



GENERAL

The DiT, Inc. AQ-One is designed to provide a simple solution for small leak detection requirements. The AQ-One kit includes a wall mounted display and alarm panel, customer defined sensing cable lengths up to 200 feet, starter cable, power transformer, hold down clips and alarm test plug. The display and alarm panel offers a green normal led and a red alarm led. A silence button will silence the onboard audible alarm.

The AQ-One provides two sets of normally open or normally closed non-powered contacts for remote monitoring connections. Power on and alarm leds indicates an alarm condition. An alarm silence switch can be depressed to silence the audible alarm.

The AQ-One is the perfect choice for customers needing a simple-to-install and easy-to-operate zone leak detection system.

OPERATION

The AQ-One continuously monitors the status condition of the attached sensing cable. Should water contact the cable an alarm condition will exist, the AQ-One will sound an audible alarm and display the alarm with a red led. The alarm can be silenced using the Silence button on the display and alarm panel.

WIRING

All wiring to the AQ-One is low voltage. Color-coded pigtails are provided for field connections.

MOUNTING

The AQ-One can be mounted surface or flush. A built-in flush ring is included in the box.

POWER

The AQ-One comes with a 12Volt wall transformer for power.

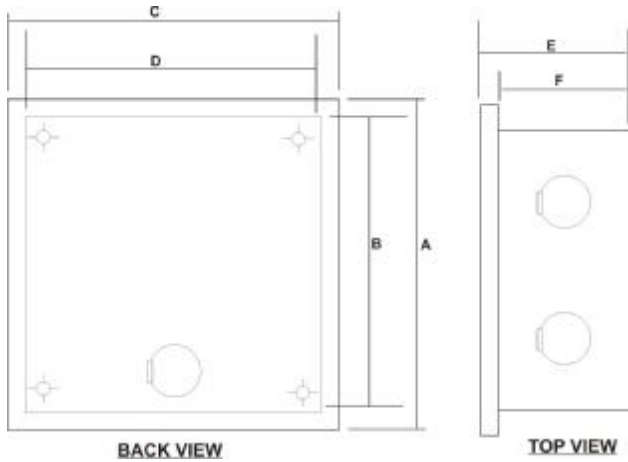
TESTING

The AQ-One comes with an Alarm Test Plug. Simply disconnect the sensing cable at any union and plug in the test plug. The display and alarm panel will indicate an alarm condition. Plug the EOL at the same location and the display and alarm panel should return to normal.

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Dimensions



A = 7.00" D = 6.00"
 B = 6.00" E = 2.50"
 C = 7.00" F = 2.00"

SPECIFICATIONS

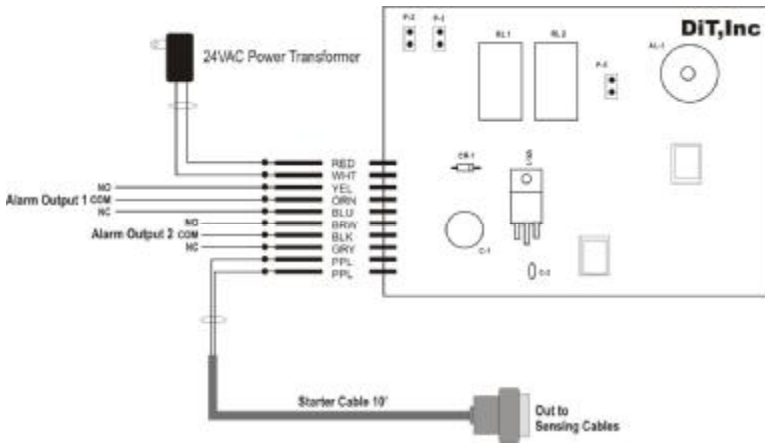
Model Number
 Base Unit AQ-One-XXX
 Electrical
 Power 12Volt (Transformer Provided)
 Alarm Inputs
 Number of Inputs
 Input Types AT1-M AquaTrak Cable Up to 200'.
 Output Types 2 Form "C" Dry Contacts
 Wall Display
 Display Type 2 LEDs
 Keypad Silence Switch
 Environmental
 Temperature 0-125 Degrees F
 Humidity 5-95% RH Noncondensing

ORDERING OPTIONS

Model Number
 AQ-1-25 Includes 25' Sensing Cable 12 Clips
 AQ-1-50 Includes 50' Sensing Cable 18 Clips
 AQ-1-75 Includes 75' Sensing Cable 28 Clips
 AQ-1-100 Includes 100' Sensing Cable 36 Clips
 AQ-1-150 Includes 150' Sensing Cable 54 Clips
 AQ-1-200 Includes 200' Sensing Cable 72 Clips

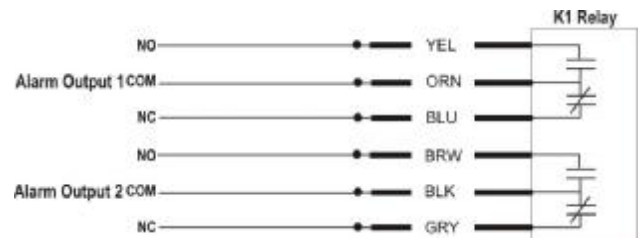
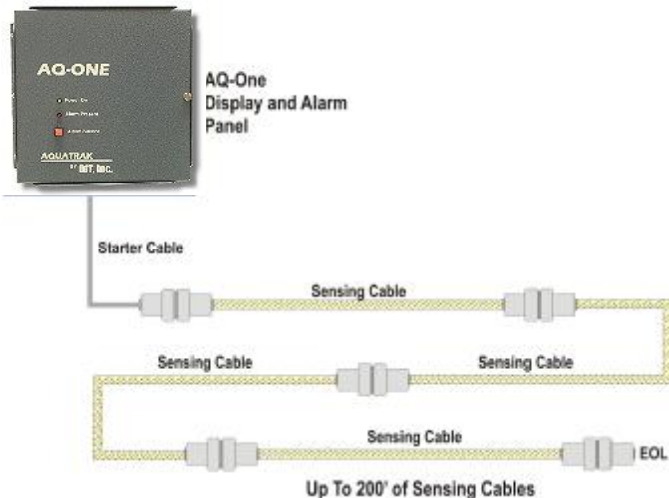
Materials Included in Kits

- ◆ Display and Alarm Panel
- ◆ Starter Cable 10' Long
- ◆ EOL End Of Line resistor
- ◆ Sensing Cable(s)
- ◆ Cable Hold Down Clips
- ◆ Alarm Test Plug



Wiring Schedule

Input Type	Wire Type	No. Condt.	Wire Size
Sensing Input	Stranded w/Shld	2	22-2 stranded
Relay Output	Stranded	2	18-22 stranded
Power Input	Stranded	2	22-2 stranded

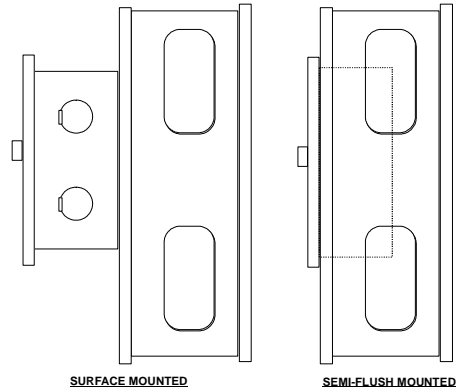


DiT
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Panel Mounting

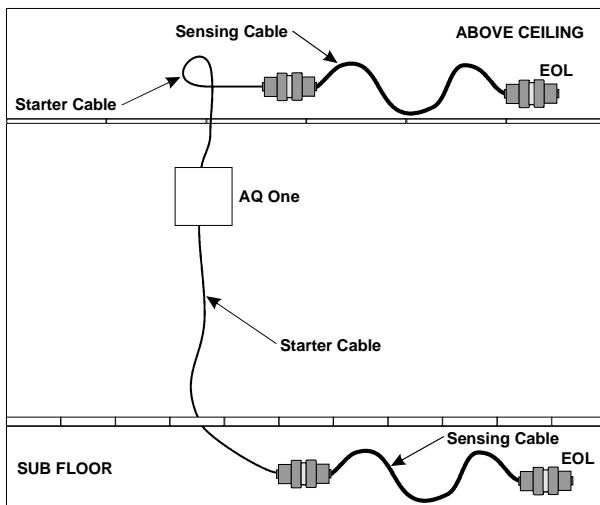
Mount the alarm panel on any flat dry surface using the 4 1/4" mounting holes on the back of the panel.



Starter Cable

A starter cable is included in the kit. The starter cable should be connected to the purple wires on the alarm board. The starter cable is 10 feet long and may be extended another 50' in the field using a 22/2 stranded and shielded cable.

The starter cable is used to connect the yellow sensing cable to the AQ One alarm module.



Sensing Cable

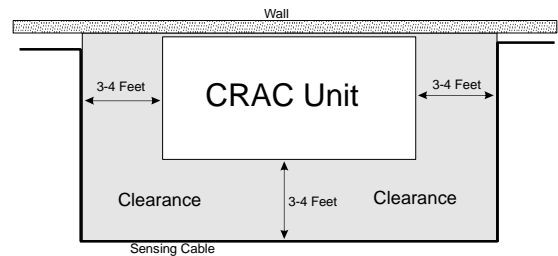
The yellow sensing cable is used to detect the presence of water. It is designed to detect water and conductive liquids. It will not detect distilled liquids or DI water.

The water sensing cable is comprised of two conductors, parallel to each other, encased in a woven nylon jacket and then in an outer nylon jacket.

1. Keep the sensing cable clean and dry prior to use. Be sure the surface to which it is being applied is clean, dry and free of grease and oil.
2. Use a chalk line, when possible, to mark the "Lay-out" of the water sensing cable. This helps make a neat, straight installation.
3. Secure cable to a clean, dry surface with the adhesive-backed clips. Space the clips approximately 4-feet apart.
4. If the sensing cable is close to an AC unit, it may be necessary to place clips 3 or 4 feet apart to hold the cable flat.
5. Only AT1-C clips should be used to fasten the cable to the floor. Other methods could cause problems with the operation and maintenance of the cable.
6. Never install the Sensing cable any closer than 3-4 feet from an A/C unit. A cable too close to an A/C unit can cause false alarms due to condensation caused from the airflow of the unit.
7. In the case of difficult installations. You may apply a bead of construction adhesive to the bottom of the cable clips for additional bonding.
8. When the cable is required to make a 90 degree turn, simply bend cable in the direction needed. Use a AT1-C hold down clip on each side of the bend.
9. The end of line (E.O.L.) resistor is terminated on the end of the sensing cable. The EOL must be on the end of the line of sensing cable.

CRAC Installations

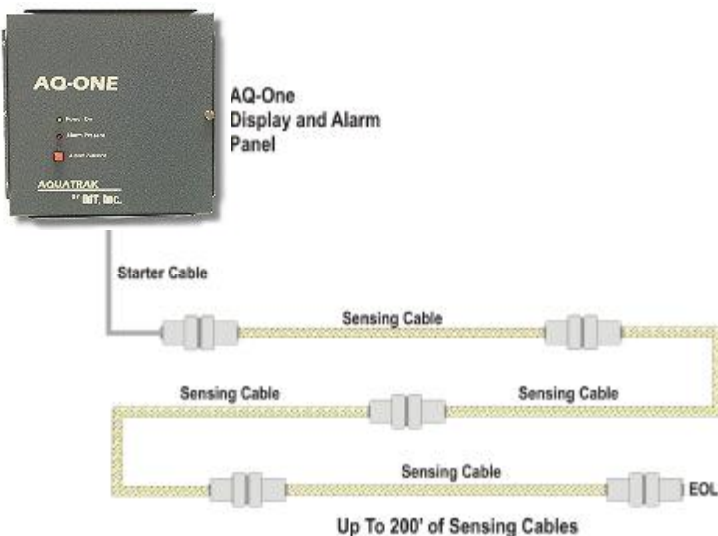
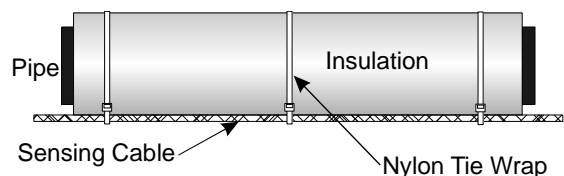
When installing the sensing cable around CRAC AC units that are down flow a safety clearance must be observed to prevent accidental alarms from moisture from the units drain pan and humidifier system. The figure below shows proper clearances.



Pipe

Installations

The sensing cable can be attached to the water piping using nylon tie wraps as shown in the figure below. This method works best on overhead piping.



TESTING SYSTEM OPERATION

Verify all field wiring prior to plugging in the power transformer. the monitoring device.

With all the sensing cable and E.O.L. resistors in place, connect power to the AQ-One. When energized, the system may go into alarm momentarily until the voltage enters a steady state condition.



The Power On led (green) will light. The Alarm Present led should not be on in a normal state.

A. Water Detection Operation

To test the AQ One zone use a damp sponge or rag at any point along the cable length. This will cause the an alarm condition. At the monitoring panel you should see the following:

1. The alarm LED come on and the audible alarm sound.
2. Press Alarm Silence button the LED remains lit. But the audible alarm is silenced.
3. Remove the sponge, or rag and the LED goes out. Note : it may take a minute or two for the cable to dry and the voltage to return to normal.
4. The relay in the AQ One module returns to the normal state and the monitoring panel returns to a steady state condition.



B. Supervision Circuit Operation

Remove the E.O.L. resistor or the cable connection at the sensing cable. The AQ One module will see an infinite resistance in the voltage loop and the relay will change to an alarm state. At the monitoring panel you should observe the following:

1. The alarm LED come on and the audible alarm sound.
2. Press Alarm Silence button, the alarm LED remains lit, but the audible alarm is silenced.
3. Re-install the resistor on the end of the sensing cable.
4. The AQ One module returns to the normal state. This may take a few seconds as the voltage returns to normal.

C. Maintenance Testing

1. Conduct a full functional test to prove the integrity of the system and the installation.
2. Use a wet sponge to wet a section of sensing cable and check the following:
 - a. The audible alarm sounds properly
 - b. The Alarm LED lights.
 - c. The Silence Alarm button stops the audible alarm.
 - d. The alarm indicator stays on until the sponge is removed and the cable dries out. (You can reduce the drying time by using a dry paper or cloth towel).

NOTE: To insure proper operation and protection, it is recommended that a Maintenance Test be conducted once every three months.

TROUBLE SHOOTING

Power Indicator "OFF".

1. Check A.C. Input Power Transformer—24 VAC 60 Hz.

Power Indicator "OFF". Units operate normally.

1. Defective Power indicator

Zone Trouble condition

1. Check E.O.L. resistor. It may have become disconnected from the end of the cable.
2. Check the cable and wiring for breaks or loose connections.

Constant Alarm Conditions (any zone)

1. Check field wiring for short circuit.
2. Make sure Water Detection Cable conductors have not come into direct contact with electrically conductive surfaces.

No Alarm condition

1. Monitoring panel has been shut down.
2. Check wiring to the Modules