EX 80 A / D

EXPLOSION PROOF ATEX INCREMENTAL ENCODER

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 V DC with several electrical interfaces available
- Up to 500 kHz output frequency
- 10 mm solid shaft diameter
- Mounting by syncronous or centering square flange

EX CLASSIFICATION

It has been assured with EC-TYPE Examination Certifcate CESI 04 ATEX 082 that the EX 80 comply 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
syncronous 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

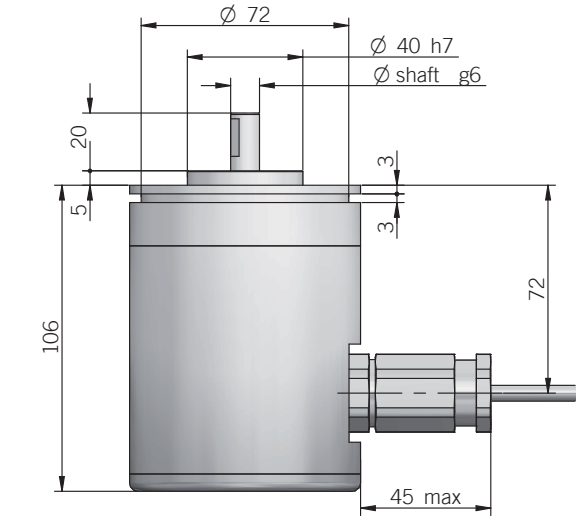
ENCLOSURE RATING
IP 65 X

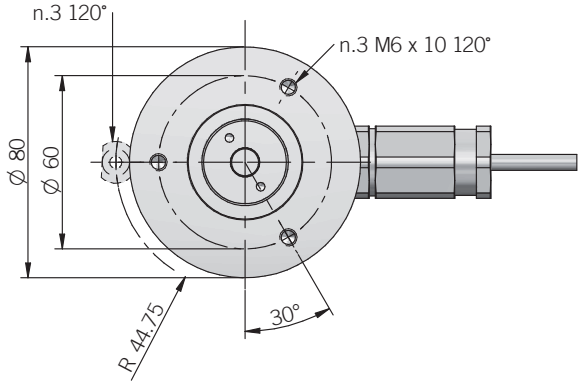
MAX ROTATION SPEED
3000 rpm 3

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

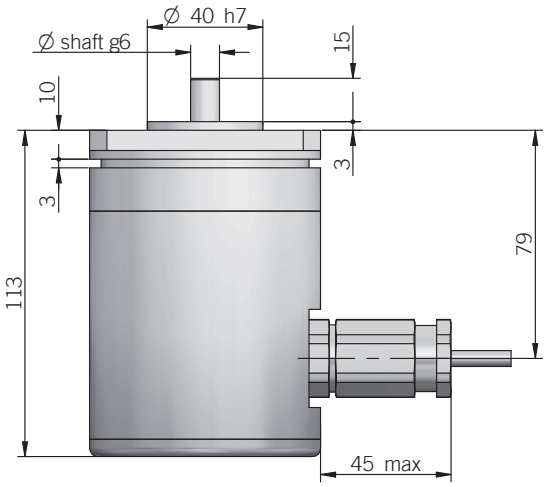
80A

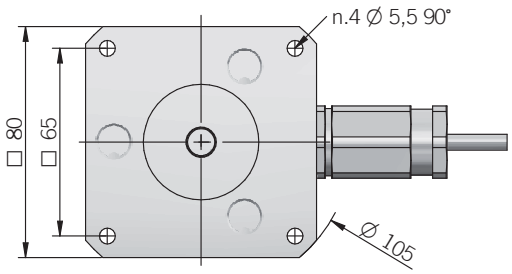




fixing clamps not included, please refer to the Accessories

80D





recommended mating shaft tolerance H7
dimensions in mm

ELECTRICAL SPECIFICATIONS

Resolution	from 100 to 10000 ppr
Power supply[1]	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 interface[2]	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 ($MTTF_d$)[3] **according to EN ISO 13849-1**	263 years
Mission time (Tm)[3]	20 years
Diagnostic coverage (DC)[3]	0%
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 load[4]	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} $lbft^2$)
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	n.2 ball bearings
Bearings life	10^9 revolutions
Operating temperature[5, 6]	-20° ... +50°C (-4° ... +122°F)
Storage temperature[6]	-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