

GRAFIK 6000™
LIGHTING CONTROL SYSTEM
Layout Guide

A Step-by-Step Guide for Specifying a
Complete Lutron GRAFIK 6000
Lighting Control System

041-087

LUTRON.

6000

Contents

GRAFIK 6000 OVERVIEW.....	4
LOADS.....	7
WALLSTATIONS.....	10
HARDWARE.....	15
WIRING.....	17
GRAFIK 6000 WORKSHEETS.....	21

SECTION 1 GRAFIK 6000 OVERVIEW

The GRAFIK 6000 Lighting Control System provides centralized preset lighting control for commercial facilities and large residences. The system consists of pushbutton wallstations located throughout the building plus a central processor panel and one or more dimming or switching panels located in an electrical closet. System set up and monitoring are accomplished via menu-driven personal computer software, provided with each system.

Before system set up can begin, a system layout or configuration must be completed. A complete system layout or configuration is also essential to determining the correct equipment for the application. This guide is intended to help the user configure an entire system and develop a bill of materials that can be used when specifying or ordering equipment. This guide will walk the user through system set up in steps. Each step will build on the previous steps. In Section 2, we will examine the lighting loads and determine the zoning of loads. In Section 3, we will select wallstations and select their functions and take a brief look at the timeclock function. In Section 4, we will examine the location of equipment and any interface equipment that is required. Section 5 shows wiring requirements for all equipment. As we walk through each step, we will also create an example system for an office building. Even if your application is not an office building, the information presented can be used for any commercial or residential application.

Definitions

Here are a few key terms that are used throughout this guide:

Zone	A circuit or group of circuits controlled simultaneously as a single unit. Each lamp in the same zone will dim to the same intensity using the same fade and delay times.
Area	A group of Zones that are controlled together.
Scene	The lighting effect achieved by adjusting one or more zones of lighting to the desired intensity.
Wallstation	A pushbutton or interface control that activates scenes, enables and disables timeclocks, opens and closes partitions, or initiates sequences.
Link	The method of wiring used for power panels, wallstations and user interfaces. A link consists of a 4 or 5 wire, Class 2 daisy-chain and can extend up to 2000 feet.
Partitionable Space	A group of 2 or more Standard Areas that are separated by movable partitions. These areas can be controlled either separately or combined based on the status of the movable partitions.
Sequence	A pre-programmed series of steps or scene selects in an area. Sequences can contain up to 60 steps and each step can be programmed from 1 to 59 seconds or 1 to 60 minutes.

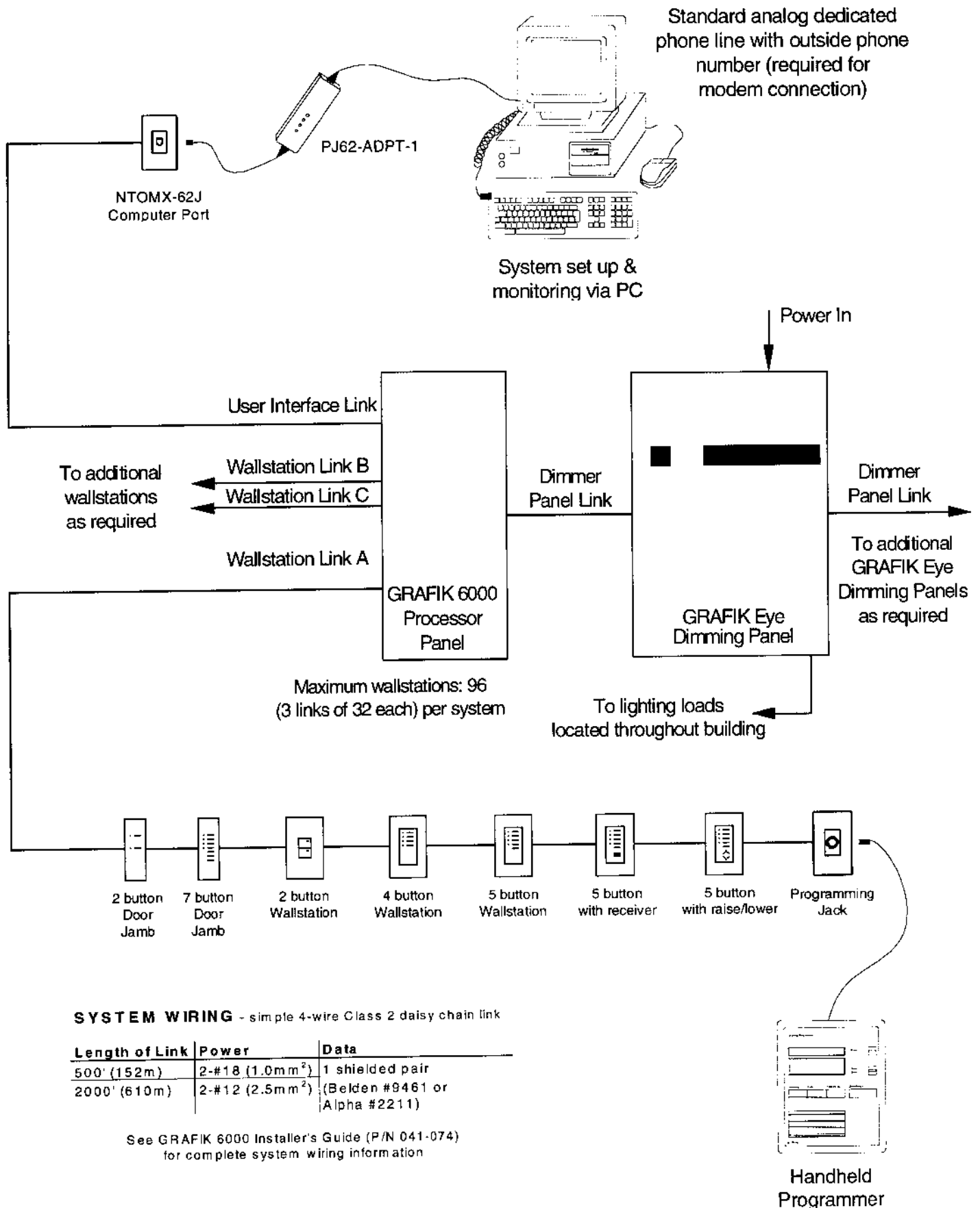


Figure 1.1 GRAFIK 6000 System One Line Diagram

System Layout

The GRAFIK 6000 system is capable of controlling up to 32 Standard Areas and 4 Master Areas. Each Standard Area can contain up to 16 unique zones and 16 scenes plus off. Each Master Area has 4 scenes plus off and is made up of zones from any or all of the standard areas.

When laying out the system, the best reference to use is the blueprints or a reflected ceiling plan. These documents will give an overview of the scope of the project. These documents will also be essential when configuring power panels and determining wallstation links.

Using the blueprints, locate all of the load circuits and group them together into zones. Give each zone a unique alphanumeric name for future reference. (We will go into more detail for the loads in the next section.) Next, group these zones into areas. Start to assign the Standard Areas by filling out the GRAFIK 6000 Configuration worksheet in Section 6. Remember that each Standard Area can contain up to 16 zones. If there is a room that contains more than 16 zones, multiple Standard Areas must be used. Figure 1.2 shows the GRAFIK 6000 Configuration for our office building example.

Area #	Area Name	Scenes	Customer Zones	Lutron Zones
1	Lobby	1 thru 16 & Off	L1 thru L6	1z1 thru 1z6
2	Conference Room A	1 thru 16 & Off	CRA1 thru CRA4	2z1 thru 2z4
3	Conference Room B	1 thru 16 & Off	CRB1 thru CRB4	3z1 thru 3z4
4	Conference Room C	1 thru 16 & Off	CRC1 thru CRC4	4z1 thru 4z4
5	Auditorium	1 thru 16 & Off	A1 thru A16	5z1 thru 5z16
6	Auditorium	1 thru 16 & Off	A17 thru A32	6z1 thru 6z16
7	Auditorium	1 thru 16 & Off	A33 thru A40	7z1 thru 7z8
8		1 thru 16 & Off		
9		1 thru 16 & Off		
10		1 thru 16 & Off		
11		1 thru 16 & Off		
12		1 thru 16 & Off		

Figure 1.2 Sample GRAFIK 6000 Configuration Worksheet

Note that the Auditorium spans three Standard Areas because there are 40 zones. We will see how to control these three areas simultaneously in later sections.

The Lutron zone numbers given represent the zone name prefixes given in the GRAFIK 6000 Set Up Software. Each zone name listed in the Set Up Software will include this prefix along with a unique zone name. The first number in the prefix is the corresponding Standard Area number, "z" signifies this designation as a zone name, and the last number is the zone number in the given Standard Area. For example 4z3 signifies the third zone in Standard Area 4.

Next, using the blueprints, locate all of the wallstations in each area. We will give each wallstation a unique alphanumeric name in Section 3 when we configure the wallstation links.

SECTION 2 LOADS

By now, we have determined the load circuits and grouped them together into zones. We have also assigned these zones into Standard Areas. Now, we must assign each load circuit to an electrical closet and a power panel.

First, assign each load circuit to an electrical closet. This will depend on the physical location of the load circuit as well as the physical location of the electrical closet. (Check your local code for length of load circuit runs.) Next, determine the voltage of each load as well as if the load is fed by a normal (non-essential) feeder or a normal/emergency (essential) feeder. The load circuits will be divided into power panels and each power panel will have one feeder for the entire panel.

Next, assign each group of circuits to power panels. GRAFIK Eye Dimming Panels contain 3, 4, 8, 12, 16, 20 or 24 circuits. Switching Panels handle 24, 32 or 48 circuits. The model numbers that meet most applications are listed in Figures 2.1 and 2.2. (For additional model numbers, contact the Lutron Hotline.)

When you have selected all of the power panels, complete a load schedule for each panel. Section 6 contains a sample load schedule of a GP24-1204ML-20 panel. The Area/ Room Name, Lutron Zone, Zone Description, and Load Type columns must be completed. This information will be required when you want to run GRAFIK 6000 Set Up software. Also, after the power panels are installed, these schedules can be attached to the inside of the power panel and can serve as a circuit directory.

The GRAFIK 6000 system typically talks to up to 32 power panels. These panels will be wired using the power panel link wiring method shown in Section 5. The GRAFIK 6000 can talk to more than 32 power panels using the MX-RPTR. For more information on the MX-RPTR, consult factory.

Dimmers will operate the following sources: incandescent, tungsten, magnetic low voltage transformer, electronic low voltage transformer, electronic fluorescent dimming ballasts using Lutron Hi-lume dimming ballast, neon, and cold cathode. All of these loads, and other fluorescent ballasts can also be controlled on a non-dim, or switched, basis.

The power panels are cooled by free convection, so they must be mounted in a well-ventilated area, free from dust and dirt. Power panels require 12" (305mm) clearance above and below each panel for ventilation. When double stacking panels, allow 6" (153mm) below the bottom panel, 12" (305mm) between each panel and 12" (305mm) above the top panel. This spacing is required to meet the 78" NEC (US) breaker height limit.

Dimmer panels may produce an audible hum so the dimmer panels should be located where this hum is acceptable. The power panels are capable of continuous operation within an ambient temperature range of 0°C to 40°C.

Model Prefix	No. of Circuits	Voltage	Feed Type*	Main Lugs Only(ML) Main Breaker (M Amps)	Branch Circuit Breaker Ampacity
120V Dimmer Panels					
GP	3-	120	4	M-	20
GP	3-	120	4	M-	15
GP	4-	120	FT	ML	-
GP	8-	120	2	ML-	20
GP	8-	120	2	ML-	15
GP	8-	120	3	ML-	20
GP	8-	120	3	ML-	15
GP	8-	120	4	ML-	20
GP	8-	120	4	ML-	15
GP	12-	120	3	ML-	20
GP	12-	120	3	ML-	15
GP	12-	120	4	ML-	20
GP	12-	120	4	ML-	15
GP	16-	120	4	ML-	20
GP	16-	120	4	ML-	15
GP	16-	120	4	M125-	20
GP	16-	120	4	M100-	15
GP	20-	120	4	ML-	20
GP	20-	120	4	ML-	15
GP	24-	120	4	ML-	20
GP	24-	120	4	ML-	15
GP	24-	120	4	M175-	20
GP	24-	120	4	M125-	15
277V Dimmer Panels					
GP	3-	277	4	M-	20
GP	4-	277	FT	ML	-
GP	8-	277	2	ML-	20
GP	8-	277	4	ML-	20
GP	16-	277	4	ML-	20
GP	16-	277	4	M125-	20

* Feed Type (Phase to neutral only)

Feed Type 2	Feed Type 3	Feed Type 4	Feed Type FT
120V, 1 phase, 2 wire	120/240V, 1 phase, 3 wire	120/208V, 3 phase, 4 wire	120V Feed Through
277V, 1 phase, 2 wire		277/480V, 3 phase, 4 wire	277V Feed Through

Model Prefix	No. of Circuits	Voltage	Feed Through Only	Main Lugs Only
120/277V Switching Panels				
XP	24-	120	FT	ML
XP	32-	120	FT	ML
XP	48-	120	FT	ML
XP	24-	277	FT	ML
XP	32-	277	FT	ML
XP	48-	277	FT	ML

Figure 2.1 GRAFIK EYE Power Panel Model Numbers (120/277V)

Model Prefix	No. of Circuits	Voltage	Feed Type*	Main Lugs Only(ML) Main Breaker (M# Amps) or Isolator (IS)	MCB Size
GP	3-	230	4	M-	10CE
GP	4-	230	FT-	ML-	CE
GP	8-	230	2	IS-	10CE
GP	8-	230	4	IS-	10CE
GP	12-	230	4	IS-	10CE
GP	16-	230	4	IS-	10CE
GP	20-	230	4	IS-	10CE
GP	24-	230	4	IS-	10CE
GP	3-	240	4	M-	16AU
GP	4-	240	FT	ML-	AU
GP	8-	240	2	IS-	16AU
GP	8-	240	4	IS-	16AU
GP	12-	240	4	IS-	16AU
GP	16-	240	4	IS-	16AU
GP	20-	240	4	IS-	16AU
GP	24-	240	4	IS-	16AU

* - Feed Type (Phase to neutral only)

Feed Type 2	Feed Type 4	Feed Type FT
220/230/240V 1Ø, 2 wire	220/380V or 230/400V or 240/415V, 3Ø, 4 wire	220/230/240V Feed Through

Model Prefix	No. of Circuits	Voltage	Feed Through Only	Main Lugs Only
220-240V Switching Panels				
XP	24-	230	FT	ML
XP	32-	230	FT	ML
XP	48-	230	FT	ML

Figure 2.2 GRAFIK EYE Power Panel Model Numbers (220-240V)

Feed Wiring (Mains Voltage Wiring)

Panel	Maximum - Minimum Size (75°C Wire Only)	Where to Enter Panel
GP-3 (277V)	1 or 2 #10 AWG - #14 AWG (2.5mm ²)	Bottom Right of Panel (Bottom or Side Entry)
GP-3 (120, 220-240)	#6 AWG (5mm ²) - #14 AWG (2.5mm ²)	Bottom Right of Panel (Bottom or Side Entry)
GP-4	#10 AWG (2.5mm ²) - #14 AWG (2.5mm ²)	Bottom Right of Panel (Bottom or Side Entry)
GP-8 through GP-24 Main Lugs	#2/0 AWG (10mm ²) - #14 AWG (2.5mm ²)	Top Left of Panel (Top Entry Only)
GP-8 through GP-24 Main Breaker	see rating on breaker	Top Left of Panel (Top Entry Only)

Load Circuit Wiring

Panel	Maximum - Minimum Size (75°C Wire Only)	Where to Enter Panel
GP-3,4	#10 AWG - #14 AWG (2.5mm ²)	Bottom Left of Panel (Bottom or Side Entry)
GP-8 through 24	#10 AWG - #14 AWG (2.5mm ²)	Top Right of Panel (Top Entry Only)

SECTION 3 WALLSTATIONS

The GRAFIK 6000 system can have up to 96 Wallstations connected to it to provide control of the lighting levels in the system. Wallstations can be configured to select Scenes or raise and lower Zone intensity levels in the various Areas that make up the system. At the time of system configuration, the system designer must add Wallstations to the system and then assign areas which the Wallstations will control. The configuration of the wallstations will be done in three steps:

1. Select the wallstation type and function.
2. Select which area or areas each wallstation will control.
3. Assign each wallstation to a link and complete a wallstation schedule.

Wallstation Type and Function

Refer to the blueprints that were used in Section 1. For each wallstation on the blueprints, select the wallstation type from the available options shown in Figure 3.1 below.

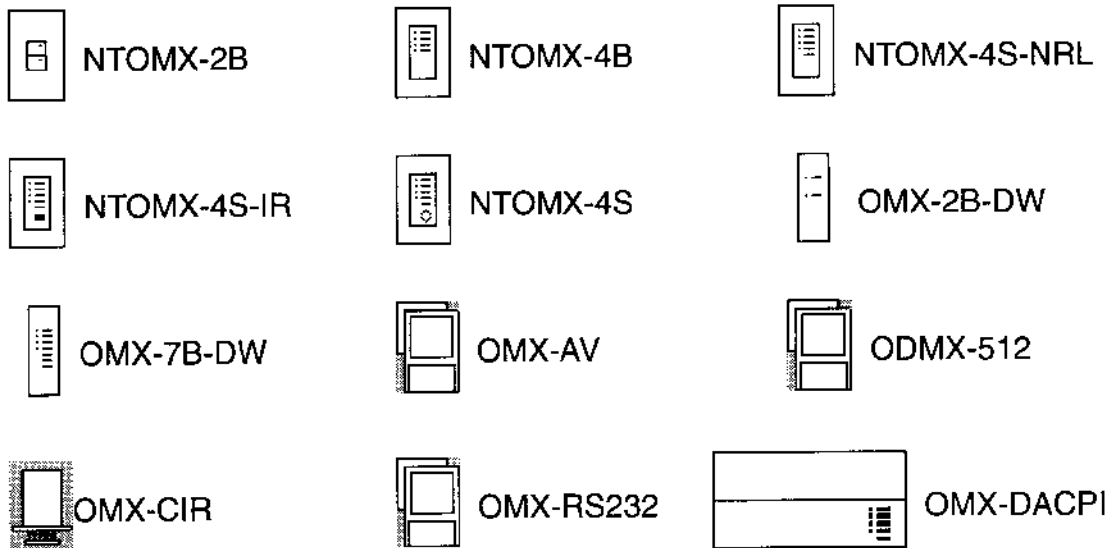


Figure 3.1 Addressed Wallstation Options

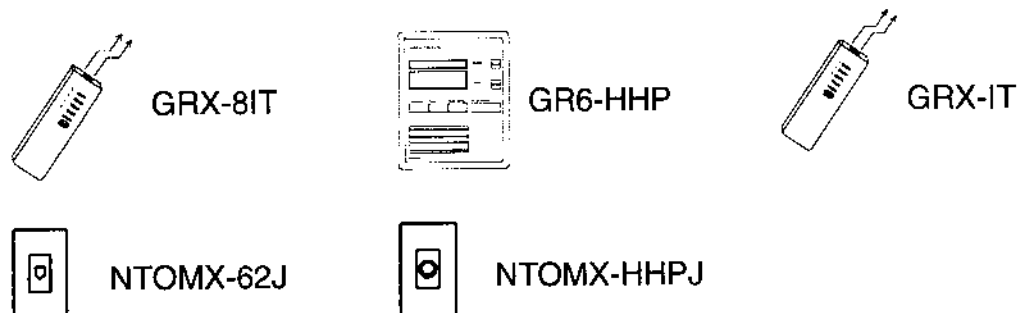


Figure 3.2 Wallstation Options That Do Not Require Addressing

Wallstation	Model Number	Mounting	Function
2 button Architrave 2 button	NTOMX-2B OMX-2B-DW	Wall Door Jamb	-Select scene 1 & off -Select scenes 13 & 14 -Select scenes 15 & 16 -Raise/lower zones -Enable & disable wallstations -Timeclock on/off -Timeclock off, scene1; timeclock on -One partition open/close -Two partitions open/close -Sequence 1 start/stop -Enable DACPI; disable DACPI, scene 1 -Enable DACPI; disable DACPI, off
4 button	NTOMX-4B	Wall ¹	-Select scenes 1-4 and off -Select scenes 5-8 and off -Select scenes 9-12 and off -Select scenes 13-16 and off -Four partitions open/close -Photocell bank select
5 button	NTOMX-4S-NRL	Wall ¹	-Select scenes 1-4 and off -Select scenes 5-8 and off -Select scenes 9-12 and off -Select scenes 13-16 and off -Sequence 1-4, halt sequence
5 button w/ raise/lower Architrave 7 button	NTOMX-4S OMX-7B-DW	Wall ¹ Door jamb ²	-Select scenes 1-4 and off -Select scenes 5-8 and off -Select scenes 9-12 and off -Select scenes 13-16 and off
5 button w/ IR receiver	NTOMX-4S-IR	Wall ¹	-Select scenes 1-4 and off -Select scenes 5-8 and off -Select scenes 9-12 and off -Select scenes 13-16 and off

¹ Mounts in standard U.S. backbox

² Lutron supplies backbox

³ Requires 2 3/16" square opening

⁴ Mounts on 4"x4" U.S. junction box

⁵ Mounts in standard 4-gang U.S. backbox

Figure 3.3 Wallstation Functions

Wallstation	Model Number	Mounting	Function
Infrared Receiver	OMX-CIR	Ceiling ³	-360° range of view to receive IR signals -Select scenes 1-4 and off -Select scenes 5-8 and off -Select scenes 9-12 and off -Select scenes 13-16 and off
Contact Closure Interface control	OMX-AV	Surface ⁴	-Select scenes 1-4 and off -Select scenes 5-8 and off -Select scenes 9-12 and off -Select scenes 13-16 and off -Raise/lower zones
Photocell Interface	OMX-DACPI	Wall ⁵	-Select 4 groups (banks) of 4 scenes
DMX-512 Interface	ODMX-512	Surface ⁴	-Consult factory
4 scene IR transmitter	GRX-IT	Handheld	-Activates 4 scenes and off
8 scene IR transmitter	GRX-8IT		-Activates 8 scenes and off -Raise/lower (both remotes)
Handheld Programmer	GR6HHP	Handheld	-Set scene values without a PC -Enter fade times and delays on-line -Plugs into NTOMX-HHPJ (See Section 4)

¹ Mounts in standard U.S. backbox

² Lutron supplies backbox

³ Requires 2 3/16" square opening

⁴ Mounts on 4"x4" U.S. junction box

⁵ Mounts in standard 4-gang U.S. backbox

Figure 3.3 (Continued) Wallstation Functions

Wallstation Colors

All wallstations in the NTOMX family and the OMX-CIR are available in white, beige, ivory, gray, brown, and black. Architrave style wallstations are available in Bright Brass, Bright Chrome, and Satin Brass.

Defining Wallstations

The 96 wallstations in the system must be divided up into 3 groups of 32 stations each. There can only be 32 wallstations physically connected to one run of wiring, called a wallstation link. Refer to Section 5 for wallstation link wiring details. It is important to select wallstations for a given area that are on a link that is convenient to the area, to minimize wiring lengths and the cost of installation. The designer should plan which links to use for which wallstations before beginning the process of assigning areas to stations. Lutron recommends that you keep the number of wallstations to about 80% of link capacity. (This is about 26 controls.) This will enable you to add wallstations to any given link in the future.

Next, you must select the area or areas that each wallstation will access. To do this, refer to your GRAFIK 6000 configuration worksheet. Assign an area or group of areas to each wallstation. A wallstation that is controlling an area or group of areas cannot affect any zones other than those available to be assigned to that area or group of areas. Note that there is no requirement that an area must be controlled by a wallstation, since the time clock could be used to operate the area, even if no wallstations are provided. However, in most cases, an area will be controlled by at least one wallstation. The user has complete freedom to divide up the 96 wallstations in any manner necessary between the areas in the system.

As you configure each wallstation, you should complete the wallstation schedule shown in Section 6. There will be one schedule for each wallstation link. The wallstation links are referred to by capital letters rather than numbers, so the three links in a GRAFIK 6000 system are Links A, B and C. Each wallstation on a given link will have a unique address number on that link. The addresses will be 1 through 32. Therefore, every wallstation in the system will have a unique Link Address. The example in Figure 3.4 shows the controls for our example project.

Wallstation name	Lutron Wallstation		Lutron Model #	Controls Area(s)	Function
	Link # (A, B, or C)	Address #			
Lobby	A	1	NTOMX-4S	1	Scenes 1-4, off
Conference Room A	A	2	NTOMX-4S	2	Scenes 1-4, off
Conference Room A	A	3	NTOMX-2B	2	Scene 1, off
Conference Room B	A	4	NTOMX-4S	3	Scenes 1-4, off
Conference Room B	A	5	NTOMX-2B	3	Scene 1, off
Conference Room C	A	6	NTOMX-4S	4	Scenes 1-4, off
Conference Room C	A	7	NTOMX-2B	4	Scene 1, off
Auditorium	A	8	NTOMX-4S	5, 6, 7	Scenes 1-4, off
Auditorium	A	9	NTOMX-2B	5, 6, 7	Scene 1, off
Auditorium	A	10	NTOMX-2B	5, 6, 7	Scene 1, off
Auditorium	A	11	OMX-AV	5, 6, 7	Scenes 1-4, off
		12			
		13			
		14			

Figure 3.4 Wallstation Configuration Schedule

Timeclock Schedules

The GRAFIK 6000 also features a timeclock function that allows the system to automatically select scenes, start and stop sequences, and enable and disable wallstations. The user can program up to 10 schedules with 20 events per schedule for each Standard or Master Area. There are seven daily schedules as well as three "Special" schedules which can be used for programming holiday or special event schedules.

The timeclock events can be programmed in real time or astronomic time (relative to sunrise/sunset). The astronomic times are calculated by the GRAFIK 6000 based on the longitude and latitude of the system location. There are many major cities whose locations are preprogrammed in the GRAFIK 6000. If the system is located within a 100 mile radius of one of these cities, the user can select that city and the longitude and latitude are programmed automatically. If the system is not located within 100 miles of one of these cities, or you want greater accuracy in sunrise and sunset times, you can enter the longitude and latitude to within a tenth of a degree.

While configuring your system, make note of the timeclock events that you want to occur for each area. These events will be entered using the GRAFIK 6000 Set Up Software.

SECTION 4 HARDWARE

Each GRAFIK 6000 system consists of a GRAFIK 6000 Processor Panel, a computer interface, and one or more computer port walljacks. The GRAFIK 6000 Processor Panel is available in two voltages.

GR6MXINP	GRAFIK 6000 Processor Panel (100/120 VAC 50/60 Hz feed)
or	
GR6MXINP-220/240	GRAFIK 6000 Processor Panel (220/230/240 VAC, 50/60 Hz feed)
PJ62-ADPT-1	GRAFIK 6000 Computer Interface Adapter
NTOMX-62J	Computer Port Walljack

The GR6MXINP panel should be mounted in an electrical closet, perhaps near the dimmer panels, in an area free from dust and dirt. The main feed should enter the panel on the top right side, as shown in Figure 4.1. Knockouts on the top of the panel are 1/2" (13mm) or 3/4" (19mm). All of the low voltage wiring (the User Interface Link, Wallstation Link, and Dimmer Panel Link) should enter the panel at the bottom. Knockouts on the bottom of the panel are 1/2" (13mm).

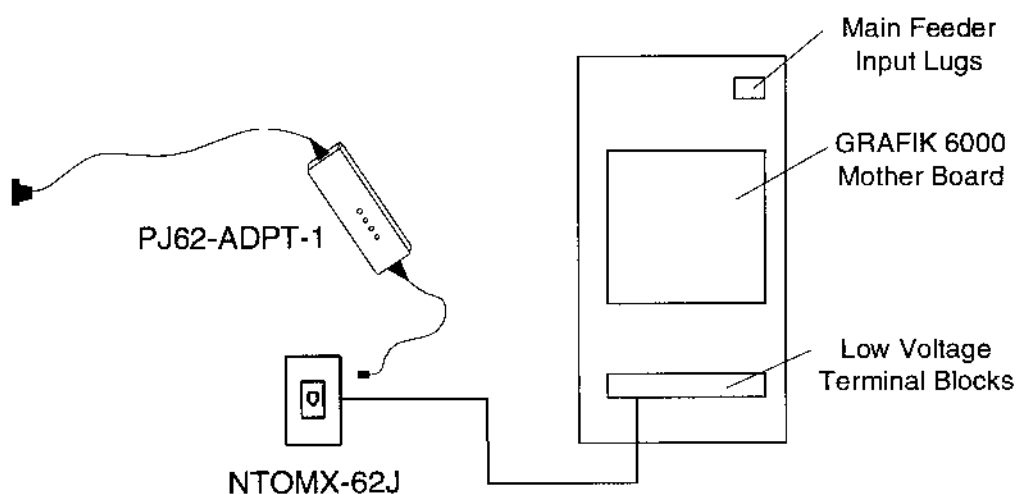


Figure 4.1 GRAFIK 6000 panel wiring

The system also requires a PC or laptop computer to set up and operate the GRAFIK 6000 system. Lutron offers two styles of computers for use with the GRAFIK 6000 system.

GPC-DT Desktop computer

GPC-LT Laptop computer

These computers will have all of the required software installed by Lutron. They will be ready to plug in, turn on and communicate with the GRAFIK 6000 panel. The computer should be located in a clean and secure place. It should be located within 10 feet of a NTOMX-62J computer port for easy access. The computer will be used to preset light levels and to configure the system. For larger applications, it may be convenient to place an NTOMX-62J at several locations throughout the building, perhaps one per floor. The GR6-HHP hand held programmer is also convenient for setting up scene values in larger applications. In this case, an NTOMX-HHPJ should be mounted in each area for connection to the GRAFIK 6000 system. A standard analog dedicated phone line is also required for modem connection. This phone line must have an outside phone number and must be located in close proximity to the GRAFIK 6000 processor panel.

If the user wants to control the system with their own PC, the requirements for the PC are as follows:

Software

- Windows 3.1x
- DOS 6.2
- Norton-Lambert Close-Up 6.0 (Complete package, Host and Remote)

Hardware

	Minimum Requirements	Lutron Recommends
CPU	486DX4 / 75MHz	Pentium® / 100MHz
Memory	8MB RAM	8MB RAM
Display	VGA or DSTN	VGA or DSTN
Disk Space	20MB	40MB
Available Disk	10MB	20MB
Floppy Drive	3.5" 1.44MB	3.5" 1.44MB
Modem *	14.4k Baud	28.8k Baud
Pointing Device	Mouse or Trackball	PS/2 style pointing device
Serial Port **	High Speed Required (16C550 UARTs)	High Speed Required (16C550 UARTs)

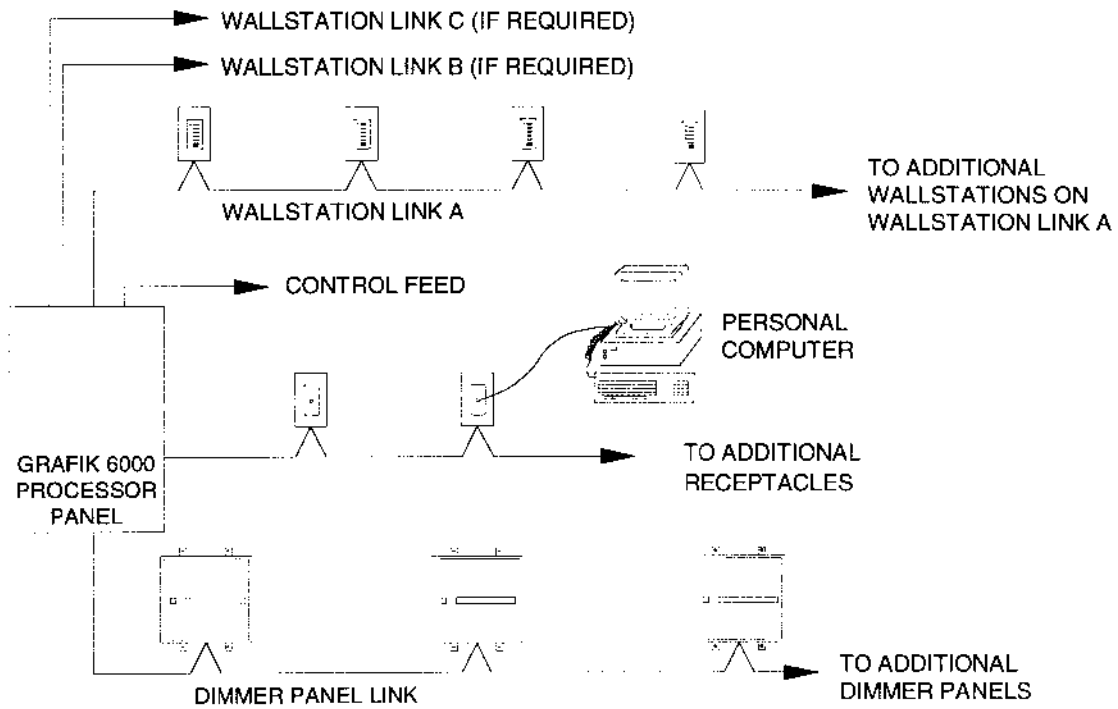
* For GRAFIK 6000 use, the modem, serial port and pointing device must be able to run simultaneously (unique Com Ports and IRQ's).

** Serial Port is dedicated to the GRAFIK 6000 system.

SECTION 5 WIRING

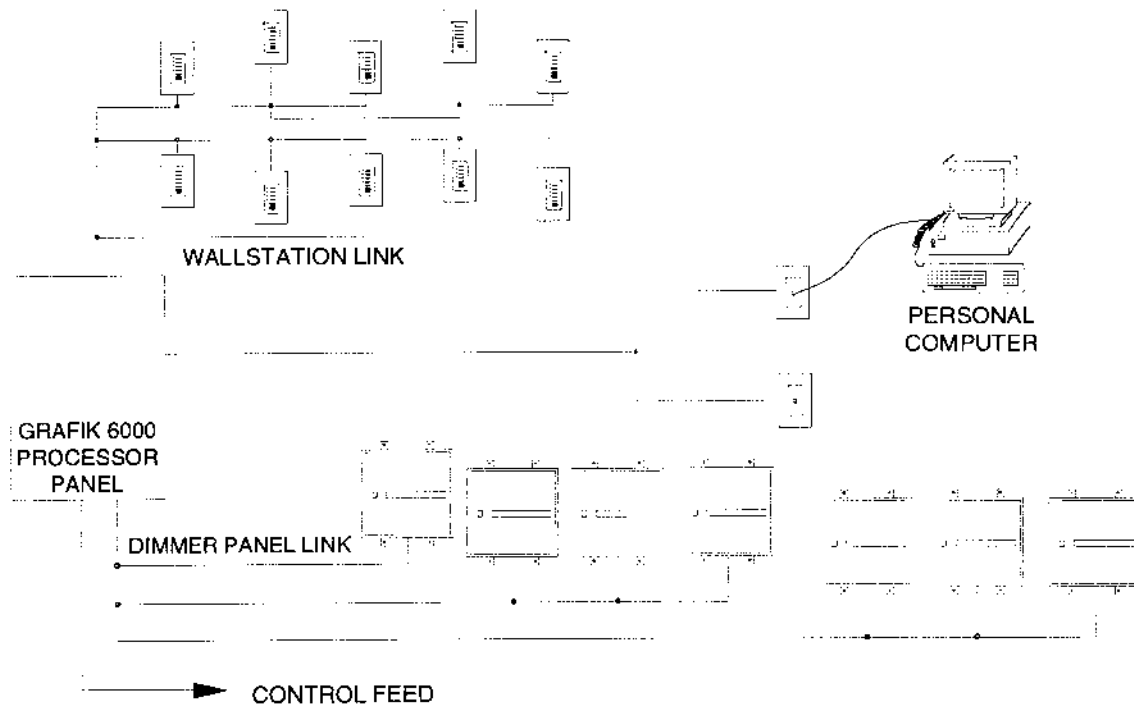
Wire system like this...

Each link should have only one home run to the GRAFIK 6000 processor panel.
The length of each link must not exceed 2000 feet.



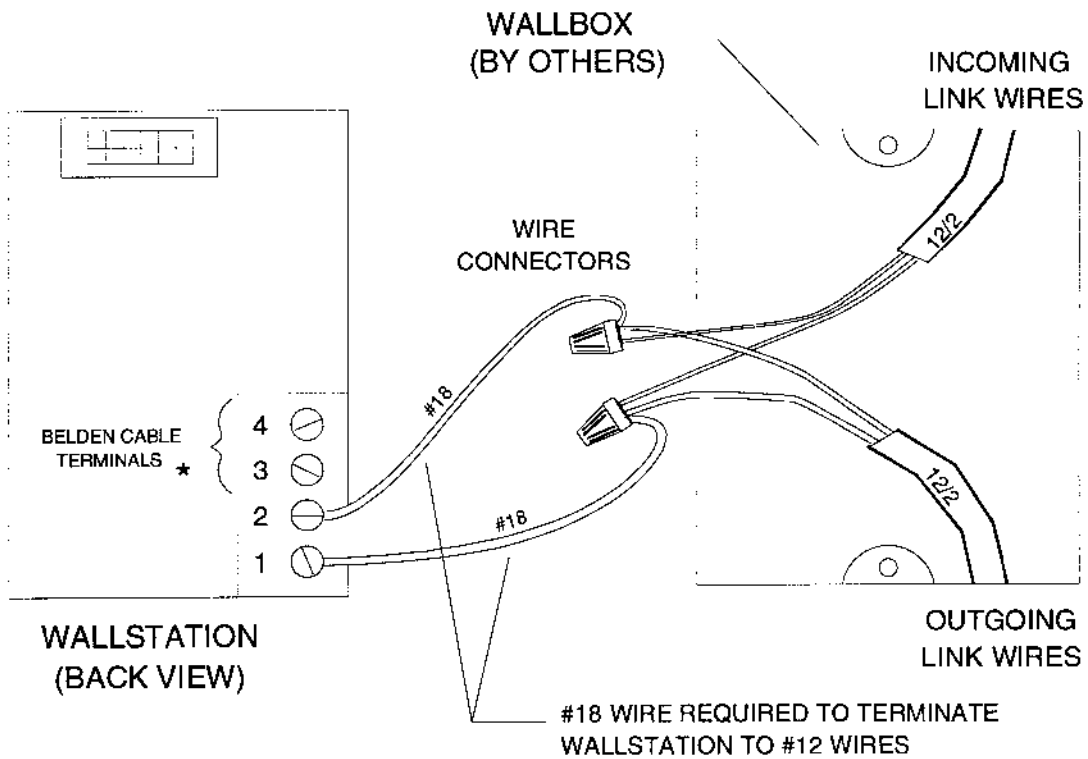
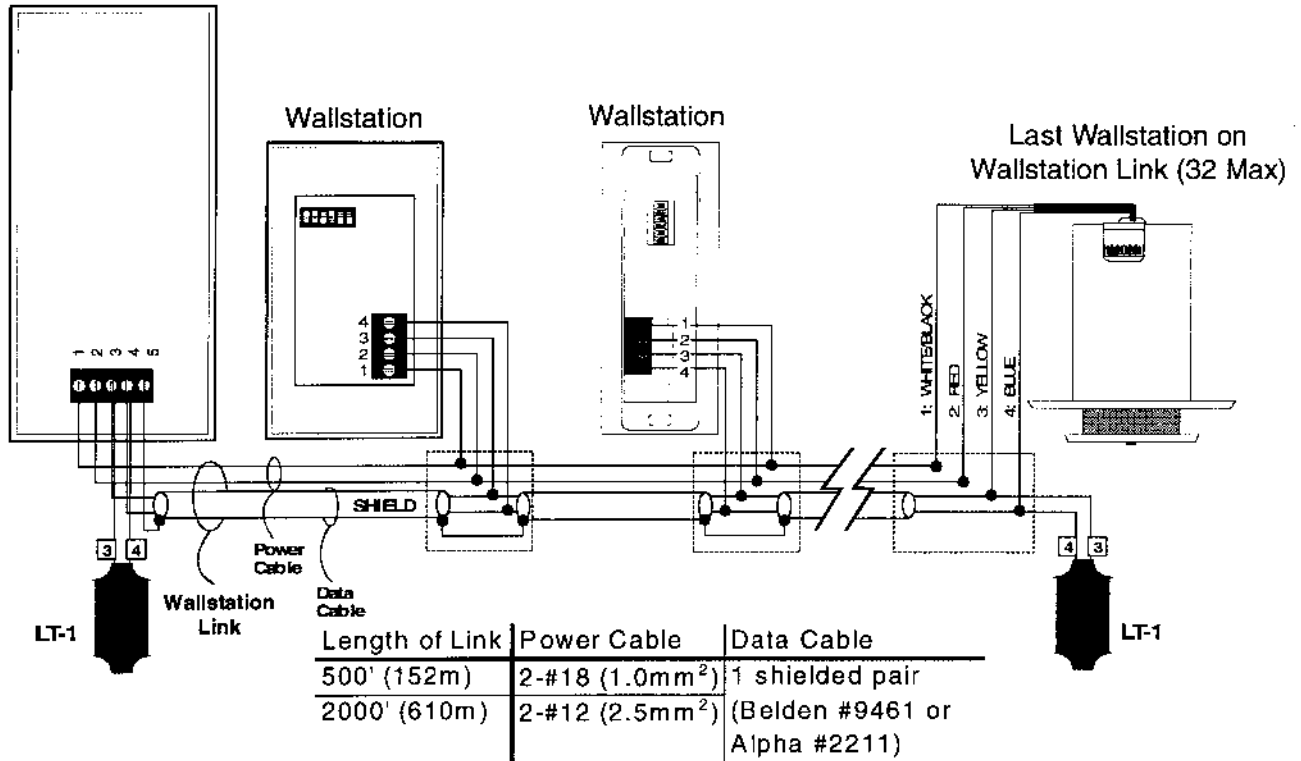
Not like this...

Do not branch individual links.
Do not have more than one home run per link.



Wallstation Link Wiring

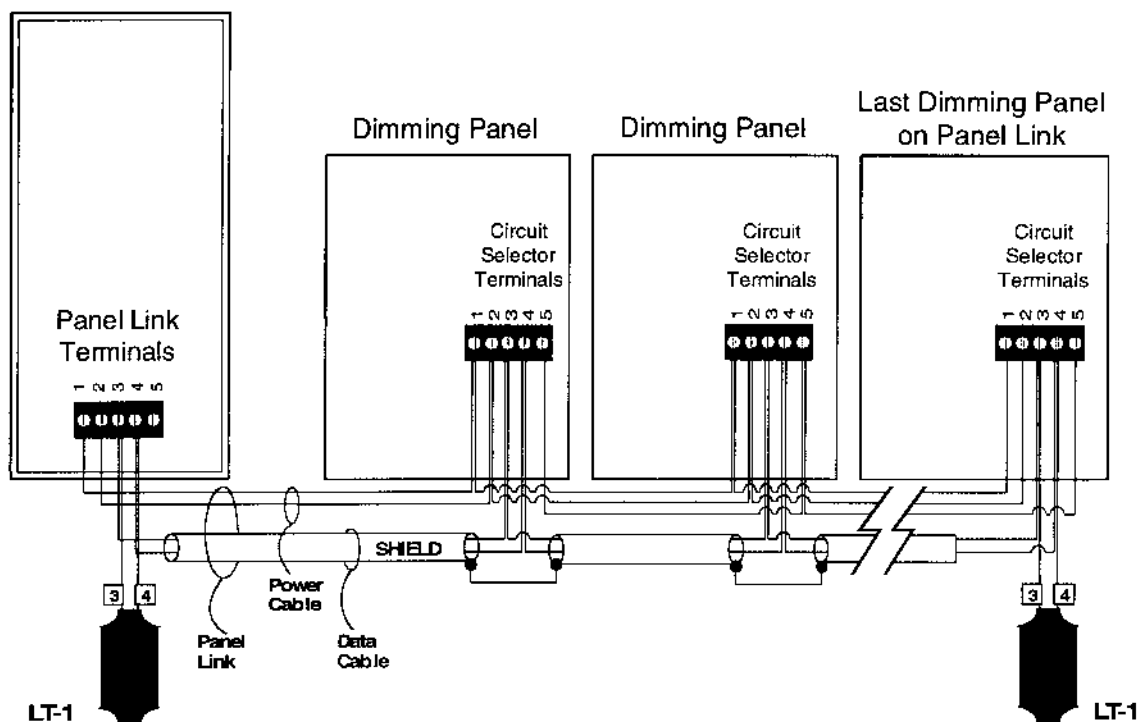
GRAFIK 6000 Processor Panel



* ONLY POWER WIRING IS SHOWN. REFER TO WALLSTATION LINK WIRING DETAIL FOR BELDEN OR ALPHA CABLE WIRING INFORMATION.

Dimmer Panel Link Wiring

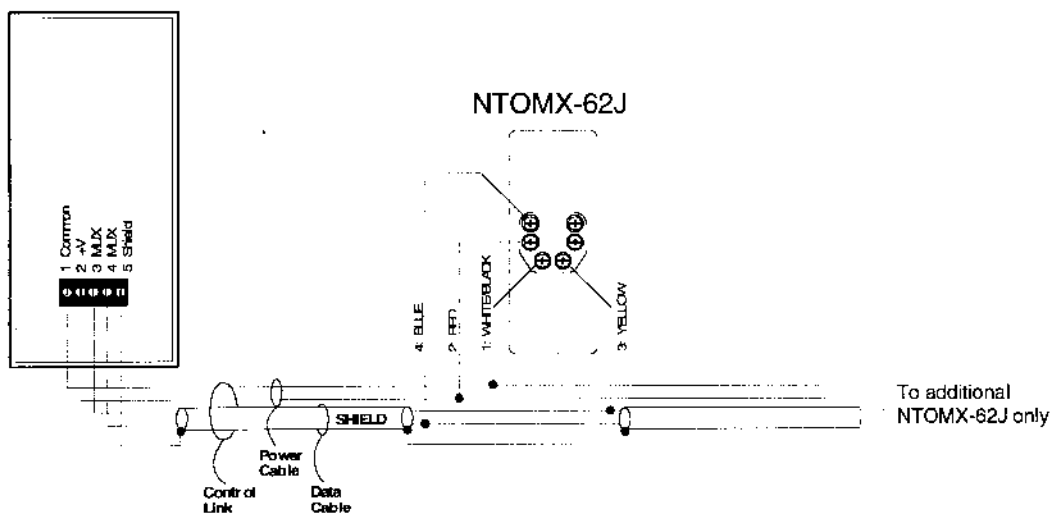
GRAFIK 6000 Processor Panel



Power Cable: 3 #18 AWG (Class 2)
 Data Cable: Belden #9461 or Alpha #2211

User Interface Link Wiring

GRAFIK 6000 Processor Panel



Length of Link	Power Cable	Data Cable
500' (152m)	2-#18 (1.0mm ²)	1 shielded pair
2000' (610m)	2-#12 (2.5mm ²)	(Belden #9461 or Alpha #2211)

Wallstation Wiring Notes

1. Connections to Wallstation Link are made inside the wallstation (accessory) backbox or in a junction box (provided by others) located no more than 8 feet from the wallstation.
2. Connections to numbered terminals inside the GRAFIK 6000 wallstations are wired 1:1 with numbered terminals inside the GRAFIK 6000 panel.
3. Link wiring must not be run in the same raceway as 100/120/220/240/277 VAC.
4. Total data cable length is not to exceed 2000 feet. If wallstation wire run is less than 500 feet, (2) #18 (1.0mm²) wires may be used instead of (2) #12 (2.5mm²) wires for power wiring.
5. Maximum of 32 wallstations per link.
6. Data cable shield must be maintained throughout the link. Do not connect the shield to earth ground.
7. GRAFIK 6000 panel will support 3 wallstation links.
8. Wallstation Links require a LT-1, Link Termination Assembly, at each end of the link.

Dimmer Panel Wiring Notes

1. Connections to Dimmer Panel Link are made inside the dimmer panel or in a junction box (provided by others) located no more than 8 feet from the dimmer panel.
2. Connections to numbered terminals inside the dimmer panels are wired 1:1 with numbered terminals inside the GRAFIK 6000 panel.
3. Link wiring must not be run in the same raceway as 100/120/220/240/277 VAC.
4. Total data cable length is not to exceed 2000 feet (610m).
5. Data cable shield must be maintained throughout the link. Do not connect the shield to earth ground; connection of the shield at the dimmer panel and GRAFIK 6000 panel is not required.
6. Dimmer Panel Link requires a LT-1, Link Termination Assembly, at each end of the link.

User Interface Link Wiring Notes

1. Connections to User Interface Link are made inside the receptacle backbox or in a junction box (provided by others) located no more than 8 feet from the receptacle.
2. Link wiring must not be run in the same raceway as 100/120/220/240/277 VAC.
3. Total data cable length is not to exceed 2000 feet. If wallstation wire run is less than 500 feet, (2) #18 (1.0mm²) wires may be used instead of (2) #12 (2.5mm²) wires.
4. Data cable shield must be maintained throughout the link. Do not connect the shield to earth ground.
5. User Interface Link requires a LT-1, Link Termination Assembly, at each end of the link.

SECTION 6
GRAFIK 6000 WORKSHEETS

The following worksheets will be helpful when configuring your GRAFIK 6000 system. The system configuration, wallstation schedule and load schedule worksheets should be completed and returned to your local Lutron representative along with the blueprints or reflected ceiling plans that were used. These documents are required to accurately quote the system. They will also be used to generate the GRAFIK 6000 database for the project.

GRAFIK 6000 System Configuration

Area #	Area Name	Scenes	Customer Zones	Lutron Zones
1		1 thru 16, Off		
2		1 thru 16, Off		
3		1 thru 16, Off		
4		1 thru 16, Off		
5		1 thru 16, Off		
6		1 thru 16, Off		
7		1 thru 16, Off		
8		1 thru 16, Off		
9		1 thru 16, Off		
10		1 thru 16, Off		
11		1 thru 16, Off		
12		1 thru 16, Off		
13		1 thru 16, Off		
14		1 thru 16, Off		
15		1 thru 16, Off		
16		1 thru 16, Off		
17		1 thru 16, Off		
18		1 thru 16, Off		
19		1 thru 16, Off		
20		1 thru 16, Off		
21		1 thru 16, Off		
22		1 thru 16, Off		
23		1 thru 16, Off		
24		1 thru 16, Off		
25		1 thru 16, Off		
26		1 thru 16, Off		
27		1 thru 16, Off		
28		1 thru 16, Off		
29		1 thru 16, Off		
30		1 thru 16, Off		
31		1 thru 16, Off		
32		1 thru 16, Off		
M1		1 thru 4, Off		
M2		1 thru 4, Off		
M3		1 thru 4, Off		
M4		1 thru 4, Off		

Dimmer Panel Load Schedule

Area/Room	Customer		Lutron		Zone Description	Load Type	Actual Load	Maximum Load	Circuit Bkr Size	Phase
	Ckt	Zone	Ckt	Zone						
			1					1920 W/WA	20A-1P	A
			2					1920 W/WA	20A-1P	B
			3					1920 W/WA	20A-1P	C
			4					1920 W/WA	20A-1P	A
			5					1920 W/WA	20A-1P	B
			6					1920 W/WA	20A-1P	C
			7					1920 W/WA	20A-1P	A
			8					1920 W/WA	20A-1P	B
			9					1920 W/WA	20A-1P	C
			10					1920 W/WA	20A-1P	A
			11					1920 W/WA	20A-1P	B
			12					1920 W/WA	20A-1P	C
			13					1920 W/WA	20A-1P	A
			14					1920 W/WA	20A-1P	B
			15					1920 W/WA	20A-1P	C
			16					1920 W/WA	20A-1P	A
			17					1920 W/WA	20A-1P	B
			18					1920 W/WA	20A-1P	C
			19					1920 W/WA	20A-1P	A
			20					1920 W/WA	20A-1P	B
			21					1920 W/WA	20A-1P	C
			22					1920 W/WA	20A-1P	A
			23					1920 W/WA	20A-1P	B
			24					1920 W/WA	20A-1P	C

When configuring the GRAFIK 6000 system, complete the "Lutron Zone" and "Load Type" information of the schedule above. This information is essential for system Set Up.

GRAFIK 6000 Wallstation Link A Schedule

Wallstation name	WS Link	Address #	Lutron Model #	Controls Area(s)	Function
	A	1			
	A	2			
	A	3			
	A	4			
	A	5			
	A	6			
	A	7			
	A	8			
	A	9			
	A	10			
	A	11			
	A	12			
	A	13			
	A	14			
	A	15			
	A	16			
	A	17			
	A	18			
	A	19			
	A	20			
	A	21			
	A	22			
	A	23			
	A	24			
	A	25			
	A	26			
	A	27			
	A	28			
	A	29			
	A	30			
	A	31			
	A	32			

GRAFIK 6000 Wallstation Link B Schedule

Wallstation name	WS Link	Address #	Lutron Model #	Controls Area(s)	Function
	B	1			
	B	2			
	B	3			
	B	4			
	B	5			
	B	6			
	B	7			
	B	8			
	B	9			
	B	10			
	B	11			
	B	12			
	B	13			
	B	14			
	B	15			
	B	16			
	B	17			
	B	18			
	B	19			
	B	20			
	B	21			
	B	22			
	B	23			
	B	24			
	B	25			
	B	26			
	B	27			
	B	28			
	B	29			
	B	30			
	B	31			
	B	32			

GRAFIK 6000 Wallstation Link C Schedule

Wallstation name	WS Link	Address #	Lutron Model #	Controls Area(s)	Function
	C	1			
	C	2			
	C	3			
	C	4			
	C	5			
	C	6			
	C	7			
	C	8			
	C	9			
	C	10			
	C	11			
	C	12			
	C	13			
	C	14			
	C	15			
	C	16			
	C	17			
	C	18			
	C	19			
	C	20			
	C	21			
	C	22			
	C	23			
	C	24			
	C	25			
	C	26			
	C	27			
	C	28			
	C	29			
	C	30			
	C	31			
	C	32			