ANALOG ENCODER



Series M58

Key-Features:

- *Low wear magnetic encoder without gear*
- *Solid shaft with diameter 6 mm or 10 mm*
- *Flange diameter 58 mm*
- *Analog output: 4...20 mA, 0...5 V, 0...10 V*
- *Singleturn linearity ±1°*
- *Mechanical speed up to 4000 min^{-1}*
- *Protection class IP65*
- *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)
Shaft diameter Ø x L	[mm]	6 x 12.5 / 10 x 20
Flange type	[mm]	synchro flange Ø 58 / clamping flange Ø 58
Output signal		see electrical data below
Connection		cable output or connector output M12, 5 poles
Mechanical speed	[min^{-1}]	4000 (continuous: 2000)
Starting torque (at 20 °C)	[Nm]	<0.01
Shaft load capacity	[N]	radial: 80 / axial: 40
Protection class		IP65
Operating temperature	[°C]	-40...+85
Temperature coefficient	[ppm/K]	<100
Shock resistance		5000 m/s^2, 4 ms (according to EN 60068-2-27)
Vibration resistance		300 m/s^2, 10...2000 Hz (according to EN 60068-2-6)
Shaft material		V2A
Flange material		Aluminium
Housing material		zinc die-cast
Weight	[g]	approx. 200

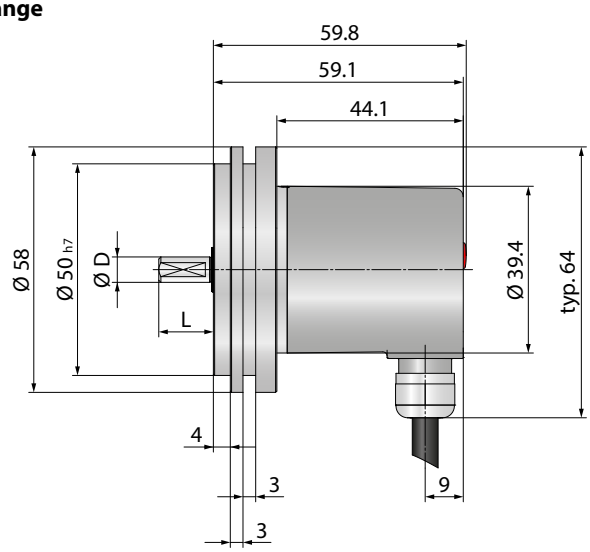
ELECTRICAL DATA

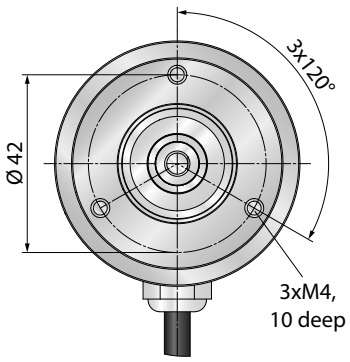
Output signal		4...20 mA	0...5 V	0...10 V
Resolution DA converter	[bit]	12	11	12
Supply	[VDC]	10...30		15...30
Current consumption (no load)	[mA]	30		
Output load max.	[kΩ]	0.2...1.2 (0.9 at 24 VDC)	-	-
Output current max.	[mA]	-	10	
Setting time		<1 ms (R_{burden} = 0.9 kΩ, 25 °C)	<1 ms (R_{load} = 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

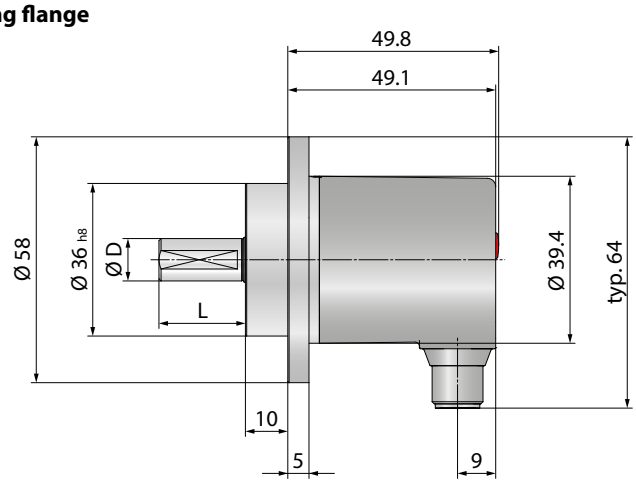
TECHNICAL DRAWING

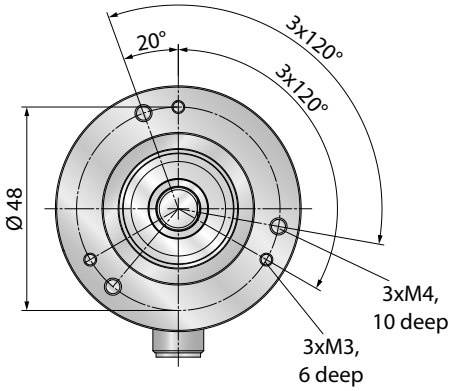
Synchro flange





Clamping flange





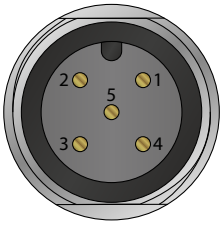
D	Fit	L
6	h7	12.5
10	f7	20

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

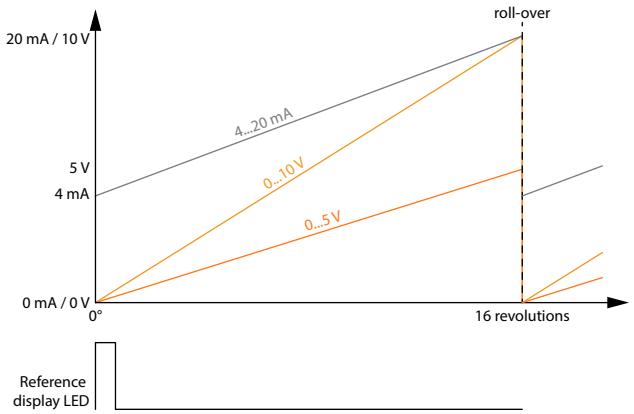
[1)] only with scalable versions.
Set 1: input for teach point 1
Set 2: input for teach point 2

Connector output
M12, male

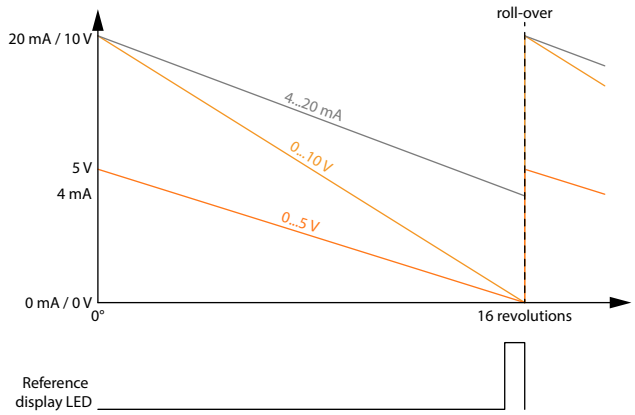


EXAMPLE OUTPUT DIAGRAMS

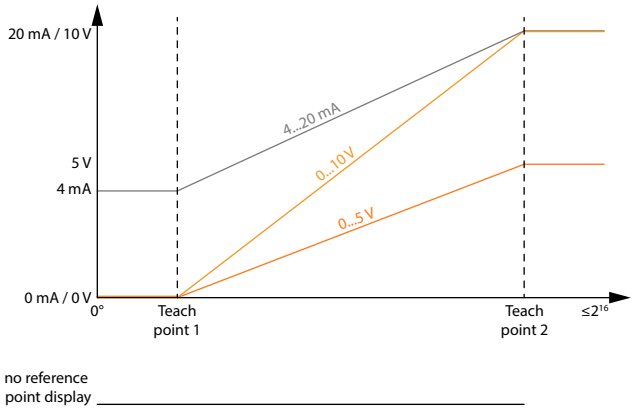
Version 16 revolutions, clockwise



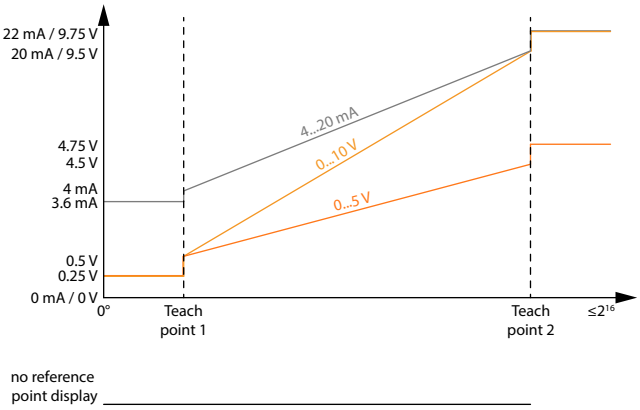
Version 16 revolutions, counterclockwise



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

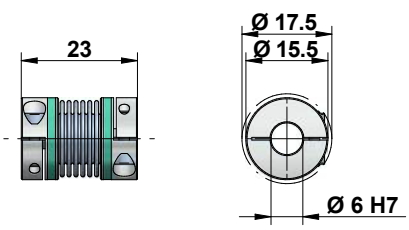
Limit switch function:

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

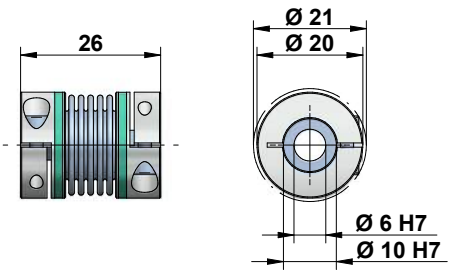
ACCESSORIES COUPLINGS

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!

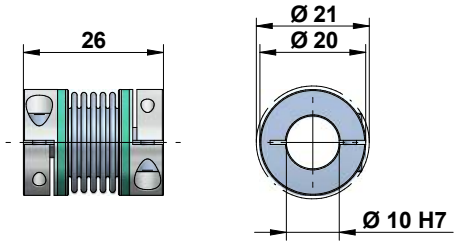
MBK-15.5-23-06-06



MBK-20-26-06-10

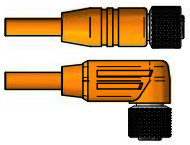


MBK-20-26-10-10

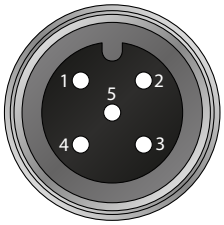


ACCESSORIES CABLES AND CONNECTORS

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

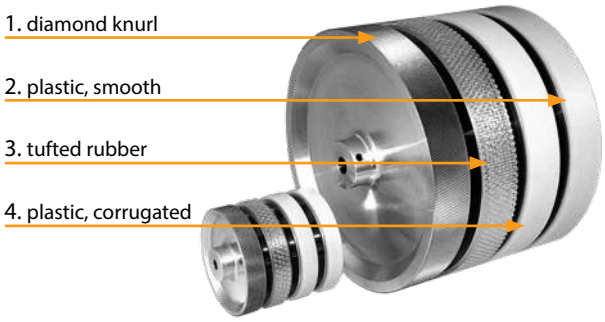


ACCESSORIES MEASURING WHEELS AND SPRING ENCODER ARM

Measuring wheels for measuring the length of products in movement, e.g. in the paper, metal, textile, wood or plastic industry.

Circumference	[m]	0.2	0.5	0.3
Diameter	[mm]	63.7	159.2	97.03
Width	[mm]	12	25	9.65
Bore diameter	[mm]		10	
Weight	[g]	60	775 (Profile 1), 700 (Profiles 2, 3, 4)	100
Temperature	[°C]		-30...+80	
Material of wheel body			Aluminium	
Profile		1. diamond knurl (aluminium) / 2. plastic (polyurethane), smooth / 3. tufted rubber (polyurethane) / 4. plastic (polyurethane), corrugated		5. natural rubber (NR), smooth

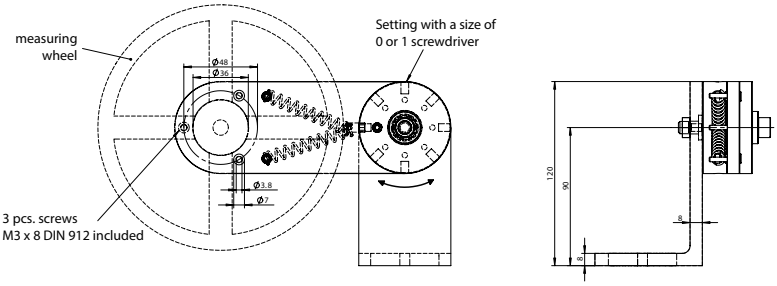
Surface of the measured material	Recommended profile
Cardboard	1, 2, 3, 4, 5
Wood	1, 2, 3, 4, 5
Textile	1, 2, 3, 4
Plastic (PVC, PE, ...)	2, 3, 4, 5
Paper	2, 3, 4, 5
Wire, greased metals, steel profiles, leather	2
Carpet, cables, nonwoven	3
Greased metals, glass, floor coverings	4
Painted surfaces	2, 4
Rubber, soft plastic	1

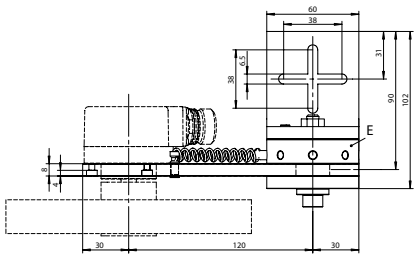


Please note:
If a measuring wheel is mounted directly on the shaft of a rotary encoder, the pressure force between the measuring wheel and measured material should not exceed the radial shaft load listed in this data sheet. In addition, the measuring wheels can only be used for in-house purposes which are not subject to the stipulations of the German calibration code.

Spring encoder arm for encoder with clamping flange
- Spring encoder arm for easy mounting of a measuring wheel with Encoder
- Flexible mounting position: 9 setting positions in 40° steps
- Base plate variable in 4 directions
- Adjustable spring pressure, max. 40 N
- Pressure for each notch approx. 20 N (first notch between 0 and approx. 20 N)
- Temperature range -40...120 °C







ORDER CODE

M58 – □ – □ – □ – □ – □

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 58 mm	W
Solid shaft, synchro flange Ø 58 mm	S

	Connection
SR12	Connector output M12, radial
KR_ _	Cable output, radial [1]

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

	Shaft diameter
6	Ø 6 mm x 12.5 mm
10	Ø 10 mm x 20 mm

[1] length in m (min. 1 m)
Example: KR01 = 1 m, KR02 = 2 m

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	
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

Spring encoder arm and measuring wheels	
DGA-MSR	Spring encoder arm
MSR-02-1	Wheel, diamond knurl, aluminium, circumference 0.2 m
MSR-02-2	Wheel, smooth plastic, polyurethane, circumference 0.2 m
MSR-02-3	Wheel, tufted rubber, polyurethane, circumference 0.2 m
MSR-02-4	Wheel, corrugated plastic, polyurethane, circumference 0.2 m

Spring encoder arm and measuring wheels	
MSR-05-1	Wheel, diamond knurl, aluminium, circumference 0.5 m
MSR-05-2	Wheel, smooth plastic, polyurethane, circumference 0.5 m
MSR-05-3	Wheel, tufted rubber, polyurethane, circumference 0.5 m
MSR-05-4	Wheel, corrugated plastic, polyurethane, circumference 0.5 m
MSR-12-5	Wheel, smooth natural rubber (NR), circumference 0.3 m

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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