



**Greer Systems, LLC
Installation, Operation and Maintenance Manual
Multizone Controller MZ-500**



Manual 204-0158-10

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INSTALLATION AND OPERATION MANUAL

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I. GENERAL

A. Overview

This manual is intended to provide necessary information to install and operate the Multizone Controller MZ-500. Failure to install or operate the units in accordance with the information in this manual could result in unsatisfactory, unreliable or unsafe operation. Please read this manual in its entirety and adhere to the instructions.

B. Applications

The Greer Systems model MZ-500 Multizone Controller provides central monitoring and annunciation for up to 24 detectors. The controller is designed to be used with Greer Systems AS-400 or AS-600 model detectors but can be used with any device that provides a 4-20 mA output.

II. CONTROLLER OPTIONS

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A. Models Available

MZ-500-3	1-8 zones
MZ-500-4	1-16 zones
MZ-500-5	1-24 zones

B. OTHER

1. The MultiZone is expandable via additional modules.
2. The locking cover option may be added to an existing MZ-500. Contact the factory for details.
3. Custom Multizone Controller setups are available. Contact the factory for information.

III. INSTALLATION – MECHANICAL

A. Physical Description

The MZ-500 is housed in a NEMA 12 non-metallic enclosure with a clear cover.

Sizes are:

3	15.4" X 10.4" X 8.2"
4	20.3" X 10.4" X 8.2"
5	20.2" X 10.4" X 8.2"

The electronics are mounted in the base of the enclosure. All field wiring is terminated to screw terminals.

B. Environment

The MZ-500 must be installed in a non-condensing environment. The MZ-500 operating temperature must be maintained between: -10°F and 125°F.

C. Installing Field Wiring

The MZ-500 Enclosure requires knockouts for standard conduit fittings.

CAUTION: To prevent damage to the internal components of the MZ-500, use care when performing knockouts.

D. Mounting

The controller cabinet may be mounted to any rigid vertical surface. Although the cabinet is water resistant, install the unit in a manner to prevent direct water contact. Terminate conduit with sealed fittings to maintain the integrity of the enclosure. The MZ-500 must be installed in a non-condensing environment.

Warning: The MZ-500 does not have a NEMA 12 rating unless the clear Cover Is fully closed.

A. Input Voltage

The wiring connected to the input terminals must be a minimum of 18 AWG in order to handle the appropriate current. Input voltage is 120 Volts AC. The lower portion of the MZ module contains the Power Supply board, where AC line input voltage is applied.

CAUTION: Avoid connection of the input power to other loads that may produce spikes or surges to the unit. Examples of such devices include starter relays, solenoids, heater controllers and electric motors.

B. Fuse

Fuses are located on the Power Supply board (010-0229-10)

F1	.5 amp 250V
F2	1.5 amp 250V

CAUTION: Use care when changing the fuses as line voltage may still be present.

C. Connections

All MZ-500 connections are on Power Supply board and/or the Zone Modules.

The Power Supply board contains the 120v power input terminals (lower right) and the common NO/NC contact relay (lower left).

The Zone Modules contain both contact NO/NC terminals for the zone as well as power output to the detector and 4-20 input from the detector. All these connections are located on the lower portion of the Zone Module. The upper portion of the Zone Module is the communication port to the Power Supply board.

Connection	Description
120/VAC @ 2 amp.	Line Voltage In
SPDT amp @ 120 VAC	Common Relay on the Power Supply that Indicates any zone in alarm
24/VAC at 200 mA per sensors for a maximum of 24 sensors	Detector Power
4-20 mA (- +)	Receives 4-20 mA input from AS-400's or AS-600's
Relays (120 VAC 7 amp Max) (High Low)	Low or High Alarm relay Contacts

D. Sensor Wiring

4-20 mA input connections to the MZ-500 terminals should be with shielded cable. A single ground connection should be made from the sensor cables to the ground terminal, and to a nearby earth or chassis ground.

Warning: The MZ-500 enclosure is non-metallic and is not grounded.

E. Providing Power To Greer Systems Gas Detectors

Greer Systems Gas Detectors such as the AS-400 and AS-600 series may be powered directly from the MZ-500 24 VAC output terminals.

CAUTION: Other types of input devices may have different power requirement. Verify input requirements before connecting other devices to the 24 VAC output terminals.

V. OPERATION

A. Startup

The complete zone module system should be assembled with the power/control board, the 12 VAC transformer, the sonalert, the “Horn Silence” and ‘Reset’ pushbutton switches, and the desired number of zone module units (e.g. eight). Apply 115 VAC to the power/ control board for the entire system, verifying that the ERR LED on each zone module is not flashing. If nothing else is connected to the individual zone module units, the ERR LED should be on solid (not flashing).

When gas concentration exceeds the set point, the relay will de-energize and LED will be on. When concentration drops, the LED will Begin to flash and relay will remain de-energized until reset is pressed.

- **ERR** – LED Indicates an error in the signal from a remote sensor.
- **MA** – LED Flashes the count of milliamps input from the remote sensor. For example, four flashes then a pause indicates 4 ma input.
- **HI** – LED Indicates the HI set point has been exceeded. Flashing indicates that the set point was exceeded, but it is below set point now.
- **LO** – LED Same as the HI but is associated with LOW set point and relay.
- **Percent – Range Pots** These set the trip point of the relay in percent of the sensor range. If the 4-20 ma signal covers the 0-1,000 ppm range, then the set point of 10% will indicate 100 ppm.
- **Reset – Push – button** This button will reset the relay and LED associated with the zone that is not above the set point. Relay will return to energized position and LED will go out.

*During normal operation, the MZ-500 continuously scans each inputs channel’s 4-20 input value, compares this value against each zones set point and determines the state of each output relay. If an individual zone’s value exceeds the set point, then it’s corresponding relay is energized **AND** the common relay and internal audible alarm are also energized.*

B. Reset and Horn Silence

Master Reset – Push Button Depressing this button will reset all the relays and LED’s associated with the zones that are not above the set points. Relays will return to energized position and LED’s will go out.

Horn Silence – Push – Button Depressing this button will silence the sonalert alarm.

VI. Maintenance and testing

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A. Maintenance

The MZ-500 is a solid-state device and requires no normal or preventive maintenance. However, the user needs to keep the clear cover closed when not operating the controls in order to maintain the integrity of the NEMA 12 enclosure.

Warning: the MZ-500 does not have a NEMA 12 rating unless the clear cover is fully closed.

B. Testing

The MZ-500 should be tested periodically to ensure satisfactory operation and compliance with all applicable laws, etc. Local regulations may dictate the frequency of testing required for a particular installation.

VII. Warranty

The MZ-500 is covered by Greer Systems, LLC limited (3) year warranty. Please see warranty statement for additional details.

VIII. REPAIRS AND SERVICE

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Should the MZ-500 become damaged or inoperative, please contact your Greer Systems Dealer. Greer Systems' factory repair service is available. Please make any arrangements through your Greer Systems Dealer.

IX. SPECIFICATIONS

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Power	120 VAC at 2 amps
Relay output	Two per zone Form C 7 amps at 120 VAC
Sensor Power	24 VAC at 200 mA per Sensor for a maximum of 24 sensors
Terminals	Screw terminals removable from the zone module Screw terminal with pressure plate for 120VAC
Enclosure	NEMA 12 non-metallic with clear cover
Size	3 15.4" X 10.4" X 8.2" 4 20.3" X 10.4" X 8.2" 5 25.2" X 10.4" X 8.2"
Audible Alarm	85 db Annunciator
Common Relay	SPDT 7amp @ 120VAC
LED Indication	<ul style="list-style-type: none"> • Power • Relay activation • VeriCheck™ (blinking LED to indicate input from remote sensor) • Sensor Fault
Operating Temperature	-10°F to 125°F
Security	Optional Mechanical lock with key
Relay trip Point adjustment & Indication	Via knob on the front of zone module calibrated in percent of range