

ATEX ABSOLUTE SINGLE TURN PARALLEL ENCODER, CAMX 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

ICIE03 ATEX 6235

CE0081

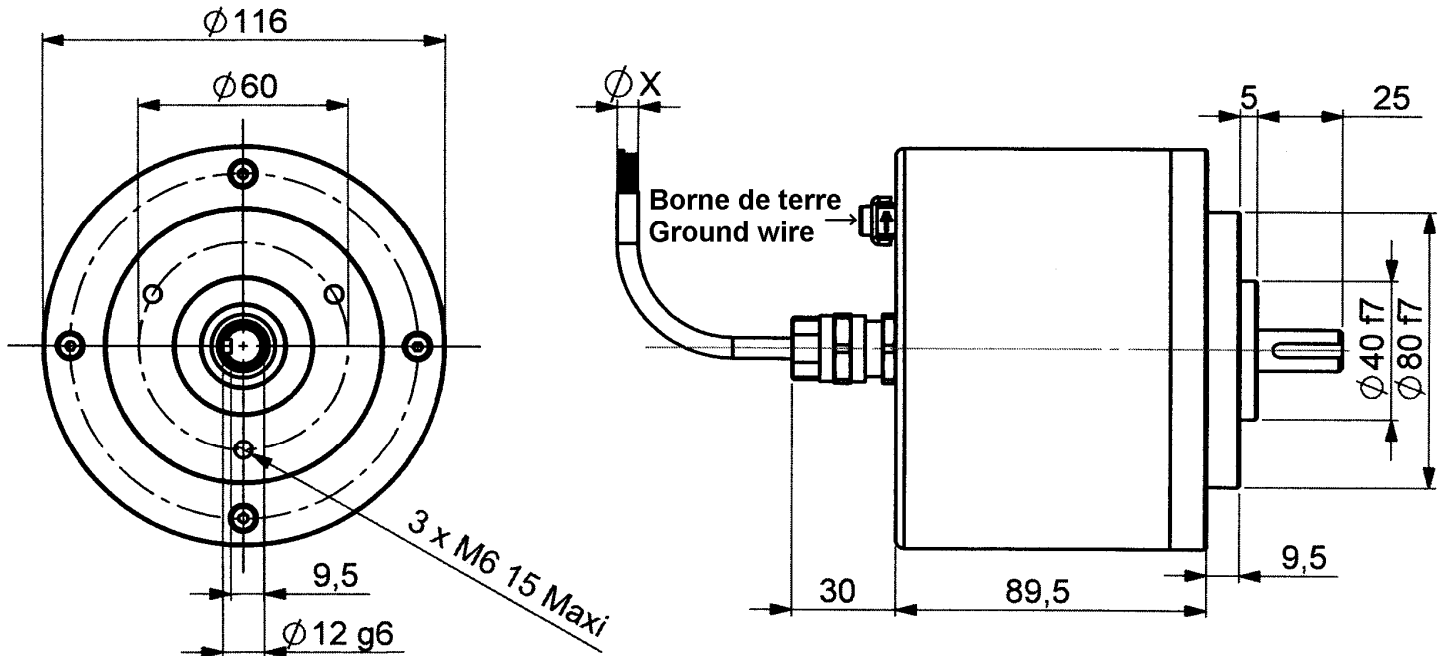
II 2 G/D

Ex d IIC T6, T5 or T4

Ex tD A21 IP6X T80°C T95°C T100°C



CAMX_12 T6 connection (axial cable gland)



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
Maxiamal load	Axial : 50 N	Weight	3,5kg aluminium body and cover
	Radial : 100 N		7,2kg stainless steel body and cover
Shaft inertia	$\leq 16.10^{-6} \text{ kg.m}^2$	Operating temperature	Cf here-under table (encoder T°)
Torque	$\leq 15.10^{-3} \text{ N.m}$	Storage temperature	- 30... + 85 °C
Permissible max.speed	9 000 min ⁻¹	Protection(EN 60529)	IP 65
Continuous max. speed	6 000 min ⁻¹	Theoretical mechanical lifetime 10 ⁹ turns (F _{axial} / F _{radial})	
Shaft seal	Viton	20 N / 30 N : 360	50 N / 100 N : 18
			100 N / 200 N : 2,2

T _{amb}	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

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RACCORDEMENT

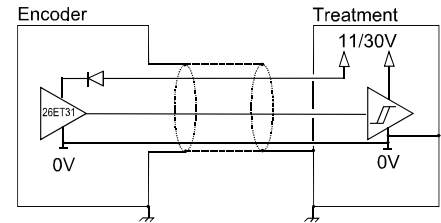
2 ⁰	GN green
2 ¹	YE yellow
2 ²	GY grey
2 ³	OG orange
2 ⁴	BU blue
2 ⁵	RD red
2 ⁶	BK black
2 ⁷	VT violet
2 ⁸	WH/BN white/brown
2 ⁹	WH/GN white/green
2 ¹⁰	WH/YE white/yellow
2 ¹¹	WH/BK white/black
2 ¹²	WH/OG white/orange
-	WH white
+	BN brown
Ground/body	General shield

DIRECTION	WH/RD blanc/rouge
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POWER SUPPLY/ OUTPUT STAGES

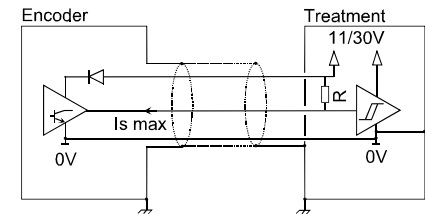
5C5 electronic : Push-pull 11/30Vdc

Power supply : 11 to 30Vdc
Consumption without load : 100mA max
Intensity per channel : $I_s = 20\text{mA max}$
0 max ($I_s=20\text{mA}$): $V_{ol} = 0,5\text{Vdc}$
1 min ($I_s=20\text{mA}$): $V_{oh} = V_{cc}-3\text{Vdc}$
Protection against short circuits
Protection against inversion of polarity



5CN electronic : NPN CO 11 to 30Vdc

Power supply: 11 to 30Vdc
Consumption without load : 100mA max
Intensity per channel : $I_s = 20\text{mA max}$
0 max ($I_s=20\text{mA}$): $V_{ol} = 1,25\text{Vdc}$
Protection against inversion of polarity



10 bits encoder example : only MSB (D3 to D12) will be connected

DIRECTION entry :

- Code direction CW : connect White/Red with Brown
- Code direction CCW : connect White/Red with White

ORDERING CODE

	Shaft Ø	Parallel output: 5C5, 5CN		Code	Resolution	Connection	Orientation connection
CAMX (aluminium) CEMX (stainless steel)	12 :12mm	5: 11 – 30Vdc	C5 : Push-Pull 11-30Vdc CN : NPNCO 11-30Vdc	B : binaire G : Gray	13 ... 1	B : cable gland + PVC cable	Ex. cable : A030 : cable 3m axial
Ex: CEMX	_ 12 //	5	C5	G //	13 //	B	A030

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 ABSOLUTE SINGLE TURN PARALLEL ENCODER, CAMX 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 :

CE0081  **II 2 G/D, Ex d IIC T_B, T_B or T_A
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 :

ICIE03 ATEX 6235

et une notification :

ICIE03 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 :

CE0081  **II 2 G/D, Ex d IIC T_B, T_B or T_A
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 :

ICIE03 ATEX 6235

and a notification :

ICIE03 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