



Elegance Electrician's Guide

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Section 1

Elegance™ Specifications and Load Ratings

Types of Acceptable Power:

230V, 50Hertz Single Phase Supply. Can also be spread across Three Phases.

Relay Panel Max. Load:

72 Amps

Relay Module Max. Load:

16 Amps

Individual Relay Max. Load:

8 Amps

Allowable Types of Dimming:

Incandescent, Magnetic Low Voltage, and Suitable Electronic Low Voltage Fixtures.

Dimming Method:

Normal Phase Control leading edge dimming.

Note:

Use copper conductors only.

Max. Ambient Temperature:

40 Degrees Celsius

Min. Ambient Temperature:

0 Degrees Celsius

Relay Panel must be mounted upright

Do not insulate within 150mm of Relay Panel

All components must be mounted in dry conditions. Do not expose to rain, high humidity, or other sources of moisture.

Do not exceed 72 amps total Relay Panel load.

Do not exceed 16 Amps load on any Relay Module. Do not exceed 8 Amps load on any individual Relay.

General Information

The CentraLite Elegance system is a centrally located microcomputer, a home lighting and electrical control system. The system provides on-off control of lighting and other electric devices, and automatic dimming of incandescent, magnetic extra low voltage, approved electronic extra low voltage and halogen lights.

CentraLite installation is divided into two parts, mains voltage control and extra low voltage controls. Below is a figure showing the overall layout of the Elegance lighting control system.

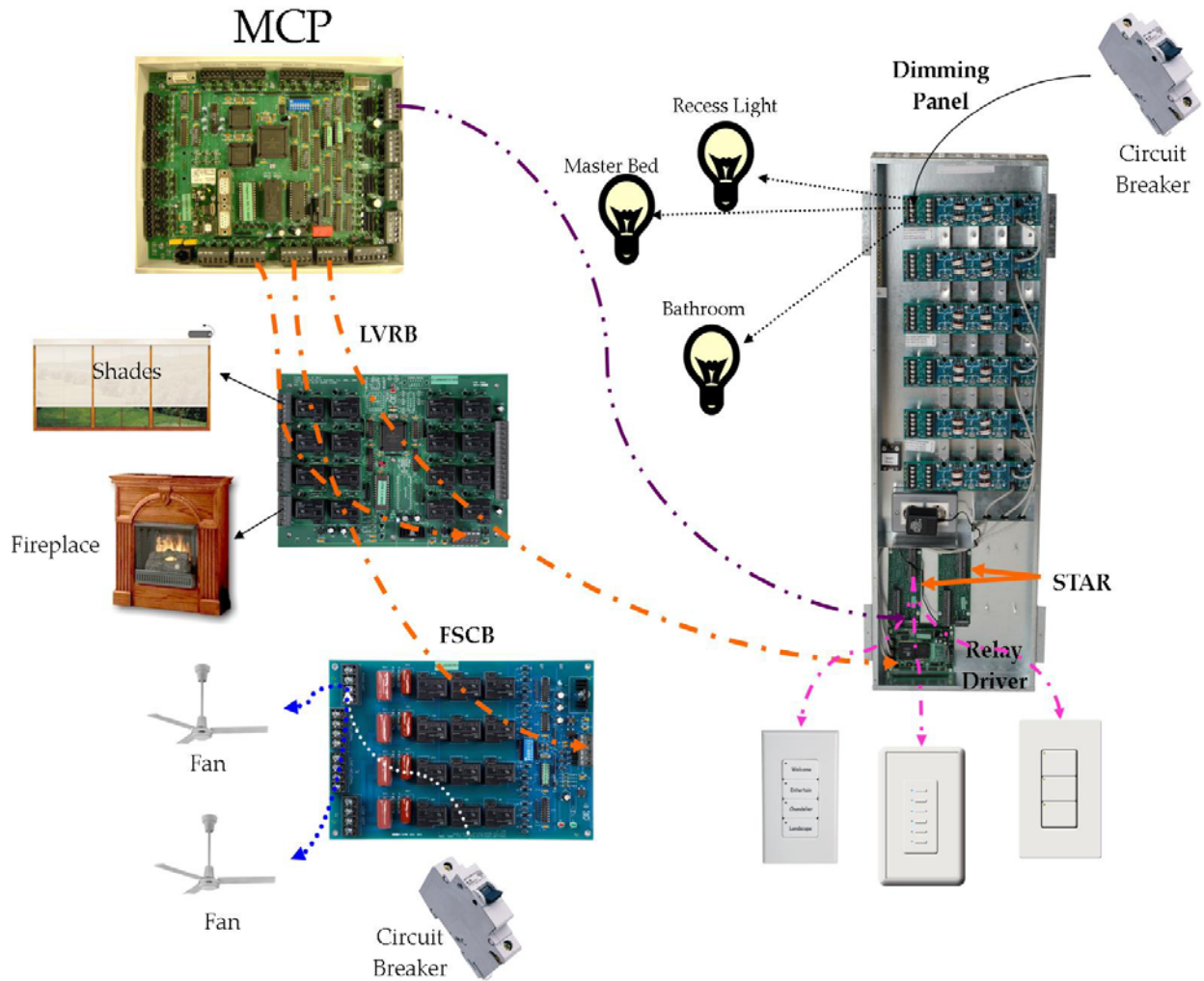


Figure 1
Elegance System Layout

Mains Voltage Wiring

Mains Voltage Control is to be installed and connected by licensed electricians only.

The mains voltage part of the system switches the 230V power between the Distribution Board and light fittings etc. This switching occurs in the system's relay panel.

The electrician has five tasks to complete during system installation:

1. Mount system relay panels in an upright position.
2. Rough in 230V switch wiring from each lighting or other electrical circuit controlled by CentraLite™ into the relay panel.
3. Rough in 230V power feeds from distribution board into relay panel.
4. Connect 230V power feeds and switch wiring to relays modules (Electrician only connects the mains voltage wiring to the relay modules) and connect the power outlet inside relay box. If a relay will be controlling a load other than an Incandescent, Magnetic Extra Low Voltage, or Halogen light, it must be replaced with a non-dimmable relay from CentraLite. This ensures that the equipment cannot be damaged by inadvertent dimming commands. Call InTouch Automation on +61 403 117 678 to exchange the relay.
5. Mount switch fixing (stud bracket etc.) for the system's extra low voltage wall switches in each location, as per the home's electrical plans and the home builder's request.

Relay Module:

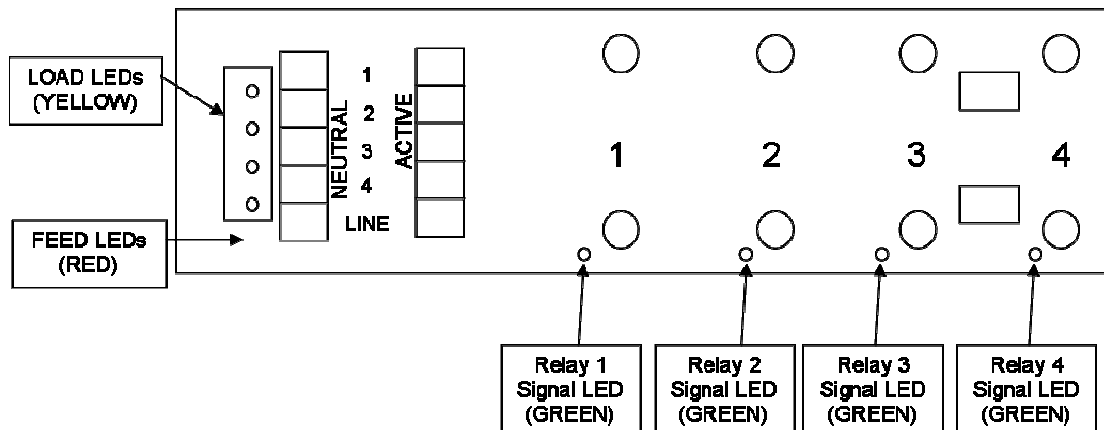


Figure 2

Each Relay Module contains four solid state relays. Each module has status LED's which indicate information about the extra low voltage signal to the relays (Green), the feed power to the module from the circuit breaker (Red), and the mains voltage output of each relay (Yellow). One look at the relay module yields information that usually requires a voltmeter and test light.

If the RED LED is lit, this means power from the circuit breaker is feeding the module.

If the GREEN LED for a relay is lit, this means that a 5V signal is being sent to the relay from the relay driver and MCP.

If the YELLOW LED is lit, this means the relay is outputting mains voltage from the terminal and the light fixture it is connected to should be working.

If the YELLOW LED is lit but the light fixture is not working, this probably indicates that a bulb is out or the fixture is not wired correctly.

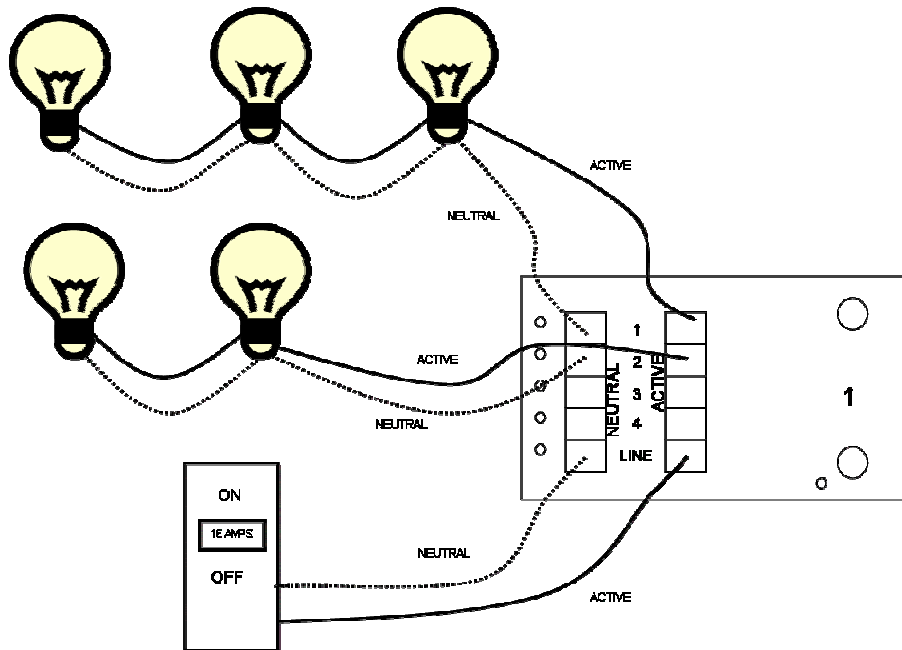


Figure 3
Relay Module Connections

Each lighting or other electrical Switched Wire is terminated on a LOAD terminal. Each LOAD ACTIVE (HOT) wire is terminated on it's corresponding ACTIVE (HOT) side. Each LOAD NEUTRAL is terminated on it's corresponding NEUTRAL side.

All earth wires are terminated from the loads onto the earth bar. A 6mm earth wire is to be terminated from the earth bar within the CentraLite relay panel back to the main earth bar within the main distribution board.

DO NOT load Relay Panel with more than 72 Amps.

DO NOT control more than 16 Amps with any one relay module.

DO NOT control more than 8 Amps from any one relay.

Warning: The CentraLite output relay panel contains dangerous mains voltage electricity. Any mains voltage installation and repair is to be done only by licensed and qualified electricians. All work is to be performed according to AS:NZS 3000:2000, and all applicable local codes. All electrical components are to meet Australian and New Zealand approved certification standards. All work is to be done in a good, neat, and workmanlike manner.

Low-Voltage Control is to be installed and connected by Authorized CentraLite installers only.

Please see Elegance Installation Guide for details on extra low voltage control.

Relay Layout within Enclosure:

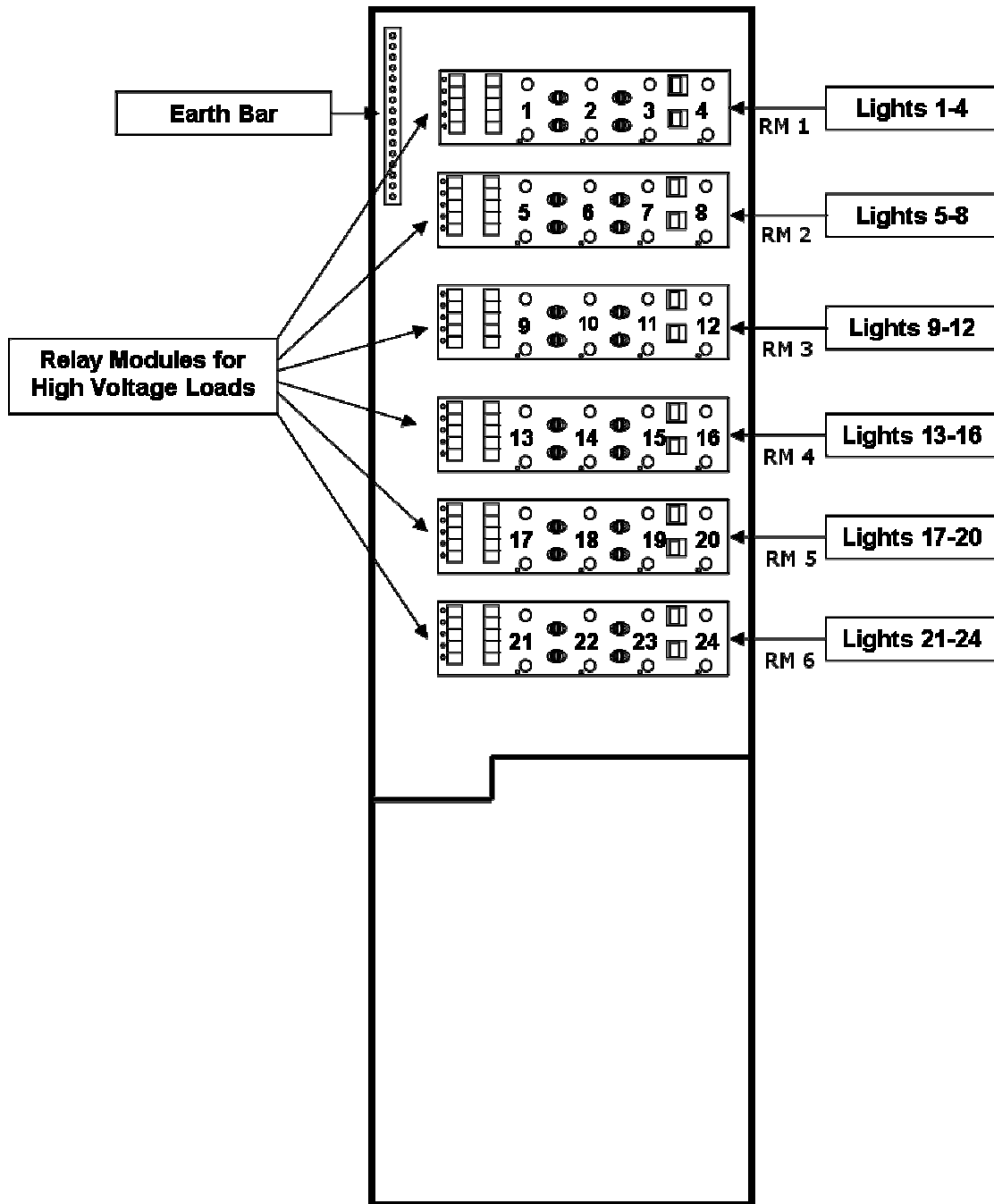


Figure 4

Section 2

Installation Instructions

Mains Voltage Load Planning Example (Single Phase Installation)

Planning is the key to a quick and problem free installation. Never rough in wiring until the following form is completed. Locate the lighting circuits to include in the installation on the electrical plan and verify them with the system installer. Follow the example below to properly plan the installation

Ensure that each Feeding Circuit Breaker's current rating is not exceeded when disturbing power to relay modules. Note the following example that Breaker #1 is a 16A breaker supplying 13.5 Amps to relay module one only, relay module one includes relay one to four.

(Blank forms are included at the end of this guide.)

Relay	Circuit Description	Circuit Load (Amps)	Feeding Breaker Number	Feeding Breaker Rating (Amps)	Is Load Dimmable	Load Type Incandescent, Magnetic Low-Voltage, Electronic Low-Voltage, Fluorescent
1	Kitchen Recess	3	1	16	Yes	Incandescent
2	Dining Room	4	1	16	Yes	Incandescent
3	Laundry	4.5	1	16	Yes	Incandescent
4	Hall Bath	2	1	16	Yes	Incandescent
5	Master Bath	3	2	16	Yes	Incandescent
6	Master Bath Fan	1	2	16	No	Motor
7	Kids Room	4	2	16	Yes	Incandescent
8	Kids Room Lamp Plug	1	2	16	No	Plug
9	Master Bed Recess	3	2	16	Yes	Magnetic Extra Low Voltage
10	Master Bed Sconce	2	2	16	Yes	Electronic Extra Low Voltage
11	Master Bed Lamp Plug	1	2	16	No	Plug
12	Kitchen Lamp Plug	1	2	16	No	Plug

Table 1

***If a relay will be controlling a load other than an incandescent, magnetic extra low voltage, or halogen light, it must be replaced with a non-dimmable relay from CentraLite. This ensures that the equipment cannot be damaged by inadvertent dimming commands. Call InTouch Automation on +61 403 117 678 to exchange the relay.**

Mains Voltage Feed Connection

Before connecting the Feeding Circuit breakers to the relay modules calculate the total current draw of each load attached use the following table as a guide. Remember that the Relay Enclosure is rated at 72 Amp total current rating.

Breaker Feed Number	Relay Module Number	Load (Amps)
1 – 16A – Red	1	7
1 - 16A – Red	2	8
2 – 16A – White	3	7.5
2 – 16A – White	4	7.5
4 – 16A – Blue	5	4
5 – 16A – Blue	6	13
	Total	47 Amps

Table 2

Each feed consists of a two conductor cable of the appropriate gauge for its circuits maximum demand:

- The line active wire can be daisy chained to several relay modules depending on loading and phase status.
- Isolated neutral bars are used when neutrals must be kept separate for installing LVRB's with earth leakage circuit breakers.
- One 24 port earth bar is provided in each relay panel, a 6mm earth shall be terminated in each relay panel and run back, connecting to the main earth bar.
- Use copper clad aluminum or copper conductors only.
- Size all field wiring based on 60 °C or 75 °C Wire Only.
- The power outlet located in the bottom of the high voltage section of the relay panel are for use only to energize Class 2 power supplies for the Relay Driver boards, Master Control Panel and accessory boards.

Care should be taken before system Start Up occurs. Carefully read page 12 prior to start up

Extra Low Voltage Control Installation

Installing CentraLite Wall Switch Boxes during Rough-In

Because the CentraLite Elegance system uses a dimming panel to control all of the loads, mains voltage switching only takes place within the relay panel. Because of the Elegance architecture, there is no longer a need to create mains voltage switch locations. Each traditional mains voltage switch location will be replaced with a CentraLite extra low voltage switch location. Each button location will be connected to a STAR board which accepts 24 contact closure inputs and transmits these inputs to the Master Control Panel (MCP). The MCP will determine which button was pressed and command the relay panel to activate the appropriate loads.

CentraLite keypads can accommodate multiple buttons in a single switch location. Determine the number of keypads that will be used. All workmanship must be completed as per AS:NZS 3000:2000 and all other National Electric Codes.

Wire from each keypad must be connected to a STAR board which is connected to the Master Control Panel (MCP) as shown in

Figure 1. For each keypad there must be one common conductor. For example a 4 button switch location will require 5 wires to operate (4 switch wires and 1 common).

CentraLite recommends that you will rough in either 6 or 12 conductor 22AWG stranded wire. CAT5 or similar wire is acceptable but is prone to breakage when the keypad screw terminals are over tightened.

Conventional mains voltage switches and wires must never share wall boxes with low-voltage CentraLite switches. If extra low voltage and mains voltage switches are to share a location, they must be housed in separate wall boxes. Installation must comply with AS:NZ 3000:2000.

Installing CentraLite MCP Rough-In Enclosure

The Elegance Master Control Panel (MCP) has a rough in enclosure that must be installed between two studs. The box is 105mm deep and 280mm wide. Ensure that both sides of the box are firmly attached to the studs. Install the box in a location that will be convenient for connections at a later date. This will be the location that the installer will connect the PC and all third party devices to the system.

Ensure that all relay driver cables are run from the MCP rough in enclosure to each relay panel. Remember a 12 or 24 load panel requires one 4-conductor 22AWG cable and one 18 gauge figure 8 cable between the MCP and Relay Panel.

Ensure that all STAR Chain cables are installed and run back to the MCP rough in enclosure. Remember a STAR Chain can support up to 4 STAR boards.

Run each keypad cable back to the STAR location. Each STAR can support up to 24 buttons, but plan to terminate 20 inputs leaving plenty of room for later expansion.

Elegance Rough-In Quick Reference Checklist

Mains Voltage

All wiring must be installed in accordance with AS:NZ 3000:2000.

Try to envision the Elegance system as follows. You remove all the mains voltage switches from the walls and place them all in the relay panel. They now become electronic switches, and are controlled by a microcontroller in the MCP box.

First plan locations for the relay panels. Relay panels are 1115mm in height, 100mm in depth, and 365mm in width. Then mount the relay panels in the specified location.

Rough in a switch wire for each load to be controlled by the system, from the first fixture in a circuit back to the relay panel.

Calculate the lighting load requirements, and rough in enough 230V feeds from the breaker box to the relay panel in order to provide enough feed capacity plus some margin. Power must also be provided to the power outlet in the relay box. The power used by the plug-in transformers will be far less than one amp, so you may use a circuit supplying relay modules, or provide a separate feed.

Bring all 230V wires in and out through the knockouts in the top of the box. Extra low voltage will enter the bottom and be kept separate from the 230V wires by a metal segregation.

One 24 port earth bar is provided in each relay panel, a 6mm earth shall be terminated in each relay panel and run back connecting to the main earth bar.

Extra Low Voltage Control

Verify that the MCP's rough-in enclosure was mounted in the specified area.

Ensure that there are appropriate extra low voltage control wires have been installed between the MCP rough in box and each relay panel. Every relay driver board in a relay panel requires 4 conductor 22AWG wire to be connected to the MCP with a separate 18 gauge figure 8 cable to power the MCP from the power supply with in the relay panel.

Verify that there is a 6 conductor 22AWG cable between each STAR chain and MCP. If 4 STARS are on a STAR Chain that is longer than 25m use a separate 18 gauge figure 8 wire for the power.

Ensure that the appropriate cabling has been run between each switch location and STAR board.

Run 18 gauge figure 8 wire for power from one relay panel to the MCP, this will be used to connect the MCP to the power supply with in the relay panel. A second wire and power supply will be needed if star chains 3 & 4 are to be used.

Elegance Fit-Off Quick Reference Checklist

All wiring must be done in accordance with AS:NZ 3000:2000.

Try to envision the Elegance system as follows. You remove all the mains voltage switches from the walls and place them all in the relay panel. They now become electronic switches, and are controlled by a microcontroller in the MCP box.

Be careful not to short any mains voltage wiring to the extra low voltage wiring or terminals.

Connect all earths. Several relays modules may be fed from a single 230V breaker depending on loading, but be sure to provide some safety margin. Be sure that all wiring is secured in place and neatly loomed to the left of the relay modules. After each relay is connected, pull on the wire to check it is securely fitted off.

Be sure to complete the job in a neat manner and insure that appropriate spacing between all mains voltage wiring and all extra low voltage control wires.

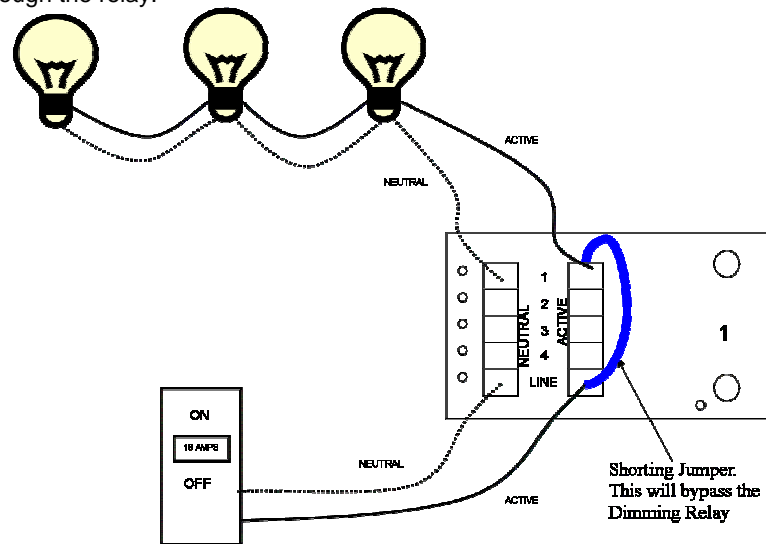
Before energizing the Elegance system ensure that all mains voltage shorts have been found and remedied. If an Elegance relay is turned on while the load is shorted to neutral or earth the current draw through the relay will exceed its maximum rating and fuse the relay in the "ON" position. If a load will not turn off even without a control signal present, it has been fused to the "ON" position and must be replaced.

Section 3

Start-up

Prior to starting up the Elegance units, test each lighting circuit by providing a short from the line active of a relay module to each of the four output switch wire active terminals individually. The lights associated with that circuit being tested should come on when the 230 volt active terminals on the relay module are shorted out. If this step is not done and a short exists on the load side of a relay, it will probably cause the relay to fail. Solid state relays which are repeatedly subjected to shorts will fail either closed or open, but most often closed.

Install a jumper between the relay's main voltage terminals before starting the home's initial electrical checkout. This allows a short circuit to be handled directly by the circuit breaker without the excessive current passing through the relay.



Notes on Centralite Solid State Relays

Care should be taken before the initial system startup to detect and fix any short circuits in lighting fixture circuits controlled by Centralite. A short circuit creates a current draw through the relay that is far greater than the relay's load rating and can likely cause the relay to fail. Relays damaged by faulty wiring are not covered under warranty.

Installation of Elegance Systems

All 230 volt workmanship is to be completed by registered electrical contractors. The installation shall meet all requirements of AS:NZS 3000:2000. Disconnect all power to this box before working inside.

Care to be taken when connecting Neutrals.

The proper wiring and balance of neutral circuits is essential to insure the safe installation of an Elegance lighting control system. It is the responsibility of the installing electrical contractor to ensure neutral conductors are not mixed between circuits and that the installation meet's all requirements of AS:NZS 3000:2000..

If you are using RCD's (Safety Switches), all circuits connected to that RCD shall have corresponding neutrals connected exclusively to that same RCD. When using LVRB's (Low Voltage Relay Boards) and FSCB's (Fan Speed Control Boards) a neutral bar may need to be used. *Eg. A Ceiling sweep fan, a secondary relay switched by a LVRB controlling a bank of non dimmable lighting and a relay module may all be connected to a single circuit or RCD. Care should be taken to ensure this neutral is not being used for other circuits, this is where a dedicated protected neutral bar may be needed.*

ERP-12 High-Voltage Load Planning Sheet

Planning is the key to a quick and problem free installation. Never pull wire until the following form is completed. Locate the lighting circuits to include in the installation on the electrical plan and verify them with the system installer. Then complete the form below to properly plan the installation.

Relay #	Circuit Description	Circuit Load (Amps)	Feeding Breaker Number	Feeding Breaker Rating (Amps)	Is Load Dimmable	Load Type Incandescent, Magnetic Low-Voltage, Electronic Low-Voltage, Fluorescent
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

ERP-24 High-Voltage Load Planning Sheet

Relay #	Circuit Description	Circuit Load (Amps)	Feeding Breaker Number	Feeding Breaker Rating (Amps)	Is Load Dimmable	Load Type Incandescent, Magnetic Low-Voltage, Electronic Low-Voltage, Fluorescent
1						
2						
3						
4						
5						
6						
7						
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Notes: