

ATEX ABSOLUTE MULTITURN CANopen ENCODER, PAMX 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.

CANopen

DS 501 V4.02

DS 406 V3.1



EC type examination certificate

Download from our website www.beisensors.com

LCIE ATEX & IECEX approved

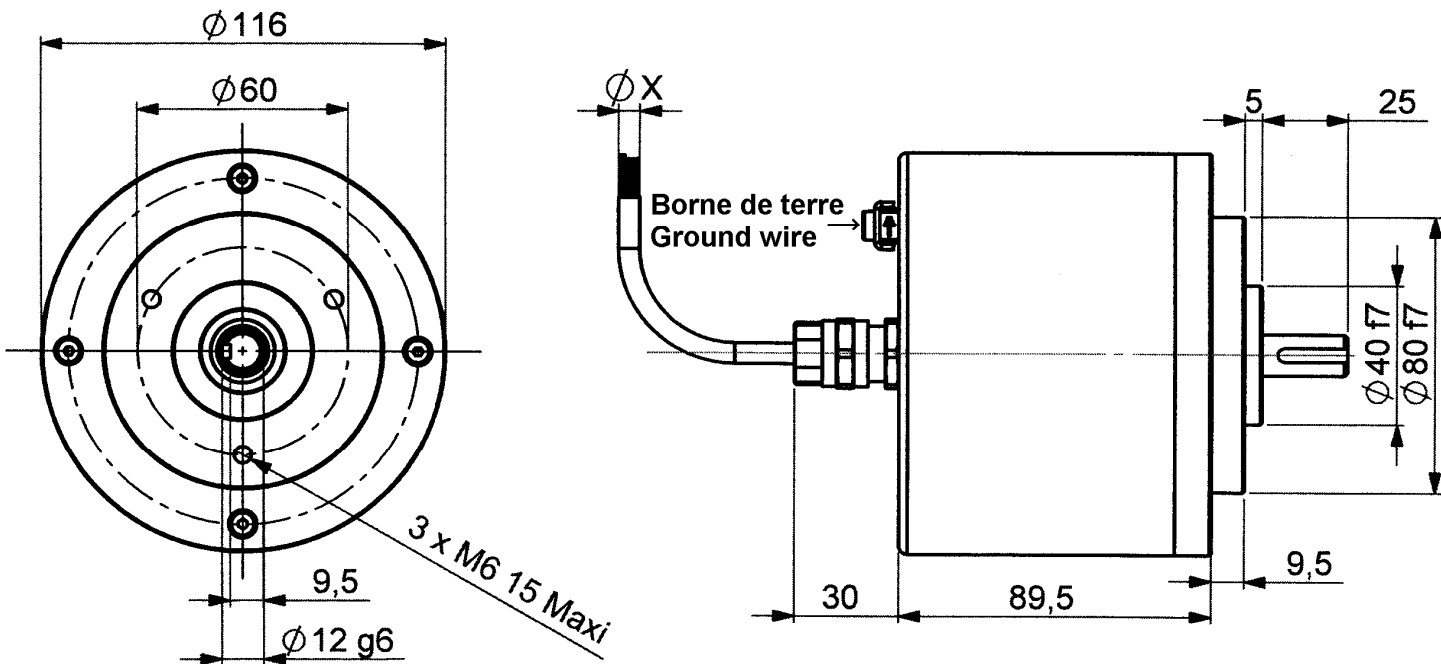
II 2 GD

Ex d IIC T6...T4 Gb

Ex t IIIC T80°C, T95°C, T100°C Db IP 6x



PAMX – PEMX DIMENSIONS



Material	Cover : aluminium	Shock (EN60068-2-27)	≤ 500 m.s ⁻² (during 6ms)
Stainless steel option	Body: aluminium	Vibration (EN60068-2-6)	≤ 200 m.s ⁻² (10 ... 1 000 Hz)
Shaft	Stainless steel	CEM	EN 61000-6-4, EN 61000-6-2
Bearings	Ball bearings	Isolation	500 V (1 min.)
Maximal load	Axial : 50 N	Weight	3,5kg aluminium body and cover
	Radial : 100 N		7,2kg stainless steel body and cover
Shaft inertia	≤ 16.10 ⁻⁶ kg.m ²	Operating temperature	- 20... + 80 °C (encoder T°)
Torque	≤ 15.10 ⁻³ N.m	Storage temperature	- 20... + 80 °C
Permissible max.speed	6 000 min ⁻¹	Protection(EN 60529)	IP 65
Continuous max. speed	4 000 min ⁻¹	Theoretical mechanical lifetime 10 ⁹ turns (F _{axial} / F _{radial})	
Shaft seal	Nitril	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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ELECTRICAL CHARACTERISTICS

Power supply	5 – 30Vdc
Introduction	< 1 s
Consumption (without load)	< 50mA (at 24Vdc)
Accuracy	± ½ LSB (13 bits)

Programmable parameters

Resolution: defines the resolution per revolution (0 to 8 192),
Global resolution : total amount of codes for the encoder (2 to 536 870 912),
Transmission speed : programmable from 10kbaud (1000m) to 1 Mbaud (40 m) ; value per default: 20 Kbaud,
Address: define the software address of the encoder on the bus (1 to 127, value by default: id = 1),
Direction : define the direction of count of the encoder ,
RAX : defines the value of its preset position (non turning shaft),
CAM: Low and High Limits.

Communication modes

3 modes are available to interrogate the encoder :
POLLING mode: (Response to a RTR message): The position value is only given upon request (SDO mode),
CYCLIC mode: the encoder transmits its position in an asynchronous manner. The frequency of the transmission is defined by the programmable cyclical timer register from 0 to 65 535 ms,
SYNCHRO mode: the encoder transmits its position on a synchronous demand by the master.

CANopen CONNECTION

Blue	Black	White	Red
CAN LOW	0V	CAN HIGH	+V

Nota : Refer to the bus standards for the maximal derivation length.

ORDERING REFERENCE

	Shaft Ø	Power supply	Output stages	Code	Resolution	Nb of turns	Connection	Connection orientation
PEMX (stainless steel)	12:12mm	P : 5 to 30Vdc	BB : CANopen	B: Binary	13 : 8192 points per turn (2 ¹³)	B16 : 65 536 turns (2 ¹⁶)	B2: PUR cable	Example : A050 : 5m radial cable
PAMX (aluminium)								
PEMX	_ 12 //	P	BB	B //	13	B16 //	B2	A050

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.

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Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA

CONTACT US

Regional head offices:

United States of America

Sensata Technologies

Attleboro, MA

Phone: 508-236-3800

E-mail: support@sensata.com

Netherlands

Sensata Technologies Holland B.V.

Hengelo

Phone: +31 74 357 8000

E-mail: support@sensata.com

China

Sensata Technologies China Co., Ltd.

Shanghai

Phone: +8621 2306 1500

E-mail: support@sensata.com

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