

MICROSTAT® TEMP CONTROLLERS

5 AMP and 15 AMP

Item #107522 / #107564 / #107519

INSTRUCTION MANUAL



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INSERTS

- 15-Amp Wiring diagram
- 5-Amp Single-Zone Wiring diagram
- 5-Amp Multiple-Zone Wiring diagram

SAFETY SUMMARY

In this manual:

DANGER means that you will be killed or badly injured if you don't take precautions. This is the highest level of warning.

WARNING means you could be killed or badly injured if you don't take precautions.

CAUTION means you could be moderately or slightly injured, or equipment could be damaged if you don't take precautions.

The following general alerts apply to this controller:

*** DANGER ***

LIVE ELECTRICAL CONTACTS COULD CAUSE DEATH OR SHOCK.
Lock out and tag out power before doing service.
Only qualified electricians are to do electrical work.

*** WARNING ***

CHANGES TO MACHINE COULD CAUSE DEATH OR INJURY.
Modify ONLY with approval of IMS Company.
Do not use replacement parts not approved by IMS Company.

SPECIFICATIONS

Power Input: Dual voltage --
120/60/1 or 208-240/60/1

Rating (Per Zone):

5 Amp: 1200 Watts at 240 VAC
600 Watts at 120 VAC

15 Amp: 3600 Watts at 240 VAC
1800 Watts at 120 VAC

Dimensions:

1 Zone 5 Amp:	5-1/8" W x 6-5/8" H x 3-5/8" D
2 Zone 5 Amp:	5-1/8" W x 8-5/8" H x 3-5/8" D
4 Zone 5 Amp:	5-1/8" W x 12-5/8" H x 3-5/8" D
6 Zone 5 Amp:	5-1/8" W x 16-5/8" H x 3-5/8" D
8 Zone 5 Amp:	5-1/8" W x 20-5/8" H x 3-5/8" D
1 Zone 15 Amp:	6-1/4" W x 4-3/4" H x 5" D
4 Zone 15 Amp:	22-5/8" W x 7-3/4" H x 5-3/4" D

DESCRIPTION

IMS Microstat® Voltage Controllers use an IMS-designed circuit to control voltage to heaters. An ammeter on the Microstat® panel lets the operator monitor the output current.

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INSTALLATION

1. Install in dry place, protected from high heat and strong mechanical shock. Remember that factory-installed power cord is 6' long. (Except on 15-Amp 4-Zone model, it does not include a cord).
2. There is one Hubbell® plug for each zone; attach heater wires to plugs.

Do not exceed per-zone watt ratings:

5-amp:

120V:	600 watts
240V:	1200 watts

15-amp:

120V:	1800 watts
240V:	3600 watts

3. Before plugging heaters into controller, use ohmmeter to test heater/plug assemblies. There should be at least 16 ohms through a 240V heater, or 8 ohms through a 120V heater. Also test each line to ground. Do any needed repairs before use.

INSTALLATION (continued)

4. Plug heater plugs into Hubbell® sockets on controller.
5. Before connecting controller, lock out and tag out power to circuit.

Connect to either 115/60/1 or 208-240/60/1 circuit with a fused disconnect. Circuit amperage rating must be at least as high as combined rating of Microstats®.

Either hard-wire controller to fused disconnect or install plug. All wiring, plugs, connectors, and disconnects must meet national and local codes.

OPERATION

1. Controller must have been installed according to INSTALLATION instructions in this manual.
2. Turn all Microstat® POWER ON/OFF switches OFF and all output selection knobs to 0.

Turn ON power to circuit.
3. For each zone:
 - a. Turn Microstat® POWER ON/OFF switch ON.
 - b. While holding METER button down, either set output directly to needed level, or do a SOFT START first, as described in step c on next page.

Soft start gradually warms heater to evaporate moisture from heater before it gets hot. Heaters last much longer that way.

OPERATION (continued)

- c. To do a soft start:
 - (1) While pressing METER button, slowly turn knob until ammeter needle moves slightly.
 - (2) Let unit run at this low output level for about 5 minutes. Then turn knob (while pressing meter button) until needed current draw shows on ammeter. (Current through heater changes as voltage changes.)
- d. While in operation, use ammeter to check output. Adjust output as needed by turning knob.
- e. To turn a zone off, toggle POWER ON/OFF switch OFF.

REPLACING MICROSTAT® MODULE

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Use ONLY replacement parts approved by IMS Company.

1. Lock out and tag out power to Microstat® controller.
2. Loosen screw on side of knob. Lift or gently pry knob off of shaft. On 4-zone 15-amp units, remove all knobs.

REPLACING MICROSTAT® MODULE (continued)

3. Remove screws from controller cover. Lift off cover.
4. Disconnect microstat module. Red wire is butt-connected to transformer wire. White wire is spade-connected to Hubbell® socket.
5. Remove old module as follows:
 - a. 15 Amp
From back of unit, use 7/64" hex wrench to remove 4 socket-head screws that hold module to heat sink.
 - b. 5 Amp
Remove hex nut and star washer from stem on module.
6. Install new module using socket head screws on 15 amp module, or star washer and hex nut on 5 amp module.
7. Wire module. Red wire is butt-connected to transformer wire. White wire is spade-connected to Hubbell® socket.
8. Install cover. Secure with 4 sheet-metal screws.
9. Install knob on stem.
 - a. Turn stem all the way counterclockwise.
 - b. Press knob onto stem, with 0 lining up with arrow on panel. Lightly tighten screw on side of knob.
10. Before returning to operation, test unit at low setting to verify correct repair.

TROUBLESHOOTING

*** DANGER ***

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Only qualified electricians are to do electrical work.

*** WARNING ***

CHANGES TO CONTROLLER COULD CAUSE DEATH OR INJURY.
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Use ONLY replacement parts specified by IMS Company.

1. No output shown when meter button is pressed
 - Is POWER ON/OFF switch turned ON ?
 - Are fuse lights on ?
 - Are fuses good ?
 - Is there power to controller ?
Is heater open ?

2. Output constantly full
 - Is Microstat® module shorted ?

3. No change on ammeter when meter button pressed
 - Is there output ?
 - Is METER button good ?
 - Is current transformer good ? (15-amp units only)
 - Is ammeter good ?

TROUBLESHOOTING (continued)

4. Ammeter reading erratic or too high

- Is microstat® module good ?
- Is ammeter good ?
- Is wiring loose (intermittent) ?

5. Erratic output

- Do Hubbell® plug and socket fit together properly ?
- Is wiring loose (intermittent) ?

6. Fuse blows

- Is heater or wiring shorted ?

REPLACEMENT PARTS

All Microstat® Controllers

Fuse Indicator Light:	COZZ-36EN
Control Knob:	COZZ-K10
Fuse Holder:	COZZ-FH-MS
(Complete with Cap)	
Cap Only:	COZZ-FC-MS
Zone Power Switch:	COZZ-ZPS515

15 Amp Only

Fuse	COZZ-ABC15
Microstat® Control	
Module:	COZZ-MS15B
Male Output Plug:	COZZ-7102C
(Hubbell®)	
Female Socket:	COZZ-3226
(Hubbell®)	
Ammeter:	COZZ-AM15
Current Transformer:	COZZ-CT15
(for meter)	
Ammeter Button:	COZZ-MPA406R

5 Amp Only

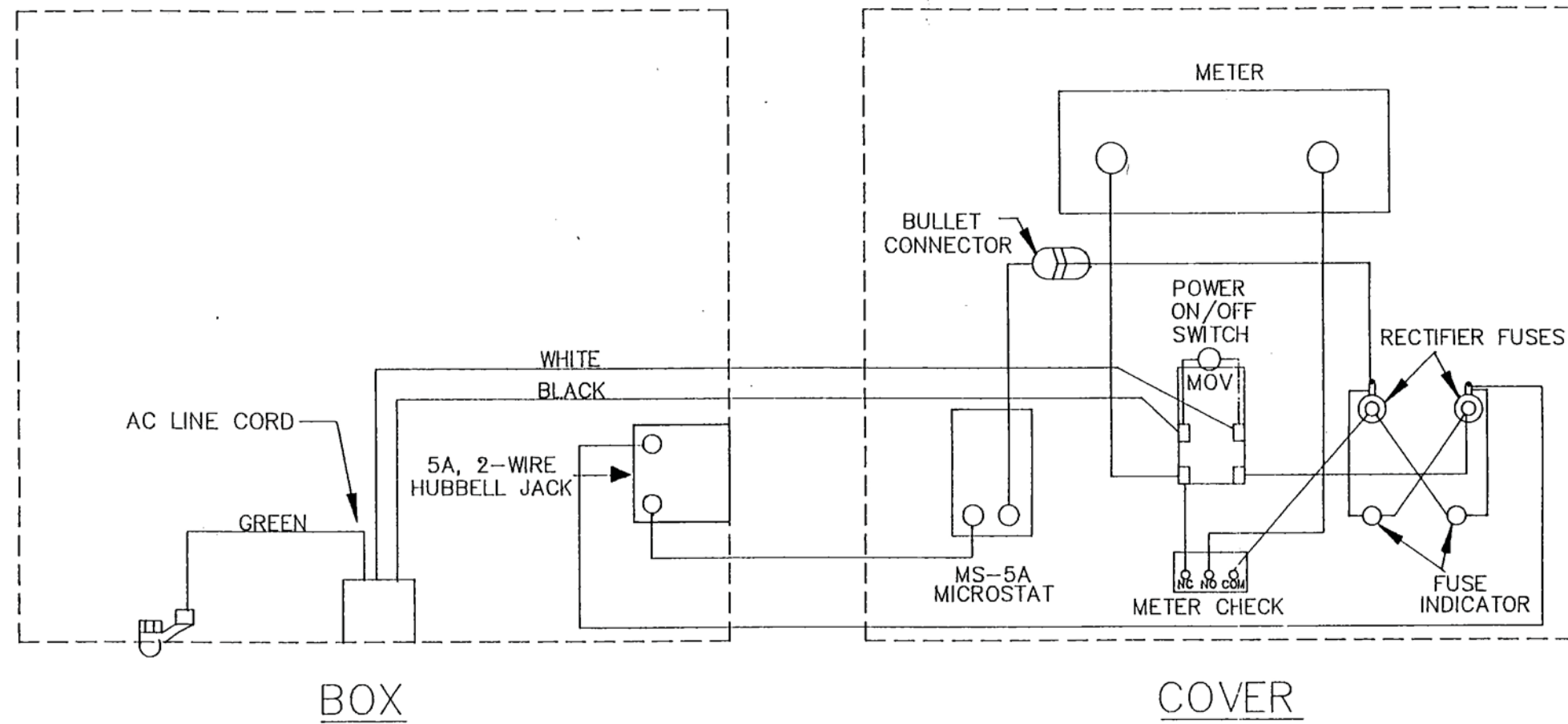
Microstat® Control	
Module:	COZZ-MS5A
Male Output Plug:	COZZ-7465
(Hubbell®)	
Female Socket:	COZZ-7468
(Hubbell®)	
Ammeter Button:	COZZ-1PB5
5-Amp meter:	COZZ-AM5N
(standard)	
1-Amp meter:	COZZ-AM1N
(optional)	
2-Amp meter:	COZZ-AM2N
(optional)	
3-Amp meter:	COZZ-AM3N
(optional)	

MAINTENANCE RECORD
AND NOTES

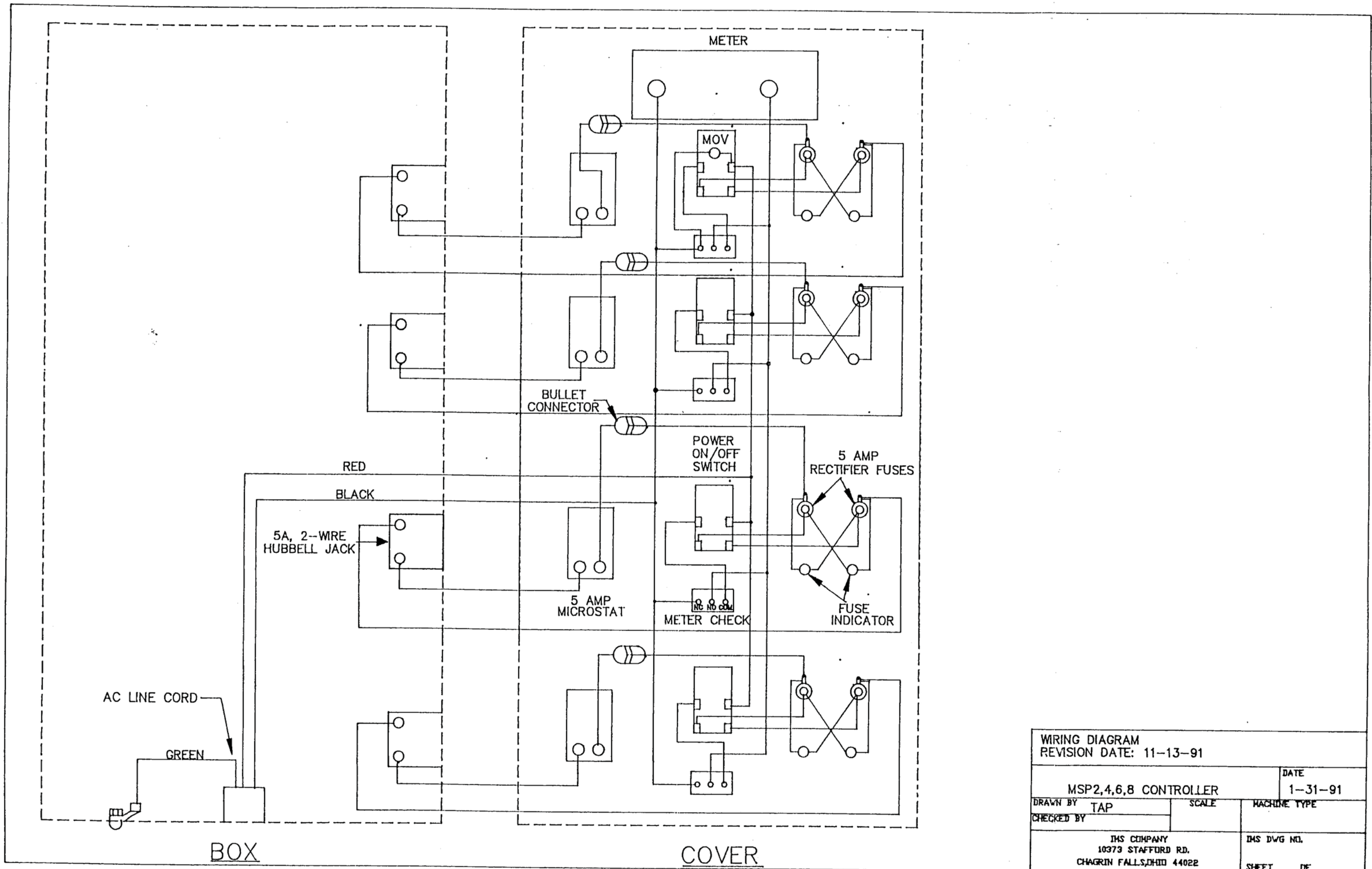
NOTES:

- 1). BLACK: #14 AWG STRANDED
- 2). GREEN #14 AWG STRANDED
- 3). WHITE: #14 AWG STRANDED

WARNING: REMOVE POWER TO UNIT BEFORE SERVICING.



WIRING DIAGRAM		
MSP1-5 CONTROLLER		DATE 1-21-91
DRAWN BY TAP	SCALE	MACHINE TYPE
CHECKED BY		
IMS COMPANY 10373 STAFFORD RD. CHAGRIN FALLS, OHIO 44022		IMS DWG NO. SHEET OF



WIRING DIAGRAM		
REVISION DATE: 11-13-91		
MSP2,4,6,8 CONTROLLER		DATE 1-31-91
DRAWN BY TAP	SCALE	MACHINE TYPE
CHECKED BY		
IHS COMPANY 10373 STAFFORD RD. CHAGRIN FALLS, OHIO 44022		IHS DWG NO. SHEET OF

NOTES:

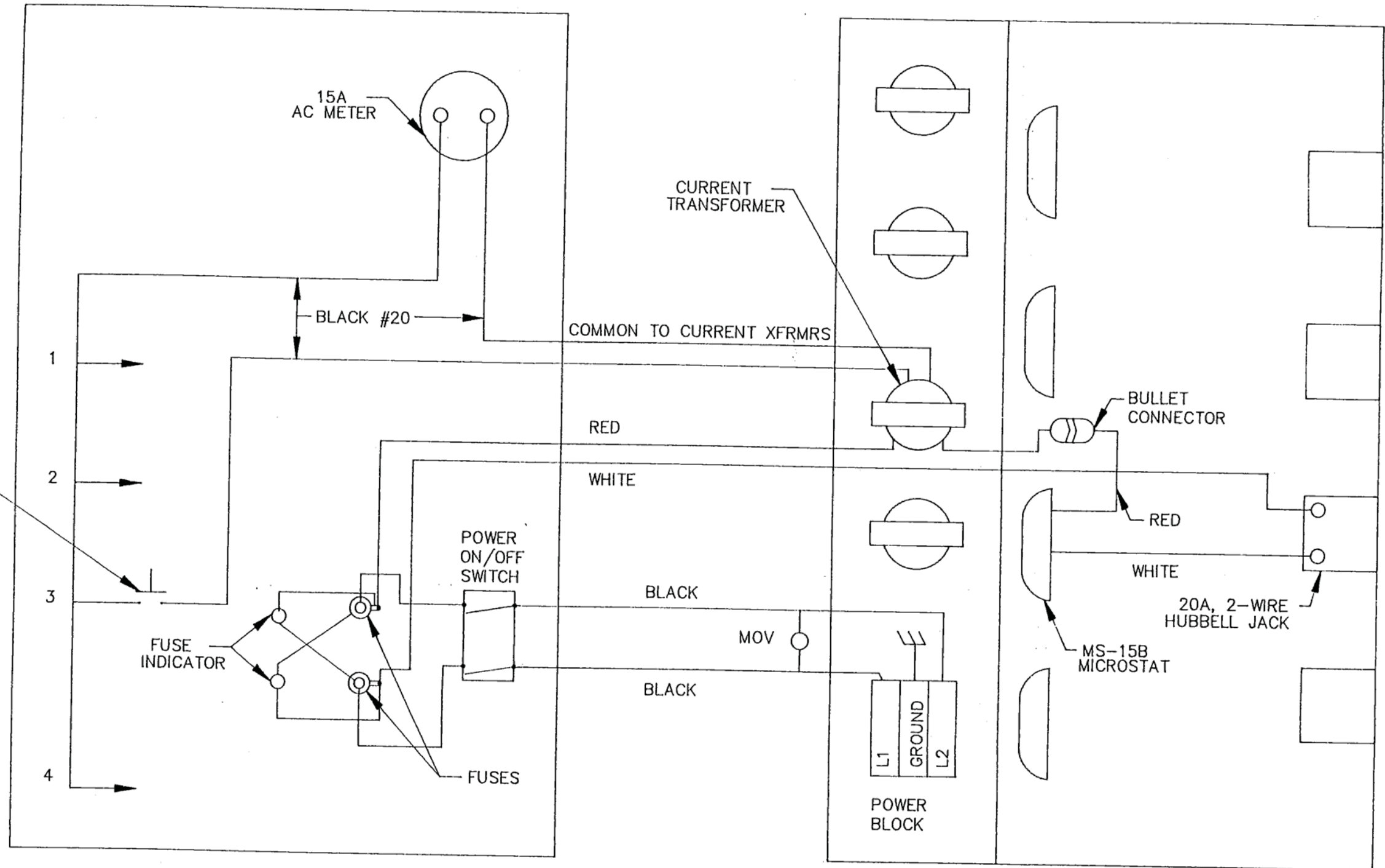
- 1). BLACK: #20 AWG STRANDED
- 2). BLACK: #14 AWG STRANDED
- 3). RED: #14 AWG STRANDED
- 4). WHITE: #14 AWG STRANDED

WARNING:

REMOVE POWER TO UNIT BEFORE SERVICING.

NOTE:
ONLY ZONE 3 WRING SHOWN.
OTHER ZONES WIRED THE SAME.

METER
PUSH BUTTON
SWITCH



COVER

BOX

LET.	DATE	DESCRIPTION	CHGD. BY
REVISIONS			

ITEM NO.	NO. REQ.	DESCRIPTION	MATERIAL
		<u>TOLERANCES</u> UNLESS OTHERWISE SPECIFIED	TITLE
		.XXX DECIMALS +.005	WIRING DIAGRAM
		.XX DECIMALS +.010	
		FRACTIONS ± 1/64	MSP4-15 CONTROLLER
		ANGLES ± 1/2°	DATE 1-18-90
			DRAWN BY PCB
			CHECKED BY
			SCALE
			MACHINE TYPE
			IMS COMPANY
			10373 STAFFORD RD.
			CHAGRIN FALLS, OHIO 44022
			IMS DWG NO.
			B-014
			SHEET OF