



AHS/AHM36 IO-Link

FLEXIBLE, SMART, COMPACT:
ENCODERS FOR COUNTLESS FIELDS OF APPLICATION

Absolute encoders

SICK
Sensor Intelligence.

FLEXIBLE, SMART, COMPACT: ENCODERS FOR COUNTLESS FIELDS OF APPLICATION



Product description

The AHS/AHM36 IO-Link absolute encoders set standards in mechanical adaptation and the range of functions. With their rotatable male connector or cable connection as well as various mounting hole patterns and adapter flanges, these encoders are suitable for nearly any application. The IO-Link interface enables economical integration into Ethernet and fieldbus networks. The configuration of the encoder can

be adjusted individually via the SOPAS engineering tool or the IO-Link master. Intelligent diagnostic functions, the monitoring of limit values, an additionally configurable input/output pin as well as smart tasks offer the user extensive added benefits. The singleturn variant features a resolution of max. 14 bits, while the multiturn variant features a resolution of max. 26 bits.

At a glance

- Compact 36 mm absolute encoder with maximum 26 bits (AHM36) or 14 bits (AHS36)
- Face mount flange, servo flange, blind hollow shaft
- Rotatable M12 male connector or cable connection
- Process data communication via IO-Link
- Configuration via IO-Link or SOPAS ET
- Enclosure rating up to IP67
- Operating temperature range -40 °C ... +85 °C

Your benefits

- Quick, easy mechanical installation due to a rotatable male connector or cable connection, various mounting hole patterns, adapter flanges and many different shafts
- Economic integration into various higher-level networks via IO-Link interface
- Easy parameterization via IO-Link master or SOPAS ET
- Intelligent diagnostic functions and limit value monitoring evaluate maintenance intervals for the entire system
- Configurable input/output pin for additional communication
- Configurable smart tasks take over functions of the higher automation level
- Rugged, reliable, fully-magnetic sensors for harsh environments
- Space-saving design for applications where space is tight



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→ www.sick.com/AHS_AHM36_IO-Link

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

Measurement of absolute position in various industries, machines and tools, e.g. packaging machines, logistics applica-

tions, machine construction or medical technology

Detailed technical data

Performance

	Singleturn	Multiturn
Number of steps per revolution (max. resolution)		
Basic	4,096 (12 bit)	–
Advanced	16,384 (14 bit)	–
Max. resolution (number of steps per revolution x number of revolutions)		
Basic	–	12 bit x 12 bit (4,096 x 4,096)
Advanced	–	14 bit x 12 bit (16,384 x 4,096)
Advanced Smart Task	–	14 bit x 12 bit (16,384 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⁾	
Advanced Smart Task	–	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	Advanced Smart Task
Communication interface	IO-Link		
Communication Interface detail	IO-Link V1.1 / COM3 (230,4 kBaud)		
Smart Sensor	Efficient communication, Enhanced Sensing	Efficient communication, Enhanced Sensing, diagnosis	Efficient communication, Enhanced Sensing, diagnosis, Smart Task
Process data	Position, speed	Position, speed, electronic cams, limit values, linear position, linear speed, errors and warnings, switching signals on pin 2	Position, speed, electronic cams, limit values, linear position, linear speed, errors and warnings, switching signals on pin 2, Length, switching signals on pin 4
Parameterising data			
Singleturn	Number of steps per revolution PRESET Counting direction Sampling rate for speed calculation Unit for output of the speed value	Number of steps per revolution PRESET Counting direction Sampling rate for speed calculation Unit for output of the speed value Electronic cams(2 channels x 8 cams) Limit values Linear measuring length per 360° Pin 2 configuration	–

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

	Basic	Advanced	Advanced Smart Task
Multiturn	Number of steps per revolution Number of revolutions PRESET Counting direction Sampling rate for speed calculation Unit for output of the speed value	Number of steps per revolution Number of revolutions PRESET Counting direction Sampling rate for speed calculation Unit for output of the speed value Round axis functionality Electronic cams(2 channels x 8 cams) Limit values Linear measuring length per 360° Pin 2 configuration	Number of steps per revolution Number of revolutions PRESET Counting direction Sampling rate for speed calculation Unit for output of the speed value Round axis functionality Electronic cams(2 channels x 8 cams) Limit values Linear measuring length per 360° Pin 2 configuration Configuration of length measurement (IO-Link mode) Configuration of length monitoring (IO-Link and SIO mode) Configuration of trigger after a defined length (SIO mode)
Available diagnostics data	-	Minimum and maximum temperature, maximum-speed, power-on counter, operatinghours counter power-on/motion, counter of direction changes/number of movements cw/number of movements ccw, minimum and maximum operating voltage, distance covered	Minimum and maximum temperature, maximum-speed, power-on counter, operatinghours counter power-on/motion, counter of direction changes/number of movements cw/number of movements ccw, minimum and maximum operating voltage, distance covered, number of trigger signals on pin 2
Status information	Via status LED		
Initialization time	2 s ¹⁾		
Cycle time	≤ 3.2 ms		
Switching input/Switching output	-	✓	
Input frequency Pin 2	-	≤ 100 Hz	
Output frequency Pin 2	-	≤ 100 Hz	
Output frequency Pin 4	-		≤ 100 Hz
Latency period	-		3.5 ms

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

Electrical data

	Basic	Advanced	Advanced Smart Task
Connection type	Male connector, M12, 4-pin, universal Cable, 4-wire, universal, 0.5 m Cable, 4-wire, universal, 1.5 m Cable, 4-wire, universal, 3 m Cable, 4-wire, universal, 5 m		
Supply voltage	18 V ... 30 V		
Power consumption	≤ 1.5 W		
Reverse polarity protection	✓		
MTTFd: mean time to dangerous failure	240 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	Advanced Smart Task
Shaft diameter			
Solid shaft, Servo flange	6 mm 8 mm 10 mm 1/4" 3/8" 6 mm ¹⁾		
Solid shaft, face mount flange	6 mm 8 mm 10 mm 1/4" 3/8" 10 mm ²⁾		
Blind hollow shaft	6 mm 8 mm 3/8" 10 mm 1/4"		
Shaft length			
Solid shaft, Servo flange	12 mm		
Solid shaft, face mount flange	12 mm 24 mm		
Weight	0.12 kg ³⁾		
Shaft material	Stainless steel		
Flange material	Aluminum		
Housing material	Zinc		
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, Servo flange	2.5 gcm ²		
Solid shaft, face mount flange	2.5 gcm ²		
Blind hollow shaft	15 gcm ²		
Bearing lifetime			
Solid shaft, Servo flange	3.6 x 10 ⁸ revolutions		
Solid shaft, face mount 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, Solid shaft, Servo flange	≤ 9,000 min ⁻¹	≤ 6,000 min ⁻¹	-
Multiturn, Solid shaft, Servo flange	≤ 6,000 min ⁻¹		
Singleturn, Solid shaft, face mount flange	≤ 9,000 min ⁻¹	≤ 6,000 min ⁻¹	-
Multiturn, Solid shaft, face mount flange	≤ 6,000 min ⁻¹		

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

²⁾ For use with the adapters 2072298 and 2072295.

³⁾ Relates to devices with male connector connection.

	Basic	Advanced	Advanced Smart Task
Singleturn, blind hollow shaft	≤ 9,000 min ⁻¹	≤ 6,000 min ⁻¹	-
Multiturn, blind hollow shaft	≤ 6,000 min ⁻¹		

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

²⁾ For use with the adapters 2072298 and 2072295.

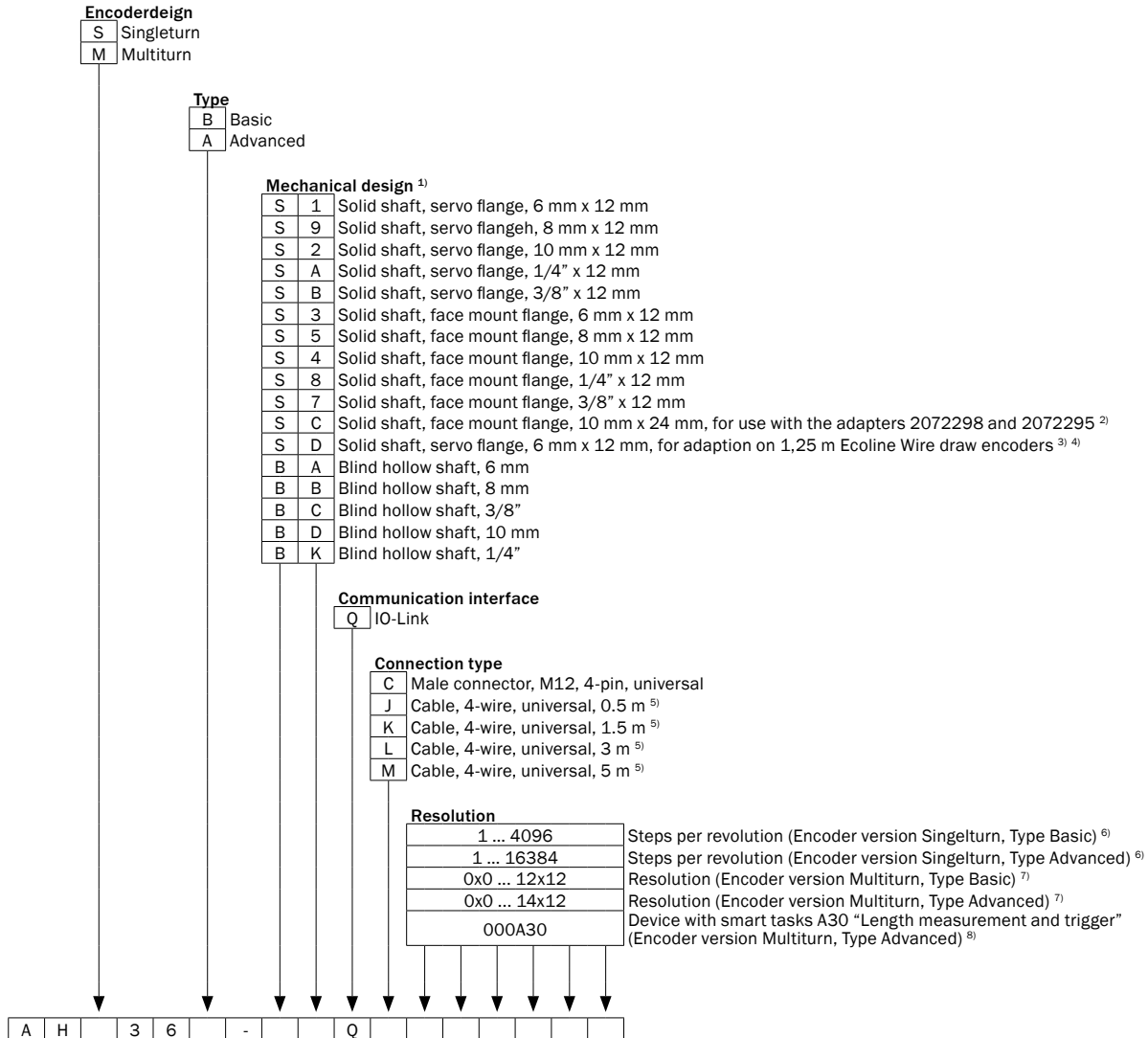
³⁾ Relates to devices with male connector connection.

Ambient data

	Basic	Advanced	Advanced Smart Task
EMC	According to EN 61000-6-2, EN 61000-6-3 and EN 61131-9		
Enclosure rating	IP65 (IEC 60529)	IP66 (IEC 60529) IP67 (IEC 60529)	
Permissible relative humidity	90 % (Condensation not permitted)		
Operating temperature range	-20 °C ... +70 °C	-40 °C ... +85 °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

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⁾ Steps per revolution programmable via control unit or via SOPAS.
⁷⁾ Resolution programmable via control unit or via SOPAS.
⁸⁾ IO-Link Advanced device with additional smart task functionality, only available for multiturn versions.

Ordering information

Singleturn, Solid shaft, Servo flange

- **Communication Interface detail:** IO-Link V1.1 / COM3 (230,4 kBaud)
- **Shaft length:** 12 mm
- **Programmable/configurable:** ✓

Shaft diameter	Connection type	Number of steps per revolution	Type	Part no.
6 mm	Cable, 4-wire, universal, 0.5 m	16,384 (14 bit)	AHS36A-S1QJ016384	1101560
		4,096 (12 bit)	AHS36B-S1QJ004096	1092344
	Male connector, M12, 4-pin, universal	16,384 (14 bit)	AHS36A-S1QC016384	1101565
8 mm	Male connector, M12, 4-pin, universal	16,384 (14 bit)	AHS36A-S9QC016384	1101570
10 mm	Cable, 4-wire, universal, 1.5 m	4,096 (12 bit)	AHS36B-S2QK004096	1107680
	Cable, 4-wire, universal, 5 m	16,384 (14 bit)	AHS36A-S2QM016384	1101569

Multiturn, Solid shaft, Servo flange

- **Communication Interface detail:** IO-Link V1.1 / COM3 (230,4 kBaud)
- **Shaft length:** 12 mm
- **Programmable/configurable:** ✓

Shaft diameter	Connection type	Max. resolution	Smart Task name	Type	Part no.
6 mm	Cable, 4-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S1QJ012x12	1092060
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S1QJ014x12	1101555
	Cable, 4-wire, universal, 1.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S1QK012x12	1092061
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S1QK014x12	1101556
	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S1QC012x12	1092009
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S1QC014x12	1101481
8 mm	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S9QC012x12	1092010
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S9QC014x12	1101482
		Length measurement and trigger	AHM36A-S9QC000A30	1108589	
10 mm	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S2QC012x12	1092011
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S2QC014x12	1101483
		Length measurement and trigger	AHM36A-S2QC000A30	1108590	
1/4"	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-SAQC012x12	1092012
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-SAQC014x12	1101484
		Length measurement and trigger	AHM36A-SAQC000A30	1108591	
3/8"	Cable, 4-wire, universal, 3 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-SBQL012x12	1100665
	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-SBQC012x12	1092013
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-SBQC014x12	1101485
		Length measurement and trigger	AHM36A-SBQC000A30	1108592	
6 mm ¹⁾	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-SDQC012x12	1092035
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-SDQC014x12	1101538
		Length measurement and trigger	AHM36A-SDQC000A30	1108599	

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

Singleturn, Solid shaft, face mount flange

- **Communication Interface detail:** IO-Link V1.1 / COM3 (230,4 kBaud)
- **Programmable/configurable:** ✓

Shaft diameter	Shaft length	Connection type	Number of steps per revolution	Type	Part no.	
6 mm	12 mm	Cable, 4-wire, universal, 0.5 m	16,384 (14 bit)	AHS36A-S3QJ016384	1101559	
			4,096 (12 bit)	AHS36B-S3QJ004096	1092343	
		Cable, 4-wire, universal, 1.5 m	16,384 (14 bit)	AHS36A-S3QK016384	1101567	
			16,384 (14 bit)	AHS36A-S3QC016384	1101573	
		Male connector, M12, 4-pin, universal	4,096 (12 bit)	AHS36B-S3QC004096	1093084	
			4,096 (12 bit)	AHS36B-S5QC004096	1100069	
8 mm	12 mm	Male connector, M12, 4-pin, universal	4,096 (12 bit)	AHS36B-S5QC004096	1100069	
			Cable, 4-wire, universal, 5 m	4,096 (12 bit)	AHS36B-S4QM004096	1100667
				16,384 (14 bit)	AHS36A-S4QC016384	1101572
10 mm	12 mm	Male connector, M12, 4-pin, universal	4,096 (12 bit)	AHS36B-S4QC004096	1093083	
			4,096 (12 bit)	AHS36B-S7QC004096	1100668	
3/8"	12 mm	Male connector, M12, 4-pin, universal	4,096 (12 bit)	AHS36B-S7QC004096	1100668	
10 mm ¹⁾	24 mm	Male connector, M12, 4-pin, universa	16,384 (14 bit)	AHS36A-SCQC016384	1110131	

¹⁾ For use with the adapters 2072298 and 2072295.

Multiturn, Solid shaft, face mount flange

- **Communication Interface detail:** IO-Link V1.1 / COM3 (230,4 kBaud)
- **Programmable/configurable:** ✓

Shaft diameter	Shaft length	Connection type	Max. resolution	Smart Task name	Type	Part no.		
6 mm	12 mm	Cable, 4-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S3QJ012x12	1092056		
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S3QJ014x12	1101545		
		Cable, 4-wire, universal, 1.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S3QK012x12	1092057		
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S3QK014x12	1101547		
		Cable, 4-wire, universal, 3 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S3QL012x12	1092058		
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S3QL014x12	1101548		
		Cable, 4-wire, universal, 5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S3QM012x12	1092059		
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S3QM014x12	1101549		
		Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S3QC012x12	1092014		
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S3QC014x12	1101532		
		8 mm	12 mm	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S5QC012x12	1092016
					14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S5QC014x12	1101533
					Length measurement and trigger	AHM36A-S5QC000A30	1108594	

¹⁾ For use with the adapters 2072298 and 2072295.

Shaft diameter	Shaft length	Connection type	Max. resolution	Smart Task name	Type	Part no.
10 mm	12 mm	Cable, 4-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S4QJ012x12	1107739
		Cable, 4-wire, universal, 1.5 m	14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S4QK014x12	1101576
		Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S4QC012x12	1092017
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S4QC014x12	1101534
			Length measurement and trigger	AHM36A-S4QC000A30	1108595	
1/4"	12 mm	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S8QC012x12	1092030
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S8QC014x12	1101535
			Length measurement and trigger	AHM36A-S8QC000A30	1108596	
3/8"	12 mm	Cable, 4-wire, universal, 3 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S7QL012x12	1100664
		Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-S7QC012x12	1092032
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-S7QC014x12	1101536
			Length measurement and trigger	AHM36A-S7QC000A30	1108597	
		10 mm ¹⁾	24 mm	Cable, 4-wire, universal, 5 m	12 bit x 12 bit (4,096 x 4,096)	-
Male connector, M12, 4-pin, universal	14 bit x 12 bit (16,384 x 4,096)			-	AHM36A-SCQM014x12	1114530
	12 bit x 12 bit (4,096 x 4,096)			-	AHM36B-SCQC012x12	1092033
	14 bit x 12 bit (16,384 x 4,096)			-	AHM36A-SCQC014x12	1101537
Length measurement and trigger	AHM36A-SCQC000A30			1108598		

¹⁾ For use with the adapters 2072298 and 2072295.

Singleturn, Blind hollow shaft

- **Communication Interface detail:** IO-Link V1.1 / COM3 (230,4 kBaud)
- **Programmable/configurable:** ✓

Shaft diameter	Connection type	Number of steps per revolution	Type	Part no.
6 mm	Cable, 4-wire, universal, 5 m	4,096 (12 bit)	AHS36B-BAQM004096	1106438
	Male connector, M12, 4-pin, universal	16,384 (14 bit)	AHS36A-BAQC016384	1101571
		4,096 (12 bit)	AHS36B-BAQC004096	1093082
8 mm	Cable, 4-wire, universal, 0.5 m	16,384 (14 bit)	AHS36A-BBQJ016384	1101557
		4,096 (12 bit)	AHS36B-BBQJ004096	1092342
	Cable, 4-wire, universal, 1.5 m	16,384 (14 bit)	AHS36A-BBQK016384	1101563
	Cable, 4-wire, universal, 5 m	4,096 (12 bit)	AHS36B-BBQM004096	1100152
	Male connector, M12, 4-pin, universal	4,096 (12 bit)	AHS36B-BBQC004096	1101237
		16,384 (14 bit)	AHS36A-BDQJ016384	1101558
10 mm	Cable, 4-wire, universal, 0.5 m	4,096 (12 bit)	AHS36B-BDQJ004096	1092341
		16,384 (14 bit)	AHS36A-BDQK016384	1101566
	Cable, 4-wire, universal, 1.5 m	16,384 (14 bit)	AHS36A-BDQC016384	1101564
	Male connector, M12, 4-pin, universal	16,384 (14 bit)	AHS36A-BDQC004096	1093075
		4,096 (12 bit)	AHS36B-BDQC004096	1093075
3/8"	Male connector, M12, 4-pin, universal	16,384 (14 bit)	AHS36A-BCQC016384	1101568

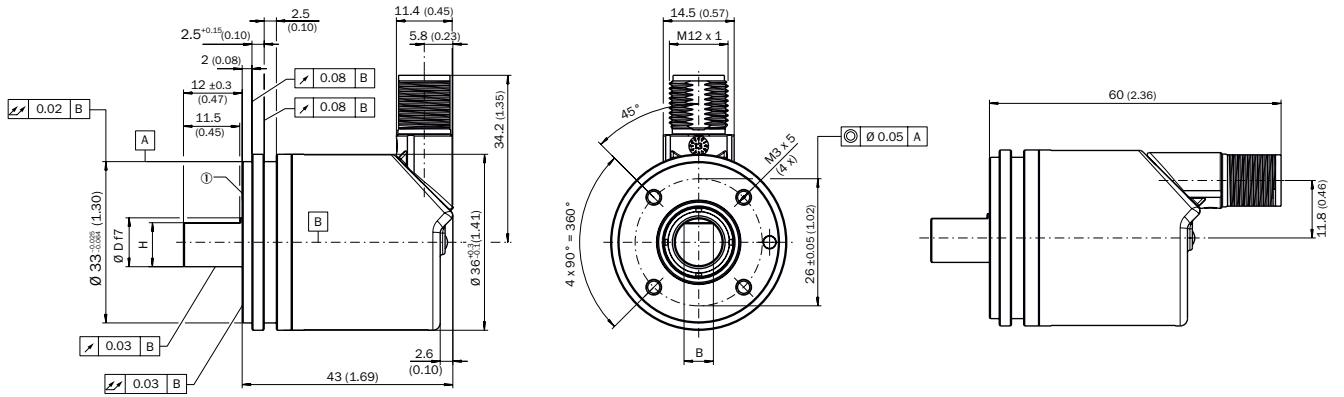
Multiturn, Blind hollow shaft

- **Communication Interface detail:** IO-Link V1.1 / COM3 (230,4 kBaud)
- **Programmable/configurable:** ✓

Shaft diameter	Connection type	Max. resolution	Smart Task name	Type	Part no.	
6 mm	Cable, 4-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BAQJ012x12	1096746	
	Cable, 4-wire, universal, 1.5 m	14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-BAQK014x12	1101574	
	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BAQC012x12	1091991	
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-BAQC014x12	1101476	
			Length measurement and trigger	AHM36A-BAQC000A30	1108583	
8 mm	Cable, 4-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BBQJ012x12	1092038	
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-BBQJ014x12	1101539	
	Cable, 4-wire, universal, 1.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BBQK012x12	1092049	
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-BBQK014x12	1101540	
	Cable, 4-wire, universal, 3 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BBQL012x12	1092051	
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-BBQL014x12	1101541	
	Cable, 4-wire, universal, 5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BBQM012x12	1092053	
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-BBQM014x12	1101542	
	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BBQC012x12	1092004	
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-BBQC014x12	1101477	
			Length measurement and trigger	AHM36A-BBQC000A30	1108584	
	10 mm	Cable, 4-wire, universal, 0.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BDQJ012x12	1092054
			14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-BDQJ014x12	1101543
		Cable, 4-wire, universal, 1.5 m	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BDQK012x12	1092055
14 bit x 12 bit (16,384 x 4,096)			-	AHM36A-BDQK014x12	1101544	
Cable, 4-wire, universal, 3 m		12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BDQL012x12	1104896	
Cable, 4-wire, universal, 5 m		12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BDQM012x12	1104293	
Male connector, M12, 4-pin, universal		12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BDQC012x12	1092007	
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-BDQC014x12	1101479	
			Length measurement and trigger	AHM36A-BDQC000A30	1108586	
1/4"		Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BKQC012x12	1092008
	14 bit x 12 bit (16,384 x 4,096)		-	AHM36A-BKQC014x12	1101480	
			Length measurement and trigger	AHM36A-BKQC000A30	1108587	
3/8"	Male connector, M12, 4-pin, universal	12 bit x 12 bit (4,096 x 4,096)	-	AHM36B-BCQC012x12	1092006	
		14 bit x 12 bit (16,384 x 4,096)	-	AHM36A-BCQC014x12	1101478	
			Length measurement and trigger	AHM36A-BCQC000A30	1108585	

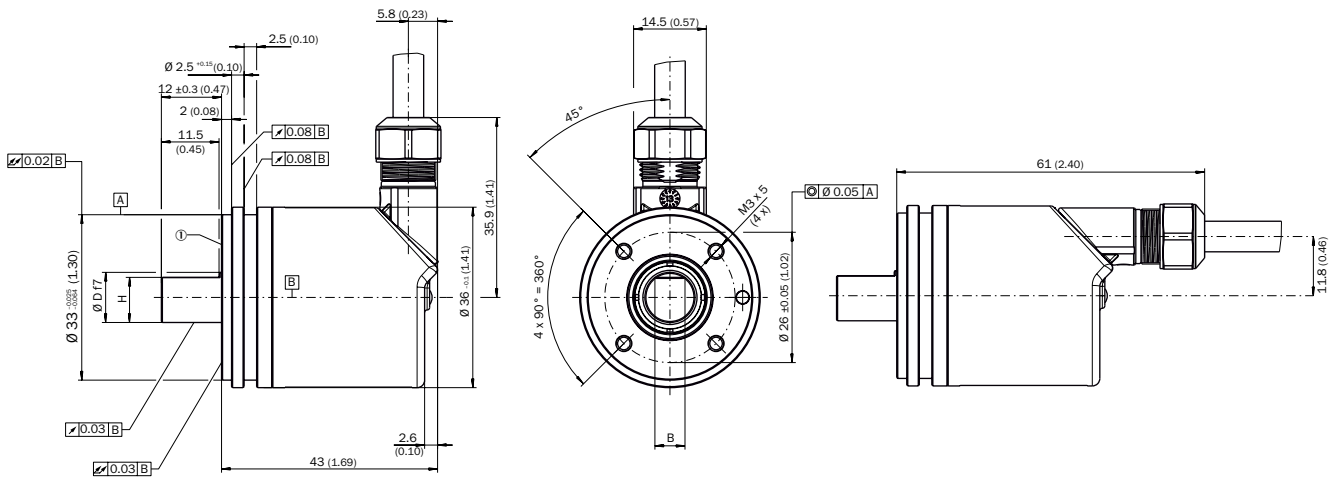
Dimensional drawings (Dimensions in mm (inch))

Solid shaft, servo flange, male connector



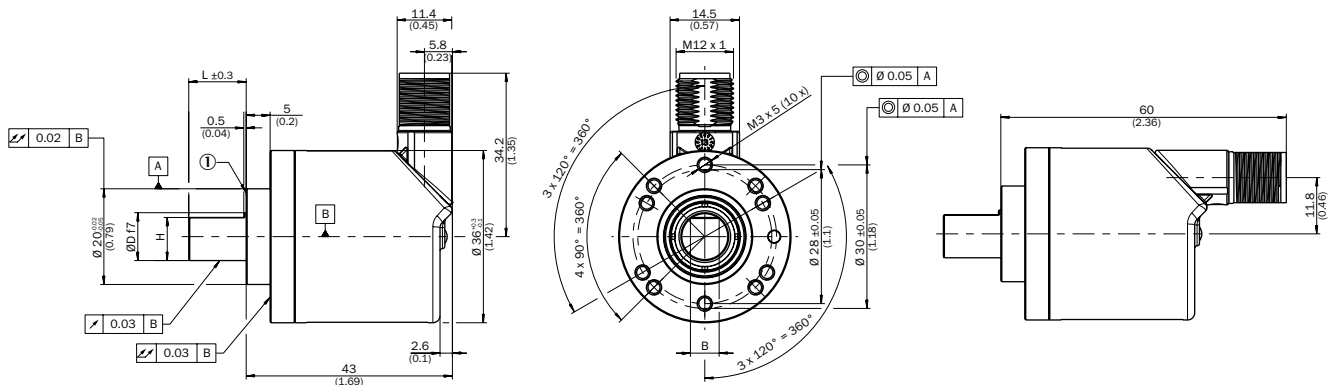
① Measuring point for operating temperature

Solid shaft, servo flange, cable



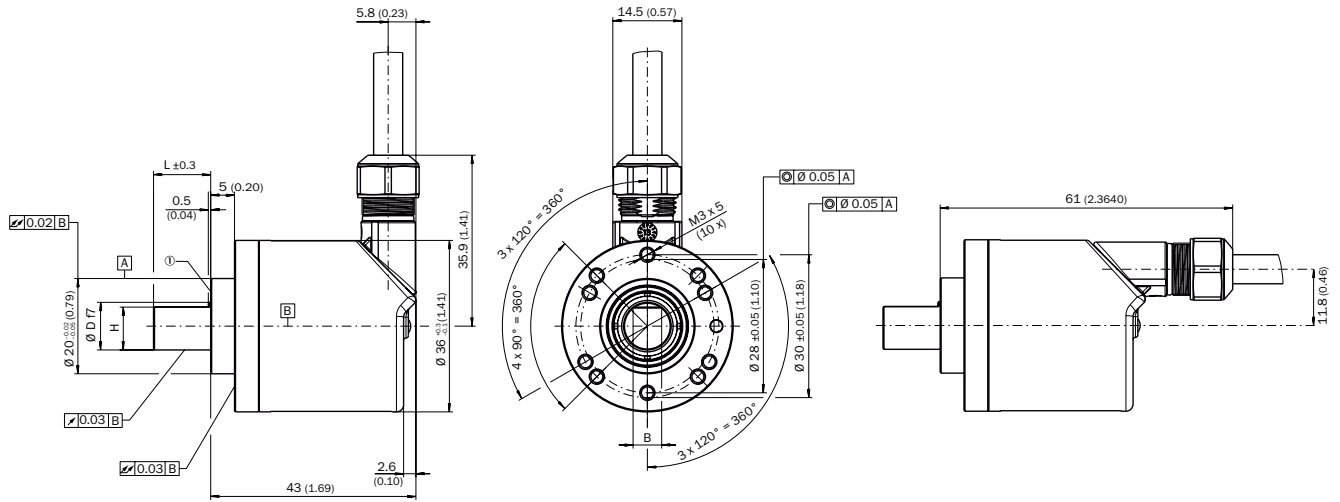
① Measuring point for operating temperature

Solid shaft, face mount flange, male connector



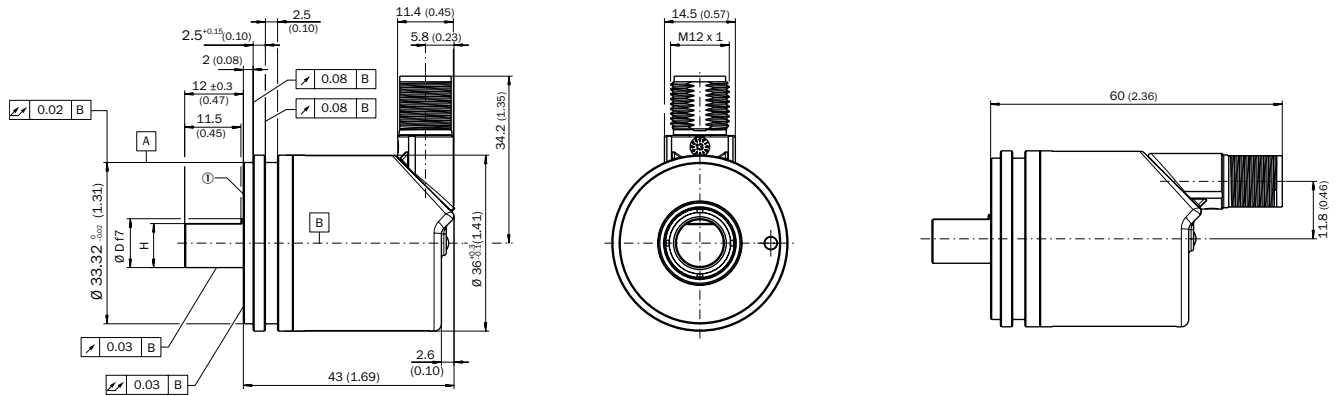
① Measuring point for operating temperature

Solid shaft, face mount flange, cable



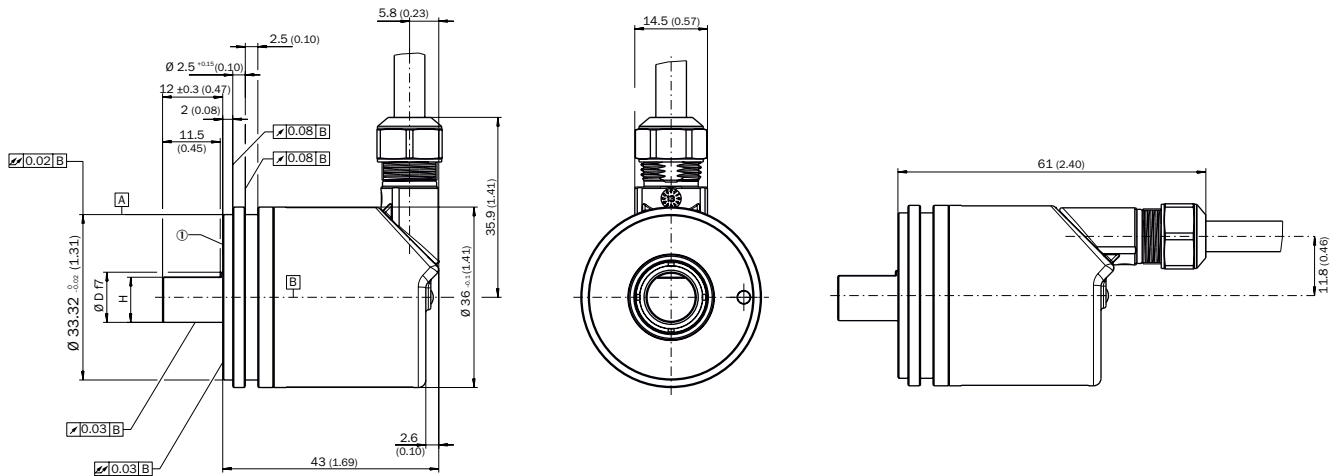
① Measuring point for operating temperature

Solid shaft, servo flange, male connector, for adaption on 1,25 m Ecoline Wire draw encoders



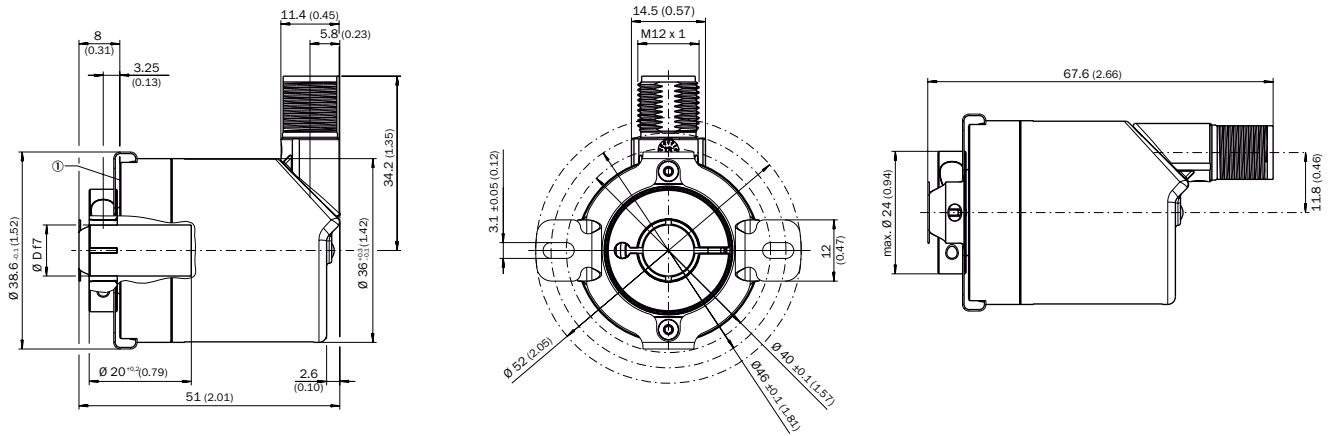
① Measuring point for operating temperature

Solid shaft, servo flange, cable, for adaption on 1,25 m Ecoline Wire draw encoders



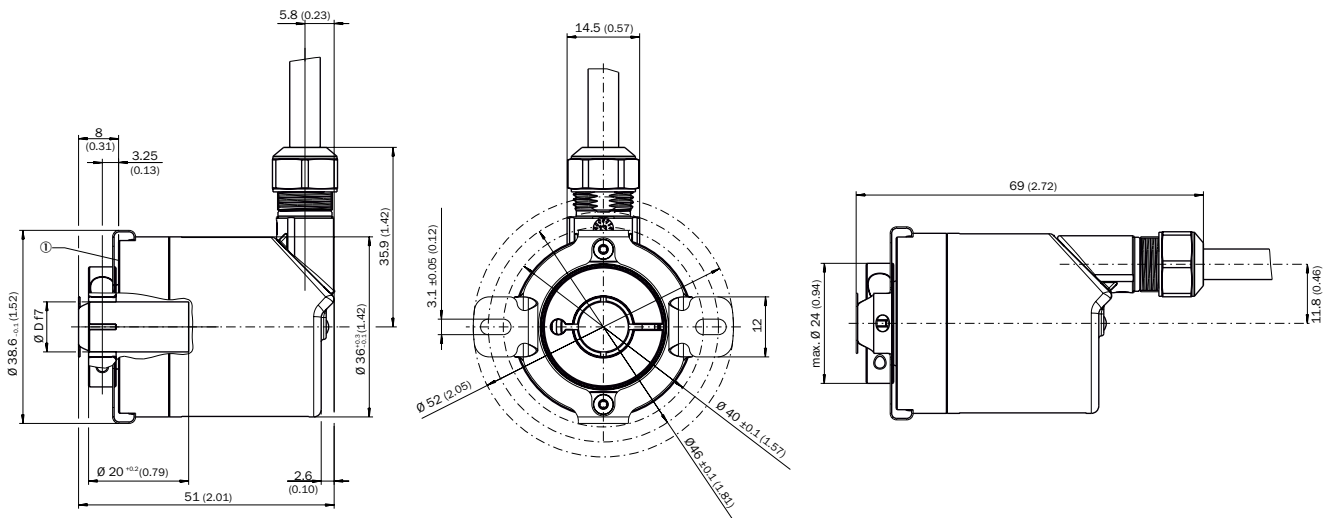
① Measuring point for operating temperature

Blind hollow shaft, male connector



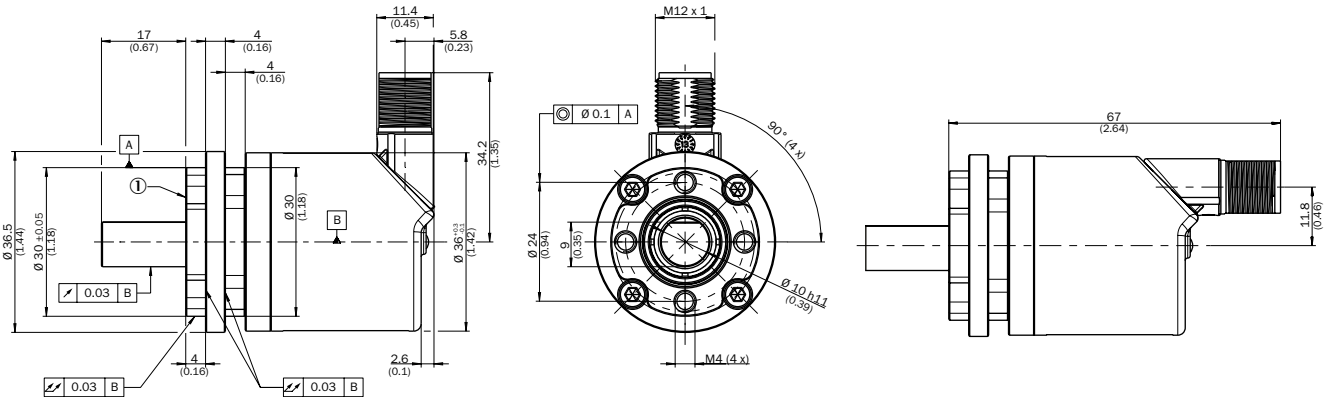
① Measuring point for operating temperature

Blind hollow shaft, cable



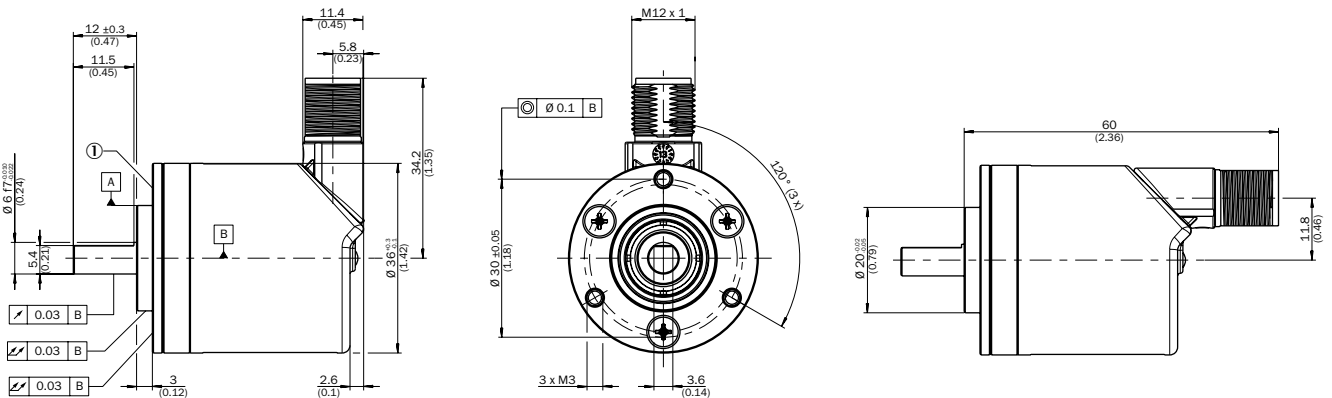
① Measuring point for operating temperature

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



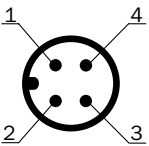
Order example for 10 mm shaft diameter: AHx36x-SCxx0xxxxx + BEF-FA-020-030 (adapter is not pre-assembled)

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)

PIN assignment




PIN	Wire color	Signal	Function		
			Basic	Advanced	Advanced Smart Task
1	Brown	L+	Encoder supply voltage 18-30 V (+Us)		
2	White	I/Q	Not connected - no function	Multifunctional pin (configurable as switching input or switching output)	
3	Blue	L-	Encoder supply voltage 0 V (GND)		
4	Black	C/Q	IO-Link communication		
					Switching output (SIO mode)


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 20](#)**Mounting brackets and plates****Mounting brackets**

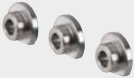
Figure	Brief description	Type	Part no.
	Mounting bracket for encoder with centering hub 20 mm, including mounting kit for face mount flange, mounting kit for face mount flange included	BEF-WF-20	2066393

Dimensional drawings → [page 23](#)**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 23](#)







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 23](#)

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
	Double-loop coupling, shaft diameter 6 mm / 6 mm, maximum shaft offset: radial ± 2.5 mm, axial ± 3 mm, angular $\pm 10^\circ$; max. speed 3,000 rpm, -30°C to $+80^\circ\text{C}$, max. torque 1.5 Nm; material: polyurethane, galvanized steel flange	KUP-0606-D	5340152
	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 24](#)

Connection systems

Modules and gateways


Connection modules

Figure	Brief description	Type	Part no.
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A	IOLA2US-01101 (SiLink2 Master)	1061790

Dimensional drawings → [page 24](#)


Plug connectors and cables

Connecting cables

Figure	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 0.34 mm ² , 4.5 mm	2 m	YF2A14-020UB3X-LEAX	2095607
		5 m	YF2A14-050UB3X-LEAX	2095608
		10 m	YF2A14-100UB3X-LEAX	2095609

Dimensional drawings → [page 25](#)

Connection cables

Figure	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: male connector, M12, 4-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 0.34 mm ² , 4.5 mm	2 m	YF2A14-020UB-3M2A14	2096000
		5 m	YF2A14-050UB-3M2A14	2096001
		10 m	YF2A14-100UB-3M2A14	2096002

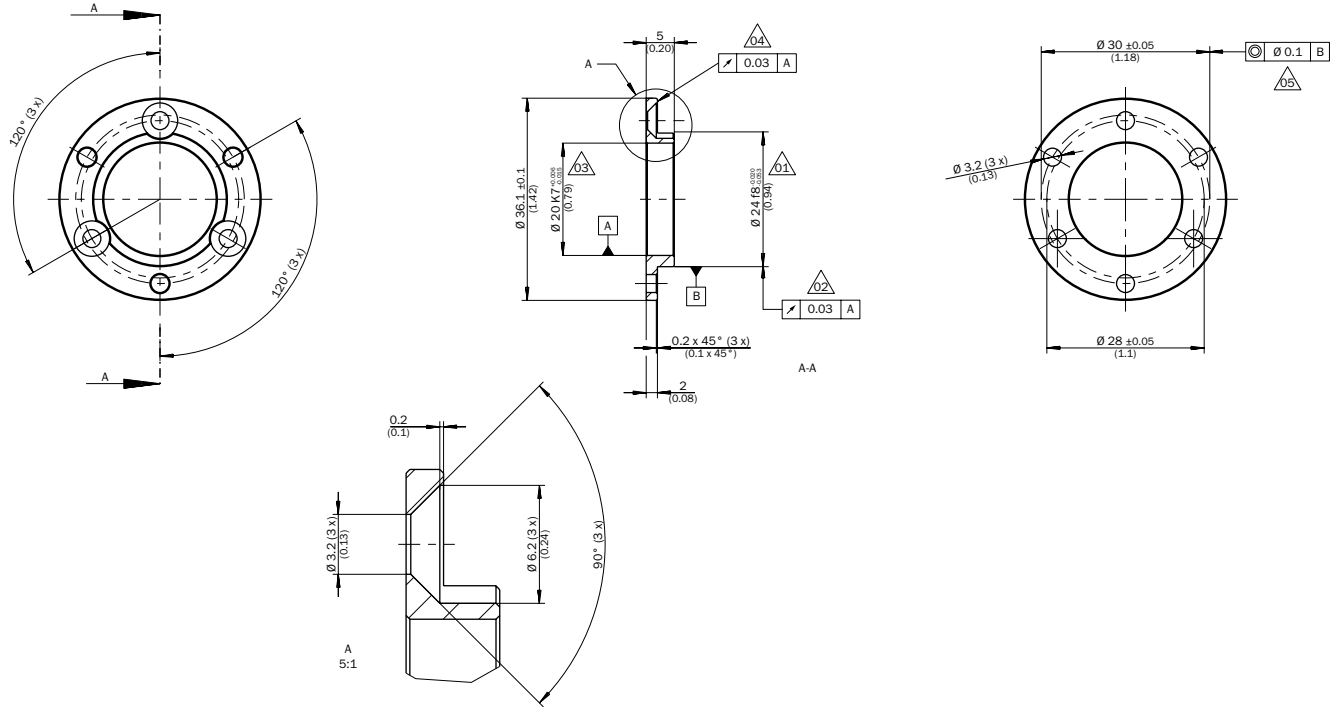
Dimensional drawings → [page 25](#)

Field-attachable connectors

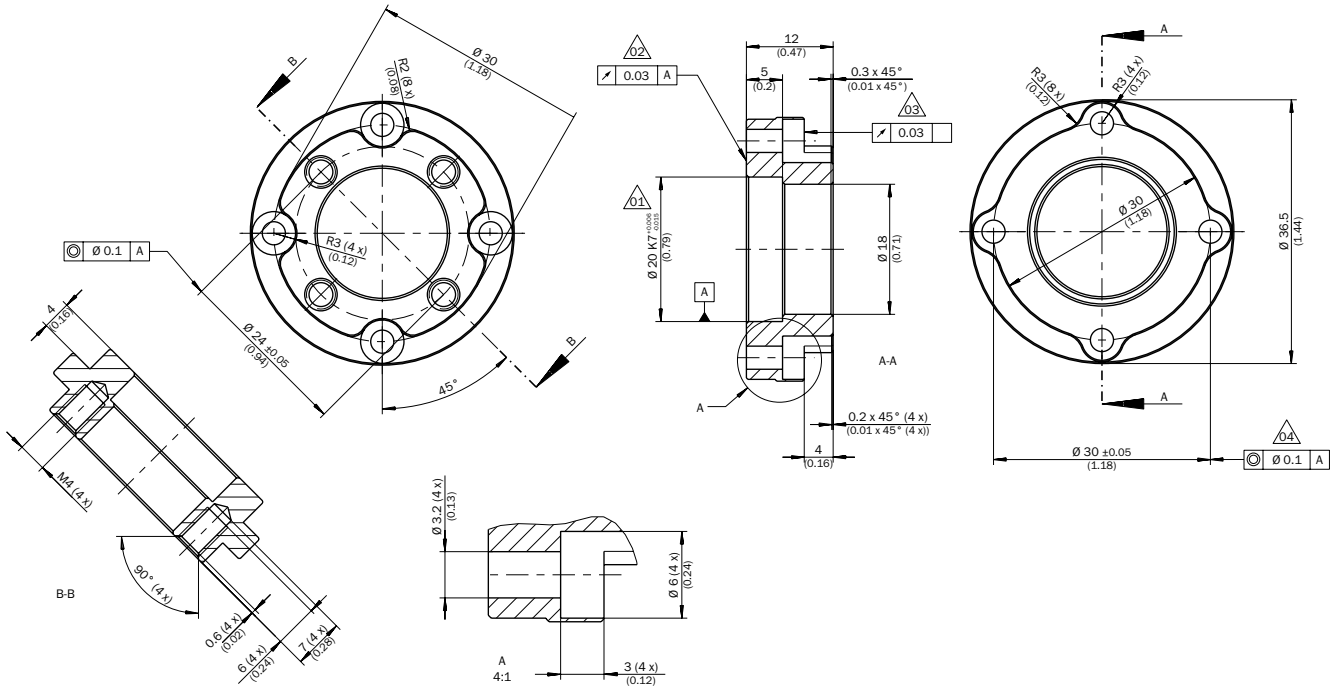
Figure	Brief description	Type	Part no.
	Head A: female connector, M12, 4-pin, straight Head B: - Cable: unshielded	DOS-1204-G	6007302
	Head A: male connector, M12, 5-pin, straight Cable: unshielded Details: for field bus technology	STE-1205-G	6022083

Dimensional drawings → [page 25](#)

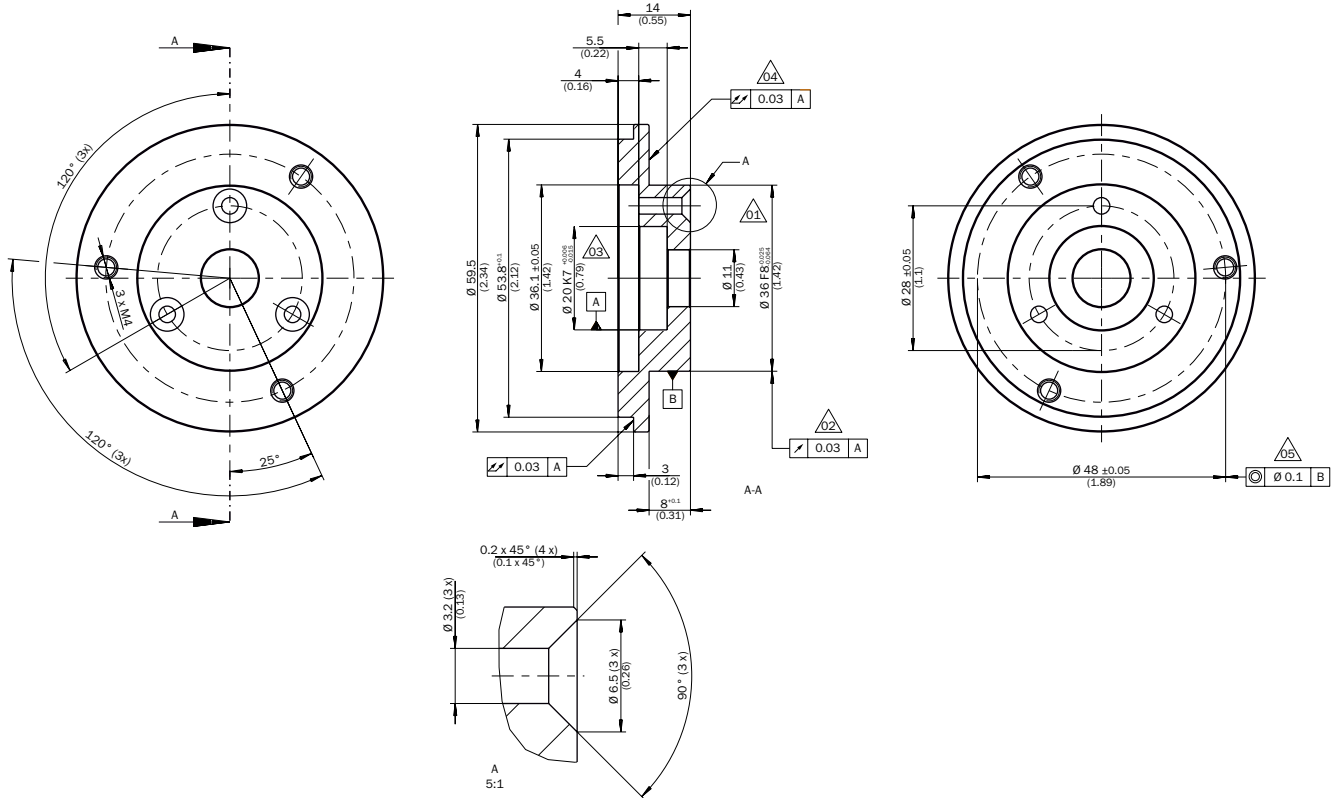
BEF-FA-020-024



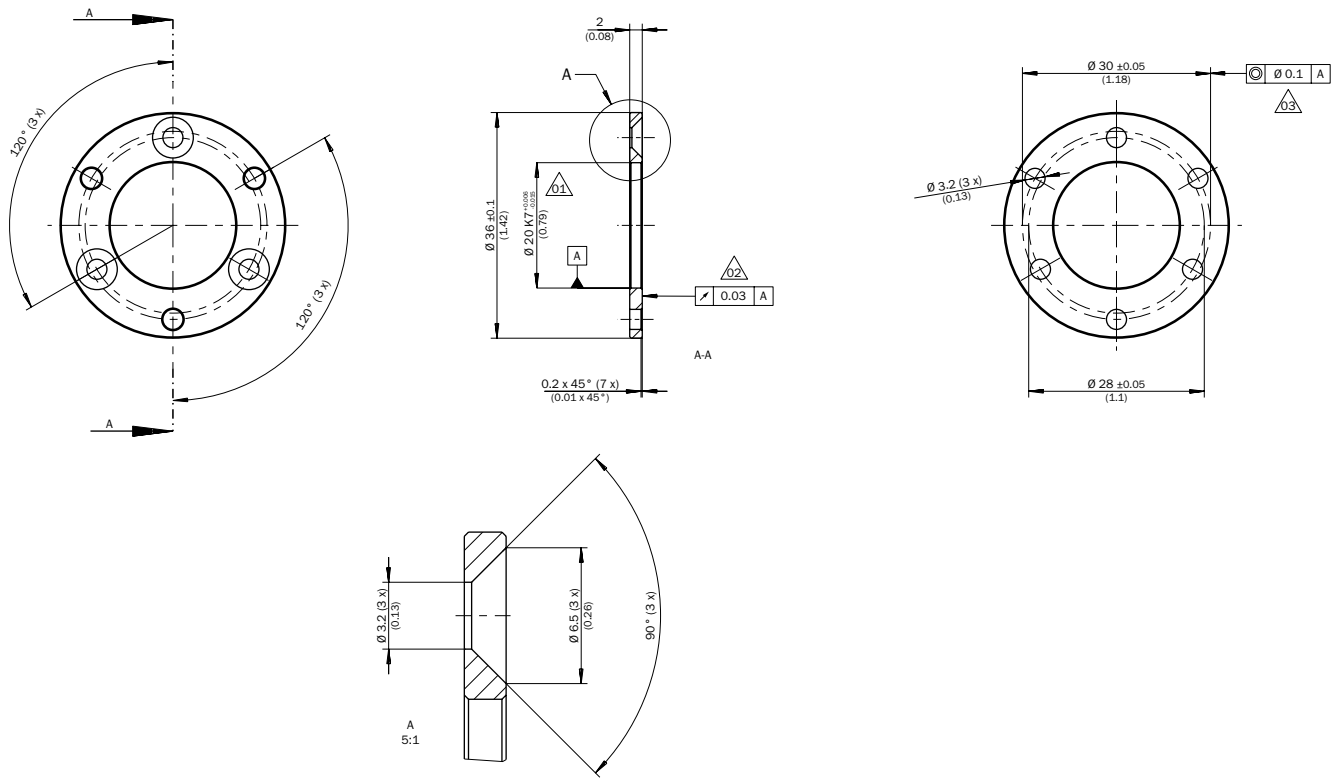
BEF-FA-020-030



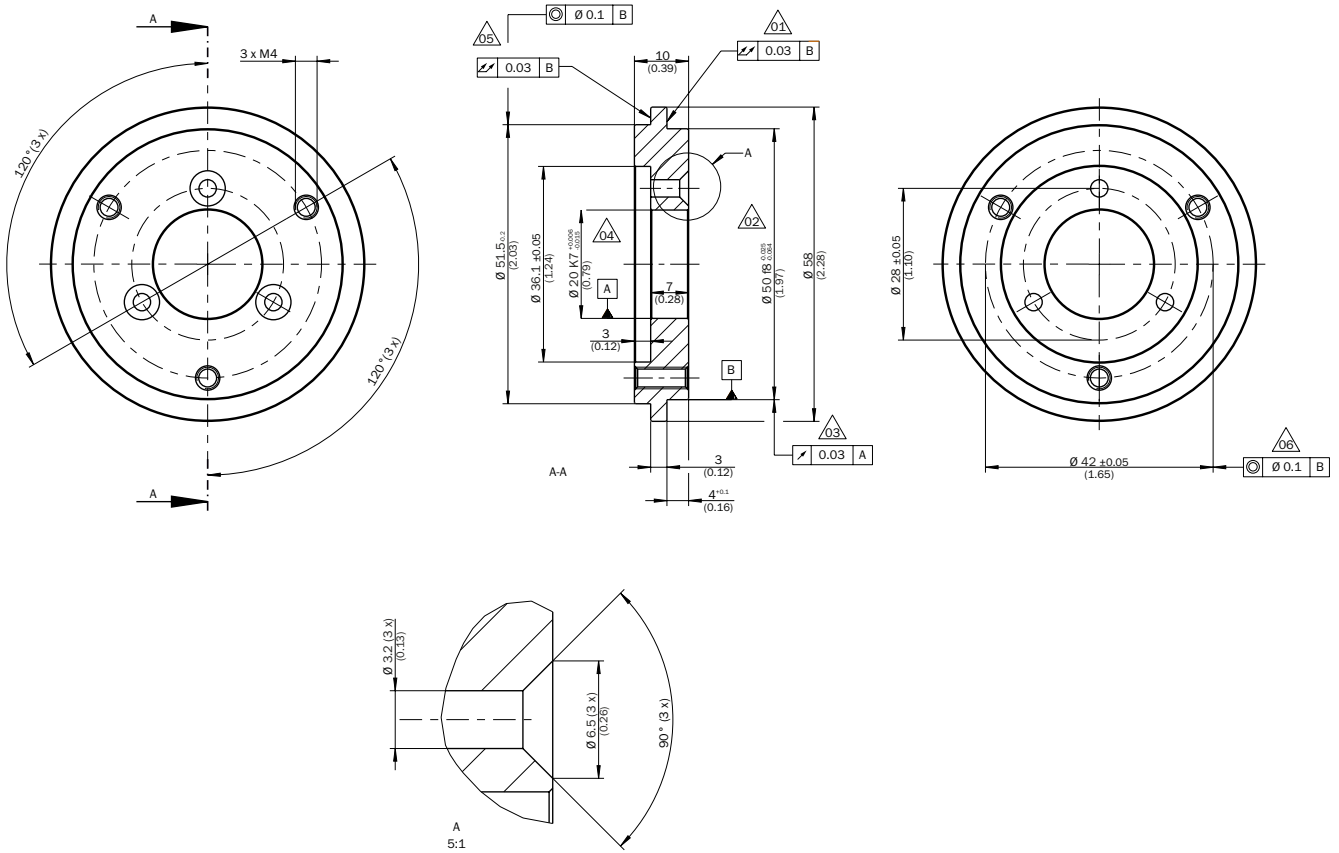
BEF-FA-020-036



BEF-FA-020-036-002

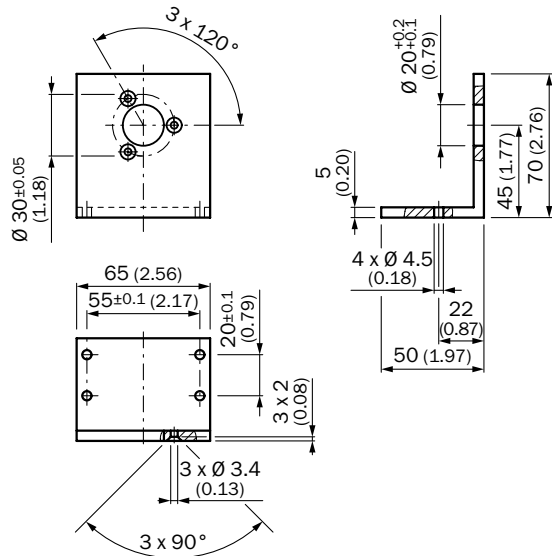


BEF-FA-020-050



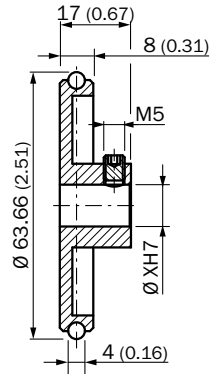
Mounting brackets and plates

BEF-WF-20

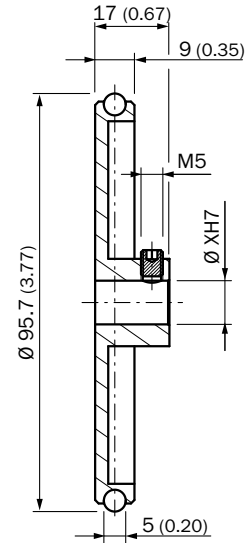


Other mounting accessories

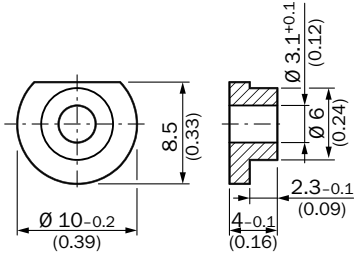
BEF-MR006020R



BEF-MR006030R



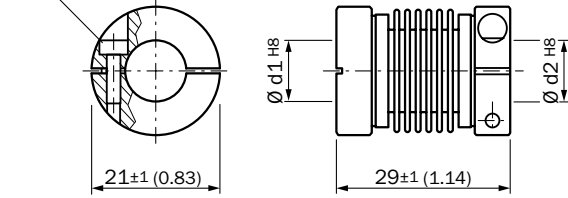
BEF-WK-RESOL



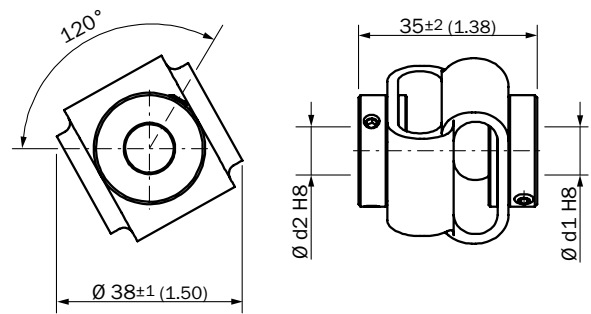
Shaft adaptation

KUP-xxxx-B

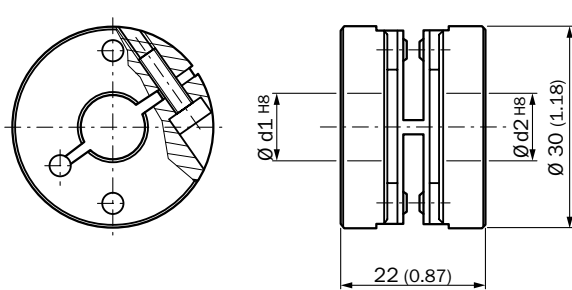
Cheese-head screw
M2.5 x 8, DIN 912 A2



KUP-xxxx-D

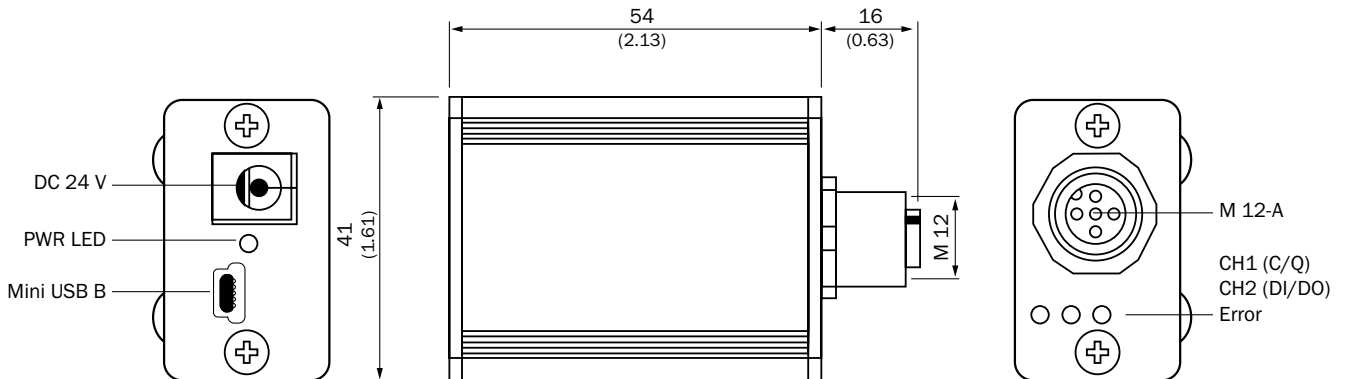


KUP-xx10-F



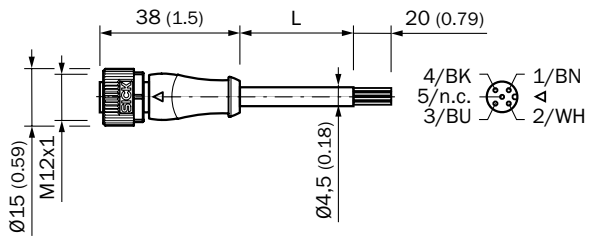
Modules and gateways

IOLA2US-01101 (SiLink2 Master)

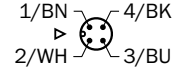
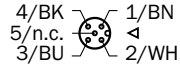
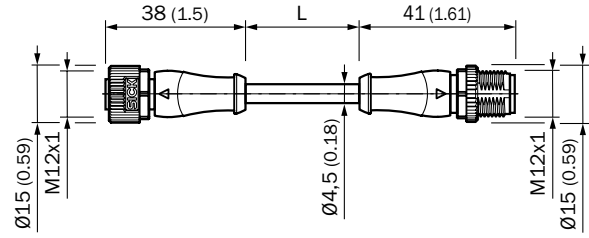


Plug connectors and cables

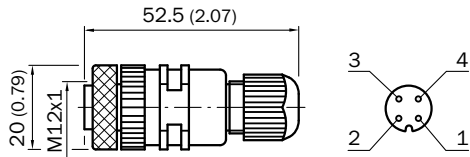
YF2A14-xx0UB3XLEAX



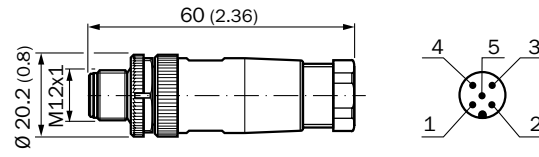
YF2A14-xx0UB3M2A14



DOS-1204-G



STE-1205-G



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