

## From the Old to the New

### Microtec Light Control Module MkII Conversion

From August 2011 the new Microtec Light Control Modules will be available for sale in Australia. The original units will remain fully supported for repair and technical for the foreseeable future.

The purpose of this document is to compare the old and the new modules and provide an easy to understand set of instructions for conversion from the Old to the New. If you use the modules regularly this is a “must read”.

For detailed instructions specific to all Light Control Modules go to [www.microteceng.com.au](http://www.microteceng.com.au)

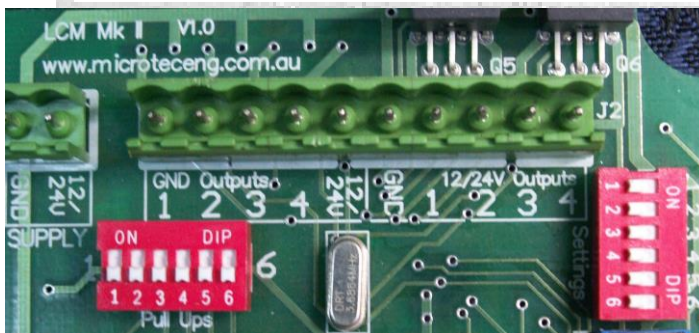
### **The Changes**

Many of the changes to the module are invisible to the user and the changes that are visible are designed to make the unit more intuitive, the core technology of the unit is identical, after all why change something that has proven so reliable? Here at Microtec we install these units as well as our customers so we understand the good and the bad points too!

### **Connections**

When you first open the box the most obvious change will be the connector arrangement. The basic positions are identical and the input connector remains the same, but the output and power connectors have been separated. You will notice that the output connector is longer and the print on the board clearly divides the connector into 2 halves. The first half provides connection to switched GND and a common supply terminal. The second half provides connection to switched supply and a common GND terminal.

*Fig.1 Output Connector.*



The supply connector is separated.

Switched GND outputs and common supply feed to the Left of the output connector.

Switched supply outputs and common GND feed to the Right of the output connector.

Lights may be connected to both the switched supply and switched GND simultaneously to increase output options.

**Output Channel Allocation**

A further change has been made to the output channel - external warning light colour allocations to make the module more intuitive and easier to remember.

*Fig.2 Output Channel To Light Colour.*

Light Control Module Output Channel	1	2	3	4
MkII LCM Light Colour	Green	Yellow	Red	Buzzer
Original LCM Light Colour	Red	Yellow	Green	Buzzer

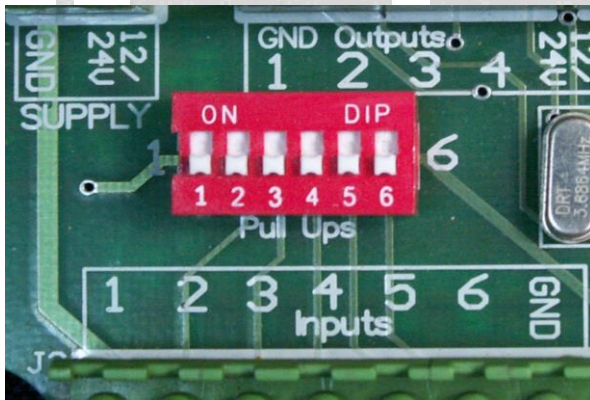
**Input Channels**

The input channels of the module remain largely the same with the minor exception that all 6 channels are now identical electrically and have been improved to impose an even lower load on external circuits.

All input channels are now fitted with individually switchable pull up resistors to simplify installation and improve input versatility.

The logical function of the input channels remain largely the same with the exception that input 1 now triggers the Yellow 90% aspect of the external warning light in stead of input 3, all other inputs trigger the Red & Buzzer.

*Fig.3 Individual Input Channel Pull Up Switches.*



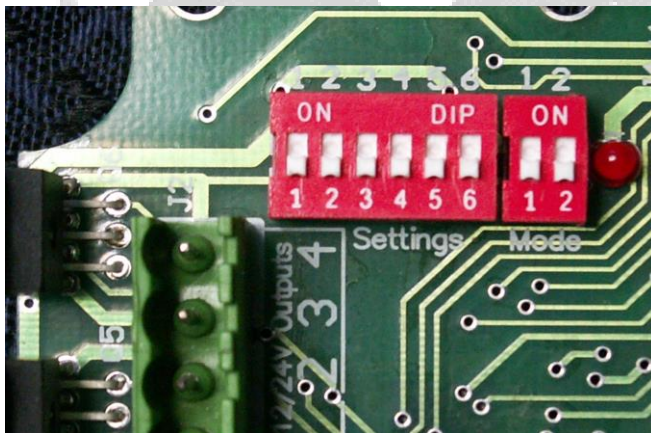
Each of the 6 input channels is now equipped with a Pull Up Resistor that is easily switched into circuit as required.

## Configuration / Programming

It is the configuration aspect of the MkII module that provides the greatest number of changes from the original module, although the changes are largely to improve versatility and be more intuitive in use.

Configuring your MkII module is still performed by selections on miniature DIP Switches. The new system uses 2 switches:- Mode and Settings.

*Fig.4 Configuration Switches.*



The Configuration aspect of the MkII module provides the greatest number of changes.

The Mode switches select the Configuration parameter, Eg. Input Sensitivity.

The Settings switches enter the configuration.

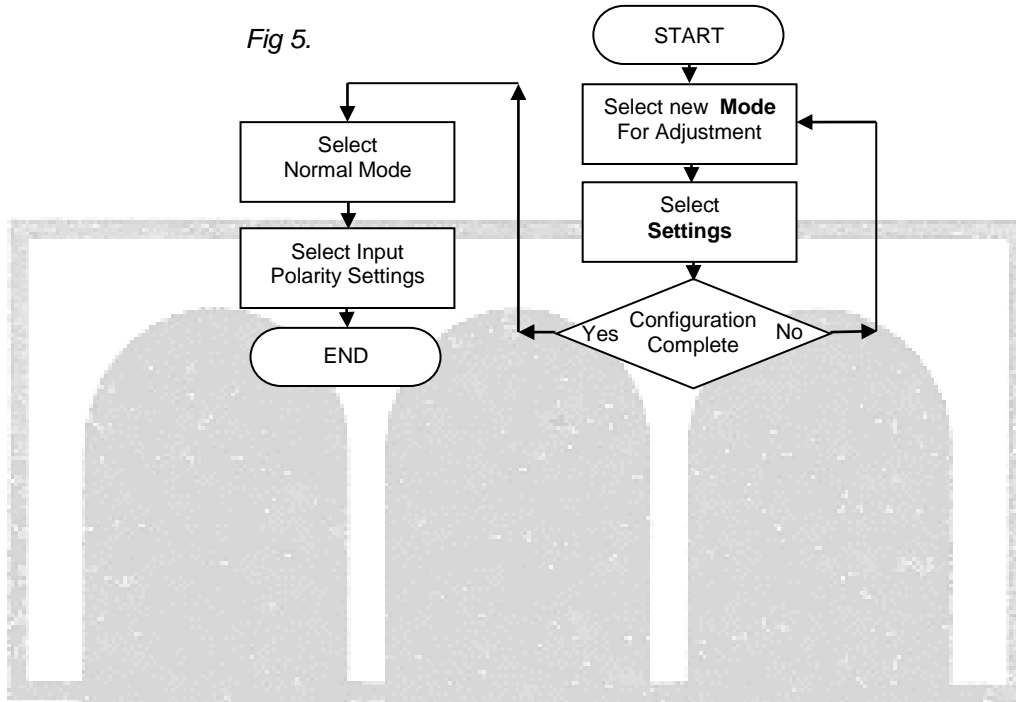
The current Mode is indicated by the flash pattern of the LED on the right.

Each configuration is performed by selecting the appropriate Mode, the required changes are then entered into the Settings switches. The current Settings switch states are saved into memory when the Mode is changed.

### ***Module Configuration Flow Chart.***

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Fig 5.



**Switch Configuration Table.**

Fig. 6

Operation Mode LED pattern	Mode Switch		Settings Switch On Each Channel	Settings Switch Off Each Channel
	1	2		
Normal (Input Polarity) Flash 1 second	O ff	O ff	Input Normally High (1 - 6)	Input Normally Low (1 - 6)
Input Sensitivity Pulse 1/4 second	O n	O ff	Input High Sensitivity 1V (1 - 6)	Input Normal Sensitivity 3V (1 - 6)
Output state Pulse 1/4 second	O ff	O n	Output Flash (1 - 4)	Output Steady (1 - 4)

**Input Polarity**

The input polarity settings are the same as the old module.

**Input Polarity is selected while the module is in the normal running Mode** as indicated by a 1 second flash from the LED. In this Mode the input polarity of all channels is selected directly on the Settings Switches and changes take immediate effect. See the final 2 steps in Fig.5 Module Configuration Flow Chart.

**Note important change.**

The old module design had a single fixed pull up resistor on the channel 6 input, when not in use the input polarity of input 6 had to be set to Normally High (ON). The other 5 channels did not have the pull up resistor so when not in use the input polarity had to be set to Normally Low, this caused of some confusion.

All MkII module input channels are identical. Unused input channels should be set to Normally Low input polarity (Off), *providing that input channel Pull Ups are turned off.*

Instructions written for the old module will show the channel 6 input polarity set to Normally High (ON) even when the input is not connected. When using the MkII module input 6 must be set to Normally Low (OFF) when not connected.

**Legacy Instructions**

The many similarities between the original and the MkII Light Control Modules means that legacy instructions are easily adapted to the MkII modules.

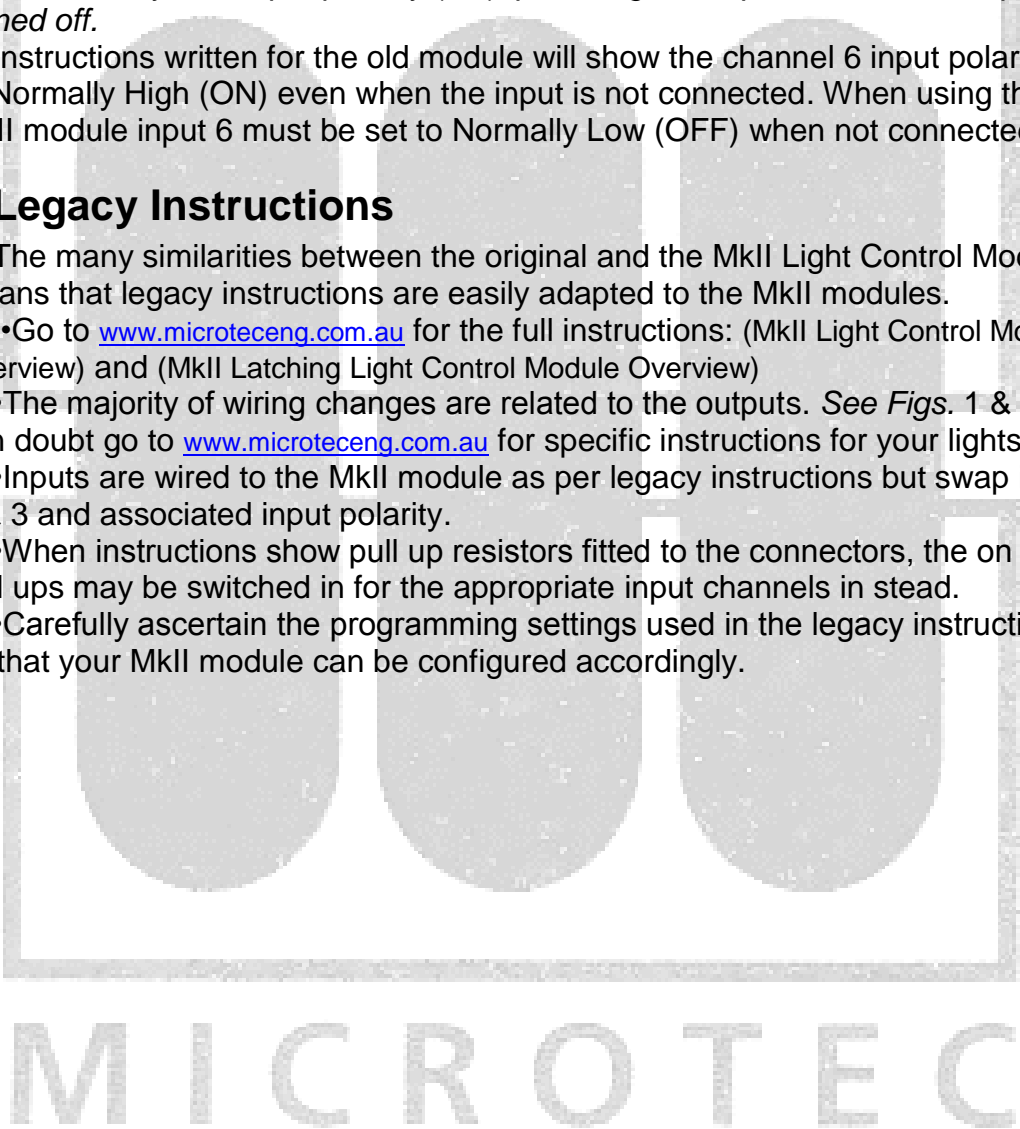
- Go to [www.microteceng.com.au](http://www.microteceng.com.au) for the full instructions: (MkII Light Control Module Overview) and (MkII Latching Light Control Module Overview)

- The majority of wiring changes are related to the outputs. See Figs. 1 & 2. If in doubt go to [www.microteceng.com.au](http://www.microteceng.com.au) for specific instructions for your lights.

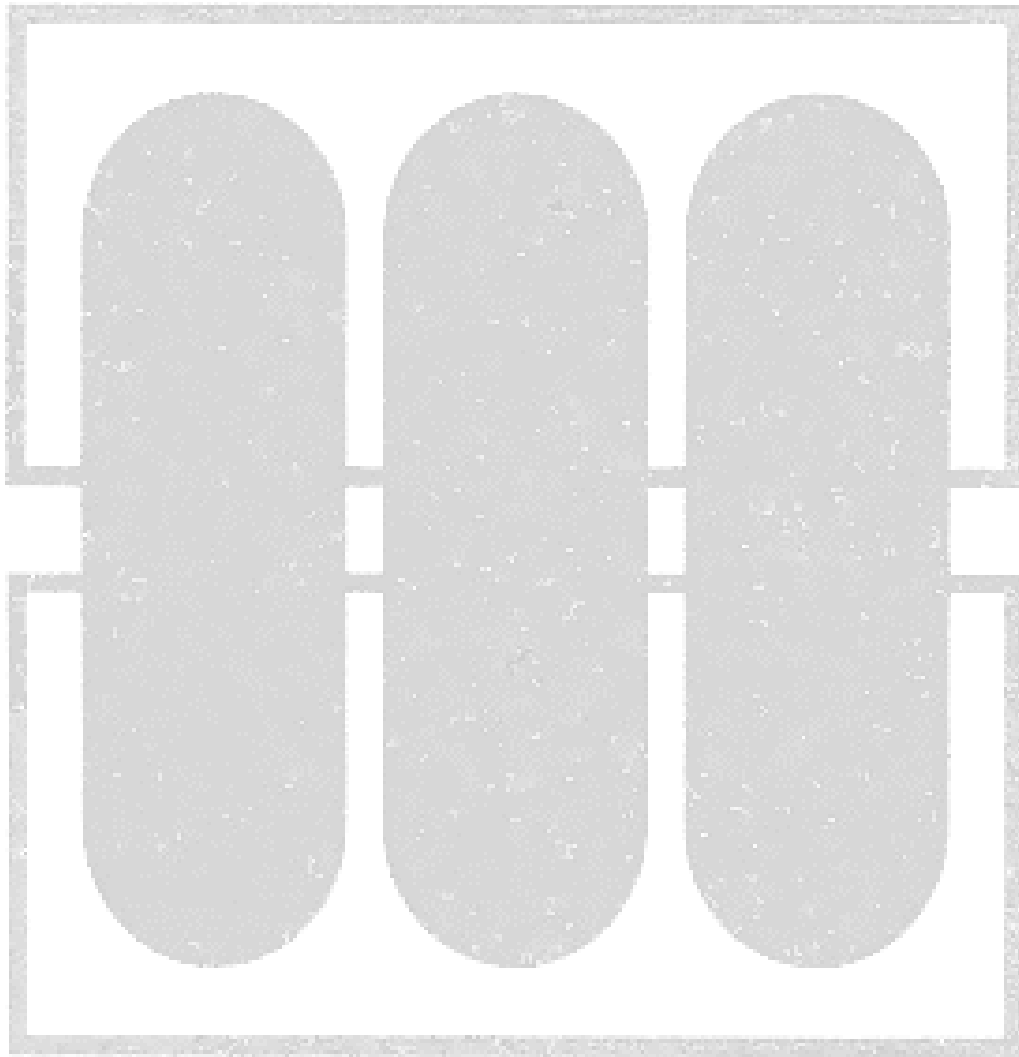
- Inputs are wired to the MkII module as per legacy instructions but swap inputs 1 & 3 and associated input polarity.

- When instructions show pull up resistors fitted to the connectors, the on board pull ups may be switched in for the appropriate input channels in stead.

- Carefully ascertain the programming settings used in the legacy instructions so that your MkII module can be configured accordingly.

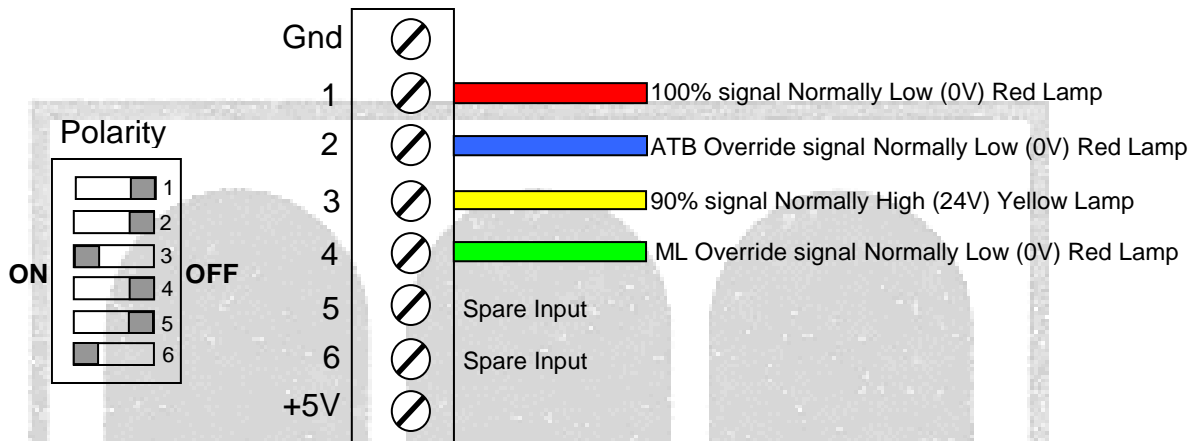
A large, light gray watermark of the Microtec logo is centered on the page. It features three stylized, rounded shapes above the word "MICROTEC" in a bold, sans-serif font.

## Conversion Example



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Fig. 7 **Original** Input Connection / Polarity Example

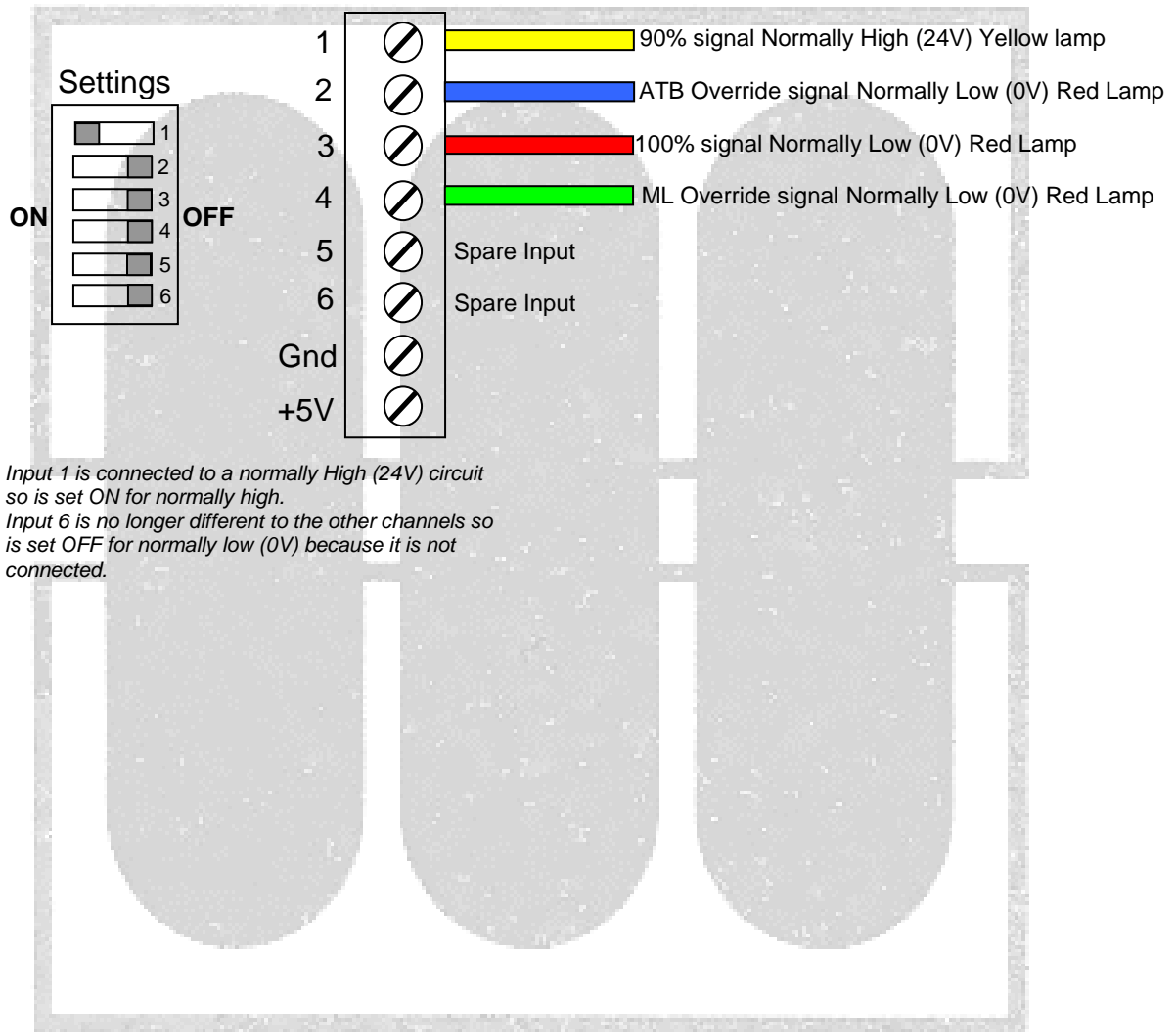


Input 3 is connected to a normally High (24V) circuit so is set ON for normally high.  
 Input 6 has a Pull Up resistor so is different to the other channels so is set ON for normally High (24V) even when it is not connected.

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The 90% (Yellow) input is triggered by input 1 in the MkII modules so the 90% input is moved from input 3 to input 1. The input polarity switch setting is carried across to match.

Fig. 8 MkII Input Connection / Polarity Example



Input 1 is connected to a normally High (24V) circuit so is set ON for normally high.  
 Input 6 is no longer different to the other channels so is set OFF for normally low (0V) because it is not connected.

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