LUMINOR™
ENVIRONMENTAL

LUMINOR™
BLACKCOMB
OWNER'S MANUAL

EQUIPMENT MODULES

Operation & Installation Instructions

illuminating technologies for life

Table of Contents

CAUTION: The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.

Children should be supervised so that they do not play with the appliance.

*Modules not available in all markets.
*These instructions are available in soft copy via email from Luminor Customer Service.

EMULATOR MODULE

MODEL # MOD-EMU

The Emulator module comes with a male IEP connection (Infinite Expandability Port). Prior to start-up, first ensure all the toggle switches for the "Module Alarms" and "Lamp Alarm" are in the OFF (toggle up) position. Plug the Emulator connector into the IEP on the BLACKCOMB/HO controller, then plug in the controller power cord.

To Emulate a particular module failure, toggle the corresponding switch to the ON (toggle down) position. The alarm can be cleared by returning the switch to its OFF (toggle up) position. The device also can emulate the UV intensity reported by a UV sensor module. Turning the right "UV" knob in the clockwise direction will increase the intensity, while turning it counterclockwise will decrease the intensity. Please note that to see all the capabilities of the sensor, you will need to cycle the intensity through the range of 49 through 66 %. The "Days Remaining" cycle can also be adjusted by turning the left "Days" knob. The emulator module must only be supplied at SELV.

*For dealer use only. Not available for sale to general public.

BLACKCOMB Controller

IEP connection

BLACKCOMB-HO Controller

IEP connection

REMOTE ALARM MODULE

MODEL # MOD-RAM

BLACKCOMB Controller

IEP connection

BLACKCOMB-HO Controller

IEP connection

Sensor IEP Installation

IEP connection

The Remote Alarm module comes with both a male and female IEP connection (Infinite Expandability Port). To initiate the module simply plug the male plug into the IEP on the Standard or High Output controller, or into any other BLACKCOMB module that contains an IEP (sensor, 4-20 mA module, solenoid module, etc.) and then restart the system.

Figure 1
Secure module to wall with screws

The Remote Alarm module is a pair of dry contacts and can be used to connect the controller to a PLC based system, an alarm buzzer (or light), or an "OK" light. Maximum contact rating is 30V / 1A. If the connected device (eg. light or buzzer) exceeds the 1A current rating then use the Remote Alarm Module to control an appropriately rated relay.
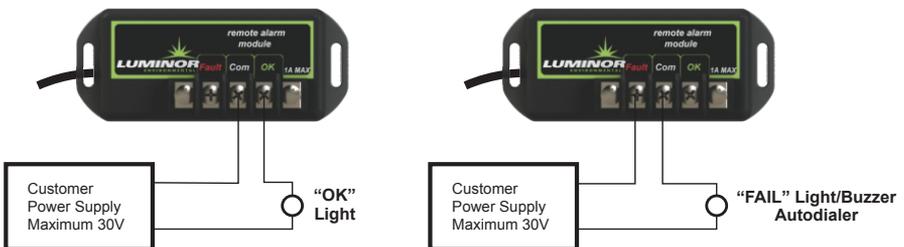
The remote alarm module must only be supplied at SELV. Disconnect power supply before servicing.

IEP

Figure 2
IEP connection

Customer Power Supply Maximum 30V

"OK" Light

Customer Power Supply Maximum 30V

"FAIL" Light/Buzzer Autodialer

4-20 mA MODULE

MODEL # MOD-420

BLACKCOMB Controller

IEP connection

BLACKCOMB-HO Controller

IEP connection

Sensor IEP Installation

IEP connection

The 4-20 mA module comes with both a male and female IEP connection (Infinite Expandability Port). To initiate the module simply plug the male plug into the IEP on the controller, or into any other BLACKCOMB module that contains an IEP (sensor, remote alarm, solenoid module, etc.)

The 4-20 mA module must only be supplied at SELV. Disconnect power supply before servicing.
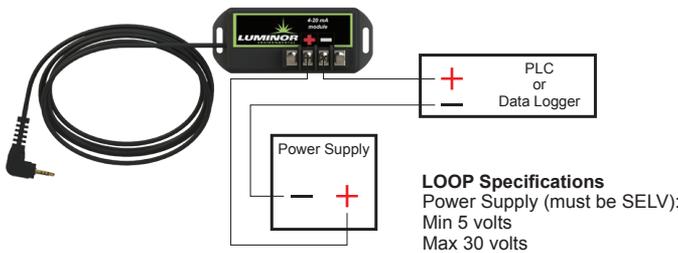
Connect "LOOP" Connections as follows:

Figure 1
Secure module to wall with screws

IEP

Figure 2
IEP connection

PLC
or
Data Logger

Power Supply

LOOP Specifications
Power Supply (must be SELV):
Min 5 volts
Max 30 volts

SOLENOID MODULE

MODEL # MOD-SOL1 (in 110V, NEMA 5-15 plug)
MOD-SOL2 (in 230V, CEE 7/7 plug)
MOD-SOL3 (in 230V, BS 1363 plug)
MOD-SOL4 (in 230V, AS/NZS 3112 plug)

The Solenoid Module is designed to connect a NORMALLY CLOSED line voltage solenoid valve to the controller. It is possible to use a 12V or 24V normally closed solenoid by replacing the AC power cord. Note that the maximum contact rating is 240VAC (50-60Hz) / 30VDC / 2A.

LOCATION

Step 1) Find a suitable location on the wall for the solenoid module. The module must be installed close enough to the controller, or the UV sensor to be able to plug in the male IEP connector. The module must also be installed close enough to the actual solenoid valve and this distance will be dependent on the cord length of the particular solenoid valve that is used.

Figure 1
Secure module to wall with screws

Step 2) Pick a location for the solenoid valve and install as per the manufacturer's directions. The solenoid module requires bare leads for connection to terminal blocks, so if the solenoid cable has a plug attached, remove the plug and strip the wires to a suitable length.

INSTALLATION

Step 1) Make sure the solenoid valve cable is NOT plugged into the electrical outlet. Insert the solenoid valve cable through the center hole of the middle strain relief. Connect the three electrical wires to the terminal block that is marked "SOLENOID" (see Fig. 2). Connect the ground wire in the position marked "GND", the line voltage wire in the position marked "L1" and the neutral wire in the position marked "N". Typical wire colour configurations are marked directly on the circuit board to the left of the SOLENOID terminal block to aid in this process (see Fig.3) If you are unsure of the correct wiring configuration for you particular solenoid valve, please contact an approved electrical contractor. Once all the line voltage connections have been made, tighten the strain relief nut to secure the cable to the solenoid module.
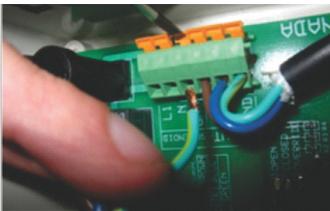
Figure 2
Solenoid Wire Installation

Figure 3
Wiring Colour Guide

BLACKCOMB Controller

IEP connection

BLACKCOMB-HO Controller

IEP connection

Sensor IEP Installation

IEP connection

Step 2) Plug the solenoid valve into the applicable electrical outlet. At this stage, the functionality of the solenoid valve can be tested by pressing the solenoid test button located on the upper left of the circuit board. Manually depressing (and holding) this button will complete the electrical circuit and will open the normally closed solenoid valve. You should be able to hear the activation of the solenoid valve at this stage to ensure the valve is functioning properly (see Fig. 4).

Step 3) Make sure your UV controller is unplugged from the power source. Once all these connections have been made, affix the male IEP plug of the solenoid module cable into the IEP port on the controller (see Fig. 5), or any other available IEP port such as the UV sensor, 4-20 mA module or remote alarm module. It does not matter which IEP port any module is attached to, as long as they are attached.
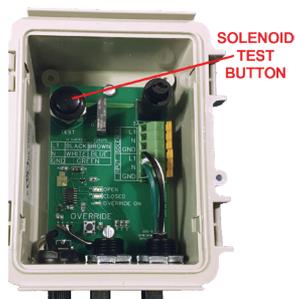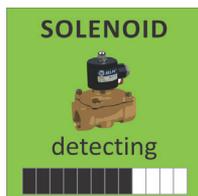
OPERATION

Step 1) Plug the BLACKCOMB controller into the power source and make sure the solenoid module is activated on the controller. During the start-up sequence, the SOLENOID MODULE screen will indicate a "initialized" when the module is activated properly (see Fig. 6).

Figure 4
Solenoid Test Button

Figure 5
IEP connection

Figure 6
Solenoid Activation Screens

detecting the presence of a solenoid module

if solenoid module is present, returns this screen

if solenoid module is not present, returns this screen

Step 2) The controller will only notify you when there is a failure mode whereby the solenoid module (and connected solenoid valve) will be activated. On the BLACKCOMB 5.1 system, the solenoid module will be activated (shutting off the flow of water) upon LAMP FAILURE (see Fig. 7). To remedy this, replace the UV lamp and restart the system as per the directions outlined in the Owner's Manual.

Step 3) On the BLACKCOMB 6.1 system where a UV sensor is installed, the solenoid module will be activated (shutting off the flow of water) upon a LOW UV condition (less than 50%) (see Fig. 8). To remedy this, you will need to address the reason for this low UV condition which may be due to a dirty UV sensor and quartz sleeve, a lamp that is not emitting enough UV energy, or a change in the water quality. Please refer to the UV systems Owner's Manual for corrective action procedures.
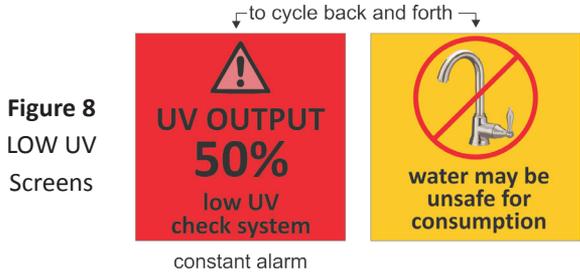
DANGER

lamp failure replace lamp

Figure 7
LAMP FAILURE Screen

to cycle back and forth

Figure 8
LOW UV
Screens

UV OUTPUT
50%
low UV
check system

water may be unsafe for consumption

constant alarm

Step 4) To determine what position the solenoid valve is currently in, the solenoid module incorporates three lights on the circuit board (see Fig. 9). When the solenoid is in the OPEN position a green light will appear on the circuit board beside the word "OPEN". When the valve is CLOSED, a red light will appear on the circuit board beside the word "CLOSED". And when the solenoid is in an OVERRIDE position, an amber light will appear on the circuit board beside the word "OVERRIDE ON".

Figure 9
Solenoid Status
(Colour)

SOLENOID OPEN (green light)

SOLENOID CLOSED (red light)

SOLENOID OVERRIDE (amber light)

> **Boil Water Advisory: If any failure occurs on a BLACKCOMB UV system, the water must not be used for human consumption until the system is returned to a safe operational mode. If the water is used for human consumption during this period, the water must be boiled (minimum 20 minutes at a full boil) prior to consumption.**

EMERGENCY BYPASS

In a case where the solenoid valve has been activated (valve is closed and no water is allowed to flow), the solenoid module has the ability to bypass the solenoid valve in case of an emergency need of water. To initiate this bypass, depress the button labeled "OVERRIDE" located in the lower left portion of the circuit board (see Fig. 10)

Figure 10
Solenoid Bypass
Button

Once this button has been pressed, the system will remain in this override mode regardless of whether or not the condition causing the solenoid activation has been remedied or not. To reset the system, the power to the controller must be shut off and restarted. While in this override mode the controller will intermittently display a red "SOLENOID OVERRIDE" screen (see Fig. 11).

Figure 11
SOLENOID OVERRIDE
Screen

DISABLING EMERGENCY BYPASS

In certain regulated applications, the availability , and use, of the emergency bypass feature may be in violation of the local, state/provincial codes. If this is the case, the bypass feature can easily be disabled by physically removing the bypass button. To accomplish this, carefully use a pair of needle nose pliers and physically remove the actual bypass button (marked "OVERRIDE") from the circuit board .

OTHER FAILURE MODES

In the event there is an issue with the solenoid connection from the IEP cable to the controller, the system will register a "SOLENOID FAILURE" screen on the controller (see Fig. 12).
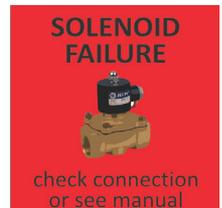

Figure 12
SOLENOID FAILURE
Screen

CAUTION: BEFORE PERFORMING ANY WORK ON THE SOLENOID MODULE, THE POWER CORD MUST BE DISCONNECTED FROM ITS POWER SOURCE (WALL PLUG).

WATER QUALITY MONITOR MODULE

MODEL # MOD-SHERPA

SHERPA Transmitter

50m/164ft
(Note 2)

SHERPA Remote Display

The module comes with a SHERPA Transmitter and a SHERPA Remote Display. The Transmitter connects to a BLACKCOMB and BLACKCOMB-HO controller and transmits the controller's status wirelessly to the Remote Display. Every Transmitter and Remote Display is paired together and uses encryption to create a reliable and secure communication link between the two devices. Every Transmitter supports up to five Remote Displays. Additional Remote Displays can be purchased and installed separately. Refer to 'Pairing an Additional Remote Display' for additional Remote Display installation.

BLACKCOMB Controller

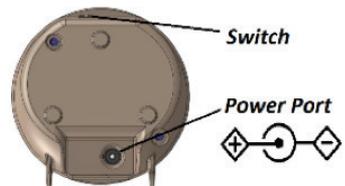IEP connection

BLACKCOMB-HO Controller

IEP connection

Sensor IEP Installation

IEP connection

Installation

Step 1) Power off the BLACKCOMB or BLACKCOMB-HO controller.

Step 2) Plug the male plug of the SHERPA Transmitter into the IEP (Infinite Expandability Port) on the controller, or into any other LUMINOR module that contains an IEP (sensor, 4-20 mA module, solenoid module, etc.) and then restart the system [Note 1].

Step 3) To Receive the BLACKCOMB or BLACKCOMB-HO controller's status on the SHERPA Remote Display, plug the AC/DC wall adapter into the Power Port on the SHERPA Remote Display (5V Max) and slide the switch to the ON position.

Back of Remote Display

Switch

Power Port

Operation

SHERPA Remote Display		
Status LED's	Good (Green)	<u>Water is safe for consumption</u>. No Active Alarms.
	Caution (Yellow)	<u>Water may not be safe for consumption</u>. Active Minor Alarm, check system for details.
	Alarm (Red)	<u>Water is NOT safe for consumption</u>. Active Major Alarm, check system for details.
Comm. LED	OFF	Communication is working.
	Flashing	Communication is NOT working. *Remote Display is Out-of-Range[2], Transmitter is disconnected OR controller is powered off.*
	ON	Remote Display is attempting to pair with a local transmitter in proximity.
Power Switch	I	Remote Display Powered ON
	O	Remote Display Powered OFF

NOTE 1: Not Compatible with MOD-RAM. The SHERPA gets detected as a "Remote Alarm" on BLACKCOMB or BLACKCOMB-HO controllers during the start-up sequence.

NOTE 2: The Wireless Range can vary based on the installation environment; objects, walls and metal obstacles can interfere and degrade the wireless signal. Best suited for residential applications.

Pairing an Additional Remote Display

To pair an additional Remote Display to a currently installed Transmitter:

Step 1) Power ON the Additional Remote Display within 5m (15ft) proximity to the transmitter; by simply plugging the AC/DC wall adapter into the Power Port on the Remote Display and sliding the switch to the ON position.

Step 2) The Remote Display performs self-pairing with the local transmitter. Once paired the Communication LED on the Remote Display will turn OFF and a Status LED will turn ON.

Step 3) Once pairing is complete, relocate the Remote Display to any location[2].

UV CONCIERGE MODULE

MODEL # MOD-APP

The UV Concierge module connects to your wireless network (WiFi) and transmits your UV system's status to the uvconcierge.com webpage. You can then view your status online from anywhere you have internet access, and receive email or SMS notifications of your system's status on your mobile device.

BLACKCOMB Controller
IEP connection

BLACKCOMB-HO Controller
IEP connection

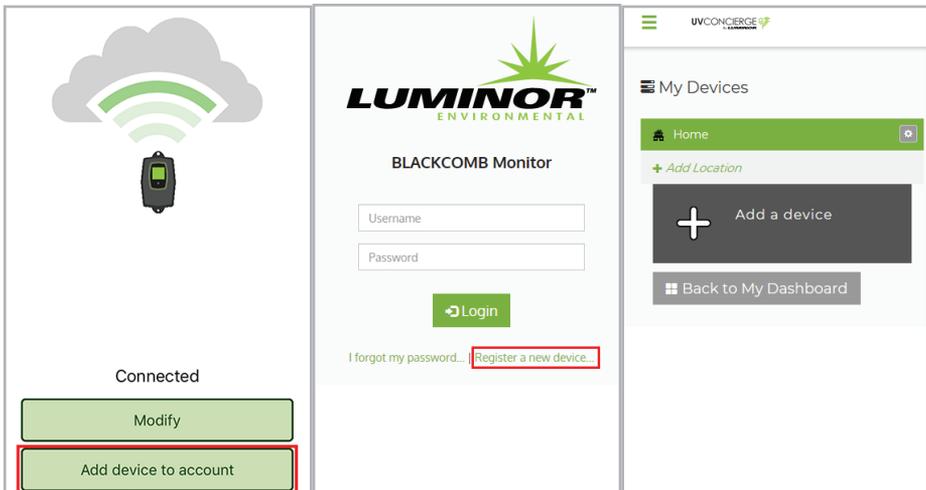**Sensor IEP Installation**
IEP connection

The UV Concierge module comes with both a male and female IEP connection (Infinite Expandability Port). To initiate the module simply plug the male plug into the IEP on the Standard or High Output controller, or into any other BLACKCOMB module that contains an IEP (sensor, 4-20 mA module, solenoid module, etc.), plug in the included power adapter to the wall and your UV Concierge module, and then restart the UV system.

Once the system is initiated as above, you will need to provide your WiFi login credentials to the system. Install the UV Concierge app on your iOS or Android device by searching for it in your iOS App Store or Google Play store, or scan the QR code below:

From the app, click the Connect Device button, and follow the prompts to select your WiFi network and enter in your password.

Once the app reports the module is connected, add the device to your account by one of the three following methods:

If you do not currently have a uvconcierge.com account: From the UV Concierge app, click "Add device to account". This method will automatically populate your module key for you. OR

Make note of the Module Key from the label on your UV Concierge module. Go to uvconcierge.com and click the "Register a new device" link. You will need the module key to successfully register your module.

If you currently have a uvconcierge.com account: Follow one of the above two options OR log into your account, select (or add, then select) the location you'd like to have the device, then click the "Add a device button". You will need the module key to successfully register your module.

App Troubleshooting

The app does not find my UV Concierge module
Ensure you have plugged your UV Concierge module into the power outlet using the included power adapter.

I'm stuck at "Waiting for system to complete startup"
You must restart your system by unplugging and plugging in the controller power cord after plugging in the UV Concierge module. Once the controller detects the UV Concierge module and the startup routine is finished, you will automatically pass this section. After startup is complete, you can press and hold the controller button for 3 seconds to see what modules it currently detects. If the controller is not detecting the UV Concierge module, check your IEP connections. Connect one module to the controller at a time to test each module individually. With multiple modules, the order of the daisy chain (which device is plugged in to which) does not matter.

I get a "Pairing Failed" error
After the app finds your device, you must enter in the 6 numbers displayed on the controller into your app, including leading zeros. If you are still stuck, try restarting the UVConcierge module by unplugging it and plugging it back in. Try restarting your iOS/Android device also. If the issue persists, try with another iOS or Android device.

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