

# MAC34

## BRUSHLESS DIGITAL AXIS

### Description:

**MAC34** is a fully digital intelligent brushless axis: on one hand a brushless motor with encoder; on other hand power electronics and a microprocessor position control unit in a closed box.



This motorization system, with high holding torque at zero speed, has a wide speed range and a high resolution. It can be driven in position, torque, speed or acceleration. Unlike with traditional brushless motors, this system doesn't need any feedback correction. The motor shaft is mounted on ball bearings and thanks to the brushless rotor, is a high reliability system.

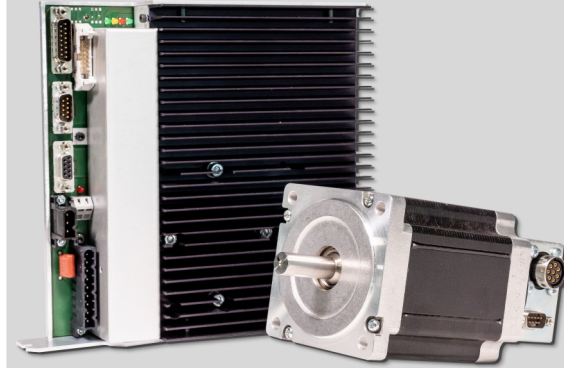
A high optimization from the electronics enables a very simple using : no complex calculation, no complicated wiring.

This digital axis communicates via a RS232C serial link, or via a CAN bus interface, or via Profibus dp with your PC or your PLC.

Control is made easy by **MACSIM** software, which is supplied with the system (PC Windows 95/98/NT). In option, the communication driver for Windows 9x/XP can be purchased : **DrvCom.dll**.

### Technological specifications:

AMPLIFIER (variator)	MAC34 AMPL	
Power supply	22 - 80 VDC	
Digital inputs	Reference/Clock, Init./Direction, end sensor+, - (Opto-isolated)	
Digital outputs	Busy, Défaut, (Opto-isolated)	
Encoder outputs	Differential A, /A, B, /B	
Driving modes	<ul style="list-style-type: none"><li>• <b>RS232C</b>, at 9600, 19200, 38400 bd, Multiaxis configuration is possible.</li><li>• <b>CANopen</b>, DS301, version 4.0</li><li>• <b>Clock/Direction</b></li><li>• <b>Profibus</b></li></ul>	
Amplifier weight	1,9 kg	
MOTORS	MAC34-1	MAC34-2
Holding torque	7 Nm	10 Nm
Max speed	4500 tr/min	4500 tr/min
Max mechanical power	400 W méca	950 W méca
Rotor inertia	2,7 kg.cm <sup>2</sup>	4 kg.cm <sup>2</sup>
Attachment	NEMA 34, shaft diameter 12 mm	
Motor weight	3,7 kg	5 kg
Resolution	10 000 positions per rotation	
Certifications	<ul style="list-style-type: none"><li>•  mark</li><li>• All printed circuit boards equipping the products Midi Ingénierie are </li></ul>	



### References

Amplifiers without motors:

MAC341 (MAC34-1 RS232C)

MAC341-C (MAC34-1 CAN)

MAC341-P (MAC34-1 Clock/Direction with RS232C)

MAC341-PC (MAC 34-1 Clock/Direction with CAN)

MAC341-PRO (MAC34-1 Profibus)

MAC342 (MAC34-2 RS232C)

MAC342-C (MAC34-2 CAN)

MAC342-P (MAC34-2 Clock/Direction with RS232C)

MAC342-PC (MAC34-2 Clock/Direction with CAN)

MAC342-PRO (MAC34-2 Profibus)

### Options

MACB34 (Ballast MAC34)

MACV34 (Fan MAC34)

PLE80-i (Precision planetary gearbox, reduction ratio i)

Power Supply from 320 to 1000W available

WINSIM 2 (Programming Software SIMPA and MAC families)

DrvCom.dll (Part number DRVMAC): This is a communication driver which provides access, in the form of a 32 bits DLL, to all functions required for dialoguing with MAC 23 (and/or MAC34). For example, it can be used with C++, Labview, Delphi, Visual Basic...

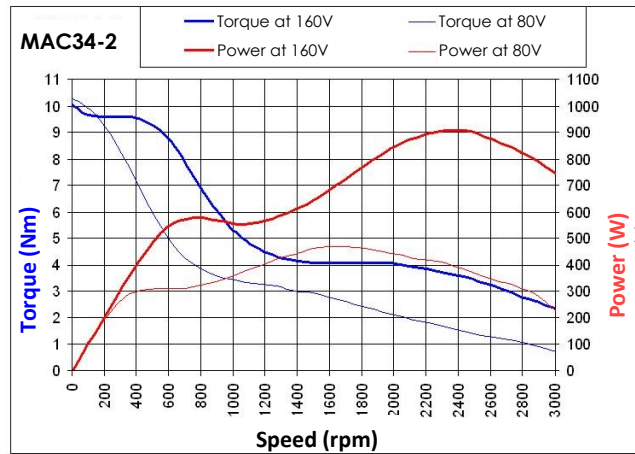
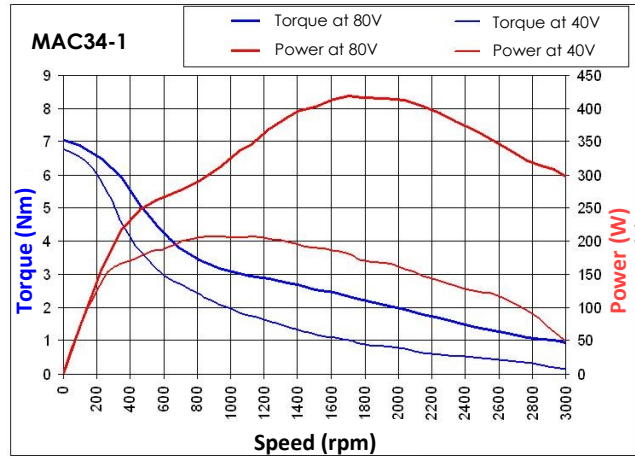
WINSIM2 (option) is a software-based Human Machine Interface allowing easy communication with one or several modules (SIMPA, MAC and DMAC family) from a Windows PC. WINSIM2 features visual parameters adjusting for every axis, programming of sequences and execution of movements. It greatly facilitates the application development.

## Commands:

For speed command, parameter is given in 1/10 rpm.  
 For position command, parameter is given in 1/10000 rotation.  
 In a multi-axis configuration, command must be preceded by the module address.

am06	Programs the module address at the value 06
bn-56400	Defines software end sensor- at -56400
bp+8000	Defines software end sensor+ at +8000
di	Puts position counter at zero (Home)
dg10	Position tolerance $\pm 10$ inc
ga+5000	Motion to the absolute position +5000
ge	Stop with deceleration
gf+3200	Endless motion at 320 rpm
gh	Return Home
gi 68	Motor torque = 68% Cmax
gm	Motor power ON
gr	Motor power OFF
gs	Immediate stop
gt1200 900	Interpolation Segment +1200 increments at 90 rpm
mb	Enables software and hardware end sensors
mbr	Enables hardware end sensors only
mbs	Enables software end sensors only
mn	Disables software and hardware end sensors
mr	Reset
mrz	Return to factory configuration
msn	Forced nominal torque
mss	Automatic commutation standby/nominal torque
mza	Enables Reference input
mzi	Disables Reference input
wl 40	Defines the unlock speed at 4 rpm
wx 2500 30	Defines the speed profile (Speed 250 rpm, Acceleration and deceleration time 30ms)
ws	Waiting for the synchronization signal
sy	Synchronization signal
qa	Reads secondary parameters
qb	Reads software en sensors
ql	Reads main parameters
qp	Reads position
qv	Reads software version
qx	Reads module state

## Torque/ Speed characteristics:



## Dimensions:

