Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

Chapter 2

Data Sheets
PMC Modules

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

Ambient Temperature Range	**-40 C to +85 C (-40 F to +185 F)**
Vehicle System Voltage Range 12 Volt System	**10 to 18 Volts**
Vehicle System Voltage Range 24 Volt System	**20 to 36 Volts**
CPU only Voltage Range	**10 to 36 Volts**
Short Term over voltage protection	**52 Volts**
Positive voltage spike protection	**+150 Volts**
Negative Voltage protection (continuous)	**-300 Volts**
Input voltage threshold	**+ 6 Volts**
System operating current (CPU + 16 modules)	
PMC sleep mode current (CPU + 16 modules)	

NOTE: PMC operating and sleep mode currents include only the operating current of the PMC modules. Specifications do not include items such as warning lamps, switch backlighting, etc.

Items with * are proposed or in development.
Check with Intellitec for availability

Page	Part No.	Description		
Central Processing Units				
2-5	00-00620-021	160 Channel Central Processing Unit	+12/24V	
2-7	00-00800-022	320 Channel Central Processing Unit	+12/24V	
Output Modules				
2-9	00-00621-406	4 point DC Input / 6 point Relay Out	+24V	10 Amp Fused, Relay Output
	00-00621-416	4 point DC Input / 6 point Relay Out	+12V	10 Amp Fused, Relay Output
	00-00621-426	4 point DC Input / 6 point Relay Out	+12V	10 Amp Fused, Relay Output
		Same as 406 module, except 12 volt Communications and 24 volt I/O		
2-11	00-00838-000	10 Channel Latching Relay Out	+12V	10/20 Amp Fused, Relay Output
	00-00838-410	10 Channel Relay Out	+12V	10/20 Amp Fused, Relay Output
2-13	00-00844-500	10 Solid-state latching outputs w/lamp dimmer control		10 Amp Fused, Solid-state Output
	00-00844-510	10 Solid-state latching outputs w/lamp dimmer control		10 Amp Fused, Solid-state Output
2-15	00-00937-516	Scene Control Lamp Dimmer	+12V	6 dimmable Solid-state Output
	00-00937-506	Scene Control Lamp Dimmer	+24V	6 dimmable Solid-state Output
2-17	00-00846-506	4 point DC Input/6 point FET Out	+24V	20/10 Amp Fused, Solid-state Output
	00-00846-516	4 point DC Input/6 point FET Out	+12V	20/10 Amp Fused, Solid-state Output
2-19	00-00846-606	4 point DC Input/6 point protected FET Out	+24V	20/10 Amp self protected, Solid-state Output
	00-00846-616	4 point DC Input/6 point protected FET Out	+12V	20/10 Amp self protected, Solid-state Output
2-21	00-00802-600	10 Solid-state protected FET Out	+24V	10 Amp self protected, Solid-state Output
	00-00802-616	10 Solid-state protected FET Out	+12V	10 Amp self protected, Solid-state Output
2-23		I/O Modules Acceptable Load Distribution		
2-25	00-00702-320	10 Channel Low Watt Output Module	+24V	0.5A Output, 5 Low side Solid-state Outputs
	00-00702-330	10 Channel Low Watt Output Module	+12V	0.5A Output, 5 Low side Solid-state Outputs
2-27	00-00916-120	Quad “H” Output Module	+12V	10 Amp Relay Outputs connected in four “H” bridge configurations.
2-29	00-00917-120	6 Relay Output/4 Input	+12V	6 Floating nondedicated contacts/4 pos or Neg Inputs
	00-00917-240	6 Relay Output/4 Input	+24V	6 Floating nondedicated contacts/4 pos or Neg Inputs
Input Modules				
2-31	00-00622-100	10 point DC Input	+24V	10 DC Pos or Neg
	00-00622-110	10 point DC Input	+12V	10 DC Pos or Neg
Load Manager Voltage Input Module				
2-33	00-00809-120	Inputs 4 voltage thresholds	+12V	
	00-00809-240	Inputs 4 voltage thresholds	+24V)	

The number of modules available for use with the PMC system continues to grow as needs are identified. These modules are designed to offer maximum flexibility to the vehicle designer. The output modules provide high current solid-state, or relay outputs with built in circuit protection. There are modules that have only inputs, or outputs and modules that have both inputs and outputs. Inputs can be set as high-side, or low-side (+ BAT or GND).

As additional modules are developed, they can be added to this section of your book. The following pages describe each of the modules, along with their performance and specifications. *Check with Intellitec, as new modules continue to be developed.*

Intellitec will develop custom product for your specific requirement. Custom product includes switch panels and switch adapters, which can be used to make your product unique. If there is an electrical or electronic product that you need to resolve your specific problem, let our engineers propose a solution for you.

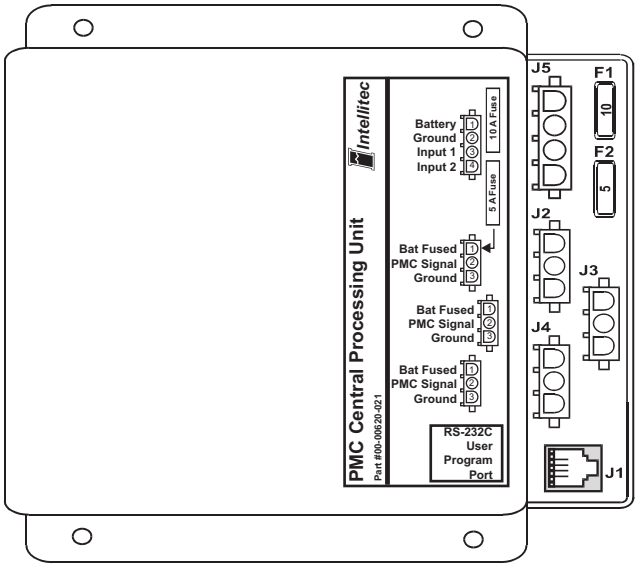
Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

160 Channel PMC CPU
00-00620-021 Central Processing Unit

The PMC CPU is the main component of Intellitec's Programmable Multiplex Control family. It controls remote I/O modules through Intellitec's multiplex communications system (Pat. No. 4,907,222 and 6,011,997). This multiplex system allows the CPU, I/O Modules and switch panels to be wired together with two wires.

The CPU has three, 3-pin, Amp Mate-N-Lok connectors which are used to communicate to the Input/Output modules. One pin is the multiplex signal, another multiplex Ground, and the third is fused power to operate remote switch panel backlighting.

Multiple modules can be wired to a single connector. All input, or switch information is gathered through the remote modules and directly communicated to the CPU. The CPU then interprets the inputs, determines the states of all outputs and communicates that information to the remote modules via the PMC communications link.



The CPU can communicate with up to 16 modules. Each module can have a combination of up to 10 inputs or outputs, with a single CPU controlling up to 160 inputs/outputs. If your system requires more than 160 I/O points, CPU 00-00800-021 can be used.

The CPU also has 10 timers built-in, which are setup by the Windows software. These timers can function as on/delay, off/delay, and interval timers. PMC can replace flasher modules, mirror heat timers, wiper delays, or any other timer function.

The CPU RS-232C communications ports is used to setup, or program the vehicle specific requirements. The port can also be used to perform system diagnostics; *however*, 99% of the diagnostics can be easily performed on the multiplex communication wires with the use of a commonly available Volt Meter.

The PMC system communicates continually at a relatively slow rate of 4 kHz. Each input/output is updated every .040 seconds. The multiplex signal, which communicates to the output modules, switches all the way from ground to the battery voltage. This slow communications rate and large signal voltage change makes the PMC system extremely resistant to interference from EMI and RFI. Because of the low communications frequency and large signal change, communication can take place without fear of interference over any economical wire and eliminates the need for special cables and connectors. Four high speed channels are available to control elements requiring a higher speed.

The CPU includes a sleep mode. The sleep mode reduces the overall system operating current, allowing the system to be constantly live with insignificant drain on the vehicle battery.

Through the use of Intellitec's PMC Windows based software program and the connection of a PC to the RS-232C port, the user can easily set up the relationships between the switch inputs, timers and outputs. If desired, Intellitec can ship CPU modules to the OEM with their program already loaded.

If your customer needs a modification, a CPU can be programmed at your desk and shipped overnight. The plugs are designed so that the CPU can only be plugged in one way. The CPU may also be reprogrammed over and over again. In the PMC system, the only module that needs programming is the CPU.

All the harnesses are connected with AMP Mate-N-Lok connectors to reduce installation time and errors. Combine the Programmable Multiplex Control Central Processing Unit with the Intellitec standard, semi-custom or custom modules, and you can create the exact system configuration that you want, from basic to all encompassing. The approximate module dimensions are 6.375" X 6.250" X 1.875" (16.2mm X 15.9mm X 4.8mm). *The module should be installed in a protected environment inside of the vehicle.*

SPECIFICATIONS	
Part Number	00-00620-021
Nominal Vehicle Voltage	+12 Volt or +24 Volt system
Voltage Range	+10 Volts to 36 Volts

SYSTEM CAPACITY		COMMUNICATIONS	
Program Memory	EPROM	CPU/Module	PMC two wire 4KHZ
User Memory	Non Volatile flash	EMI/RFI	High Immunity
Module Capacity	16	User PC Program	RS-232C
I/O per Module	10		
Total I/O Control	160		
Virtual Channels	10		
Timer Channels	10		

CONNECTOR PIN DESIGNATIONS

J1	RS-232C	PC Communications *(Note 1)*
J2-J4	PMC Communications	(All three connectors identical)
Pin 1	Fused Power for remote backlighting	Fuse F2 5 Amps Max.
Pin 2	Multiplex Signal	16 awg Min. *(see Chapter 3 of the Users Guide)*
Pin 3	Multiplex Ground	14 awg Min. *(see Chapter 3 of the Users Guide)*
J5-1	Battery	Fuse F1 10 Amps Max.
J5-2	Ground	
J5-3	Aux In 1 (+12V disables sleep mode)	Sleep Mode 4.7K Input Impedance
J5-4	Aux In 2 (+12V disables sleep mode)	Sleep Mode 4.7K Input Impedance

MATING CONNECTIONS

Designator	Function	Connector	Mating Part #	Contact, Typical
J1	RS-232C		RJ11	(Note 1)
J2	PMC Com	3 Pin Amp Mate-N-Lok	1-480700-0	350919-3 for 14-18 AWG
J3	PMC Com	3 Pin Amp Mate-N-Lok	1-480700-0	350919-3 for 14-18 AWG
J4	PMC Com	3 Pin Amp Mate-N-Lok	1-480700-0	350919-3 for 14-18 AWG
J5	Power	4 Pin Amp Mate-N-Lok	1-480702-0	350919-3 for 14-18 AWG

Note 1: Communications to PC is accomplished via Cable and Program Key, included in the programming kit.

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

320 Channel PMC CPU

00-00800-022/240 Central Processing Unit

The PMC CPU is the main component of Intellitec's Programmable Multiplex Control family. It controls remote I/O modules through Intellitec's multiplex communications system (Pat. No. 4,907,222 and 6,011,997). This multiplex system allows the CPU, I/O Modules and switch panels to be wired together with two wires.

This CPU has two identical, 4-pin, Amp Mate-N-Lok connectors. Pin 1 provides a fused 12 volt power source to power things like switch back lighting. Pins 2 and 3 are the multiplex signals (two loops of 160 channels each) which communicate instructions to and from each of the I/O modules, Pin 4 is multiplex communication ground.

A system can be as small as one CPU and one I/O module, or it can communicate with up to 32 I/O modules. Each module can have a combination of up to 10 inputs, or outputs.

Multiple modules can be wired to a single connector. All input, or switch information is gathered through the remote modules and directly communicated to the CPU. The CPU then interprets the inputs, determines the states of all outputs and communicates that information to the remote modules via the PMC communications link (pins 2 and 3).

This CPU also has 160 timer channels built-in. The timers are setup by the Windows software. These timers can function as on/delay, off/delay, flasher and interval timers. PMC eliminates the need for special flasher modules, mirror heat timers, wiper delays, load managers, etc. In addition there are also 160 virtual channels which provide the capability to write very complex logic relationships between the channels.

The CPU RS-232C communications port and Windows software is used to setup or program the vehicle specific requirements. The port can also be used to perform system diagnostics. If a lap top isn't available most diagnostics can be performed with a volt meter.

The PMC system communicates continually at a relatively slow rate of 4 kHz. Each input/output is updated every .040 seconds. The multiplex signal, communicates to the output modules with a large change in signal voltage. This slow communications rate and large signal voltage change makes the PMC system extremely resistant to interference from EMI and RFI. Because of the low communications frequency and large signal change, communication can take place without fear of interference over any economical wire and eliminates the need for special cables and connectors. Four high speed channels are available to control elements requiring a higher speed.

The CPU includes a sleep mode. The sleep mode reduces the overall system operating current, allowing the system to be constantly live with insignificant drain on the vehicle battery.

Through the use of Intellitec's WinPMC II Windows based software program and the connection of a PC to the RS-232C port, the user can easily set up the relationships between the switch inputs, timers and outputs.

If your customer needs a modification, a CPU can be programmed at your desk and shipped overnight. The plugs are designed so that the CPU can only be plugged in one way. The CPU may also be reprogrammed over and over again. In the PMC system, the only module that needs programming is the CPU. This program resides in non-volitile memory and is retained when power is removed from the CPU.

All the harnesses are connected with AMP, Mate-N-Lok connectors to reduce installation time and errors. Combine the Programmable Multiplex Control Central Processing Unit with the Intellitec standard, semi-custom or custom modules, and you can create the exact system configuration that you want, from basic to all encompassing. The approximate module dimensions are 6.375" X 6.250" X 1.875" (16.2mm X 15.9mm X 4.8mm). The module should be installed in a protected environment inside of the vehicle.

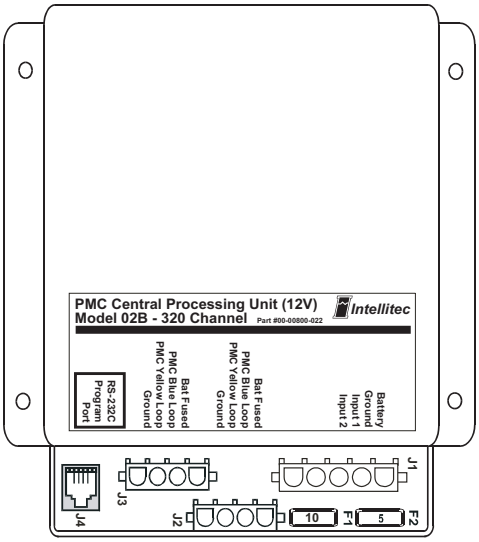
Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

320 Channel PMC CPU

00-00800-022/240 Central Processing Unit

SPECIFICATIONS

Part Number	**00-00800-022**	**00-00800-240**
Voltage	12V	24V
Voltage Range	up to +16 Volts	+10 Volts to 36 Volts



SYSTEM CAPACITY	
Program Memory	EPROM
User Memory	Non Volatile
Module Capacity	32
I/O per Module	10
Total I/O Control	320
Virtual Channels	160
Timer Channels	160

COMMUNICATIONS	
CPU/Module	PMC two wire 4KHZ
EMI/RFI	High Immunity
User PC Program	WinPMCII

CONNECTOR PIN DESIGNATIONS

J4	RS-232C	PC Communications *(Note 1)*
J2-J3	PMC Communications	(All three connectors identical)
Pin 1	Fused Power for remote backlighting	16 awg Min. Fuse F2 5 Amps Max.
Pin 2	Multiplex Signal Blue Loop	16 awg Min. *(see Chapter 3 of the Users Guide)*
Pin 3	Multiplex Signal Yellow Loop	16 awg Min. *(see Chapter 3 of the Users Guide)*
Pin 4	Communications Ground	14 awg Min. *(Make no other connections)*
J1-1	Battery	Fuse F1 10 Amps Max.
J1-2	Ground	
J1-3	Aux In 1 (+12V disables sleep mode)	Sleep Mode 4.7K Input Impedance
J1-4	Aux In 2 (+12V disables sleep mode)	Sleep Mode 4.7K Input Impedance

MATING CONNECTIONS

Designator	Function	Connector	Mating Part #	Contact, Typical
J1	CPU Power	5 Pin Amp Mate-N-Lok	1-480763-0	350919-3 for 14-18 AWG
J2	PMC Com	4 Pin Amp Mate-N-Lok	1-480702-0	350919-3 for 14-18 AWG
J3	PMC Com	4 Pin Amp Mate-N-Lok	1-480702-0	350919-3 for 14-18 AWG
J4	RS-232C		RJ11	*(Note 1)*

Note 1: Communications to PC is accomplished via Cable and Program Key, included in the programming kit.

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

4 Channel DC Input / 6 Channel Relay Output

00-00621-406/416 PMC I/O Module

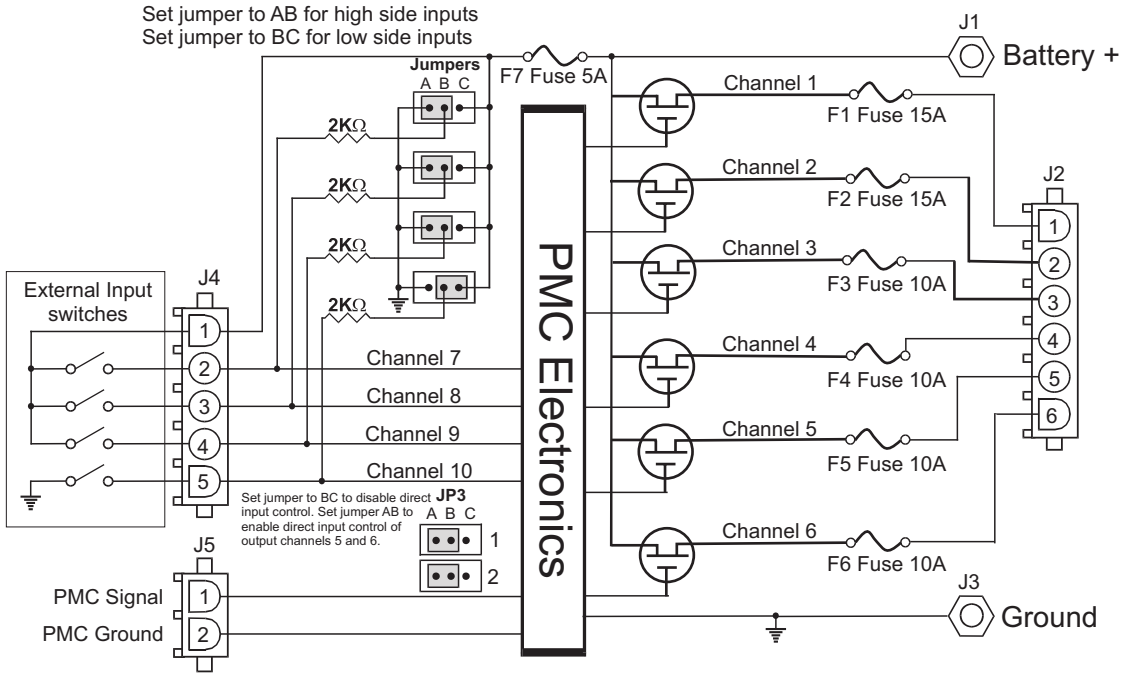
The PMC I/O Module 406/416 is a member of Intellitec's Programmable Multiplex Control family. It works in combination with the PMC CPU and other standard, semi-custom, or custom I/O modules.

The 406/416 provides power fusing, switching, and distribution in one module. It has two, 15 amp SPST relays and four, 10 Amp SPST relays for switching loads to the battery. Each fuse position can be filled with a fuse, or circuit breaker. The total module current should not exceed 50 Amps.

There are four input connections for rocker, limit, or sensor switches. Each individual input can be configured as either a low side switch to ground, or a high side switch to battery. Input information is directly communicated to the CPU and the relays are controlled by the CPU via the PMC communications link. All of the output harnesses are connected with AMP Mate-N-Lok connectors to reduce installation time and errors.

The approximate module dimensions are 6.375" X 6.250" X 1.875" (16.2mm X 15.9mm X 4.8mm). *It should be installed in a protected environment, inside the vehicle*.

PAT NO. 4,907,222 & 6,011,997



DIRECT CONTROL

Jumper block JP3 provides for direct input control of output channels 5 and 6, for this module only. If the jumper JP3-1 is moved from the BC position to the AB position, output channel 5 will be controlled directly from input channel 7 on this module. Booleans written for this channel will have no effect. If jumper JP3-2 is moved to the AB position, output channel 6 will be controlled directly from input channel 8 of this module. This function eliminates the CPU's processing time for the channel involved.

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

SPECIFICATIONS

General Connections			**00-00621-416**	**00-00621-406**
Nominal Vehicle Voltage			12V	24V
J1	+ 12 Volts	Module Current	50 Amps Max	50 Amps Max
J3	Ground			
J4-1	Fuse #7 Power for Positive switched inputs		3 Amps Max	3 Amps Max
J5-1	PMC Signal		18 awg Min	18 awg Min
J5-2	PMC Ground		14 awg Min	14 awg Min

CHANNEL DESIGNATIONS

Channel	**Connection**	**Type**	**Name**	**Rating**
1	J2-1	Relay Output, Form A (SPST),(1)	Relay 1 Fuse 1	15 Amp Max
2	J2-2	Relay Output, Form A (SPST),(1)	Relay 2 Fuse 2	15 Amp Max
3	J2-3	Relay Output, Form A (SPST),(1)	Relay 3 Fuse 3	10 Amp Max
4	J2-4	Relay Output, Form A (SPST),(1)	Relay 4 Fuse 4	10 Amp Max
5	J2-5	Relay Output, Form A (SPST),(1)	Relay 5 Fuse 5	10 Amp Max
6	J2-6	Relay Output, Form A (SPST),(1)	Relay 6 Fuse 6	10 Amp Max
7	J4-2	Input, Positive or Negative	Switch 1	2K Input Resistance
8	J4-3	Input, Positive or Negative	Switch 2	2K Input Resistance
9	J4-4	Input, Positive or Negative	Switch 3	2K Input Resistance
10	J4-5	Input, Positive or Negative	Switch 4	2K Input Resistance

Note 1: Relay provides a fused source of voltage to the Load from the Battery.

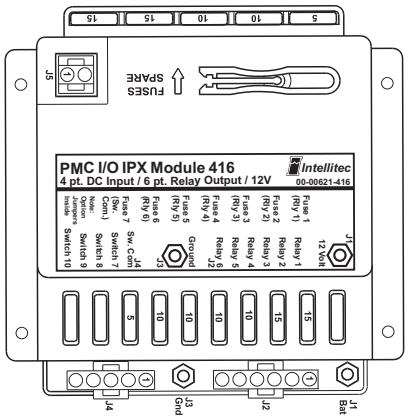
MATING CONNECTIONS

Designator	**Function**	**Connector**	**Mating Part #**	**Contact, Typical**	
J1	Battery	#10/32 Ring Term		*for 14-18 AWG*	*for 10-12 AWG*
J2	Outputs	6 Pin Amp Mate-N-Lok	640585-1	350919-3	640310-3
J3	Ground	#10/32 Ring Term			
J4	Inputs	5 Pin Amp Mate-N-Lok	1-480763-0	350919-3	640310-3
J5	PMC/Com	2 Pin Amp Mate-N-Lok	1-480698-0	350919-3	640310-3

MODULE SETTINGS

Module can be set for 1 of 16 address. Set four jumpers on jumper block JP2 per table to the right. X = Jumper is out.

JUMPERS 4 3 2 1	***MODULE Address***	***JUMPERS 4 3 2 1***	***MODULE Address***
0 0 0 0	A	X 0 0 0	I
0 0 0 X	B	X 0 0 X	J
0 0 X 0	C	X 0 X 0	K
0 0 X X	D	X 0 X X	L
0 X 0 0	E	X X 0 0	M
0 X 0 X	F	X X 0 X	N
0 X X 0	G	X X X 0	O
0 X X X	H	X X X X	P



Four inputs labeled Switch 1 - 4 can be individually set for either positive (high-side) switched to the battery, or negative (low-side) switched to ground. Setting a jumper to short pins AB selects positive switch. Setting a jumper to short pins BC selects negative switch.

The PMC Output Modules 00-00838-000 and 00-00838-410 are members of Intellitec's Programmable Multiplex Control family, as well as the 160 Channel Multipoint Switching System. They works in combination with the PMC CPU or the 160 Channel IPX Master and other standard, semi-custom, or custom I/O modules.

The modules provide power fusing, switching, and distribution . They have five 20 Amp SPST relays and five 10 amp SPST relays for switching loads to the battery. Each fuse position can be filled with a fuse or circuit breaker. *The total module current should not exceed 70 Amps.*

All of the output harness connections are made with AMP Mate-N-Lok connectors to reduce installation time and errors.

The approximate module dimensions are 7.0" X 6.250" X 1.875" (16.2mm X 15.9mm X 4.8mm). *It should be installed in a protected environment inside the vehicle.*

The 838-000 and 838-410 can be set for module addresses of A - P. This allows each output of the module to be addressed for any one of 160 channels in groups of 10. *Using the chart on the next page, set the dip switch to address the module.*

LATCHING VS NON-LATCHING

The 838-000 is a latching module, which means that an output will turn on and latch on when it sees that it's channel has been turned on momentarily. Once the output is on, the output will turn off when it sees it's channel turn on momentarily again.

No program is necessary when used with either a PMC Central Processing Unit or the 160 Channel IPX Master.

An output can be turned on by providing a momentary input on the same channel address. Another momentary input turns the output off.

Example: Intellitec's 10 button keypad has a button set for address B1 and a Latching Output Module 838-000 has an output set for address B1 while both are connected to an IPX Master, or PMC CPU. If push button B1 is pressed momentarily, output B1 of the output module will latch on. Pushing the button again will latch the output off. If a push button is set for BL/MR, pressing and holding the button for 3 seconds will cause all outputs that are latched on, to turn off.

When using this module with PMC *you should neither check the latched switch box in the Windows set up software for the pushbutton nor should a Boolean be written to operate the output.* Channel P10 for 3 seconds will unlatch all latched outputs.

The 838-410 is a non-latching module, which means the output will turn on when it sees it's address but will not latch and *should only be used with the PMC system.* In this case, if the channel is turned on momentarily, the output will only be on while the channel is on, but will not latch. This module will respond to programming in the same fashion as any other PMC output module. To keep the output on, the channel must be kept on.

DIAGNOSTIC LED INDICATORS

Next to each Mate-N-Lok output connection you will find an LED. If the output is on, the LED will be on. Should the output be on and a fuse is blown, the LED will not illuminate.

Next to pin J1-2, you will find an LED which illuminates RED and indicates that the multiplex communication signal is not normal.

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

SPECIFICATIONS

Modules	00-00838-000	00-00838-410
Nominal Vehicle Voltage	12V	12V
Outputs	Latching Outputs	Non-Latching Outputs
Module Current	70 Amps Max total	

General Connections

J1-1	Communications Signal (from Master or CPU)	18 Awg Min.
J1-2	Communications Ground (from Master or CPU)	14 Awg Min.

CHANNEL DESIGNATIONS

Channel	Connection	Type	Name	Rating
1	J2-1	Relay Output, Form A (SPST),(1)	Relay 1 Fuse 1	20 Amp Max
2	J2-2	Relay Output, Form A (SPST),(1)	Relay 2 Fuse 2	10 Amp Max
3	J2-3	Relay Output, Form A (SPST),(1)	Relay 3 Fuse 3	20 Amp Max
4	J2-4	Relay Output, Form A (SPST),(1)	Relay 4 Fuse 4	10 Amp Max
5	J2-5	Relay Output, Form A (SPST),(1)	Relay 5 Fuse 5	20 Amp Max
6	J2-6	Relay Output, Form A (SPST),(1)	Relay 6 Fuse 6	10 Amp Max
7	J3-1	Relay Output, Form A (SPST),(1)	Relay 7 Fuse 7	20 Amp Max
8	J3-2	Relay Output, Form A (SPST),(1)	Relay 8 Fuse 8	10 Amp Max
9	J3-3	Relay Output, Form A (SPST),(1)	Relay 9 Fuse 9	20 Amp Max
10	J3-4	Relay Output, Form A (SPST),(1)	Relay 10 Fuse 10	10 Amp Max

Note 1: Relay provides a fused source of voltage to the Load from the Battery.

J3-5 Power Ground

NOTE: Total Module current not to exceed 70 Amps

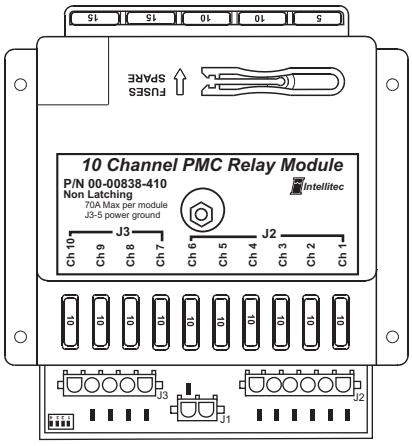
MATING CONNECTIONS

Designator	Function	Connector	Mating Part #	Contact,Typical	
J4	Battery	#10/32 Ring Term		*for 14-18 AWG*	*for 10-12 AWG*
J3	Communication	2 Pin Amp Mate-N-Lok	1-480698-0	350919-3	640310-3
J2	Outputs	6 Pin Amp Mate-N-Lok	640585-1	350919-3	640310-3
J1	Outputs	5 Pin Amp Mate-N-Lok	1-480763-0	350919-3	640310-3

MODULE SETTINGS

Module can be set for 1 of 16 address, A-P.
Set four dip switches per table on right. X = Switch OFF

SWITCH 4 3 2 1	MODULE Address	SWITCH 4 3 2 1	MODULE Address
0 0 0 0	A	X 0 0 0	I
0 0 0 X	B	X 0 0 X	J
0 0 X 0	C	X 0 X 0	K
0 0 X X	D	X 0 X X	L
0 X 0 0	E	X X 0 0	M
0 X 0 X	F	X X 0 X	N
0 X X 0	G	X X X 0	O
0 X X X	H	X X X X	P

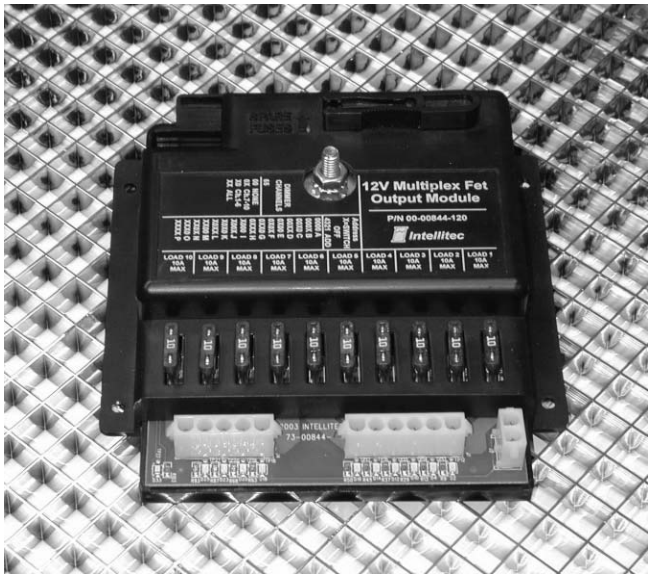


The PMC Output Modules 00-00844 are members of Intellitec's Programmable Multiplex Control family as well as the 160 Channel Multipoint Switching System. They work in combination with the PMC CPU or the 160 channel IPX master and other standard, semi-custom, or custom I/O modules. These modules provide solid-state outputs with the capability of dimming lights.

The modules provide power fusing, switching, and distribution. Switching is accomplished via long life, field effect transistors instead of relays. Each output will handle 10 Amps. The total module current is limited by the *"I squared rule"* on the following page.

The approximate module dimensions are 7.0" X 6.250" X 1.875" (16.2mm X 15.9mm X 4.8mm). *It should be installed in a protected environment, inside the vehicle.*

The 844 module can be set for module addresses, A-P. *Using the chart on the next page, set the dip switches 1-4 to address the module.*



PWM PROVIDES VARIABLE POWER (PULSE WIDTH MODULATION)

The 844 modules provide the ability to dim lights from any Intellitec multiplex keypad. With the PMC system, a momentary push button can be used if it is connected to a PMC input. These modules come in two versions. The 00-00844-120 works with the 160 Channel Multipoint Switching System. The 00-00844-500 and 00-00844-510 work with the PMC system.

This module dims the lights using pulse width modulation or PWM. Variable power is applied to the load by quickly turning the power on and off. By varying the duty cycle we can vary the intensity of the lamp.

By adjusting the dip switch, it is possible to select the channels that will operate to dim lights. *See the chart on the next page for dip switch settings.*

PMC VERSION 00-00844-500 AND 510

When set as a non-dimmable output, the outputs will operate as any other PMC output. To keep the output on, it's channel must be on. If the output is set to be a dimmable output, the output will latch on at the output module. To turn the output on, all that is required is that it's channel be turned on momentarily. When the channel comes on, the output turns on and latches. When the channel turns off, the output remains latched until the channel turns on again, at which time the output turns off.

OPERATING EXAMPLE FOR A PMC DIMMABLE OUTPUT

If the lighting output channel is B3 and a momentary push button is placed at D5 you could write a boolean such as B3=D5. When momentary button D5 is pressed and released output B3 will turn on at 100% intensity and remain on even though switch channel D5 is off. When D5 is pressed and released a second time, output B3 will turn off. This happens because we latch the output on and off at the module. When button D5 is pressed and held, the output will begin to ramp up, increasing the lamp intensity. When the button is let go, the lamp will remain at that intensity. Pressing and holding the button a second time will cause the intensity to begin ramping down. When the button is released, the lamp will remain at that intensity. Pressing and releasing the button quickly will cause the output to toggle off. If power has been maintained at the module, the output will remember it's last intensity setting.

MULTIPOINT SWITCHING VERSION 00-00844-120

This module works with the non-programmable Multipoint Master. This module works in a similar fashion to the 844-500 and 510, except that when it's outputs are not set for dimming they will latch on and off just as the dimmer outputs do. With the Multipoint Master and Intellitec programmable momentary push button switches 00-00841-XXX, a switch is set for the same channel as the output. When the switch turns the channel on, the output latches on. When the switch turns the channel on again, the output latches off. Using the GUI and setting a switch for BL/MR (back light/Master Reset), instructs the switch to turn all 10 outputs off when the switch is held for 3 seconds.

LED DIAGNOSTIC INDICATORS

Next to each Mate-N-Lok connection you will find green LEDs. If the output is on, the LED will be on. There is also one red LED. This will illuminate if multiplex communications fail. In this case check the connections at J2.

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

SPECIFICATIONS

Modules	00-00844-120	00-00844-500	00-00844-510
Nominal Vehicle Voltage	12V	24V	12V
NOTES:	Output latches On/Off when Channel turns on momentarily	For use with PMC ONLY. Outputs set for dimming latch; others do not latch. Use PMC Channel P10 to unlatch all dimmer module outputs or turn channel on momentarily to unlatch.	

General Connections

J1-1	Communications Signal (from Master or CPU)	16 Awg Min.
J1-2	Communications Ground (from Master or CPU)	14 Awg Min.

CHANNEL DESIGNATIONS

Channel	Connection	Type	Rating
1	J1-1	FET Output	10 Amp Max **
2	J1-2	FET Output	10 Amp Max **
3	J1-3	FET Output	10 Amp Max **
4	J1-4	FET Output	10 Amp Max **
5	J1-5	FET Output	10 Amp Max **
6	J1-6	FET Output	10 Amp Max **
7	J4-1	FET Output	10 Amp Max **
8	J4-2	FET Output	10 Amp Max **
9	J4-3	FET Output	10 Amp Max **
10	J4-4	FET Output	10 Amp Max **
	J4-5	Power Ground	

"I SQUARED RULE"

** Total module current is limited by the following. The sum of the current squared for each output may not exceed 350.

$I1^2+I2^2+I3^2+I4^2+I5^2+I6^2+I7^2+I8^2+I9^2+I10^2<350$

Failure to follow this rule may cause module failure.

MATING CONNECTIONS

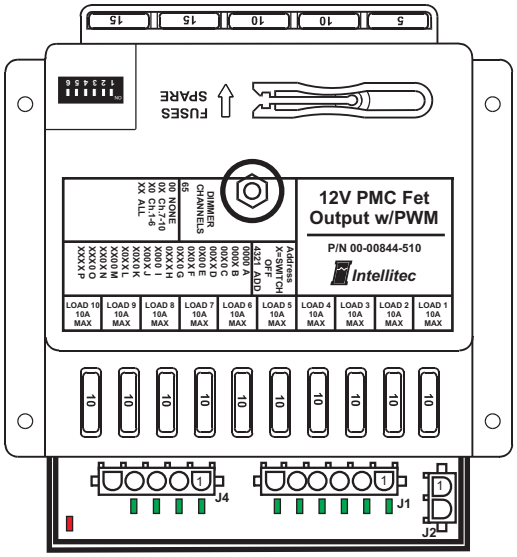
Designator	Function	Connector	Mating Part #	Contact,Typical	
	Battery	#10/32 Ring Term		*for 14-18 AWG*	*for 10-12 AWG*
J2	Communication	2 Pin Amp Mate-N-Lok	1-480698-0	350919-3	640310-3
J1	Outputs	6 Pin Amp Mate-N-Lok	640585-1	350919-3	640310-3
J4	Outputs	5 Pin Amp Mate-N-Lok	1-480763-0	350919-3	640310-3

MODULE SETTINGS

Module can be set for 1 of 16 address, A-P. Outputs can be set as dimmer or ON/OFF. Set six dip switches per table on right. X = Switch is OFF

SWITCH 6 5 4 3 2 1	MODULE Address	SWITCH 6 5 4 3 2 1	MODULE Address
0 0 0 0	A	X 0 0 0	I
0 0 0 X	B	X 0 0 X	J
0 0 X 0	C	X 0 X 0	K
0 0 X X	D	X 0 X X	L
0 X 0 0	E	X X 0 0	M
0 X 0 X	F	X X 0 X	N
0 X X 0	G	X X X 0	O
0 X X X	H	X X X X	P

0 0 No Dimmers
0 X 1 thru 6 are Dimmers
X 0 7 thru 10 are Dimmers
X X All are Dimmers



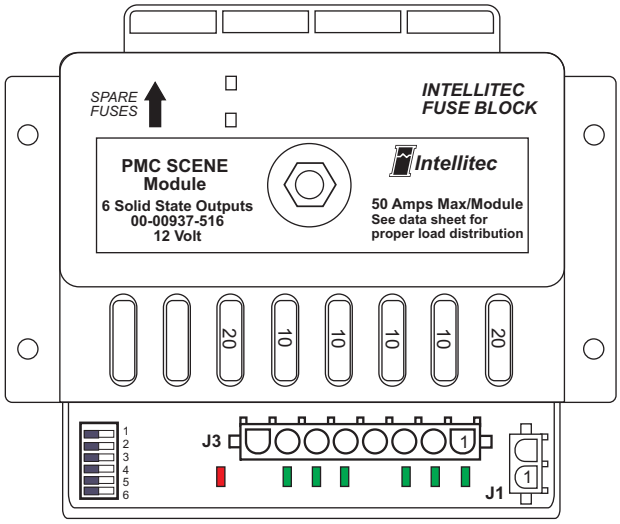
Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

The PMC Output Modules 00-00937 are members of Intellitec's Programmable Multiplex Control family, as well as the 160 Channel Multipoint Switching System. These output modules work in combination with the PMC CPU or the 160 channel IPX Master and other standard, semi-custom, or custom I/O modules. They provide solid-state outputs with the capability of dimming lights and allow the vehicle user to preset 4 different scenes.

The modules provide power fusing, switching, and distribution. Switching is accomplished via long life, field effect transistors instead of relays. Four outputs are rated at a maximum of 10 Amps and two outputs are rated at a maximum of 20 Amps . The total module current is limited by the *"I squared rule"* on the following page.

The approximate module dimensions are *3.80*" X *5.03*" X 1.*80*" . *It should be installed in a protected environment, inside the vehicle.*

The 937 module can be set for module addresses, A-P. *Using the chart on the next page, set the dip switches 1-4 to address the module.*



PULSE-WIDTH MODULATION (PWM) PROVIDES VARIABLE POWER

The 937 modules provide the ability to dim lights from any Intellitec multiplex keypad or momentary switch. This module dims the lights using pulse width modulation or PWM. Variable power is applied to the load by quickly turning the power on and off. By varying the duty cycle we can vary the intensity of the lamp.

Pressing and releasing the button quickly will cause the output to toggle on or off. Pressing and holding the button a second time will cause the intensity to begin ramping down. When the button is released, the lamp will remain at that intensity. The output will remember it's last intensity setting.

When using Intellitec programmable momentary push button switches, a switch is set for the same multiplex channel as the output. When the switch turns the channel on, the output latches on. When the switch turns the channel on again, the output latches off. Using the switch programming GUI and setting a switch for BL/MR (back light/Master Reset), instructs the module to turn all 6 outputs off when the switch is held for 3 seconds.

PRESETS

The module includes the ability to store up to four preset levels of brightness for all six channels. To store a given set of brightness levels (including off), the vehicle owner sets the desired brightness of the six channels. Then pressing and holding one of the programmed buttons on a keypad for three seconds, the lights will blink to indicate those levels are stored. Scene buttons on the keypads are programmed to be channels 7, 8, 9 or 10. These channels can also be activated via PMC Booleans. To return to this set of brightness levels, the owner can momentarily press that scene button again.

By adjusting dip switches on the module, two, four, or all six channels can be included in the group. When selecting four outputs, Channel 6, a 20 Amp channel, can be included our not in the group by proper setting of the dip switches.

When using a PMC System, Booleans can be written providing scene signals to multiple modules allowing nearly unlimited number of lights to be included in the scene group.

LED DIAGNOSTIC INDICATORS

Next to each Mate-N-Lok connection you will find green LEDs. If the output is on, the LED will be on. There is also one red LED. This will illuminate if multiplex communications fail. In this case check the connections at J2.

SPECIFICATIONS

Modules **00-00937-506, 00-00937-516**

Nominal Vehicle Voltage 24V (00-00937-506), 12V (00-00937-516)

NOTE: *Output latches On/Off when channel turns on momentarily*

General Connections

J1-1	Communications Signal (from Master or CPU)	16 Awg Min.
J1-2	Communications Ground (from Master or CPU)	14 Awg Min.

CHANNEL DESIGNATIONS

Channel	Connection	Type	Rating
1	J3-1	FET Output	20 Amp Max **
2	J3-2	FET Output	10 Amp Max **
3	J3-3	FET Output	10 Amp Max **
	J3-4	Power Ground	
4	J3-5	FET Output	10 Amp Max **
5	J3-6	FET Output	10 Amp Max **
6	J3-7	FET Output	20 Amp Max **
	J3-8	No Connect	
7	Ch 7,8,9,10	Scene 1 input	
8	is sent from keypads	Scene 2 input	
9		Scene 3 input	
10		Scene 4 input	

"I SQUARED RULE"

** Total module current is limited by the following. The sum of the current squared for each output may not exceed 350.

$$\frac{I1^2}{2}+I2^2+I3^2+I4^2+I5^2+\frac{I6^2}{2}<350$$

Failure to follow this rule may cause module failure.

MATING CONNECTIONS

Designator	Function	Connector	Mating Part #	Contact,Typical	
	Battery	1/4" or 1/4-20 Ring Term		*for 14-18 AWG*	*for 10-12 AWG*
J1	Communication	2 Pin Amp Mate-N-Lok	1-480698-0	350919-3	640310-3
J3	Outputs	8 Pin Amp Mate-N-Lok	640586-1	350919-3	640310-3

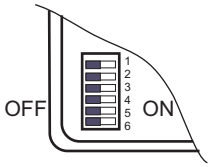
MODULE SETTINGS

Module can be set for 1 of 16 address, A-P. Set six dip switches per table on right.

X = Switch is OFF

SWITCH POSITIONS 5 &6

0 0 Channels 1 & 2 in scene group
0 X Channels 1 - 4 in scene group
X 0 Channels 1,2,5, 6 in scene group
X X All channels in scene group



SWITCH 6 5 4 3 2 1	MODULE Address	SWITCH 6 5 4 3 2 1	MODULE Address
0 0 0 0	A	X 0 0 0	I
0 0 0 X	B	X 0 0 X	J
0 0 X 0	C	X 0 X 0	K
0 0 X X	D	X 0 X X	L
0 X 0 0	E	X X 0 0	M
0 X 0 X	F	X X 0 X	N
0 X X 0	G	X X X 0	O
0 X X X	H	X X X X	P

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

4 Channel DC Input / 6 Channel Solid-State Output

00-00846-506/516 PMC Solid State I/O Module

The PMC I/O Module 846-506/516 is a member of Intellitec's Programmable Multiplex Control family. It works in combination with the PMC CPU and other standard, semi-custom, or custom I/O modules.

The 506/516 provides power-fusing, switching, and distribution in one module. With it's six, solid-state, high-side outputs it is capable of controlling a total of 37 Amps. *Please refer to the tables in this brochure for proper load distribution.* The outputs are controlled by field effect transistors and are ideal for high use applications, such as flashing warning lights, turn signals and brake lights.

There are four input connections for rocker, limit, or sensor switches. Each individual input can be configured as either a low-side switch to ground, or a high-side switch to battery. Input information is directly communicated to the CPU via the PMC communications link. All of the input/output harnesses are connected with AMP Mate-N-Lok connectors to reduce installation time and errors.

This module should be installed in a protected environment, inside a vehicle.

Dimensions 5-3/4 X 5 inches
Pat. No. 4,907,222 & 6,011,997

DIRECT CONNECT OUTPUTS 5 AND 6

Direct Connection between inputs 7 and 8 and outputs 5 and 6 can be accomplished by setting dip switch 5 and 6 to the on position. When set for direct connect, the respective output will turn on within 1ms of receiving an input at 7 or 8. The purpose of the direct connect outputs is to eliminate the delay caused by communication with the CPU. This setting bypasses any boolean that may be written for these channels. Inputs at 7 and 8 may be high or low-side inputs.

DIAGNOSTICS AND LED INDICATORS

Next to each Mate-N-Lok output connection you will find a green LED. If the output is on, the LED will illuminate. If a fuse is blown and the output should be on, the LED will not illuminate.

A Red LED Illuminates when power is applied. When multiplex communications are present and correct, the COM LED will Illuminate.

If the module's circuit board exceeds temperature of 100^0 C, all outputs will turn off protecting the module. The COM LED will flash indicating that an over temperature condition exists. After cool down and the power is removed and reapplied, the module will return to normal function. The module will record the number of times overheating has occurred and upon initial power up the LED will flash the number of times the module has been overheated.

LOAD DISTRIBUTION

Max load current per module 50 Amps
Max load current output One 20 Amps
Max load current outputs two through six 10 amps

I = the current in amps
$II1^2/2+I2^2+I3^2+I4^2+I5^2+I6^2=<350$

(Notice that for output one, the current squared is divided by two)

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

4 Channel DC Input / 6 Channel Solid-State Output

00-00846-506/516 PMC Solid State I/O Module

SPECIFICATIONS

General Connections		00-00846-516	00-00846-506
Nominal Vehicle Voltage		12V	24V
Maximum Operating Temperature		65^0 C	65^0 C
Module Current		50 Amps Max	50 Amps Max
J1-1	Output Channel 1 20A		
J1-2	thru J1-6 Output Channels 2-6 10A		
J2-1	Communication Signal (from CPU) 16 awg Min.		
J2-2	Communication Ground (from CPU) 14awg Min.		
J3	Power Stud +12V size wire to support module load current		
J4-1	Fused 12V out for positive switched inputs	3 Amps Max.	3 Amps Max
J4-2-5	Input Channels 7-10	18 awg Min.	18 awg Min.
J5	Module Ground	16 awg Min.	16 awg Min.

CHANNEL DESIGNATIONS

Channel	Connection	Type	Rating
1	J1-1	FET Output	20 Amps Max @65^0 C Ambient
2-6	J1-2 thru J1-6	FET Output	10 Amps Max @65^0 C Ambient Use Channel 1 for highest amperage output. Do not exceed 50 Amps total or 350 per below. $I1^2/2+I2^2+I3^2+I4^2+I5^2+I6^2=<350$
7-10	J4-2 thru J4-5	Input, Positive or Negative	

Contact Intellitec for assistance determining of your particular load distribution will provide for a reliable design.

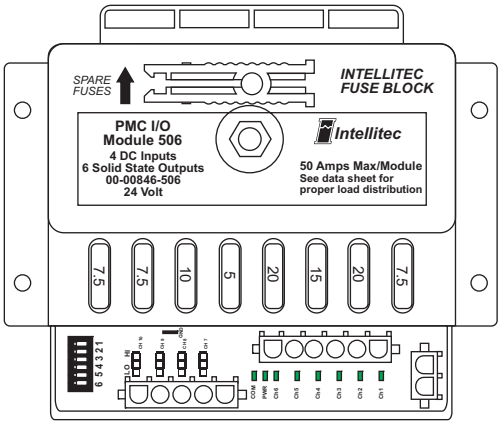
MATING CONNECTIONS

Designator	Function	Connector	Mating Part #	Contact, Typical	
				For 14-18 AWG	*for 10-12 AWG*
J1	Outputs	6 Pin Amp Mate-N-Lok	640585-1	350919-3	640310-3
J2	PMC/Com	2 Pin Amp Mate-N-Lok	1-480698-0	350919-3	640310-3
J3	Ground	.250 Tab Terminal			
J4	Inputs	5 Pin Amp Mate-N-Lok	1-480763-0	350919-3	640310-3

MODULE SETTINGS

Module can be set for 1 of 16 address, A-P.
Set six dip switches per table on right. X = Switch is *OFF.*

SWITCH 6 5 4 3 2 1	*Module Address*	*SWITCH 6 5 4 3 2 1*	*Module Address*
0 0 0 0	A	X 0 0 0	I
0 0 0 X	B	X 0 0 X	J
0 0 X 0	C	X 0 X 0	K
0 0 X X	D	X 0 X X	L
0 X 0 0	E	X X 0 0	M
0 X 0 X	F	X X 0 X	N
0 X X 0	G	X X X 0	O
0 X X X	H	X X X X	P



Turning switch 5 on causes Output Ch 5 to be operated directly from Input Ch 7 (acts like a Relay)
Turning switch 6 on causes Output Ch 6 to be operated directly from Input Ch 8 (acts like a Relay)

Four inputs Channel 7-10 can be individually set for either positive (high-side)
Switched to the battery, or negative (low-side) switched to ground.

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

The PMC I/O Module 846-506/516 is a member of Intellitec's Programmable Multiplex Control family. It works in combination with the PMC CPU and other standard, semi-custom, or custom I/O modules.

The 506/516 provides power-fusing, switching, and distribution in one module. With it's six, solid-state, high-side outputs it is capable of controlling a total of 37 Amps. *Please refer to the tables in this brochure for proper load distribution.* The outputs are controlled by field effect transistors and are ideal for high use applications; such as flashing warning lights, turn signals and brake lights.

There are four input connections for rocker, limit, or sensor switches. Each individual input can be configured as either a low-side switch to ground, or a high-side switch to battery. Input informatioN is directly communicated to the CPU via the PMC communications link. All of the input/output harnesses are connected with AMP Mate-N-Lok connectors to reduce installation time and errors.

This module should be installed in a protected environment inside a vehicle.

Dimensions 5-3/4 X 5 inches

DIRECT CONNECT OUTPUTS 5 AND 6

Direct Connection between inputs 7 and 8 and outputs 5 and 6 can be accomplished by setting dip switch 5 and 6 to the on position. When set for direct connect, the respective output will turn on within 1ms of receiving an input at 7 or 8. The purpose of the direct connect outputs is to eliminate the delay caused by communication with the CPU. This setting bypasses any boolean that may be written for these channels. Inputs at 7 and 8 may be High or Low side inputs.

DIAGNOSTICS AND LED INDICATORS

Next to each output connection you will find a green LED. If the output is on, the LED will illuminate. If a fuse is blown and the output should be on, the LED will not illuminate.

A Red LED Illuminates when power is applied. When multiplex communications are present and correct, the COM LED will Illuminate.

If the module's circuit board exceeds 100^0 C, all outputs will turn off protecting the module. The COM LED will flash indicating that an over temperature condition exists. After cool down, and after power is removed and reapplied the module will return to normal function. The module will record the number of times overheating has occurred and upon initial power up the LED will flash the number of times the module has been overheated.

LOAD DISTRIBUTION

Max load current per module 37 Amps
Max load current per output one through six, 10 amps

I = the current in amps
$I1^2/2+I2^2+I3^2+I4^2+I5^2+I6^2_{6}=<200$

(Notice that for output one, the current squared is divided by two)

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

SPECIFICATIONS

General Connections		**00-00846-616**	**00-00846-606**
Nominal Vehicle Voltage		12V	24V
Maximum Operating Temperature		65^0 C	65^0 C
Module Current		37 Amps Total Max	37 Amps Total Max
J1-1	Output Channel 1 20A		
J1-2	thru J1-6 Output Channels 2-6 10A		
J2-1	Communication Signal (from CPU) 16 awg Min.		
J2-2	Communication Ground (from CPU) 14awg Min.		
J3	Power Stud +12V size wire to support module load current		
J4-1	Fused 12V out for positive switched inputs	3 Amps Max.	3 Amps Max
J4-2-5	Input Channels 7-10	18 awg Min.	18 awg Min.
J5	Module Ground	16 awg Min.	16 awg Min.

CHANNEL DESIGNATIONS

Channel	**Connection**	**Type**	**Rating**
1-6	J1-1 thru J1-6	FET Output	Ch 1 15Amps Max, Ch 2-6 10 Amps Max @65^0 C Ambient. Use Channel 1 for highest amperage output. Do not exceed 37 Amps total or 200 per below. $I1^2/2+I2^2+I3^2+I4^2+I5^2+I6^2=<200$
7-10	J4-2 thru J4-5	Input, Positive or Negative	

Contact Intellitec for assistance determining of your particular load distribution will provide for a reliable design.

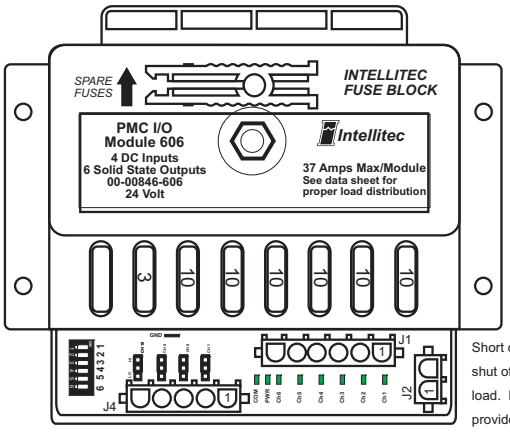
MATING CONNECTIONS

Designator	**Function**		**Connector**	**Mating Part #** *for 14-18 AWG*	**Contact, Typical** *for 10-12 AWG*
J1	Outputs	6 Pin Amp Mate-N-Lok	640585-1	350919-3	640310-3
J2	PMC/Com	2 Pin Amp Mate-N-Lok	1-480698-0	350919-3	640310-3
J3	Ground	.250 Tab Terminal			
J4	Inputs	5 Pin Amp Mate-N-Lok	1-480763-0	350919-3	640310-3

MODULE SETTINGS

Module can be set for 1 of 16 address, A-P.
Set six dip switches per table on right. X = Switch is OFF

SWITCH 6 5 4 3 2 1	***Module Address***	***SWITCH 6 5 4 3 2 1***	***Module Address***
0 0 0 0	A	X 0 0 0	I
0 0 0 X	B	X 0 0 X	J
0 0 X 0	C	X 0 X 0	K
0 0 X X	D	X 0 X X	L
0 X 0 0	E	X X 0 0	M
0 X 0 X	F	X X 0 X	N
0 X X 0	G	X X X 0	O
0 X X X	H	X X X X	P



Short circuit protected FETs shut off in the event of a shorted load. Fuses or circuit breakers provide redundant protection.

Turning switch 5 on causes Output Ch 5 to be operated directly from Input Ch 7 (Acts like a relay)
Turning switch 6 on causes Output Ch 6 to be operated directly from Input Ch 8 (Acts like a relay)

Four inputs Channel 7-10 can be individually set for either positive (high-side) switched to the battery, or negative (low-side) switched to ground.

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

The PMC I/O Module 600/610 is a member of Intellitec's Programmable Multiplex Control family. It works in combination with the PMC CPU and other standard, semi-custom, or custom I/O modules.

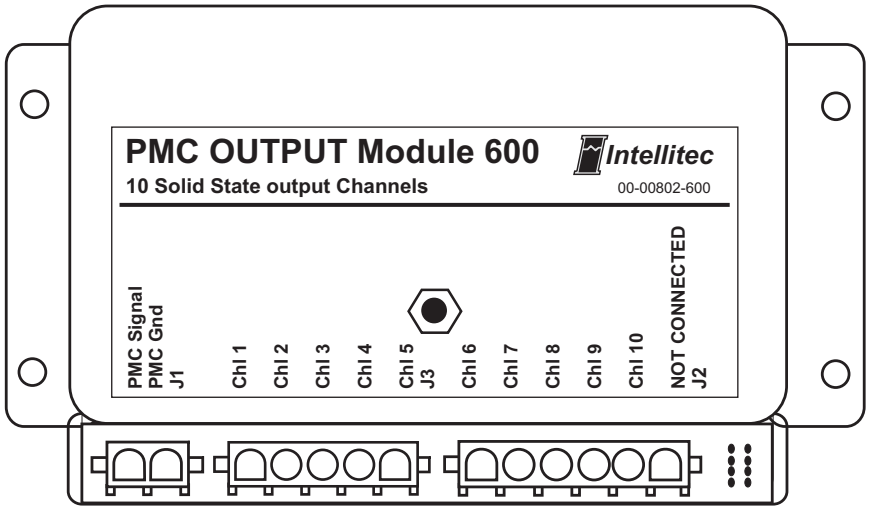
The 600/610 module provides power switching, and distribution in one module. With it's ten, solid-state, high-side outputs, it is capable of controlling a total of 50 Amps. Each output is capable of controlling a maximum of 10 Amps. ***Please refer to the tables in this brochure for proper load distribution.* The outputs are controlled by field effect transistors and are ideal for high use applications, such as turn signals, brake lights and emergency vehicle flashers.

The advanced FET outputs in the 600/610 module are self protecting in the event of a short circuit. The electronic over current and short circuit protection will shut current flow off very quickly in the event of either a short circuit or over temperature condition. In the event that overcurrent or a short circuit is detected, the output will turn off and remain off until the PMC channel that is controlling it is turned off and then on again. If the fault is still present, the output will turn off again.

The unique design of this module provides protection for the FET outputs in the event of wiring errors or failures that produce loss of ground. With most competitive units, loss of ground can cause their solid state outputs to turn partially on when they are not directed to do so. In addition to creating a hazard due to loss of control, this will also destroy the output. In the event of loss of ground the Intellitec output will remain off. All of Intellitec's FET output modules are protected for this as well as other conditions such as load dump and voltage spikes that are common to vehicles.

** Determining Acceptable Load Distribution

$$I1^2 + I2^2 + I3^2 + I4^2 + I5^2 + I6^2 + I7^2 + I8^2 + I9^2 + I10^2 <= 255$$



SPECIFICATIONS

General Connections	**00-00802-610**	**00-00802-600**
Nominal Vehicle Voltage	12V	24V
Maximum Operating Temperature	65^0 C	65^0 C
Module Current	50 Amps Total Max	50 Amps Total Max

CONNECTORS

J1-1	PMC Signal	18 awg Min.	18 awg Min.
J1-2	PMC Ground	14 awg Min.	14 awg Min.

CHANNEL DESIGNATIONS

Channel	**Connection**	**Type**	**Rating**
1-5	J2-1 thru J2-5	Protected FET Output	10 Amps cont. Any output @65^0 C Ambient.
6-10	J3-1 thru J3-5	Protected FET Output	10 Amps cont. Any output @65^0 C Ambient.
Pwr GND	J3-6		*See formula & examples on "Determining Acceptable Load Distribution" page.*

+ BAT Power stud 1/4 - 20

NOTE: The FET outputs of channels 1-10 provide a protected source of voltage to the Load from the Battery. The maximum current for the entire module is 50 Amps. Due to the need to dissipate heat, the current being controlled by each output must be considered.

For reliability, the sum of the current in each channel squared must equal less than 255 and total module current must not exceed 50 Amps. $I1^2 + I2^2 + I3^2 + I4^2 + I5^2 + I6^2 + I7^2 + I8^2 + I9^2 + I10^2 = 255$

Do not exceed 50 Amps total and stay within the recommendations for the combination of outputs described in this data sheet. *Contact Intellitec for assistance determining if your particular load distribution will provide for a reliable design.*

MATING CONNECTIONS

Designator	**Function**	**Connector**	**Mating Part #**	**Contact, Typical**	
				for 14-18 AWG	*for 10-12 AWG*
J1	PMC/Com	2 Pin Amp Mate-N-Lok	1-480698-0	350919-3	640310-3
J2	Outputs	5 Pin Amp Mate-N-Lok	1-480763-0	350919-3	640310-3
J3	Outputs	6 Pin Amp Mate-N-Lok	640585-1	350919-3	640310-3

MODULE SETTINGS

Module can be set for 1 of 16 address, A-P. Set four jumpers on jumper block JP2 per table on right.

X = Jumper is OUT

JUMPERS 4 3 2 1	***Module Address***	***JUMPERS 4 3 2 1***	***Address***
0 0 0 0	A	X 0 0 0	I
0 0 0 X	B	X 0 0 X	J
0 0 X 0	C	X 0 X 0	K
0 0 X X	D	X 0 X X	L
0 X 0 0	E	X X 0 0	M
0 X 0 X	F	X X 0 X	N
0 X X 0	G	X X X 0	O
0 X X X	H	X X X X	P

DETERMINING ACCEPTABLE LOAD DISTRIBUTION

Per the data sheet, any output on a 506/516 module may be used to control as much as 20 Amps; on a 600/610/606 or 616 module 10 Amps. It is important that we consider the amount of current being drawn on each of the 6 outputs and the total amount of heat generated by the FETs for reliability reasons to keep the field effect transistors within their rated operating temperature. *If for example, with a 506 module, you anticipate that all of the outputs could be on at the same time and one of the outputs draws 20 Amps, the others should be limited to approximately 3.2 Amps each.* If one of the outputs were 10 amps instead, the others could each be as much as 8.4 amps. As you can see, the relationship is *not linear* and *does not always* add up to the module's total current capacity of 50 amps.

To determine if your particular load distribution is acceptable, please use the following formula, or stay within the examples shown on this sheet. These calculations assume an ambient temperature of 65^{0}C or less. The calculations also assume that all 6 channels are on continuously at the same time. If because of the operating logic, it is impossible for two outputs to be on at the same time, use 0 in the formula for the lower current output and perform the calculation. For a 506/516 module, the resultant of the formula should be 450, or less. For a 606/616 it should be 255 or less. If an output is on for a short duration, (10 seconds) and does not repeat for several minutes, then 0 may be used in the equation.

The field effect transistors are kept within their operating temperature by dissipating their heat into the surrounding air. *It is important that the metal heat sink on the top of the module is not covered by carpeting, paint, labels, or any other type of insulating material.* It is OK to mount the module inside an enclosure, provided that there is a volume of at least 200 cubic inches.

When continuously operating the module close to it's full load capacity, the heat sink will become hot. This is normal. *Care should be taken so that materials that may be damaged by heat, such as plastics, are not in contact with the metal heat sink.*

I = Average Channel Current

For 00-00846- 506 and 516 modules $I1^2/2+I2^2+I3^2+I4^2+I5^2+I6^2=350$ or Less and I_T< or = 50 Amps

For 00-00846-606 and 616 modules $I1^2/2+I2^2+I3^2+I4^2+I5^2+I6^2=200$ or Less and I_T< or = 37 Amps

For 00-00802-600 and 610 modules $I1^2+I2^2+I3^2+I4^2+I5^2+I6^2+I7^2+I8^2+I9^2+I10^2=255$ or Less and I_T< or = 50 Amps

For 00-00888-600 and 610 modules $I1^2+I2^2+I3^2+I4^2+I5^2+I6^2+I7^2+I8^2+I9^2+I10^2=350$ or Less and I_T< or = 50 Amps

DETERMINING ACCEPTABLE LOAD DISTRIBUTION

Examples for 00-00846-506/516 Modules $I1^2/2+I2^2+I3^2+I4^2+I5^2+I6^2=350$

Channel	No.	Amps	I^2
1	$I^2/2$	10	50
2	I^2	8	64
3	I^2	8	64
4	I^2	8	64
5	I^2	8	64
6	I^2	6.5	42
Total		48.5	348

Channel	No.	Amps	I^2
1	$I^2/2$	10	50
2	I^2	10	100
3	I^2	10	100
4	I^2	7	49
5	I^2	4	25
6	I^2	5	25
Total		47	349

Channel	No.		43.5
1	$I^2/2$	Amps	I^2
2	I^2	20	200
3	I^2	2.5	6
4	I^2	10	100
5	I^2	5	25
6	I^2	3	9
Total		3	9

Examples for 00-00846-606/616 Modules $I1^2/2+I2^2+I3^2+I4^2+I5^2+I6^2=200<200$

Channel	No.	Amps	I^2
1	$I^2/2$	12	72
2	I^2	5	25
3	I^2	5	25
4	I^2	5	25
5	I^2	5	25
6	I^2	5	25
Total		37	197

Channel	No.	Amps	I^2
1	$I^2/2$	10	50
2	I^2	8	64
3	I^2	5	25
4	I^2	2	4
5	I^2	6	36
6	I^2	4	16
Total		35	195

Channel	No.	Amp	35.5
1	$I^2/2$	s	I^2
2	I^2	15	112.5
3	I^2	5	25
4	I^2	4	16
5	I^2	2.5	6.25
6	I^2	5	25
Total		4	16

Examples for 00-00802-600/610 Modules $I1^2+I2^2+I3^2+I4^2+I5^2+I6^2+I7^2+I8^2+I9^2+I10^2=255$

Channel	No.	Amps	I^2
1		5	25
2		5	25
3		5	25
4		5	25
5		5	25
6		5	25
7		5	25
8		5	25
9		5	25
10		5	25
Total		50	250

Channel	No.	Amps	I^2
1		10	100
2		5	25
3		5	25
4		5	25
5		5	25
6		4	16
7		3	9
8		3	9
9		3	9
10		3	9
Total		46	252

Channel	No.	Amps	I^2
1		10	100
2		10	100
3		3	9
4		3	9
5		3	9
6		3	9
7		2	4
8		2	4
9		2	4
10		2	4
Total		40	252

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

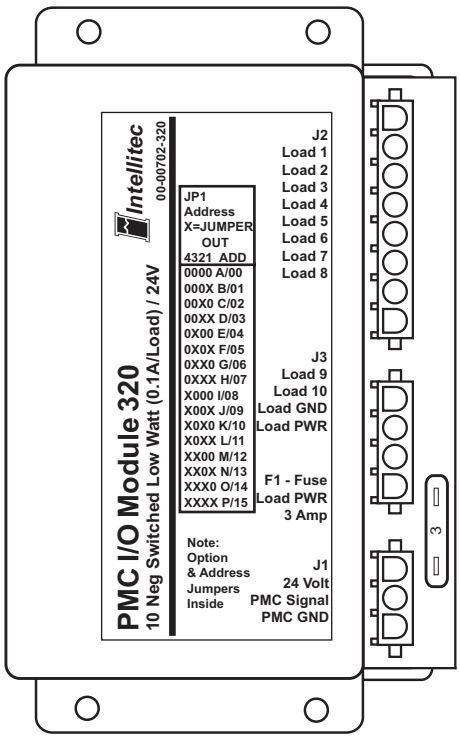
10 Negative Switched Low Watt Outputs (0.1A Load)

00-00702-320/330 PMC Output Modules

PMC I/O Modules 00-00702-320 and 330 are members of Intellitec's Programmable Multiplex Control family. They work in combination with the PMC CPU and other standard, semi-custom or custom I/O modules, allowing you to create the exact system configuration that you want from basic to all encompassing.

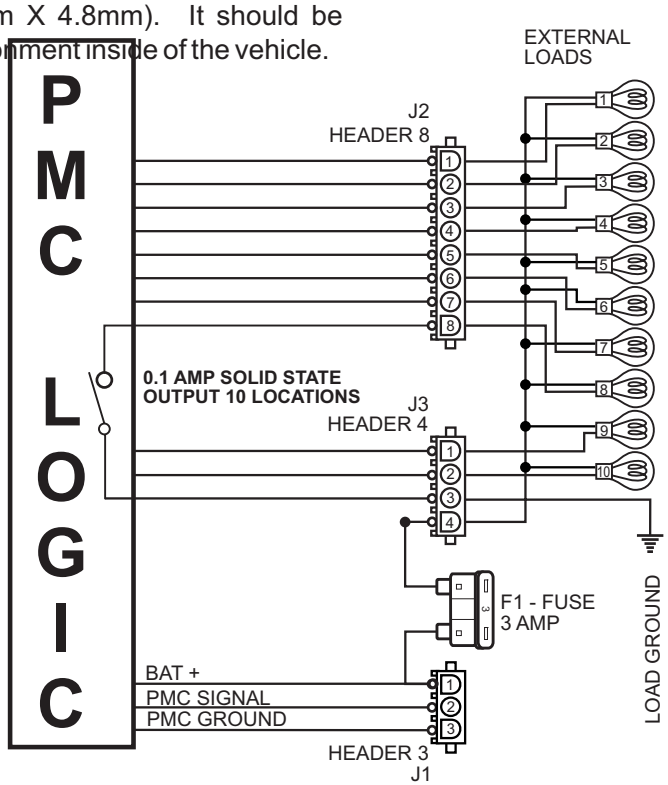
There are ten connections for low wattage loads, such as dash warnings lights, or beepers. The PMC CPU utilizes input information from other modules on the system, and via the PMC communications link controls the ten loads of this module. All of the output harnesses are connected with AMP Mate-N-Lok connectors to reduce installation time and errors.

All loads are negative (low-side), switched to a local load ground which needs to be provided to the module. In other words, the outputs are connected between the load and ground. *(Different than the 406/416 module which provides for high-side switching).* A fused load power connection is available at the module which can be used for loads requiring a power source.



Pat. No. 4,907,222 & 6,011,997

The approximate module dimensions are 6.375" X 3.750" X 1.875" (16.2mm X 9.5mm X 4.8mm). It should be installed in a protected environment inside of the vehicle.



Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

10 Negative Switched Low Watt Outputs (0.1A Load)

00-00702-320/330 PMC Output Modules

SPECIFICATIONS

General Connections		00-00702-330	00-00702-320
Nominal Vehicle Voltage		12V	24V
J3-4	Fuse 1, Load Power	3 Amps Max.	3 Amps Max.
J3-3	Local Load Ground		
J1-1	External Power from CPU	5 Amps Max.	5 Amps Max.
J1-2	PMC Signal	18 awg Min.	18 awg Min.
J1-3	PMC Ground	14 awg Min.	14 awg Min.

CHANNEL DESIGNATIONS

Channel	Connection	Type	Name	Rating
1	J2 -1	Output, Negative Switch to Gnd	Load 1	0.1 Amp
2	J2 -2	Output, Negative Switch to Gnd	Load 2	0.1 Amp
3	J2 -3	Output, Negative Switch to Gnd	Load 3	0.1 Amp
4	J2 -4	Output, Negative Switch to Gnd	Load 4	0.1 Amp
5	J2 -5	Output, Negative Switch to Gnd	Load 5	0.1 Amp
6	J2 -6	Output, Negative Switch to Gnd	Load 6	0.1 Amp
7	J2 -7	Output, Negative Switch to Gnd	Load 7	0.1 Amp
8	J2 -8	Output, Negative Switch to Gnd	Load 8	0.1 Amp
9	J3 -1	Output, Negative Switch to Gnd	Load 9	0.1 Amp
10	J3 -2	Output, Negative Switch to Gnd	Load 10	0.1 Amp

MATING CONNECTIONS

Designator	Function	Connector	Mating Part #	Contact,Typical	
				For 14-18 AWG	*for 10-12 AWG*
J1	PMC Link	3 Pin Amp Mate-N-Lok	1-480700-0	350919-3	640310-3
J2	Loads	8 Pin Amp Mate-N-Lok	1-480702-0	350919-3	640310-3
J3	Loads, Power, GND	4 Pin Amp Mate-N-Lok	640586-1	350919-3	640310-3

MODULE SETTINGS

Module can be set for 1 of 16 address, A-P.
A-P. Set four jumpers on jumper block JP2 per table on right.

X = Jumper is OUT

JUMPERS 4 3 2 1	MODULE Address	JUMPERS 4 3 2 1	MODULE Address
0 0 0 0	A	X 0 0 0	I
0 0 0 X	B	X 0 0 X	J
0 0 X 0	C	X 0 X 0	K
0 0 X X	D	X 0 X X	L
0 X 0 0	E	X X 0 0	M
0 X 0 X	F	X X 0 X	N
0 X X 0	G	X X X 0	O
0 X X X	H	X X X X	P

***NOTE Heavier loads can be connected to this module if the following guidelines are observed.** Any single Load shall not exceed 0.5 Amps, and neither the sum of the currents in Loads 1-5, nor the sum of the currents in Loads 6-10 shall exceed 0.5 Amps. (Example1: Load 1=0.25 Amps, Load 2=0.05 Amps, Load 3=0.1 Amps, Load 4=0.1 Amps, Load 5=No Connection, Load 1-5 sum =0.5 Amps is an acceptable configuration. Example 2: Load 6=0.5 Amps, Load 7=No Connection, Load 8=No Connection, Load 9=No Connection, Load 10=No Connection, Load 6-10 sum =0.5 Amps is an acceptable configuration.)

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

Quad "H" Bridge Output Module

00-00916-120 PMC Output Modules

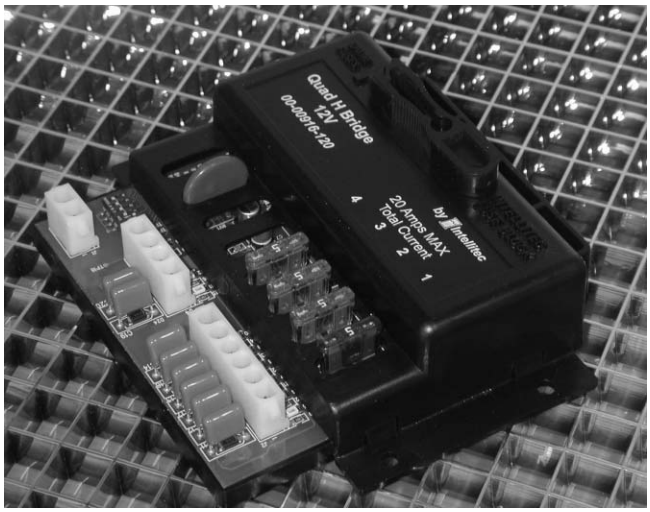
The Quad "H" Bridge Module is a member of Intellitec's Multiplex Control family. It works in combination with the PMC CPU and other standard, semi-custom, or custom I/O modules.

The 916-120 provides power fusing, switching, and distribution all in one module. It would typically be used to operate reversible motor loads. This module has eight, 10 amp SPDT relays connected in four "H" bridge configurations. When a channel is activated, it connects one end of the load to the Battery, while the other end is connected to Ground. Each of the four "H" bridges is fed from a fuse position that can be filled with a fuse, or circuit breaker. The total module current should not exceed 20 Amps.

The Quad "H" Bridge Module includes 9 diagnostic LED's. One indicates the loss of the communication signal and the others indicate the activation of the individual outputs.

Each of the first eight channels will turn on one of the relays in the four "H" bridges. A channel 9 signal will turn on all the odd numbered channel relays and channel 10 signal will turn on all the even channels. This allows simultaneous operation of the four motor loads with a single input.

Each of the outputs can also be used as individual outputs with the understanding that the load will be grounded when turned off. This allows the module to power up to 8 individual loads.



PAT NO. 4,907,222 & 6,011,997

All of the output harnesses are connected with AMP Mate-N-Lok connectors to reduce installation time and errors.

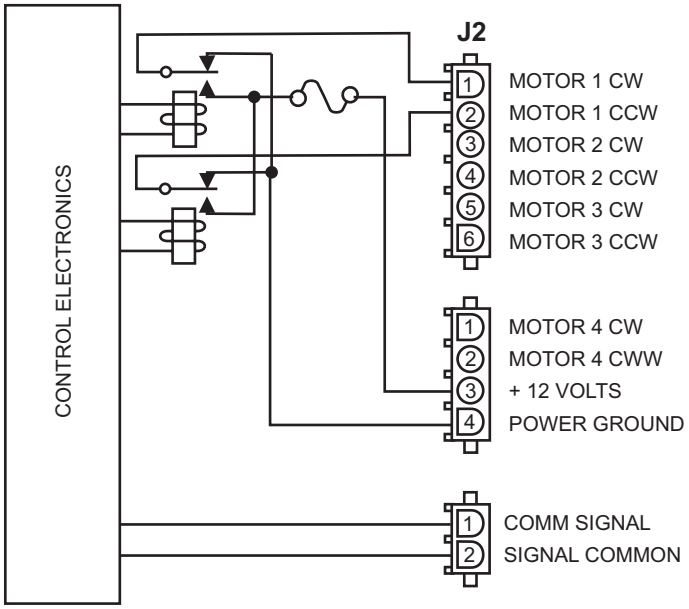
The approximate module dimensions are:
5.8" X 5.0" X 1.45" (147mm X 127mm X 36mm).

The module should be installed in a protected environment, inside the vehicle.

TRUTH TABLE EXAMPLE						
PMC CH 1	**PMC CH 2**	**PMC CH 9**	**PMC CH 10**	**MOTOR 1**	**J2-1**	**J2-2**
OFF	OFF	OFF	OFF	OFF	GND	GND
ON	OFF	OFF	OFF	CW	BAT+	GND
OFF	ON	OFF	OFF	CCW	GND	BAT+
ON	ON	OFF	OFF	OFF	BAT+	BAT+
OFF	OFF	ON	OFF	CW	BAT+	GND
OFF	OFF	OFF	ON	CCW	GND	BAT+

Repeat for motors 2,3 and 4
Channels 9 & 10 affect all motors

NOTE: **Only one output circuit shown**



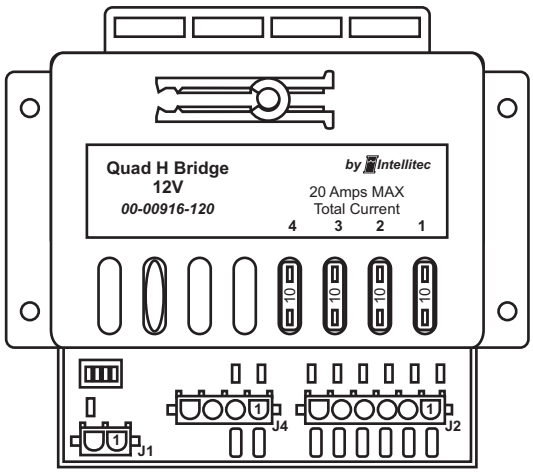
Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

Quad "H" Bridge Output Module

00-00916-120 PMC Output Modules

SPECIFICATIONS

General Connections		00-00916-120
Nominal Vehicle Voltage		12V
Module Current		20 Amp Max
J4-3	+ 12 Volts	
J4-4	Ground	
J1-1	PMC Signal	18 awg Min
J1-2	PMC Ground	14 awg Min



CHANNEL DESIGNATIONS

Channel	Relay	Connection	Type	Fuse	Rating
1	Relay 1	J2-1	Relay Output, Form C (SPDT)	Fuse 1	10 Amp Max
2	Relay 2	J2-2	Relay Output, Form C (SPDT)	Fuse 1	10 Amp Max
3	Relay 3	J2-3	Relay Output, Form C (SPDT)	Fuse 2	10 Amp Max
4	Relay 4	J2-4	Relay Output, Form C (SPDT)	Fuse 2	10 Amp Max
5	Relay 5	J2-5	Relay Output, Form C (SPDT)	Fuse 3	10 Amp Max
6	Relay 6	J2-6	Relay Output, Form C (SPDT)	Fuse 3	10 Amp Max
7	Relay 7	J3-1	Relay Output, Form C (SPDT)	Fuse 4	10 Amp Max
8	Relay 8	J3-2	Relay Output, Form C (SPDT)	Fuse 4	10 Amp Max
9	All Odd Number Relays ON				
10	All Even Number Relays ON				

NOTE:
The relays provide a fused source of voltage to the Load from the Battery when ON and Ground when OFF.

MATING CONNECTIONS

Designator	Function	Connector	Mating Part #	Contact,Typical
J1	PMC/Com	2 Pin Amp Mate-N-Lok	1-480698-0	350919-3
J2	Outputs	6 Pin Amp Mate-N-Lok	640585-1	350919-3
J4	Outputs/Power	4 Pin Amp Mate-N-Lok	1-480700-0	350919-3

MODULE SETTINGS

Module can be set for 1 of 16 address. Set four position dip switch per table to the right.

X = Switch OFF

DIP SW 4 3 2 1	*MODULE Address*	*DIP SW 4 3 2 1*	*MODULE Address*
0 0 0 0	A	X 0 0 0	I
0 0 0 X	B	X 0 0 X	J
0 0 X 0	C	X 0 X 0	K
0 0 X X	D	X 0 X X	L
0 X 0 0	E	X X 0 0	M
0 X 0 X	F	X X 0 X	N
0 X X 0	G	X X X 0	O
0 X X X	H	X X X X	P

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

6 Relay Output / 4 Input Module

00-00917-120/240 PMC I/O Module

The PMC 6 Relay / 4 Input I/O Module is a member of Intellitec's Programmable Multiplex Control family. It works in combination with the PMC CPU and other standard, semi-custom, or custom I/O modules.

The 917 module provides six undedicated relays for switching floating signals. Each relay can carry up to 10 amps of current. There are diagnostic LED's for each of the relay circuits. These LED's will light when the respective relay is closed.

In addition to the six output diagnostic LED's on the outputs, there is also one that indicates the failure of communications. This LED will light in the event of loss of signal.

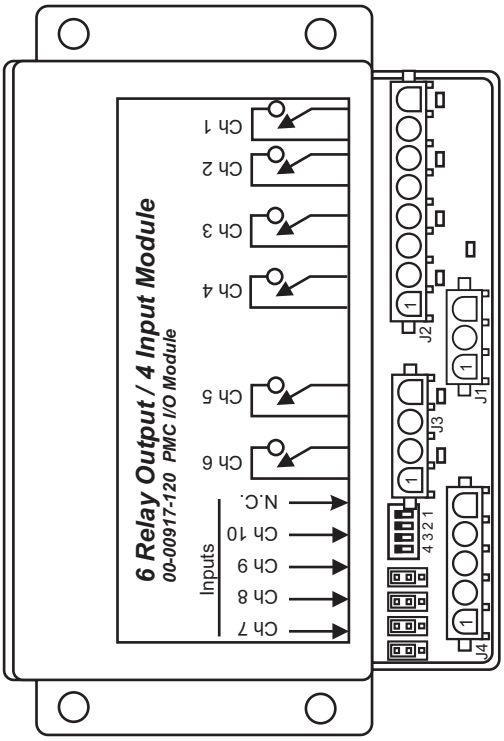
There are four input connections for rocker, limit, or sensor switches. Each individual input can be configured as either a low side switch to ground, or a high side switch to battery. There are four jumpers on the board that can be set to have the input be a high side or low side input.

With the jumper closest to the edge of the board, the inputs will be high side. In other words, when the input is high, there will be an output on the PMC bus.

The module address can be set from A through P by use of the dip switch located on the edge of the board. Addressing information is available on the back of this brochure.

Input information is directly communicated to the CPU and the relays are controlled by the CPU via the PMC communications link. All of the output harnesses are connected with AMP Mate-N-Lok connectors to reduce installation time and errors.

The approximate module dimensions are 6.375" X 4.375" X 1.625" (162mm X 111mm X 42mm). *It should be installed in a protected environment, inside the vehicle*.



PAT NO. 4,907,222 & 6,011,997

Intellitec
131 Eisenhower Lane N., Lombard, IL 60148
630 268 0010 800 251 2408
www.intellitec.com

SPECIFICATIONS

General Connections		**00-00917-120**	**00-00917-240**
Nominal Vehicle Voltage		12V	24V
J1-1	PMC +12 volts	18 awg Min	18 awg Min
J1-2	PMC Signal	18 awg Min	18 awg Min
J1-3	PMC Ground	14 awg Min	14 awg Min

MATING CONNECTIONS

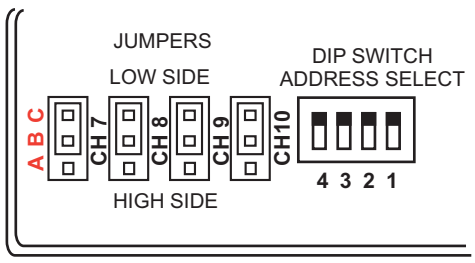
Designator	**Function**	**Connector**	**Mating Part #**	**Contact, Typical**	
				for 14-18 AWG	*for 10-12 AWG*
J1	PMC/Com	3 Pin Amp Mate-N-Lok	1-480700-0	350919-3	640310-3
J2	Outputs	8 Pin Amp Mate-N-Lok	640586-1	350919-3	640310-3
J3	Outputs	4 Pin Mate-N-Lok	1-480702-0	350919-3	640310-3
J4	Inputs	5 Pin Mate-N-Lok	1-480763-0	350919-3	640310-3

CHANNEL DESIGNATIONS

Channel	**Connection**	**Type**	**Name**	**Rating**
1	J2-7 & 8	Relay Output, Form A (SPST),(1)	Relay 1	10 Amp Max
2	J2-5 & 6	Relay Output, Form A (SPST),(1)	Relay 2	10 Amp Max
3	J2-3 & 4	Relay Output, Form A (SPST),(1)	Relay 3	10 Amp Max
4	J2-1 & 2	Relay Output, Form A (SPST),(1)	Relay 4	10 Amp Max
5	J3-3 & 4	Relay Output, Form A (SPST),(1)	Relay 5	10 Amp Max
6	J3-1 & 2	Relay Output, Form A (SPST),(1)	Relay 6	10 Amp Max
7	J4-1	Input, Positive or Negative	Switch 1	2K Input Resistance
8	J4-2	Input, Positive or Negative	Switch 2	2K Input Resistance
9	J4-3	Input, Positive or Negative	Switch 3	2K Input Resistance
10	J4-4	Input, Positive or Negative	Switch 4	2K Input Resistance

MODULE SETTINGS

Module can be set for 1 of 16 address.
Set four dip switches per table to the right.
X = Switch is *OFF.*
(Switches shown in ON position.)



DIP SWITCH 4 3 2 1	***MODULE Address***	***DIP SWITCH 4 3 2 1***	***MODULE Address***
0 0 0 0	A	X 0 0 0	I
0 0 0 X	B	X 0 0 X	J
0 0 X 0	C	X 0 X 0	K
0 0 X X	D	X 0 X X	L
0 X 0 0	E	X X 0 0	M
0 X 0 X	F	X X 0 X	N
0 X X 0	G	X X X 0	O
0 X X X	H	X X X X	P

Four inputs, CH7 thru CH10, can be individually set for either positive (HIGH-SIDE) switched to the battery, or negative (LOW-SIDE) switched to ground. Setting a jumper to short pins AB selects positive switch. Setting a jumper to short pins BC selects negative switch.