ANALOG ENCODER



Series M36

Key-Features:

- Low wear magnetic encoder without gear
- Versions with solid shaft or blind hollow shaft
- Shaft diameter up to 10 mm
- Housing diameter 36 mm
- Analog output: 4...20 mA, 0...5 V, 0...10 V
- Singleturn linearity ±1°
- Mechanical speed up to 6000 min^{-1}
- Protection class up to IP67
- Temperature range -40...+85 °C

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18.02.26

WayCon Positionsmesstechnik

TECHNICAL DATA

Measurement range		16 revolutions or scalable up to 65536 revolutions							
Linearity singleturn (at 20 °C)	[°]	±1							
Repeatability (at 20 °C)	[°]	±0.2							
Shaft type		solid shaft (with flat)				blind hollow shaft			
Shaft diameter Ø	[mm]	6	6.35	8	10	6	6.35	8	10
Shaft length / depth	[mm]	12.5		15	20	18.5			
Flange type	[mm]	synchro flange Ø 36 / clamping flange Ø 36				spring element / stator coupling Ø 46			
Output signal		see electrical data below							
Connection		cable output or connector output M12, 5 poles							
Mechanical speed	[min^{-1}]	6000 (continuous: 3000) / with option IP67: 4000 (continuous: 2000)							
Starting torque (at 20 °C)	[Nm]	<0.007 / with option IP67: <0.01							
Shaft load capacity	[N]	radial: 40 / axial: 20							
Protection class		IP65 / optional: IP67							
Operating temperature	[°C]	-40...+85							
Temperature coefficient	[ppm/K]	<100							
Shock resistance		2500 m/s^2, 6 ms (according to EN 60068-2-27)							
Vibration resistance		300 m/s^2, 10...2000 Hz (according to EN 60068-2-6)							
Shaft material		stainless steel							
Housing material		zinc die-cast							
Weight	[g]	approx. 200							

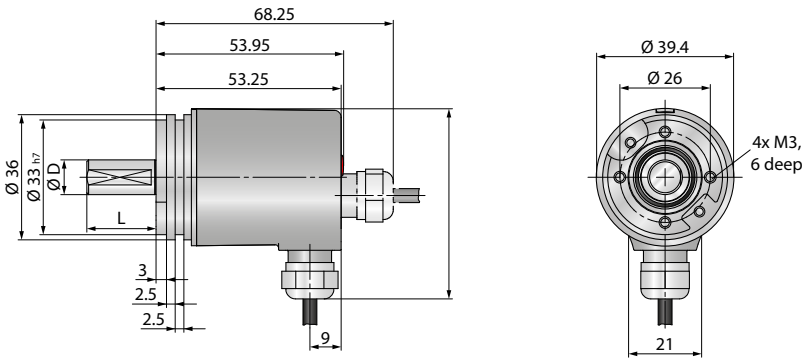
ELECTRICAL DATA

Output signal		4...20 mA	0...5 V	0...10 V
Resolution DA converter	[bit]	12	11	12
Supply	[VDC]	10...30		15...30
Current consumption (no load)	[mA]	30		
Output load max.	[kΩ]	0.2...1.2 (0.9 at 24 VDC)	-	-
Output current max.	[mA]	-	10	
Setting time		<1 ms (R_{burden} = 0.9 kΩ, 25 °C)	<1 ms (R_{load} = 1 kΩ, 25 °C)	
PowerON time	[s]	<1		
Update rate	[ms]	1		
LED (green/red)		• system status • current loop interruption - input load too high • reference point display (only with factory settings) at clockwise: 0°...1° at counterclockwise: 0°...-1° • status in teach modus	• system status • reference point display (only with factory settings) at clockwise: 0°...1° at counterclockwise: 0°...-1° • status in teach modus	
Teach inputs		level = +V for min. 1 s		
Short circuit proof outputs		yes [1)]		
Reverse polarity protection supply		yes		
CE compliant		according to EMC guideline 2014/30/EU and RoHS guideline 2011/65/EU		

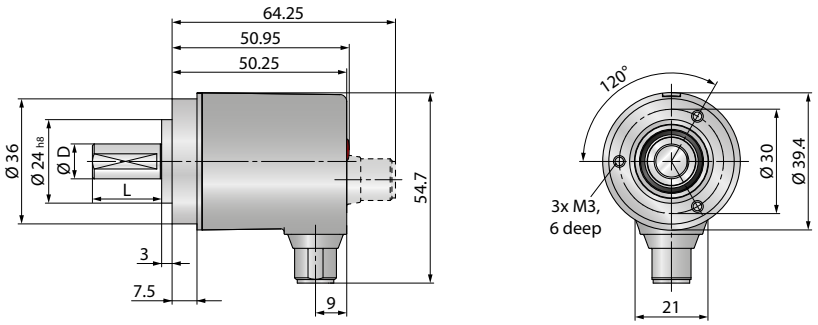
[1)] if power supply is applied correctly

TECHNICAL DRAWING

Solid shaft, synchro flange

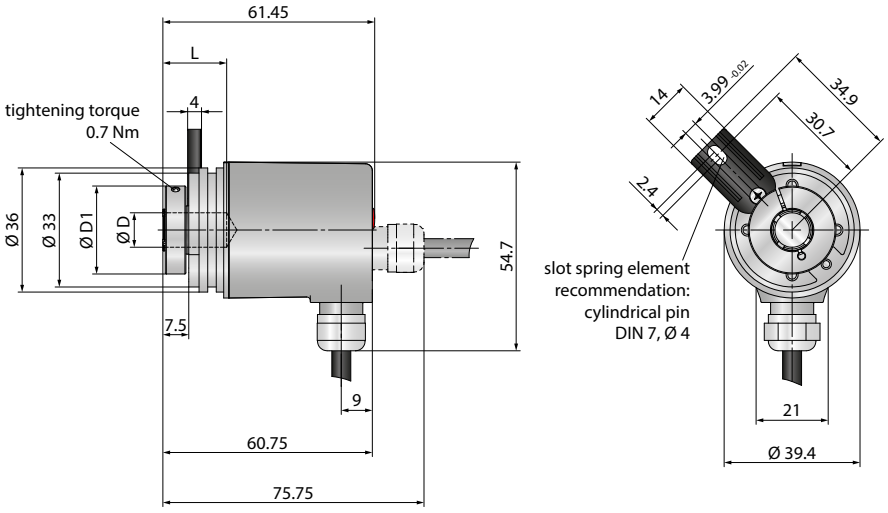


Solid shaft, clamping flange

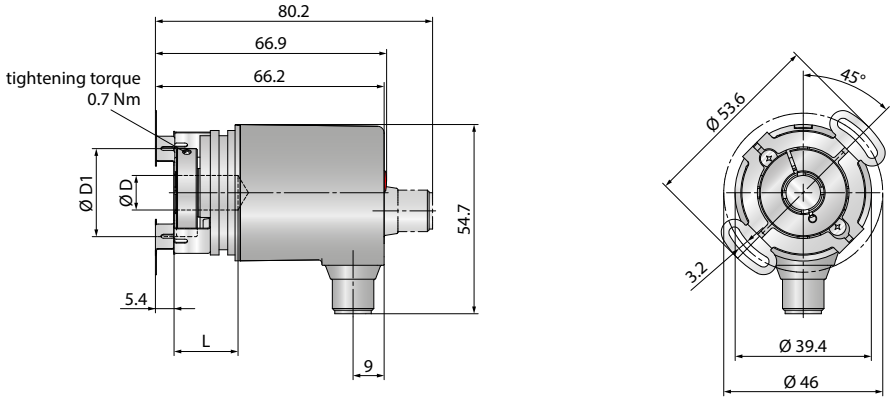


D	Fit	L
6	h7	12.5
6.35	h7	12.5
8	h7	15
10	f7	20

Blind hollow shaft, flange with spring element



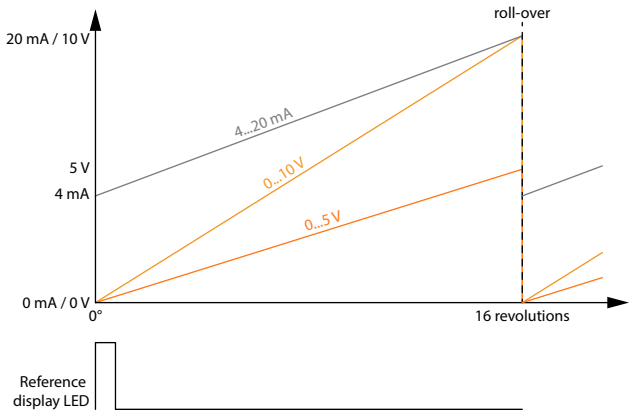
Blind hollow shaft, flange with stator coupling



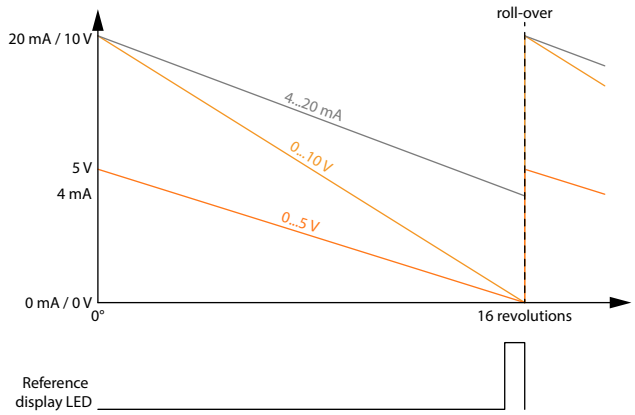
D	Fit	L	D1
6	H7	18.5	24
6.35	H7	18.5	24
8	H7	18.5	25.5
10	H7	18.5	25.5

EXAMPLE OUTPUT DIAGRAMS

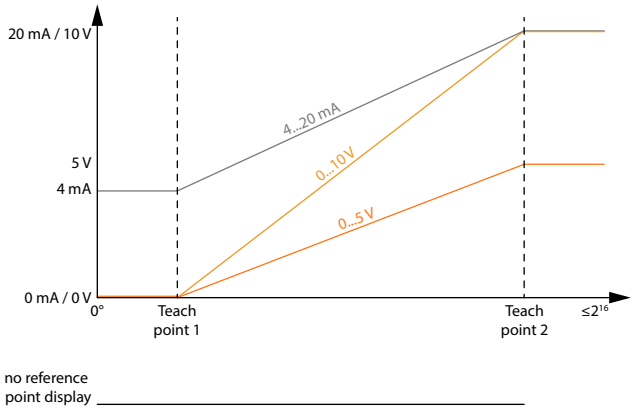
Version 16 revolutions, clockwise



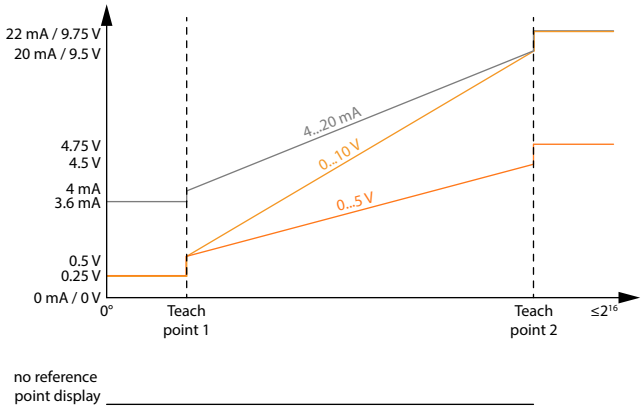
Version 16 revolutions, counterclockwise



Version scalable up to 65536 revolutions, without limit switch



Version scalable up to 65536 revolutions, with limit switch



Measurement range with factory settings:
16 revolutions with roll-over

Limit switch function:

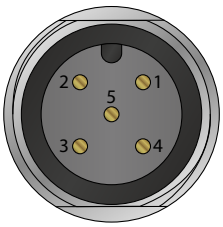
Version	4...20 mA	0...5 V	0...10 V
Limit switch low	3.6 mA	0.25 V	0.25 V
Limit switch high	22 mA	4.75 V	9.75 V

ELECTRICAL CONNECTION

Function	Connector output	Cable output
Signal	1	GN
+V	2	BN
GND	3	WH
Set 2 [1)]	4	PK
Set 1 [1)]	5	GY

[1)] only with scalable versions.
Set 1: input for teach point 1
Set 2: input for teach point 2

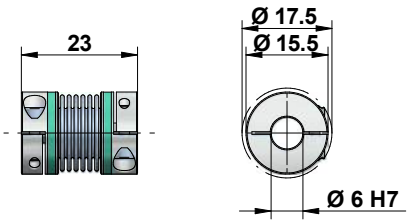
Connector output
M12, male



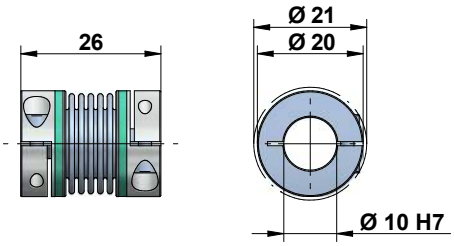
ACCESSORIES

Rotary transducers should never be connected to shafts or drives in an inflexible, stiff way. For this reason, we recommend using a coupling between the rotary transducer and the shaft. Bellow couplings are used for the free of backlash connection between an encoder and a shaft. The couplings are free of wear and compensate lateral, axial and angular shaft misalignment. The mounting on the shaft is done by clamping hubs.
Never use force to align the rotary angle transducer!

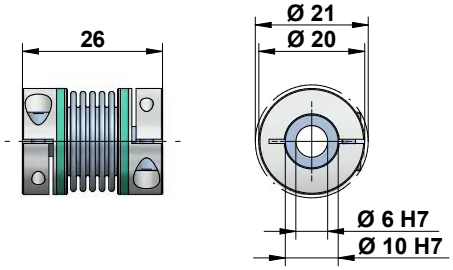
MBK-15.5-23-06-06



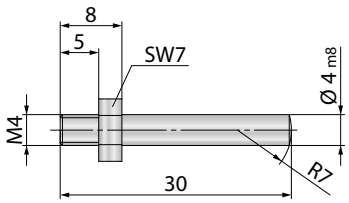
MBK-20-26-06-10



MBK-20-26-10-10

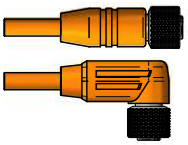


Cylindrical pin with fixing thread for flange with spring element

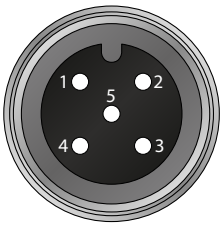


K5P: cable with mating connector

- M12 connector straight or angular
- 5 poles
- Protection class IP67



Pin	Cable colour
1	BN
2	WH
3	BU
4	BK
5	GY



D5: mating connector

- for self assembly
- M12 connector straight or angular
- 5 poles
- Protection class IP67
- Cable diameter Ø 4...8 mm



ORDER CODE

M36 – □ – □ – □ – □ – □ – □

Measurement range	
16 revolutions, clockwise	*C*
16 revolutions, counterclockwise	A
Scalable up to 65536 r, cw	SC
Scalable up to 65536 r, ccw	SA
Scalable up to 65536 r, cw, limit switch	SCE
Scalable up to 65536 r, ccw, limit switch	SAE

Shaft type, flange type	
Solid shaft, clamping flange Ø 36 mm	W
Solid shaft, synchro flange Ø 36 mm	*S*
Blind hollow shaft, with spring element	F
Blind hollow shaft, with stator coupling	*K*

Shaft diameter	
Ø 6 mm	6
Ø 6.35 mm	6.35
Ø 8 mm	*8*
Ø 10 mm	*10*

	Protection class
-	Standard IP65
IP67	Optional IP67

	Connection
SA12	Connector output M12, axial
SR12	*Connector output M12, radial*
KA_ _	Cable output, axial [1]
KR_ _	Cable output, radial [1]

	Output signal	
420A	*Current*	*4...20 mA*
5V	Voltage	0...5 V
10V	*Voltage*	*0...10 V*

[1] length in m (min. 1 m)
Example: KA01 = 1 m, KA02 = 2 m

Encoders that consist entirely of underlined italic options have a shortened delivery time.
(Shortened delivery time shaft diameter 8 only for solid shaft, shaft diameter 10 only for blind hollow shaft.)

ACCESSORIES

Cable with mating connector M12 (female), 5 poles, shielded	
K5P2M-S-M12	2 m, straight connector
K5P5M-S-M12	5 m, straight connector
K5P10M-S-M12	10 m, straight connector
K5P2M-SW-M12	2 m, angular connector
K5P5M-SW-M12	5 m, angular connector
K5P10M-SW-M12	10 m, angular connector

Mating connector M12 (female), 5 poles, shielded	
D5-G-M12-S	straight connector for self assembly
D5-W-M12-S	angular connector for self assembly

Installation accessories solid shaft	
MBK-15.5-23-06-06	Metal bellow coupling, 2 x Ø 6 mm
MBK-20-26-06-10	Metal bellow coupling, Ø 6 mm, Ø 10 mm
MBK-20-26-10-10	Metal bellow coupling, 2 x Ø 10 mm

Installation accessories blind hollow shaft	
ZS-M4	Cylindrical pin M4 for flange with spring element

Digital displays for sensors with analog output, 2 channel	
WAY-AX-S	touch screen, supply: 18...30 VDC
WAY-AX-AC	touch screen, supply: 115...230 VAC

For more information and options please refer to the WAY-AX data sheet.

Subject to change without prior notice.

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