

IGHU9 SERIES

INCREMENTAL ENCODERS



Features

- Especially designed for heavy-duty (steel, paper, wood – mills, cranes), compact and robust conception, its connection can be done with industrial connector or shield cable
- Various standard and specials electronics: push-pull 11-30V (HTL) & 5VRS422 (TTL); for long, high capacity cables: push-pull 11-30V transistorised
- Hollow shaft of up to 30mm, adaptation of the bore size with composite hub for thermal and electric insulation (aluminum hubs in option)
- Digital incremental signals, option - analogue output signals (Tachoencoders , optotachos)
- Self-monitoring MaxControl (optional) : detection of shocks, vibrations, temperatures
- Double/triple mounting in combinations of incremental, absolute, analogue signals, mechanical over-speed switch

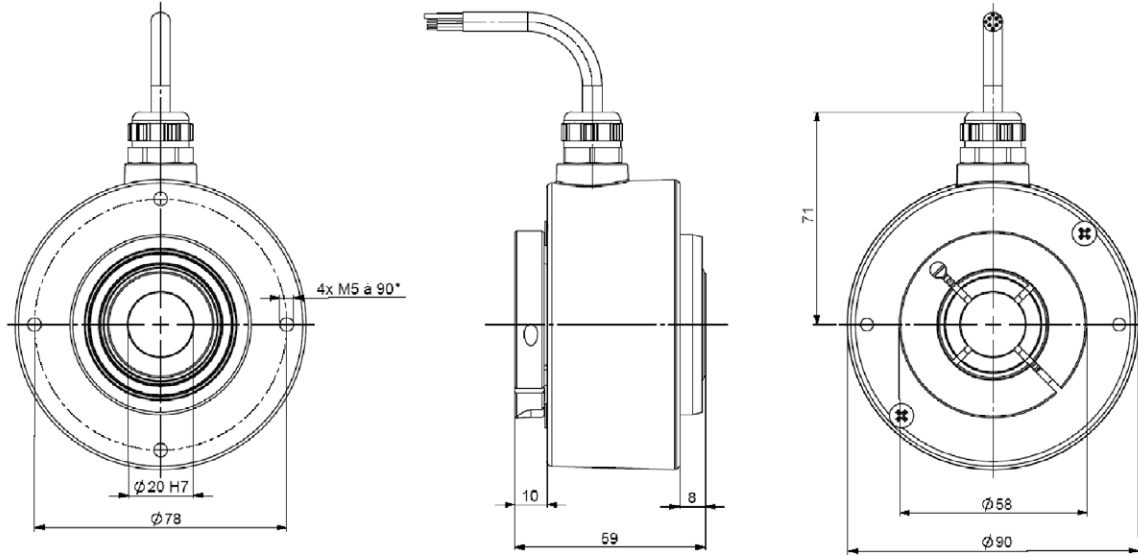
SPECIFICATIONS

Material	Cover: zinc alloy Body: aliminum
Shaft	Inox
Bearings	6807 serie
Maximum Loads	Axial: 50 N Radial: 80 N
Shaft Inertia Moment	$\leq 55.10^{-6}$ kg.m ²
Torque	$\leq 25.10^{-3}$ N.m
Permissible max. speed	6 000 min ⁻¹
Continuous max. speed	3 600 min ⁻¹
Shaft seal	Viton
Shocks (EN60068-2-27)	$\leq 2\ 000$ m.s ⁻² (during 6ms)
Vibration (EN60068-2-6)	≤ 200 m.s ⁻² (10 ... 1 000 Hz)
EMC	EN 50081-1, EN 61000-6-2
Isolation	1 000 Veff
Encoder weight (approx.)	0,700kg zinc alloy cover, alu body
	1,000kg zinc alloy cover, stainless steel body
	1,200kg stainless steel cover and body
Operating temperature	- 20 ... + 80 °C (Encoder T°)
Storage temperature	- 40 ... + 80 °C
Protection (EN 60529)	IP 65
Torque (ring screw)	nominal: 3N.m, break: 4N.m
Theoretical mechanical lifetime 10⁹ turns (F_{axial} / F_{radial})	
25 N / 40 N: 140	50 N / 80 N : 17

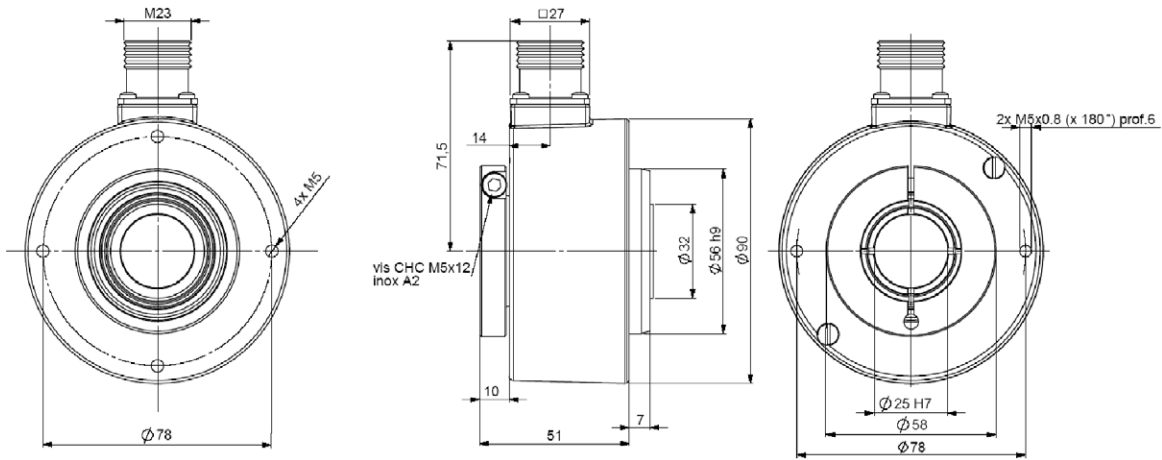
DIMENSIONS

Dimensions in mm

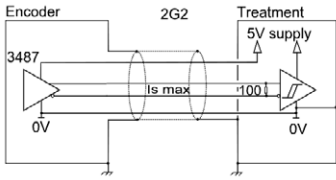
GHU9_20 connection G3R (radial cable output), with reduction hub 9418/I20 mounted in the shaft



GHU9_25 connection G6R (radial M23), with reduction hub 9418/I25 mounted in the shaft

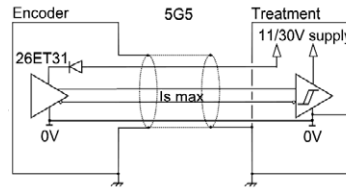


Output Electronic / Supply



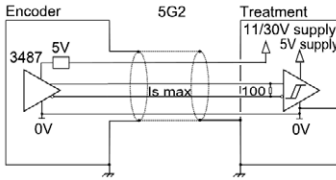
2G2 electronic (100kHz)

Supply : 5Vdc \pm 10%
 Cons. without load : 100mA max
 Current per channel : 40mA max
 0 max (Is=20mA) : $V_{ol} = 0,5Vdc$
 1 min (Is=20mA) : $V_{oh} = 2,5Vdc$



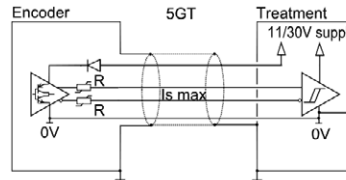
5G5 electronic (100kHz)

Supply : 11 to 30Vdc
 Cons. without load : 75mA max
 Current per channel : 40mA max
 0 max (Is=20mA) : $V_{ol} = 0,5Vdc$
 1 min (Is=20mA) : $V_{oh} = V_{cc}-3Vdc$



5G2 electronic (100kHz)

Supply : 11 to 30Vdc
 Cons. without load : 75mA max
 Current per channel : 40mA max
 0 max (Is=20mA) : $V_{ol} = 0,5Vdc$
 1 min (Is=20mA) : $V_{oh} = 2,5Vdc$



5GT electronic, optional (100kHz)

Supply : 11 to 30Vdc
 Cons. without load : 75mA max
 Current per channel : 40mA max
 0 max (Is=20mA) : $V_{ol} = 0,5Vdc$
 1 min (Is=20mA) : $V_{oh} = V_{cc}-2,5Vdc$

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 for 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	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 OPTIONS

Example : GHU9_30 // 5G5 // 5000 // GPR050

	GHU9	30	//	5G5	9	//	5000	//	GP	R050
Family										
GHU9_:	Cover: zinc									
	Body: alu									
GBU9_:	Cover: zinc									
	Body: stainless steel									
GXU9_:	Cover: stainless steel									
	Body: stainless steel									
Shaft										
30:	30mm (reduction hubs available)									
32:	32mm (option consult us)									
Supply + Output stage										
2:	5Vdc									
	G2: driver 5Vdc RS422									
5:	11 to 30Vdc									
	G2: driver 5Vdc RS422									
	G5: push-pull									
	GT: push-pull 11-30Vdc transistorized									
	GH: push-pull 11-30Vdc 150 mA									
3:	15 to 30Vdc									
	G3: driver 12Vdc									
Output Signal										
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)									
Resolution ^(A)										
10000:	max									
Connection										
G6:	M23 12 pins CW									
G5:	M23 12 pins CW									
G8:	M23 12 pins CCW									
GT:	terminal box									
G3:	PVC cable 8 wires									
GP:	PUR cable 12 wires									
Connection Orientation										
R:	radial cable (0 + meters + 0)									

AGENCY APPROVALS & CERTIFICATIONS



GENERAL NOTES

^(A) **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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