BMAC

Digital indexer and microstep amplifier

MIDI INGENIERIE
A Hensoldt Company

Description:

BMAC module is a digital indexer and microstep amplifier with integrated DSP controller. It can drive any bipolar stepper motor (4, 6 or 8 wires). Thanks to its smart processing unit, BMAC is suitable for both simple mono-axis applications and complex mutli-axis systems.

Its 45V/2.5ARMS amplifier stage makes it ideal to drive NEMA17 and NEMA23 stepper motors. Sinusoidal current generation provides good resonance immunity.

The motor can be driven in open-loop mode or in self-switched closed-loop mode thanks to an external encoder. Autocom® provides motor stall protection, extended speed range and torque control without external PID controller.

BMAC implements an internal sequencer, 8 optoisolated digital I/Os and 1 analog input. The module can work in standalone mode with up to 500 commands stored in non-volatile memory.

Simple communication protocol is based on ASCII USB or RS232/485 standard. CANopen (DSP402 Motion Control profile) protocol can be implemented for multiaxis applications.

Installation and maintenance is fast and easy with plug-in connectors (module) or DIN41612 (rack) connector.

Technical specifications:

	BMAC (rack)
Supply voltage	12 Vdc to 45 Vdc
Nominal current	2.5ARMS
Max speed	4000RPM
Resolution	50µstep/step 10 000 positions per rev. for a 200steps per rev. motor
Digital IOs	8 IO optoisolated
Analog input	1 differential (0-10V)
Encoder input	biphase incremental encoder. Differential RS422 (A, /A, B, /B, Z, /Z, 0V) on-board 5V 100mA supply
Communication	RS485 optoisolated, 9600 to 115 200 bauds with USB or CANopen DSP402
Sequencer	500 commands memory
Protections	Overvoltage, overcurrent, short-circuit (mot. phase or supply), temperature. 5AT fuse
Fixation	Screw slots or DIN rail mounting kit
Dimensions	100x110x20mm (Front face not included)
Certifications	RoHs, CE marking, UL PCBs

Main features

> 2.5A stepper motor driver. open loop or closed loop control.
> "S curve" velocity profile for smooth motion without resonance.
> Optimized current management to minimize thermal losses.
> Smart move functions.
> Interpolation mode for multi-axis (2D and 3D) applications.
> UBS/485 or CANopen protocol.
> Hardware and Software end-stops. User configurable.
> Integrated sequencer. PLC-like functions.
> DSP controller.
> Brake driver (option).
> 2 analog outputs (option)
> Ballast for energy dissipation (option)
> DIN rail mounting kit (option).

References

BMAC (BMAC USB RS485 module)

BMAC-C (BMAC CAN version module)

BMAC-D (BMAC USB RS485 rack)

BMAC-CD (BMAC CAN rack)

DRVMI (communication dll library)

WINSIM2 (PC software with GUI)

SPxxx-48 (xxx watts AC/DC power supply)

MICB9010 (Ballast)

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Pinout:

Plug-in connector or DIN41612							
2A	+Vpower	**2C**	Motor A +	**18A**	I/O2	**18C**	+5V COD
4A	0Vpower	**4C**	Motor A -	**20A**	I/O3	**20C**	COD A
6A	⏚	**6C**	Motor B +	**22A**	I/O4	**22C**	COD /A
8A	0V 485 CAN	**8C**	Motor B -	**24A**	I/O5	**24C**	COD B
10A	Z CANH	**10C**	⏚	**26A**	I/O6	**26C**	COD /B
12A	/Z CANL	**12C**	+IANA	**28A**	I/O7	**28C**	COD I
14A	+V_IO	**14C**	-IANA	**30A**	I/O8	**30C**	COD /I
16A	I/O1	**16C**	0Vana	**32A**	0V_IO	**32C**	0V COD

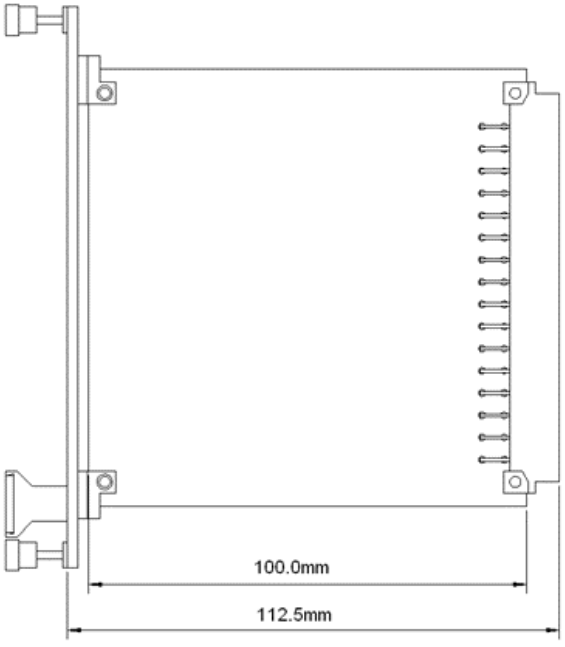
DSub9 Male : RS485 or CAN bus					
1	Reserved	**4**	Reserved	**7**	Z CANH
2	/Z CANL	**5**	⏚	**8**	Reserved
3	0V485 CAN	**6**	Reserved	**9**	Reserved

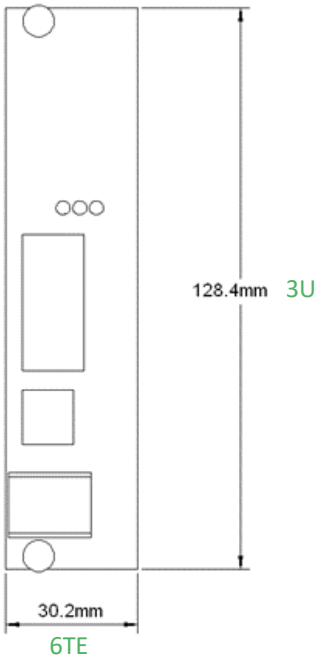
Muti-axis rack units:

Midi Ingenierie implements standard multi axis rack units.

Supported fieldbus protocols:

Dimensions:





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