

### MAIN FEATURES

Explosion proof encoder for applications within explosive and hazardous areas.



- Optical sensor technology (OptoASIC + gears)
- Resolution up to 27 bit (13 bit single turn (8192 ppr) + 14 bit multiturn (16384 turns))
- Power supply up to +28 V DC with SSI as electrical interface
- Cable output
- Solid shaft diameter up to 10 mm
- Mounting with synchronous or centering square flange

### EX CLASSIFICATION

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

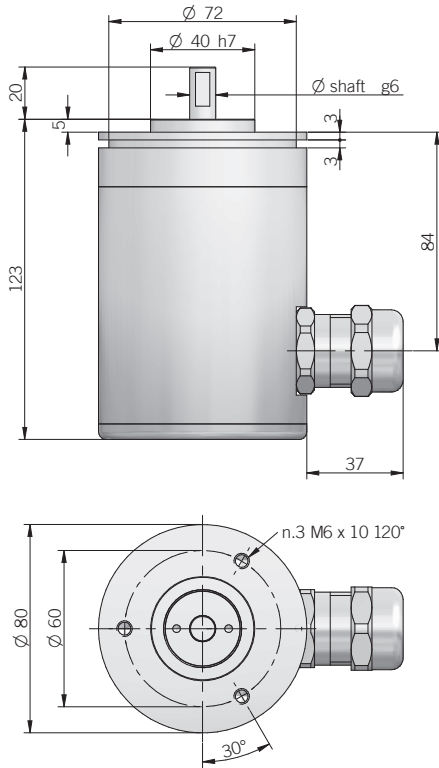
- EN 60079-0:2012+A11:2013
- EN 60079-1:2007
- EN 60079-31:2014

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

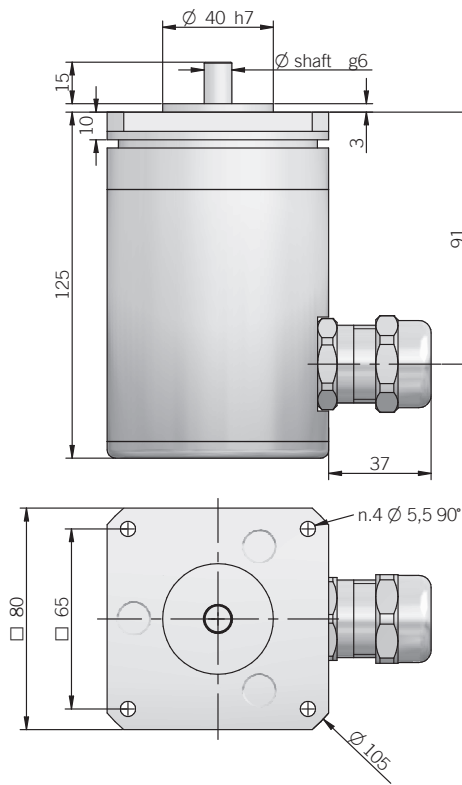


ORDERING CODE	EAMX	80A	4096 / 4096	G	8/28	S	X	X	10	X	3	PR	.XXX
	<b>SERIES</b> multiturn absolute explosion proof encoder EAMX												
	<b>MODEL</b> synchronous flange ø 40 mm 80A centering square flange ø 40 mm 80D												
	<b>MULTITURN RESOLUTION</b> (powers of 2) turns from 2 to 16384												
	<b>SINGLETURN RESOLUTION</b> ppr 4096 / 8192												
	<b>CODE TYPE</b> binary B gray G												
	<b>POWER SUPPLY</b> 8 ... 28 V DC 8/28												
	<b>ELECTRICAL INTERFACE</b> Serial Synchronous Interface - SSI S												
	<b>LOGIC</b> to be reported X												
	<b>OPTION</b> to be reported X												
	<b>SHAFT DIAMETER</b> mm 10												
	<b>ENCLOSURE RATING</b> IP 65 X												
	<b>MAX ROTATION SPEED</b> 3000 rpm 3												
	<b>OUTPUT TYPE</b> radial cable (standard length 1,5 m) PR												
	<b>VARIANT</b> custom version XXX												

80 A



80 D



fixing clamps not included, please refer to Accessories section

dimensions in mm

ELECTRICAL SPECIFICATIONS

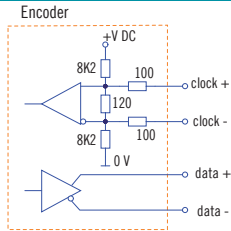
<b>Multiturn resolution</b>	from 2 to 16384 turns
<b>Singleturn resolution</b>	4096 / 8192 ppr
<b>Power supply</b>	7,6 ... 29,4 V DC
<b>Current consumption without load</b>	100 mA
<b>Max load current</b>	20 mA / channel
<b>Output type*</b>	RS-422 (LTC1690 or equivalent)
<b>Auxiliary input (U/D)</b>	active high (+V DC) connect to 0 V if not used
<b>Clock frequency</b>	100 kHz ... 1 MHz
<b>SSI monostable time (Tm)</b>	18 µs
<b>SSI pause time (Tp)</b>	> 35 µs
<b>SSI frame</b>	Tree format (MSB ... LSB) up to 12 bit multiturn = length 25 bit (12MT + 13ST) 13 to 14 bit multiturn = length 27 bit (14MT + 13ST)
<b>Accuracy</b>	± 1/2 LSB
<b>Counting direction</b>	decreasing clockwise (shaft view)
<b>Start-up time</b>	150 ms
<b>Electromagnetic compatibility</b>	according to 2014/30/EU directive
<b>RoHS</b>	according to 2011/65/EU directive
<b>UL / CSA</b>	certificate n. E212495

\* for further details please see OUTPUT LEVELS under TECHNICAL BASICS section

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> (36 x 10 <sup>-6</sup> lbf <sup>2</sup> )
<b>Starting torque (at 20°C / +68°F)</b>	< 0,03 Nm (4,25 Ozin)
<b>Bearing stage 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>	0° ... +50°C (+32° ... +122°F)
<b>Storage temperature</b>	-15° ... +70°C (+5° ... +158°F)
<b>Weight</b>	1200 g (42,33 oz)

SSI SCHEMATICS



CONNECTIONS

Function	Cable
+ V DC	red
0 V	grey
data +	green
data -	brown
clock +	yellow
clock -	pink
U / D	blue
≡	shield

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