

## MAIN FEATURES

Flameproof encoders for applications within explosive and hazardous areas.

- Up to 8192 ppr (13 bit)
- Several output types available. Up to 28 V dc input voltage
- Output cable
- Several flanges available
- Up to 3000 rpm speed rotation
- IP 65 as protection grade



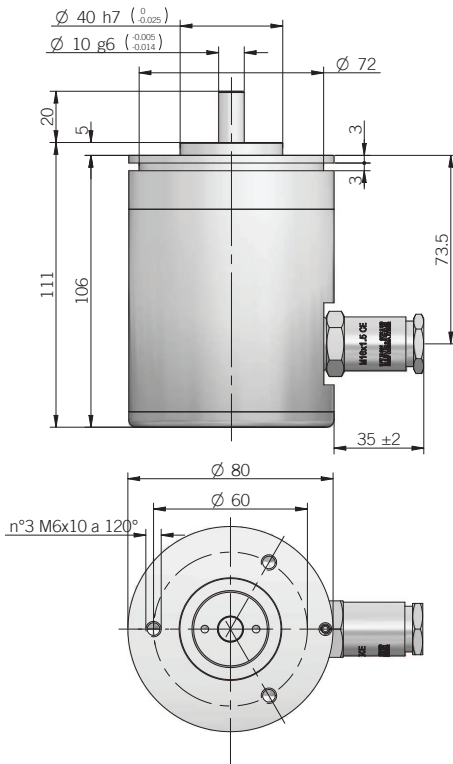
EN 60079-0:2006 / EN 60079-1:2007  
EN 61241-0:2006 / EN 61241-1:2004  
ATEX certificate number: CESI 04 ATEX 082



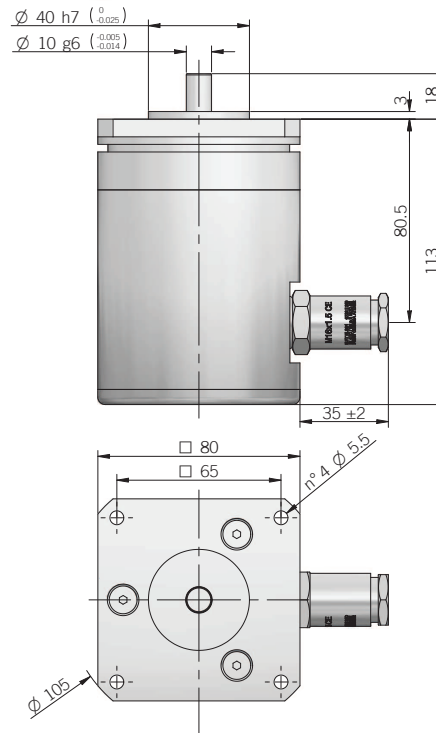
## ORDERING CODE

EAX 80 A 512 G 5 N N X 10 X 3 PR . XXX	
<b>SERIES</b> singleturn absolute flameproof encoder <b>EAX</b>	<b>VARIANT</b> <b>XXX</b> custom version
<b>SIZE</b> mm <b>80</b>	<b>OUTPUT TYPE</b> <b>PR</b> cable output radial (standard length 1.5 m)
<b>TYPE</b> <b>A</b> <b>D</b> stainless steel A model <b>AX</b> stainless steel D model <b>DX</b>	<b>MAX ROTATION SPEED</b> <b>3</b> 3000 rpm
<b>RESOLUTION</b> ppr <b>2 / 4 / 8 / 16 / 32 / 64 / 128 / 256 / 512 / 1024 / 2048 / 4096 / 8192</b> ppr <b>90 / 180 / 360 / 720 / 1440 / 2880</b> ppr <b>225 / 450 / 900 / 1800 / 3600</b> ppr <b>250 / 500 / 1000 / 2000 / 4000</b> <i>please directly contact our offices for pulses availability</i>	<b>ENCLOSURE RATING</b> <b>X</b> IP 65
<b>CODE TYPE</b> Binary <b>B</b> Gray (standard) <b>G</b> Binary offset code (0-XXX) <b>BC</b> Gray offset code (0-XXX) <b>GC</b> <i>powers of 2 except for the offset code</i>	<b>SHAFT DIAMETER</b> <b>6</b> mm <b>8</b> mm <b>10</b> mm
<b>POWER SUPPLY</b> 5 V DC <b>5</b> 8 ... 28 V DC <b>8/28</b>	<b>OPTIONS</b> <b>L</b> Latch (available only with N / C / R / U / P electronic) <b>S</b> Strobe (only with binary code and N / C / R / U / P electronic) <b>X</b> Unused option <b>ZE</b> Code reset (available only with SSI electronic)
	<b>LOGIC</b> <b>N</b> Negative <b>P</b> Positive <b>X</b> with SSI output
	<b>ELECTRONIC INTERFACE</b> <b>N</b> NPN (negative logic) <b>C</b> NPN OPEN COLLECTOR (negative logic) <b>R</b> PNP (positive logic) <b>U</b> PNP OPEN COLLECTOR (positive logic) <b>P</b> PUSH PULL (with short circuit protection - positive logic) <b>S</b> SSI (Serial Synchronous Interface)

## EAX 80 A / AX



## EAX 80 D / DX



### Mechanical specifications

Shaft diameter	6 / 8 / 10 mm
Enclosure rating	IP 65 (IEC 60529)
Max rotation speed	3000 rpm
Max shaft load	200 N (20Kgf) axial / radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibrations	10 G, 10÷2000 Hz (IEC 60068-2-6)
Bearings	n° 2 ball bearings
Bearings life	10 <sup>9</sup> revolutions
Body material	aluminium UNI 9002/5 *
Shaft material	stainless steel UNI X10CrNiS1809
Housing material	aluminium UNI 9002/5 *
Operating temperature	0° ... +50 °C
Storage temperature	-15° ... +70 °C
Weight	1200 g

\*: on request also available in AISI 304 UNI X5CrNi1810 or AISI 316 UNI X5CrNiMo17-12-2

### Electrical specifications

Resolution	2 / 4 / 8 / 16 / 32 / 64 / 128 / 256 / 512 / 1024 / 2048 / 4096 / 8192
Power supply	5 V DC ± 10% 8 ... 28 V DC ± 5%
Current consumption without load	100 mA
Max load current	20 mA for channel (push pull) 40 mA for channel (NPN / PNP)
Electronic interface	NPN / NPN OPEN COLLECTOR / PNP / PNP OPEN COLLECTOR / PUSH PULL / RS422 SSI
Auxiliary inputs (U/D - Latch - Reset)	active high (+Vdc) connect to 0V if not used / Reset <i>t<sub>min</sub></i> 150 ms
Max output frequency	25 kHz parallel 100 kHz ÷ 1MHz SSI
Monostable time SSI	10 ... 25 us
Strobe time (binary code)	20 µs with N / C / R / U / P interface
Accuracy	± 1/2 LSB
Counting direction	decreasing clockwise (shaft view)
Start-up time	< 150 ms
Electromagnetic compatibility	IEC 61000-6-2 / IEC 61000-6-4

**Ex II 2GD Ex d IIC T6 Ex tD A21 IP65 T85°C**

**Ex II 2GD**

II: group II: other than mines  
2: category 2: zone 1 (GAS), zone 21 (DUST)  
GD: gas, vapours, mist, cloud of dust

**Ex d IIC T6**

Ex d: flameproof enclosure safety type  
IIC: gas subdivision IIC  
T6: max surface temperature 85°C

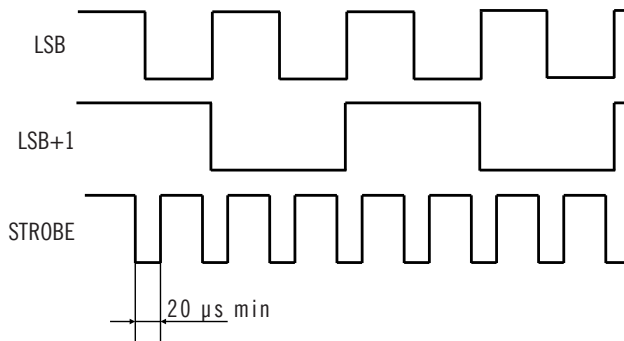
**Ex tD A21 IP65 T85°C**

Ex tD: flameproof enclosure safety type  
A: IP grade testing method  
21: zone 21  
IP65: protection grade IP65  
T85°C: max surface temperature 85°C

### Output connections for SSI

Function	Wire cable
+ V dc	red
0 Volt	gray
dato +	green
dato -	brown
clk +	yellow
clk -	pink
U / D	blue
RESET	white
⏏	shield

Strobe timing



### Output connections for PARALLEL

Function	B / G	Cable colours
bit 1 (LSB)	G <sup>0</sup> / B <sup>0</sup>	green
bit 2	G <sup>1</sup> / B <sup>1</sup>	yellow
bit 3	G <sup>2</sup> / B <sup>2</sup>	blue
bit 4	G <sup>3</sup> / B <sup>3</sup>	brown
bit 5	G <sup>4</sup> / B <sup>4</sup>	pink
bit 6	G <sup>5</sup> / B <sup>5</sup>	white
bit 7	G <sup>6</sup> / B <sup>6</sup>	gray
bit 8	G <sup>7</sup> / B <sup>7</sup>	violet
bit 9	G <sup>8</sup> / B <sup>8</sup>	gray / pink
bit10	G <sup>9</sup> / B <sup>9</sup>	white / green
bit 11	G <sup>10</sup> / B <sup>10</sup>	brown / green
bit 12	G <sup>11</sup> / B <sup>11</sup>	white / yellow
bit 13	G <sup>12</sup> / B <sup>12</sup>	yellow / brown
0 Volt	/	black
+ Vdc	/	red
U / D	/	red / blue
STROBE	/	white / gray
LATCH	/	brown / blue or gray / brown
⏏	/	shield