

MC-5
MOTOR CONTROLLER

OPERATION MANUAL

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NOTE: Information and data in this manual are subject to periodic amendments, revisions and additions. Please consult factory for the most current information and revision.



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I. WARNINGS

FAILURE TO PROPERLY INSTALL OR OPERATE THIS PRODUCT CAN RESULT IN PRODUCT DAMAGE, RF INTERFERENCE, ELECTROCUTION, BURNS, EYE INJURY OR DEATH. PLEASE EXERCISE EXTREME CAUTION IN OPERATION OR MODIFICATION OF THIS EQUIPMENT AND BE CERTAIN ALL PERSONNEL COMING INTO CONTACT WITH THE EQUIPMENT ARE AWARE OF THE FOLLOWING HAZARDS:

HIGH VOLTAGE:

THIS PRODUCT REQUIRES CONNECTION TO A 90 - 240 VAC SOURCE.

RETURN OF CONTAMINATED EQUIPMENT:

NEVER SHIP OR RETURN EQUIPMENT CONTAMINATED WITH HAZARDOUS MATERIALS TO AJA INTERNATIONAL. ALL RETURNS REQUIRE FULL DISCLOSURE OF MATERIALS USED AND THE POTENTIAL HEALTH RISKS THEREOF, PRIOR TO THE ISSUANCE OF A RETURN AUTHORIZATION NUMBER.

UNPACKING

The shipping container should be inspected for obvious signs of shipping damage. If damage is noticed contact the shipper immediately.

Carefully unpack the MC-5 motor controller and compare contents to the packing list. Inspect the contents and contact your shipper if there are any signs of shipping damage. If a discrepancy exists between what was ordered, the packing list or what has been shipped, contact AJA International immediately.

A. ELECTRICAL CONNECTIONS

WARNING:

HIGH VOLTAGE: THIS PRODUCT REQUIRES CONNECTION TO A 208 - 240 VAC SOURCE.

MAKE SURE ALL POWER TO THE MOTOR CONTROLLER IS SHUT OFF AND DISCONNECTED BEFORE ANY CONNECTIONS OR WORK IS PERFORMED ON THE CONTROLLER.

A1. MAIN INPUT POWER.

ELECTRICAL REQUIREMENTS:

The MC-5 requires 208 - 240VAC, 2A single phase.

Note: The MC-5 can be run on 100 - 240VAC however, all units are configured at AJA for 208 - 240 VAC operation. Contact AJA if you require 115VAC operation.

ELECTRICAL CONNECTION:

A1.1 The 6'(or other length) black SJ/SO cable with flying leads is used for line power. Attach a connector with the proper electrical rating to the flying leads. Use a connector that matches your power outlet. The other end with IEC connector plugs into the power receptacle(1S) at the back of the unit.

A2. MOTORS AND LIMITS CONNECTION.

A2.1 Dual Axis: A gray or black colored custom cable is used to connect the MC-5 controller to the substrate stage assembly. There is a round 9-pin female amphenol connector on each end of this cable. One connector plugs into the receptacle 12VDC OUT (MOTORS). The other end of this cable plugs into the 9-pin round receptacle located on the substrate stage assembly. Either end of the cable is interchangeable. It is "keyed" and can only fit one way. Be sure it is fully threaded onto the receptacle connector. Strain relief support of this cable is recommended. This cable operates the Rotation, Z- motion and uses the contacts from the Z-motion limit switches.

A2.2 Single Axis: The control cable operates the rotation only and connects in-line with the short cable attached to the rotation motor housing.

B. OPERATION

B1. MAIN POWER.

Be sure the rotary RPM switch is in the OFF position before turning the power switch on.\

Turn the MC-5 controller power switch to ON. (located at the rear of the unit).
(The small cooling fan will continuously operate while the controller is switched on).

B2. ROTATION. (Single Axis and Dual Axis controllers).

B2.1 LOCAL/FRONT PANEL CONTROL.

IF APPLICABLE: Be sure the toggle REM / BYPASS (TGS1) switch is in the middle position.

1. Turn the RPM rotary switch clockwise. Turn the knob to the desired percent output.

Note: 100 % = ~ 20 rpm.

To stop rotation turn the knob counter clockwise until the knob clicks off.

B2.2 REMOTE OPERATION. Note: MC5 with remote control is available by special order only. Contact AJA for more information.

1. Flip the toggle REM / BYPASS (TGS1) switch up to enable remote operation.

Remote operation is done through the Sub-D 9-pin REMOTE connector at the back of the unit. See section B4. for remote control logic information.

B3. Z - MOTION AND JOG OPERATION. (Dual Axis controllers only).

The Z - MOTION and rotation JOG function are controlled by the joy stick.

The rotation RPM must be in the OFF position for jog function.

B3.1 Z - MOTION:

1. Move the joy stick UP or DOWN to make the substrate stage bellows move. When a travel limit is reached the Z-MOTION will stop. The Z-MOTION will then only work in the opposite direction.

B3.2 ROTATION JOG:

1. Move the joy stick left or right (CCW or CW) to jog the rotation. Note: the rotation jog speed is fixed at a slow speed.

B3.3 Z - MOTION BY-PASS This is only applicable if your substrate stage has a third mid-position limit switch. This allows the stage to travel past this limit switch.

1. Hold the BYPASS switch in the momentary IN position while operating the Z-motion.
2. (Controller with optional remote: Hold the REMOTE toggle switch in the momentary down position).

B4. REMOTE CONTROL LOGIC.

The MC-5 controller with optional remote control capabilities has a sub-D 9-pin male connector on the back for remote control. (Standard MC5's without remote capability have a non-usable sub-D connector).

Note: MC5 with remote control is available by special order only. Contact AJA for more information.

pin# 1 12VDC

pin# 2 N/A

pin# 3 "Z" motion up (ref to pin#1)

pin# 4 "Z" motion dn (ref to pin# 1)

pin# 5 N/A

pin# 6 N/A

pin# 7 N/A

pin# 8 analog 0-10VDC speed ref

pin# 9 analog common speed ref

Note: To run the motion control in remote mode do the following:

1. Turn the toggle switch on the front of the motion control to Rem.
2. A 0 - 10vdc signal to pins 8 & 9 will start the rotation 0vdc = no rotation.
10vdc = full speed rotation.
3. A contact closed between pins 1 & 3 will start the "Z" motion in the UP direction.
If the upper limit is made the "Z" motion up will stop.
4. A contact closed between pins 1 & 4 will start the "Z" motion in the DOWN direction.
If the lower limit is made the "Z" motion down will stop.