

## Common problems and fault finding with the Microtec Light Control Modules.

NOTE: The LAB can accept 12V or 24V signal so any reference to 24V in the documentation is interchangeable with 12V depending on the crane system.

| Symptom                                             | Cause                                                                       | Remedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| Red light and buzzer are active all the time.       | Input polarity is incorrectly set.                                          | Place the crane in a normal safe working state. Using a volt meter check the voltage at each of the connected input terminals. Inputs with a voltage over 3V (1V if set to high sensitivity) must have their corresponding input polarity switch set to ON. All other terminals including those not connected should be set to OFF.                                                                                                                                          |
| Red light and buzzer are active all the time.       | The unit is a latching (Thiess) specification module and requires a reset.  | Ensure that the input polarities are set correctly and no alarm / override conditions exist. Use the supervisor's key supplied to reset the module.                                                                                                                                                                                                                                                                                                                          |
| Red light and buzzer are active all the time.       | Confusion over Pull Up resistor use.                                        | If a pullup resistor is required and the input is <b>normally switched to GND</b> the input polarity must be set to OFF (normally low) <i>Pull-Up resistor will have input voltage pulled down to GND.</i><br>If a pullup resistor is required and the input is normally open the input polarity must be set to ON (normally High) <i>Pull Up resistor will lift the input voltage High.</i>                                                                                 |
| Pull up resistors do not work.                      | Pull up resistors in the module are fighting an external resistance to GND. | The Pull-Up resistors in the module will lift the input voltage above the "Normal" 3V trigger level with a resistive load to GND of 8200 Ohms and above. With the input sensitivity set to "High" 1V trigger level the resistive load to GND can be dropped to 2200 Ohms. These values only apply to a 24V system.                                                                                                                                                           |
| Red light and buzzer activate unexpectedly.         | The input is receiving signals in error.                                    | The output from an override switch is often influenced by the load computer. There is a common requirement to fit a diode in between the override switch and the computer to supply the signal <b>to</b> the computer but block interference <b>from</b> the computer. The signal to the Light Control Module can then be tapped straight from the switch terminal.                                                                                                          |
| Red light and buzzer do not activate with an input. | The input is not receiving a change in voltage.                             | Check that the input is providing a change in voltage to trigger the change in state. Occasionally an override switch must be wired slightly differently to provide a switched voltage. The GND connection for example must be swapped to the common so that the computer is supplied the GND signal when needed and the Light Control Module is supplied the GND signal at other times.<br>Check that an Input pull up resistor is not switched on and holding an input Hi. |
| Lights and or buzzer will not work, No LED          | Supply voltage and or ground not present.                                   | Check the voltage across the supply terminals (GND and +24V) there should be at least 12V present.                                                                                                                                                                                                                                                                                                                                                                           |

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| Lights and buzzer will not work, Fast flashing LED                                                             | The unit is in program mode.                                                                                                                                                          | Reconfigure the unit and switch it back into normal mode on completion.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| No LED                                                                                                         | MkI modules only display an LED in Program Mode.<br>MkII modules should flash the LED slowly all the time.                                                                            | To check the LED on a MkI unit place the module in program mode.<br>If your MkII module LED does not flash check the power connection. If the LED still doesn't flash return to Microtec for service.                                                                                                                                                                                                                                                                                                                                                                |
| Individual lights or buzzer will not work.                                                                     | Output wiring is incorrect.                                                                                                                                                           | The outputs from the LCM board can be wired to supply 24V or GND. To supply 24V to a light connected to a common GND the light must be connected to the GND and 12/24V Outputs.<br>To switch a GND connection to a light connected to a common 24V ( <i>Robway LED light</i> ) the light must be connected to 12/24V and GND Outputs.                                                                                                                                                                                                                                |
| Individual lights or buzzer will not work                                                                      | Output is damaged.                                                                                                                                                                    | The LCM is designed to drive small loads typically under 10W while being fused at 3A. Occasionally our customers wish to drive larger loads. In this case use relays to boost the output capacity of your LCM board to drive spot lights and halogen rotating beacons.<br>Try wiring the output in the other polarity which probably still works. If the output was damaged while switching 24V to a light with a common GND try wiring the light with a common 24V supply.                                                                                          |
| The buzzers on my module do not work.                                                                          | The module is possibly a latching unit.                                                                                                                                               | Latching modules are equipped with a setup timer. During this period the latching function and the buzzers are disabled. The timer starts when powered, for 10 minutes in later MkI modules and is user configurable for 1 ½ or 3 minutes on MkII modules.                                                                                                                                                                                                                                                                                                           |
| Some board inputs are connected to LED's and the change in voltage does not appear to be enough for detection. | The input sensitivity is set to low, in this state a voltage above 3V is needed to trigger the input.<br>Voltages of <b>1.6V OFF</b> & <b>0.7V ON</b> is common with LED connections. | Make note of the input polarity settings.<br>Unplug the Power connector from the module:<br>Switch <b>Mode</b> switch 1 ON & 2 OFF<br>Power the Module ON. ( <i>LED will flash rapidly</i> )<br>For each input channel that that you require <b>High 1V</b> sensitivity switch the corresponding Settings switch to <b>ON</b> turn the other Setting switches OFF<br>Switch <b>Mode</b> switch 1 OFF ( <i>LED will flash slowly</i> )<br>Set the input polarity back to their original states.<br>Done. <i>Your chosen input channels should now activate at 1V.</i> |
| The Red light and buzzer need to flash but they are steady.                                                    | The outputs are configured for steady state output.                                                                                                                                   | Make note of the input polarity settings.<br>Unplug the Power connector from the module:<br>Switch <b>Mode</b> switch 2 ON & 1 OFF<br>Power the Module ON. ( <i>LED will flash rapidly</i> )<br>For each input channel that that you need to flash switch the corresponding Settings switch to <b>ON</b> turn                                                                                                                                                                                                                                                        |

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|                                                                                         |                                                                                                                                                                                           | <p>the other Setting switches OFF</p> <p>1= Green<br/>2 = Amber<br/>3 = Red<br/>4 = Buzzer</p> <p>Switch <b>Mode</b> switch 2 OFF (<i>LED will flash slowly</i>)<br/>Set input polarity back to original states.<br/><i>Done. Your chosen outputs should now flash.</i></p>                                                                                                                           |
| My latching module is installed in a Franna and Thiess require a 90 second setup timer. | <p>If your module is a Mkl unit (Silver test Button) it will probably require re programming.</p> <p>If your module is a MkII unit (Black test Button) it will require reconfiguring.</p> | <p>Mkl<br/>Return your unit to Microtec for reprogramming. A small fee applies.</p> <p>MkII<br/>Unplug the Power connector from the module:<br/>Switch <b>Mode</b> switch 1 OFF &amp; 2 OFF for <b>90 sec</b><br/>Switch <b>Mode</b> switch 1 ON &amp; 2 ON for <b>3 mins</b><br/>Power the Module ON. (<i>LED will flash slowly</i>) <i>Done. Your new chosen timer should now be in effect.</i></p> |

For greater detail particularly with programming the Light Control Module see the **Microtec MkII Light Control Module Overview** available from [www.microteceng.com.au](http://www.microteceng.com.au).

Also available are instructions to assist in the installation of over 10 commonly used computer types and many popular warning lights.