4 Channel DC Input / 6 Channel Solid-State Output, PMC Solid State I/O Module

Date datasheet created: 18/07/2013

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, highside 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.

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 COMLED will Illuminate.

If the module's circuit board exceeds temperature of 100 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 50Amps
Max load current output One 20 Amps
Max load current outputs two through six 10 amps
I = the current in amps
II1 /2+I2 +I3 +I4 +I5 +I6 =<350
(Notice that for output one, the current squared is divided by two)

For further information on this product, please contact Intellitec.

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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.

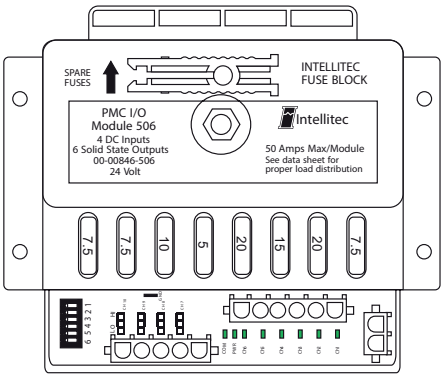
MATING CONNECTIONS

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.