

IHO5

ATEX INCREMENTAL ENCODERS, IHO5 RANGE



Introduction

Intrinsically safe encoders, specially designed for explosive GAS atmospheres

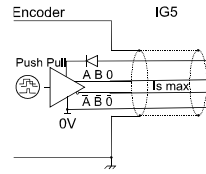
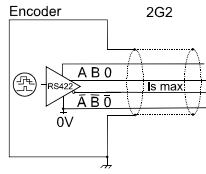
For chemical applications (painting, solvent, fragrances and rubber), textile, food processing, wood, petrochemical...



SPECIFICATIONS

Material Stainless Steel Body Option	Cover : zinc alloy
	Body : aluminium
	Shaft : stainless steel
Bearings	6 803 serie
Maximum Load	Axial: 20 N
	Radial: 50 N
Shaft Inertia	$\leq 2,2 \cdot 10^{-6}$ kg.m ²
Torque	$\leq 6 \cdot 10^{-3}$ N.m
Permissible Max.Speed	6 000 min ⁻¹
Continuous Max. Speed	6 000 min ⁻¹
Shaft Seal	Viton
Shock (EN60068-2-27)	≤ 500 m.s ⁻² (during 6 ms)
Vibration (EN60068-2-6)	≤ 100 m.s ⁻² (55 ... 2 000 Hz)
CEM	EN 50081-1, EN 61000-6-2
Insulation	1 000 V
Encoder weight approx.	0,300 kg
Operating temperature	- 30 ... + 70°C (encoder T°)
Storage temperature	- 40 ... + 100°C

Protection(EN 60529)	IP 65
Torque (ring pressure screw)	nominal: 1.5 N.m, break: 2.0 N.m
Theoretical mechanical lifetime 109 turns (F_{axial} / F_{radial})	
10N / 25N : 230	20N / 50N : 29



Environmental

Types	Electronic 2G2	Electronic IG5
	II 1 G Ex ia IIC T4 Ga	II 1 G Ex ia IIB T4 Ga
Power supply	4.5 to 6Vdc, cons. : 75mA	8 to 12Vdc, cons. : 75mA
	U _i ≤10V, I _i ≤750mA, P _i ≤1W C _i =1,3μF, L _i =0	U _i ≤16V, I _i ≤750mA, P _i ≤1W C _i =1,3μF, L _i =0
Output signal	RS422, 40 mA, TTL 20mA, F _{max} =300kHz	Push Pull 50mA, F _{max} =300kHz
	U _i ≤10V, I _i ≤200mA, P _i ≤0,1W C _i =1,3μF, L _i =0	U _i ≤16V, I _i ≤150mA, P _i ≤0,1W C _i =1,3μF, L _i =0
Cable linear capacitance	100pF/m	
Cable linear inductance	1,2μH/m	



STANDARD CONNECTION

		-	+	A	B	0	A/	B/	0/	Ground
G6	12 pins CW	1	2	3	4	5	6	7	8	Connector body
G8	12 pins CCW	10+11	2+12	8	5	3	1	6	4	Connector body
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

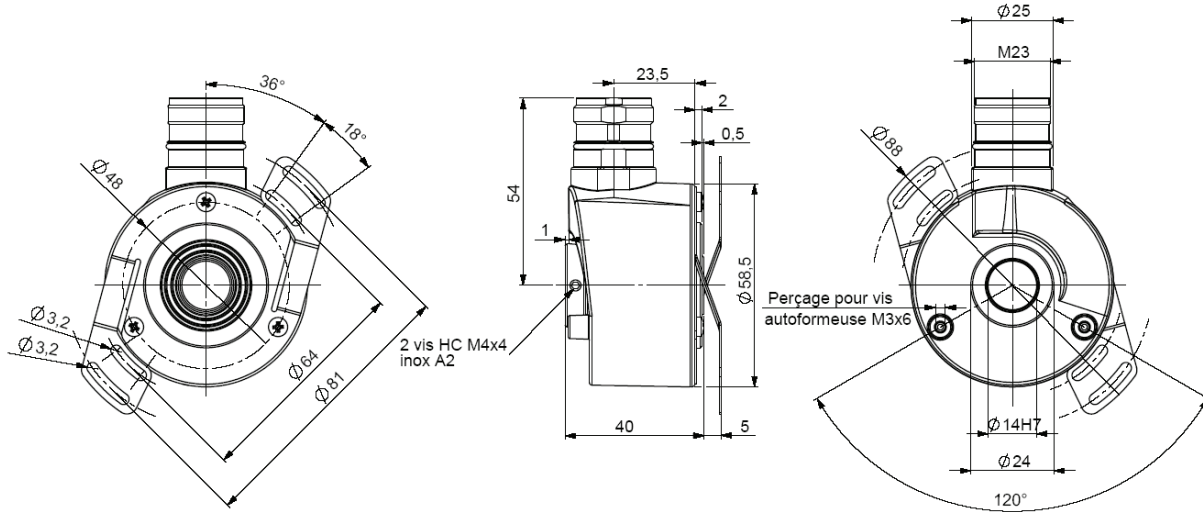


DIMENSIONS

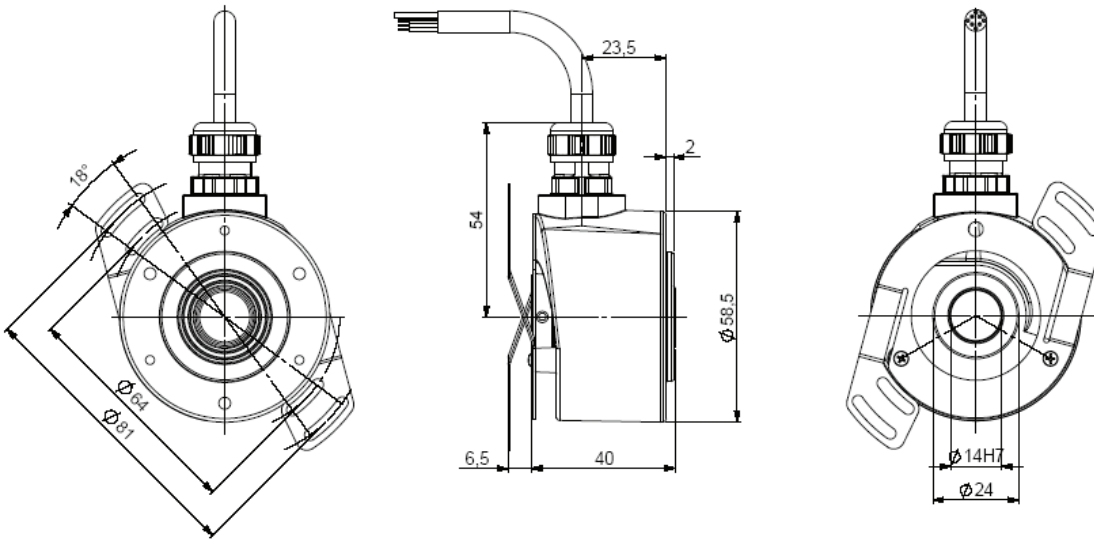
Tolerance, unless otherwise noted:

All dimensions are in millimeters [inches]

IHO5_14 connection G6R (radial M23), DAC 9445/015 mounted on the body



IHO5_14 connection G3R (radial cable), DAC 9445/015 mounted onto the cover





ORDERING OPTIONS

Example : IH05_14//2G29//10000/GPR050

Family	IH05_	14	//	2	G2	9	//	10000	//	GP	R050
IH05: Aluminum body IB05: Stainless steel body											
Shaft											
14: 14mm Reduction hubs available											
Supply											
2: 5Vdc I: 8 to 12Vdc											
Output stage											
G2: driver 5Vdc RS422 G5: push-pull											
Signals											
9: A,A/,B,B/,0,0/ (0 gated A&B)											
Resolution											
80 000 max											
Connection											
G6: M23 12pins CW G8: M23 12 pins CCW Other consult us G3: PVC cable 8 wires GP: PUR cable 12 wires											
Orientation											
R: radial Example: R020: radial cable 2m											

Available resolutions (2G2 and IG5):

50 60 100 120 125 127 150 180 200 240 250 256 300 314 360 375 400 500 512 600 720 750 768 800 927 1000 1024 1200 1250 1280 1440 1500 1800 2000 2048 2400 2500 3000 3600 4000 4096 5000 6000 7200 8000 8192 10000

Interpolated available resolutions (2G2 only) :

1080 2560 2880 3072 4320 5120 7500 5760 9000 10240 10800 12000 12500 12288 14400 15000 16000 16384 18000 20000 20480 24000 25000 28800 30000 32000 32768 36000 40000 40960 43200 48000 49152 50000 57600 60000 64000 65536 80000



AGENCY APPROVALS & CERTIFICATIONS

NEVER CONNECT/DISCONNECT OR OPEN THE ENCODER WITH POWER ON OR IN HAZARDOUS 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 :

The apparatus can be only connected to certified intrinsically safe apparatus. These combinations must be compatible as regard the intrinsic safety rules (see electrical parameters clause 15).

For the apparatuses equipped with a cable, the connecting must be done according to the requirements of the EN 60079-0 standard.

The apparatuses type "IH.." must not be submitted to mechanical impacts or frictions Operating ambient temperature : **-30°C to +70°C**

1) Déclaration UE de conformité

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

capteurs à sécurité intrinsèque, type

IHM5, IHM9, IH05 et IHK5

IBM5, IBM9, IB05 et IBK5

3) Avec les inscriptions suivantes :

II 1 G

Ex ia IIC T4 Ga (électronique 2G2) ou

Ex ia IIB T4 Ga (électronique IG5)

1) EU Declaration of conformity

2) We, BEI Sensors, certify that this material: sensor

intrinsically safe standard

IHM5, IHM9, IH05 and IHK5

IBM5, IBM9, IB05 and IBK5

3) With the following inscriptions:

II 1 G

Ex ia IIC T4 Ga (electronic 2G2) or

Ex ia IIB T4 Ga (electronic IG5)

Conceived and manufactured has the directive applicable following:

ATEX : 2014/34/EU

CEM : 2014/30/EU

4) Complies with these standards:

ATEX: EN60079-0:2018, EN60079-1:2014,

IECEX: IEC60079-0:2017, IEC60079-1:2014

5) EC type examination certificate was obtained :

LCIE 04 ATEX 6109 X

and a notification :

LCIE 03 ATEX Q 8060

6) IECEX certificate of conformity was obtained :

IECEX LCIE 13.0048X

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 followup 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 :

LCIE BUREAU VERITAS, Aire de la Thur, 68840 Pulversheim

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



Personne Autorisée Produits certifiés ATEX
Jean-Marc HUBSCH

A handwritten signature in black ink, consisting of a large, stylized 'J' followed by a horizontal line and a flourish.



WARNINGS



RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

Failure to follow these instructions can result in serious injury, or equipment damage.



HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

Failure to follow these instructions will result in death or serious injury.

Made in France

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