

### ATEX certified Explosion-proof encoders

Explosion-proof rotary encoders for hazardous environments gas & dust.  
Robust design for heavy-duty applications.  
Hollow through shaft up to 30mm.  
Application fields: explosive atmospheres.

### LCIE ATEX & IECEx approved

II M2  
Ex d I Mb

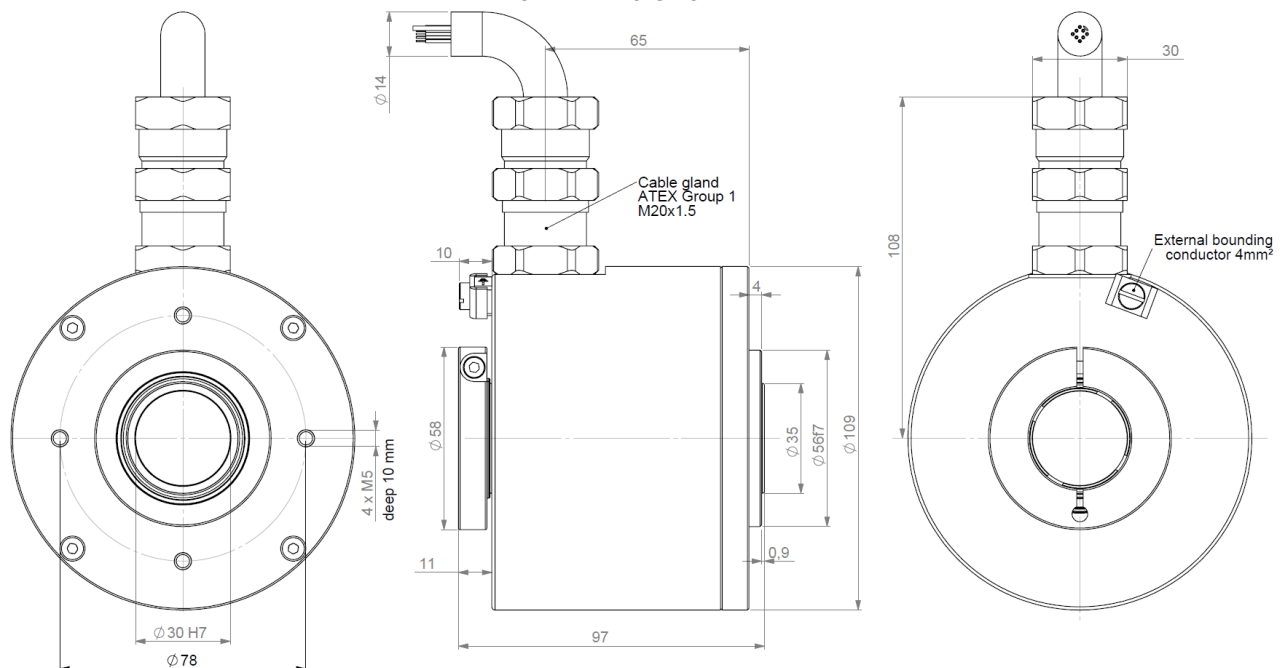


MINING



PEUX / PAUX version is also available with II 2 GD certification: consult us.

### PEUX DIMENSIONS



Material	Cover: aluminum
Stainless steel option	Body: aluminum
Shaft	Stainless steel
Bearings	Ball bearings
Maximal load	Axial : 50 N
	Radial : 80 N
Shaft Inertia	$\leq 50 \cdot 10^{-6} \text{ kg.m}^2$
Torque	$\leq 25 \cdot 10^{-3} \text{ N.m}$
Permissible max. speed	4 500 min <sup>-1</sup>
Continuous max speed	3 000 min <sup>-1</sup>
Shaft seal	Nitril
Shock (EN60068-2-27)	$\leq 300 \text{ m.s}^{-2}$ (during 6 ms)

Vibration (EN60068-2-6)	$\leq 100 \text{ m.s}^{-2}$ (10 ... 500 Hz)
EMC	EN 61000-6-4, EN 61000-6-2
Isolation	500 V (1 min)
Weight	2kg aluminium body & cover
	5kg stainless steel body & cover
Operating temperature	- 20... + 80 °C (encoder T°)
Storage temperature	- 20... + 80 °C
Protection(EN 60529)	IP 65
Torque (ring pressure screw)	nominal: 3N.m, break: 4N.m
Theoretical mechanical lifetime 10 <sup>9</sup> turns (F <sub>axial</sub> / F <sub>radial</sub> )	
25 N / 40 N	140
50 N / 80 N	17

T <sub>amb</sub>	Temperature class for gas atmosphere	Temperature class for dust atmosphere
-20°C ≤ T <sub>a</sub> ≤ +40°C	T6	T80°C
-20°C ≤ T <sub>a</sub> ≤ +55°C	T5	T95°C
-20°C ≤ T <sub>a</sub> ≤ +60°C	T4	T100°C
-40°C ≤ T <sub>a</sub> ≤ +70°C	T4	T110°C

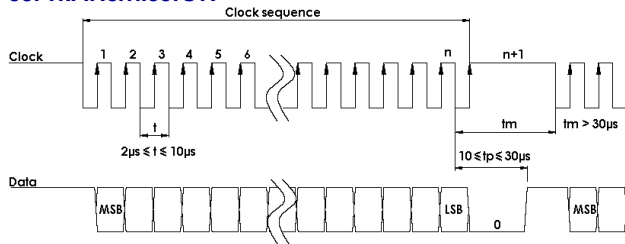
## ATEX ABSOLUTE MULTITURN SSI ENCODER, PEUX RANGE

### ELECTRICAL CHARACTERISTIC

Input signal clock CLK	per opto-coupler
Output signal DATA	line - driver RS422
Clock frequency CLK	100kHz – 500kHz
Precision	$\pm \frac{1}{2}$ LSB (13 bits)

Power supply	5 – 30Vdc
Introduction	< 1 s
Cons. without load	< 100mA (typically 50-60mA at 24Vdc)
Position refresh	< 200 $\mu$ s

### SSI TRANSMISSION



Transmission	Transmission up to 400m* at 100kHz in function of the cable characteristics
Cable	High security of transmission by using shielded cable and twisted pairs

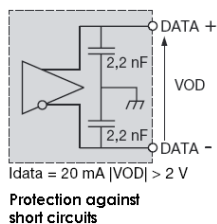
\*Consult us for length > 100m

### SSI CONNECTION

Type	Vcc	Gnd	Clk+	Data+	RAZ	Data-	Clk-	DIRECTION
S5	BN/GN Brown/Green	WH/GN White/Green	GN Green	GY Grey	BU Blue	PK Pink	BN Brown	WH White

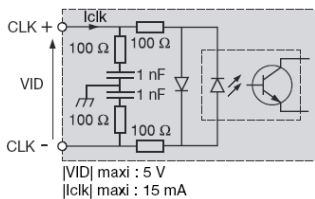
Note : Do not connect other pinouts, connect DIRECTION and RAZ to a potential (RAZ at 0V if not used)

#### Data output RS422

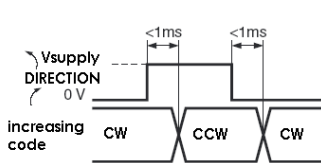


#### Isolated Clk input

Power supply: 5 to 30 V  
Max ond.: 500mV for  
11 to 30Vdc power supply  
Protection against inversion of polarity  
Cons. without load: 100mA max.

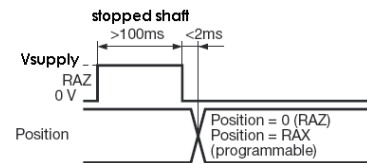


#### DIRECTION input



min 0V  
Level "0" 0,7xVsupply  
Level "1" < 5mA  
increasing  
CW CCW

#### RAZ / RAX input



min 0 V  
Level "0" 0,7xVsupply  
Level "1" < 5mA  
max 0,3xVsupply  
Vsupply

### ORDERING CODE

	Shaft Ø	Supply	Output stage	Code	Resolution Number of turns	Connection	Connection Orientation
PEUX (stainless steel) PAUX (aluminium)	30:30 mm	P : 5-30Vdc	SS : SSI without parity SP : SSI with even parity SI : SSI with odd parity	B : Binary G : Gray	13B12D5 : Resolution : 13 bits Number of turns : 12 bits D5: 25bits frame	S5: PUR cable	Example : R030 : radial cable 3m
PEUX	30	P	SS	G	13 B12 D5	S5	R030

### SPECIAL CONDITIONS FOR SAFE USE

The gaps of the different flamepath are less than the values specified in the tables of the IEC 60079-1 standard.  
The width of the different flameproof joints are superior to these specified in tables of IEC 60079-1 standard.

### ASSEMBLY CAUTION

#### NEVER OPEN THE ENCODER

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

For electrical installation use the standard EN/IEC 60079-14.

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 MULTITURN SSI ENCODER, PEUX RANGE****1) Déclaration UE de conformité**

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

**CEUX, GEUX, NEUX, PEUX**

3) Avec les inscriptions suivantes :

 **I M2**

**Ex d I Mb**

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

**ATEX : 2014/34/UE**

**CEM : 2014/30/UE**

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

(\*) ATEX: EN60079-0:2012+A11:2013, EN60079-31:2014 et EN60079-1:2014

IECEx: IEC60079-0:2011+IS1 2013, IEC60079-1:2014, IEC60079-31:2013

(\*) Une étude comparative des normes EN 60079-0 (2009 et 2012+A11 2013), EN 60079-31 (2009 et 2014) et EN 60079-1 (2007 et 2014) montre que le matériel n'est pas concerné par les modifications substantielles.

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

**LCIE 03 ATEX 6407**

et une notification :

**LCIE 03 ATEX Q8060**

6) Un certificat de conformité IECEx a été obtenu :

**IECEx LCIE 13.0030X**

et une notification :

**FR/LCI/QAR08.0002**

7) 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, CEI61000-4-4, CEI 61000-4-5, CEI 61000-4-6, CEI 61000-4-8, CEI 61000-4-11

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

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

Numéro d'identification : 0081

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

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

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

**1) EU Declaration of conformity**

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

**CEUX, GEUX, NEUX, PEUX**

3) With the following inscriptions :

 **I M2**

**Ex d I Mb**

Conceived and manufactured has the directive applicable following :

**ATEX : 2014/34/EU**

**EMC: 2014/30/EU**

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

(\*) ATEX: EN60079-0:2012+A11:2013, EN60079-31:2014 and EN60079-1:2014

IECEx: IEC60079-0:2011+IS1 2013, IEC60079-1:2014, IEC60079-31:2013

(\*) A comparative study of the standards EN 60079-0 (2009 and 2012+A11 2013), EN 60079-31 (2009 and 2014) and EN 60079-1 (2007 and 2014) shows that the product is not concerned by the substantial modifications.

5) EC type examination certificate was obtained :

**LCIE 03 ATEX 6407**

and a notification :

**LCIE 03 ATEX Q8060**

6) IECEx certificate of conformity was obtained :

**IECEx LCIE 13.0030X**

and a notification :

**FR/LCI/QAR08.0002**

7) 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, CEI61000-4-4, CEI 61000-4-5, CEI 61000-4-6, CEI 61000-4-8, CEI 61000-4-11

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

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

Identification number : 0081

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

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

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

Date :

ATEX Certified Product Approved Person  
Jean-Marc HUBSCH

