

## 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



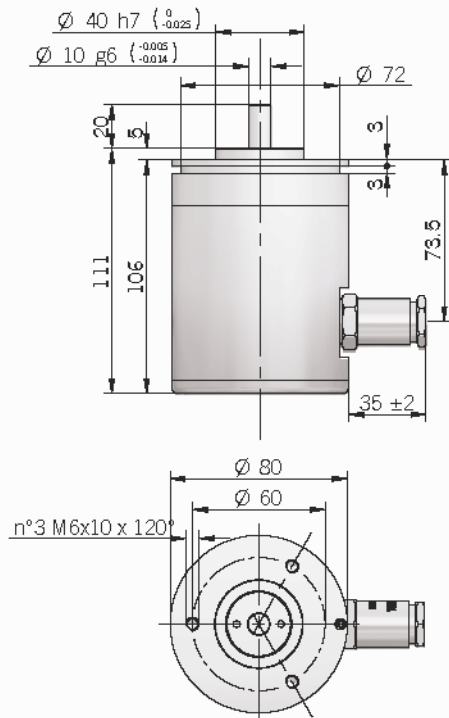
## ORDERING CODE

<b>EAX 80 A 512 G 5 N N X 10 X 3 PR . XXX</b>	<b>VARIANT</b> XXX custom version
<b>SERIES</b> singleturn absolute flameproof encoder EAX	<b>OUTPUT TYPE</b> PR cable output radial (standard length 1.5 m)
<b>SIZE</b> mm 80	<b>MAX ROTATION SPEED</b> 3 3000 rpm
<b>TYPE</b> synchronous flange $\varnothing$ 40 mm A square flange $\square$ 65 mm D	<b>ENCLOSURE RATING</b> X IP 65
<b>RESOLUTION</b> (powers of 2) ppr from 2 to 8192 (multiples and submultiples of 360) ppr from 90 to 3600 (multiples and submultiples of 1000) ppr from 250 to 4000	<b>SHAFT DIAMETER</b> 6 mm 8 mm 10 mm
<i>N.B.: please directly contact our offices for pulses availability</i>	<b>OPTIONS</b> L Latch (available only with N/C/R/U/P electronic) S Strobe (only with binary code and N/C/R/U/P electronic) X Unused option ZE Code reset (available only with SSI electronic)
<b>CODE TYPE</b> Binary B Gray (standard) G Binary offset code (0-XXX) BC Gray offset code (0-XXX) GC <i>powers of 2 except for the offset code</i>	<b>LOGIC</b> N Negative P Positive X to be reported with SSI output
<b>POWER SUPPLY</b> 5 V DC 5 8 ... 28 V DC 8/28	<b>OUTPUT TYPES</b> N NPN (negative logic) C NPN OPEN COLLECTOR (negative logic) R PNP (positive logic) U PNP OPEN COLLECTOR (positive logic) P PUSH-PULL (with short circuit protection - positive logic) S SSI (Serial Synchronous Interface)

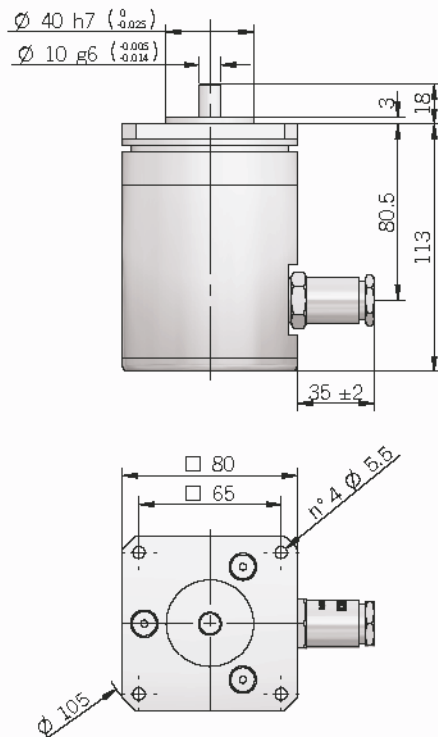
SINGLETURN ABSOLUTE ENCODERS

EAX 80 A / D

## EAX 80 A



## EAX 80 D



## Electrical specifications

<b>Resolution</b>	from 2 to 8192
<b>Power supply</b>	5 V DC $\pm$ 10% 8 ... 28 V DC $\pm$ 5%
<b>Current consumption without load</b>	100 mA
<b>Max load current</b>	20 mA for channel (push pull) 40 mA for channel (NPN / PNP)
<b>Electronic interface</b>	NPN / NPN OPEN COLLECTOR / PNP / PNP OPEN COLLECTOR / PUSH PULL / RS422 SSI
<b>Auxiliary inputs (U/D - Latch - Reset)</b>	active high (+Vdc) connect to 0V if not used / Reset $t_{\text{min}}$ 150 ms
<b>Max output frequency</b>	25 kHz parallel 100 kHz $\div$ 1MHz SSI
<b>SSI monostable time (Tm)</b>	18 $\mu$ s
<b>SSI pause time (Tp)</b>	> 35 $\mu$ s
<b>Accuracy</b>	$\pm$ 1/2 LSB
<b>Counting direction</b>	decreasing clockwise (shaft view)
<b>Start-up time</b>	< 150 ms
<b>Electromagnetic compatibility</b>	IEC 61000-6-2 IEC 61000-6-4

## Mechanical specifications

<b>Shaft diameter</b>	6 / 8 / 10 mm
<b>Enclosure rating</b>	IP 65 (IEC 60529)
<b>Max rotation speed</b>	3000 rpm
<b>Max shaft load</b>	10 N (1 Kp) axial with $\phi$ 6 shaft 20 N (2 Kp) radial with $\phi$ 6 shaft 200 N (20 Kp) axial 200 N (20 Kp) radial
<b>Shock</b>	50 G, 11 ms (IEC 60068-2-27)
<b>Vibrations</b>	10 G, 10 $\div$ 2000 Hz (IEC 60068-2-6)
<b>Bearings</b>	n° 2 ball bearings
<b>Bearings life</b>	10 <sup>9</sup> revolutions
<b>Shaft material</b>	1.4305 / AISI 303 stainless steel
<b>Body material</b>	anodized aluminum
<b>Housing material</b>	anodized aluminum
<b>Operating temperature</b>	0° ... +50 °C
<b>Storage temperature</b>	-15° ... +70 °C
<b>Weight</b>	1200 g

**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

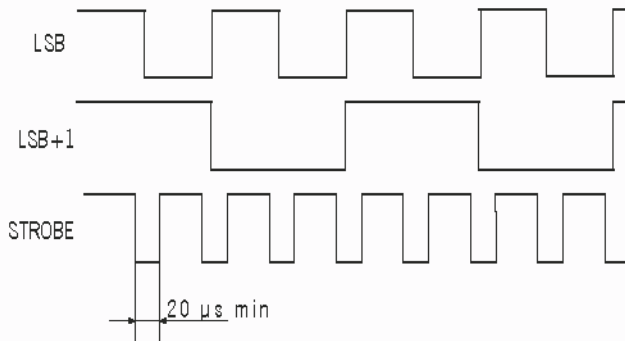
**Ex tD A21 IP65 T85 °C**

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