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M49 - Step-Motor Controller

Internal!

PDF version of this data sheet

» Description
» Technical Data
» Diagram
» Back

Product Description



» Large picture

Control of 2 2-phase motors
2 power bridges
Overcurrent protection
Position and velocity operation
Microstepping
On-board power amplifier
Thermal shutdown
Optical isolation

The M49 is based on the M-Module™ ANSI mezzanine standard. It can be used as an I/O extension in any type of bus system, i.e. CPCI, PXI™, VME or on any type of stand-alone SBC. Appropriate M-Module™ carrier cards in 3U, 6U and other formats are available from MEN or other manufacturers.
The M49 is a step motor controller with power amplifier for two 2-phase motors. Each motor is controlled by its own powerful RISC-like microcontroller. The motor(s) are driven directly by two on-board power stages with up to 50V/3A for each phase. For both motors a binary input can be used to detect the home position of the motor.
When the values for acceleration, speed and nominal position are defined, the M49 moves the motors on its own. Due to the trigger line, motions on several axes (X, Y, Z motions etc.) can be synchronized.

» Description
» Technical Data
» Diagram
» Back

Technical Data

Motor Controllers	Optically isolated Two PIC microcontrollers Downloadable step sequence tables Constant motion/linear accelerated motion Zero positioning 32-bit step count Step rates from 10Hz..44kHz Acceleration from 54Hz/s..3515kHz/s Synchronous motion via TRIGA, TRIGB or software trigger Phase switch-off mode Brake support
Motor Interface	2x2 full bridges 12..50V/3A max. per bridge Overcurrent protection Thermal shutdown Max. current resistor programmable Motor power max. 50W (300W with additional cooling)
Miscellaneous	2 binary inputs (home position) Temperature sensor

Peripheral Connections	Via front panel on a shielded 25-pin D-Sub receptacle connector
M-Module™ Characteristics	A08, D08, INTA, TRIGI, IDENT
Electrical Specifications	Isolation voltage: 500V DC Supply voltage/power consumption: +5V (4.85V..5.25V), 350mA typ. MTBF: tbd. (derived from MIL-HDBK-217F)
Mechanical Specifications	Dimensions: conforming to M-Module™ Standard Weight: 130g
Environmental Specifications	Temperature range (operation): • 0..+60°C • Industrial temperature range on request • Airflow: min. 10m³/h Temperature range (storage): -40..+85°C Relative humidity range (operation): max. 95% non-condensing Relative humidity range (storage): max. 95% non-condensing Altitude: -300m to + 3,000m Shock: 15g/11ms Bump: 10g/16ms Vibration (sinusoidal): 2g/10..150Hz Conformal coating on request
Safety	PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers
EMC	Tested according to EN 55022 (radio disturbance), IEC1000-4-2 (ESD) and IEC1000-4-4 (burst) with regard to CE conformity
Software Support	MEN Driver Interface System (MDIS3 for OS-9®)

» Description
» Technical Data
» Diagram
» Back

Diagram



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