

## ATEX INCREMENTAL ENCODERS, GAMX RANGE

ATEX certified Explosion-proof encoders according to Directive 94/9/CE

Explosion-proof rotary encoders for hazardous environments gas & dust  
Robust design for heavy-duty applications  
Application fields: explosive atmospheres except for firedamp mines

EC type examination certificate

Download from our website [www.beisensors.com](http://www.beisensors.com)

LCIE 03 ATEX 6235

CE0081

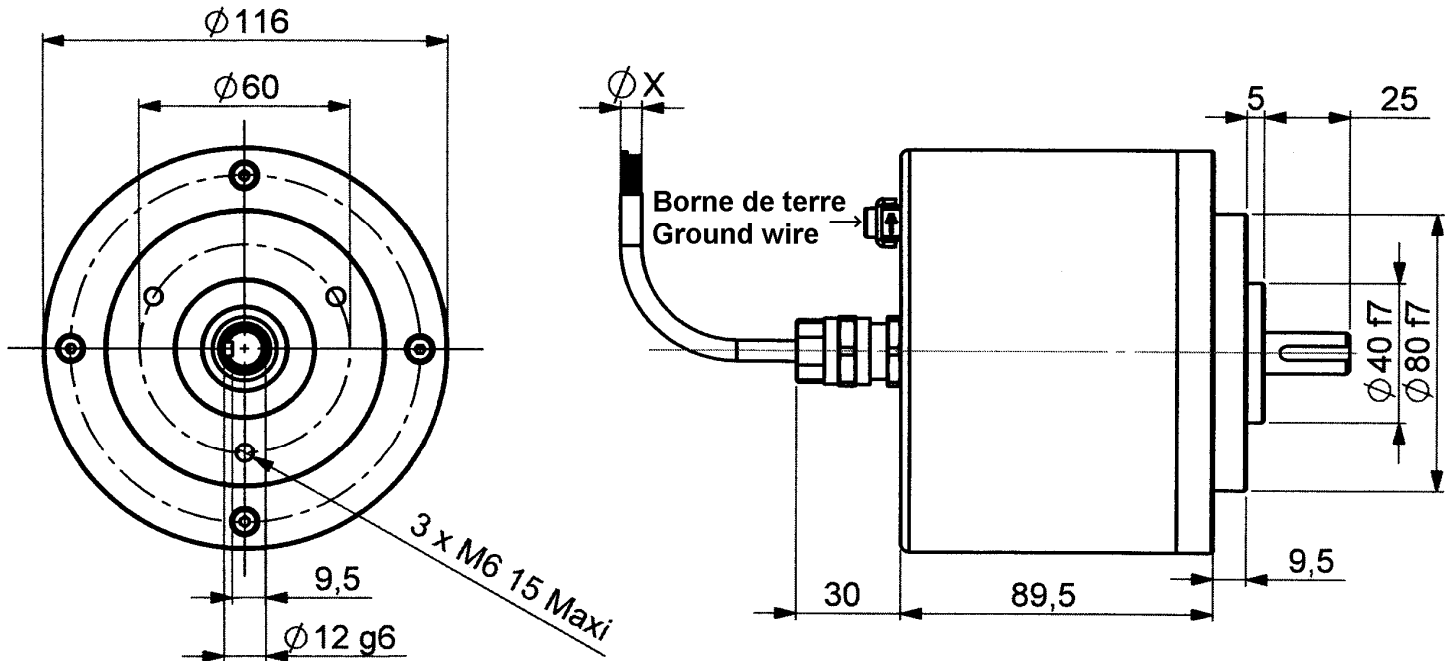
II 2 G/D

Ex d IIC T6, T5 or T4

Ex tD A21 IP6X T80°C T95°C T100°C



GAMX\_12 connection G3A (axial cable)

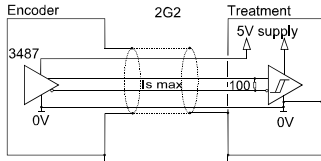


Material	Cover : aluminium	Shock (EN60068-2-27)	$\leq 500 \text{ m.s}^{-2}$ (during 6ms)
Stainless steel option	Body: aluminium	Vibration (EN60068-2-6)	$\leq 200 \text{ m.s}^{-2}$ (10 ... 1 000 Hz)
Shaft	Stainless steel	CEM	EN 50081-1, EN 61000-6-2
Bearings	6001 serie	Isolation	1 000 V eff
Maximal load	Axial : 50 N	Weight	3,5kg aluminium body and cover
	Radial : 100 N		7,2kg stainless steel body and cover
Shaft inertia	$\leq 16 \cdot 10^{-6} \text{ kg.m}^2$	Operating temperature	Cf here-under table (encoder T°)
Torque	$\leq 15 \cdot 10^{-3} \text{ N.m}$	Storage temperature	- 30... + 80 °C
Permissible max.speed	9 000 min <sup>-1</sup>	Protection(EN 60529)	IP 65
Continuous max. speed	6 000 min <sup>-1</sup>	Theoretical mechanical lifetime 10 <sup>9</sup> turns (F <sub>axial</sub> / F <sub>radial</sub> )	
Shaft seal	Viton	20 N / 30 N : 360	50 N / 100 N : 18 100 N / 200 N : 2,2

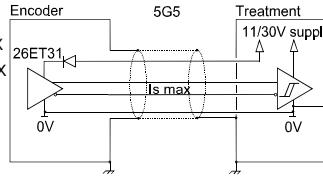
T <sub>amb</sub>	Temperature class for gas atmosphere	Temperature class for dust atmosphere
-20°C ≤ Ta ≤ +40°C	T6	T80°C
-20°C ≤ Ta ≤ +55°C	T5	T95°C
-20°C ≤ Ta ≤ +60°C	T4	T100°C

## ATEX INCREMENTAL ENCODERS, GAMX RANGE

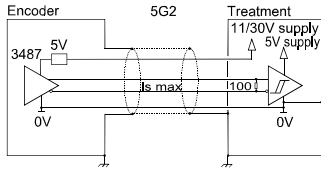
### OUTPUT ELECTRONIC / SUPPLY



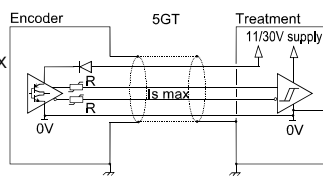
Supply : 5Vdc ± 10%  
Cons. without load : 100mA max  
Intensity per channel: 40mA max  
0 max (Is=20mA) :  $V_{ol} = 0,5Vdc$   
1 min (Is=20mA) :  $V_{oh} = 2,5Vdc$



Supply: 11 to 30Vdc  
Cons. without load : 75mA max  
Intensity per channel: 40mA max  
0 max (Is=20mA) :  $V_{ol} = 0,5Vdc$   
1 min (Is=20mA) :  $V_{oh} = Vcc - 3Vdc$



**5G2 electronic (100kHz)**  
Supply: 11 to 30Vdc  
Cons. without load : 75mA max  
Intensity per channel: 40mA max  
0 max (Is=20mA) :  $V_{ol} = 0,5Vdc$   
1 min (Is=20mA) :  $V_{oh} = 2,5Vdc$



**5GT electronic, option (100kHz)**  
Supply: 11 to 30Vdc  
Cons. without load : 75mA max  
Intensity per channel: 40mA max  
0 max (Is=20mA) :  $V_{ol} = 0,5Vdc$   
1 min (Is=20mA) :  $V_{oh} = Vcc - 2,5Vdc$

### 2G2 electronic (100kHz)

5GT electronic helps to drive very long cables (contact our factory)

Available :

3G3 electronic, supply between 15 and 30Vdc, push-pull output regulated 12Vdc

### 5G5 electronic (100kHz)

Protection against short circuits of the electronics: 5G5, 5GT, 3G3

Protection against inversion of polarity for all the electronics except 2G2

### STANDARD CONNECTION

		-	+	A	B	0	A/	B/	0/	Ground
G3	PVC cable 8 wires 8230/020	WH white	BN brown	GN green	YE yellow	GY grey	PK pink	BU blue	RD red	General shielding
GP	PUR cable 12 wires 8230/050	WH white + WH/GN white / green	BU blue + BN/GN brown / green	GY grey	BN brown	RD red	PK pink	GN green	BK black	General shielding

### ORDERING REFERENCE

	Shaft Ø	Available electronic		Output signals	Resolution	Connection	Connection orientation
GAMX Aluminium cover & body	12 : 12mm	2G2, 5G2, 5G5, 5GT, 3G3		9 : A,A/,B,B/,0,0/ (0, gated A&B)  A : A,A/,B,B/,0,0/ (0, gated A)  N : A,A/,B,B/,0,0/ (0, ungated)	10 000 max	G3 : PVC cable 8 wires  GP : PUR cable 12 wires	Example :  A030 : axial cable 3m
		Supply	Output stage				
		2: 5Vdc 5: 11 to 30Vdc 3: 15 to 30Vdc	G2 : driver 5Vdc RS422 G3 : driver 12Vdc G5 : push-pull 11-30Vdc GT : push-pull 11-30Vdc transistorized				
GEMX Stainless steel cover & body							
Ex: GAMX	12 //	5	G5	9 //	5 000 //	GP	A030

**Available resolutions :** 1 2 3 4 5 6 7 8 9 10 12 13 14 15 16 19 20 21 24 25 26 28 29 30 32 35 36 39 40 43 45 46 48 50 54 56 58 60 62 63 64 66 67 70 72 74 75 76 80 84 86 88 89 90 91 94 96 100 107 110 120 122 123 125 127 128 130 132 135 138 140 147 150 157 159 160 168 169 170 172 175 180 188 191 196 200 201 205 220 222 225 234 240 241 242 245 246 248 250 254 255 256 258 259 267 268 275 283 285 295 300 305 314 315 318 320 330 340 350 360 367 375 378 380 381 388 390 397 400 405 410 424 425 438 443 450 471 480 489 495 500 505 512 515 534 540 550 565 580 600 623 625 628 630 632 635 650 660 700 720 746 750 752 754 800 810 840 860 880 891 900 942 990 1000 1024 1080 1100 1131 1200 1225 1250 1260 1280 1290 1400 1414 1440 1500 1536 1570 1600 1620 1630 1750 1800 1885 2000 2048 2250 2400 2500 2640 3000 3456 3600 3680 3750 4000 4096 4500 4900 5000 7200 9000 10000

### ASSEMBLY CAUTION

#### NEVER OPEN THE ENCODER

#### NEVER CONNECT/DISCONNECT UNDER POWER SUPPLY/IN PRESENCE OF DUSTS ATMOSPHERE

The customer obliges to take up and to use our products, according to our specifications and to the manners of the profession. Our company would not be responsible for any defect resulting from a defective or erroneous assembly. From a use superior to the standard, or in abnormal conditions. The breakdowns resultant of shocks, bad electric supply, put in low capacity or overcapacity of the product, the environment of bad conditions (humidity, projection, dust, etc) cannot be imputed to us. The converter doesn't require any maintenance. Any encoder presenting a dysfunction will have to be the object of immediate return for control in our facilities. The encoder mustn't be open in any case (cable gland and/or cover)

An earth situated on the cover must be linked with the ground of the installation

Made in FRANCE


## ATEX INCREMENTAL ENCODERS, GAMX RANGE

### 1) Déclaration de conformité CE

2) Nous, société BEI Sensors, certifions que ce matériel : capteurs antidéflagrants, type

**GAMX, CAMX, NAMX, GEMX, CEMX, NEMX**

3) Avec les inscriptions suivantes :

CE 0081  II 2 G/D, Ex d II C T6, T5 or T4  
Ex tD A21 IP6X T80°C T95°C T100°C

A été conçu et fabriqué conformément à la directive applicable suivante :

**ATEX directive 94/9/CE**

**Directive CEM 89/336/CEE**

4) La certification a été obtenu grâce à l'application des normes suivantes :

EN 60079-0 (2006), EN 60079-1 (2004), EN 61241-0 (2004) et EN 61241-1 (2004)

5) Une attestation d'examen CE de type a été obtenu :

**LCIE 03 ATEX 6235**

et une notification :

**LCIE 03 ATEX Q8060**

6) L'application des normes suivantes a participé à l'obtention de la certification :

EN 60-529, NFC 23-520, NFC 23-539, EN 50081-1, EN 55022 classe B, EN 55014, EN 61000-6-2, CEI 61000-4-2, CEI 61000-4-3, CEI 61000-4-4, CEI 61000-4-5, CEI 61000-4-6, CEI 61000-4-8, CEI 61000-4-11

7) L'organisme notifié responsable du suivi de la directive **ATEX** est le

LCIE, B.P.8, F92260 Fontenay-aux-Roses

Numéro d'identification : 0081

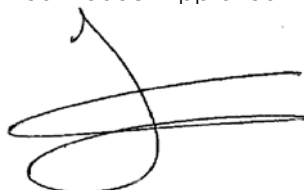
8) La société chargée de la certification **CEM** est nommée ci-après :

GRME, Cellule CEM, B.P.8, 68840 Pulversheim

9) Nous certifions que nos produits désignés ci-dessus sont conformes à la directive et aux normes spécifiées

Date :

ATEX Certified Product Approved Person




### 1) Declaration of conformity EC

2) We, BEI Sensors, certify that this material : sensor explosion-proof standard

**GAMX, CAMX, NAMX, GEMX, CEMX, NEMX**

3) With the following inscriptions :

CE 0081  II 2 G/D, EEx d II C T6, T5 or T4  
Ex tD A21 IP6X T80°C T95°C T100°C

Conceived and manufactured has the directive applicable following :

**ATEX directive 94/9/CE**

**Directive CEM 89/336/CEE**

4) Certification to summer obtained thanks to the application of the standards :

EN 60079-0 (2006), EN 60079-1 (2004), EN 61241-0 (2004) and EN 61241-1 (2004)

5) EC type examination certificate was obtained :

**LCIE 03 ATEX 6235**

and a notification :

**LCIE 03 ATEX Q8060**

6) The application of the following standards took part in obtaining certification :

EN 60-529, NFC 23-520, NFC 23-539, EN 50081-1, EN 55022 classe B, EN 55014, EN 61000-6-2, CEI 61000-4-2, CEI 61000-4-3, CEI 61000-4-4, CEI 61000-4-5, CEI 61000-4-6, CEI 61000-4-8, CEI 61000-4-11

7) The notified organization responsible for the follow-up of the directive **ATEX** is the

LCIE, B.P.8, F92260 Fontenay-aux-Roses

Numéro d'identification : 0081

8) The company in charge of certification **CEM** is named :

GRME, Cellule CEM, B.P.8, 68840 Pulversheim

9) We certify that our indicated products so above are in conformity with the directive and the specified standards