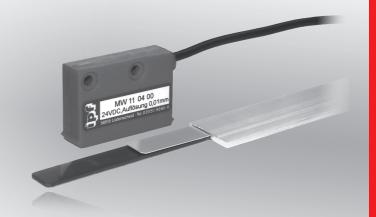


magnetic linear measurement 1100

dimensions 10x37x25mm

incremental resolution 10µm



- √ distance sensor / band: max. 2mm
- ✓ robust plastic housing
- √ very easy installation of the complete measuring system
- √ high initial acceleration is possible
- ✓ resistant to wear maintaining high accuracy
- ✓ linear resolution 10µm after 4-time interpretation

insensitive to dirt, humidity and vibration









description

Sensors for the detection of changes in position (linear) or angular change (rotating), which can detect the distance and direction of path and/or change of angle and direction of rotation are referred to as incremental encoders. The path measuring system consists of two parts: The sensing head and the magnetic tape. On the 10mm wide magnetic tape, north and south poles are alternating in a longitudinal direction with an exactly defined pole width. The magnetic tape is protected by a carrier strip on the rear and by a magnetically permeable masking tape made of stainless steel. A double-faced adhesive tape glued to the rear side is used as a fixture.

The sensing head mounted above the magnetic tape consecutively senses the different poles. From the sinusoidal signal which is generated, the integrated electronic system forms square wave signals.

These can be processed directly via a counter or a control.

The sensor element has a width of 5mm and is located in the center of the sensing head. In environments with dust, chipping, moisture or mechanical impacts, a protective aluminum section (AM000050) can be screwed above the magnetic tape (AM000059). The maximum tape length is 80m.

The precision of the system, taking into account the magnetic tape length "L" in meters is $\pm (0.025 + 0.01 \times L)$ mm. The magnetic tape has to be 55mm longer than the required measured distance.

For the further evaluation please connect the multifunction counter CI050100.

application examples

Linear measurement under toughest ambiance conditions







1100 magnetic linear measurement



operating voltage output signal ou	MW110411	MW110410	MW110405	MW110400	article-no.
output current (max. load) 4 x 20mA 4 x 5mA 6 x 20mA 6 x 20mA A / A Inverse B / B Inverse I / I Inverse B / B Inv	24V DC				
Dush pull	6 x 20mA				
### A / A inverse B / B invers	push pull	* = *	-		
TECHNICAL DATA Sensing range	A / A inverse				o any are original.
TECHNICAL DATA	B / B inverse	B / B inverse	B / B inverse	B / B inverse	
TECHNICAL DATA	I / I inverse	I / I inverse			
TECHNICAL DATA Sensing range output signal A/A inverse, B/B inverse	1μs		1µs	1µs	pulse distance
### TECHNICAL DATA sensing range	active measuring surface 90° 5 05	active measuring surface	active measuring surface	active/measuring surface	
sensing range output signal 0.42.0mm push pull A/A inverse, B/B inverse push pull push pull A/A inverse, B/B inverse a/A inverse, B/B inverse polarity problem. 0.42.0mm push pull push pull push push pull push push pull push A/A inverse, B/B inverse a/A inverse, B/B inverse polarity problem. 0.4	96 7	96 -	93.5	96 93.5	TECHNICAI DATA
A/A inverse, B/B inverse	0.4 2.0mm	0.4 2.0mm	0.4 2.0mm	0.4 2.0mm	
A/A inverse, B/B inverse	push pull	push pull	line driver	push pull	
pulse distance 1µs 1µs 1µs 1µs operating voltage 24V DC ±20% 5V DC ±5% 24V DC ±20% 24V DC current consumption (w/o load) < 70mA	e A/A inverse, B/B inverse		A/A inverse, B/B inverse	A/A inverse, B/B inverse	
operating voltage 24V DC ±20% 5V DC ±5% 24V DC ±20% 24V DC current consumption (w/o load) < 70mA	0.01mm	0.01mm	0.01mm	0.01mm	resolution
current consumption (w/o load) < 70mA < 820mA < 82	1µs	1µs	1µs	1µs	pulse distance
output current (max. load) 4x20mA 4x5mA 6x20mA 6x20mA accuracy * ±(0.025+0.01*L)mm ±(0.00*m)m	24V DC ±20%	24V DC ±20%	5V DC ±5%	24V DC ±20%	operating voltage
output current (max. load) 4x20mA 4x5mA 6x20mA 6x20mA accuracy * ±(0.025+0.01*L)mm ±(0.00*m)m	< 70mA	< 70mA	< 70mA	< 70mA	current consumption (w/o load)
accuracy * ±(0.025+0.01*L)mm ±(0.00*m)m	6x20mA	6x20mA	4x5mA	4x20mA	
repeat accuracy	±(0.025+0.01*L)mm	±(0.025+0.01*L)mm	±(0.025+0.01*L)mm	±(0.025+0.01*L)mm	
traversing speed < 6.9m/s < 6.	± 1 increment	, ,			
vibration resistance humidity 100/50Hz	< 6.9m/s			< 6.9m/s	
humidity 100% rh condensation permitted conde	10g/50Hz			10g/50Hz	
condensation permitted condensation permitted condensation permitted condensation permitted display (signal)	100% rh				
display (signal)					
short-circut protection + + + + + + + + + + + + + + + + + + +	_		_	_	display (signal)
reverse polarity protection + + + + + + + + + + + + + + + + + + +	_	_	_	_	
housing material plastic plast					·
dimensions 10x37x25mm 10x3x25mm 10x3x					
operating temperature system of protection (EN 60529) IP67	plastic	·	·	·	
system of protection (EN 60529) IP67 IP6	10x37x25mm				
connection 2m PUR cable, 6-wire 2m PUR cable, 6-wire 2m PUR cable, 8-wire 5m PUR cable 4x M3x14mm 2x M3x14mm 2x M3x14mm 2x M3x14mm 2x M3x14mm 4x M3x14mm 4x M3x14mm 5x M3x14mm 4x M3x14mm 5x M3x14mm 4x M3x14mm 5x M3x14mm 6x M3x14mm	-10 +70°C				
mounting accessories 2x M3x14mm 2x M3x14mm 2x M3x14mm 2x M3x14mm 2x M3x14mm 4xagon socket 4x L = magnetic tape length in m	IP67				
hexagon socket hexago	5m PUR cable, 8-wire	2m PUR cable, 8-wire	2m PUR cable, 6-wire	2m PUR cable, 6-wire	
* L = magnetic tape length in m	2x M3x14mm				mounting accessories
	hexagon socket	hexagon socket	hexagon socket	hexagon socket	



TUV HORE



magnetic linear measurement 1100

article-no.	MW110430	MW110431	MW110435
operating voltage	24V DC	24V DC	5V DC
output current (max. load)	4 x 20mA	4 x 20mA	4 x 5mA
output signal	push pull	push pull	line driver
	A / A inverse B / B inverse	A / A inverse B / B inverse	A / A inverse
nulso distanso			B / B inverse
pulse distance	4μs	4μs	4μs
	active measuring surface 90° 5 5	active measuring surface 90° 5	active measuring surface 90° 5 05
	93.5	93.5	Ø3.5
TECHNICAL DATA	0.4. 2.0	0.4 . 2.0	0.4. 2.0
sensing range	0.4 2.0mm	0.4 2.0mm	0.4 2.0mm line driver
output signal	push pull A/A inverse, B/B inverse	push pull A/A inverse, B/B inverse	A/A inverse, B/B inverse
resolution	0.01mm	0.01mm	0.01mm
pulse distance	4µs	4µs	4µs
operating voltage	24V DC +20%	24V DC ±20%	5V DC ±5%
current consumption (w/o load)	< 70mA	< 70mA	< 70mA
output current (max. load)	4x20mA	4x20mA	4x5mA
accuracy*	±(0.025+0.01*L)mm	±(0.025+0.01*L)mm	±(0.025+0.01*L)mm
repeat accuracy	± 1 increment	± 1 increment	± 1 increment
traversing speed	< 1.7m/s	< 1.7m/s	< 1.7m/s
vibration resistance	10g/50Hz	10g/50Hz	10g/50Hz
humidity	100% rh	100% rh	100% rh
	condensation permitted	condensation permitted	condensation permitted
display (signal)			
short-circut protection	+	+	+
reverse polarity protection	+	+	+
housing material	plastic	plastic	plastic
dimensions	10x37x25mm	10x37x25mm	10x37x25mm
operating temperature	-10 +70°C	-10 +70°C	-10 +70°C
system of protection (EN 60529)	IP67	IP67	IP67
connection	2 m PUR-Kabel, 6-wire	5m PUR cable, 6-wire	2m PUR cable, 6-wire
mounting accessories	2x M3x14mm hexagon socket	2x M3x14mm hexagon socket	2x M3x14mm hexagon socket
* L = magnetic tape length in m at +20° C	ZANISAT IIIII IICAAgoii socket	Z. NIJAZ-IIIII Nexagon socket	ZAWIJAT-IIIII IICAGOII 30CKC

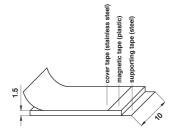


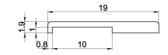


1100 magnetic linear measurement



article-no.	AM000059	AM000050
version	magnetic tape	profil rail
pole length	5mm	
operating temperature	-20 +70°C	-
humidity	100% rh, condensation permitted	
material	see drawing	aluminium
mounting	glued joint	screw connection



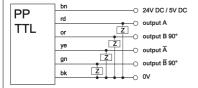




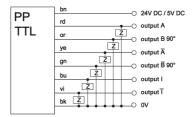
magnetic linear measurement 1100

connection

cable device 6-wire

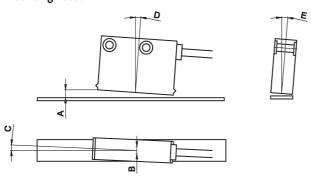


cable device 8-wire

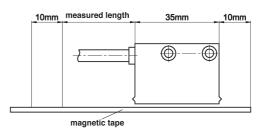


wire colors: bn = brown, rd = red, or = orange, ye = yellow, gn = green, bu = blue, vi = violet, bk = black

mounting notes



determination of the magnetic tape length

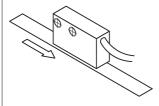


Messweg + 35mm + (2*10mm) = Magnetbandlänge

MW100150

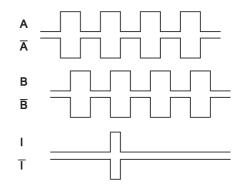
sensing range	А	max. 2.0mm
lateral offset	В	max. ± 2.0mm
misalignment	С	< ±3°
longitudinal inclination	D	< ±1°
lateral inclination	E	< ±3°

traversing direction



The arrow points to the direction of the linear measurement of the magnetic tape (signal A before B). An indication for positioning the **MW11** is the cable outlet.

signal pictures



This data sheet contains the available standard versions only. Kindly request the availability of other output- and connection functions. **Warning:** Never use these devices in applications where the safety of a person depends on their functionality.

You also find this data sheet, as well as contact details under www.ipf-electronic.com





1100 magnetic linear measurement



notes

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