EMI 30 M

MAGNETIC INCREMENTAL KIT ENCODER

MAIN FEATURES

Series of miniaturized encoders with innovative proprietary magnetic sensor for integration on small size AC/DC motors, stepper motors or for limited size applications.

- 3 channel encoder (A / B / Z) with resolution up to 10000 ppr
- Power supply up to +30 V DC with several electrical interfaces available
- Cable output, connectors available on cable end
- Compact dimensions (height < 25 mm)
- No wear due to non contact magnetic technology
- Bore shaft diameter up to 10 mm
- Wide operating temperature -20° ... +100°C (-4° ... +212°F)
- OEM version without cover available

ORDERING CODE

EMI	30M	*S	50	Z	5/30	P	6	X	X	PR	. XXX

SERIES
magnetic incremental encoder series EMI

MODEL
kit encoder 30M

COVER
* add if without cover S

RESOLUTION
ppr from 1 to 10000
please refer to the preferred resolutions list

ZERO PULSE
without zero pulse S
with zero pulse Z

POWER SUPPLY
5 V DC 5
5 ... 30 V DC 5/30

ELECTRICAL INTERFACE
NPN open collector C
push-pull P
line driver L
power supply 5/30 V DC - output RS-422 RS

BORE DIAMETER
mm 6
(1/4") mm 6,35
mm 8
mm 10

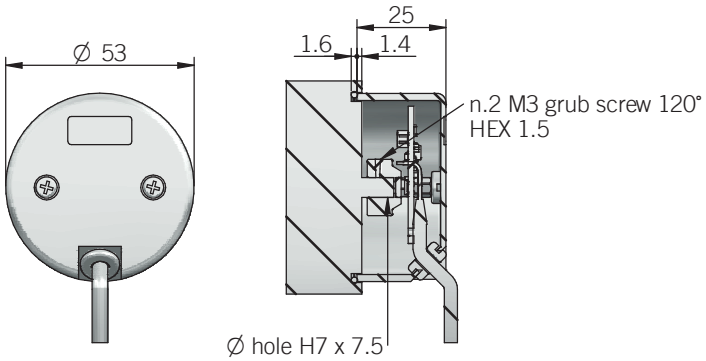
ENCLOSURE RATING
IP 54 X

OPTION
to be reported X

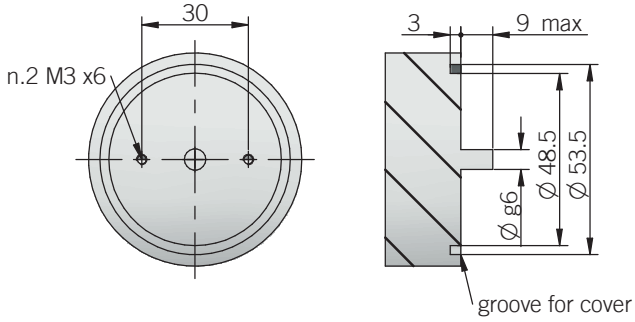
OUTPUT TYPE
radial cable (standard length 0,5 m) PR
preferred cable lengths 1,5 / 2 / 3 / 5 / 10 m, to be added after OUTPUT TYPE (eg. PR5)

VARIANT
custom version XXX

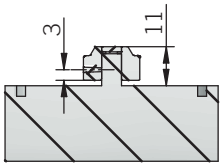
30M



RECOMMENDED INTERFACE FLANGE DESIGN



MAGNET-ACTUATOR INSTALLATION



dimensions in mm

ELECTRICAL SPECIFICATIONS

Resolution	from 1 to 10000 ppr
Power supply[1]	5 = 4,5 ... 5,5 V DC 5/30 = 4,5 ... 30 V DC (reverse polarity protection)
Power draw without load typical	0,4 W
Max load current	C / P = 50 mA / channel L / RS = 20 mA / channel
Electrical interface[2]	NPN open collector (AEIC-7273, pull-up max +30 V DC) push-pull / line driver HTL (AEIC-7272 or similar) line driver RS-422 (AELT-5000 or similar)
Max output frequency	800 kHz
Counting direction	A leads B clockwise (shaft view)
Index signal	180°e (gated A)
Startup time typical	10 ms
Accuracy	< 0,3° at +20°C (+68°F) ± 0,5° in the operating temperature range
Hysteresys	0,70° up to 256 ppr 0,35° from 257 ppr to 10000 ppr
Mean time to dangerous failure ($MTTF_d$)[3] **according to EN ISO 13849-1**	253 years
Mission time (Tm)[3]	20 years
Diagnostic coverage (DC)[3]	0%
Cable type	shielded - fixed installation conductors section 0,22 mm² / AWG 24 bending radius min 60 mm
Electromagnetic compatibility	according to 2014/30/EU directive
RoHs	according to 2011/65/EU directive
UL / CSA	file n. E212495

PREFERRED RESOLUTIONS

2 - 4 - 5 - 6 - 8 - 10 - 12 - 16 - 20 - 30 - 40 - 50 - 60 - 80 - 90 - 100 - 125 - 128 - 200 - 250 - 256 - 360 - 400 - 500 - 512 - 720 - 1000 - 1024 - 1440 - 2000 - 2048 - 3600 - 4096 - 5000 - 7200 - 10000

please directly contact our offices for other pulses

MECHANICAL SPECIFICATIONS

Bore diameter	ø 6 / 6,35 (1/4") / 8 / 10 mm
Enclosure rating	IP 54 (IEC 60529) when properly installed with supplied oring kit
Max rotation speed	limited only by output frequency
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	20 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	0,1 x 10^{-6} kgm² (2,4 x 10^{-6} lbft²)
Magnet-actuator material	aluminium
Cover material	PA66 glass fiber reinforced
Shaft radial play allowed	± 0,25 mm
Shaft axial play allowed	± 0,5 mm
Operating temperature[4, 5]	-20° ... +100°C (-4° ... +212°F)
Storage temperature[5]	-20° ... +100°C (-4° ... +212°F)
Weight	100 g approx (3,5 oz)

[1] as measured at the transducer without cable influences
[2] for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section
[3] this product is not a safety component, for further details refer to TECHNICAL BASICS section
[4] measured on the transducer flange
[5] condensation not allowed

CONNECTIONS

Function	Cable C / P	Cable L / RS
+V DC	red	red
0 V	black	black
A+	green	green
A-	/	brown or grey
B+	yellow	yellow
B-	/	orange
Z+	blue	blue
Z-	/	white
⏚	shield	shield