



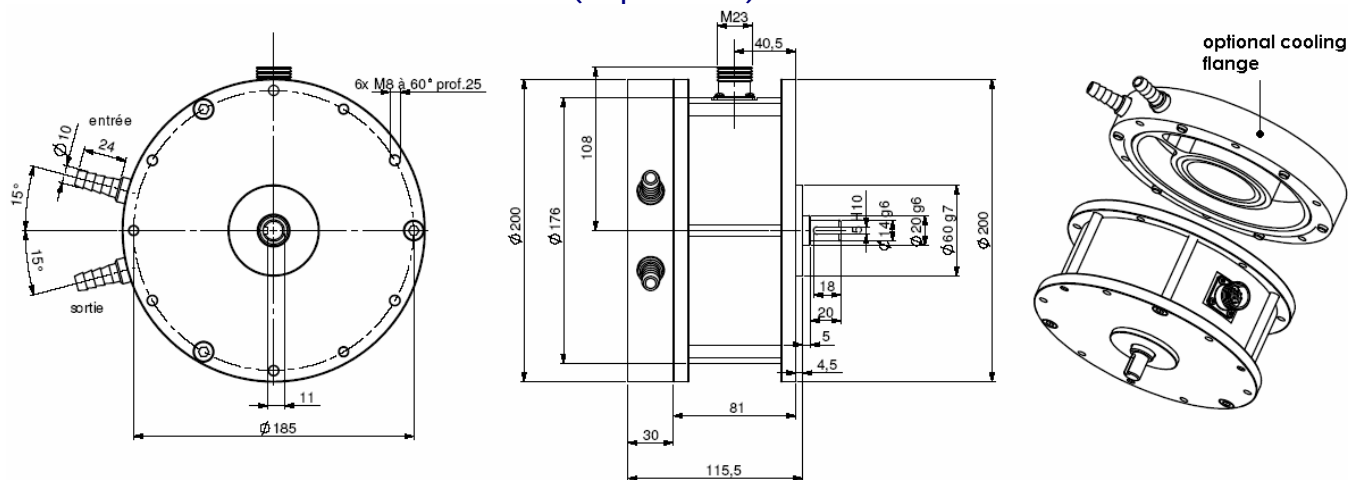
**OPTOTACHO, NHML RANGE, MAXX™**

- 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
- Analog output (proportional to the speed)
- Cooling flange in option
- double shaft output in option
- Duplex version with 2 opto-electronics redundant systems

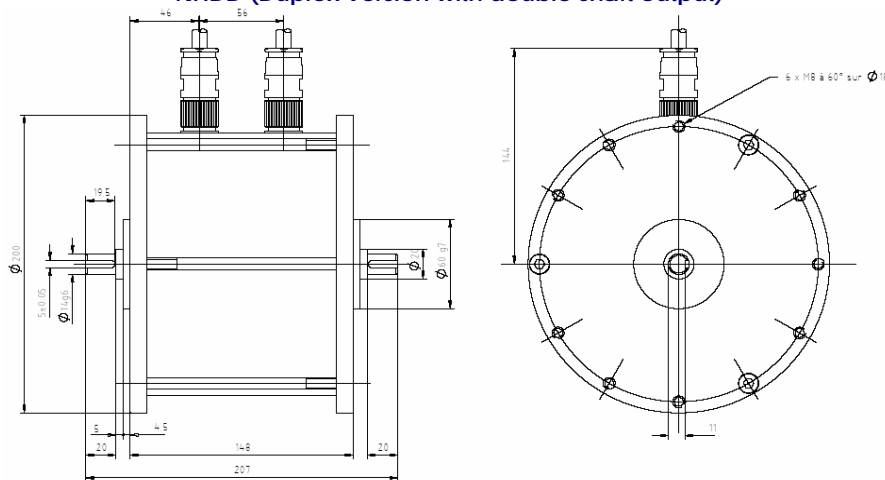
Application : Glass factory, steel mills, cement works, platform marinades, lock



NHML (simple version)



NHDD (Duplex version with double shaft output)



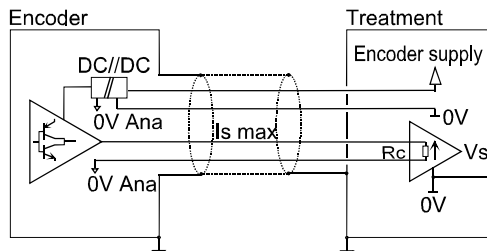
Material (connector output or cable version)	Cover : steel	Shock (EN60068-2-29)	≤ 10 g (during 6 ms)
	Body: chromed steel	Vibration (EN60068-2-6)	≤ 10 g (10 Hz...500 Hz)
	Shaft : stainless steel	EMC	EN 61000-6-4, EN 61000-6-2
Ball bearings	6004 DDU	Isolation voltage	2 000 V eff
Maximal load	Axial : 200 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
Shock (EN60068-2-27)	≤ 30 g (during 11 ms)	100 N / 200 N : 2,5	

## OPTOTACHO, NHML RANGE, MAXX™

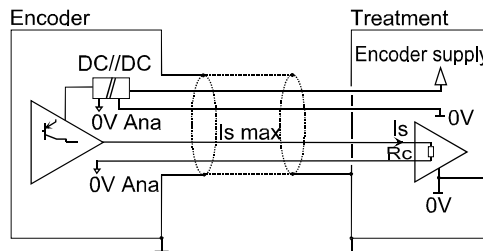
### ANALOG OUTPUT CIRCUIT / SUPPLY

2Vm : power supply 5 Vdc – driver 0...10 Vdc  
 3Vm : power supply 15-30 Vdc – driver 0...10 Vdc  
 2Vp : power supply 5 Vdc – driver -10 Vdc ... +10 Vdc  
 3Vp : power supply 15-30 Vdc – driver -10 Vdc ... +10 Vdc

2V1 : power supply 5 Vdc – driver 0...20 mA  
 2V2 : power supply 5 Vdc – driver 4...20 mA  
 2V3 : power supply 5 Vdc – driver -20 mA ... +20 mA  
 3V1 : power supply 15-30 Vdc – driver 0...20 mA  
 3V2 : power supply 15-30 Vdc – driver 4...20 mA  
 3V3 : 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

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 contre les courts circuits pour les électroniques type 3Nc, 3Nf, 3Ni, NI et No

### STANDARD CONNECTION

		-	+	A	B	0	A/	B/	0/	0V ana	Out ana	Ground
V6	12 pinouts CW M23	1	2	NC	NC	NC	NC	NC	NC	9	10	Connecting body
V3	PVC cable 12 wires 8230/003	WH white	BN brown	NC	NC	NC	NC	NC	NC	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		Speed	Connection	Orientation				
NHML	14 : 14mm	3V1, 3V2, 3V3, 3Vm, 3Vp 2V1, 2V2, 2V3, 2Vm, 2Vp		example : D10 : 10rpm	V6 : M23 12 pinouts CW VB : terminal box	R : radial				
NHDL		Supply	Output stage							
NHMD		2: 5Vdc	V1 : 0...20 mA V2 : 4...20 mA V3 : -20mA ...+20mA	C20 : 200rpm M30 : 3000rpm	V3 : PVC cable 12 wires	example: R020 : radial cable 2m				
NHDD		3 : 15 to 30Vdc	Vm : 0...10Vdc Vp : -10V...+10Vdc							
Ex: NHML	_	14	//	3	V2	//	M30	//	V3	R050

NHML : simple shaft output, standard  
 NHDL : double shaft output, standard  
 NHMD : simple shaft output, Duplex  
 NHDD : double shaft output, Duplex

In Duplex version, 2 outputs (independent electronic/optronic) assure redundant security of the product