EL 120 P

THROUGH HOLLOW SHAFT INCREMENTAL ENCODER

MAIN FEATURES

ø 120 mm through hollow shaft encoder designed for medium / large size motors.

- 3 channel encoder (A / B / Z) up to 2048 ppr
- Power supply up to +28 V DC with various electrical interfaces available
- Output frequency up to 105 kHz
- Cable output, connectors available at cable end
- Through hollow shaft up to 60 mm diameter
- Shaft fixing by grub screws

ORDERING CODE

EL 120P 1024 S 5/28 P 50 X 3 PR . XXX

SERIES
incremental encoder series EL

MODEL
through hollow shaft with spring 120P

RESOLUTION
ppr from 400 to 2048
refer to the available pulses list

ZERO PULSE
without zero pulse S
with zero pulse Z

POWER SUPPLY
(with L electrical interface) 5 V DC 5
(with L electrical interface) 8 ... 24 V DC 8/24
5 ... 28 V DC 5/28

ELECTRICAL INTERFACE
push-pull P
line driver L

BORE DIAMETER
mm 40
mm 50
mm 60

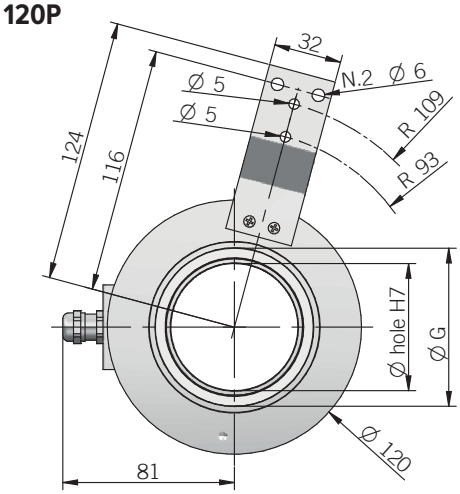
ENCLOSURE RATING
IP 54 X

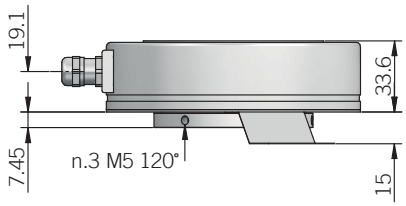
MAX ROTATION SPEED
3000 rpm 3

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

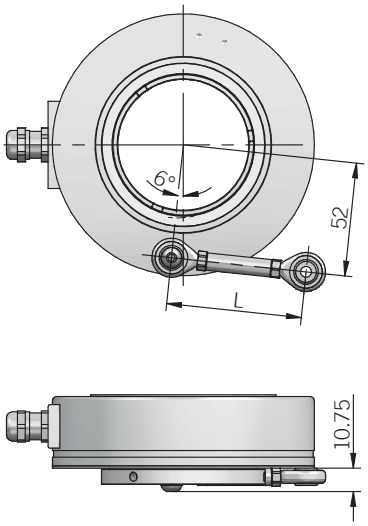
120P





recommended mating shaft tolerance g6
dimensions in mm

INSTALLATION WITH TORQUE ARM



for torque arm please refer to Accessories

SHAFT DIAMETER	G
ø 40	ø 65
ø 50	ø 65
ø 60	ø 75

ELECTRICAL SPECIFICATIONS

Resolution	from 400 to 2048 ppr
Power supply[1]	5 = 4,5 ... 5,5 V DC 5/28 = 4,75 ... 29,4 V DC 8/24 = 7,6 ... 25,2 V DC (reverse polarity protection)
Current consumption without load	100 mA max
Max load current	C / P = 50 mA / channel L = 20 mA / channel
Electrical interface[2]	push-pull / line driver HTL (AEIC-7272 or similar) line driver RS-422 (AELT-5000 or similar)
Max output frequency	105 kHz
Counting direction	A leads B clockwise (shaft view)
Index signal	90°e (gated A&B)
Mean time to dangerous failure ($MTTF_d$)[3] **according to EN ISO 13849-1**	429 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

RESOLUTIONS

400 - 800 - 1000 - **1024** - 1440 - 1600 - 2000 - **2048**

please directly contact our offices for other pulses, preferred resolutions in bold

MECHANICAL SPECIFICATIONS

Bore diameter	ø 40 / 50 / 60 mm
Enclosure rating	IP 54 (IEC 60529)
Max rotation speed	3000 rpm
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	approx 215 x 10^{-6} kgm² (51 x 10^{-4} lbft²)
Starting torque (at +20°C / +68°F)	< 0,05 Nm (7 Ozin)
Bearing stage material	aluminum
Shaft material	aluminum
Housing material	aluminum
Bearings	n.2 ball bearings
Bearings life	10^9 revolutions
Operating temperature[4, 5]	0° ... +60 °C (+32° ... +140°F)
Storage temperature[5]	-25° ... +70 °C (-13° ... +158°F)
Weight	750 g (26,46 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
+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

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