



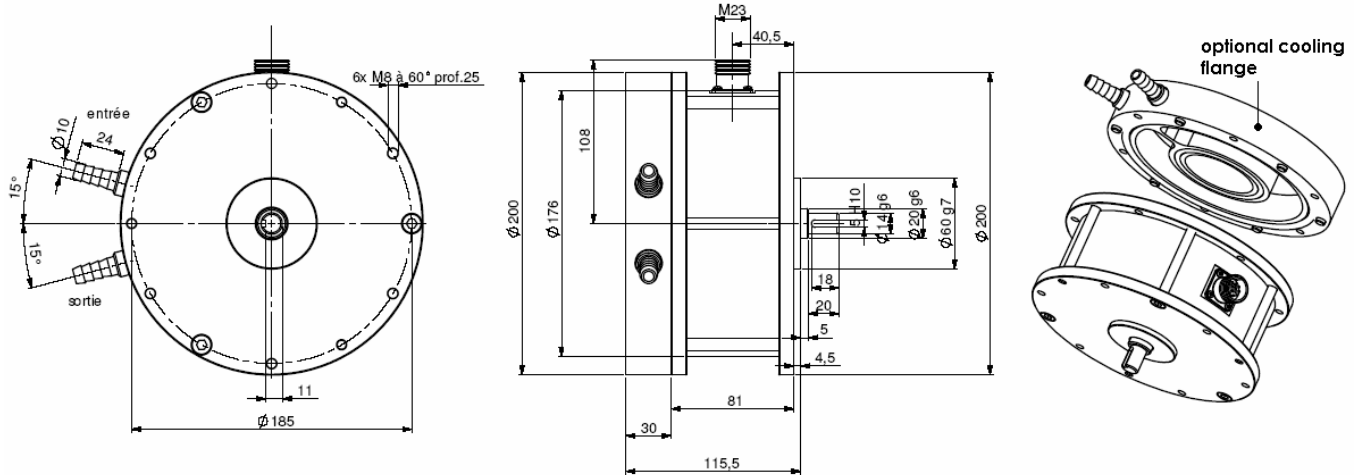
TACHO ENCODER, NHML RANGE, MAXX™

- With 200mm external diameter, especially for heavy duty, extreme resistance to shocks/vibrations and to axial and radial loads
- Bodies are in steel treated against corrosion
- Incremental output and analogic (proportional to the speed)
- Cooling flange in option
- double shaft output in option
- Duplex version with 2 opto-electronics redundant systems

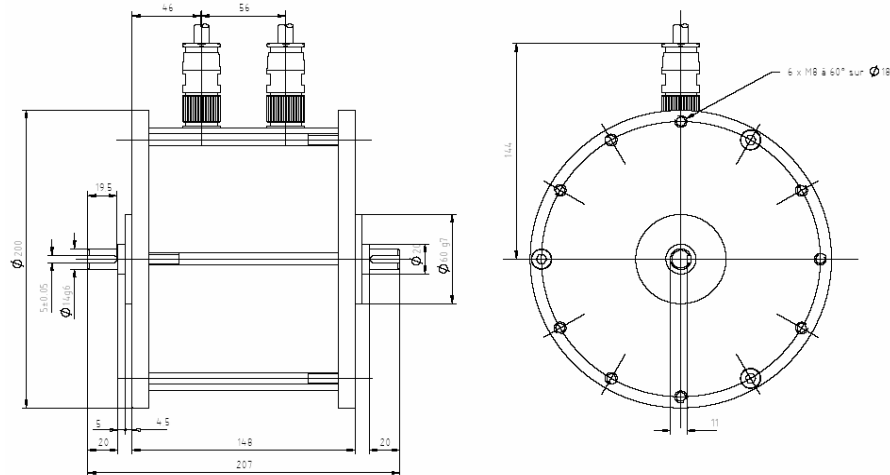
Application : Glass factory, steel mills, cement works, platform marinades, lock



NHML (simple version)



NHDD (Duplex version with double shaft output)



Material (connector output or cable version)	Cover : steel	Shock (EN60068-2-29)	≤ 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 <sup>5</sup> h	
	Radial : 200 N	Weight	10kg Simple version 15kg Duplex version	
Simple inertia / duplex	500 / 2000 g.cm <sup>2</sup>	Operating temperature	- 20... + 85 °C	
Torque	≤ 3 N.cm	Storing temperature	- 40... + 85 °C	
Max. speed	6 000 rpm	Humidity	98 % (without condensation)	
Max. speed (continuous)	3 600 rpm	Protection(EN 60529)	IP 65	
Max. acceleration	1.10 <sup>5</sup> rad.s <sup>-2</sup>	Theoretical electrical lifetime 10 <sup>9</sup> turns (F <sub>axial</sub> / F <sub>radial</sub> )		
Shaft seal	Viton	20 N / 30 N : 360	50 N / 100 N : 30	100 N / 200 N : 2,5
Shock (EN60068-2-27)	≤ 30 g (during 11 ms)			

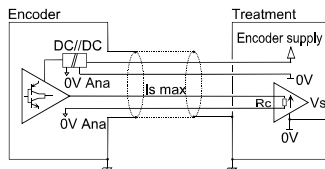


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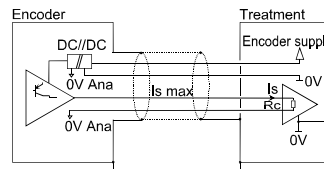
ANALOG OUTPUT CIRCUIT / SUPPLY

- 2Na : power supply 5 Vdc – driver 0...10 Vdc
- 3Nc : power supply 15-30 Vdc – driver 0...10 Vdc
- 2Nj : power supply 5 Vdc – driver -10 Vdc ... +10 Vdc
- 3Ni : power supply 15-30 Vdc – driver -10 Vdc ... +10 Vdc

- 2Nd : power supply 5 Vdc – driver 0...20 mA
- 2Ng : power supply 5 Vdc – driver 4...20 mA
- 2Nm : power supply 5 Vdc – driver -20 mA ... +20 mA
- 3Nf : power supply 15-30 Vdc – driver 0...20 mA
- 3Ni : power supply 15-30 Vdc – driver 4...20 mA
- 3No : power supply 15-30 Vdc – driver -20 mA ... +20 mA



Rc min	1 kOhms
Rc advised	1,5 kOhms
Rc max	/

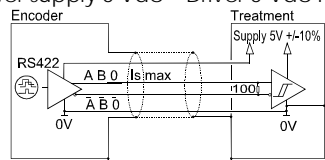


Rc min	25 Ohms
Rc advised	150 Ohms
Rc max	500 Ohms

Nota : Current loop output also available  
Both versions, voltage and current output are protected against inversion of polarity and excess voltage up to 33Vdc

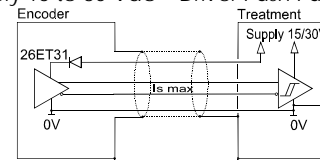
DIGITAL OUTPUT CIRCUIT / SUPPLY

Electronic type 2Na, 2Nd, 2Ng, 2Nj and 2Nm :  
Power supply 5 Vdc – Driver 5 Vdc RS422



Power supply 5 Vdc +/- 10%  
Current output : 40 mA  
Level "1" min : Voh = 2,5 Vdc  
Level "0" max : Vol = 0,5 Vdc

Electronic type 3Nc, 3Nf, 3Ni, NI and No :  
Power supply 15 to 30 Vdc – Driver Push Pull 15 to 30 Vdc



Power supply 15 to 30 Vdc  
Current output : 50 mA  
Level "1" min : Voh = VCC - 2,5 Vdc  
Level "0" max : Vol = 1,5 Vdc

Nota : regulated 12Vdc output also available

The products are equipped with a total galvanic isolation (1kV) between the analog output circuits and the rest of the electronic  
Consumption without load : 250mA, protection against short circuits for the electronic type 3Nc, 3Nf, 3Ni, NI and No

STANDARD CONNECTION

		-	+	A	B	0	A/	B/	0/	0V ana	Out ana	Ground
N6	12 pinouts CW M23	1	2	3	4	5	6	7	8	9	10	Connecting body
N3	PVC cable 12 wires 8230/003	WH white	BN brown	GN green	YE yellow	GY grey	PK pink	BU blue	RD red	WH-GN white-green	WH-BN white-brown	General shield

ORDERING CODE (Special versions upon request, for ex. special flanges/electronics/connections...)

	shaft Ø	Available electronic		Channel	Resolution	Speed	Connection	Orientation
NHML	14 : 14mm	2Na, 2Nd, 2Ng, 3Nc, 3Nf and 3Ni		9 : A,A/,B,B/,0,0/ (0, A&B gated)	10 000 max	example : D10 : 10rpm C20 : 200rpm M30 : 3000rpm	N6 : M23 12 pinouts CW	R : radial
		Supply	Output stage					
NHDL	14 : 14mm	2: 5Vdc	Na:0..10Vdc+RS422	A : A,A/,B,B/,0,0/ (0, A gated)			N3 : PVC cable 12 wires	example: R020:radial cable 2m
NHMD			Nc:0..10Vdc+push-pull					
NHDD	14 : 14mm	3 : 15 to 30Vdc	Nd:0..20mA+RS422	N : A,A/,B,B/,0,0/ (0 un gated)				
			Nf:0..20mA+push-pull					
			Ng:4..20mA+RS422					
			Ni:4..20mA+push-pull					
Ex: NHML_	14 //	3	Nc	9 //	5000	M30 //	N6	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