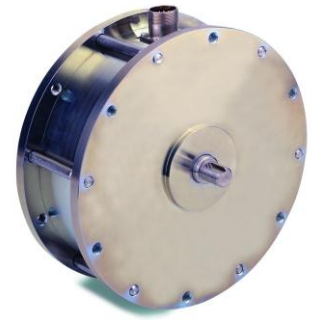


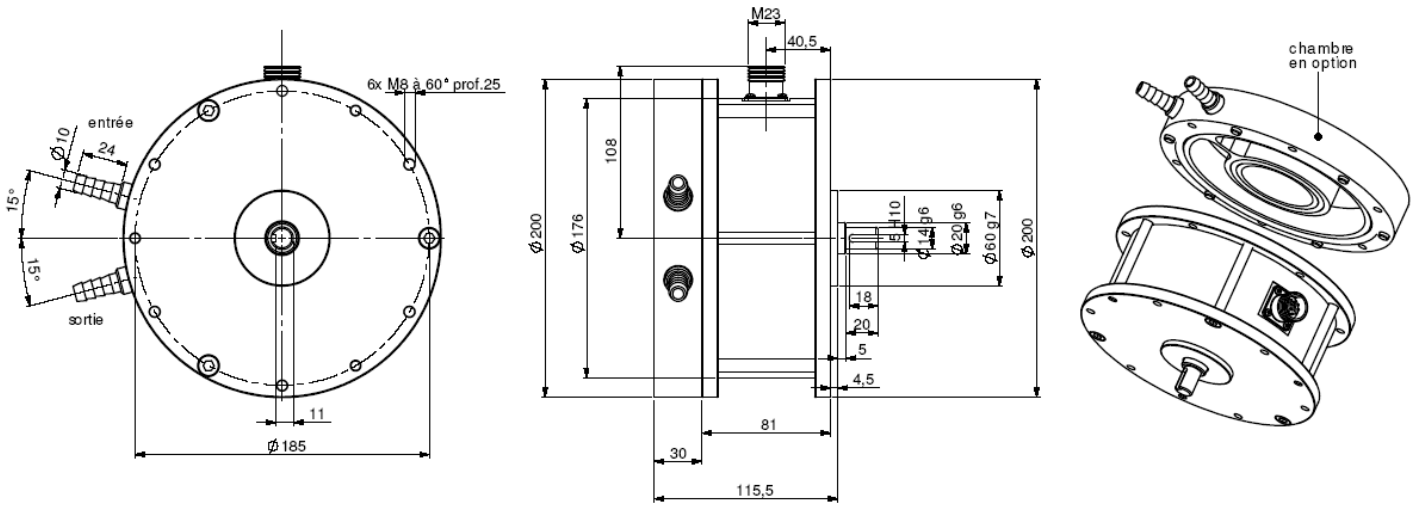
## INCREMENTAL ENCODERS, GHML RANGE

- With 200mm diameter, especially for heavy duty, extreme resistance to shocks/vibrations and to axial and radial charges
- Stainless steel body, treated against corrosion
- Digital incremental output, analog output in option (tacho-encoder, optotacho)
- Water cooling flange as option
- Max control function as option : shock detection, vibration, temperatures
- Double shaft output as option
- Duplex version with 2 opto-electronics redundant system

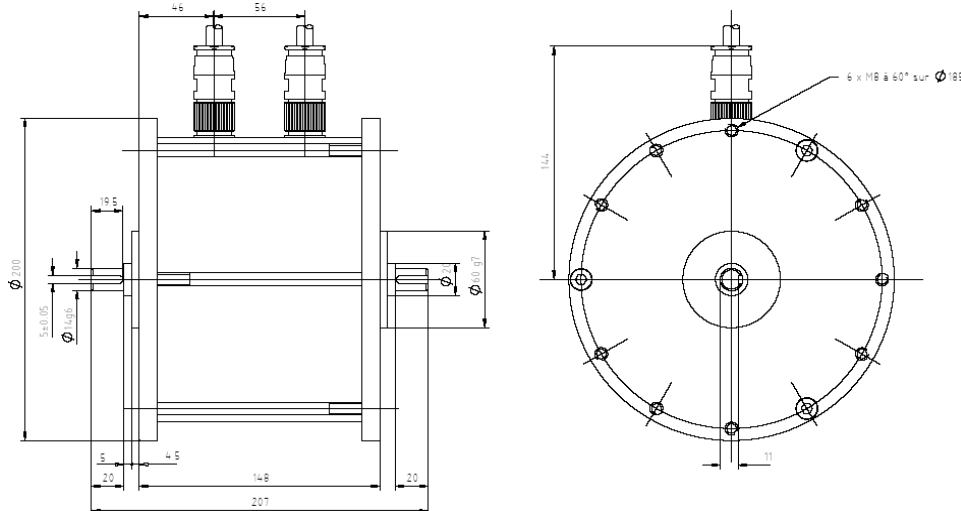
Application fields : glass, steel, cement- mills, platform marine, locks...



**GHML (simple version)**



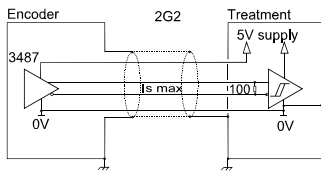
**GHDD (Duplex version with double shaft output)**



Material	Cover : steel	Continuous max. speed	3 600 min <sup>-1</sup>
	Body: steel	Shocks (EN60068-2-27)	≤ 500 m.s <sup>-2</sup> (during 6ms)
	Shaft : stainless steel	Vibrations (EN60068-2-6)	≤ 200 m.s <sup>-2</sup> (10 ... 1 000 Hz)
Bearings	6004 serie	EMC	EN 50081-1, EN 61000-6-2
Maximum loads	Axial : 200 N	Isolation	1 000 V eff
	Radial : 200 N	Encoder weight (approx.)	Simple version : 10kg
Shaft inertia moment	Simple: 50.10 <sup>-6</sup> kg.m <sup>2</sup>		Duplex version: 15kg
		Duplex : 200.10 <sup>-6</sup> kg.m <sup>2</sup>	Operating temperature
Torque	≤ 30.10 <sup>-3</sup> N.m	Storage temperature	- 40... + 80 °C
Permissible max. speed	6 000 min <sup>-1</sup>	Protection(EN 60529)	IP 65

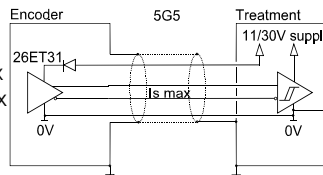
## INCREMENTAL ENCODERS, GHML RANGE

### OUTPUT ELECTRONIC / SUPPLY



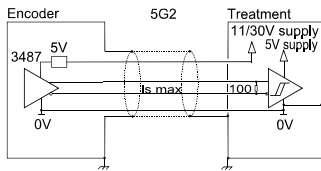
#### 2G2 electronic (100kHz)

Supply : 5Vdc ± 10%  
Cons. without load : 100mA max  
Current per channel : 40mA max  
0 max (I<sub>s</sub>=20mA) : V<sub>oi</sub> = 0,5Vdc  
1 min (I<sub>s</sub>=20mA) : V<sub>oh</sub> = 2,5Vdc



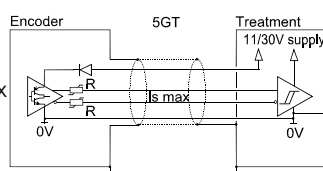
#### 5G5 electronic (100kHz)

Supply : 11 to 30Vdc  
Cons. without load : 75mA max  
Current per channel : 40mA max  
0 max (I<sub>s</sub>=20mA) : V<sub>oi</sub> = 0,5Vdc  
1 min (I<sub>s</sub>=20mA) : V<sub>oh</sub> = V<sub>cc</sub>-3Vdc



#### 5G2 electronic (100kHz)

Supply : 11 to 30Vdc  
Cons. without load : 75mA max  
Current per channel : 40mA max  
0 max (I<sub>s</sub>=20mA) : V<sub>oi</sub> = 0,5Vdc  
1 min (I<sub>s</sub>=20mA) : V<sub>oh</sub> = 2,5Vdc



#### 5GT electronic, optional (100kHz)

Supply : 11 to 30Vdc  
Cons. without load : 75mA max  
Current per channel : 40mA max  
0 max (I<sub>s</sub>=20mA) : V<sub>oi</sub> = 0,5Vdc  
1 min (I<sub>s</sub>=20mA) : V<sub>oh</sub> = V<sub>cc</sub>-2,5Vdc

Electronics 5GT is designed for long and high capacity cables (contact our factory)

Available in option :

- 3G3 electronic, supply between 15 and 30Vdc, push-pull output regulated 12Vdc
- 5GH electronic permits to drive different inputs (plc + display for example)

Protection against short circuits the electronics: 5G5, 5GT, 3G3

Protection against inversion of polarity for all the electronics except 2G2

Option "Max control" : the encoder gives on real time its physical environment parameters: shocks and vibrations, too high or too low temperature, too low or too high supply, quality of the output signals : upon request..



### STANDARD CONNECTION

		-	+	A	B	0	A/	B/	0/	Ground
G6	M23 - 12 pins CW	1	2	3	4	5	6	7	8	connector body
G8	M23 - 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 bleu	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 (Contact the factory for special versions ex: electronics, special flanges, connections ...)

	Shaft Ø	Available electronic		Output signal	Resolution	Connection	Connection orientation
GHML GHDL GHMD GHDD	14 : 14mm	2G2, 5G2, 5G5, 5GT, 5GH, 3G3		9 : A,A/,B,B/,0,0/ (0, A&B gated) A : A,A/,B,B/,0,0/ (0, A gated) N : A,A/,B,B/,0,0/ (0 ungated)	10 000 max	G6 : M23 12 pins CW G5 : M23 12 pins CCW G8 : M23 12 pins CCW	R : radial
		Supply	Output stages				
		2 : 5Vdc 5 : 11 to 30Vdc 3 : 15 to 30Vdc	G2 : driver 5Vdc RS422 G3 : driver 12Vdc G5 : push-pull GT : push-pull 11-30Vdc transistorised GH : push-pull 11-30Vdc 150 mA				
						G3 : PVC cable 8 wires GP : PUR cable 12 wires	Example : R020 : radial cable 2m
Ex: GHML	14	5	G5	9	5 000	GP	R020

GHML : simple shaft output, standard

GHDL : double shaft output, standard

GHMD : simple shaft output, duplex

GHDD : double shaft output, duplex

In duplex version, 2 outputs (independent electronic/optronic) ensure a redundant security of the product

**Available resolutions :** 1 2 3 4 5 6 7 8 9 10 12 13 14 15 16 19 20 21 24 25 26 28 29 30 32 35 36 39 40 43 45 46 48 50 54 56 58 60 62 63 64 66 67 70 72 74 75 76 80 84 86 88 89 90 91 94 96 100 107 110 120 122 123 125 127 128 130 132 135 138 140 147 150 157 159 160 168 169 170 172 175 180 188 191 196 200 201 205 220 222 225 234 240 241 242 245 246 248 250 254 255 256 258 259 267 268 275 283 285 295 300 305 314 315 318 320 330 340 350 360 367 375 378 380 381 388 390 397 400 405 410 424 425 438 443 450 471 480 489 495 500 505 512 515 534 540 550 565 580 600 623 625 628 630 632 635 650 660 700 720 746 750 752 754 800 810 840 860 880 891 900 942 990 1000 1024 1080 1100 1131 1200 1225 1250 1260 1280 1290 1400 1414 1440 1500 1536 1570 1600 1620 1630 1750 1800 1885 2000 2048 2250 2400 2500 2640 3000 3456 3600 3680 3750 4000 4096 4500 4900 5000 7200 9000 10000

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