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Ezturn® software



General description of the Ezturn® software:

Ezturn is a programming tool for all of Kübler's multi-turn encoders of the latest generation. These encoders are basically all programmable. The encoders are pre-set ex works with the default values given in the data sheet and the order key.

The purchase of a programming set allows

customers to program any encoder. The customer can thus tailor the encoder's default settings to specific applications or use the software for diagnostic purposes or as an information tool, for instance to make settings for a machine. All of these configurations can be saved. The software is compatible upwards.

Functionality of the Ezturn® software

- Setting of the communication parameters
- RS232 encoder/PC interface
- Setting of a drive factor by means of the modification of the resolution per revolution, the number of revolutions and the total resolution
- Programming of the direction of rotation and code type
- Setting of a preset/electronic zero point
- Setting of diagnostic functions
- Setting of the outputs A1 ... A4
 - Limit switch values, max. 2
 - Alarm and status information
 - Battery monitoring
- Limiting max. number of bits to interface with PLCs
- Diagnostics and information for the set-up operation
- Data transmission from the PC to the encoder and inversely, also during operation
- Print-out of the current data and set parameters
- Convenient position output with the current set data
- Output of the software/hardware version number
- Terminal operation for direct instructions via the keyboard
- Diagnostics of the encoder connected

Scope of delivery:

Interface converter
 Connection cable from the interface converter to the encoder
 90 ... 250 V AC power supply and CD-ROM
 Order-code: 8.0010.9000.0004

SSI Display Type 570



Your benefit

- AC and DC supply voltage in one unit
- Master or slave mode
- Plug-in screw terminals
- SSI clock frequency from 100 Hz up to 1 MHz
- Display and outputs may be adjusted using scaling- and offset-features
- Large 15 mm high LED-display, 6 digits, with adjustable brightness

Product features

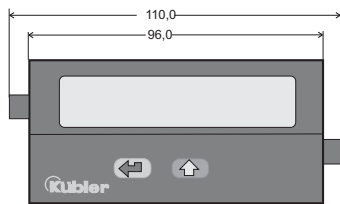
- Qualified for SSI protocols up to 25 bits
- Version with 2 optocoupler outputs to work as limit or preset values; also programmable with trail signal.
- Version with scaleable analogue output, resolution 14 bits, 0 ... 10 V, -10 ... +10 V, 0 ... 20 mA or 4 ... 20mA
- Gray or binary code
- 48 x 96mm DIN housing, IP 65

Technical data:

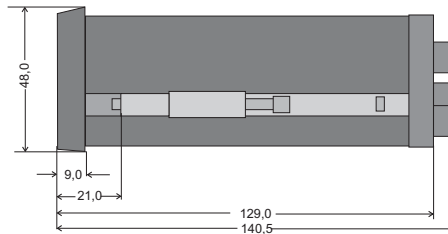
Supply voltage:	17 ... 30 V DC 115/230 V AC ± 12,5 %
Display:	15 mm high LED-display, 6 digits
Current consumption [DC]:	17 V: 190 mA; 24 V: 150 mA; 30 V: 120 mA
Power consumption [AC]:	7,5 VA
Sensor power supply:	24 V DC ± 15%, 120 mA
Inputs:	
SSI input frequency range:	100 Hz ... 1 MHz
Input reset:	PNP or NPN, programmable 5.1 mA 24 V DC/ R _i = 4.7 kOhm
Input level:	Low: 0 ... 2 V High: 9 ... 35 V
Reset time:	min. 5 ms

Outputs:	
Scaleable analogue output:	0 ... 10 V, -10 ... +10 V or 0 ... 20 mA, 4 ... 20mA 0.570.011.E90
Resolution:	14 bits + sign
Accuracy:	0.1 %
Optocoupler output:	5 ... 35 V DC/150 mA 0.570.012.E00
Interface:	RS232 or RS485 (ISO 1745) 0.570.012.E05
Operating temperature:	0 ... +45 °C
Storage temperature:	-25 ... +70 °C
Protection class:	IP 65 (front)
EMC:	according to EC EMC directive 89/36/EC
Interference emissions:	EN 50081-2/EN 55011 class B
Interference resistance:	EN 6100-6-2
Weight:	approx. 200 g

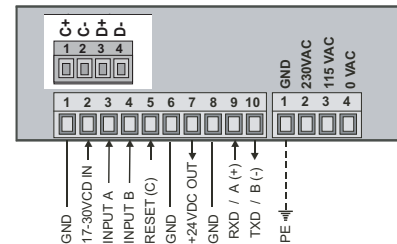
Dimensions:



Panel cut-out: 92 x 45mm

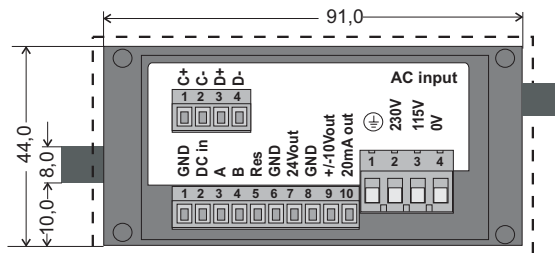


Display with serial interface 0.570.012.E05

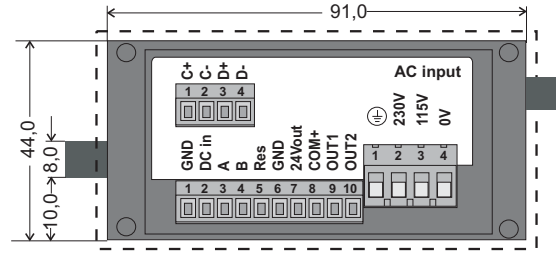


Wiring diagram:

Display with analogue output 0.570.012.E90



Display with 2 optocoupler outputs 0.570.011.E00



Do not connect A, B; C+, C- = clock signal SSI; D+, D- = data signal SSI

Scope of delivery:

- SSI-Display
- Plug-in screw terminals
- Seal
- Manual German/English
- Mounting kit

Order code:

- Display with 2 outputs: 0.570.011.E00
- Display with analogue outputs: 0.570.012.E90
- Display with serial interface: 0.570.012.E05

Display Type 571



Your benefit

- AC and DC supply voltage in one unit
- Measuring function can be programmed for RPM, speed (from elapsed time), machine cycle time, throughput and baking time (time interval), as well as numerous count and stop-watch functions
- Scalable display, programmed via 2 keys
- Large 15 mm high LED-display, 6 digit, with adjustable brightness

Product features

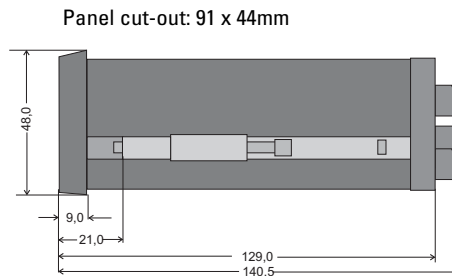
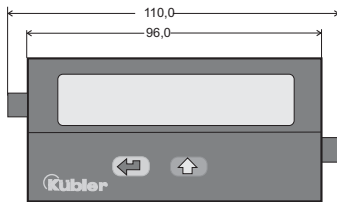
- Fast counting input, works with our LIMES measuring system (100kHz)
- Version with 2 optocoupler outputs for alarms
- Version with serial interface RS232/485 for importing and exporting data
- 48 x 96 mm DIN housing, IP65

Technical data:

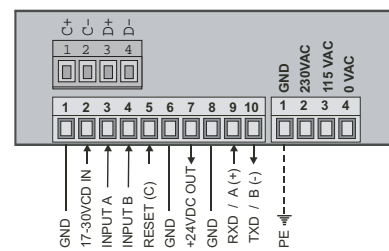
Supply voltage :	16 ... 35 V DC (Normal voltage: 24 V DC) 115/230 V AC ± 12.5 %
Display:	15 mm high LED display, 6 digits
Current consumption [DC]:	18 V: 120 mA; 24 V: 95 mA; 30 V: 80 mA
Power consumption [AC]:	7.5 VA
Sensor power supply :	24 V DC ± 15%, 120 mA (AC and DC supply)
Inputs:	3 Inputs (PNP, NPN and Namur) A, B = pulses, C = reset
Max. input frequency:	A, B = 25 kHz (100 kHz at count); C = 1 kHz
Accuracy:	±1 ppm ± 1 digit
Input level HTL:	Low: 0 ... 3.5 V High: 9 ... 35 V

Outputs:	
Analogue output: (0.571.012.E90)	0 ... +10 V, +10 ... -10 V and 0 ... 20 mA, 4 ... 20mA
Resolution:	14 bits + sign
Accuracy:	0.1 %
Optocoupler output: (0.571.011.E00)	5 ... 35 V DC/150 mA
Interface (0.571.012.E05)	RS232 and RS485 acc. to ISO 1745 Drivecom Protocol
Operating temperature:	0 ... +45 °C
Storage temperature:	-25 ... +70 °C
Protection	IP 65 (front)
EMC:	according to EC EMC directive 89/36/EC
Interference emissions:	EN 50081-2/EN 55011 Class B
Interference resistance:	EN 6100-6-2
Weight:	approx. 200 g

Dimensions:

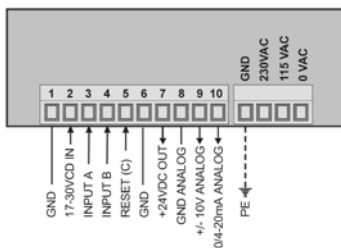


Display with serial Interface (0.571.012.E05)

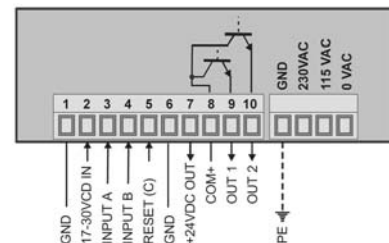


Terminal assignment:

Display with analog output (0.571.012.E90)



Display with 2 optocoupler outputs (0.571.011.E00)



Scope of delivery:

- Display 571
- Seal
- Mounting kit
- Plug-in screw terminals
- Manual German/English

Order code:

- Display with 2 outputs Order code: 0.571.011.E00
- Display with analogue outputs Order code: 0.571.012.E90
- Display with ser. Interface Order code: 0.571.012.E05

Flanges



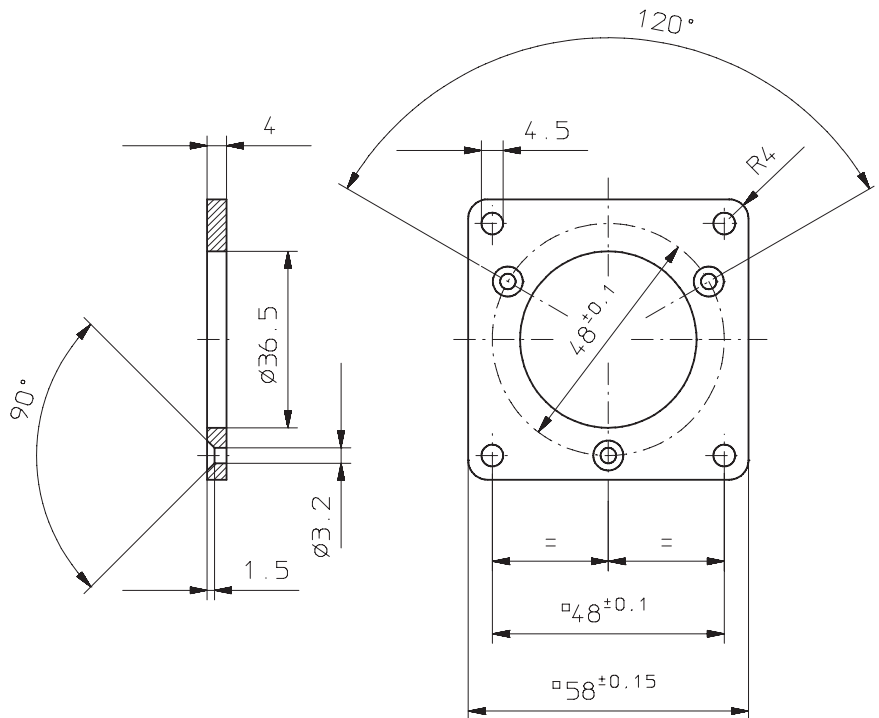
- Suitable for shaft encoders with clamping flange
- Mounting screws included
- Material aluminum

Square flange:

Suitable for shaft encoders type series 58XX with clamping flange

Order code
8.0010.2100.0000 (Kit)

Includes flange and screws for encoder mounting.

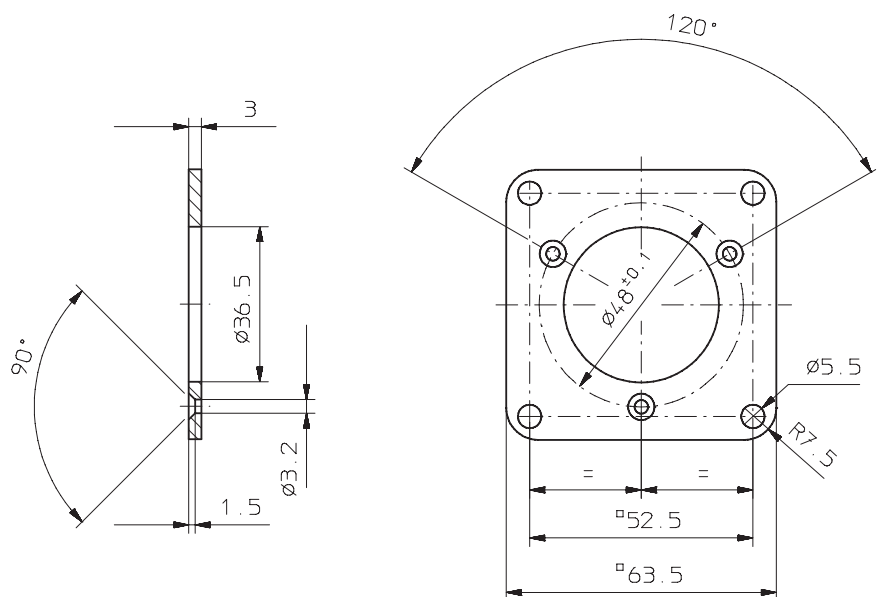


Square flange:

Suitable for shaft encoders type series 58XX with clamping flange

Order code
8.0010.2120.0000 (Kit)

Includes flange and screws for encoder mounting.



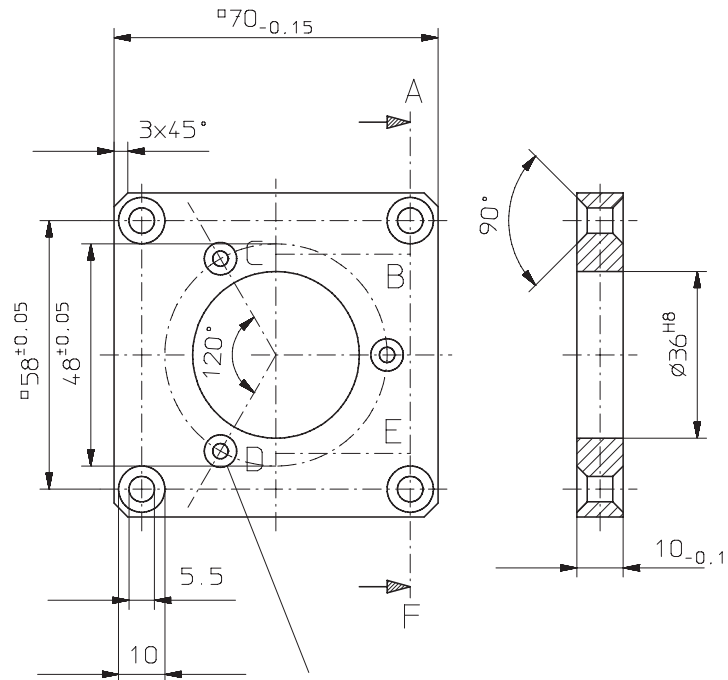
Flanges

Square flange:

Suitable for shaft encoders type series
58XX with clamping flange
Material: aluminum

Order code
8.0010.2600.0000 (Kit)

Includes flange and screws for encoder
mounting.

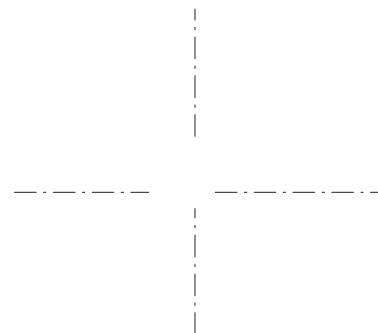


Square flange:

Suitable for encoders type series
58XX.1XXX.XXXX
with clamping flange

Order code
8.0010.2800.0000 (Kit)

Includes flange and screws for encoder
mounting.



Round flanges

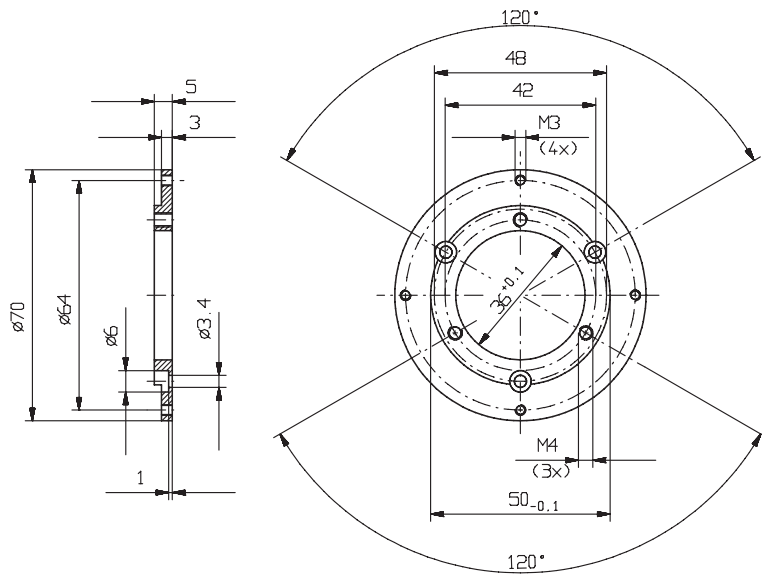
- Suitable for Kübler encoders with clamping flange
- Includes flange and screws for encoder mounting.
- Material aluminum

Round bracket:

Suitable for shaft encoders type series 58XX with clamping flange

Order code
8.0010.2200.0000 (Kit)

Includes flange and screws for encoder mounting.

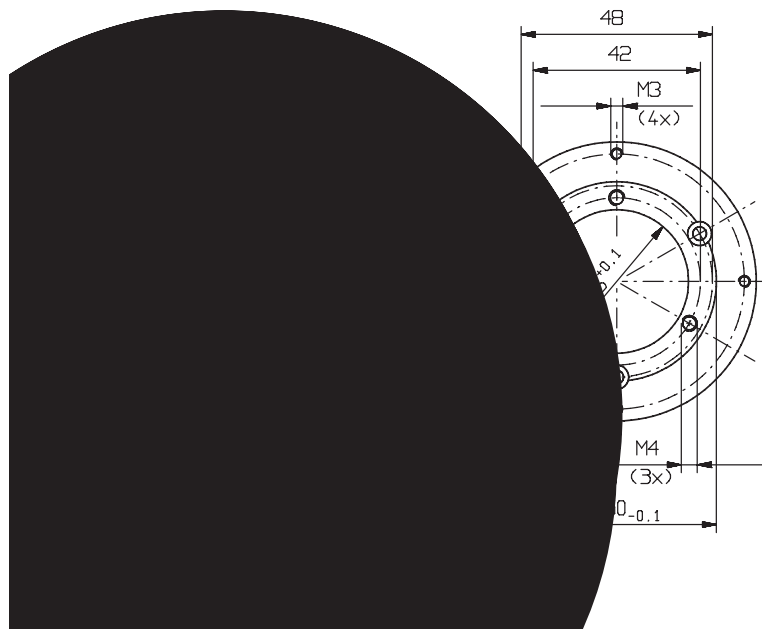


Round bracket

Suitable for shaft encoders type series 58XX with clamping flange

Order code
8.0010.2500.0000 (Kit)

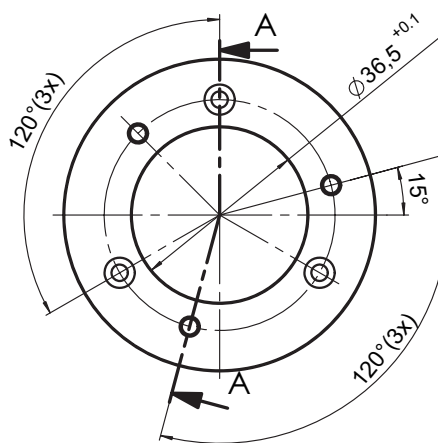
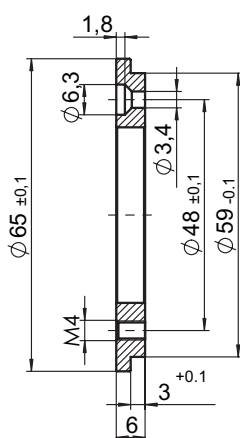
Includes flange and screws for encoder mounting.



Adapter flange 65



- Suitable for encoders of the 58XX series with clamping flange
- With this adapter bracket, Kübler encoders with size 58 mm can replace encoders with diameter 65 and pitch circle diameter 48 mm
- Screws are included in delivery
- Material: aluminum



Order code
8.0010.2230.0000 (Set)
Includes flange and screws
for encoder mounting.

Flanges

Round flange (Euro flange REO 444):

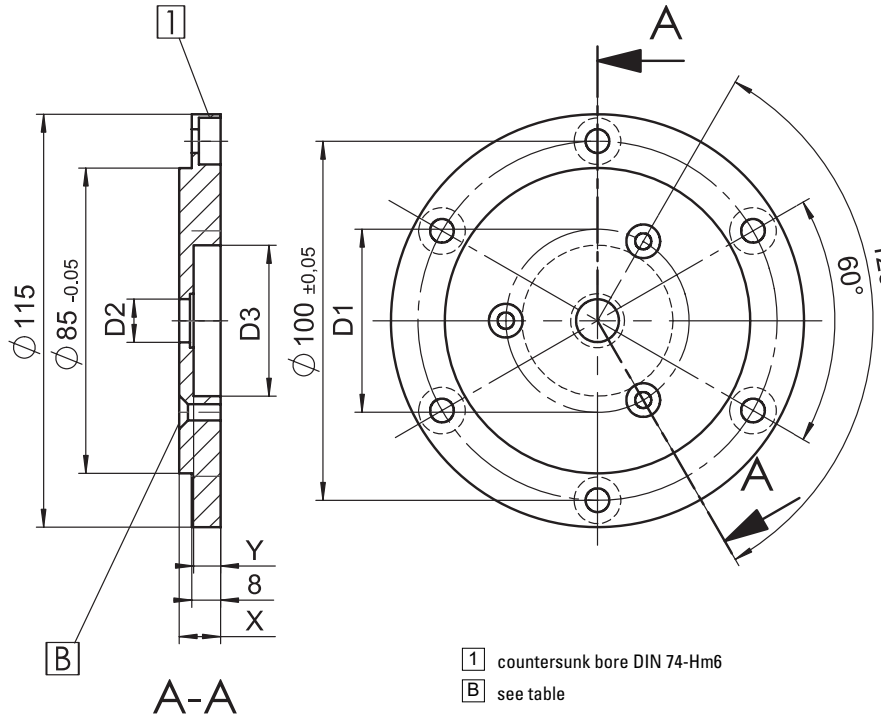
Suitable for shaft encoders

type series 58XX
 703X
 9000

Material: aluminum

Order code
 see table (Kit)

Includes flange and screws for encoder mounting.



Encoder type	Order code	D1	D2	D3	X	Y	B
58XX:	8.0010.2160.0000	48	36	58	11	1	DIN 74-BM3
703XX	8.0010.2170.0000	51	12	42	11,5	7,5	DIN 74-BM4
9000	8.0010.2130.0000	60	40	90	11,5	6,5	DIN 74-BM6

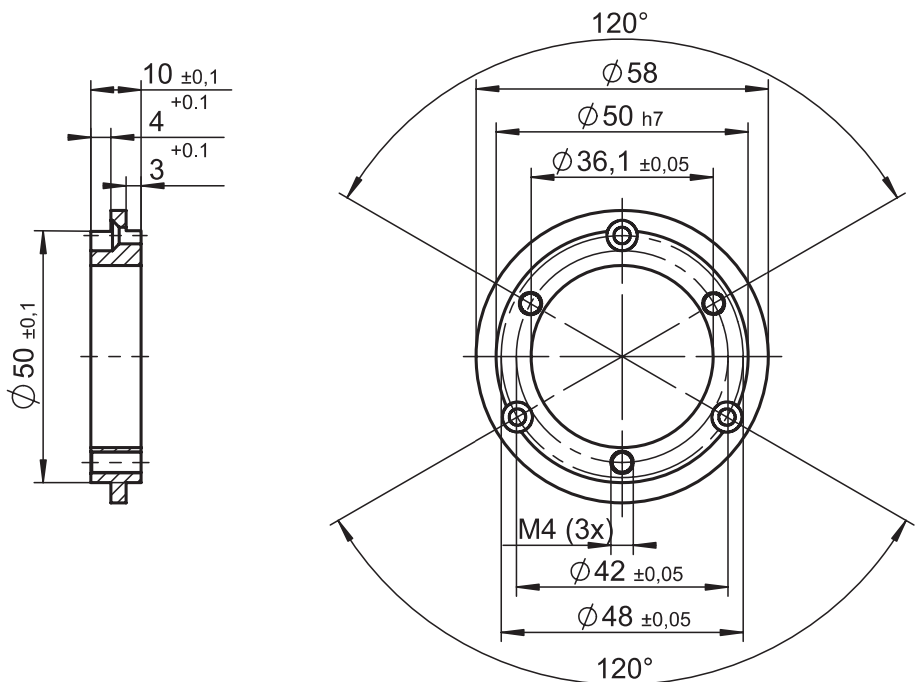
Adapter flange

For type series 58XX encoder

To mount encoders with clamping flange using the fastening eccentrics.

Includes flange and screws for encoder mounting.

Order code 8.0010.2180.0000 (Kit)



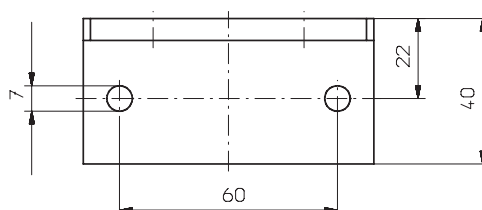
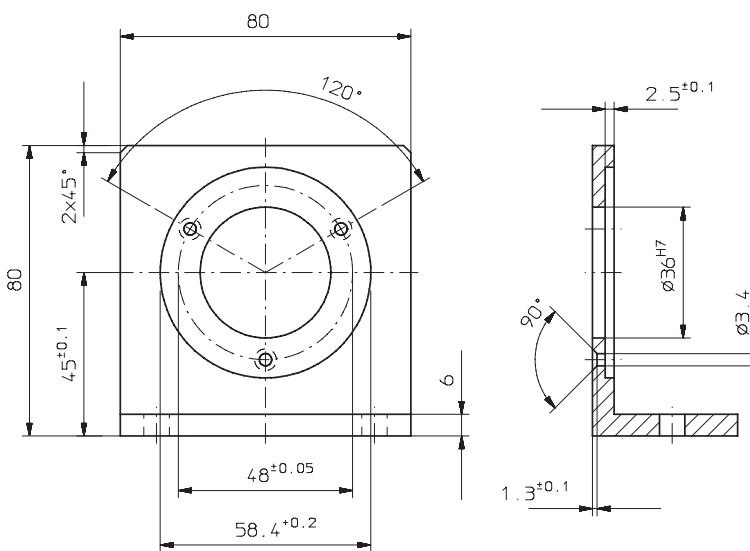
Mounting attachment

Angular bracket:

Suitable for shaft encoders type series 58XX with clamping flange

Order code 8.0010.2300.0000 (KIT)

Includes bracket and screws for encoder mounting.

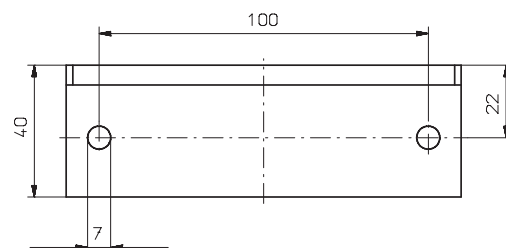
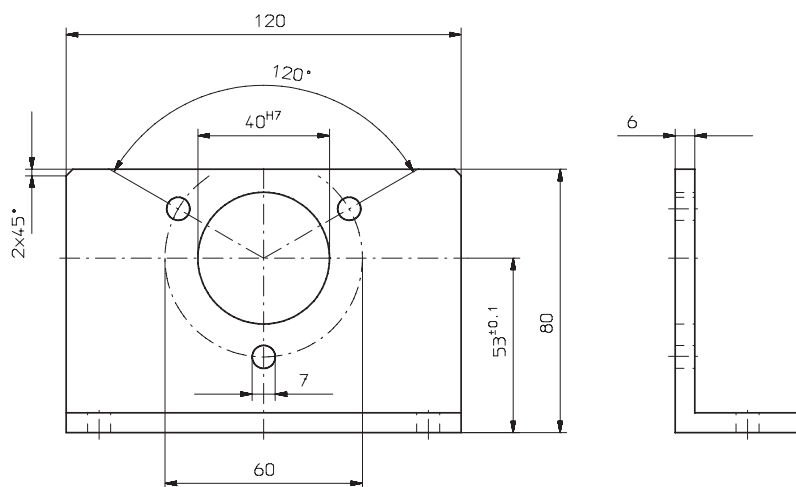


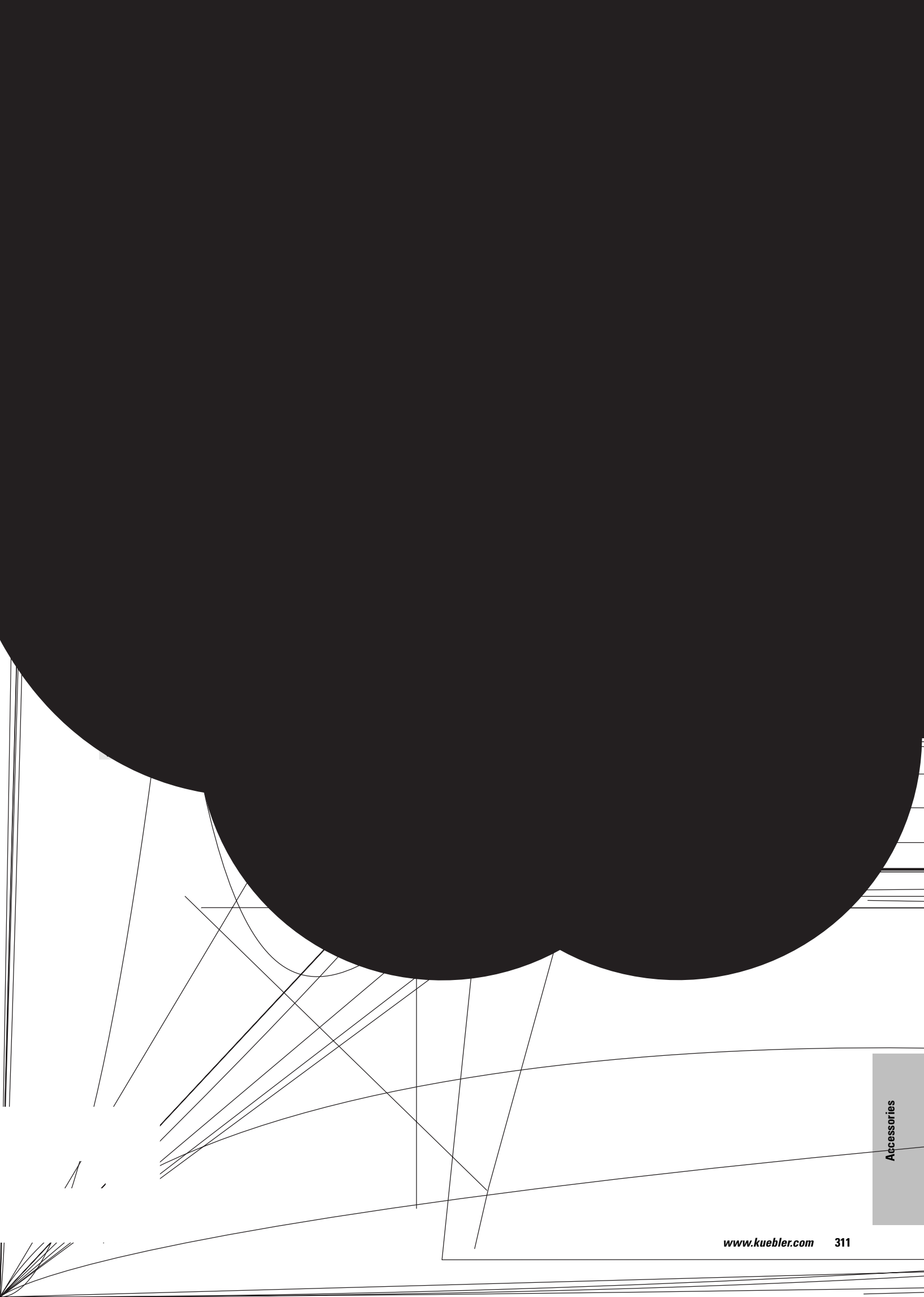
Angular bracket:

Suitable for shaft encoder 8.90XX.1XXX.XXXX
Material: aluminum

Order code 8.0010.2400.0000 (Kit)

Includes bracket and screws for encoder mounting.





Accessories

Encoder mounting attachments

Pictures	Example of use	Use	Order code:	Pitch circle diameter	Suitable for encoders	Page
		For applications with high axial play	8.0010.4K00.0000 Long spring element	cylindrical pin 110 mm	A020, A02H 9080, 9081	313
		For applications with reduced mounting space	8.0010.4J00.0000 Short spring element	cylindrical pin 76 mm	A020, A02H, 9080, 9081	313
		For applications with axial and radial play with low dynamics for constant rotary movements	8.0010.4G00.0000 Tether square	A02X: 65 mm 9080: 60 mm 9081: 60 mm 1 screw	A020, A02H, 9080, 9081	313
		For applications with fastening points located on variable pitch circle diameters	8.0010.4E00.0000 Tether arm large	104 mm – 206 mm 1 screw	A020, A02H, 9080, 9081	314
		For applications with axial play and low dynamics	8.0010.4I00.0000 Spring element	3620: 60 mm 3720: 63 mm 5020: 44 mm 58XX: 65 mm Cylindric pin	3620, 3720, 5020, 582X, 587X, 588X	314
		For standard applications with axial and radial play, and high dynamics	8.0010.1602.0000	65 mm	582X, 587X, 588X	315
		For applications with high accuracy requirements	8.0010.4D00.0000	63 mm	582X, 587X, 588X	315
		For applications with axial and radial play, and low dynamics	8.0010.4R00.0000 Flexible fastening arm	80 mm – 170 mm 1 screw	5020, 582X, 587X, 588X	316
		For applications with axial and radial play, and high dynamics	8.0010.40L0.0000 Stator coupling	65 mm 3 screws	5020, 582X, 587X, 588X	316
		For applications with axial and radial play, for constant rotary movements	8.0010.40E0.0000 Flexible fastening arm	65 mm – 91,5 mm 1 screw	5020, 582X, 587X, 588X	316
		For applications with axial and radial play, and low dynamics	8.0010.40M0.0000 Flexible fastening arm	64,5 mm 1 screw	5020, 582X, 587X, 588X	317
		For applications with axial and radial play, and high dynamics	8.0010.4C00.0000 Double-winged stator coupling	46 mm 2 screws	3720, 3620	317
		For applications with limited axial play and low dynamics, and reduced mounting space	8.0010.4H00.0000 Spring element	3620: 42 mm 3720: 40 mm 5020: 58XX: 42 mm Cylindric pin	3620, 3720, 5020, 582X, 587X, 588X	317

Tether arm large

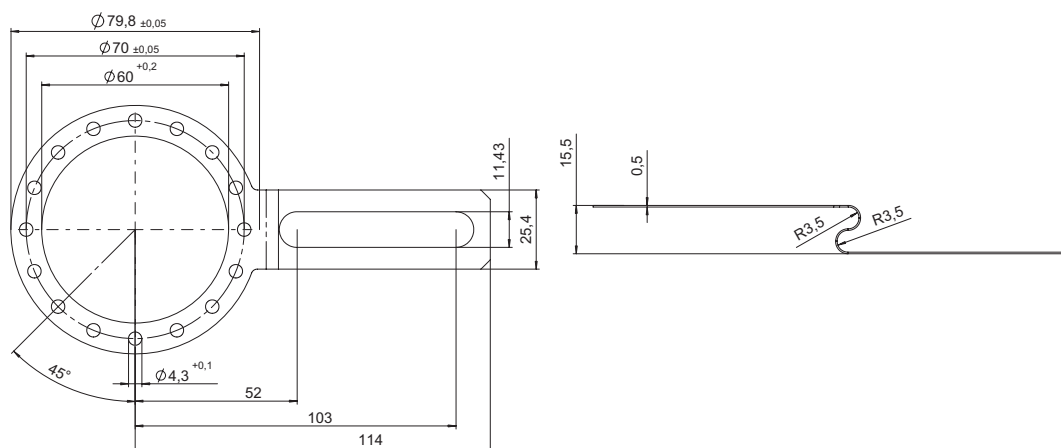


- For encoder types A020 and 908X
- Prevents radial play of the encoder
- The necessary axial play remains unchanged
- Material:
 - Mounting bracket: stainless steel
 - Screws: steel, galvanized

Delivery includes:

- Flexed spring device
- 3 screws

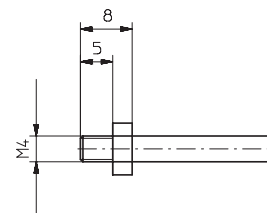
Order code 8.0010.4E00.0000



Various mounting variants can be supplied

Delivery includes:

1 x cylindrical pin with thread
Order code 8.0010.4700.0000



1 x mounting bracket
Order code T.035.009
incl. screw M3x5
Order code N.630.305

1 x long torque support slot
Order code 8.0010.4100.0000

Complete set:
Order code 8.0010.4600.0000

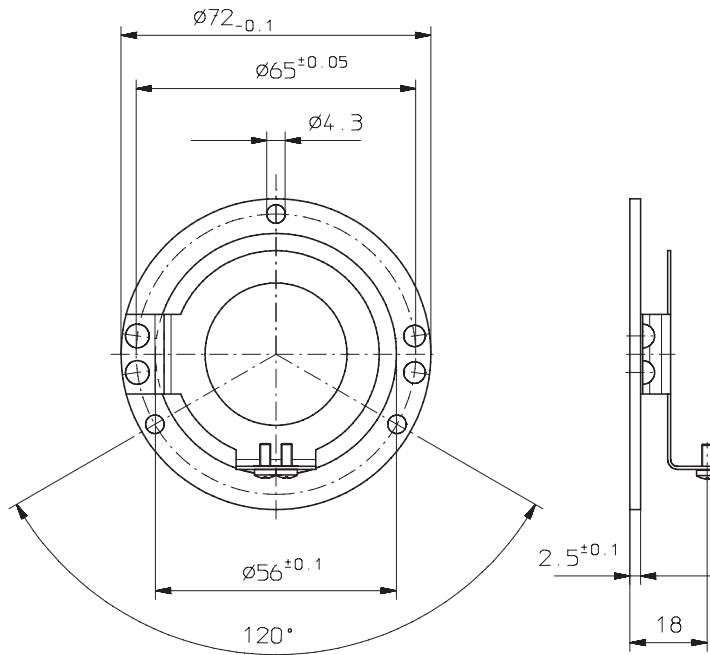
Mounting attachments



- Stator coupling for hollow shaft encoders type series 582X or 587X
- Mounting kit for hollow shaft encoder

Stator coupling for hollow shaft encoders:

For hollow shaft encoders type series 582X, 587X, 588X, 7030 or 7031
 Delivered as a kit with 2 fixing screws
 Order code 8.0010.1602.0000



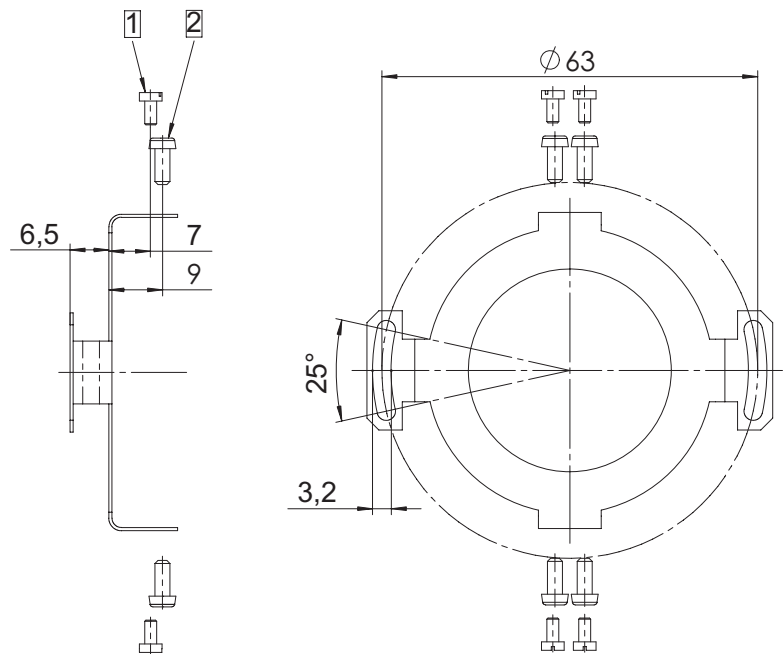
Double-winged stator coupling

- For increased torsional strength
- For increased dynamic loads

Kit for hollow shaft encoders type 58XX comprising:

- 1 x stator coupling, double-winged
- 2 x 2 screws

Complete kit:
 Order code 8.0010.4D00.0000



- 1 Fixing screw for 5882
- 2 Fixing screw for 582X, 587X

Accessories

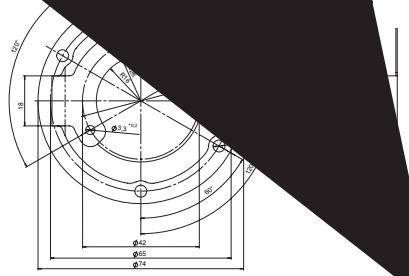
Encoder mounting

Mounting attachments



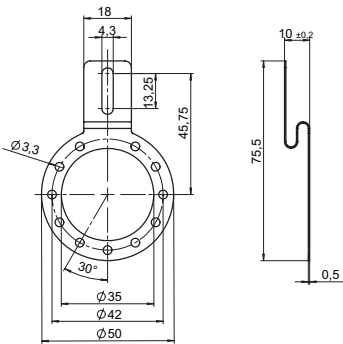
8 (screws)

Suitable for:
5020, 582X,
587X, 588X



8.0010.40E0.0000
Flexible fastening arm

Suitable for:
5020, 582X,
587X, 588X

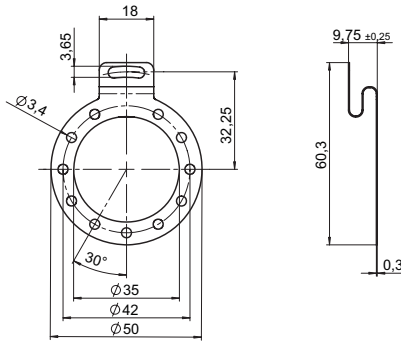


Mounting attachments



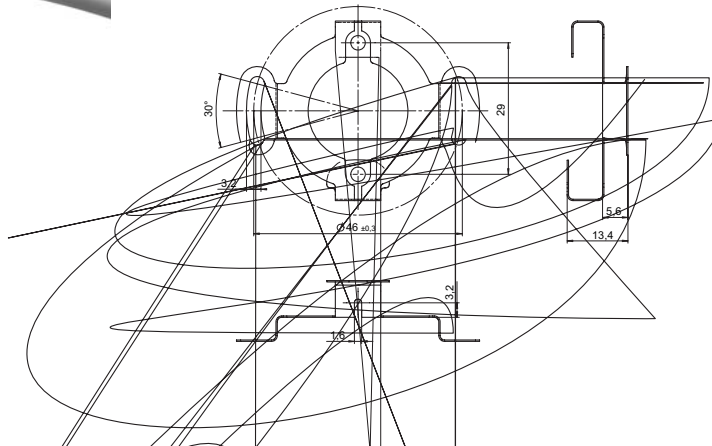
8.0010.40M0.0000
Flexible fastening arm

Suitable for:
5020, 582X,
587X, 588X



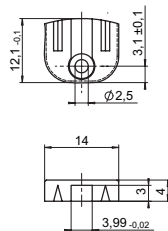
8.0010.4C00.0000
Double-winged stator coupling

Suitable for:
3720, 3620



8.0010.4H00.0000
Spring element

Suitable for:
3620, 3720.
5020, 582X,
587X, 588X



Couplings



- Bellow type couplings are recommended as an inexpensive type of coupling
- They are also suitable to compensate larger angular displacements
- Spring washer type couplings for high speed applications
- Easy to mount, two parts

Description and applications

Manufacturing and installation tolerances as well as the effects of temperature cause alignment errors between shafts in drive engineering which can sometimes lead to extreme overload on the bearings. This may result in increased wear of the bearings and may lead to premature failure of the encoder. By using couplings, these

alignment errors can be compensated, thereby reducing the load on the bearings to a minimum.

A distinction should be made between three different kinds of alignment error: radial, angular and axial displacement.

Whilst with torsion-free but bendable shaft couplings, axial shaft displacements

produce only static forces in the coupling, radial and angular displacements produce alternating stresses, restoring forces and moments which may have an impact on adjoining components (shaft bearings). Depending on the type of coupling, particular attention should be paid to radial shaft displacement which should be kept to a minimum.

Areas of application:

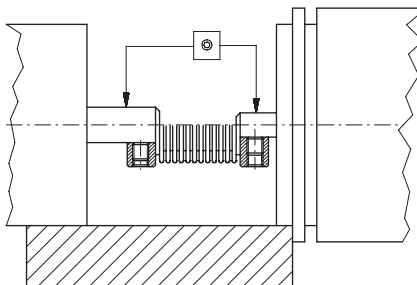
Metal bellows-type couplings (.1101 and 1201) are recommended as an inexpensive type of coupling. They are also suitable for compensating larger angle displacements.

Spring washer-type couplings (.1300 and .1401) are used mainly in those cases where high speeds and smaller angular displacements are involved. For applications where

electrical insulation between rotary encoder and drive is required, the electrically insulating spring washer-type coupling should be used.

Installation instructions:

1. Check shaft for displacement; See technical data for details
2. Align and adjust coupling on shafts.



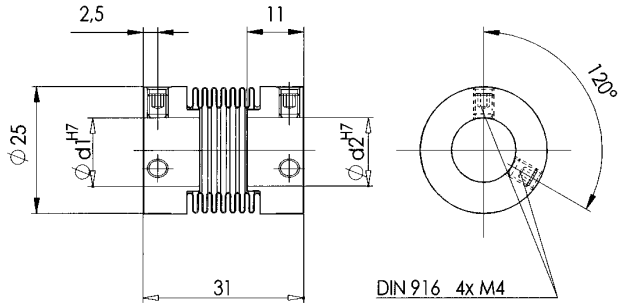
3. Tighten locking screws carefully. Avoid overtightening.
4. During installation protect the coupling from damage and from overbending.

Technical data

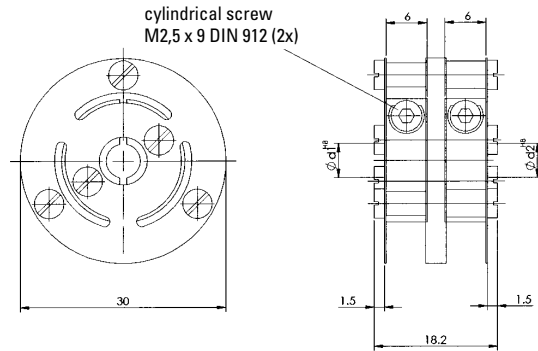
Type		8.0000.1101.XXXX	8.0000.1201.XXXX	8.0000.1301.XXXX	8.0000.1401.XXXX	8.0000.1501.XXXX
Max. speed	min ⁻¹	12000	12000	12000	12000	12000
Max. torque	Ncm	150	50	80	60	200
Max. radial displacement	mm	± 0.2	± 0.2	± 0.4	± 0.3	± 0.2
Max. angular displacement	Grad	± 1.5	± 1.5	± 3	± 2.5	± 1.5
Max. axial displacement	mm	± 0.7	± 0.5	± 0.4	± 0.4	± 0.6
Torsion spring parameter	Ncm/Grad	700	210	150	55	1300
Moment of inertia	gcm ²	5.5	1.2	19	35	18
Weight approx.	g	14	6	16	30	24
Material: Flange		Al	Al	Al cu Mg Pb	diecast Zinc	Al
Bellow or spring washer/casing		stainless steel	stainless steel	Cu Sn 6 Vern.	PA 6,6 20% gf	stainless steel
Diameter d/d1 from ... to	mm	3...12	3...9	3...8	4...16	3...16
Max. tightening torque of locking screws	Ncm	150	70	80	80	180
Standard bore diameter	mm	12/12 12/10 10/10 6/6	8/6 6/6 6/4 4/4 10/8	6/6 6/4	12/12 12/10 10/10 10/6 6/6 3/8"/10 3/8"/6 1/4"/10 1/4"/6	15/12 14/12 14/10 06/14

Couplings

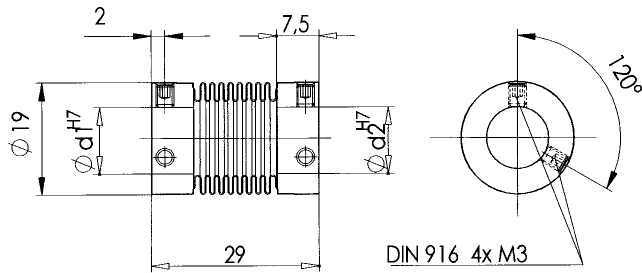
Bellows-type coupling
Order code 8.0000.1501.XXXX



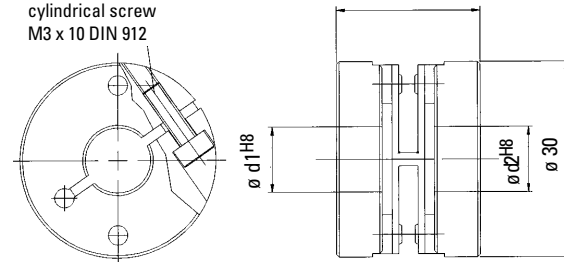
Spring washer coupling
Order code 8.0000.1300.XXXX



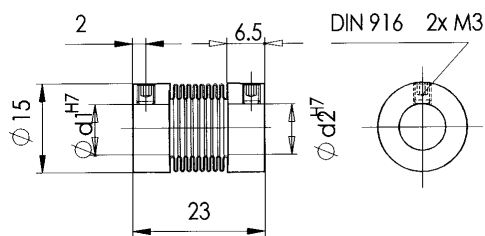
Bellows-type coupling
Order code 8.0000.1101.XXXX



Spring washer coupling
Order code 8.0000.1401.XXXX



Bellows-type coupling
Order code 8.0000.1201.XXXX



Order code:

8.0000.1X0X.XXXX

Type of coupling	
1	Bellows-type \varnothing 19 mm
2	Bellows-type \varnothing 15 mm
3	Spring washer type
4	Spring washer type*
5	Bellows-type \varnothing 25 mm

* electronically isolated

Bore diameter d_2 see table

Bore diameter d_1
e.g.: $d_1 = 10$ mm and $d_2 = 12$ mm
=> XXXX.XXXX.101²
for the bore diameter
 $d_1 = 3/8$ " Code = A1
 $d_1 = 1/4$ " Code = A2

Example: Coupling type 1401:
 $d_1 = 3/8$ " and $d_2 = 10$ mm:
Order-Code = 1401.A110

Bearing block: Separation of bearing load and sensor component

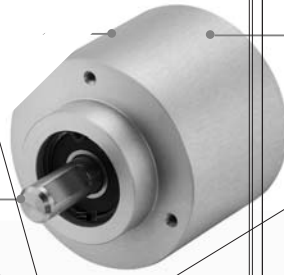
- By separating the bearing load from the sensor technology the encoder is well protected even in harsh applications. This is, for example, a particular advantage with belts that can be used in different ways such as occurs in lift construction (shaft copying)
- Simple upgrade for mechanical adaptation
- Long service life due to the mounting

Fits:

- Compatible dimensions to existing encoders

Upgradeable:

- Simple and easy upgrade
- Increases the number of shafts by a number of times



Flexible:

- Versions for retrofitting to solid shaft encoders
- Versions for hollow shaft encoders for very small installation depth

Mechanical adaptation:

Shaft

Hollow shaft

max. 6000 min

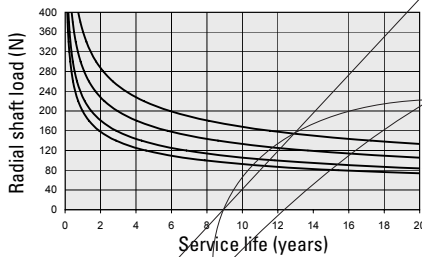
Shaft version



Hollow shaft version



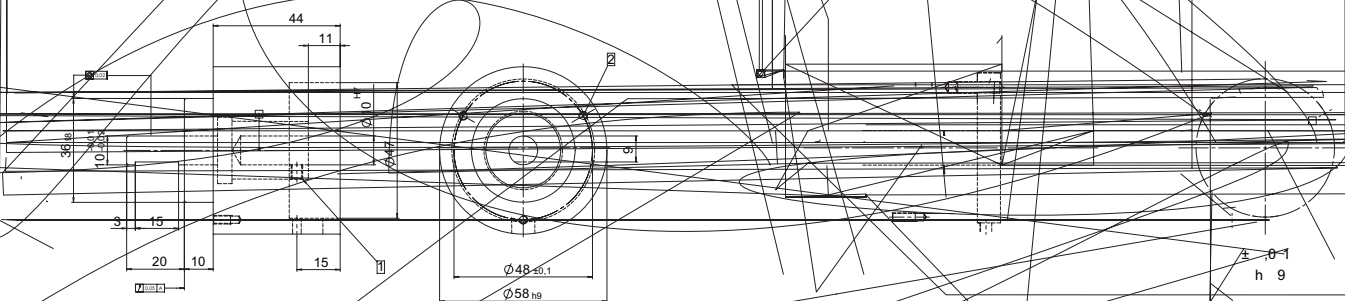
Service life dependent on the radial shaft load



Service life dependent on the radial shaft load



Dimensions:



- 1 M4, SW2 2 M3, 5 depth (3 x 120°)

Order Code:

Type	Bearing block for solid shaft encoder $\varnothing 58$ mm with clamping flange and shaft $\varnothing 10$ mm	Bearing block for hollow shaft encoder $\varnothing 58$ mm with hollow shaft $\varnothing 12$ mm
Art. No.	8.0010.8200.0006	8.0010.8400.0007

Assembly bell



- easy and quick encoder mounting
- electrical and thermal insulation: use of fibre glass plastic
- complete delivery (kit)

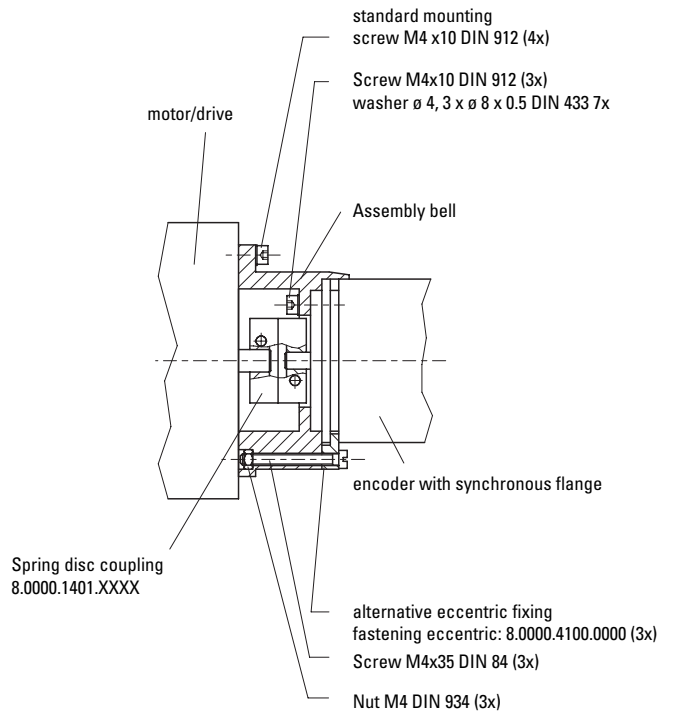
Kit includes:

- Assembly bell
- Spring washer type coupling
Order code 8.0000.1401.XXXX
- 4 x hexagon socket head cap screws
DIN 912 M 4 x 12
- 3 x hexagon socket head cap screws
DIN 912 M 4 x 10
- 7 x washers DIN 433 Ø4
- 3 x fastening eccentrics
8.0000.4B00.0000
- 3 x hexagon head screws DIN 84 M 4 x 35
- 3 x hexagon nuts DIN 934 - M4

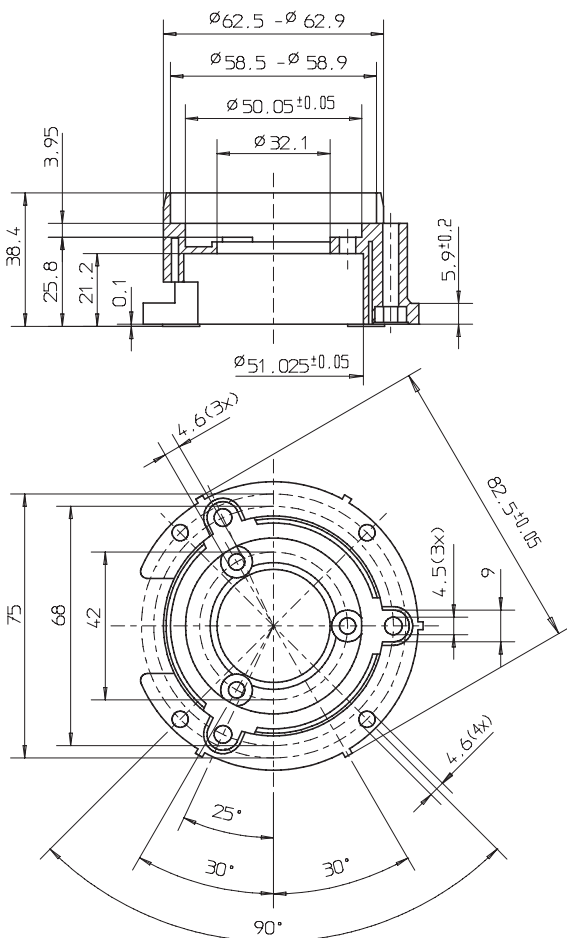
Example



Mounting example:

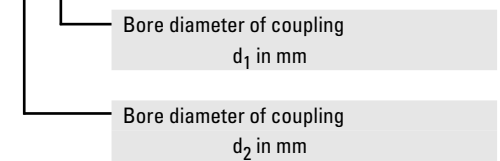


Dimensions



Order code:

8.0000.4500.XXXX



Bearing box

Description

In applications where the encoder is driven by use of gears, chains, belts etc. and the permitted axial and radial shaft loads are exceeded, we recommend the use of the special designed bearing box which has stronger bearings.

It can be combined with all encoders of the type series 58XX with clamping flange and shaft $\varnothing 10 \times 20$ mm..

Technical data

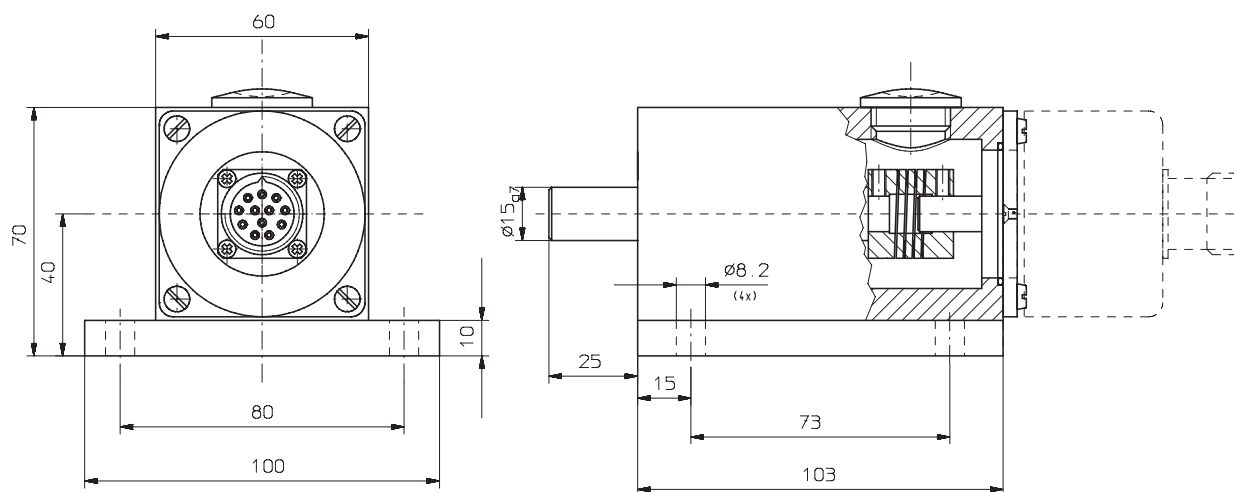
Suitable for encoders type series 58XX, with clamping flange and shaft $\varnothing 10 \times 20$ mm.

Shaft load	axial: 150 N radial: 250 N
Lifetime of bearings:	50.000 h
Protection:	IP 65
max. speed:	4000 min ⁻¹

Kit includes:

- Bearing box with lock cover and sealing
- Coupling for shaft $\varnothing 10$
- Flange adapter 8.0010.2100.0000
- 3 x countersunk head screws
DIN 63 M 3 x 8
- 4 x slotted cheese head screws
DIN 84 M 4 x 8

Dimensions

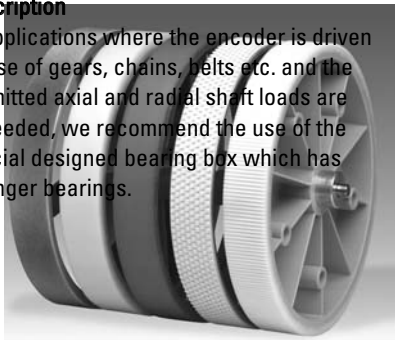


Order code
8.0010.8200.0004

Bearing box

Description

In applications where the encoder is driven by use of gears, chains, belts etc. and the permitted axial and radial shaft loads are exceeded, we recommend the use of the special designed bearing box which has stronger bearings.



It can be combined with an encoder of the type series 58XX with clamping flange and shaft $\varnothing 10 \times 20 \text{ mm}$.

- Various diameters, designed for use with Kübler encoders, available for metric and imperial systems.

- Measuring wheels are utilized in combination with encoders to measure material in the wood, paper, metal, textile and plastic industry.
- When selecting a measuring wheel, the first consideration is the type of material to be measured as this serves as the basis for determining the surface finish or coating of the measuring wheel.

Technical data

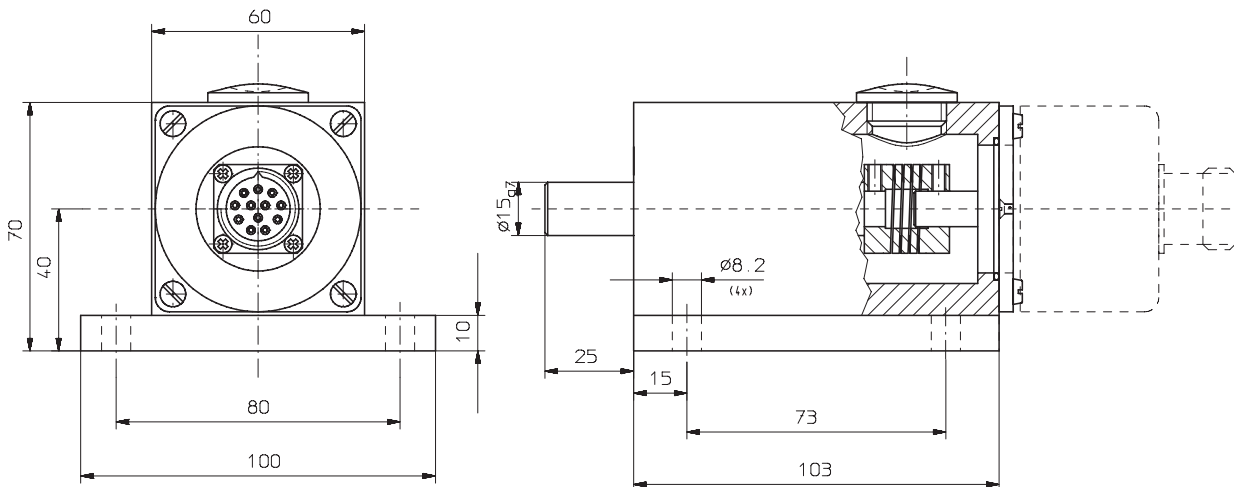
Suitable for encoders type series 58XX, with clamping flange and shaft $\varnothing 10 \times 20 \text{ mm}$.

Shaft load	axial: 150 N radial: 250 N
Lifetime of bearings:	50.000 h
Protection:	IP 65
max. speed:	4000 min^{-1}

Kit includes:

- Bearing box with lock cover and sealing
- Coupling for shaft $\varnothing 10$
- Flange adapter 8.0010.2100.0000
- 3 x countersunk head screws
DIN 63 M 3 x 8
- 4 x slotted cheese head screws
DIN 84 M 4 x 8

Dimensions



Order code
8.0010.8200.0004

Draw-wire accessories



- Guide pulley for draw-wire encoder

Order code 8.0000.7000.0031

Stock types
Draw wire accessories



Extension cable, steel wire 2 m: Order code 8.0000.7000.0033

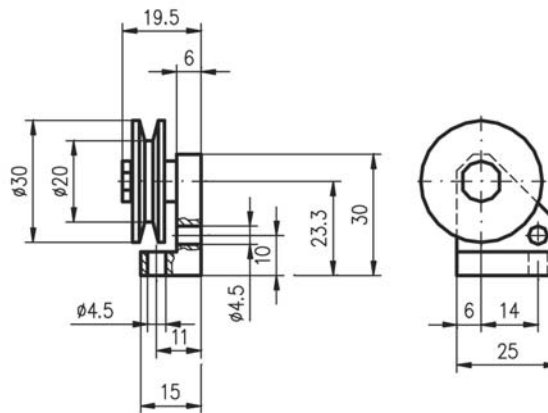
Extension cable, steel wire 5 m: Order code 8.0000.7000.0034

Extension cable, steel wire 10 m: Order code 8.0000.7000.0035

Extension cable, para wire 2 m: Order code 8.0000.7000.0032

Dimensions:

Guide pulley



Extension cable

