EAX 80 A / D
SSI

EXPLOSION PROOF ATEX SINGLETURN ABSOLUTE ENCODER

MAIN FEATURES

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

- Optical sensing technology (propietary OptoASIC)
- Resolution up to 25 bit
- Power supply up to +30 VDC with SSI as electrical interface
- Code reset for easy setup
- 10 mm solid shaft diameter
- Cable output
- Mounting by syncronous or centering square flange

EX CLASSIFICATION

It has been assured with EC-TYPE Examination Certifcate CESI 04 ATEX 082 that the EAX 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

EAX	80A	13	G	8/30	S	X	10	X	PR	. XXX

SERIES
singleturn absolute flameproof encoder EAX

MODEL
synchronous flange ø 40 mm 80A
centering square flange ø 40 mm 80D

RESOLUTION
bit 13 / 16 / 17 / 18 / 21 / 25
ppr 360 / 720 / 1440 / 2880 / 3600

CODE TYPE
binary B
gray G
(no powers of 2) binary offset code (0-XXX) BC
(no powers of 2) gray offset code (0-XXX) GC

POWER SUPPLY
8 ... 30 V DC 8/30

ELECTRICAL INTERFACE
Serial Synchronous Interface - SSI S

OPTIONS
to be reported if not used X
reset with external input ZE

SHAFT DIAMETER
mm 10

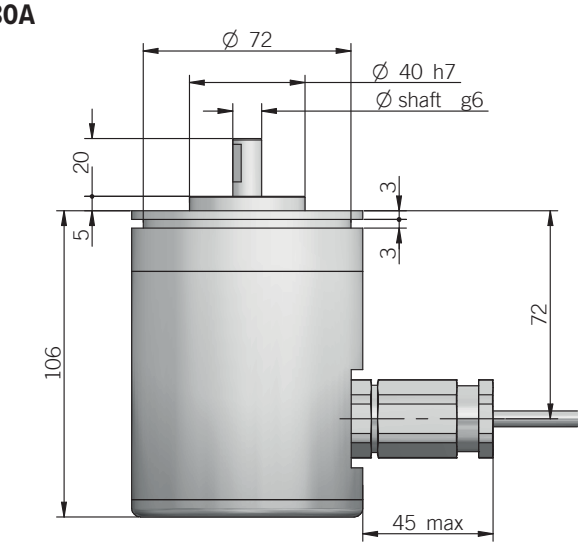
ENCLOSURE RATING
IP 65 X

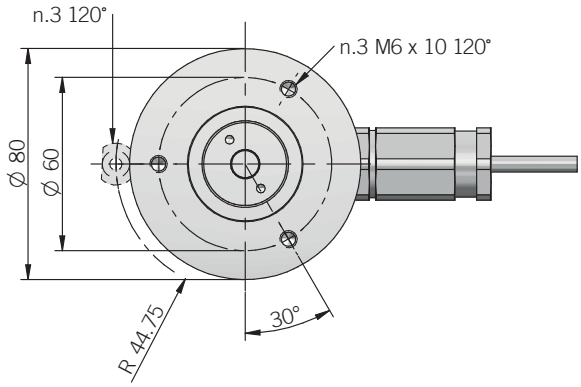
OUTPUT TYPE
radial cable (standard length 1,5 m) PR
preferred cable lengths 2 / 3 / 5 / 10 m, to be added after OUTPUT TYPE (eg. PDR5)

VARIANT
custom version XXX

eltra.it@broadcom.com

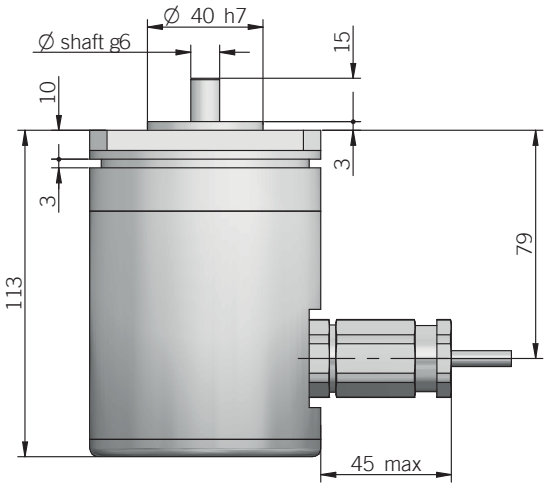
80A

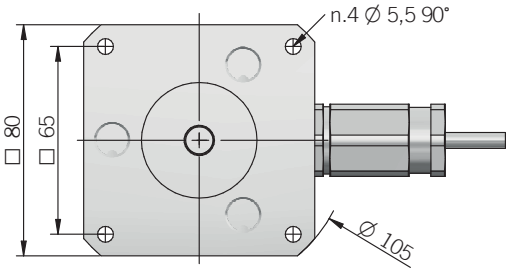




fixing clamps not included, please refer to the Accessories

80D





recommended mating shaft tolerance H7
dimensions in mm

ELECTRICAL SPECIFICATIONS

Resolution	from 360 ppr to 25 bit
Power supply[1]	7,6 ... 30 V DC (reverse polarity protection)
Current consumption without load	100 mA max
Absolute electrical interface[2]	RS-422 (THVD1451 or similar)
Auxiliary inputs (U/D - RESET)	active high (+V DC) connect to 0 V if not used / RESET t_{min} 150 ms
Max frequency	clock input 100 kHz ... 1 MHz
Code type	binary or gray
Logic	positive
SSI monostable time (Tm)	20 µs
SSI pause time (Tp)	> 35 µs
SSI frame	left aligned format MSB ... LSB up to 13 bit = length 13 bit from 14 to 21 bit = length 21 bit from 22 to 25 bit = length 25 bit
SSI status and parity bit	on request
Counting direction	decreasing clockwise (shaft view)
Start-up time	700 ms
Accuracy	± 0,069°
Mean time to dangerous failure ($MTTF_d$)[3] **according to EN ISO 13849-1**	214 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 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	stainless steel
Housing material	anodized aluminum
Bearings	n.2 ball bearings
Bearings life	10^9 revolutions
Operating temperature[5, 6]	0° ... +50°C (+32° ... +122°F)
Storage temperature[6]	-15° ... +70°C (+5° ... +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

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)

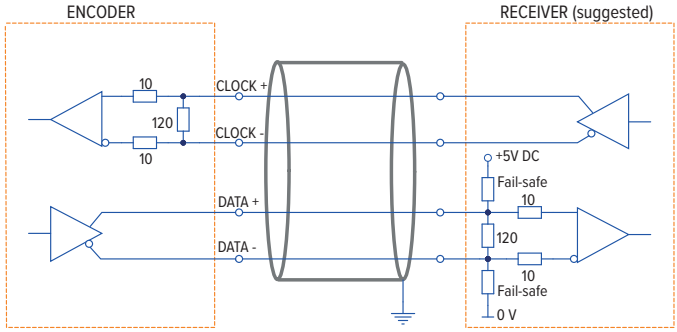
Ex db IIC T6 Gb

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

SSI ELECTRICAL INTERFACE



CONNECTIONS

Function	Cable
+ V DC	red
0 V	grey
DATA +	green
DATA -	brown
CLOCK +	yellow
CLOCK -	pink
U / D	blue
RESET	white
⏚	shield

eltra.it@broadcom.com