



Incremental rotary encoder

MNI40N

- Clear function verification via two-color LEDs (red/green)
- Simple installation and adjustment using assistance functions reduce costs
- Self-diagnostics including the magnetic wheel provide quality assurance
- Internal intelligence provides easy setup and reliable operation
- The elastomer coating of the magnetic wheel provides resistance to dirt as well as thermal and mechanical shock
- Long service life at high speeds and temperatures

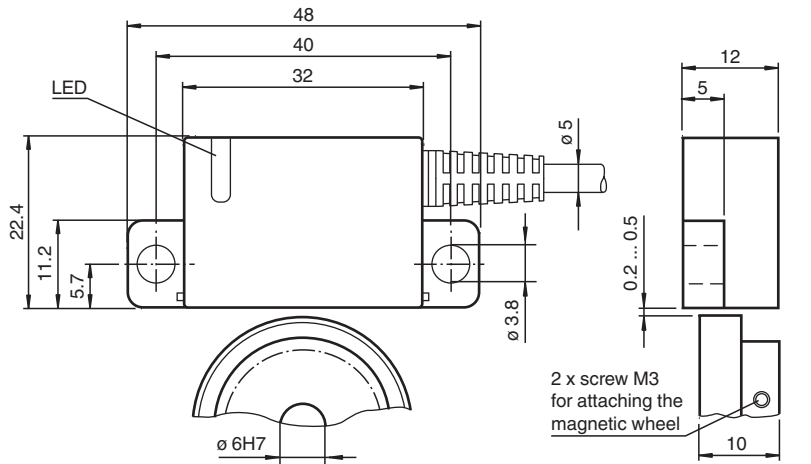
Magnetic, Non Contact



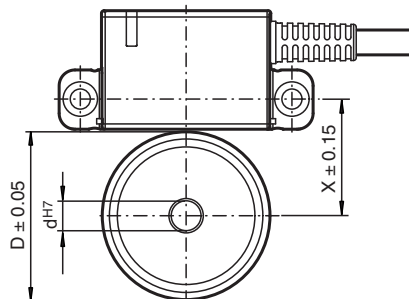
Function

The magnetic incremental encoder MNI40 combines an exceptionally robust measurement system with intelligent diagnosis and alignment functions in the smallest space. Its highly compact encapsulated housing gives the sensor its high resistance to harsh environmental conditions. The installation-friendly design and simple guided adjustment of the sensor using two-color status LED reduces the installation time considerably.

Dimensions



Poles	Ø d [mm]	Ø D [mm]	X [mm]
50	6 10 12 15	31.7	21.9
64	6 19.05 10 20 12 15	40.6	26.35
72	6 20 10 24 12 25 15 30	45.7	28.9
100	35	63.7	37.9



Release date: 2022-12-12 Date of issue: 2022-12-12 Filename: t42651_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group
www.pepperl-fuchs.com

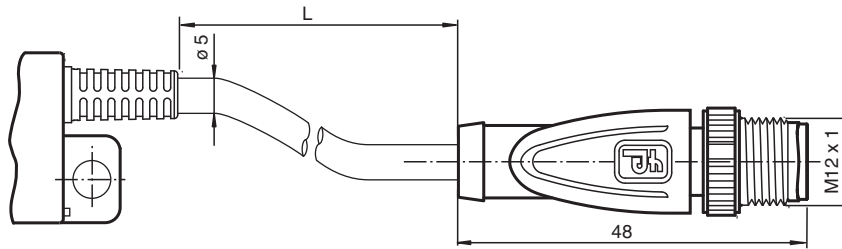
USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

PF PEPPERL+FUCHS

Dimensions



Technical Data

General specifications		
Detection type		magnetic sampling
Pulse count		max. 7200
UL File Number		E223176 "For use in NFPA 79 Applications only", if UL marking is marked on the product.
Functional safety related parameters		
MTTF _d		942 a
Mission Time (T _M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
LED red/green		Operating display / Alignment aid
Electrical specifications		
Operating voltage	U _B	10 ... 30 V DC 5 V DC for RS-422
No-load supply current	I ₀	max. 55 mA
Output		
Output type		push-pull, incremental or RS-422, incremental
Voltage drop	U _d	< 2.5 V
Load current		max. per channel 30 mA , short-circuit protected (max. per channel 20 mA, conditionally short-circuit proof)
Output frequency		max. 1 MHz
Connection		
Cable		Ø4,7 mm, 4 x 2 x 0,128 mm ² connection with plug M12, 8-pin, L = 0.3 m
Standard conformity		
Degree of protection		DIN EN 60529, IP67 , IP68 , IP69K
Climatic testing		DIN EN 60068-2-30
Emitted interference		EN 61000-6-4:2007/A1:2011
Noise immunity		EN 61000-6-2:2005
Shock resistance		DIN EN 60068-2-27, 200 g, 6 ms
Vibration resistance		DIN EN 60068-2-6, 40 g, 10 ... 2000 Hz
Approvals and certificates		
UL approval		cULus Listed, General Purpose, Class 2 Power Source, Type 1 enclosure , if UL marking is marked on the product. adapters providing field wiring on request
Maximum permissible ambient temperature		max. 80 °C (max. 176 °F)
Ambient conditions		
Operating temperature		-40 ... 100 °C (-40 ... 212 °F)

Release date: 2022-12-12 Date of issue: 2022-12-12 Filename: t42651_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

 Pepperl+Fuchs Group
www.pepperl-fuchs.com

 USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

 Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

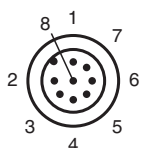
 Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

Technical Data

Storage temperature	-40 ... 100 °C (-40 ... 212 °F)
Mechanical specifications	
Material	
Housing	PA
Cable	PUR
Magnetic wheel	steel 1.4021 (AISI 420) ferrite filled cured rubber
Mass	approx. 190 g
Rotational speed	max. 30000 min ⁻¹

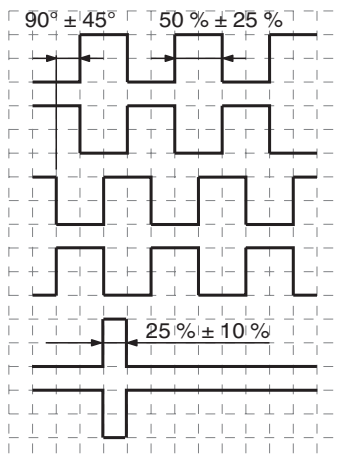
Connection

Signal	Cable, 8-core	Connection cable with M12 plug, 8-pin
GND	White	1
+U _b	Brown	2
A	Green	3
B	Grey	5
\bar{A}	Yellow	4
\bar{B}	Pink	6
0	Blue	7
$\bar{0}$	Red	8
Screen	-	-

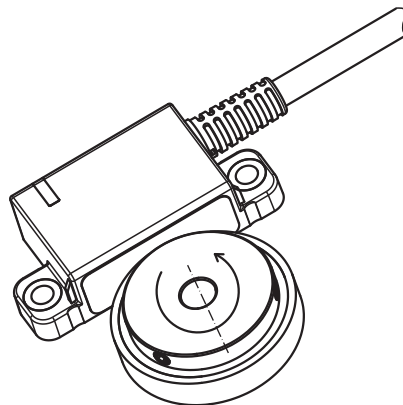


Operation

Signal outputs



↻ ccw - with top-view



Indication

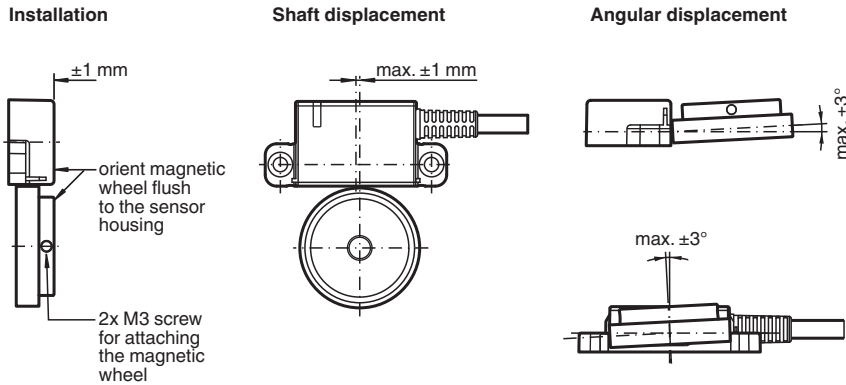
LED-Indicators

LED status	Description
Green On	Sensor self test and magnetic wheel verification successfully completed.
Green Flashing	Sensor waiting to complete single magnetic revolution for code wheel verification process.
Red Flashing	Warning Alignment or wheel velocity detected as out of specified limits. Possible cause: improper alignment (large sensor-wheel gap, magnetic wheel misalignment, ...)
Red On	Error Possible reason: <ul style="list-style-type: none"> • Supply voltage drop • Magnetic wheel not detectable (e. g. too large gap) • Broken magnetic wheel

Release date: 2022-12-12 Date of issue: 2022-12-12 Filename: t42651_eng.pdf

Mounting

Mounting information



Type Code

M	N	I	4	0	N	-					6	N	-					
Version		MNI 4 0 N - - - - - 6 N - - - - -										Pulse count		see below				
												Temperature		N normal				
												Output type		1 10 V ... 30 V, push-pull				
												6		5 V, RS 422				
												Signal output		6 A + B + 0 and $\bar{A} + \bar{B} + \bar{0}$				
												Connection type		B1 Fixed cable with M12 plug, 8-pin, 0.3m				
												K2		PUR cable, 4 x 2 x 0.128 mm ² , 2m				
												Magnetic wheel specifications		01 50 Poles, Ø31.7 mm (1.25")				
														Pulse counts: 50, 100, 200, 500, 800, 1000, 1250, 1600, 2400, 2500, 5000				
												A1		64 Poles, Ø40.6 mm				
														Pulse counts: 64, 128, 512, 1024, 1600, 2048, 3072, 3200				
												E1		72 Poles, Ø45.7 mm				
														Pulse counts: 360, 1800, 3600, 7200				
												E1		72 Poles, Ø45.7 mm				
														Pulse counts: 360, 1800, 3600, 7200				
												D1		100 Poles, Ø63.7 mm				
														Pulse counts: 100, 200, 500, 800, 1000, 1600, 2400, 2500, 3200, 5000				
												Bore hole of magnetic wheel		0S Ø6 mm				
												0A		Ø10 mm				
												0B		Ø12 mm				
												0T		Ø15 mm				
												2B		Ø19.05 mm (only with A1)				
												0F		Ø20 mm (only with A1 and E1)				
												0G		Ø24 mm (only with E1)				
												0H		Ø25 mm (only with E1)				
												0I		Ø30 mm (only with E1)				
												0K		Ø35 mm (only with D1)				
												Housing material		N Plastic				

Release date: 2022-12-12 Date of issue: 2022-12-12 Filename: t42651_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

