IHM5

ATEX INCREMENTAL ENCODERS

Introduction

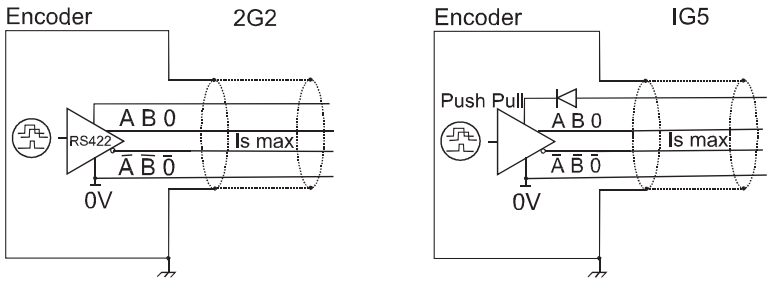
Intrinsically safe encoders, specially designed for explosive GAS atmospheres.

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

SPECIFICATIONS

Material	**Cover:** Zinc Alloy **Body:** Aluminum **Shaft:** Stainless Steel
Bearings	6000 series
Maximal Loads	**Axial:** 50 N **Radial:** 100 N
Shaft Inertia	$\leq 1.10^{-6}$ kg.m^2
Torque	$\leq 4.10^{-3}$ N.m
Permissable Max. Speed	12,000 min^{-1}
Continuous Max. Speed	9,000 min^{-1}
Shocks (EN60068-2-27)	$\leq$ 500 m.s^{-2} (during 6 ms)
Vibrations (EN60068-2-6)	$\leq$ 100 m.s^{-2} (55… 2 000 Hz)
EMC	EN 50081-1, EN 61000-6-2
Insulation	1000 Veff
Encoder Weight (Approx.)	0,300 kg
Operating Temperature	- 30 ... + 70°C (encoder T°)
Storage Temperature	- 40 ... + 100°C
Protection (EN 60529)	IP 65 (IP67 with flange option)
Theoretical mechanical lifetime 10^9 turns (F_{axial} / F_{radial})	
25 N / 50 N	99
50 N / 100 N	12

Output Electronic / Supply
Digital Signals (Square Wave Signals)



Type	Electronic 2G2	Electronic IG5
⟨Ex⟩	⟨Ex⟩ II 1 G Ex ia IIC T4 Ga	⟨Ex⟩ II 1 G Ex ia IIB T4 Ga
Power Supply	4.5 to 6Vdc, cons. : 75mA	8 to 12Vdc, cons. : 75mA
	Ui≤10V, Ii≤750mA, Pi≤1W Ci=1,3µF, Li=0	Ui≤16V, Ii≤750mA, Pi≤1W Ci=1,3µF, Li=0
Output Signal	RS422, 40 mA, TTL 20mA, F_{max}=300kHz	Push Pull 50mA, F_{max}=300kHz
	Ui≤10V, Ii≤200mA, Pi≤0,1W Ci=1,3µF, Li=0	Ui≤16V, Ii≤150mA, Pi≤0,1W Ci=1,3µF, Li=0
Cable Linear Capacitance	100pF/m	
Cable Linear Inductance	1,2µH/m	

Standard Connections

		-	+	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

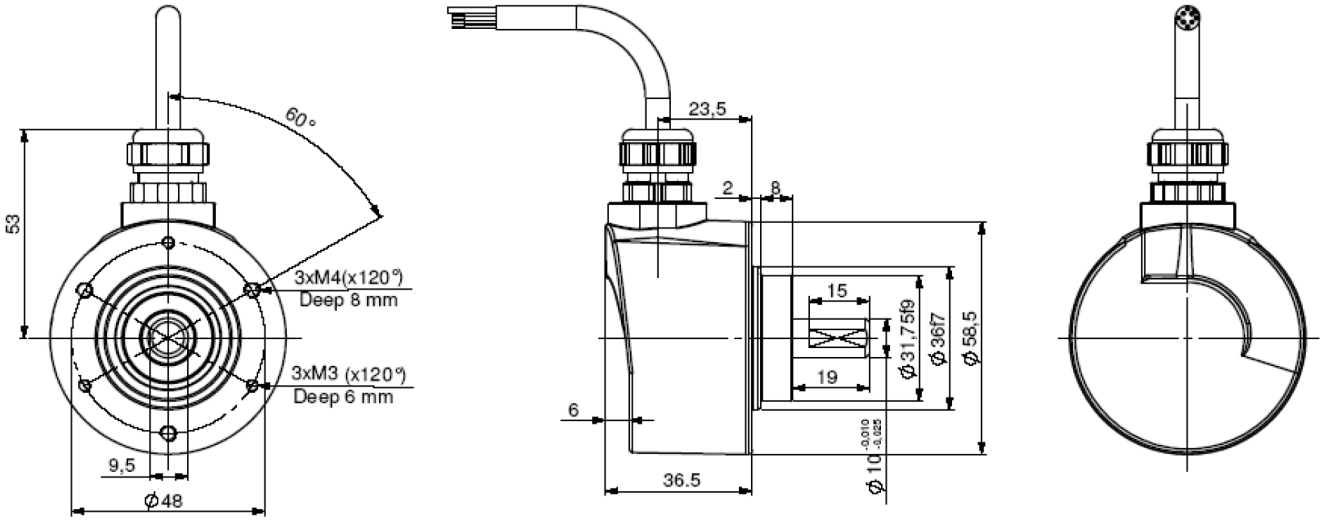
NEVER CONNECT/DISCONNECT OR OPEN THE ENCODER UNDER POWER SUPPLY IN DUST ENVIRONMENTS
RESPECT THE MOUNTING TOLERANCES AND THE MECHANICAL RESTRICTIONS IN ORDER TO REMAIN IN LINE WITH THE MAXIMAL SURFACE TEMPERATURE VALUE ALLOWED BY THE CLASS T4 REQUIREMENTS

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**

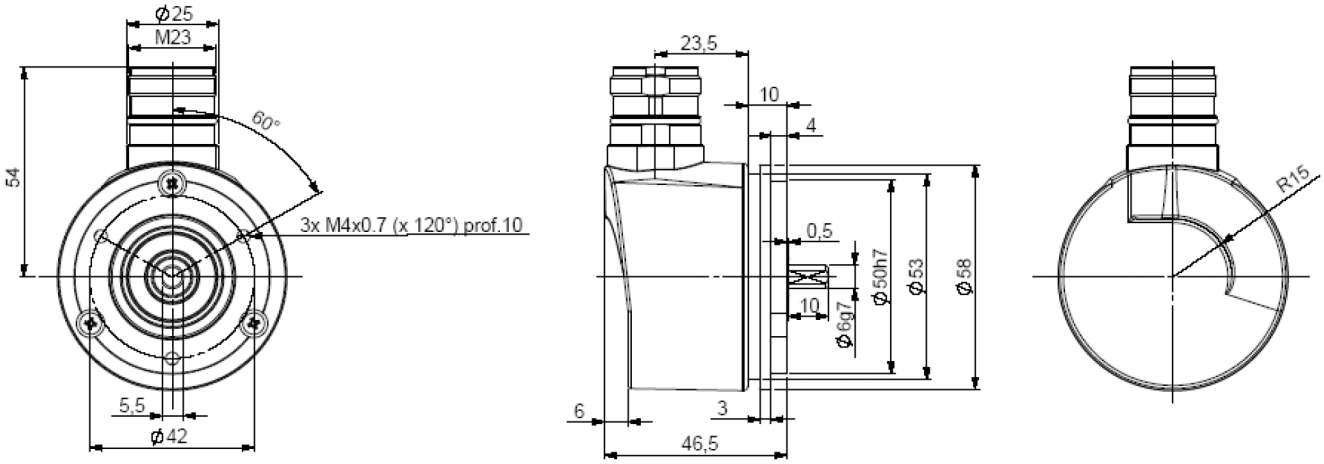
DIMENSIONS

Dimensions in mm

IHM5_10 connection G3R (radial cable)



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



** To be ordered seperately.*

ORDERING OPTIONS

Example : IHM5_10//2G29//10000//GPR050

Contact the factory for special versions, ex: special flanges, electronics, connections…

IHM5 _ 10 // 2 G2 9 // 10000 // GP R050

Family

IHM5: Aluminum body
IXM5 : Stainless steel body

Shaft Ø

06: 6mm
10: 10mm

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 [A]

80000 max

Connection

G6: M23 12 pins CW
G8: M23 12 pins CCW
Other: consult us

G3: PVC cable 8 wires
GP: PUR cable 12 wires

Connection Orientation

R: radial

Example:
R020: radial cable 2m

GENERAL NOTES

[A] **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

EC type examination certificate
LCIE ATEX & IECEX approved
II 1 G
Ex ia IIC T4 Ga (electronic 2G2) or Ex ia IIB T4 Ga (electronic IG5).

1) EU Declaration of conformity

2) We, BEI Sensors, certify that this material: sensor intrinsically safe standard
IHM5, IHM9, IHO5 and IHK5
IBM5, IBM9, IBO5 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

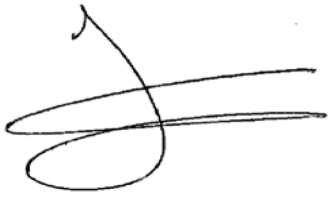
7) The application of the following standards took part in obtaining certification:
EN 60-529, NFC 23-520, NFC 23-539, EN 50081-1, EN 55022 classe B, EN 55014, EN 61000-6-2, CEI 61000-4-2, CEI 61000-4-3, CEI61000-4-4, CEI 61000-4-5, CEI 61000-4-6, CEI 61000-4-8, CEI 61000-4-11

8) The notified organization responsible for the 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:
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

ATEX Certified Product Approved Person



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