

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 EX 80 comply with essential health and safety requirements according to

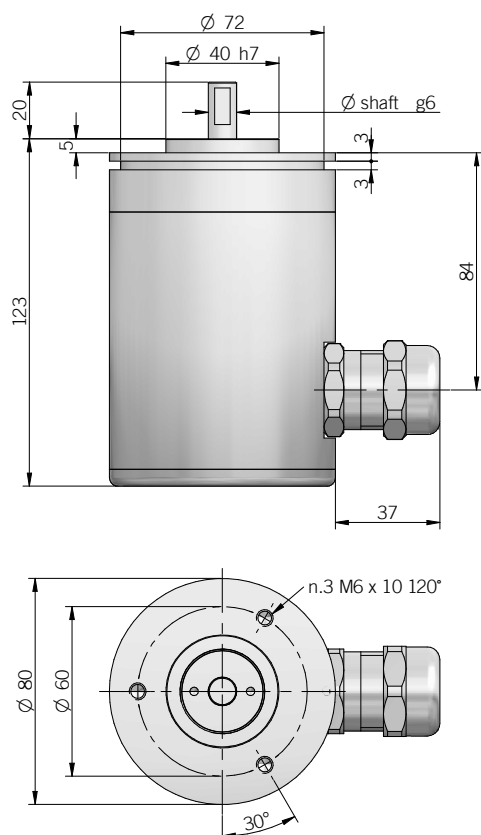
- EN 60079-0:2012+A11:2013
- EN 60079-1:2014
- EN 60079-31:2014

The UE declaration is available on www.eltra.it



ORDERING CODE	EAMX	80A	4096 / 4096	G	8/28	S	X	X	10	X	3	PR	.XXX
SERIES multiturn absolute explosion proof encoder EAMX													
MODEL synchronous flange ø 40 mm 80A centering square flange ø 40 mm 80D													
MULTITURN RESOLUTION (powers of 2) turns from 2 to 16384													
SINGLETURN RESOLUTION ppr 4096 / 8192													
CODE TYPE binary B gray G													
POWER SUPPLY 8 ... 28 V DC 8/28													
ELECTRICAL INTERFACE Serial Synchronous Interface - SSI S													
LOGIC to be reported X													
OPTION to be reported X													
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													

80 A



fixing clamps not included, please refer to Accessories section

dimensions in mm

ELECTRICAL SPECIFICATIONS	
Multiturn resolution	from 2 to 16384 turns
Singleturn resolution	4096 / 8192 ppr
Power supply¹	7,6 ... 29,4 V DC (reverse polarity protection)
Current consumption without load	100 mA
Max load current	20 mA / channel
Output type²	RS-422 compatible
Auxiliary input (U/D)	active high (+V DC) connect to 0 V if not used
Clock frequency	100 kHz ... 1 MHz
SSI monostable time (Tm)	18 μs
SSI pause time (Tp)	> 35 μs
SSI frame	Tree format (MSB ... LSB) up to 12 bit multiturn = length 25 bit (12MT + 13ST) 13 to 14 bit multiturn = length 27 bit (14MT + 13ST)
Counting direction	decreasing clockwise (shaft view)
Start-up time	700 ms
Accuracy	± 1/2 LSB
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2015/863/EU directive
UL / CSA	certificate n. E212495

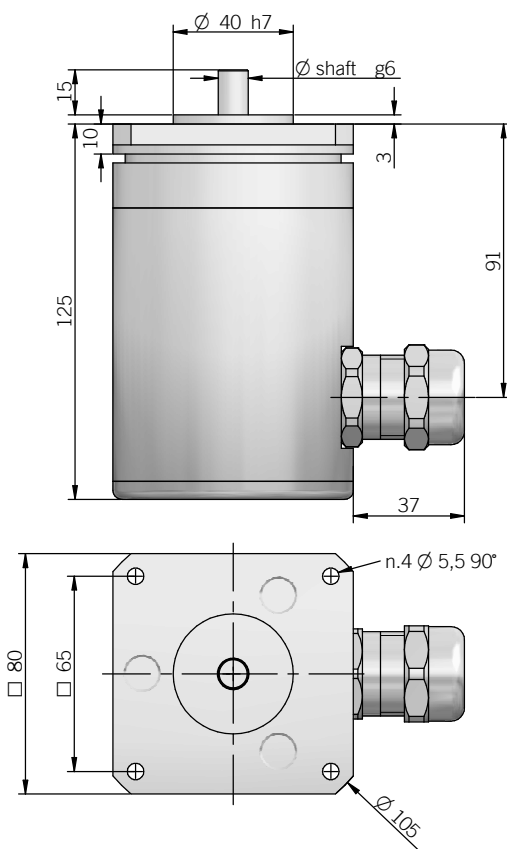
¹ as measured at the encoder without cable influences

² for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section

³ measured on encoder flange

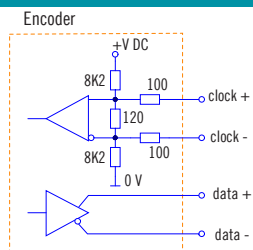
⁴ condensation not allowed

80 D



MECHANICAL SPECIFICATIONS	
Shaft diameter	Ø 10 mm
Enclosure rating	IP 65 (IEC 60529)
Max rotation speed	3000 rpm
Max shaft load	200 N 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	1.4305 / AISI 303 stainless steel
Housing material	anodized aluminum
Bearings	2 ball bearings
Bearings life	10 ⁹ revolutions
Operating temperature^{3,4}	0° ... +50°C (+32° ... +122°F)
Storage temperature⁴	-15° ... +70°C (+5° ... +158°F)
Weight	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

EPL 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