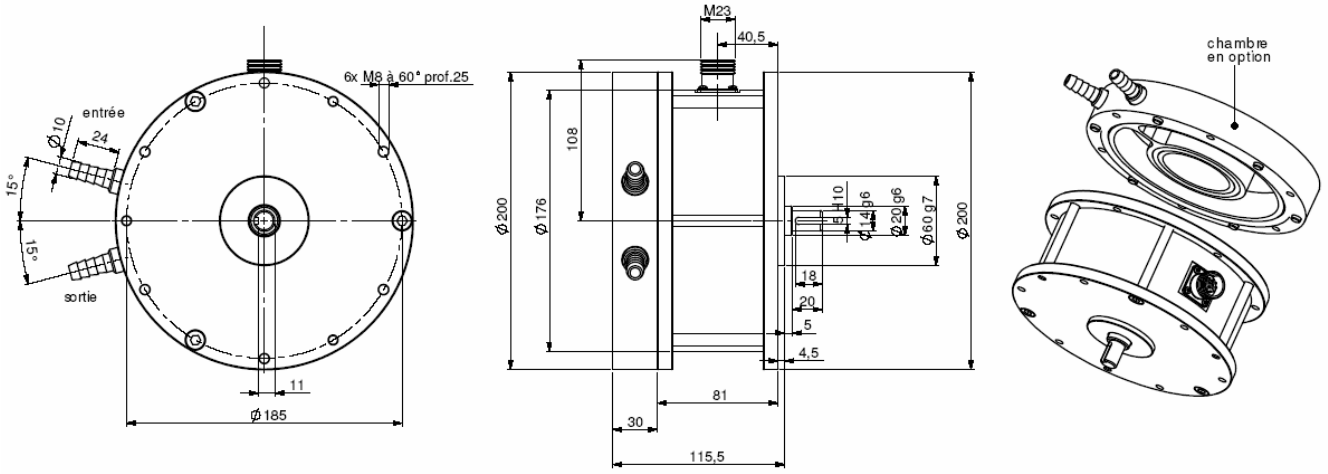
GHML

INCREMENTAL ENCODERS, GHML RANGE, *MAXX*™

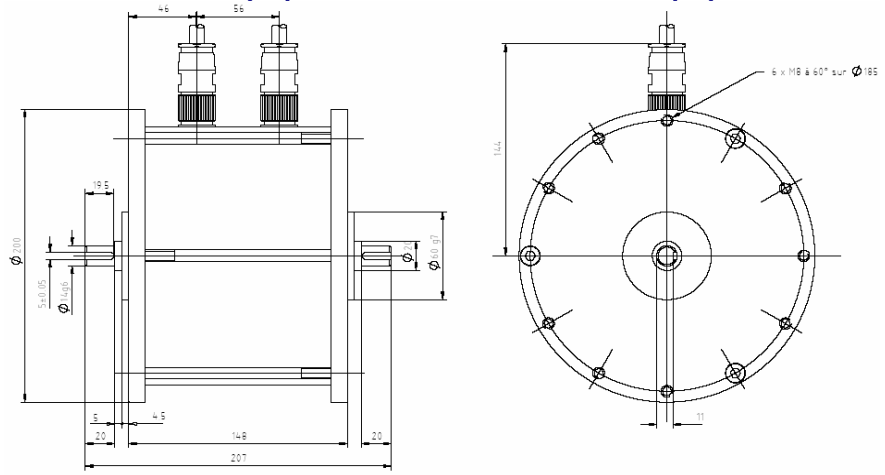
- With 200mm diameter, especially for heavy duty, extreme resistance to shocks/vibrations and to axial and radial charges
- Bodies are in steel treated against corrosion
- Digital incremental output, analog output in option (tachoencoder, optotacho)
- Water cooling flange in option
- Max control function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

Application : Glass factory, iron industry, cement works, platform marinades, lock...

GHML (simple version)



GHDD (Duplex version with double shaft output)



Material (connector output or cable version)	Cover : steel	Shocks (EN60028-2-29)	≤ 10 g (during 6 ms)
	Body: chromed steel	Vibration (EN60068-2-6)	≤ 10 g (10 Hz....500 Hz)
	Shaft : stainless steel	EMC	EN 61000-6-4, EN 61000-6-2
Ball bearings	6004 DDU	Isolation voltage	2 000 V eff
Maximal load	Axial : 200 N	Electrical lifetime	> 10^5 h
	Radial : 200 N	Weight	8 770g Simple version
Simple inertia / duplex	500 / 2000 g.cm²		9 950 Duplex version
Torque	≤ 3 N.cm	Operating temperature	- 20... + 85 °C
Maximal speed	6 000 rpm	Storing temperature	- 40... + 85 °C
Speed (continuous)	3 600 rpm	Humidity	98 % (without condensation)
Maximal acceleration	1.10^5 rad.s^{-2}	Protection(EN 60529)	IP 65
Shaft seal	Viton	Theoretical electrical lifetime 10^9 turns (F_{axial} / F_{radial})	
Shocks (EN60068-2-27)	≤ 30 g (during 11 ms)	20 N / 30 N : 360	50 N / 100 N : 30 / 100 N / 200 N : 2,5

AK-Industries GmbH Schmiedgasse 34 A 53797 Lohmar

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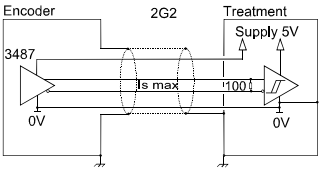
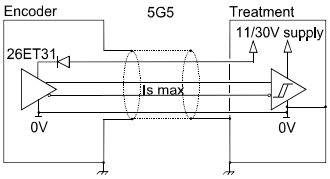
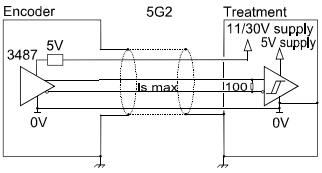
OUTPUT ELECTRONIC / SUPPLY



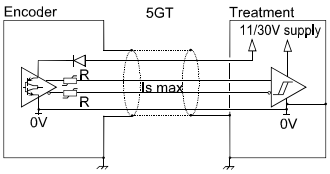
2G2 electronics (100kHz)
Supply : 5Vdc ± 10%
Consumption : 100mA
Intensity per channel : 40mA
Level 0 max : V_{ol} = 0,5Vdc
Level 1min : V_{oh} = 2,5Vdc



5G5 electronics (100kHz)
Supply: 11 to 30Vdc
Consumption : 75mA
Intensity per channel : 50mA
Level 0 max : V_{ol} = 1,5Vdc
Level 1min : V_{oh} = Vcc-2,5Vdc



5G2 electronics (100kHz)
Supply: 11 to 30Vdc
Consumption : 60mA
Intensity per channel : 40mA
Level 0 max : V_{ol} = 0,5Vdc
Level 1min : V_{oh} = 2,5Vdc



5GT electronics , option (100kHz)
Supply: 11 to 30Vdc
Consumption : 75mA
Intensity per channel : 50mA
Level 0 max : V_{ol}=1,5Vdc
Level 1min : V_{oh}= Vcc-2,5Vdc

5GT electronic permits to drive long cables (consult us)
Available in option :
- 3G3 electronic, supply between 15 and 30Vdc, regulated 12Vdc push-pull output
- 5GH electronic permits to driver different inputs (plc + display for example)

Protection against shorts circuits for the electronics: 5G5, 5GT, 3G3
Protection against inversions of polarity for all the electronics except 2G2

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

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

ORDERING REFERENCE (Contact the factory for special versions ex: special flanges, connections...)

	Shaft Ø	Available electronic		Output signal	Resolution	Connection	Connection orientation
		2G2, 5G2, 5G5, 5GT, 5GH, 3G3					
		Supply	Output stage				
GHML **GHDL** **GHMD** **GHDD**	**14** :14mm	**2** : 5Vdc **5** : 11 to 30Vdc **3** : 15 to 30Vdc	**G2** : driver 5Vdc RS422 **G3** : driver 12Vdc **G5** : push-pull 11-30Vdc **GT** : push-pull 11-30Vdc transistorized **GH** : push-pull 11-30Vdc 150 mA	**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) **K** : Max control option	**10 000** max	**G6**:M23 12pins CW **G5**:M23 12pins CW **G8**: M23 12 pins CCW	**R** : radial
						G3 : PVC cable 8 wires **GP** : PUR cable 12 wires	Example : **R020** : radial cable 2m
Ex: GHML _	**14 //**	**5**	**G5**	**9 //**	**5 000 //**	**GP**	**R050**

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) assure 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*