ft water treatment

EcoLeak

Eco-6+ Six Zone Panel

For use with PF Detect

Please read instructions carefully and keep them in a safe place. Wiring should be carried out by a suitably qualified electrician in accordance with the applicable regulations and standards in the relevant industry. This manual is intended as a guide and FT Water Treatment bears no responsibility for damage or injury arising from incorrect installation of this and any supplementary equipment.

GENERAL INFORMATION

The Eco-6+ panel is an updated and improved version of the original Eco-6 panel, providing greater versatility and function with increased sensing capability, while keeping a compact form factor and simple-to-use, reliable layout. The Eco-6+ is capable of monitoring 6x individual zones. It can also support battery back-up for up to 24 or 6 hours when using 3.2Ah or 1.3Ah option.

PRODUCT INFORMATION

ECO 6+ POWER SUPPLY
100 to 240 Vac, 50-60 Hz, 5W

RELAYS
1x Leak relay per zone (6x total)
1x Common Leak relay
1x Common Break/Fault relay
1x Sounder relay
Type: SPDT
Rating: 5A at 250Vac/24 Vdc

MAXIMUM SENSING CABLE
50 metres of 2-core cable

MAXIMUM LENGTH OF JUMPER CABLE
300 metres (per zone)

NUMBER OF ZONES
6x individually activated zones

CIRCUIT
2-wire (PF Detect)

CABLE ENTRY AND MOUNTING
4x fixing holes for mounting
15x 20mm, 1x25mm

DIMENSIONS AND WEIGHT
247 x 245 x 85, WxHxD.
Panel-2.4kg (battery excluded)
Panel and 1.3Ah battery-3kg
Panel and 3.2Ah battery-3.6kg

WORKING TEMPERATURE RANGE
5°C to 40°C

ENCLOSURE
Powder coated steel RAL 9006 matt,
IP43 - Indoor use only

PRELIMINARY

FT Water Treatment Ltd, Unit 22 Europa Way, Britannia Enterprise Park, Lichfield, Staffordshire WS14 9TZ
+44 (0)1543 416024 www.ftwatertreatment.co.uk

STATUS LED

Power: Mains-Green
Battery-Yellow
Alarm: Leak-Red (steady
Muted Alarm-Red (flashing)
Cable Break-Yellow

AUDIBLE ALARM

90Db at 10cm

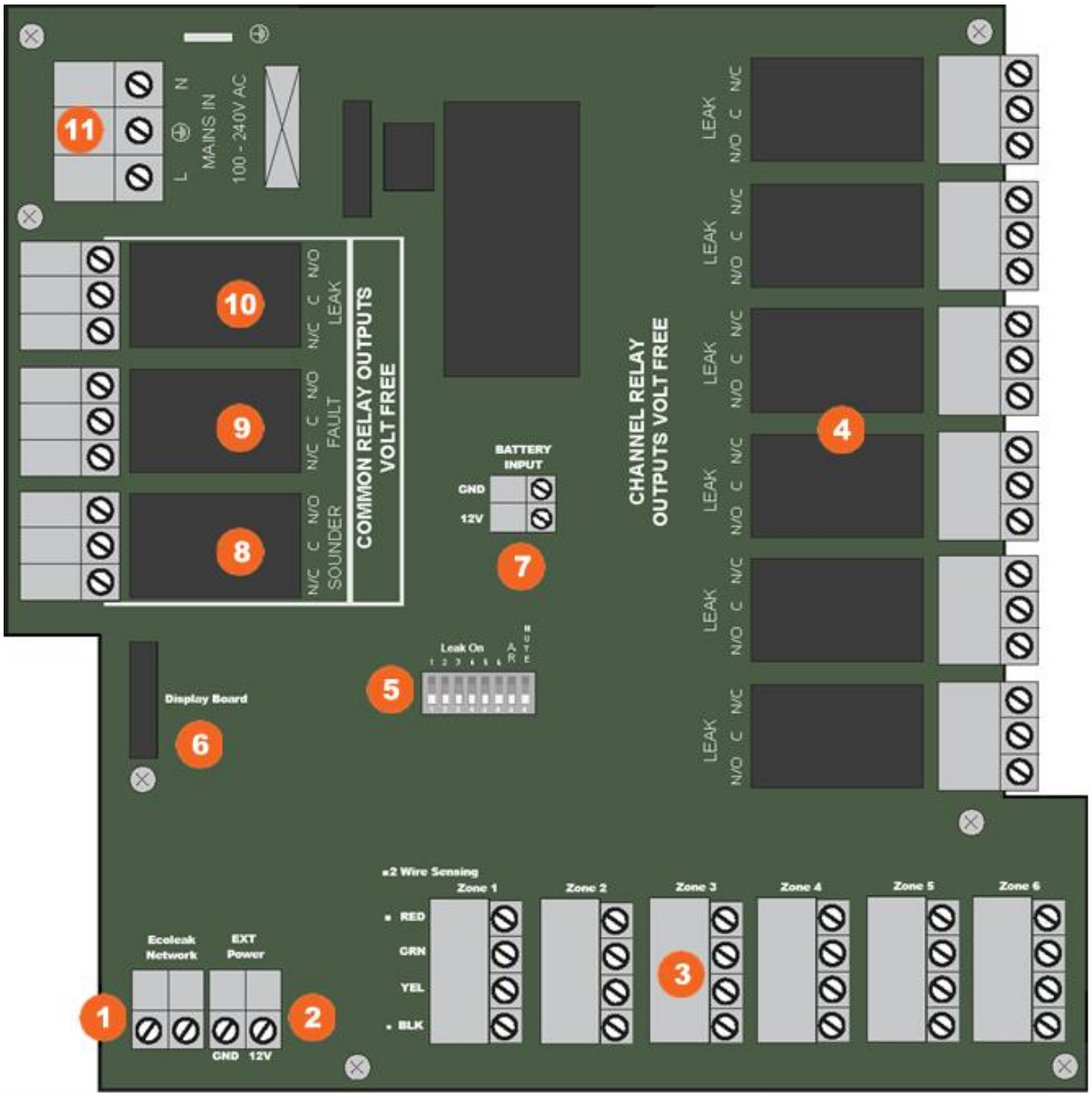
ACCESSORIES

12Vdc Accessory connector
Rating: 500Ma

BATTERY BACK-UP

12Vdc battery back-up (optional)
3.2Ah Large Battery - Up to 24hrs
1.3Ah Small Battery - Up to 6hrs

ALARM PANEL INTERNAL LAYOUT



PRELIMINARY

5. Eco-Network Connector
6. Accessory 12v Power
7. 6 Zones sensor connection
8. 6x Leak relays (1 per zone)

1. Zone enabled dipswitch
2. Display board connector
3. Battery back-up connector
4. Common sounder relay

9. Common fault relay
10. Common leak relay
11. Mains in 100-240Vac

ALARM PANEL MOUNTING

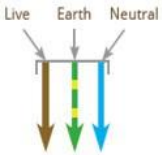
The Eco-6+ leak alarm panel should be mounted on an internal flat surface away from direct contact with water. 4 x fixing holes are provided along with several 20/25mm diametre knockouts for conduit/cable entry. To access the fixing holes it is recommended the circuit board is removed prior to mounting and any holes knocked out/drilled for conduit being fitted.

MAINS POWER AND BATTERY CONNECTION

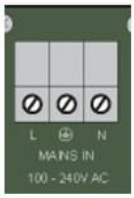
It is recommended this alarm panel be connected to 230Vac mains power via an un-switched 3A fused spur. The panel has the capability to be connected to 110 – 240Vac.

This alarm panel **MUST** be earthed.

Mains power must be isolated prior to any connection being made or altered.



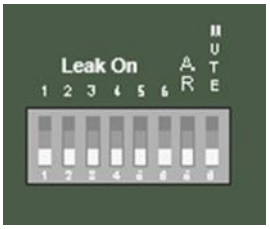
Warning Shock Hazard. Exposed Circuitry within! It is strongly recommended the power is isolated before opening the control panel door and carrying out any work within this unit.



If required ensure the optional battery pack is plugged in. Allow 24 hours for full charge. (Two battery versions are available, see section ‘Battery Backup’ for further details.)

The panel manages battery condition and automatic switching between mains and battery power. While the panel is in use the battery should be left connected at all times.

IMPORTANT SENSOR INFORMATION



ENABLING ZONES

All zones used for sensing must be enabled using the dipswitches 1-6. Zones that are not enabled will not be monitored by the panel. Any enabled zones that do not have a sensor connected will show a fault alarm.

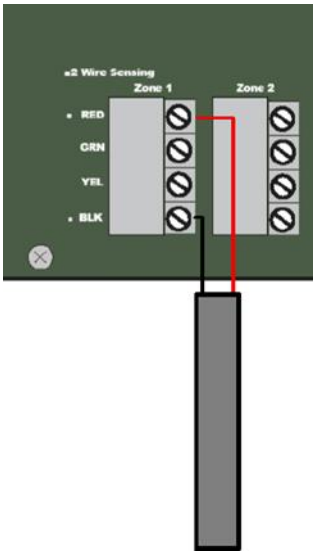
To enable a zone, simply move the dipswitch into the on (up) position.

TWO-WIRE SENSING (PF DETECT)

Two-wire systems should be connected using the red-black outer terminals only, as indicated by the white dots. Use only FT Water Treatment two-core cable. Use of other sensing devices could cause the panel to malfunction.

TYPICAL WIRING EXAMPLE

2-Core Cable



1. EcoLeak 2-core leader cable is connected as shown. The connectors are colour coded and for two core you will need to utilise black and red.

2. Place the wires in the correct connections as shown.

3. The leader cable will have a female connector on one end which is used to connect to the corresponding length of PF Detect two-wire sensing wires, with an 82 kΩ resistor built into the cable to complete the circuit.

4. Once the wiring has been completed successfully, you can select which zone you would like to operate using the onboard dipswitch function.

Warning Shock Hazard! Caution 230v mains voltage could be present at these relays that may require isolation elsewhere.

Leak relays 1to 6 operate when a leak is detected within their respective zone

There are three 'common' relays: Leak, Break, Sounder

- The common leak relay operates when any of the six zones goes into leak alarm
- The common break relay operates when a cable break is detected on any of the six zones or power is lost* to the panel.

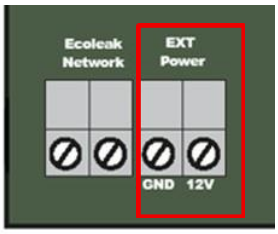
***Note**: For loss of mains power, if the optional battery pack is plugged in and charged, the fault relay can be reset and the system will continue to monitor for leaks and cable break on battery power until the backup battery discharges or mains is restored.

The common sounder relay is primarily for the connection of external sounders. It will operate with both leak and break alarms. Pressing the mute or reset button on the panel will reset this relay.

Leak and fault relays will only reset when the leak/fault has been rectified and the reset is operated either by pressing the button, or automatically by the panel. The Mute button has no effect on leak or break relay output.

IMPORTANT! Relay output terminals refer to the panel in its 'off' state. The Break/Fault relay is energised when the panel is mains powered. Once power is applied to the panel the normally open and closed terminals are reversed.

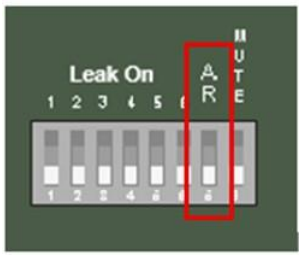
ACCESSORY POWER



The Eco-6+ has a 12Vdc output for the powering of accessories such as the Remote Alarm Panel. The maximum load available from this is 500mA. Exceeding this may cause damage to the panel.

Note: Accessory load may reduce battery back-up performance.

AUTO RESET



By default, all alarms must be manually reset. The Eco-6+ can be set to auto reset. This is set on dipswitch 7. Enabling this will mean all alarms will automatically reset once the leak or fault has been cleared without any input from the user.

Important: Alarm history is not retrievable from the Eco-6+, auto reset should only be enabled if the panel is connected to a BMS or master panel that can record alarm events.

BUZZER DISABLE

The internal buzzer can be disabled by using dipswitch 8. Enabling this dipswitch will only mute the internal buzzer. All relays and LEDs (including the sounder relay) will operate as normal.

BATTERY BACK-UP

The Eco-6+ can also support battery back-up for up to 24 hours or 6 hours when using 3.2Ah or 1.3Ah option, please see below for optional codes:

Code: 6135 Large Capacity battery – up to 24 hours
Code: 6136 Small Capacity battery – up to 6 hours

The battery should be connected into the correct terminal using the leads supplied, taking care to connect the red + terminal of the battery to 12v and the black – terminal to GND. The panel will automatically charge the battery, monitor for mains failure, switch to battery power and back to mains power as required. While the panel is in use the battery should be left connected at all times.

The built-in battery monitoring system will automatically cut off or will not engage battery power if the battery has drained below safe use limits.

Important: Incorrect connection or third-party batteries/leads may cause irreparable damage to the panel.

NORMAL OPERATION

After connections are complete, supply power to the unit. If the sensing circuit is complete and free of leaks or other problems, the panel will run a function test and then the green mains power LED only will remain illuminated.

Testing the alarm panel after supplying power and routine maintenance procedure:

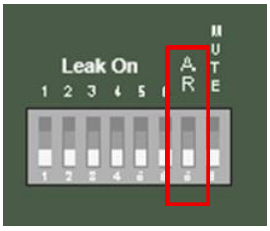
- When power is supplied, the GREEN LED illuminates for mains power.
- Place water on the sensing wires cable and the Eco-6+ panel should report a leak alarm condition in the corresponding zone.
- Verify that the RED alarm LED is illuminated and the zone is correct.
- Confirm both zone leak and common leak relays operate for all enabled zones.
- The buzzer will sound and will only be silenced when the mute button is pressed or system is reset. Reset is only possible once the cables are dried.
- To test the fault alarm operation, disconnect the cable from the leader/jumper cable. The Eco-6+ panel will report a fault alarm in the corresponding zone.
- Verify the Amber alarm LED is illuminated and the zone is correct.
- Confirm fault relay operates on all zones.
- Buzzer mute and reset in same method as for a leak alarm. Reset is only possible once the fault has been repaired.
- Turn off mains power (after allowing sufficient time for battery charge). Green power light will switch to amber to indicate panel is running on battery power. If battery LED is flashing or does not illuminate, battery power is too low for proper operation and will require further charging.
- While on battery power, ensure leak and fault functions operate correctly.

If the Eco-6+ panel does not appear to operate properly, contact your supplier for assistance.

RESETTING THE UNIT

When the cables are dried or repaired, press the reset button. The unit is designed so an alarm can be muted, but the panel **cannot** be reset until the leak or fault has been rectified.

If auto reset is enabled, the system will still not reset until the leak/fault has been rectified.



CLEANING THE MODULE

If it is necessary to clean the outside surface, use a dry cloth or sponge. Do not use solvents or abrasive cleaners. Do not open the enclosure if it is wet (risk of electrical shock).

FUSE REPLACEMENT

The panels mains input is protected by a 1A, 250-V fuse. Use no other type of fuse or the Eco-6+ panel could be damaged or could fail to perform properly.

Warning Shock Hazard. Exposed circuitry within! It is strongly recommended the power is isolated before carrying out any work within the unit.

STORAGE AND HANDLING OF CABLE

Despite their rugged construction, EcoLeak must be handled in a manner appropriate for a sensing device or they may be damaged and require replacement. Therefore, you should follow some basic rules for storing and handling all sensing cables:

- Store spare cable in its original packaging or container in a clean, dry place until ready for installation.
- Schedule cable and probe/sensor installation after all mechanical, plumbing and electrical work has been completed.
- Clean the area where the cable is to be installed and remove any obvious debris or other sources of contamination.
- Do not solder or weld near the hose without providing protection from heat, solder flux, or weld spatter.
- Do not drop tools or floor tiles on the hose; sharp and heavy objects may damage the hose.
- Avoid walking or stepping on the cable or hose. Provide shielding (for example, a half shell or plastic pipe or upturned cable tray) where additional protection is necessary.
- Do not use insulation tape or similar to secure sensing wires (some tapes and adhesives absorb moisture) or use solvents that could eventually cause an alarm.

FINAL COMMISSIONING CHECKLIST

1. Complete a system inspection in the presence of the owner.
2. Ensure a plan showing the location of the zone and sensor is available.
3. Check that the following information is clearly visible adjacent to the alarm module:
    a. “In case of alarm” instruction
    b. Location of the system “as fitted drawing” in case it is not installed adjacent to the alarm module
    c. Name and contact number of the person responsible for operating the system
    d. Supplier’s contact name and contact number, or details of the installation/maintenance company
4. Hand over these installation, operating and maintenance instructions.
5. Make the owner aware that it is strongly recommended to perform a system check at regular intervals, as a minimum once every 12 months.

ROUTINE MAINTENANCE AND TESTING

Perform a functional check per the following procedure at a minimum of 12-month intervals. Repair or replace all damaged wiring. Such a check will identify conditions that adversely affect the capability of the system.

Apart from fuse replacement, there are no field repair procedures for the Eco-6+ panel. If the module fails to perform the functional tests, it must be returned to your supplier for repair or replacement.

Contact FT Water Treatment for further information on service and maintenance support.

ROUTINE TEST PROCEDURE

Should be carried out as initial setup procedure as set out above.

Important Note: This may cause external equipment to shut down or go into alarm if devices are connected to the leak and fault relay contacts.

TROUBLESHOOTING

POWER

Problem: Green mains power LED does not illuminate
Possible Cause: No power to alarm panel. Mains or internal fuse blown.
Action: Confirm power supply is live and switched on, check 3A fuse within spur, replace if necessary. Verify mains power present at mains terminals of panel. Check internal 1A fuse, replace if necessary. If panel remains inoperative please contact supplier.

RELAY OUTPUTS

Problem: No power from the relay
Possible Cause: Relays are volt-free contacts. No power available from them.
Action: Rewire to use relay as a switch from an external power source.

FAULT ALARM

Problem: Fault output to control panel but no fault indicated on zones.
Possible Cause: Mains power lost to panel.
Action: Check mains power is connected and turned on. Check fuses. Test and replace as necessary.

Problem: Fault indicated on one or more zones, but no obvious fault found.
Possible Cause: Loose connections on circuit.
Action: Check all connections.

Problem: Fault indicated but no obvious fault found.
Possible Cause: Short to earth on circuit.
Action: Check cables are not earthed. Pins on probes should be positioned not touching metal surfaces. Cable not positioned running over sharp metal surfaces (drip tray edges, false floor support pedestals, etc.).