

### MAIN FEATURES

Explosion proof encoder for applications within explosive and hazardous areas.

- 3 channel encoder (A / B / Z) up to 10000 ppr
- Power supply up to +28 VDC with several electronic interfaces available
- Up to 500 kHz output frequency
- 10 mm solid shaft diameter
- Mounting by synchronous or centering square flange

### EX CLASSIFICATION

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

- EN 60079-0:2012+A11:2013
- EN 60079-1:2007
- EN 60079-31:2014

Declaration of conformity and CE declaration are available for download from Eltra website [www.eltra.it](http://www.eltra.it)



### ORDERING CODE

**EX 80A 500 S 5/28 N 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**  
*see table for pulses availability*

**ZERO PULSE**  
without zero pulse **S**  
with zero pulse **Z**

**POWER SUPPLY**  
(with L electronic interface) 5 V DC **5**  
(with L or PC electronic interface) 8 ... 24 V DC **8/24**  
5 ... 28 V DC **5/28**

**ELECTRONIC INTERFACE**  
NPN **N**  
NPN open collector **C**  
push-pull **P**  
push-pull protected (AEIC-7272) **PC**  
line driver **L**  
power supply 5/28V - output RS-422 **RS**

**SHAFT DIAMETER**  
mm **10**

**ENCLOSURE RATING**  
IP 65 **X**

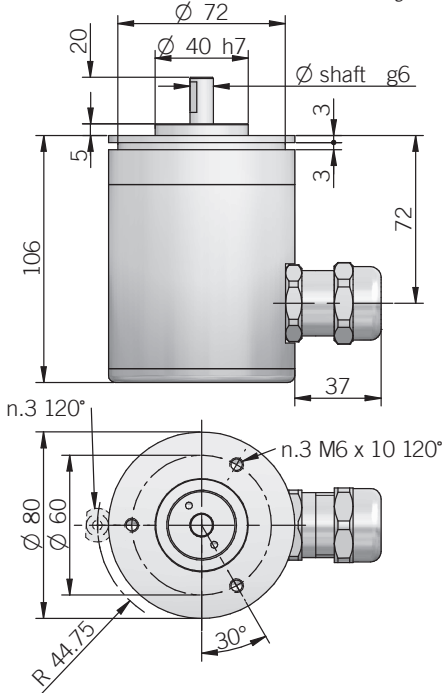
**MAX ROTATION SPEED**  
3000 rpm **3**

**OUTPUT TYPE**  
radial cable (standard length 1,5 m) **PR**

**VARIANT**  
custom version **XXX**

**EX 80 A**

fixing clamps not included



dimensions in mm

**ELECTRICAL SPECIFICATIONS**

<b>Resolution</b>	from 100 to 10000 ppr
<b>Power supply</b>	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)
<b>Current consumption without load</b>	80 mA max
<b>Max load current</b>	N / C / P / PC = 50 mA / channel L / RS = 20 mA / channel
<b>Output type*</b>	NPN / NPN open collector / push-pull / line driver
<b>Max output frequency</b>	250 kHz up to 6000 ppr 500 kHz from 7200 ppr
<b>Counting direction</b>	A leads B clockwise (shaft view)
<b>Electromagnetic compatibility</b>	IEC 61000-6-1 IEC 61000-6-3

\*output levels according to power supply, for further details please see under Technical basics

**ATEX MARKING**

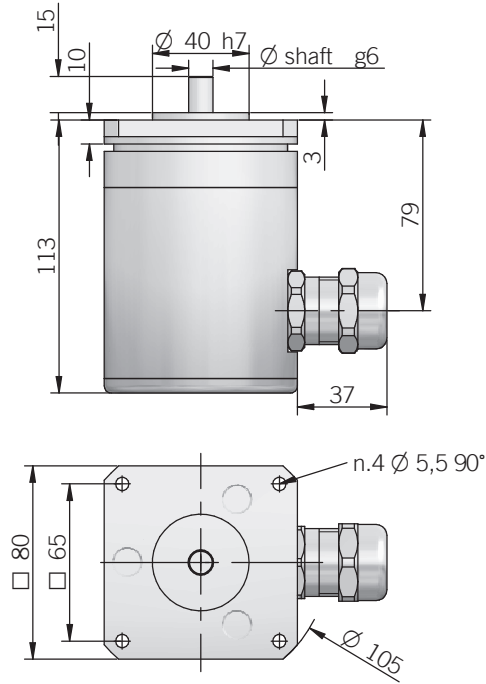
**II 2GD**  
**Ex d IIC T6 Gb**  
**Ex tb IIIC T85°C Db**  
**IP 65**

**II 2GD**  
 II: group II: different than mines  
 2: category 2: high level of protection  
 GD: areas containing gas (G) and dust (D)

**Ex d IIC T6 Gb**  
 Ex d: 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

**EX 80 D**



**MECHANICAL SPECIFICATIONS**

<b>Shaft diameter</b>	ø 10 mm
<b>Enclosure rating</b>	IP 65 (IEC 60529)
<b>Max rotation speed</b>	3000 rpm
<b>Max shaft load</b>	200 N axial / radial
<b>Shock</b>	50 G, 11 ms (IEC 60068-2-27)
<b>Vibration</b>	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
<b>Moment of inertia</b>	1,5 x 10 <sup>-6</sup> kgm <sup>2</sup>
<b>Starting torque (at +20°C / +68°F)</b>	< 0,03 Nm
<b>Body material</b>	anodized aluminum
<b>Shaft material</b>	1.4305 / AISI 303 stainless steel
<b>Housing material</b>	anodized aluminum
<b>Bearings</b>	2 ball bearings
<b>Bearings life</b>	10 <sup>9</sup> revolutions
<b>Operating temperature</b>	-20° ... +50°C (-4° ... +122°F)
<b>Storage temperature</b>	-20° ... +70°C (-4° ... +158°F)
<b>Weight</b>	1200 g (42,33 oz)

**CONNECTIONS**

Function	Cable output N / C / P / PC	Cable output Line driver
+V DC	brown	brown
0 V	gray	gray
Ch. A	green	green
Ch. A-	/	red
Ch. B	yellow	yellow
Ch. B-	/	pink
Ch. Z	white	blue
Ch. Z-	/	white
⊥	shield	shield

**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