



SYSTEM 21TM 6-WAY

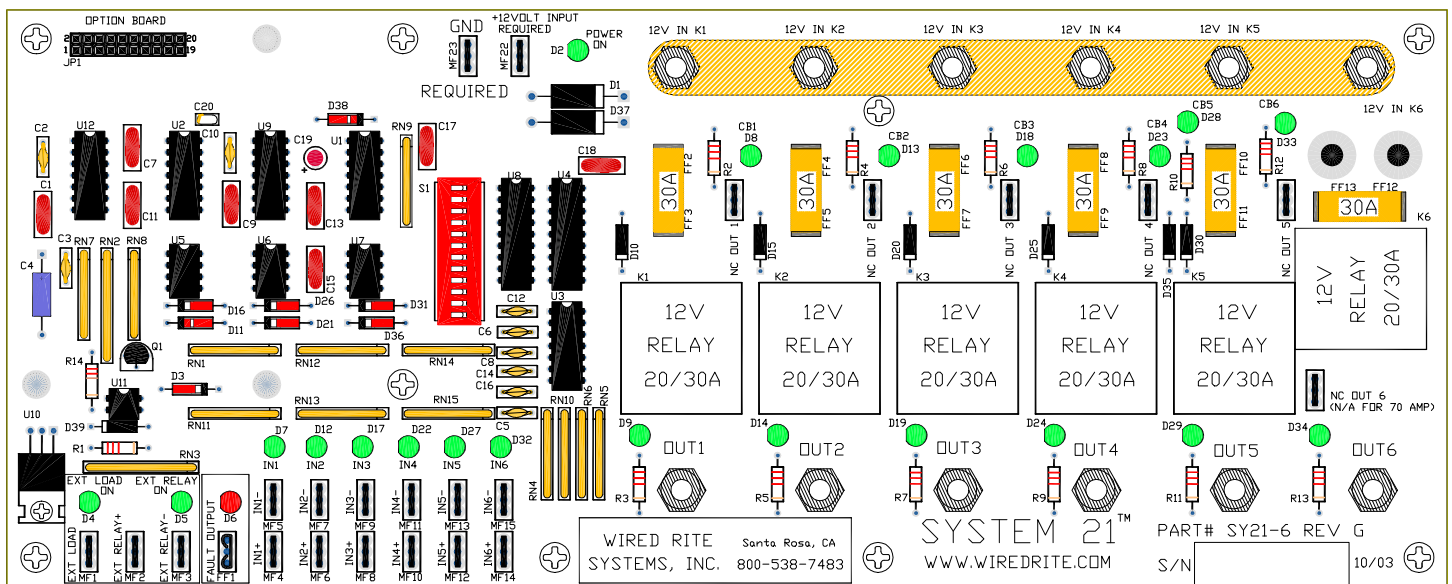
INSTALLATION GUIDE

Revision 2.0

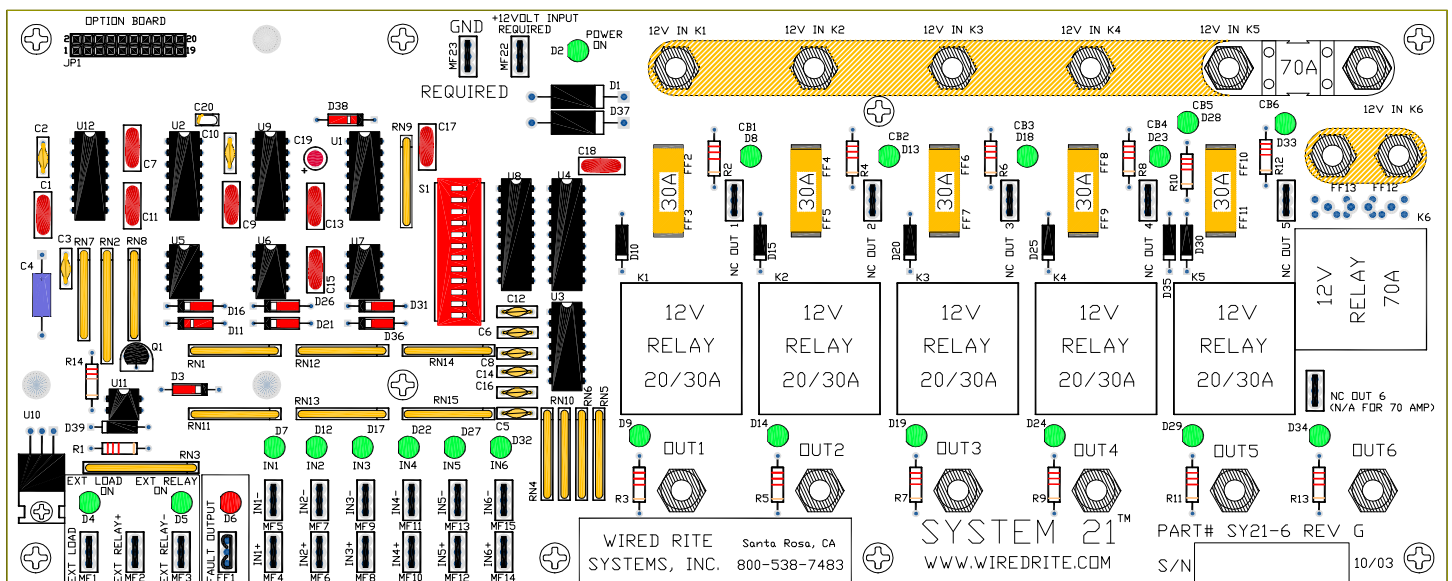
SYSTEM 21™ 6-WAY

INSTALLATION GUIDE

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STANDARD



SYSTEM 21 6-WAY CIRCUIT BOARD MOUNTING

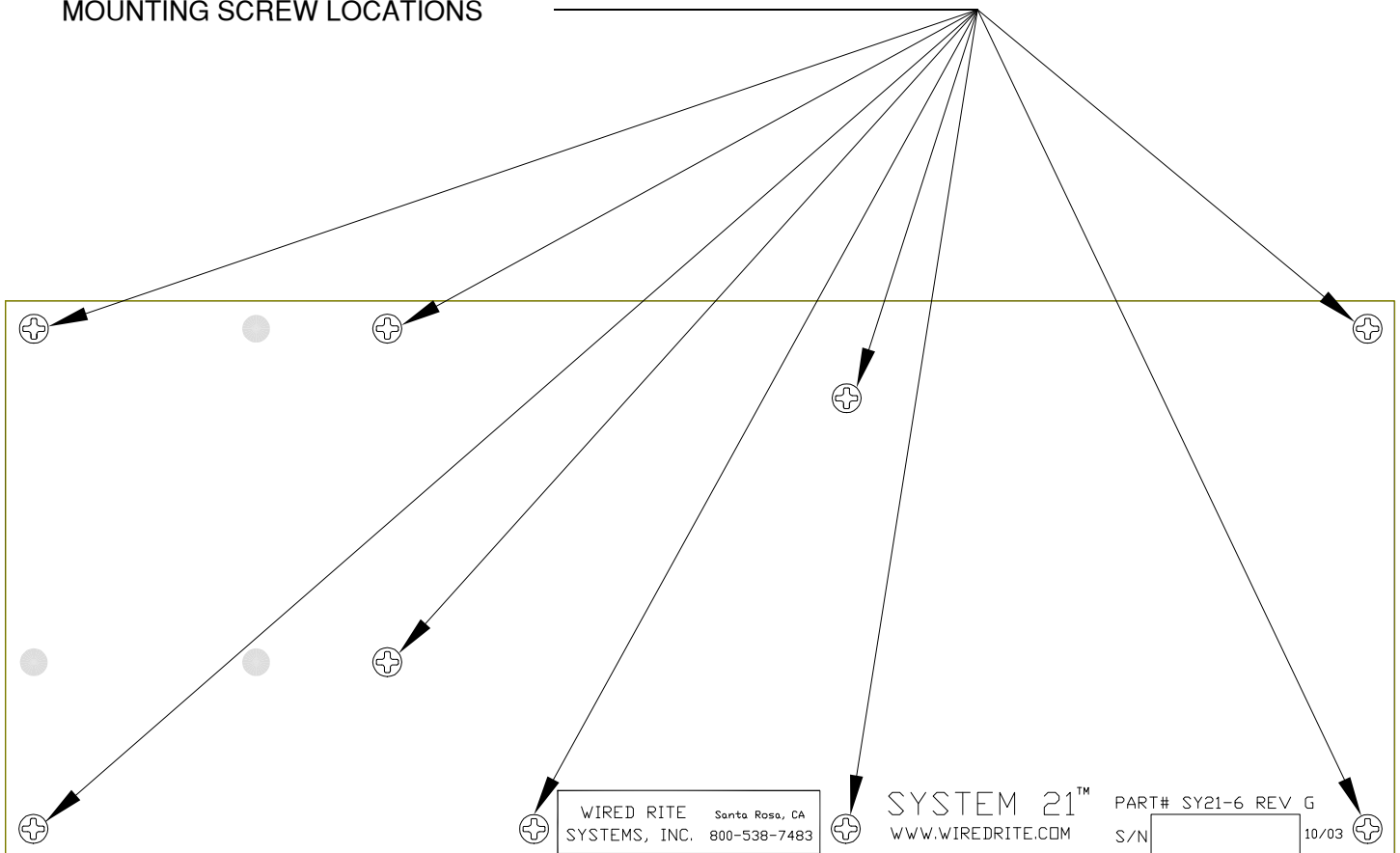
Select A Suitable Mounting Location

The best location to mount the board is one that is not exposed and is close enough so that it may be wired to the chassis harness and viewed if necessary.

To Fasten The Board

Use the 6-32 screws attached to the standoffs on the back of the board. The positions are shown below.

MOUNTING SCREW LOCATIONS



SYSTEM 21 6-WAY CONNECTING THE INPUT LEADS

Wired Rite Systems strongly recommends the installation of our waterproof, resettable circuit breaker to prevent overloads from damaging the feed wire. When you elect to follow this recommendation, the circuit breaker should be installed as close to the battery as possible. Specify part number CBW1080 for 50 Amp, CBW1081 for 80 Amp, CBW1078 for 100 Amp, and CBW1079 for 150 Amp.

"GND" Terminal

Use a #14 AWG wire as a ground wire. This connection should be clean and run directly to the negative battery terminal (-).

"+12VOLT INPUT" Terminal

Use a #14 AWG wire as a switched +12 V input wire. This connection should be made to the System Relay.

Connect to:

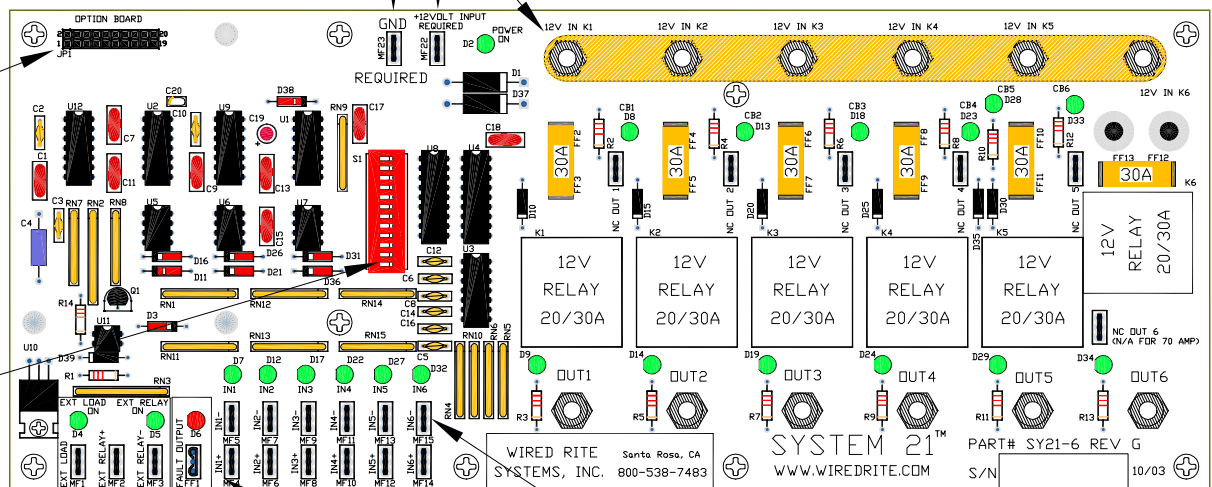
A) Battery Input Terminal

Use correct gauge wire for your current requirements. See Appendix for Wire Gauge Requirements. Attach positive (+) supply to bus bar.

B) Ignition Relay

This bus bar must be connected to and will receive it's power from the System's relay. **Wired Rite Systems** can recommend any appropriate relays.

Optional Logic Board Connector



For Inputs 1 through 6, select the outside terminals for positive inputs, and the inside terminals for negative inputs. Make the appropriate input connections to the six terminal pairs shown above. It is recommended to use #18 AWG wire for all of these inputs.

Dip Switch Guide

To control the input function to the board, use the guide pictured here to program each pair of dip switches for the desired result for each of the six circuits. Each pair of switches correspond to a relay ...the first two, 1 and 2, to relay K1, the second pair, 3 and 4, to K2 and so on.



Both Positive and Negative inputs are required to turn on this circuit.



Only a Negative input is necessary to turn on this circuit.



Only a Positive input is required to turn on this circuit.

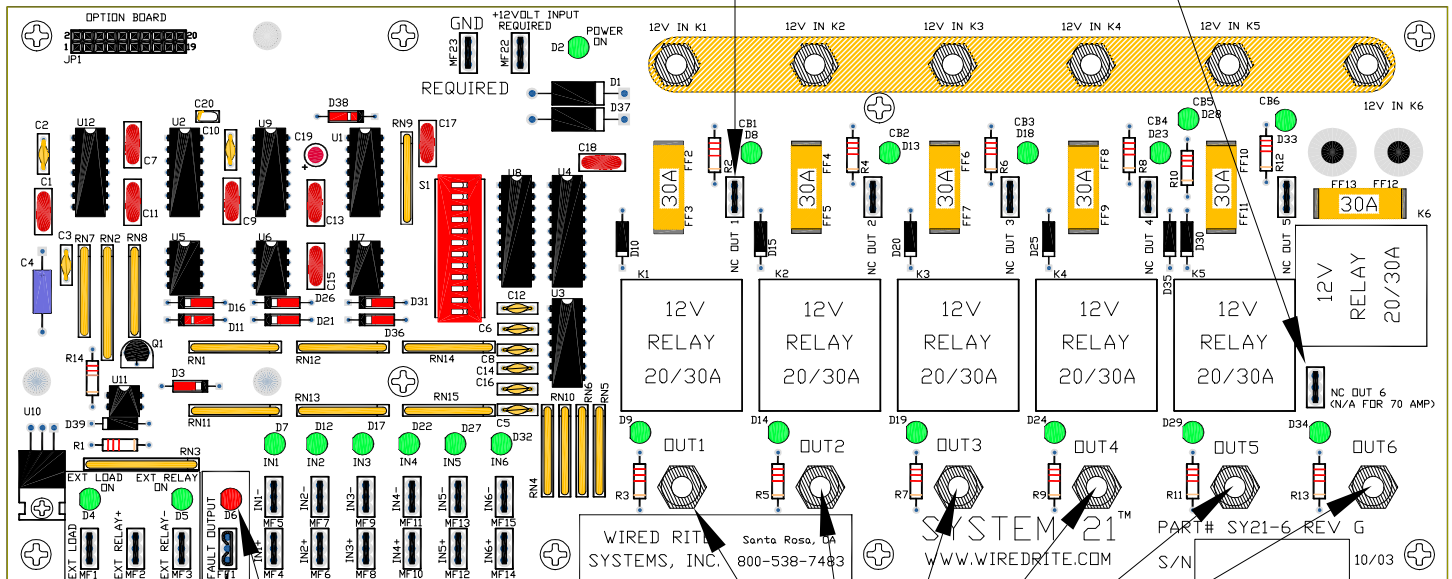


Circuit is always on.

SYSTEM 21 6-WAY CONNECTING THE OUTPUT LEADS

OPTIONAL - *Normally Closed* position terminals, and LED's

All System 21 circuit boards are manufactured with the capacity to install a *normally closed* position output terminal for each circuit. The board pictured below has this option installed on all six circuits. Note the *normally closed* output terminal for position 6 is located on the opposite side of the relay and not for use with the Plus 70 Amp Option.



"FAULT OUTPUT" terminal

"OUT 1", "OUT 2", "OUT 3", "OUT 4", "OUT 5", "OUT 6" terminals
These Outputs are all *normally open*.

Run a #18 AWG wire from the "Fault Output" terminal shown above, to an LED that is installed on the dash of vehicle. Note the *on-board* LED (D6).

Place this on-dash indicator light in a location where it will be clearly visible to the driver. This light must be an LED type light.

The LED ground wire is to be connected to the "Fault Output" terminal. The positive wire from the LED is to be connected to any "Ignition On" source. **Wired Rite Systems** Customer Service Department can recommend a variety of optional LED indicator lights.

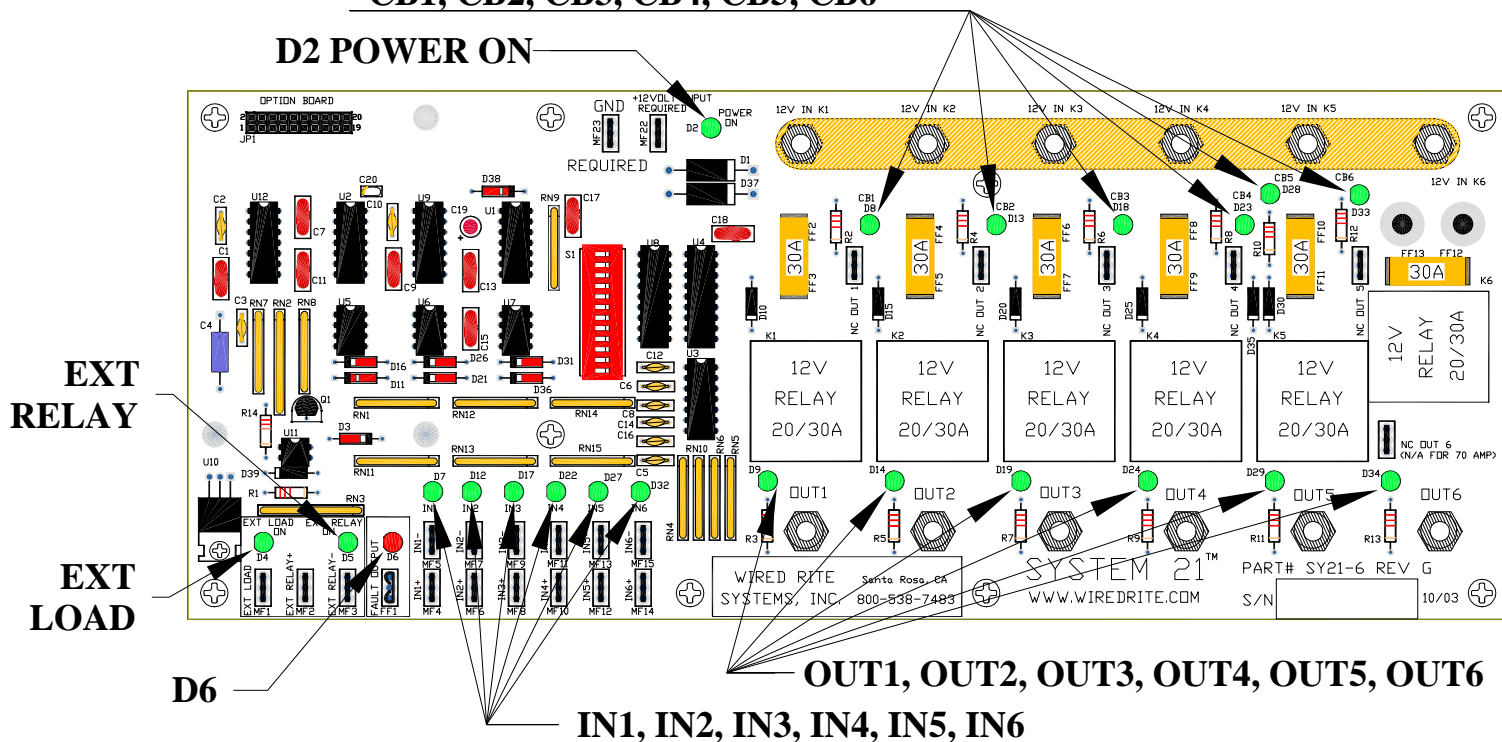
TESTING THE SYSTEM 21 6-WAY

You are now ready to test the System 21 6-Way. Battery power and all "Inputs" are to be turned on (one at a time). If the appropriate relays and circuit breakers are functioning and the wires have been properly connected, the following LED's will illuminate under various conditions:

INPUT LED's		CIRCUIT BREAKER LED's		OUTPUT LED's		EXTERNAL RELAY	EXTERNAL LOAD	FAULT OUTPUT LED	BOARD POWER
IN1	IN2	CB1	CB2	OUT1	OUT2	EXT. RELAY ON	EXT. LOAD	D6	D2 POWER ON
IN3	IN4	CB3	CB4	OUT3	OUT4				
IN5	IN6	CB5	CB6	OUT5	OUT6				

CB1, CB2, CB3, CB4, CB5, CB6

D2 POWER ON



-When Battery Power is On, LED "D2 POWER ON" will be illuminated. If it does not illuminate check Battery Power.

-Turn the inputs on one at a time, removing each corresponding circuit breaker from it's socket; also one at a time. Be sure to replace each breaker before removing the next. NOTE that when each Input is turned on, the corresponding Input LED, Circuit Breaker LED, and Output LED illuminate while the corresponding optional Normally Closed Output shuts off.

After removing each breaker from it's socket, the red Fault Output D6 LED is flashing. If you have a Remote Fault LED wired correctly and the ignition is turned on, the remote LED will be flashing as well. When you re-install the breaker, the D6 and remote Fault LED's will shut off.

Repeat this procedure with each circuit. In each case the results should be the same.

-If the Input LEDs do not illuminate, check the Inputs, Input wires and make sure the Dip Switches are configured correctly for the positive or negative or positive and negative inputs.

-If the Circuit Breaker LEDs, "CB", do not illuminate and the Power On LED is illuminated, check the Battery input terminal at the bus bar and the Circuit Breakers.

-If the Output LEDs do not illuminate and the corresponding Input and Circuit Breaker LEDs are illuminated, check the relays and disable Load Shedding from the Optional SLM Logic Board.

SYSTEM 21 6-WAY PLUS 70 AMP

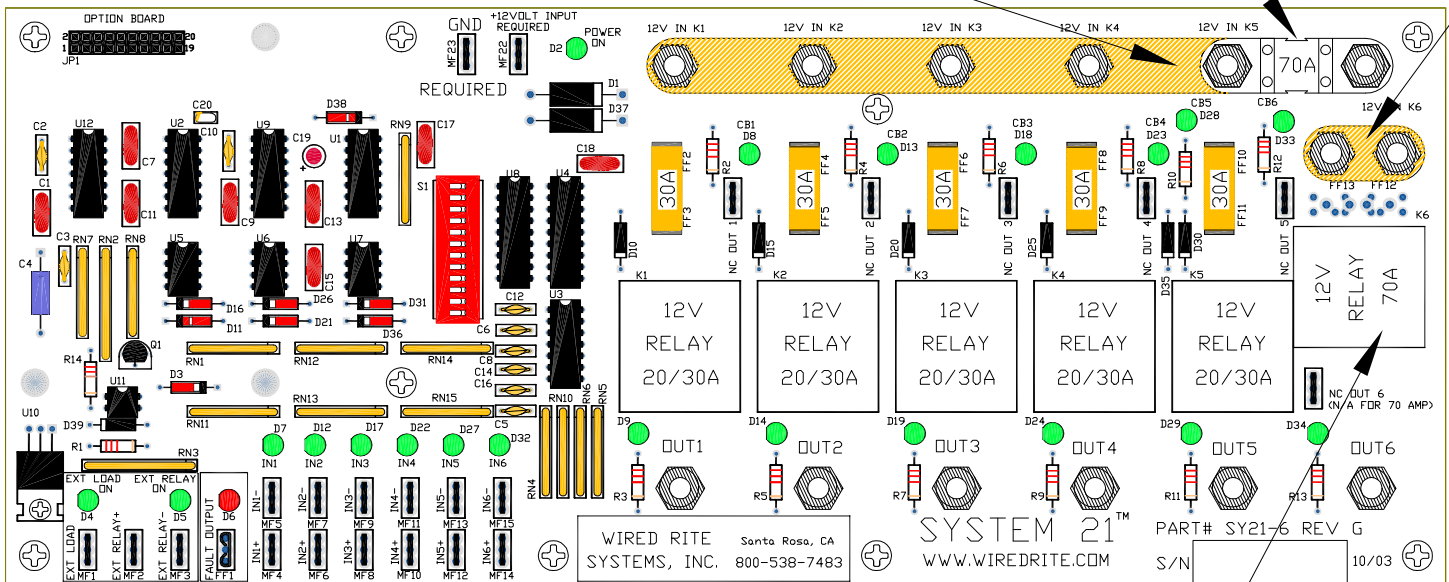
The Plus 70 Amp option is installed into the "K6" relay position on the System 21 6-Way when specified at the time of ordering. This circuit provides a 70 Amp fused circuit. If external circuit protection is preferred, please contact Customer Service at Wired Rite Systems to order your protection needs or order them when ordering your System 21 6-Way.

Up to a 70 Amp Fuse

replaces the bus bar to protect the sixth circuit. External circuit protection is available.

Shunt replaces standard circuit breaker.

Bus Bar shortened to accomodate 70 Amp Fuse.



The System 21 6-Way Plus 70 Amp will provide a 70 amp circuit in the sixth relay position. For the 70 Amp Circuit, the relay is soldered to the printed circuit board for maximum current transfer. The normally closed, N.C., output is not available for the 70 Amp relay configuration. Increased "12V IN" and "OUT 6" wire gauges are required for use with the System 21 6-Way Plus 70 Amp; Please see wire gauge chart in appendix. All other installation and set up procedures are identical to the Standard System 21 6-Way. Please refer to the preceeding pages for installation procedures.

Heavy Duty solder mount 70 Amp relay for High Current Reliability.



**FOR CUSTOMER SERVICE
& TECHNICAL SUPPORT
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		WIRE GAUGE REQUIRED - BY LENGTH OF CIRCUIT IN FEET																		
6		12	NOTE - WHEN MECHANICAL STRENGTH IS A FACTOR, USE NEXT LARGER WIRE GAUGE																	
VOLTS	VOLTS																			
AMPS	AMPS	3'	5'	7'	10'	15'	20'	25'	30'	40'	50'	60'	70'	80'	90'	100'				
0.5	1	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20				
0.75	1.5	20	20	20	20	20	20	20	20	20	20	20	20	18	18	18				
1	2	20	20	20	20	20	20	20	20	20	20	18	18	16	16	16				
1.5	3	20	20	20	20	20	20	20	20	18	18	16	16	14	14	14				
2	4	20	20	20	20	20	20	20	18	16	16	14	14	12	12	12				
2.5	5	20	20	20	20	20	20	18	18	16	14	14	14	12	12	12				
3	6	20	20	20	20	20	18	18	16	14	14	14	12	12	12	10				
3.5	7	20	20	20	20	20	18	16	16	14	14	12	12	12	10	10				
4	8	20	20	20	20	18	16	16	14	14	12	12	12	10	10	10				
5	10	20	20	20	20	18	16	14	14	12	12	10	10	8	8	8				
6	12	20	20	20	18	16	14	14	14	12	10	10	10	8	8	8				
7.5	15	20	20	20	18	16	14	12	12	10	10	8	8	6	6	6				
10	20	20	20	18	16	14	12	12	10	10	8	8	6	6	6	6				
12	24	20	18	16	14	14	12	10	10	8	8	6	6	6	6	4				
15	30	18	16	16	14	12	10	10	8	8	6	6	4	4	4	4				
18	36	16	14	14	14	12	10	10	8	6	6	4	4	4	4	4				
25	50	14	14	14	12	10	8	8	8	6	4	4	4	2	2	2				
50	100	14	12	10	8	8	6	6	4	4	2	2	1	0	0	2\0				
75	150	12	10	8	6	6	4	4	2	2	1	0	2\0	2\0	3\0	3\0				
100	200	10	8	8	6	4	2	2	2	1	0	2\0	3\0	4\0	4\0	4\0				