

## INSTALLATION INSTRUCTIONS

### Product Information

**MZA**  
115Vac +15%, -20%; 50/60 Hz  
230Vac ±10%; 50/60 Hz  
12Vdc ±20%

**Power consumption**  
12 watt maximum

**Relays**  
One LEAK relay per zone (maximum 8) SPDT  
One common LEAK relay SPDT  
One summary FAULT (cable break/power failure) SPDT  
Rating: 3 A at 250Vac/24 Vdc

**Temperature**  
Storage: -18°C to 60°C (0°F to 140°F)  
Operating: 0°C to 50°C (32°F to 122°F)

**Enclosure**  
NEMA 12; IP54

**Approvals**  
CE The MZA is approved for use in ordinary areas. The module must be located in an Ordinary Area, but may monitor intrinsically safe TraceTek sensing cables located in Hazardous Locations:

- TraceTek sensing cable in Class I, Division 2, Groups A, B, C, D Hazardous Locations.
- If protected by agency-approved zener barrier TraceTek sensing cable in Class I, Division 1, Groups A, B, C, D Hazardous Locations (Zone 0 or Zone 1 in Europe). Contact your TraceTek distributor/agent to select proper zener barrier.

**Maximum Circuit length**  
100m (328ft) TraceTek sensing cable or 10 water or optical oil probes per zone. Leader and jumper cable lengths are not included in this limitation.

### General Information

Please read these instructions carefully and keep them in a safe place (preferably close to the module) for future reference. These instructions must be followed carefully to ensure proper operation.

The MZA multi zone alarm has been designed specifically for use with TraceTek sensing cables (TT1000, TT3000, TT5000, TT5001 and TT7000). The MZA can monitor per zone up to 100 m (328 ft) of sensing cable, or 10 water detection probes. Optical probes, float switches and level indicators can also be incorporated into the system.

The MZA is designed for use in ordinary areas with temperatures of 0°C to 50°C (32°F to 122°F).

### Installation items (not supplied)

- Wall fasteners for surface mounting (four screws)
- Rubber or elastomeric washers to seal at mounting points
- Semi-flush recess flange (optional)

### Tools required

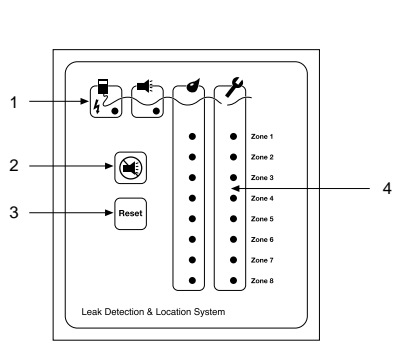
- Drill or hole punch for electrical conduit entries
- Phillips (cross-head) screwdriver
- Small flat-head screwdriver

### Storage

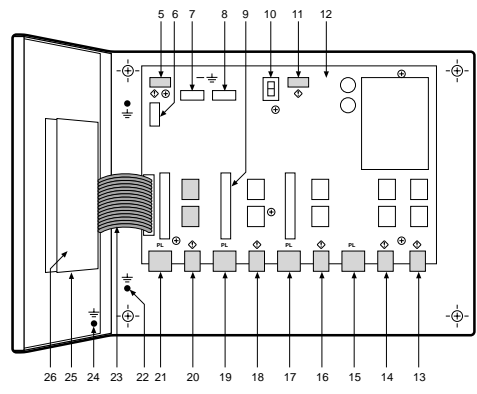
Keep the module in a dry place prior to installation to avoid possible damage to internal components.

### Additional items

- AT-BU Battery Unit c/w battery for 24 hrs operation
- AT-BAT Replacement 12Vdc, 7Ah Battery
- AT-MZA-SFMF Semi Flush Mounting Flange



- 1. LEDs with icons
- 2. Silence key
- 3. Reset key
- 4. Zone LEDs
- 5. Battery connection
- 6. Spare fuse
- 7. Fuse (1600mA, 250V)
- 8. Fuse (1600mA, 250V)
- 9. Zone exp card connection
- 10. Voltage selector (110 or 220V)
- 11. Power cable terminal block
- 12. Motherboard
- 13. Summary leak & fault relay plug and socket
- 14. Z1/2 Fault relay cable plug and socket



- 15. Z1/2 Sensing cable plug and socket
- 16. Z3/4 Leak relay cable plug and socket
- 17. Z3/4 Sensing cable plug and socket
- 18. Z5/6 Leak relay cable plug and socket
- 19. Z5/6 Sensing cable plug and socket
- 20. Z7/8 Leak relay cable plug and socket
- 21. Z7/8 Sensing cable plug and socket
- 22. Ground/earth stud
- 23. Ribbon cable
- 24. Ground/earth stud
- 25. Buzzer mute link
- 26. User Interface board

**WARNING:** Shock hazard. Shut off power before opening enclosure door.  
**PL** Indicates power limited circuits.

**Note:** To avoid damage to the MZA and the MZA-EXP electronics, store them in their cardboard boxes until construction is complete.

### Select the mounting position

Choose a location indoors where the module will be protected from the elements and temperature extremes.

**WARNING:** Ignition hazard. Do not mount the MZA unit in a hazardous location. Sensing cable connected to the MZA may (subject to approvals restrictions) be located in hazardous locations, but the module itself must be in an ordinary area.

### Prepare the module for mounting

**Important:** The MZA is an electronic unit. During installation, take the following precautions to avoid damage to its electronic components:

- Handle with care, avoid mechanical damage.
- Keep the electronics dry.
- If handling circuit boards, hold them by their edges to avoid physical contact with electronic components.
- Avoid exposure to static electricity.
- Avoid contamination with metal filings, liquids, or other foreign matter.

- Remove the module from its packaging.
- Open the enclosure door using a flat-blade screwdriver or coin.
- **Anti static precautions should be taken before touching the boards inside.**
- Carefully disconnect the ribbon cable from the motherboard.
- Unscrew the four Phillips (cross-head) screws holding the motherboard to the enclosure (see Fig 1). Remove the motherboard, and put it out of harm's way.
- Taking care to protect the User Interface board on the enclosure door, drill/punch entries as required (see Fig 2).
- **Note:** The AquiTron™/ TraceTek sensing circuit is power limited, so the TraceTek leader or jumper cable and the power supply cable must not run in the same conduit.
- Fit conduit bushings/adapters.
- Remove all traces of metal filings and dust from inside the module enclosure.

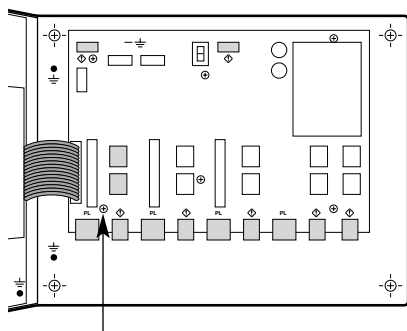
### Mount the module

The module mounts with four screws with mounting centers as noted in Fig 3. To seal around the mounting screw (necessary to maintain the IP54 rating), use a rubber or elastomeric washer.

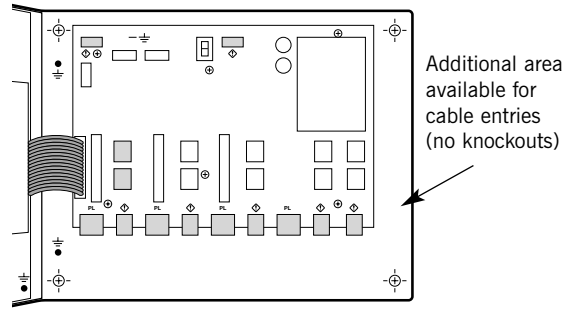
### Reassemble the module

**Note:** Before replacing the motherboard, ensure that the interior of the enclosure is clean.

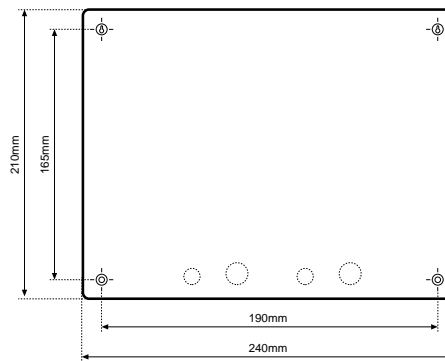
- Replace the motherboard and secure it in place with the Phillips (cross-head) screws.
- Reconnect the ribbon cable (taking care not to bend any pins in the connection).
- Close and secure the door of the enclosure.



**Figure 1** Remove all six screws attaching motherboard



**Figure 2**



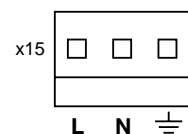
**Figure 3**

Cable entry knockouts are provided as follows:  
 Back plate 4 x 20mm and 3 x 3/4"  
 Base of enclosure 6 x 20mm and 5 x 3/4"

### Connecting the Power Cable and Relays

#### Connect the power wiring

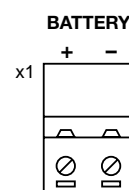
- Open door of MZA enclosure.
- Pass the power cable through the knock-out/adaptor/bushing if fitted.
- **Note:** Proper grounding/earthing is important to avoid the possibility of electromagnetic interference.
- Connect the power supply wires to the special three-pin terminal block marked LNE (Live, Neutral, Earth), observing the polarity.
- The electrical supply should be fused at no more than 3amps via an un-switched fused spur adjacent to the unit.
- **Note:** Set the voltage selector switch to the required voltage 220 or 110Vac. The terminals can accept wires 12 to 24 AWG.
- **Note:** Do not exceed maximum voltage.



**Figure 4**

#### Battery Back-Up

- The unit is equipped with a 12Vdc battery back-up power circuit. If this option is required connect the + and - (positive and negative) battery leads (leads not supplied) (fig 5).
- A separate battery unit is available AT-BU which will house a 12Vdc 7Ah battery - AT-BAT.
- Batteries should be tested, maintained and replaced in accordance with the battery manufacturers instructions and recommendations.



**Figure 5**

### Prepare sensing cable/sensing probe/device

Ensure that the sensing cable (sensing device) has been installed in accordance with the instructions provided.

#### Make connections

- Confirm that the power to the MZA unit has been turned off.
- Open the enclosure door.
- Feed the end of the TraceTek modular leader cable (or bulk jumper cable) through the knockout/adapter/bushing if fitted.
- Connect the four colour-coded wires to the Sensor Interface plug, X3, X7, X10 and X12 (see Fig 6).
- Select a spare connector between zones 1 to 8.
- Zones 1-2 do not require the insertion of a zone expansion card, MZA-EXP.
- Three cards can be added to the base unit, giving a total of 8 individual zones. Provided the relevant zone expansion card has been inserted, you can select any sequence for connecting the sensing cable or sensing device.

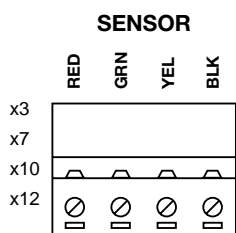


Figure 6

**Important:** Observe the colour coding. If wires are not connected to the correct terminals, the leak detection system cannot operate properly.

Insert the sensing cable (SI) plug into the SI socket (item 15, 17, 19, 21 on the product illustration on the first page).

#### Isolate spare sensing zones

If the second zone in any of the two zone blocks is not to be used it must be terminated with loops of cable between red-green and yellow-black. (See figure 7). This will prevent the system identifying this zone as having a cable break.

However, should there be a requirement for all three-expansion cards to be installed, but not used, then these must be terminated in a similar fashion.

Each spare sensing zone circuit must be terminated with a loop of cable between red-green and yellow-black. See figure 6. This will prevent the system seeing this zone as a cable break. The loop is only required if zone 1 or 2 are not connected and any subsequent zone where a MZA-EXP zone expansion card are fitted.

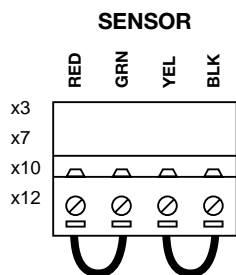


Figure 7

### Connect the LEAK and FAULT (Cable break) relays

The MZA has:  
 One LEAK relay per zone  
 One common LEAK relay  
 One summary FAULT relay

#### Relay identification:

LEAK relays:  
 Zones 1 & 2, X13 - Z1 bottom, Z2 top  
 Zones 3 & 4, X11 - Z3 bottom, Z4 top  
 Zones 5 & 6, X8 - Z5 bottom, Z6 top  
 Zone 7 & 8, X5 - Z7 bottom, Z8 top

#### Common LEAK relay:

X14 Bottom connection

#### FAULT relay:

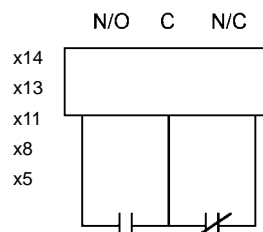
Common to all zones X14 Top connection

All relays are SPDT and independent of the next.

The MZA's FAULT relay will also indicate power failure as the relay contacts will de-energize to signal an alarm condition. Therefore, loss of power as well as a cable break would trip the relay and any equipment connected.

**Note:** The relay plugs can accept wires 12 to 24 AWG. Cable should have a temperature rating of 65°C.

**Note:** Maximum load for relays is 3 amps, 250Vac/24Vdc.



#### Connecting the Zone Expansion cards

**Important:** The MZA-EXP is an electronic unit. During installation, take the following precautions to avoid damage to its electronic components:

- The MZA panel should not be powered when installing the MZA-EXP card.
- **Anti static precautions should be taken before touching the boards inside.**
- Handle with care, avoid mechanical damage.
- Keep the electronics dry.
- If handling circuit boards, hold them by their edges to avoid physical contact with electronic components.
- Avoid exposure to static electricity.
- Avoid contamination with metal filings, liquids, or other foreign matter.

- A maximum of three MZA-EXP cards can be added to a MZA panel.
- Each MZA-EXP provides two additional zones of sensing.
- Remove the card from its static free packaging.
- Insert the first card on vertical connector marked zones 3-4 and the following cards on zones 5-6 and zones 7-8. The card will only fit in one direction.
- Push the card securely to the base connector.
- Once the card has been securely installed the MZA panel can be powered.



## Start-Up and System Testing

### Power up the system

**Note:** Check the voltage selector switch has been set to the correct country/application voltage.

After connections are complete supply power to the unit. If the sensing circuit is complete and free of leaks or other problems, the green Monitoring LED only will illuminate.

If this is not the case, you can find additional information in the MZA Operation and Maintenance Manual supplied with the module.

### Commissioning

Your system should be commissioned by an authorised AquitrOn( or TraceTek representative. The system map is a crucial part of the system and should be located adjacent to the unit and within the O&M documents.

**Important:** Store hardware and documentation supplied with the MZA in a secure place for later use (commissioning, connecting interfaces, operating).

### Testing the Module

#### Test after supplying power

- Close and latch the enclosure door.
- Supply power to the unit. When power is supplied, the green LED illuminates for mains power (red for battery supply). After the start-up sequence is complete, the module should report a fault alarm (this is normal: there is no sensing cable attached). Press the red Silence key to silence the audible alarm. Verify that the red Alarm plus yellow Cable Break LED's appear.

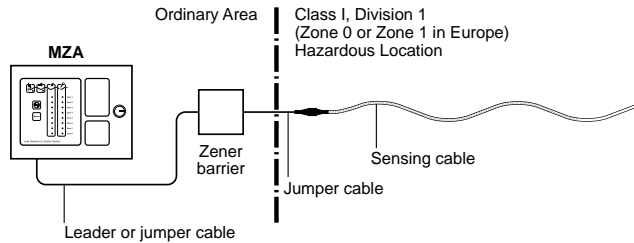
If anything other than the above occurs, check all connections.

If the unit still does not appear to operate properly contact your supplier for assistance.

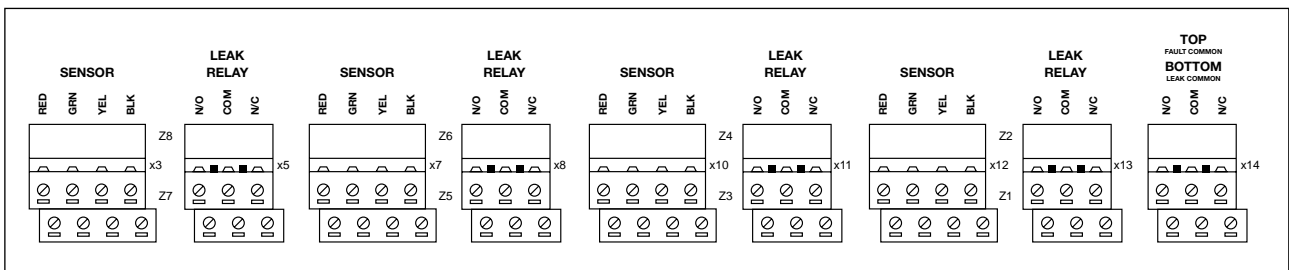
### Install Zener barrier, if applicable

When sensing cable will be located in Class 1, Division 1 locations, approval agencies require that the sensing cable be protected with a zener barrier between the sensing cable and the MZA module. A zener barrier may also be used to provide lightning protection for the module when the sensing cable may be exposed to electrical discharges. Contact your distributor/agent to select the proper zener barrier. One will be required for each sensing zone.

**When installing a zener barrier, wire it in accordance with the instructions provided with the kit.**



## Terminal Connection Layout



**Important:** All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application. Aquilar Limited makes no warranty as to the accuracy or completeness of the information, and disclaims any liability regarding its use. The only obligations of Aquilar Limited are those in the Aquilar Standard Terms and Conditions of Sale for this product, and in no case will Aquilar Limited be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use or misuse of the product. Specifications are subject to change without notice. In addition, Aquilar Limited reserves the right to make changes - without notification to Buyer - to processing or materials that do not affect compliance with any applicable specification.

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**Aquilar Limited**  
 Dial Post Court, Horsham Road,  
 Ruspur, West Sussex RH12 4QX. UK  
 Tel: + 44 (0) 1293 871874  
 Fax: +44 (0) 1293 871717

E-mail: [info@aquilar.co.uk](mailto:info@aquilar.co.uk)  
[www.aquilar.co.uk](http://www.aquilar.co.uk)

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