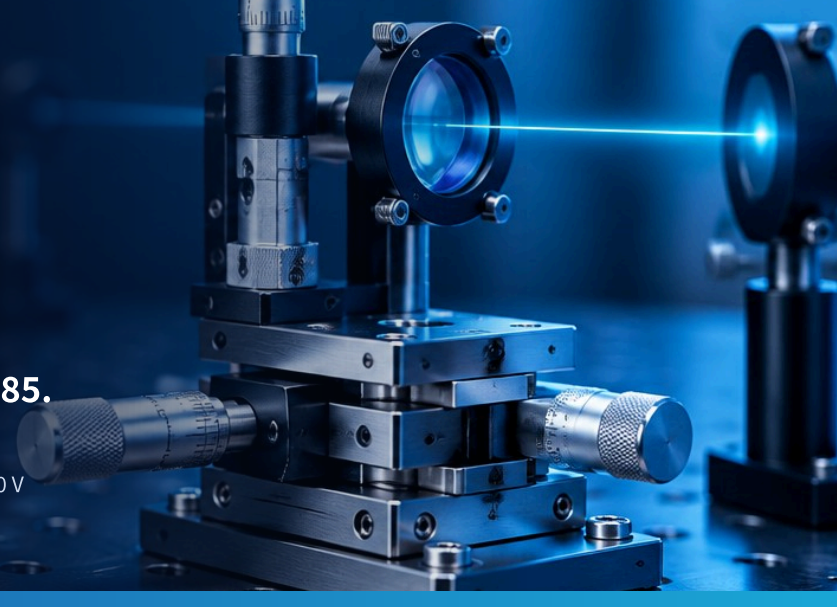
PIEZO ASSIST MOTOR CONTROLLER

PAMC-204A

4-axis controller for Piezo Assist Motor®



Three interfaces: USB, RS232C and RS485. Daisy-chain for multi-axis systems.

Stackable · Overheat protection · Output adjustable from 70 to 150 V

PAMC-204A is a dedicated controller designed to control and drive the Piezo Assist Motor® (PAM). A single unit connects up to four motors and drives one motor at a time. It connects to a PC via USB, RS232C or RS485 and is operated with simple serial commands from a terminal such as Tera Term or from the dedicated software. The output voltage can be set by command between 70 V and 150 V, so motion can be tuned for each application — from fine nanometer-order steps to faster travel. Multiple units can be stacked and linked in a daisy chain over RS485 to build multi-axis systems.

Features

Stackable system
Stack units to save space. Link multiple units in a daisy chain over RS485.

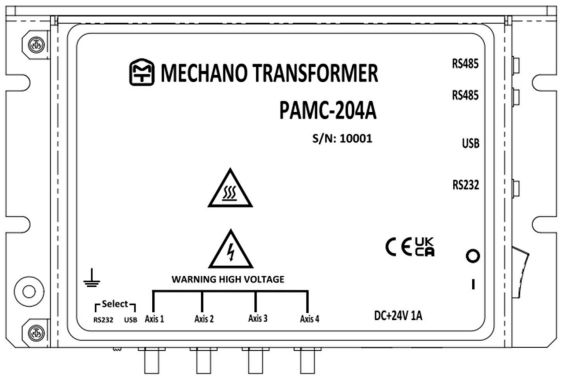
Plug-and-play USB
Connect to a PC with a single USB cable and operate immediately with the dedicated software.

RS232C / RS485
Front switch selects USB or RS232C. Two RS485 ports are provided.

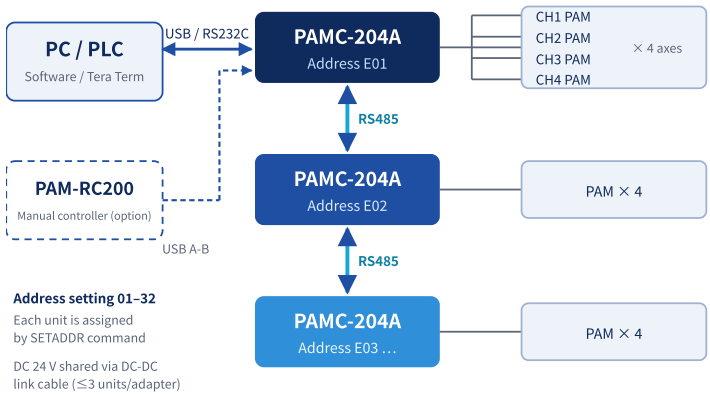
Overheat protection
Built-in protection guards the unit against internal temperature rise.

Adjustable output
Set 70–150 V by command: lower voltage for fine steps, higher voltage for faster travel.

Appearance & System configuration



Top view (148.3 × 91.7 × 26.8 mm / 0.35 kg)



- One PAMC-204A drives one motor at a time. To drive another channel, stop the motor currently being driven first.

Applications

Precision stage automation
Motorize XYZ stages by replacing micrometer heads; nanometer-level positioning

Mirror mount adjustment
Interferometer setup, laser spot positioning, beam alignment for laser welding

Microscopy & manipulation
Microscope scanning, micromanipulation, optical fiber alignment

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PAMC-204A Specifications

Electrical characteristics

Number of axes	4 (1 axis driven at a time)
Input voltage	DC 24 V
Current consumption	0.5 A max
Output voltage	70–150 V (adjustable by command)
Drive frequency	1–1,500 Hz
Pulse count	1–9,999 (extended: up to 999,999)
Operating temperature	5–40 °C
Storage temperature	−20 to +60 °C (no condensation)
Storage humidity	20–80 %RH
Dimensions	148.3 × 91.7 × 26.8 mm
Weight	0.35 kg
Protection	Overheat protection
Compatible motors	PAM3-6.5 / PAM6-13 (SMB)

Communication

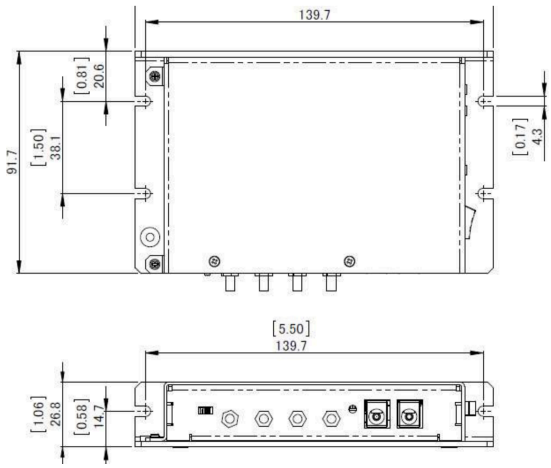
Interface	USB Serial / RS232C / RS485
Baud rate	115,200 bps
Data / Parity / Stop	8 bit / None / 1 bit
Flow control / Delimiter	None / CR+LF
Address	E01–E32 (factory default E01)

Command overview

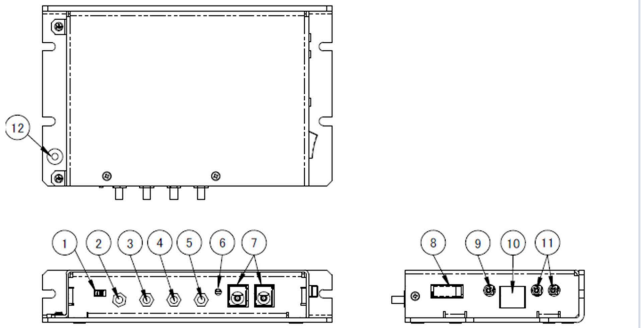
`ExxNRnnnnyyyyz`	+ rotation drive (frequency, pulses, CH A–D)
`ExxRRnnnnyyyyz`	− rotation drive
`ExxS / ExxAB`	Stop driving
`ExxDACnnnn`	Set output voltage (70–150 V)
`ExxST?`	Check driving status
`ExxSETADDRnn`	Change address
`ExxmPA / mPR`	Absolute / relative move FW 0.2.2+
`ExxmVA / mAC`	Set velocity / acceleration FW 0.2.2+
`ExxINF / ExxSNO?`	Firmware version / serial no.

Example: `E01NR15001500A` → drives CH1 of unit E01 in the + direction at 1,500 Hz for 1,500 pulses. See the operation manual for all 26 commands.

Dimensions & Parts



Unit: mm [inch]



1	USB/RS232C select switch	7	DC power terminal ×2
2–5	Axis 1–4 output (SMB)	8	Power switch
6	Power LED	9	RS232C port
12	Case ground	10/11	USB-B / RS485×2

Included items

- PAMC-204A unit
- USB cable, Type A–B (USBAB-MM-1.5)
- DC-DC power link cable (2.1DC-MM-03)
- Mini-plug cable (3.5COMC-MM-0.4)

Optional accessories

- DC 24 V 1.9 A power adapter (MT-UNI345-2419-PL03B)
- Manual controller PAM-RC200
- Linking plate (for stacking)

Dedicated software: github.com/mechano-transformer/PAMC-204 (USB connection)

⚠ Safety precautions

- High voltage (up to 150 V) is output during operation. Do not touch the motor while it is being driven.
- Always turn off the power switch before connecting or disconnecting cables or the power supply.
- Do not disassemble or modify the unit. Do not use it near flammable materials or in high humidity.
- Turn off the power immediately if abnormal smell, noise or overheating is detected.
- PAM is an open-loop device. Where absolute position is required, build a closed loop with an external sensor.

Specifications are subject to change without notice for improvement.

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