

# Home Automation Guides: SMART LIGHTING CONTROL





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Kitchen

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Music

Shades

## WHAT IS SMART LIGHTING CONTROL?

Smart lighting can be added to a frequently used room or throughout the entire house, with different types of interactions—such as a touch screen that allows for easy ramping or dimming of any light, a dedicated keypad that activates a “scene” at the touch of a button, or control of the lights using just a voice command - you can even program the lights to respond to a homeowner’s schedule, without any touch at all.

**One-Room Lighting Control** - For dedicated home theaters and family rooms, smart lighting can help set the mood and create an ambiance perfect for watching a movie or relaxing together.

**Main Living Areas** - Every home has areas which are frequented by the family that can benefit from smart lighting. The kitchen, family room, and the master bedroom are common examples. Smart lighting in the main living areas provides homeowners the benefit of taking advantage of lighting control in many different situations throughout the day, from waking in the morning, to entertaining, to going to bed.



Smartphone app for the smart lighting control

**Whole-Home Smart Lighting** - Whole-home smart lighting provides for a consistent experience and lighting control throughout the home.

Every room and light can benefit from smart lighting, and wall clutter is reduced by simplifying lighting access and control.

In any whole-home project you can do strictly Centralized or Wireless Lighting throughout the home.

However, when budgets are constrained, you can also take a hybrid approach and mix both Centralized and Wireless Lighting to achieve an overall lower-cost total solution.

The control of the lighting can be done by wired/wireless keypads, mobile phone app, on-screen display with a remote control and even your voice.



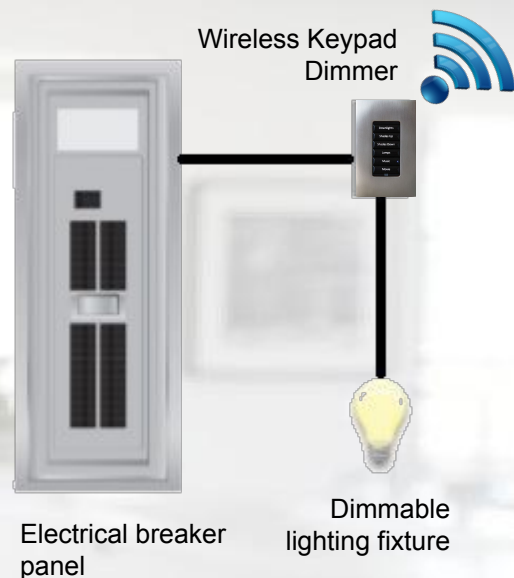
Wired and Wireless Keypads control Lights, Music, Shades, Scenes, Security, etc.

## WIRED OR WIRELESS?

**Wireless Lighting Control** - Traditional light switch is replaced with a wireless keypad dimmer, enabling automated/manual dimming/music/shades/comfort control and scene recall from the keypad.

Wireless lighting control is ideal for refurbishment projects, with no need for any additional wiring to the keypads - please note that a control processor is needed in addition to keypads.

Wireless lighting control is the easiest way to add automation to your home - you can start with only few keypad dimmers in the main room(s) of your home and gradually add more control later on.

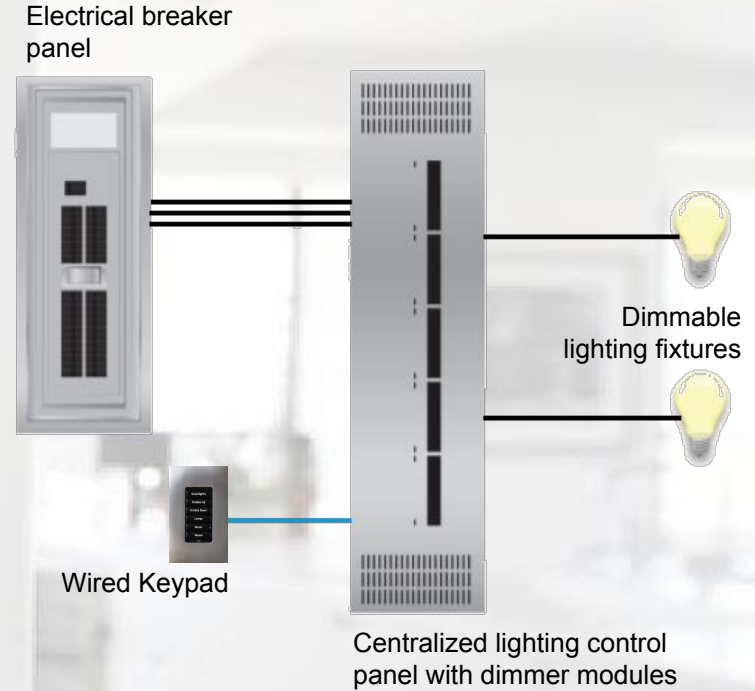


## WIRED OR WIRELESS?contd`

**Wired Lighting Control** - For new installation projects, all dimmer modules are centrally located in the electrical cupboard, while programmable keypads control the lights/music/blinds/comfort/security/etc. around the house.

Since every keypad can control multiple lights, wall clutter is minimized.

A control processor is connected to the panelized lighting control enclosure and enables control of the lights/music/comfort/etc. via mobile phone app or the on-screen display...even your voice.



## WIRED OR WIRELESS?

**Hybrid Lighting Control** - A combination of wired keypads and wireless keypad dimmers.

This solution is ideal for medium to large refurbishment projects, where the new home extension gets centralized lighting control, while the rest of the house gets the ordinary light switches replaced with wireless keypad dimmers.



# LIGHTING FIXTURES CONTROL TYPES

**8-channel Adaptive Phase Dimmer** - This dimmer eliminates much of the guesswork associated with choosing the right dimmer for the job and prevents the need to replace the dimmer if the load type changes in the future:

- Compatible with a variety of load types including LEDs, incandescent, halogen, electronic low-voltage (solid state) transformers, magnetic (iron core) low-voltage transformers, fluorescents, and compact fluorescents.
- Supports both forward phase (leading edge) and reverse phase (trailing edge) dimming.
- Automatically detects load type and determines the appropriate dimming type.
- Protection circuitry prevents device damage in case of short circuit or excessive load.
- Continuously measures energy being used by the attached load





## LIGHTING FIXTURES CONTROL TYPES

**8-channel 0-10V Dimmer** - Controls up to eight (8) 0-10V dimmable fluorescent ballasts or LEDs. Individual 0-10V lights can be programmatically tied to a corresponding channel on a relay module for on/off control of the ballasts or LEDs when needed.

0-10V are used for the smooth dimming control of dimmable fluorescent and LEDS lights, but usually need a separate on/off control wire, which makes the installation more complex and expensive.

- Sink up to 100mA per channel for control of up to 50 ballasts or source up to 25mA per channel for control of up to 12 ballasts
- Eight (8) low-voltage outputs for triggering external power relays



# LIGHTING FIXTURES CONTROL TYPES

**8-channel Switch** - Controls up to eight (8) high in-rush loads from one module. Each channel supports a variety of load types including Incandescent, Halogen, Electronic Low Voltage Transformers, Magnetic Low Voltage Transformers, Fluorescents, Compact Fluorescents, LEDs and Motors.

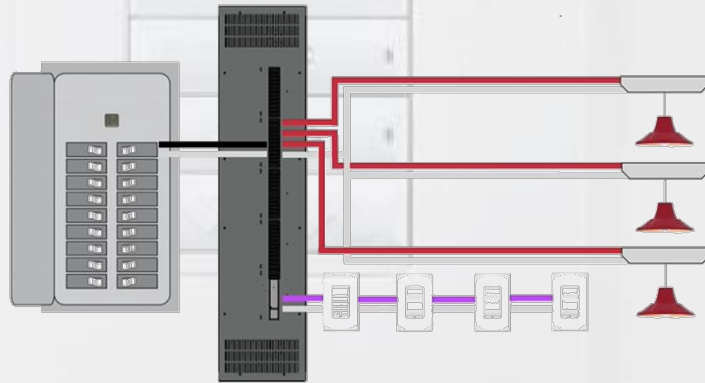
- Each channel is rated for 16 Amps
- Channel buttons allow for toggling on/off a load
- Channel status LEDs indicate whether a load is on, off or in a faulty state
- Module override button allows toggling between the module override scene and all channels off or setting the module override settings
- Can be used in conjunction with the 8-channel 0-10V dimmer to enable on/off control for the dimmable ballasts or drivers.



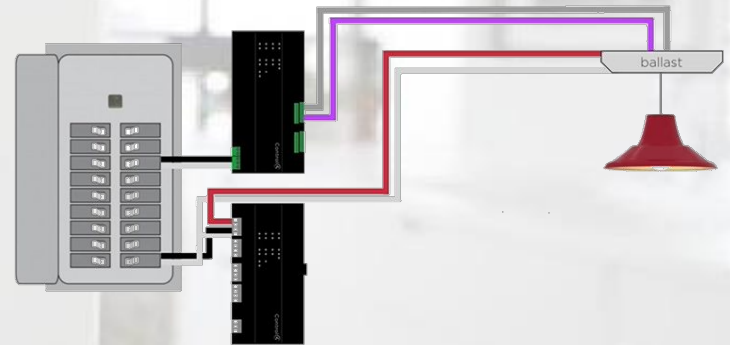
# LIGHTING FIXTURES CONTROL TYPES

## 0-10V and Adaptive Phase Dimmer wiring:

In both types of lighting control, configurable keypads are used to control individual lighting fixtures, as well as music, air-conditioning/heating, lighting scenes, etc. if needed. Please note that 0-10V dimming usually needs a separate on/off control wiring to the fluorescent ballast or a LED driver.



Adaptive Phase Dimmer wiring



0-10V Dimmer wiring

## CONFIGURABLE KEYPADS

Configurable keypads combine beautiful aesthetics and flexible button configuration, providing a stunning user interface that elegantly control any aspect of a home automation system, like light controls, scenes, music, security - the possibilities are endless.

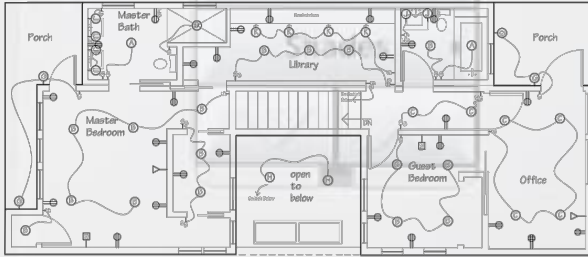
The keypad can be configured with two to seven buttons using four different button sizes for a total of 37 possible combinations.



# LIGHTING DESIGN PROCESS

During initial meetings with the project's key decision makers and influencers (Client, architect, interior designer, lighting designer and **navas** key elements of design should be agreed upon by all parties. Following are the three elements needed to correctly specify a lighting system:

- The electrical floor plan (supplied by the Architect)
- The electrical panel schedule (supplied by the Electrical Contractor)
- The light fixture schedule and the fixture datasheets (supplied by the Interior Designer/Lighting Designer)



Electrical floor plan

PANEL: "A"		VOLTAGE: 120/240 1Ø/3Ø	SEC. AMP: 200 AMP
		MINIMUM: RUSH	MAX: 100
		SEC. CIRCUIT	NO. OF
NO.	DESCRIPTION	TYPE	AMPS
1	120V 1Ø 15A	1	15
2	120V 1Ø 15A	1	15
3	120V 1Ø 15A	1	15
4	120V 1Ø 15A	1	15
5	120V 1Ø 15A	1	15
6	120V 1Ø 15A	1	15
7	120V 1Ø 15A	1	15
8	120V 1Ø 15A	1	15
9	120V 1Ø 15A	1	15
10	120V 1Ø 15A	1	15
11	120V 1Ø 15A	1	15
12	120V 1Ø 15A	1	15
13	120V 1Ø 15A	1	15
14	120V 1Ø 15A	1	15
15	120V 1Ø 15A	1	15
16	120V 1Ø 15A	1	15
17	120V 1Ø 15A	1	15
18	120V 1Ø 15A	1	15
19	120V 1Ø 15A	1	15
20	120V 1Ø 15A	1	15
21	120V 1Ø 15A	1	15
22	120V 1Ø 15A	1	15
23	120V 1Ø 15A	1	15
24	120V 1Ø 15A	1	15
25	120V 1Ø 15A	1	15
26	120V 1Ø 15A	1	15
27	120V 1Ø 15A	1	15
28	120V 1Ø 15A	1	15
29	120V 1Ø 15A	1	15
30	120V 1Ø 15A	1	15
31	120V 1Ø 15A	1	15
32	120V 1Ø 15A	1	15
33	120V 1Ø 15A	1	15
34	120V 1Ø 15A	1	15
35	120V 1Ø 15A	1	15
36	120V 1Ø 15A	1	15
37	120V 1Ø 15A	1	15
38	120V 1Ø 15A	1	15
39	120V 1Ø 15A	1	15
40	120V 1Ø 15A	1	15
41	120V 1Ø 15A	1	15
42	120V 1Ø 15A	1	15
43	120V 1Ø 15A	1	15
44	120V 1Ø 15A	1	15
45	120V 1Ø 15A	1	15
46	120V 1Ø 15A	1	15
47	120V 1Ø 15A	1	15
48	120V 1Ø 15A	1	15
49	120V 1Ø 15A	1	15
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67	120V 1Ø 15A	1	15
68	120V 1Ø 15A	1	15
69	120V 1Ø 15A	1	15
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90	120V 1Ø 15A	1	15
91	120V 1Ø 15A	1	15
92	120V 1Ø 15A	1	15
93	120V 1Ø 15A	1	15
94	120V 1Ø 15A	1	15
95	120V 1Ø 15A	1	15
96	120V 1Ø 15A	1	15
97	120V 1Ø 15A	1	15
98	120V 1Ø 15A	1	15
99	120V 1Ø 15A	1	15
100	120V 1Ø 15A	1	15

Electrical panel schedule

LIGHT FIXTURE SCHEDULE									
FIXTURE NUMBER	FIXTURE MANUFACTURER	FIXTURE CATALOG #	DESCRIPTION	LAMP			FIXTURE		
				TYPE	QTY.	VELCS	WATTS	COUNT	
A	METALUX	2003-08A305-08B3	2003-08A305-08B3	2003-08A305-08B3	2	120	80	LAMP ON	
B	METALUX	2003-08A305-08B3	2003-08A305-08B3	2003-08A305-08B3	2	120	80	LAMP ON	
C	IRS	PSLE020-15-007-0210	RECESSED 2-PART APARTURE DOWNLIGHT LUMINAIRE	IRS	1	120/277	14.7	RECESSED	
D	OMEGA	L180-HL-TRACR	LED DOWNLIGHT RECESSED TRIM 800 LUMENS	OMEGA	1	120	12	RECESSED	
E	AREA	AREA	AREA	AREA	AREA	AREA	AREA	AREA	
F	AREA	AREA	AREA	AREA	AREA	AREA	AREA	AREA	
G	AREA	AREA	AREA	AREA	AREA	AREA	AREA	AREA	

Light fixture schedule

# LIGHTING DESIGN PROCESS contd`

With the required information, **navas** team would produce the following documents:

- The Load Schedule Report, which shows the location and power consumption of each load
- The Module Report, showing the connectivity of each 8-channel Adaptive Phase Dimmer or 0-10V Dimmer, as well as each 8-channel Switch
- The Panel Report, showing the location and type of each lighting control enclosure

Upon approval of these documents by the Client and the GC, **navas** team would procure all the necessary materials for the Electrical Contractor to commence the 1st fix cabling.

Load #	Load Name	Location	Connection	Arc Fault	Watts
R1-001-01	Master Bedroom Chandelier	House > Main > R1-001 Master Bedroom	House > Main > R1-021 Equipment Room > 5-Slot Panel > 8-Channel Adaptive Dimmer_D1 > Channel 1	N	90
R1-001-03	Master Bedroom LED Ceiling Downlights	House > Main > R1-001 Master Bedroom	House > Main > R1-021 Equipment Room > 5-Slot Panel > 8-Channel Adaptive Dimmer_D1 > Channel 2	N	30
R1-002-01	Master Bedroom En-Suite LED Downlights	House > Main > R1-002 Master Bedroom En-Suite	House > Main > R1-021 Equipment Room > 5-Slot Panel > 8-Channel Adaptive Dimmer_D1 > Channel 3	N	40
R1-003-01	WalkIn Wardrobe Lobby Downlights	House > Main > R1-003 Walk-In Wardrobe	House > Main > R1-021 Equipment Room > 5-Slot Panel > 8-Channel Adaptive Dimmer_D1 > Channel 4	N	24
R1-003-02	WalkIn Wardrobe Ceiling Downlights	House > Main > R1-003 Walk-In Wardrobe	House > Main > R1-021 Equipment Room > 5-Slot Panel > 8-Channel Adaptive Dimmer_D1 > Channel 5	N	100
R1-004-01	Bedroom 3 Chandelier	House > Main > R1-004 Bedroom 3	House > Main > R1-021 Equipment Room > 5-Slot Panel > 8-Channel Adaptive Dimmer_D1 > Channel 6	N	150
R1-004-02	Bedroom 3 LED Downlights	House > Main > R1-004 Bedroom 3	House > Main > R1-021 Equipment Room > 5-Slot Panel > 8-Channel Adaptive Dimmer_D1 > Channel 7	N	50

Load Schedule Report

Ch #	Load #	Load Name	Load Location	Watts	Arc Fault	Power Booster?
1	R1-001-03	01 - Chandelier	House > Main > R1-001 Master Bedroom	90	N	N
2	R1-001-03	03 - Ceiling Downlights	House > Main > R1-001 Master Bedroom	30	N	N
3	R1-002-01	01 - Ceiling Downlights	House > Main > R1-002 Master Bedroom En-Suite	40	N	N
4	R1-003-01	01 - Lobby Ceiling Downlights	House > Main > R1-003 Walk-In Wardrobe	24	N	N
5	R1-003-02	02 - Wardrobe Ceiling Downlights	House > Main > R1-003 Walk-In Wardrobe	100	N	N
6	R1-004-01	01 - Chandelier	House > Main > R1-004 Bedroom 3	150	N	N
7	R1-004-02	02 - Ceiling Downlights	House > Main > R1-004 Bedroom 3	50	N	N
8	R1-005-01	01 - Ceiling Downlights	House > Main > R1-005 Bedroom 3 En-Suite	120	N	N

Module Report

5-Slot Panel

Panel Type: C4-DIN-SPAN				
Location: House > Main > R1-021 Equipment Room				
Slot #	Position	Module Type	Module Description	Terminal Block
1	A&B	C4-DIN-8DIM-E (V1 and V2)	8-Channel Dimmer	C4-DIN-TB-8DIM
2	A&B	C4-DIN-8DIM-E (V1 and V2)	8-Channel Dimmer	C4-DIN-TB-8DIM
3	A&B	C4-DIN-8DIM-E (V1 and V2)	8-Channel Dimmer	C4-DIN-TB-8DIM
4	A&B	C4-DIN-8REL-E (V1 and V2)	8-Channel Relay	C4-DIN-TB-8REL
5	A&B	C4-DIN-8REL-E (V1 and V2)	8-Channel Relay	C4-DIN-TB-8REL

Panel Report

# WHY navas ?

“navas” is an innovation driven audio visual integrator which combines the latest trends in home automation, audio and video equipment and control with years of experience and passion for AV excellence. We are “Control4” accredited dealers/installers and we only supply AV equipment from the world's most renowned brands.

We do our best to ensure seamless fulfilment of your needs: from the initial concept, through design and expert project management, to training and after sales support, we make sure all your projects are completed to your full satisfaction. Founders of “navas” have 20+ years of experience in AV consultancy and project management, so you can be assured your projects are in good hands.

With “navas”, you can have the future... now.

For all inquiries, please contact [info@navas.global](mailto:info@navas.global),

or give us a call on +44203 969 9694

Thank you! Your team “navas”

[www.navasresidential.com](http://www.navasresidential.com)

