

ATEX PROGRAMMABLE INCREMENTAL ENCODERS, IHM5 RANGE

Intrinsically safe encoders, specially designed for explosive GAZ or DUST atmospheres

For chemical applications (painting, solvent, fragrances, rubber), textile, food processing, wood, petrochemistry...

EC type examination certificate

Download from our website www.beisensors.com

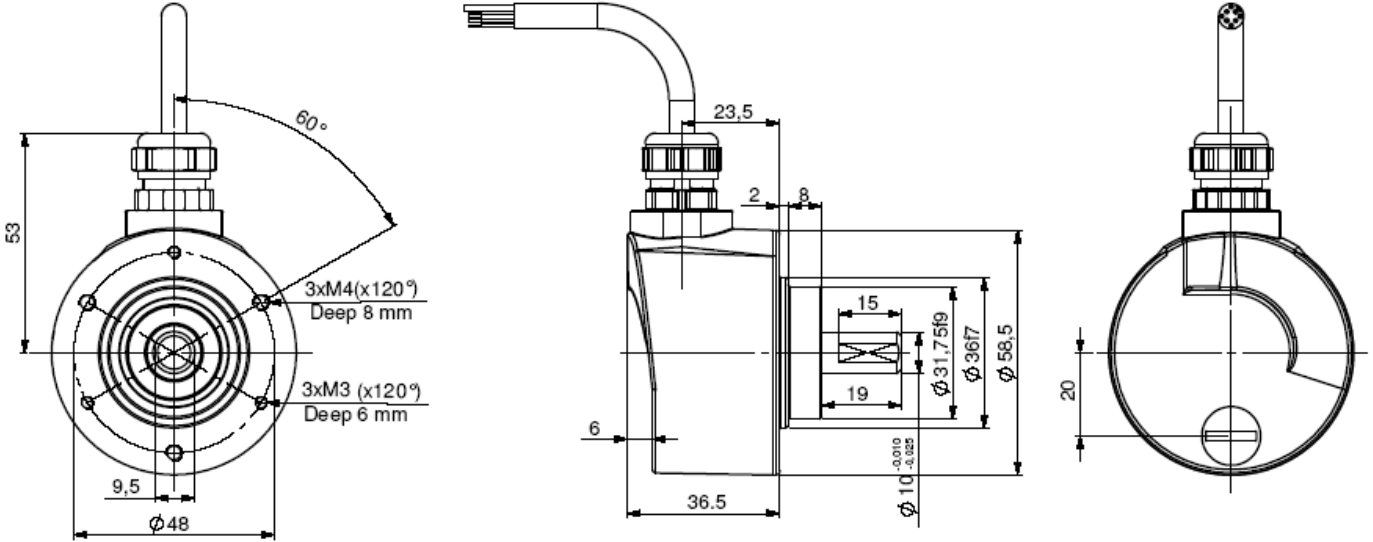
LCIE 04 ATEX 6109 X

CE 0081

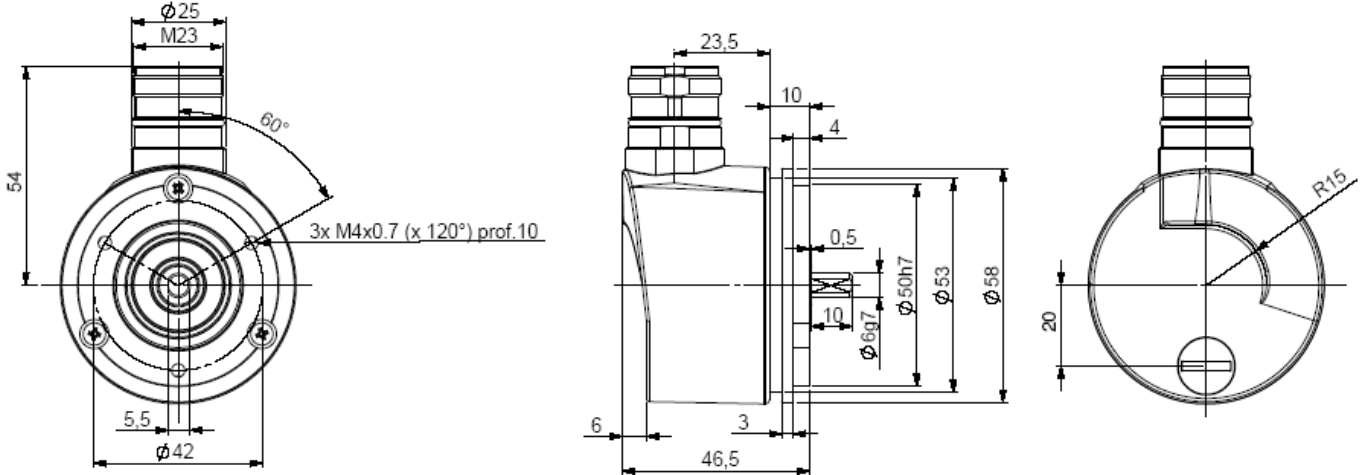
II 1 G/D EEx ia IIC T4 Ex iaD 20 T135°C



IHM5_10 connection G3R (radial cable)



IHM5_06 connection G6R (radial M23), flange 9500/003 mounted onto the body



Material	Cover : zinc alloy	Shock (EN60068-2-27)	≤ 500m.s ⁻² (during 6 ms)
	Body : aluminium	Vibration (EN60068-2-6)	≤ 100m.s ⁻² (55 ... 2 000 Hz)
	Shaft : stainless steel	EMC	EN 50081-1, EN 61000-6-2
Bearings	6 000 serie	Isolation	1 000 Veff
Maximal loads	Axial : 50 N	Weight (connector)	0,3 kg
	Radial : 100 N	Operating temperature	- 30 ... + 70 °C (encoder T°)
Shaft inertia	≤ 1.10 ⁻⁶ kg.m ²	Storage temperature	- 30 ... + 80 °C
Torque	≤ 4.10 ⁻³ N.m	Protection(EN 60529)	IP 65 (IP67 with flange option)
Permissible max.speed	12 000 min ⁻¹	Theoretical mechanical lifetime 10 ⁹ turns (F _{axial} / F _{radial})	
Continuous max. speed	9 000 min ⁻¹	25 N / 50 N : 99	50 N / 100 N : 12

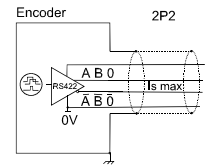
ATEX PROGRAMMABLE INCREMENTAL ENCODERS, IHM5 RANGE

OUTPUT ELECTRONIC / SUPPLY - DIGITAL SIGNALS (SQUARE WAVE SIGNALS) - 2P2 ELECTRONIC

Supply : 4.5 to 6Vdc, Consumption : 75mA
Intern capacity : 1.3µF, intern inductance : 0mH
RS422, 40 mA, TTL 20mA, F_{max} = 300kHz
II 1 G/D EEx ia IIC T4, Ex iaD 20 T135°C

Barrier to be used for supply:
Ui ≤ 10V, Li ≤ 750mA, Pi ≤ 1.875W

Barrier to be used for each output:
Ui ≤ 10V, Li ≤ 200mA, Pi ≤ 0.5W



Protection against short circuits

STANDARD CONNECTION

		-	+	A	B	0	A/	B/	0/	Ground
G6	12 pins CW	1	2	3	4	5	6	7	8	Body connector
G8	12 pins CCW	10 + 11	2 + 12	8	5	3	1	6	4	Body connector
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	Supply	Output stage	Signals	Resolution	Connection	Orientation
IHM5 Cover: Zinc alloy Body: Aluminium	06 : 6 mm 10 : 10 mm	2 : 5Vdc	P2 : driver RS422	9 : A,A/,B,B/,0,0/ (0 gated A & B)	Basic: 5 000 max	G6 : M23 12pins CW G5 : M23 12pins CW G8 : M23 12 pins CCW G1 : solenoid 4 pins G2 : DIN 5 pins GD : DIN 8 pins G3 : PVC cable 8 wires GP : PUR cable 12 wires	R : radial Example: R020 : radial cable 2m
Ex: IHM5_	10 //	2	P2	9 //	5 000 //	GP	R050

AVAILABLE INTERPOLATED RESOLUTIONS

Simple multiplication of the basic disk resolution : 1, 2, 3, 4, 5, 8, 10, 12 and 16 times with dip-switch without software, nor hardware

Interpolation Factor	Basis Resolutions											switchs position				
	250	256	360	500	1 024	2 500	3 000	3 600	4 000	4 096	5 000	factor	CODE SWITCH			
X 1	250	256	360	500	1 024	2 500	3 000	3 600	4 000	4 096	5 000	x 1	ON	OFF	OFF	OFF
X 2	500	512	720	1 000	2 048	5 000	6 000	7 200	8 000	8 192	10 000	x 2	ON	OFF	OFF	OFF
X 3	750	768	1 080	1 500	3 072	7 500	9 000	10 800	12 000	12 288	15 000	x 3	ON	OFF	OFF	OFF
X 4	1 000	1 024	1 440	2 000	4 096	10 000	12 000	14 400	16 000	16 384	20 000	x 4	ON	OFF	OFF	OFF
X 5	1 250	1 280	1 800	2 500	5 120	12 500	15 000	18 000	20 000	20 480	25 000	x 5	ON	OFF	OFF	OFF
X 8	2 000	2 048	2 880	4 000	8 192	20 000	24 000	28 800	32 000	32 768	40 000	x 8	ON	OFF	OFF	OFF
X 10	2 500	2 560	3 600	5 000	10 240	25 000	30 000	36 000	40 000	40 960	50 000	x 10	ON	OFF	OFF	OFF
X 12	3 000	3 072	4 320	6 000	12 288	30 000	36 000	43 200	48 000	49 152	60 000	x 12	ON	OFF	OFF	OFF
X 16	4 000	4 096	5 760	8 000	16 384	40 000	48 000	57 600	64 000	65 536	80 000	x 16	ON	OFF	OFF	OFF

**NEVER CONNECT/DISCONNECT OR OPEN THE ENCODER WITH POWER ON OR IN DUST ENVIRONMENTS
RESPECT THE MOUNTING TOLERANCES AND THE MECHANICAL RESTRICTIONS IN ORDER TO REMAIN IN LINE WITH THE MAXIMUM
SURFACE TEMPERATURE VALUE ALLOWED BY THE CLASS T4 REQUIREMENTS**

LCIE 04 ATEX 6109 X: CE certification of Type for the encoder :

Operating Temperature : -30°C to +70°C

The components of the device are intrinsically safe: they can be used in explosive atmospheres. The supply and output circuits can only be connected to associated devices which are intrinsically safe and that are certified by type [ia] or [ib]. These devices must have electrical parameters that have a compatible supply with the above mentioned electronics

LCIE 04 ATEX 6155 X: CE certification of Type for the encoder's system (encoder associated with a BEI barrier):

Operating temperature: barrier: -20°C to +40°C, encoder: -30°C to +70°C

System classification: **Eex ia IIC T4 Ex iaD 20 T135°C**. The interconnecting cables have to be sufficiently protected against damage and have to be separated from the non intrinsically safe circuits. They are described in the norm EN50020 paragraph 6.3, with the following characteristics C=100pF/m and L=1.2µH/m, or with cables with other C and L values, With respect to the maximum authorized values:

Gases : **Ca=3.9µF** and **L=0.4mH**

Dust : **Ca=38.7µF** and **L=0.8mH**

Made in FRANCE


ATEX PROGRAMMABLE INCREMENTAL ENCODERS, IHM5 RANGE

1) Déclaration de conformité CE

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

IHM5, IHM9, IHO5 et IHK5

3) Avec les inscriptions suivantes :

CE 0081  II 1 G/D, EEx ia IIB ou IIC T4, Ex iaD 20
T135°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 50014 (1997) + amendements 1 et 2, EN 50020 (2000),
EN 13980 (2002), CEI 61241-0-Ed.1 (2004), CEI 61241-11-Ed.1
(2004)

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

LCIE 04 ATEX 6109 X

et une notification :

LCIE 03 ATEX Q8060

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

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
intrinsically safe standard

IHM5, IHM9, IHO5 and IHK5

3) With the following inscriptions :

CE 0081  II 1 G/D, EEx ia IIB or IIC T4, Ex iaD 20
T135°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 50014 (1997) + amendments 1 and 2, EN 50020 (2000),
EN 13980 (2002), CEI 61241-0-Ed.1 (2004), CEI 61241-11-Ed.1
(2004)

5) EC type examination certificate was obtained :

LCIE 04 ATEX 6109 X

and a notification :

LCIE 03 ATEX Q8060

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

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

Identification number : 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