MAGNETIC LINEAR ENCODER

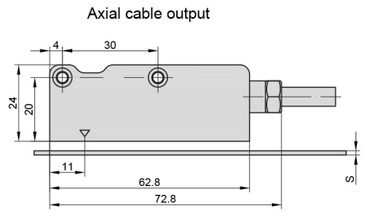
MK

Absolute Encoder · Analog output signals · BiSS protocol · Long measuring distance · SSI protocol · Magnetic Technology

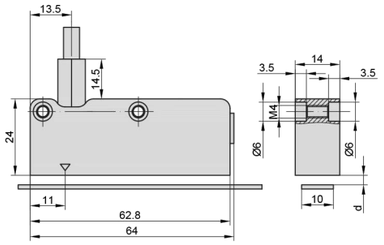
Magnetic absolute linear encoder MK has measuring length of up to 30.000 mm, accuracy can reach up to ±35 µm. The encoder has two versions of serial interface - SSI or BiSS C, but optionally it can have 2 analog sinusoidal signals with phase shift 90°C and amplitude approx. 1Vpp.

MECHANICAL DATA

Axial cable output



Radial cable output

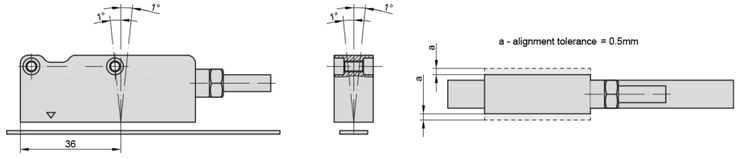


Value, mm	MP200A	MP200A +CV	MP200A +SP
s	1.3	1.6	2.1
d	0.3 ÷ 1.0	0.7 MAX	0.2 MAX

s - thickness

d - distance between reading head and magnetic band MP or protective cover CV (protective support SP)

Permissible tolerances for reading head mounting



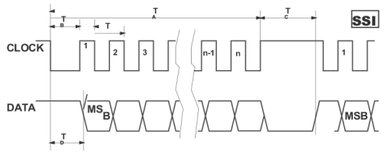
MK PARAMETERS

Pole pitch	2+2 mm
Measuring length (ML)	up to 30 m
Incremental signal	since wave 1Vpp (optional)
Resolution 1Vpp	up to 1µm (depending on CNC division factor)
Repeatability	± 1 increment
Signal period	2 mm
Serial interface	SSI or BiSS
Resolution absolute position	500, 100, 50, 10, 5, 1 µm
Accuracy	± 15 µm
Max. traversing speed	300 m/min
Power supply	(5 ... 28 V) DC ± 5%

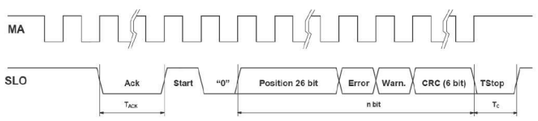
Current consumption with load	150 mA max. (with R=120Ω) 5Vdc 100 mA max. (with R=1200Ω) 24Vdc
Protection (EN 60529)	IP67
Operating temperature	0...+50 °C standard -20...+80 °C on request
Storage temperature	-30...+90 °C standard -45...+90 °C on request
Permissible humidity	100%
Permissible vibration (55...2000 Hz)	200 m/s²
Permissible shock (11 ms)	1000 m/s²
Weight of reading head	80 g
Electrical protections	from inversion of power supply polarity and from short circuit on output port
Standard cable length / max. cable length	2.0 / 20.0 m (50 m if power supply is 5V)

OUTPUT SIGNALS

Interface	SSI Binary - Gray	BiSS C unidirectional
Signals level	EIA RS 485	EIA RS 485
Clock frequency	0.1 ÷ 1.2 MHz	0.1 ÷ 4 MHz
n	Position bit	26 + 2 + bit
Tc	12 ÷ 65 µs	12 ÷ 20 µs



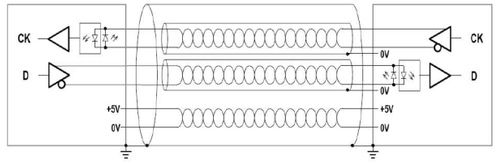
BiSS C-mode unidirectional



CABLE

Cable for serial output:

- 6-wire shielded cable, Ø=7 mm, PVC external sheath, with low friction coefficient, oil-resistant, suitable for continuous movements
- conductors section: supply 0.25 mm2, signals 0.25 mm2
- cable's bending radius should not be lower than 35 mm.



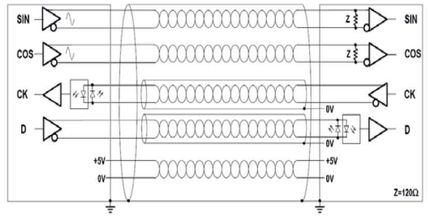
NOTE: Encoder is supplied with flexible cable, that consists of twisted pair of wires (for informational signals SSI-BiSS).

Cable for analog output + serial output:

- 10-wire shielded cable, Ø = 7.1 mm, PUR external sheath. Inside the cable, a further shield for the twisted pair of the digital signals (SSI-BiSS) is presented.
-conductors section: supply 0.35 mm2, signals 0.10 mm2
- cable's bending radius should not be lower than 45 mm.

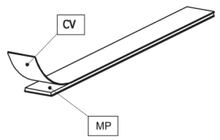
In case of cable extension, it is necessary to guarantee:

- electrical connection between the body of the connectors and the cables shield;
- minimum power supply voltage of 5 V to the head.



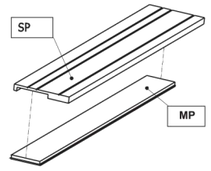
PROTECTIVE BAND CV

Stainless steel cover CV (width 10 mm, thickness 0,3 mm) for magnetic band MP protection is glued on magnetic band.



PROTECTIVE SUPPORT SP

Aluminium protective support SP for magnetic band MP protection. Fixed on machine surface and holds magnetic band. It is not possible to use the support SP if the magnetic band is already covered by stainless steel band CV.



MAGNETIC BAND MP200A

Pole pitch	2+ 2 mm
Accuracy (at 20 °C)	±20; ±80 µm/m
Width	10 mm
Thickness	1,3 mm
Length	30 m max.
Bend radius	80 mm min.
Weight of magnetic band	65 g/m
Weight of protective cover	25 g/m
Operating temperature	0...+70 °C
Storage temperature	20...+80 °C

ACCESSORIES

CONNECTORS FOR CABLE	B12 12-pin round connector	C12 12-pin round connector	D9 9-pin flat connector	D15 15-pin flat connector	RS10 10-pin round connector	ONC 10-pin round connector
DIGITAL READOUT DEVICES	CS3000				CS5500	

ORDER FORM

MK - **X1** - **X2** - **X3** - **X4** - **X5** - **X6** - **X7/X8**

Absolute resolution (X1):	Output signals (X2):	Incremental signals (X3):	Magnetic Band length (X4):	Protective steel cover length (X5):	Or aluminium protective support (X6):	Cable length and output (X7):	Connector Type (X8):
F10 - 1 µm **F50** - 5 µm **F100** - 10 µm **F500** - 50 µm **F1000** - 100 µm **F5000** - 500 µm	**S1** - SSI binary **S2** - SSI binary+even parity **S3** - SSI binary+odd parity **S4** - SSI binary+error **S5** - SSI binary+even parity+error **S6** - SSI binary+odd parity+error **S7** - SSI Gray **B1** - BiSS binary	**W** - without incremental signals **V** - 1Vpp	**MP200A/01** - 1m **MP200A/02** - 2m **MP200A/03** - 3m ... **MP200A/20** - 20m	**CV/01** - 1m **CV/02** - 2m **CV/03** - 3m ...	**SP/01** - 1m **SP/02** - 2m **SP/03** - 3m ...	**A01** - 1m axial **A02** - 2m ... **R01** - 1m radial **R02** - 2m ...	**W** - without connector **B12** - round, 12 pins **C12** - round, 12 pins **D9** - flat, 9 pins **D15** - flat, 15 pins

ORDER EXAMPLE: 1) MK-F10-S2-V-MP200A/02- SP/02-A02/C12