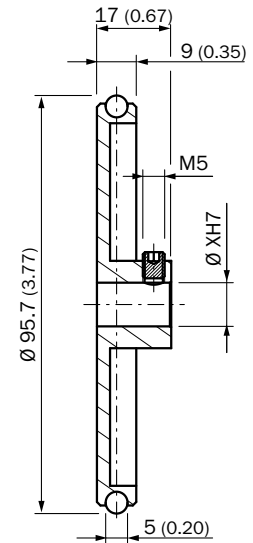


Other mounting accessories

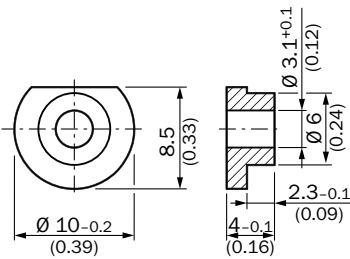
BEF-MR006020R



BEF-MR006030R



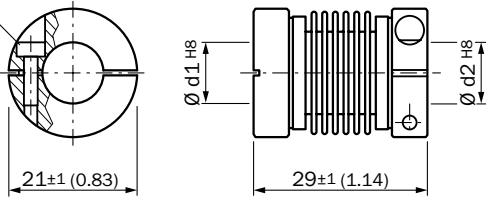
BEF-WK-RESOL



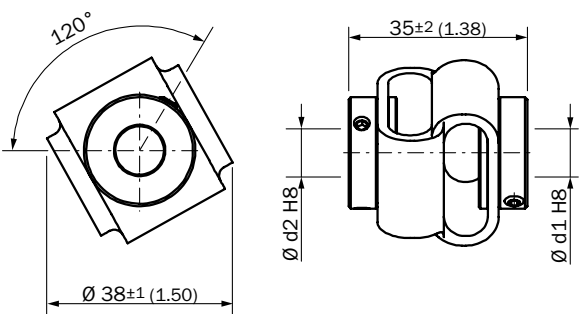
Shaft adaptation

KUP-xxxx-B

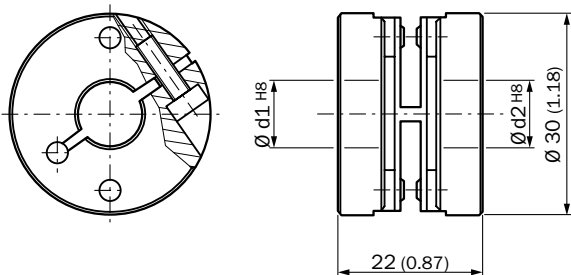
Cheese-head screw
M2.5 x 8, DIN 912 A2



KUP-xx1x-D

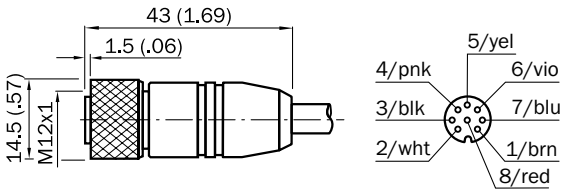


KUP-xx10-F



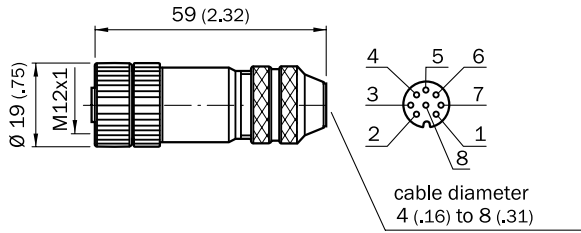
Plug connectors and cables

DOL-1208-GxxMAC1

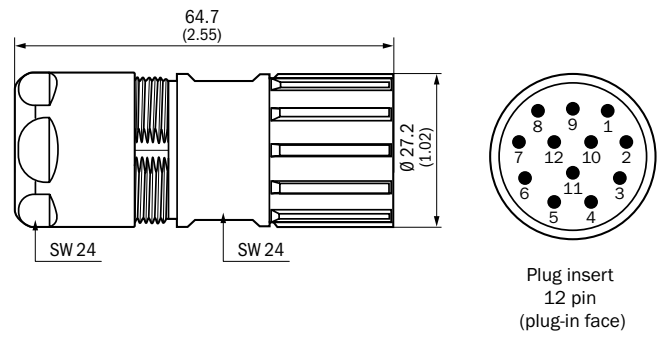


All dimensions in mm (inch)

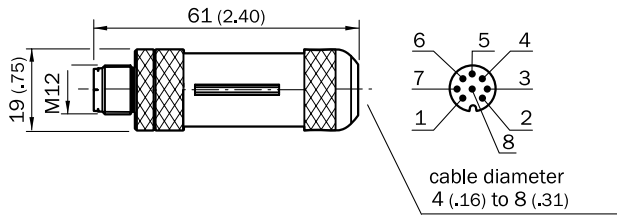
DOS-1208-GA01



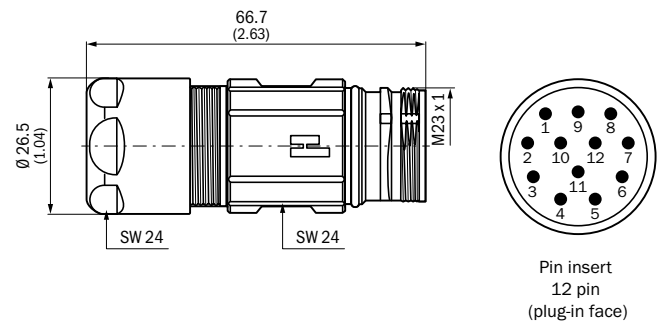
DOS-2312-G02



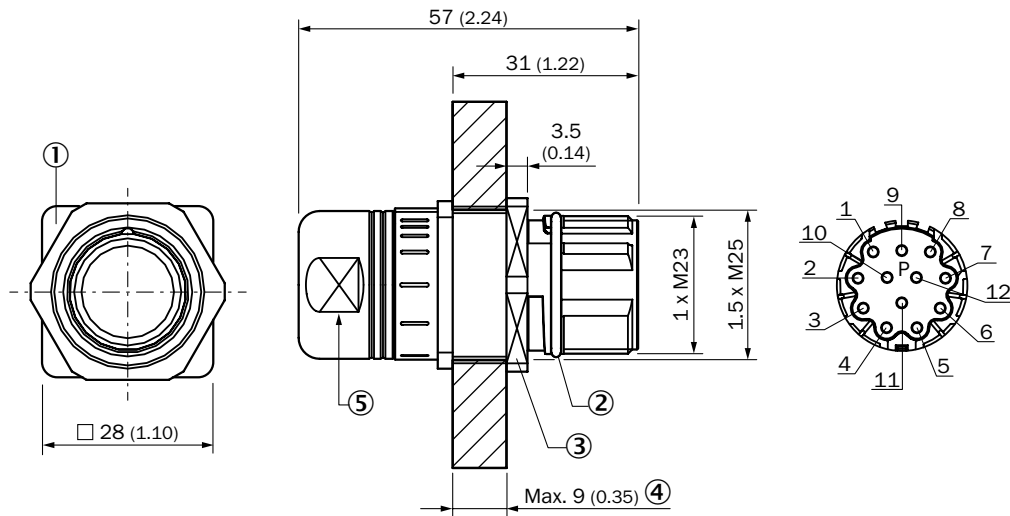
STE-1208-GA01



STE-2312-G01



STE-2312-GX



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

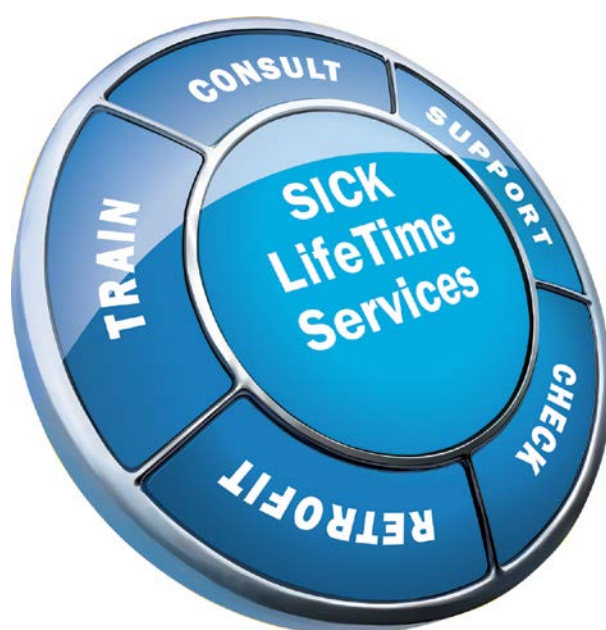
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