

Contractor's Wiring Guide for MCP

RECEIVING AND MOUNTING THE PANEL

1. Check the panel for damage that might have occurred during shipping.

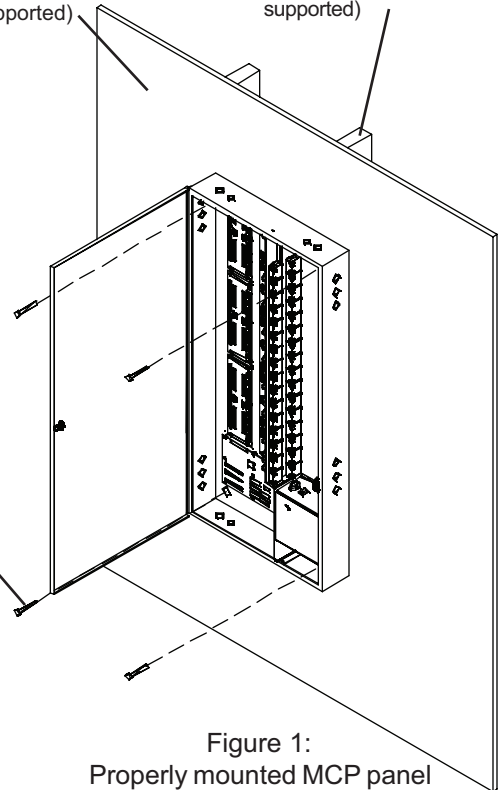
- Broken component boards
- Broken stand-offs
- Broken welds
- Damaged enclosures
- Damaged relays

2. Mount the panel on the wall following all National Electronic Code (NEC) and local building regulations. (See Figure 1)

Bolt for mounting panel to wall
(Contractor must use bolt with a shaft diameter that does not exceed diameter of mounting hole and use washers if necessary)

Gypsum wall board (concrete or brick wall is also acceptable as long as panel is supported)

Wall studs spaced with mounting holes for support (concrete or brick wall is also acceptable as long as panel is supported)



3. Check the source voltage to see if 120 VAC or 277 VAC is being used. If 277 VAC is being used, make sure there is a 277 VAC input label next to the terminal block. (See Figure 2) If there is no 277 VAC input, contact Touch Plate immediately to get a step down transformer for the panel(s).

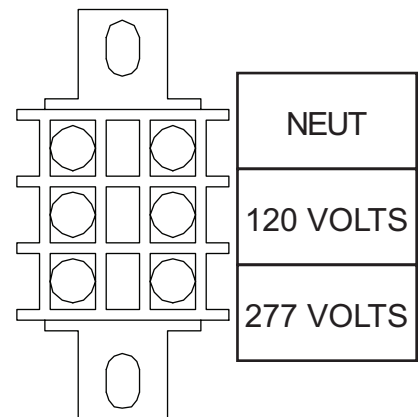


Figure 2:
Primary feed input block

4. When running line voltage to the relays, do not run any wiring through the left side of the panel. This side of the enclosure is for low voltage only. Running line voltage in this area may cause induced voltage signals to the Touch-Plate system and voids all warranties. (See Figure 3 for details)
5. Use the stamped knockout holes for running wiring into the panel, or use a Greenlee punch to create a clean hole of the appropriate size. Do not use drills and uni-bits to create other holes in the walls of the enclosure, as they create thousands of metal shavings that fall into the panel and its circuitry. If needed, use wire ways to run wire around the panel to one of the pre-made openings. (See Figure 3 for details)
6. The power supply in the MCP panel is pre-wired and contains all wiring necessary to convert line voltage to low voltage. Do not tamper with the power supply cover. Failure to follow this guideline may cause damage to the system and delay system completion and factory turn on procedures. (See Figure 3 for details)

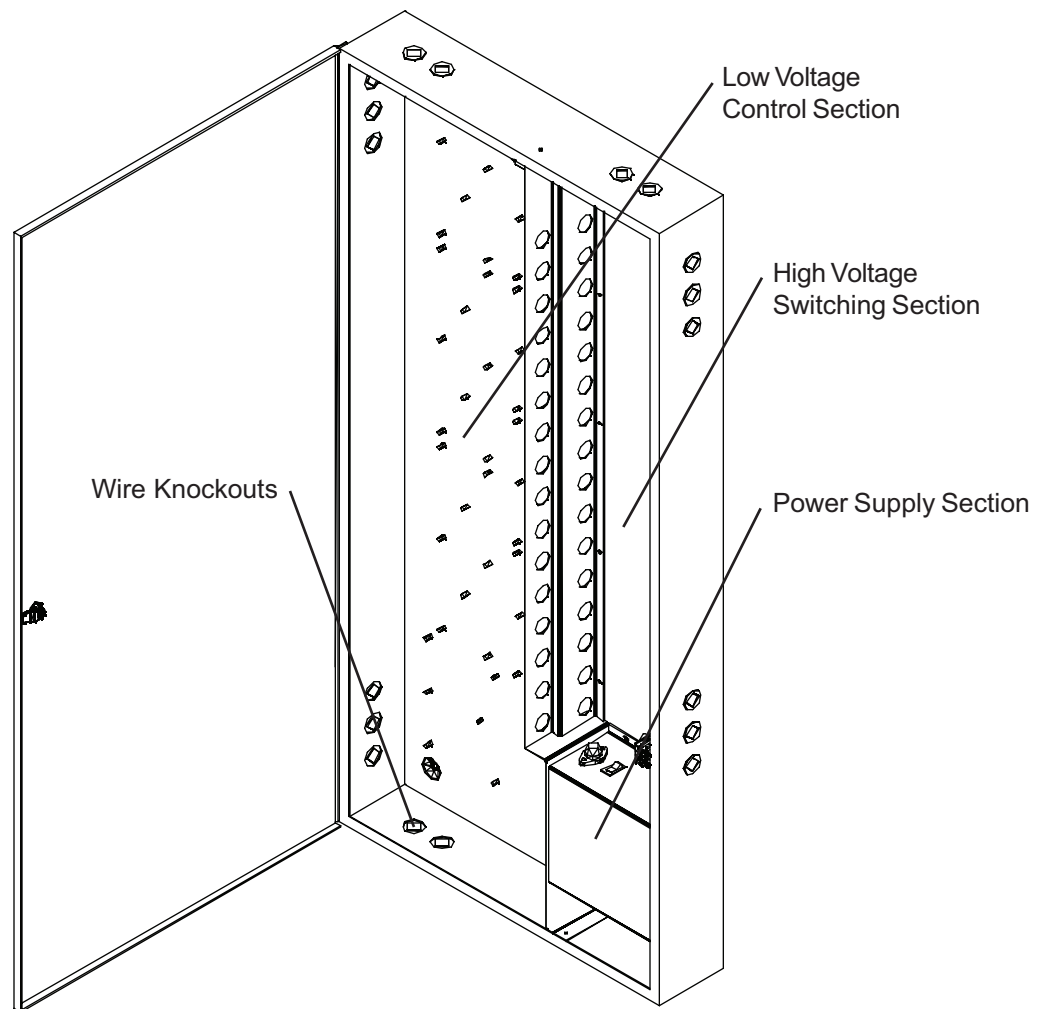


Figure 3: Enclosure for MCP-0032 panel shown

WIRING THE INPUTS

1. All INPUT (low voltage) wiring is done on the left side of the barrier strip inside the panel.
 - Use only 18 - 22-gauge stranded wire for inputs (low voltage)
 - The use of heavier wire or solid wire increases the difficulty in completing the terminations.
2. When wiring inputs, be careful to avoid overloading the switch commons onto one I/O card. There is a switch common shared for eight inputs on the I/O card, (Terminals 19 & 20 on the Backplane) and only those switches being wired to the Inputs should have their common terminated at this location on the Backplane. Overloading an I/O card with all the switch commons in the system can cause problems. The system needs to see the commons spread out evenly across all the Input boards. Also, leave some slack in the wire so that a Touch-Plate field service representative can easily modify wiring if necessary.
3. While wiring the inputs, take time to fill out the "INPUT SCHEDULE" page and "SWITCH SCHEDULE" page that was sent by Touch-Plate. If you do not have these documents, contact the Touch-Plate project manager. Filling out these documents will make job documentation far easier and aid in tracking down any problems that occur, as well as provide the necessary information for proper programming of the system.
4. Factory services are determined by the purchase agreement between the Contractor and the Factory, and may include (but not limited to)
 - Programming
 - Training
 - Turn-on

These services will not be issued until system "Commissioning" documents are completely and properly filled out and the Touch-Plate project manager approves. Normal lead time to schedule a Factory Service event is 3 weeks.

WIRING THE OUTPUTS

1. All output wiring should be no larger than 12 gauge stranded wire. Larger, stranded wire will be more difficult to connect and make a good connection. The maximum rating for the Touch Plate 3000 series relay is 20 amps and larger wire is not necessary. However, in the event the distance between the relay and the load causes the use of #10 wire, if the strands are not straight, it may be difficult to get the wire into the relay connector. At that point, we recommend the use of Buchanan connectors. They make a crimp-on style to a male stud which easily slips into the relay termination. We have these available if you cannot find them locally.
2. When using an analog output card in the MCP system, you must run a **shielded wire** between the card outputs and the load to ensure that there is no voltage crossover or damage to the component boards. The wire may be anywhere from 18 to 22 gauge stranded. Do not use a Cat 5 unshielded wire.
3. If you are using Touch-Plate equipment to control dimming equipment from another company (by use of the MCP analog output card), be sure to notify Touch-Plate and the supplier of the dimming equipment. This will help eliminate any potential problems before the factory turn on takes place. The industry standard of 0-10VDC is the same for most companies, however, some may specifically include a hardware-based “lockout” if their own control stations are also going to be used, which would prevent proper control by the Touch-Plate system. It is always best to communicate up front with the Touch-Plate Project Manager to verify all details have been taken care of when integrating different systems.

NETWORK SYSTEMS

1. Only use Belden 9729 cable between the panels and the host computer. A continuous piece of wire must be used in between the panels and the host computer (No Splicing!!). (See Figure 4) If these guidelines are not followed, job completion will be delayed because of potential errors in network communication. The overall distance of the network cable is not to exceed 4,000 ft.

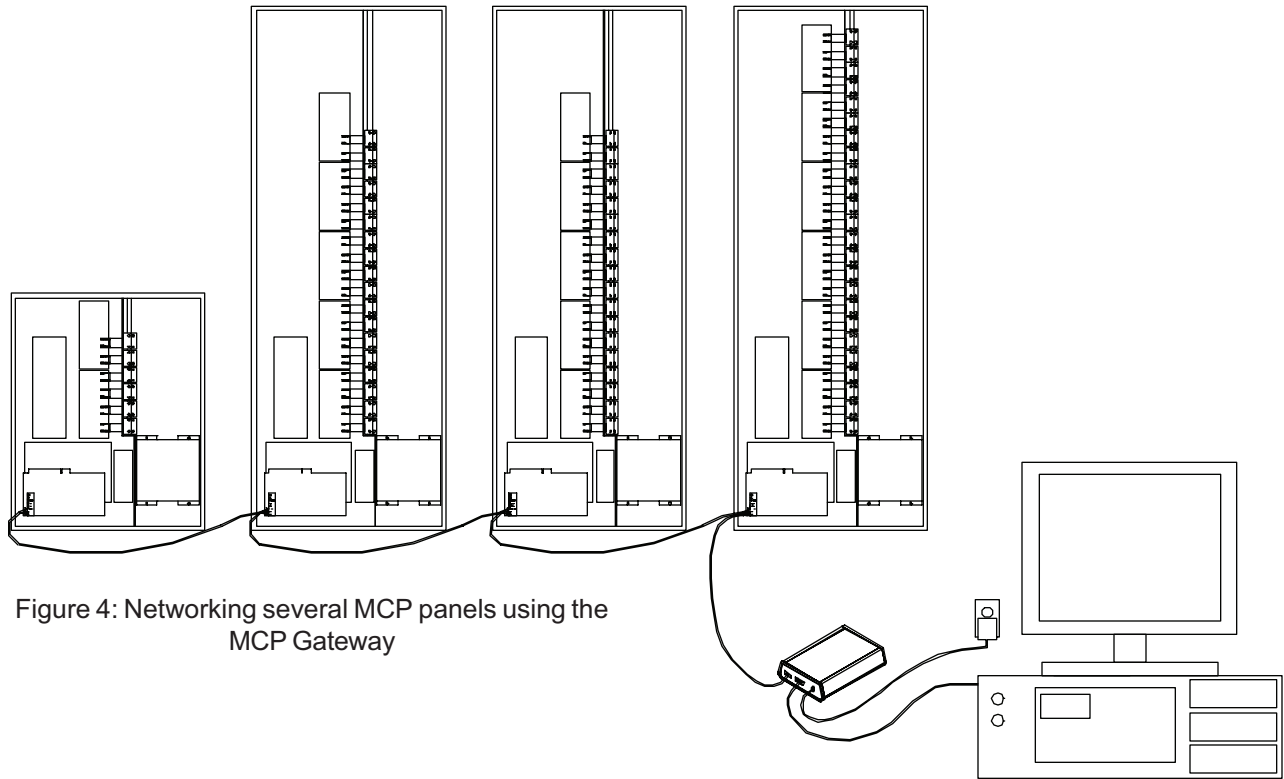


Figure 4: Networking several MCP panels using the MCP Gateway

2. Be sure that all wire colors match at each network connection and that each wire is in the correct place. Any wrong connections will cause communication problems.

Color Code if using Touch-Plate SS-98-Wire

- Bare wire = shield
- White = A-
- Blue = A+

Color Code if using Belden 9729

- Bare wire = shield
- Black = A-
- Red = A+

3. The system gateway (See Figure 5) will be supplied at turn on by the Touch-Plate representative along with the null modem cable to connect the gateway to the computer. The representative will have the connector to attach the Belden wire to the gateway at the factory turn-on. The contractor needs to have the Belden 9729 in place.

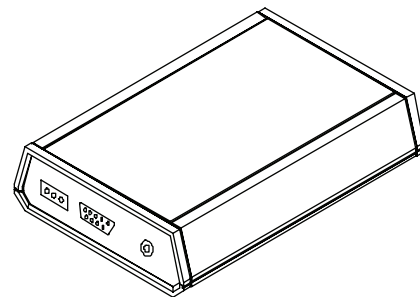


Figure 5: The MCP Gateway

WHAT IS SUPPLIED AT TURN ON

When you initially receive the panels, they will be equipped with only the backplane(s), barrier strip, power supply and relays (See Figure 6). The component boards will be sent later on, usually to the local representative or at factory turn-on. The relays will be shipped in the closed position so that you can wire loads to the individual relays and use the breaker panel for control.

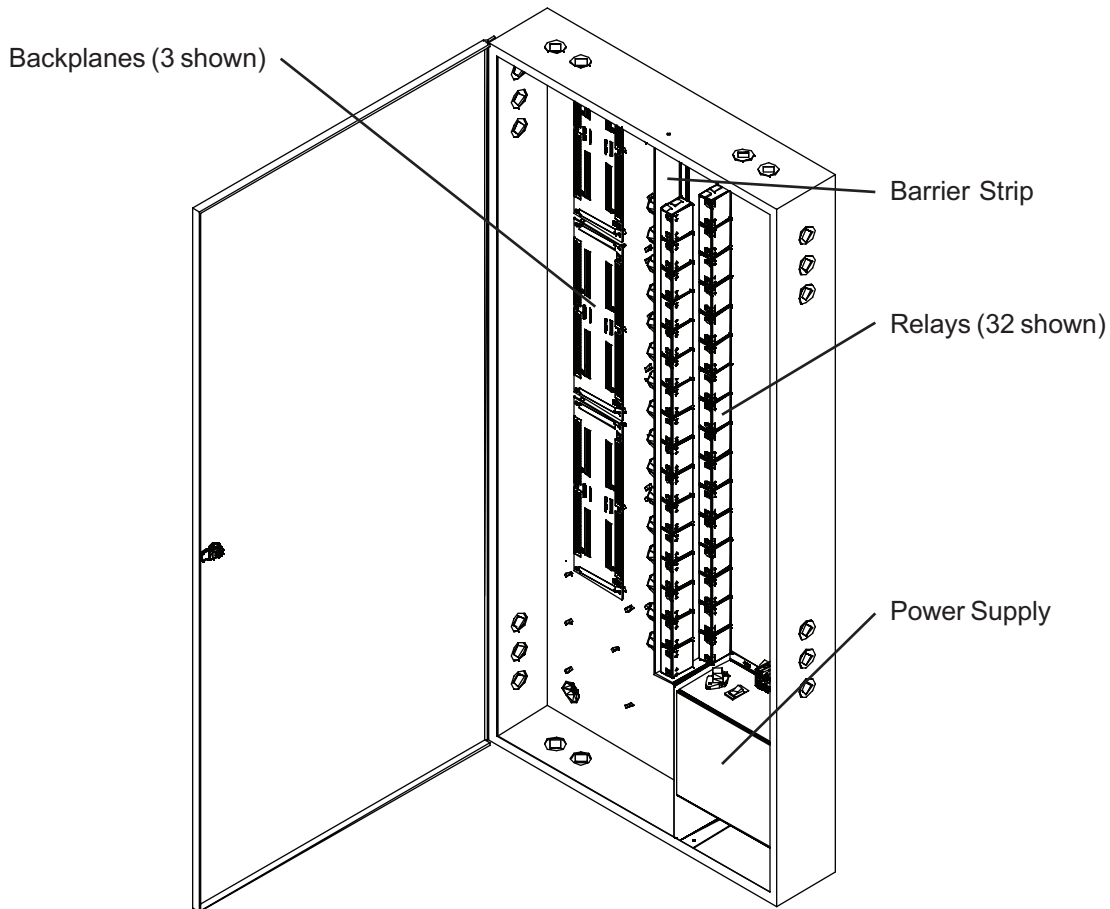


Figure 6: MCP-0032 shown

FAILURE TO FOLLOW THESE GUIDELINES

Failure to follow the guidelines will void the factory warranty, delay the completion of the project and possibly damage system components. Any damaged components that are a result of failure to follow these guidelines will be replaced at the installer's expense.

Touch-Plate will not perform the factory turn-on, programming or training if these guidelines are not followed. Touch-Plate will document any procedures that were not followed and, if possible, Touch-Plate will return later that day to perform the appropriate services if all problems are resolved. Otherwise, a separate purchase order must be issued for the return trip to the job site.

INPUT SCHEDULE

To correctly fill out the “INPUT SCHEDULE” page, you need the backplane diagram on the following page to identify the correct I/O card and input number. The “WIRE COLOR” column on the “INPUT SCHEDULE” page should correspond to your wire color on if possible. “LED FEEDBACK” tells the programmer if the input installed has an LED indicator built into it. The “WHAT IS INPUT” column describes the type of input device (infrared, motion sensor, photocell, switch or wireless control). “LOCATION OF INPUT” indicates what room or hallway the input device is located. The “WHAT INPUT CONTROLS” column gives the relay number, group name, or dimming load that the input controls. (Remember, any switch input can control any item in the MCP network.)

OUTPUT SCHEDULE

The “OUTPUT SCHEDULE” page gives information about the outputs to the person programming the system. It tells which light and relay are connected to each other and lists any special features about the load. The “LOGICAL NAME” column gives each relay a meaningful name that can be easily identified with its load by the end user. The “WHAT IS LOAD” column tells the factory personnel what type of fixtures are hooked to the relay. The “AUTO OFF” column tells whether the auto-off function is to be enabled and how long after the light goes on before the MCP panel turns the relay off. The “BLINK WARN” column tells whether the output will blink before shutting off and how long before turning off it will blink . Properly filling out this document makes it possible to begin programming. If all information is supplied Touch-Plate can do the programming before arrival at the job site.

SWITCH SCHEDULE

The “SWITCH SCHEDULE” page provides the vital information for programming the MCP system. At the top of each section, you need to fill out two lines. The first line (“SWITCH LOCATION”) gives the location and name of the switch. The second line, “PANEL NUMBER,” tells which panel the buttons in the switch bank are located (use the number assigned to the panel). The columns on the “SWITCH SCHEDULE” page give information about each button. The “LOGICAL NAME” column is the name given to each button on the switch. This name usually corresponds to the location of the switch station. The “WIRE NUMBER” and “WIRE COLOR” column gives the color and number on the wire. The “CONTROLS RELAY #, SEQUENCE, SCENE, OR GROUP” column lists the target relay or group the button is controlling. **(NOTE: There are two different switch schedules. One is for smart switches (9000 S.S. series) only, the other is used for all other types of Touch-Plate low voltage switches (4000, 5000, 7000, 8000, and 9000 series)).**

GROUP SCHEDULE

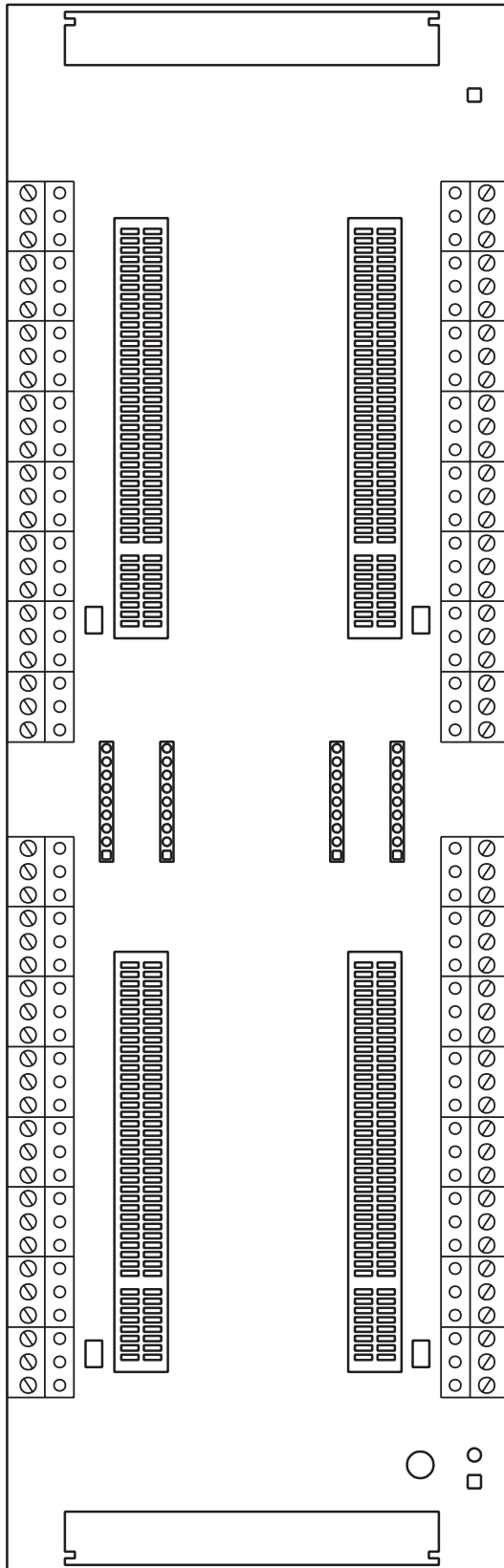
The "GROUP SCHEDULE" allows the owner to set up groups of relays to be controlled by the MCP system (either by an input or time-based event). All that is needed to fill out the schedule is a name for the group and any relays or dimming loads that you want controlled as a group. A group can be any number of relays or dimming loads, but you should not mix the two types of loads in a single group.

TIMED EVENT SCHEDULE

The "TIMED EVENT SCHEDULE" provides information to Touch-Plate on timed events for the MCP system. Timed events are used to turn lights on or off without any other type of input. This can be used to ensure that lights are on for workers when they arrive, or to turn off the lights that are accidentally left on at the end of the day. To fill out the schedule, you will need the following information. First, you will need a name for the event and what days the event will be on. Events can be set for different days of the week, individual days, weekdays or weekends, or every day of the year. Second, you will need the time for the event (either a set time, or a sunrise/sunset event). MCP uses a built in 24 hour astronomic time clock to run its events. Under signal you will need to state whether the event will turn lights on, off, or change the dimming level of the lights. The last thing to be filled out on the schedule is the target section. The target is what the event controls, either an individual relay, a group, a sequence, or a dimming scene.

DIMMER PANEL SCHEDULE

The "DIMMER PANEL SCHEDULE" gives Touch-Plate the vital information on dimming loads connected to your MCP system. The first column that needs filled out, "BREAKER", is the number from the breaker panel that the particular load is connected to. "LOGICAL NAME" is the name of the load being controlled. This usually corresponds to the room location of the load being dimmed. The final column, "LOAD (watts)" is the total load on the dimmer channel. This information lets the Touch-Plate personnel ensure that no channel of the dimmer will be overloaded when the final system start-up is done.



Digital I/O		
Input Structure		
○	∅	INPUT 0
○	∅	INPUT 1
○	∅	INPUT 2
○	∅	INPUT 3
○	∅	INPUT 4
○	∅	INPUT 5
○	∅	INPUT 6
○	∅	INPUT 7
○	∅	STATUS 0
○	∅	STATUS 1
○	∅	STATUS 2
○	∅	STATUS 3
○	∅	STATUS 4
○	∅	STATUS 5
○	∅	STATUS 6
○	∅	STATUS 7
○	∅	PILOT COM
○	∅	PILOT COM
○	∅	SW COM
○	∅	SW COM
○	∅	- (Reserved)
○	∅	- (Reserved)
○	∅	- (Reserved)

Analog		
Output Structure		
○	∅	OUTPUT 0 (+)
○	∅	OUTPUT 1 (+)
○	∅	OUTPUT 2 (+)
○	∅	OUTPUT 3 (+)
○	∅	OUTPUT 4 (+)
○	∅	OUTPUT 5 (+)
○	∅	OUTPUT 6 (+)
○	∅	OUTPUT 7 (+)
○	∅	OUTPUT 0 (-)
○	∅	OUTPUT 1 (-)
○	∅	OUTPUT 2 (-)
○	∅	OUTPUT 3 (-)
○	∅	OUTPUT 4 (-)
○	∅	OUTPUT 5 (-)
○	∅	OUTPUT 6 (-)
○	∅	OUTPUT 7 (-)
○	∅	- (Reserved)
○	∅	- (Reserved)
○	∅	- (Reserved)
○	∅	- (Reserved)
○	∅	- (Reserved)
○	∅	- (Reserved)
○	∅	- (Reserved)

Shown typical for all terminal strips on the MCP-502B I/O back plane.

Any combination of digital I/O and analog output cards may be used on a backplane for the total of four (4) slots available.

CRITICAL!: THE ANALOG OUTPUT STRUCTURE SHOWN IS FOR DIMMING CONTROLS ONLY. THEY WILL NOT WORK FOR INPUTS.

Input Card Schedule

Panel #

Date: /

I/O CARD #	INPUT #	WIRE COLOR	LED FEEDBACK (Y/N)	WHAT IS INPUT <small>(Switch, photocell, motion sensor)</small>	LOCATION OF INPUT	WHAT INPUT CC <small>(Relay # or Dim)</small>
0	0					
0	1					
0	2					
0	3					
0	4					
0	5					
0	6					
0	7					
1	0					
1	1					
1	2					
1	3					
1	4					
1	5					
1	6					
1	7					
2	0					
2	1					
2	2					
2	3					
2	4					
2	5					
2	6					
2	7					
3	0					
3	1					
3	2					
3	3					
3	4					
3	5					
3	6					
3	7					

Relay #	LOAD		OUTPUT INFORMATION			
	LOGICAL NAME (Name of Load)	WHAT IS LOAD (Incandescent, HID, Fluorescent, etc.)	AUTO OFF		BLINK WARN	
			(Y/N)	(offset)	Y/N	TIME
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
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45						
46						
47						
48						

Touch-Plate Lighting Controls

SWITCH SCHEDULE Project _____

Switch Location _____

Panel Number _____ Date / /

Button #	Logical Name(what it controls)	Wire #	Wire Color	Controls relay #, sequence, scene, or
1				
2				
3				
4				
5				
6				
7				
8				
9				

Switch Location _____

Panel Number _____

Button #	Logical Name(what it controls)	Wire #	Wire Color	Controls relay #, sequence, scene, or
1				
2				
3				
4				
5				
6				
7				
8				
9				

GROUP SCHEDULES

Project: _____

DATE: ____ / ____ / ____

GROUP NAME	RELAYS INCLUDED IN GROUP (PANEL # AND RELAY#)

Touch-Plate Lighting Controls

Dimmer Panel Schedules

Dimmer	#	Breaker	Logical Name (load name)	Load (watts)
1	1			
1	2			
1	3			
1	4			
2	1			
2	2			
2	3			
2	4			
3	1			
3	2			
3	3			
3	4			
4	1			
4	2			
4	3			
4	4			
5	1			
5	2			
5	3			
5	4			
6	1			
6	2			
6	3			
6	4			
7	1			
7	2			
7	3			
7	4			
8	1			
8	2			
8	3			
8	4			
9	1			
9	2			
9	3			
9	4			