

MAIN FEATURES

Explosion proof encoders designed to operate in hazardous and explosive environments.

- 3 channel encoder (A / B / Z) up to 10000 ppr
- Power supply up to +30 V DC with various electrical interfaces available
- Output frequency up to 500 kHz
- 10 mm solid shaft diameter
- Mounting by synchronous or centering square flange

EX CLASSIFICATION

It has been assured with EC-TYPE Examination Certificate CESA 04 ATEX 082 that the EX 80 is compliant with essential health and safety requirements according to

- EN IEC 60079-0:2018
- EN 60079-1:2014
- EN 60079-31:2014

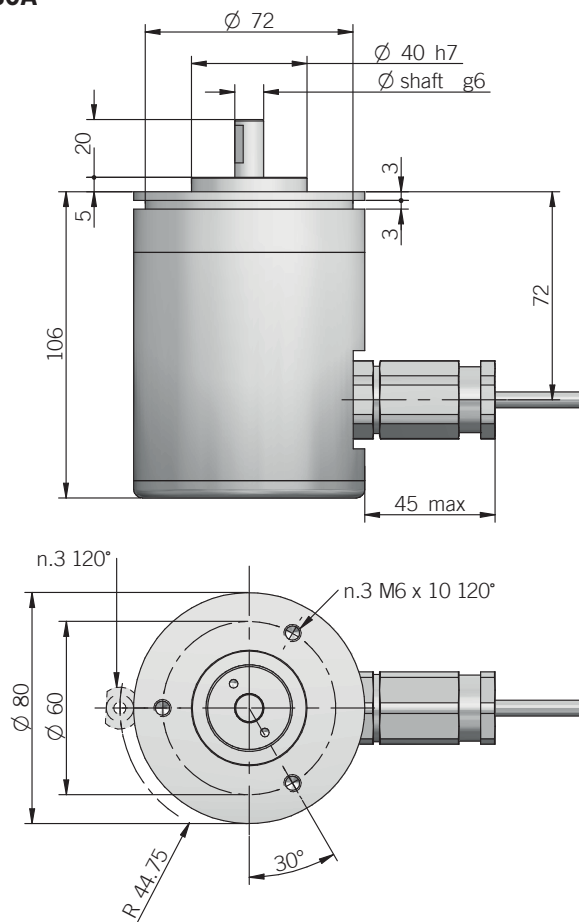
The UE declaration is available on www.eltra.it



ORDERING CODE

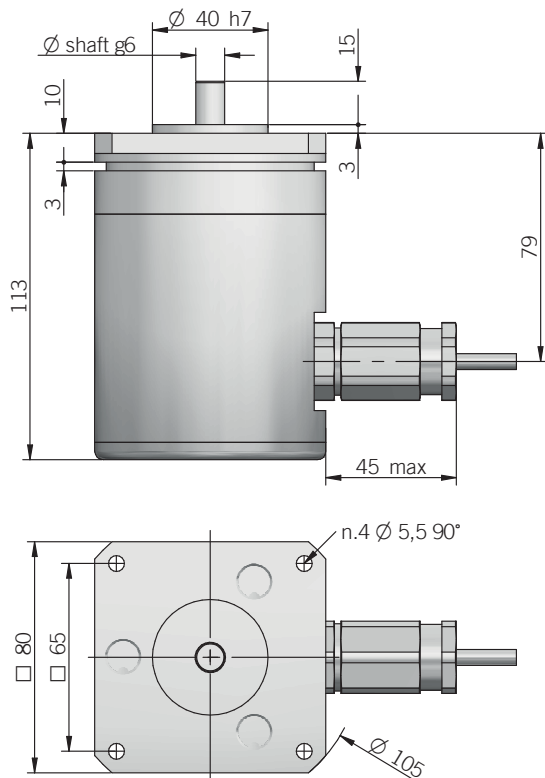
EX	80A	500	S	5/28	P	10	X	3	PR	.XXX
SERIES explosion proof encoder series EX										
MODEL synchronous flange ø 40 mm 80A centering square flange ø 40 mm 80D										
RESOLUTION ppr from 100 to 10000 refer to the available pulses list										
ZERO PULSE without zero pulse S with zero pulse Z										
POWER SUPPLY (with L electrical interface) 5 V DC 5 5 ... 28 V DC 5/28										
ELECTRICAL INTERFACE NPN open collector C push-pull P line driver L power supply 5/28 V DC - output RS-422 RS										
SHAFT DIAMETER mm 10										
ENCLOSURE RATING IP 65 X										
MAX ROTATION SPEED 3000 rpm 3										
OUTPUT TYPE radial cable (standard length 1,5 m) PR preferred cable lengths 2 / 3 / 5 / 10 m, to be added after OUTPUT TYPE (eg. PR5)										
VARIANT custom version XXX										

80A



fixing clamps not included, please refer to the Accessories

80D



recommended mating shaft tolerance H7
dimensions in mm

ELECTRICAL SPECIFICATIONS

Resolution	from 100 to 10000 ppr
Power supply¹	5 = 4,5 ... 5,5 V DC 5/28 = 4,5 ... 30 V DC (reverse polarity protection)
Current consumption without load	80 mA max
Max load current	C / P = 50 mA / channel L / RS = 20 mA / channel
Electrical interface²	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	250 kHz up to 6000 ppr / 500 kHz from 7200 ppr
Counting direction	A leads B clockwise (shaft view)
Index signal	180°e (gated A)
Mean time to dangerous failure (MTTF)³ according to EN ISO 13849-1	263 years
Mission time (Tm)³	20 years
Diagnostic coverage (DC)³	0%
Cable type	shielded - fixed or flexible installation conductors section min 0,14 mm ² / AWG 26 bending radius min 35 mm (fixed) / min 60 mm (flexible)
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2011/65/EU directive
UL / CSA	file n. E212495

MECHANICAL SPECIFICATIONS

Shaft diameter	ø 10 mm
Enclosure rating	IP 65 (IEC 60529)
Max rotation speed	3000 rpm
Max shaft load⁴	200 N (45 lbs) axial / radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	1,5 x 10 ⁻⁶ kgm ² (36 x 10 ⁻⁶ lbf ²)
Starting torque (at +20°C / +68°F)	< 0,06 Nm (8,50 Ozin)
Bearing stage material	anodized aluminum
Shaft material	stainless steel
Housing material	anodized aluminum
Bearings	n.2 ball bearings
Bearings life	10 ⁹ revolutions
Operating temperature^{5,6}	-20° ... +50°C (-4° ... +122°F)
Storage temperature⁶	-20° ... +70°C (-4° ... +158°F)
Weight	1200 g (42,33 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 maximum load for static usage

⁵ measured on the transducer flange

⁶ condensation not allowed

RESOLUTIONS

100 - 200 - 360 - 400 - 500 - 1000 - 1024 - 1440 - 2000 - 2048 - 2500 - 3000 - 3600 - 4000 - 4096 - 5000 - 6000 - 7200 - 8000 - 8192 - 9000 - 10000

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

EPL MARKING



II 2GD
Ex db IIC T6 Gb
Ex tb IIIC T85°C Db
IP 65

II 2GD

II: group II: different than mines

2: category 2: high level of protection

GD: areas containing gas (G) and dust (D)

Ex db IIC T6 Gb

Ex db: flameproof enclosure for explosive atmospheres with gases, vapours and mists

IIC: group of gas IIC

T6: max surface temperature +85°C of the device for atmospheres with gas

Gb: product with a high level of protection

Ex tb IIIC T85°C Db

Ex tb: flameproof enclosure safety type

IIIC: group of dust combustibles IIIC

T85°C: max surface temperature +85°C of the device in the presence of dust

Db: product with a high level of protection

CONNECTIONS

Function	Cable C / P	Cable L / RS
+V DC	brown	brown
0 V	gray	gray
A+	green	green
A-	/	red
B+	yellow	yellow
B-	/	pink
Z+	white	blue
Z-	/	white
⏏	shield	shield