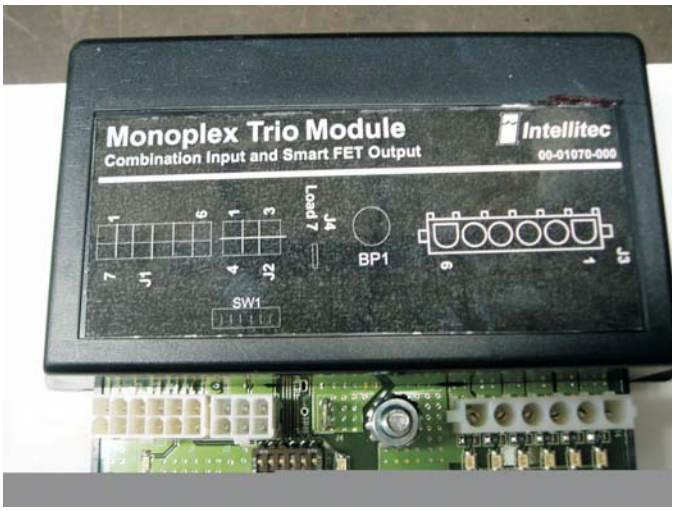
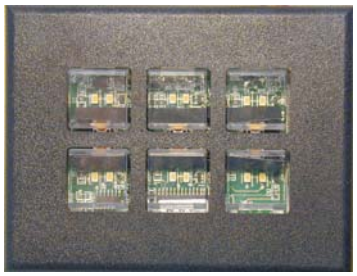
Monoplex Trio

INSTALLATION AND SERVICE MANUAL



Part Number
00-01070-000

PRELIMINARY



00-00929-100 00-00929-000 **

** non-back lit

CAUTION: The full power of the vehicle battery is available at the power input stud on the top of the unit. Service should be performed by a qualified technician.

Intellitec

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Lombard, IL 60148
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PRODUCT DESCRIPTION

The Monoplex Trio is used to switch 12 volt DC loads in a specialty vehicle application. It includes seven channels of switching, all of the output channels are solid state devices, (self-Protecting FETs). The module is capable of providing dimming on four channels and then ON/OFF logic control for the remaining three output channels. The various channels are operated from a single pair of wires by momentarily applying a particular value of resistance across these two wires. The resistors can be installed on a switch panel or by using the programming switch adapters available for the system.

At the press of a switch, the particular channel associated with that resistance will come on; the next press will turn it off. With this scheme, as many switches as desired can be used on the system to switch any channel.

When one of the channels is switched with the solid state output, by pressing and holding the button, the channel will dim the lights connected to that channel. When the button is released, the brightness level will be held. Another momentary press of the button will turn the light off. When the button is pressed again, it will come on to the level it was at when it was turned off. The desired illumination level is stored internal to the Monplex Trio , even if power is removed from the module.

A Dip Switch, (Sw1) is used to set the dimming capabilities of the four dimming channels. These can be set to be dimming for lighting or non-dimming for loads, such as motors.

There is an assortment of switch panels that may be connected to the Monoplex Trio, some switch panels may be backlit. Power for backlighting and illuminating the activated switch is supplied from the module. Indication that the switch is activated is indicaetd on the switch panel and indication that the output channel is powered up is indicated by the LED being illuminated on the module.

In the event that a fault condition exists on the module,(over current, over temperature, loss of communication, excessive in-rush current), the affected switch panel position LED will flash as prescribed below:

Over current - Slow Flash rate,1 Hz
Over Temperature -Shutter LEDs on switch panel
Switch Input Fault - Yellow LED fails to illuminate when a switch is pressed

The fault will be communicated to the switch panel to alert the user of the fault condition. If there is a communication link fault between a switch panel and the Monoplex Trio module, the Yellow LED on the module will not illuminate in response to the switch position on the switch panel being pressed. The Monoplex Trio will automatically shutdown if the inrush surge current is greater than 70 Amps on any channel.

Sometimes, an inductive loads may provide an opportunity to have large current spikes fed back into the module. The module will protect itself by shutting down and will require the output channel to be engaged again.

HOW IT WORKS

Switch Panel Backlit

The backlit for the user switch panel will illuminate when either of the following two conditions are satisified.

1) the Switch Panel Backlit will illuminate if any of the switch panel buttons are depressed. This is a short term activation of the backlit and the illumination will remain on for approximately ten seconds.
2) the Switch Panel Backlit will illuminate when the Parking Lights are enabled and will remain illuminated as long as the Parking Light signal is present.

Sofa Control

The fused power source for the Sofa Control is part of the Monoplex Trio module and provides intermittent power up to 30 Amps for operation of the sofa settings. The operation of the Sofa Control is interrupted when the Ignition signal is present at the Monoplex Trio module, refer to page 6 of this manual.

TV Play Timer

The TV Play Timer feature provides for the operation of the TV and the Audio system during a selectable period of time (15 minutes to 30 minutes in 5 minute increments) when the Ignition is turned off. The TV Play Timer will begin counting down whether the TV or Audio system is turned on prior to ignition being removed. Once the Monoplex Trio TV Play Timer expires, cycle the ignition in order to reset the TV Play Timer. The timer setting is selected by position 5 and 6 of SW1, Dip Switch located on the Monoplex Trio module, (see page 6 for specifics).

Dimmer Operation and Setup

There are four output channels that may be configured to dim. The channels that are dimmable are output channels 1,2,3, and 4. The configuration to make any or all of the four output channels dimmable is outlined for the Dip Switch, SW1, in the table below:

Position	Enable Dim	Channel
1	ON	Output 1 J3-1
2	ON	Output 2, J3-2
3	ON	Output 3, J3-3
4	ON	Output 4, J3-4

The Dip Switch settings are read on initial power up of the Monoplex Trio module and if changes are made to the Dip Switch settings, it recommended that power to the module be removed and restored to have the latest changes incorporated. The initial factory default setting for each of the output channels is 100%. All DIP switches are initially set to the OFF position for SW1.

To program the output dim setting for a selected channel, requires that you press and hold the selected switch for a period of three seconds in order to enable the dimming sequence. If the output has been programmed previously, it will begin at the saved output setting.

If the output is at the factory default, then the output will decrease approximately 10% every second until the button is released. If the button is held until the last step is reached, 10% output intensity, the output will then increase 10% per step until the it reaches the maximum output intensity of 100%.

When the button is released at the desired output intensity setting, the value is stored and will be recalled each time the output is enabled. If power is removed from the Monoplex Trio module and then restored, the last known 'dim value' will be remembered and sotred internally in the module.

INSTALLATION

The module should be installed in a weather protected area with ventilation to prevent over-heating of the module. There should be at least 3" around the module to provide adequate ventilation around the module.

It can be mounted with four #8 screws through the holes in the flanges. Twelve volt power should be brought to the unit with a wire of sufficient size to safely feed all the loads. **Since the maximum current is 60 amps, the minimum wire size should be 6 gauge.** If lighter loads are expected, smaller wire can be used. A suitable ring lug should be crimped on the wire and then attached to the stud.

The loads are connected with a six pin Mate-N-Lok plug at J3. The Communications wires are part of the 2 by 3 MiniFit connector, J2. The module requires a power connection via a 1/4- 20 ring terminal connection at BP1. The male Faston Terminal, J4, provides a maximum of 30 Amps to operate a motor control circuit.

SWITCH PANELS AND SWITCHES (Intellitec part number 00-00929-x00)

There are a number of switch panels choices that can be used with the module. These include different styles and back lighting options. In addition, conventional momentary switches can used, in conjunction with *Programming Links*, to activate any channel of the module.

To install the system, the number, style, and location of the switch panels and switches should be determined. Then the number of wires (two for non-back lit and three for back lit) should be selected. The gauge for these wires will depend on the number of switch panels and the total length from the furthest switch panel located within the vehicle.

The switch panel interface provides the ability for the user to select or activate the device shown on the face of the panel. Diagnostic information will be displayed the switch panel as described previous to inform the user of the status of the device operation.

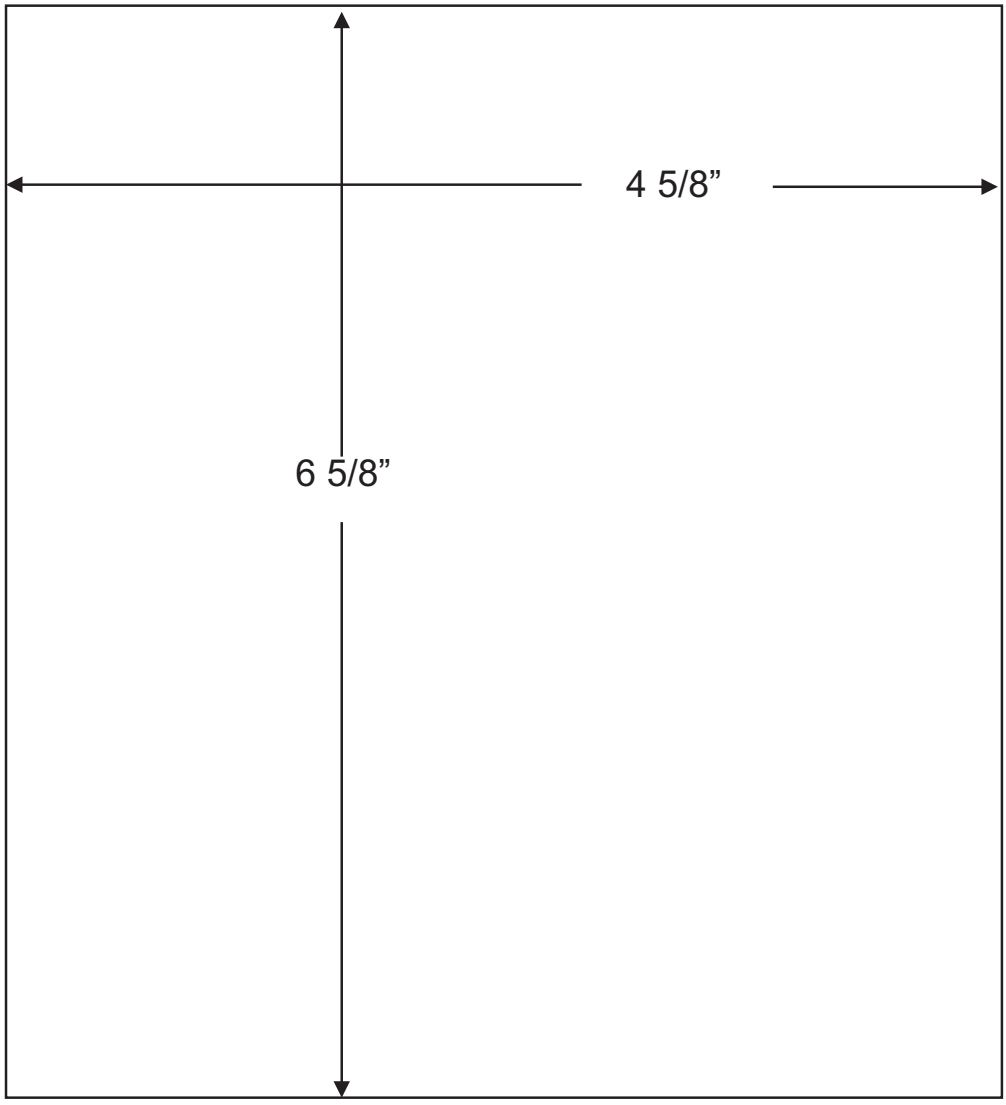
In order to reset a faulted output, the user may press the switch again to turn it back on. If the fault condition has cleared itself, then the output channel will resume operation. In the event that the fault is still present, you will need to contact your repair service center for further instructions.

PROGRAMMING LINKS (Optional)

If a single switch in a given location is desired, a *Programming Link* can be wired in series with any *momentary* switch to activate that channel. (See Typical Wiring Diagram on the last page of this manual) There are six Programming Links available for the system. *One is required for each switch function.* These links are color coded to provide easy identification.

Channel	Color	Part No.
1	Brown	00-00963-100
2	Red	00-00963-200
3	Orange	00-00963-300
4	Yellow	00-00963-400
5	Green	00-00963-500
6	Blue	00-00963-600

SUGGESTED MINIMUM FOOTPRINT FOR MODULE



CONNECTOR PIN-OUTS & FUSES

CAUTION - Maximum continuous current output for this module is 60 Amps. Maximum in-rush current for any channel is 70 Amps.
The output channel is controlled by solid-state output devices, self-protecting FETs.

J1 2 by 6 Pin MiniFit (Mating Housing MOLEX 39-01-2120)

Connector Pin	Circuit Function	Connector Pin	Circuit Function
J1-1	SW 1 LED Ind	J1-7	EL Out
J1-2	SW 2 LED Ind.	J1-8	Gnd
J1-3	SW 3 LED Ind.	J1-9	MPX SW In
J1-4	SW 4 LED Ind.	J1-10	Gnd
J1-5	SW 5 LED Ind.	J1-11	Gnd
J1-6	SW 6 LED Ind.	J1-12	N. C.

J2 2 by 3 MiniFit (Mating Housing MOLEX 39-01-2060)

J2-1	Tx Out	J2-4	Gnd
J2-2	Rx In	J2-5	Ignition Input
J2-3	Reserved	J2-6	Parking Light Input

J3 1 by 6 Pin AMP Mate-N-Lok (Mating Housing AMP MNL 640585-1)

Connector Pin	Circuit Function	Max Current	Status Indicator	Panel Position
J3-1	FET Output 1	15 Amp	D1	Ind. Lights
J3-2	FET Output 2	15 Amp	D2	Fog Lights
J3-3	FET Output 3	15 Amp	D3	Aux
J3-4	FET Output 4	15 Amp	D4	Air Purifier
J3-5	FET Output 5	15 Amp	D5	Speaker Power
J3-6	FET Output 6	15 Amp	D6	TV Power
J4	Male Faston Stab	30 Amp	D7	Sofa Power

DIP SWITCH SETTINGS

Outputs can be set as dimming or non-dimming. Set 6 dip switches per table.

Position	**Output / State**	**Function**
1	Output 1(J3-1)	ON - Dimming, OFF - No Dimming
2	Output 2(J3-2)	ON - Dimming, OFF - No Dimming
3	Output 3(J3-3)	ON - Dimming, OFF - No Dimming
4	Output 4(J3-4)	ON - Dimming, OFF - No Dimming
5/6	5- Off, 6 - Off	TV Timer set to 15 Minutes Play
5/6	5 -Off 6- On	TV Timer set to 20 Minutes Play
5/6	5 - On, 6 - Off	TV Timer set to 25 Minutes Play
5/6	5- On, 6 - On	TV Timer set to 30 Minutes Play

TROUBLE SHOOTING

Trouble shooting the system is aided by the eight diagnostic LED's on the module. There are seven Green LED's connected to the seven outputs channels of the Monoplex Trio. The selected output channel will activate,turn *ON* when the outputs are on. The LED for the selected channel will not be illuminated when the channel is deactivated or when there is a fault condition (over current, over temperature, excessive in-rush current) for the selected output.

The Red LED (labeled Monoplex) is used to diagnose communication status between the remote switch panel(s) and the module. The LED will flash every time the remote switch panel button is pressed. If there is a communication link fault between a switch panel and the Monoplex Trio module, the Red LED on the module will not illuminate in response to the switch position on the switch panel being pressed. In the event, that the LED does not flash when the switch is pressed, one may plug the switch panel directly into the J1 connector, (MiniFit 2 by 6) as a means of isolating between the switch panel, wire harness, or the module being bad. **NOTE:** See connector details on page 6 of this manual.

In the event that an output channel fault condition exists on the module,(over current, over temperature, loss of communication, excessive in-rush current), the affected switch panel position LED will flash as prescribed below:

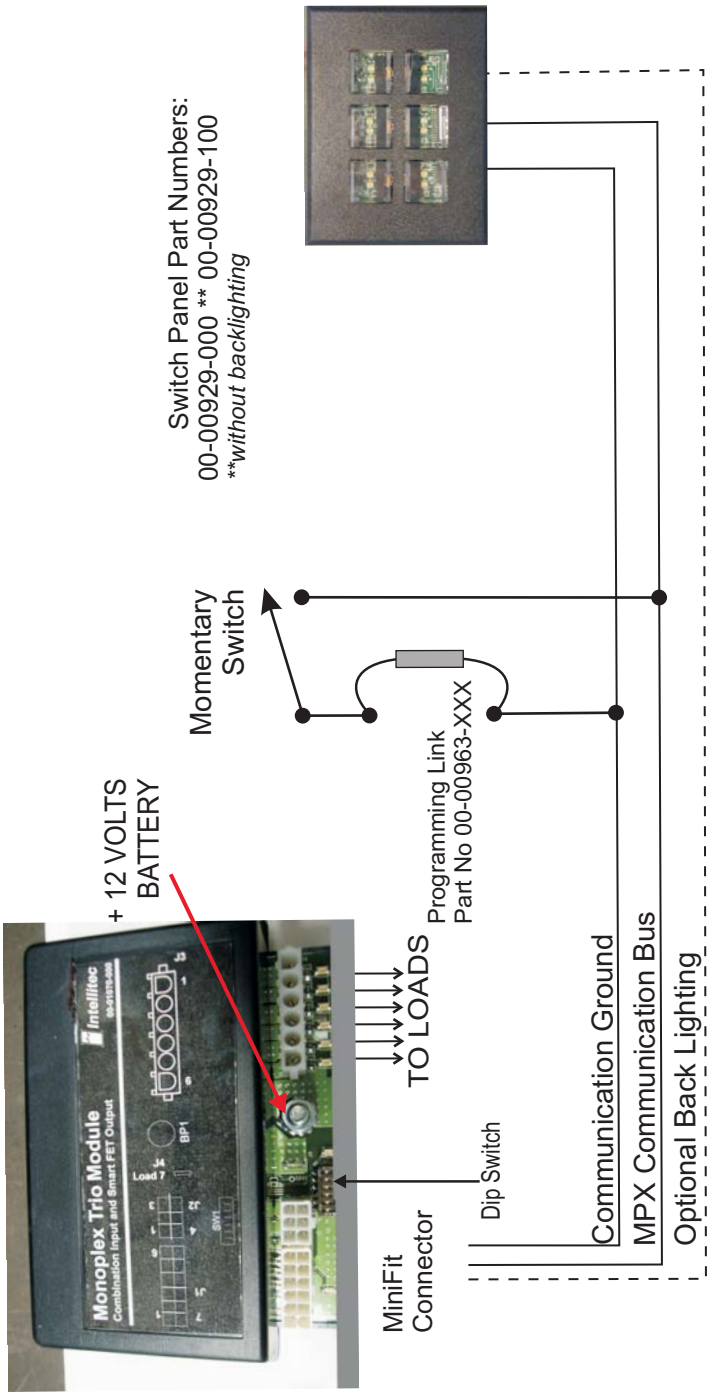
Over current - Slow Flash rate,1 Hz
Over Temperature -Shutter LEDs on switch panel
Switch Input Fault - Yellow LED fails to illuminate when a switch is pressed

The fault will be communicated to the switch panel to alert the user of the fault condition. The Monoplex Trio will automatically shutdown if the inrush surge current is greater than 70 Amps on any channel.

Sometimes, an inductive loads may provide an opportunity to have large current spikes fed back into the module. The module will protect itself by shutting down and will require the output channel to be engaged again.

The Monoplex Trio will cease to operate when the battery voltage drops to 9 VDC. This indicates the low voltage condition and all outputs will turn *OFF* in the low voltage condition.

TYPICAL WIRING DIAGRAM



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