LUTRON

Application Note #700
Revision A
October 2018

GRAFIK Eye QS (QSG) Partitioning

This application note answers typical questions about using a GRAFIK Eye QS with partitioned spaces, and will guide you in selecting the controls that best meet your needs. This application note does not describe partitioning with an Energi Savr Node (ESN) or partitioning with a Quantum system.

Why is Lighting Control Important for Partitioned Spaces?

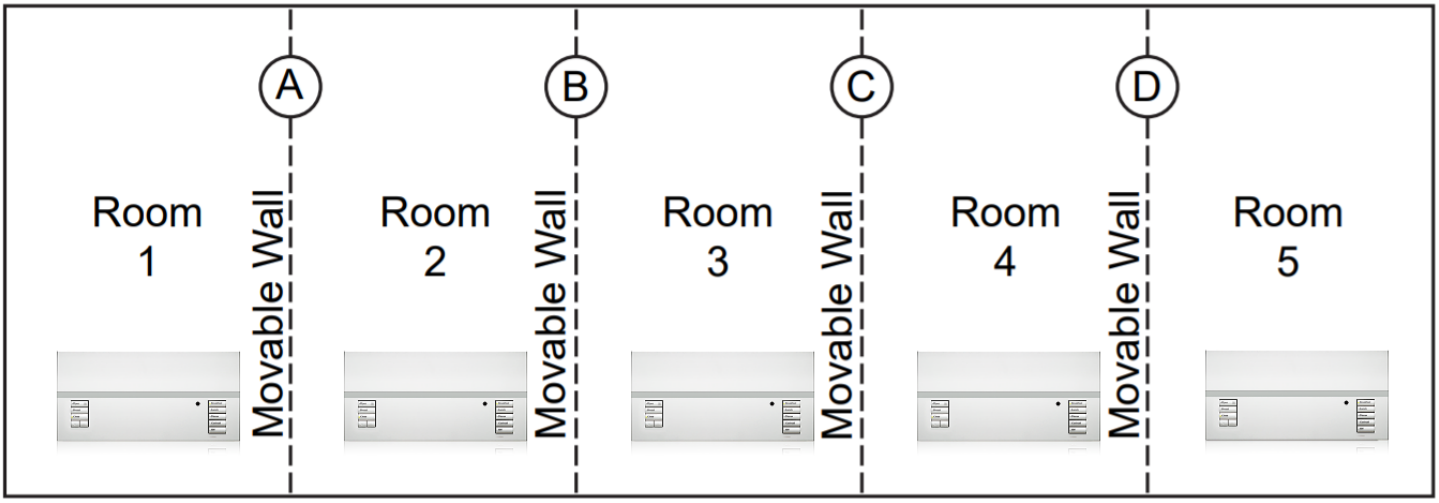
Most lighting controls are set up for a room with the expectation that the floor plan will be consistent. Partitioned spaces are always changing and need lighting controls that reflect that flexibility. Without partition status control, all of the lights in the space are split into many smaller independent zones with multiple control stations throughout the space. This way each room can be controlled independently when the partitions are closed. When the partitions are open and the room is combined into one large space, a user must go to every single control station and manually adjust the lights to match the layout of the room.

Lutron's Solution

Lutron lighting controls can adapt to the room's configuration and use. A single control location can operate the entire space when all the walls are open and the space is configured as one large room. When that same space is separated by movable partitions, the lighting controls only affect the lights in their specific room.

Examples

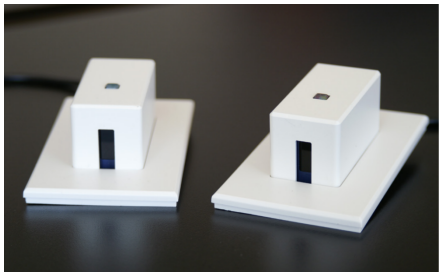
The following table shows a few examples of what rooms would be affected if a scene is activated in a room. For example, if a scene is activated on the GRAFIK Eye QS in Room 2 when walls B, C, and D are present (wall A is not present), then Rooms 1 and 2 will be affected.



Scene in Activated Room	Partition Walls Closed	Rooms Affected
Room 1	All partitions closed	Room 1
Room 1	B, C, and D	Rooms 1 and 2
Room 2	B, C, and D	Rooms 1 and 2
Room 5	B, C, and D	Room 5
Room 3	A and D	Rooms 2, 3, and 4

System Options

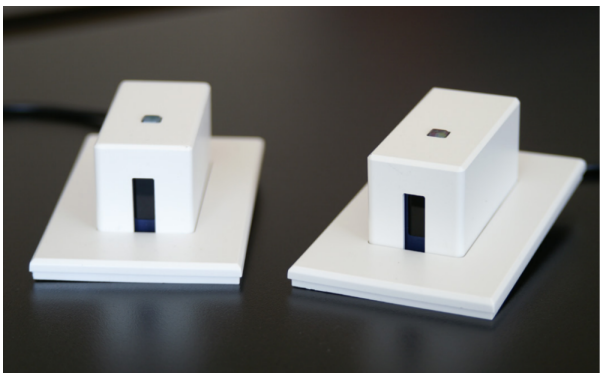
Lutron offers various levels of automation and customization to meet the needs of your space and your budget. Partition controls can automatically sense the position of the walls and adjust the lighting control function accordingly. Lutron also offers systems that let the user of the space manually set the status of the partitions with wall keypad controls. Options for the GRAFIK Eye QS system include:

Option	Example	Notes
Automatic partition status control using a partition sensor		The lighting control system will automatically update when walls are moved. The partition sensor gets wired to a contact closure input (CCI). With a GRAFIK Eye QS system, this can be done any one of three different ways. See the “How the GRX-IRPS Partition Sensor Pair Works” section on the next page for more info.
Manual wall keypad controls		Space occupants press buttons on a wall keypad to tell the lighting control system that walls have moved.
Third-party partition sensor	No image provided	The Lutron system can accept a CCI (contact closure input) from a third-party partition sensor or system, such as an audio/visual system or a partition wall with a built-in sensor.

Automatic Partition Status Control Using a Partition Sensor

GRX-IRPS-WH

The GRX-IRPS-WH is perfect for installations where the occupants will be moving partitions themselves and a facility employee will not be available to ensure that the partition settings are correct. The Infrared Partition Sensor detects when a wall has been moved and automatically signals the appropriate GRAFIK Eye QS control units.



No Button to Push

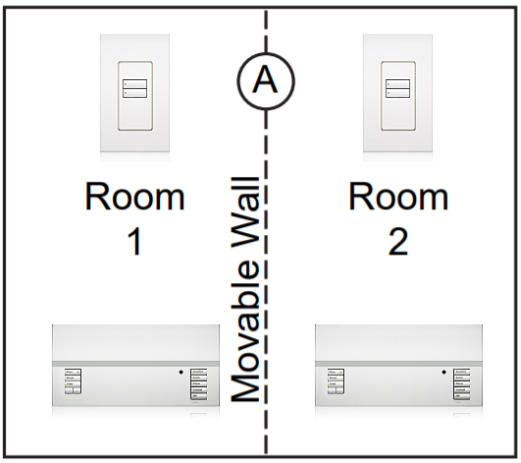
Mounted on the ceiling, the GRX-IRPS uses an invisible beam of infrared light to sense whether a partition is open or closed. The IR sensor is automatic and does not require the user to do anything more than move the walls and set the light level in the space. The GRAFIK Eye QS control units automatically know which zones to control.

How the GRX-IRPS Partition Sensor Pair Works

The GRX-IRPS partition sensor pair can be used for automatic partition status control. It is connected to the GRAFIK Eye QS using one of these 3 Lutron QS devices:

Device Description	Model Number	Image	Number of GRX-IRPS supported per device	Notes	Programming Instructions
seeTouch QS 2-button keypad	QSWS2-2B		1	A closure on either one of the contact closure inputs (CCIs) on the seeTouch QS keypad will indicate “partition open”. Release of that closure will indicate “partition closed”. The signal wire from the GRX-IRPS receiver will connect to either one of the CCI terminals on the back of the keypad.	See the “Partitioning Wallstations” section of the **QS Wallstation Programming Guide** (P/N 0301639) at www.lutron.com
QS contact closure interface	QSE-IO		5	The QSE-IO has 5 contact closure inputs (CCIs), which can be wired with up to 5 GRX-IRPS sensor pairs.	See the “Partitioning Mode” section of the **QSE-IO Programming Guide** (P/N 040391) at www.lutron.com
seeTouch QS keypad with 3 or more buttons	QSWS2-3B or higher		2	This is uncommon. Using a seeTouch QS keypad with 3 or more buttons to accept inputs from GRX-IRPS sensor pairs may be confusing since it combines automatic partition control for some walls using sensors and manual control of other walls using keypad buttons. The sensor pair wired to CCI 1 controls the partition wall associated with the top keypad button, while the sensor pair wired to CC2 controls the partition wall associated with the bottom keypad button. The middle partition buttons on the keypad can only be controlled manually, not using a CCI. You can skip over these buttons if you do not want to do manual partition control.	See the “Partitioning Wallstations” section of the **QS Wallstation Programming Guide** (P/N 0301639) at www.lutron.com

Manual Wall Keypad Control

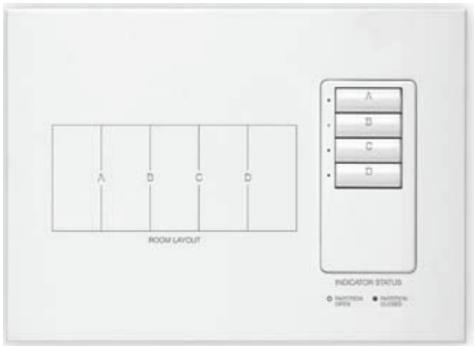


Manual partition control wall keypads are a cost-effective way to install flexible control of partitioned spaces. Similar to wall keypads that select preset lighting scenes, partition status wall keypads signal the GRAFIK Eye QS control units with the position of the movable walls in the space. The GRAFIK Eye QS control units then combine their functions accordingly. **These wall keypads are not automatic; they require that anyone who moves a partition remembers to select the correct button on the wall keypad.**

This product works well when a member of the facilities staff will be setting the partitions for the room and will be familiar with the proper operation of the lighting controls.

Two-button wall keypads placed at each partition let the user combine or separate the lighting controls in two adjacent rooms. A wall keypad is placed adjacent to the partition to which it corresponds. Wall keypads with up to 7 buttons are also available. These controls allow the user to set the status on up to 7 movable walls from one location.

Lutron offers custom engraved keypad faceplates to make it easier to understand what each keypad button does. For more information, contact Lutron Customer Service at CustSvc@Lutron.com or 1-844-LUTRON1



Partitioning with Shades

Partitioning works with GRAFIK Eye QS scenes, not with the shade buttons on the front of a GRAFIK Eye QS. If a shade button (Open, Preset, Close, Raise, or Lower) is pressed on a GRAFIK Eye QS, the behavior will be the same whether a partition wall is present or not. The table below gives an example of this behavior.

The scenes on a GRAFIK Eye QS can be programmed to affect the local shade groups, such that both the lights and shades change when you activate that scene. This way, partitioning logic can be applied to the scenes, and thus the right shades will move according to which partitions are open.

Button Pressed on GRAFIK Eye QS	In What Room?	Partition Wall “A” Closed	Rooms Affected
Scene 1	1	Yes	Room 1
“Open” on shade column 1	1	Yes	Room 1
Scene 1	2	No	Rooms 1 and 2
“Open” on shade column 1	2	No	Room 2

Partitioning with Occupancy Sensors

Wired and wireless occupancy sensors that are associated to a GRAFIK Eye QS will ignore partitioning. For example, when two GRAFIK Eye QS units are partitioned together and there is an occupancy sensor wired back to the contact closure input (CCI) on the GRAFIK Eye QS, the occupancy sensor will only affect the GRAFIK Eye QS that it is wired back to. The lighting loads that are connected to the other GRAFIK Eye QS will not be changed.

Partitioning Sub-Features

Feature	GRAFIK Eye QS	Energi Savr Node	Quantum
Scene Forwarding	Yes	Yes	Yes
Raise/Lower Forwarding	Yes [1]	Yes [1]	Yes
Scene Banking	Yes	Yes	Yes
Zone/Shade Piling	No	No	Yes
Occupancy Grouping	No	No	Yes

[1] Repeatedly tapping raise/lower on lights that span partitions will cause them to get out of sync.

Scene Forwarding

When a scene button is pressed on a GRAFIK Eye QS in a partitioned room and the partition wall is open, the scene will be activated on all GRAFIK Eye QS units in the open area. This is called Scene Forwarding.

Raise/Lower Forwarding

Similar to Scene Forwarding, when a raise or lower button is pressed on a GRAFIK Eye QS in a partitioned room and the partition wall is open, the raise/lower action will be sent to all GRAFIK Eye QS units in the open area.

Scene Banking

Scenes can be forwarded from one room to another when partition walls are open. However, there are times when someone may want a different scene to be activated based on the partition wall status. For example, they may want Scene 1 when the wall is closed and Scene 5 when the wall is open. Activating different scenes on a keypad button depending on wall state is called Scene Banking.

For information on setting up scene banking, see Lutron Application Note #428 (P/N 048428) “Wired seeTouch QS Wallstation: Advanced Programming Mode” on www.lutron.com.

Zone/Shade Piling

Similar to Scene Banking, this feature refers to a control having the ability to control zones or shades across partition walls. For example, when a partition wall is closed, a keypad button toggles zone 1 on and off in its own room only. When the partition wall opens, the keypad button now can toggle zone 1 on and off in both rooms.

Occupancy Grouping

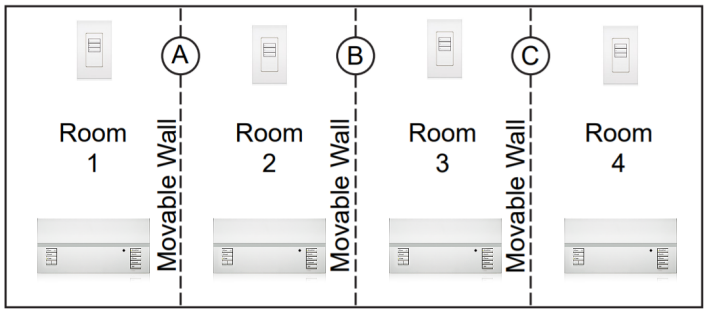
Occupancy Grouping refers to the system’s ability to treat combined rooms as one large occupancy area. If a partition wall is open and a system supports occupancy grouping, the two (or more) combined rooms will act as one large occupancy group. One room going occupied will tell other rooms to go occupied. All occupancy sensors must go unoccupied for all combined rooms to go unoccupied.

Frequently Asked Questions

If I am using manual wall keypad control (no GRX-IRPS sensors), can I use multiple seeTouch QS keypads to control the same partition wall? Yes. For example, the following image shows 4 x 3-button keypads being used to manually tell the system if a partition wall is present. No GRX-IRPS sensors are used. Each keypad does the same thing, and can be used to tell the GRAFIK Eye QS units if any of the 3 walls are present.

The LED status indicator lights on all keypads will show the same thing.

- The LED for button 1 will be on if movable wall A is open, and off if movable wall A is closed.
- The LED for button 2 will be on if movable wall B is open, and off if movable wall B is closed.
- The LED for button 3 will be on if movable wall C is open, and off if movable wall C is closed.

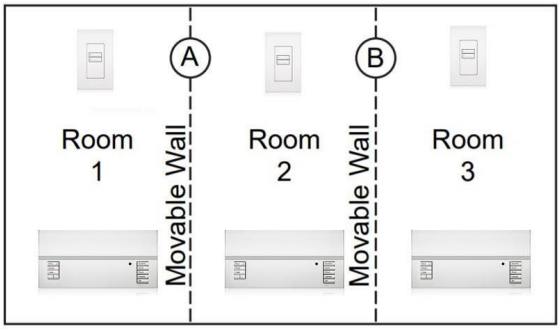


Can a 2-button seeTouch QS keypad be used to manually control 2 partition walls (with no GRX-IRPS sensors)? Yes. Special programming is needed to make this work. By default a 2-button seeTouch QS keypad only controls 1 partition wall. A 3-button or higher keypad can control as many walls as the keypad has buttons. If a room is separated into 3 separate rooms with 2 partition walls, as shown below, you can use a 2-button keypad if you reprogram it to be a 3-button keypad. Instructions to reprogram a 2-button keypad as a 3-button keypad can be found in the “Changing Wallstation Button Columns” section of the seeTouch QS advanced programming guide.

Note: Although you will be reprogramming the 2-button keypad to think it has 3 buttons, the 3rd button is not populated on the 2-button button kit, and will not be used during normal operation.

The LED status indicator lights on all keypads will show the same thing.

- The LED for button 1 will be on if movable wall A is open, and off if movable wall A is closed.
- The LED for button 2 will be on if movable wall B is open, and off if movable wall B is closed.

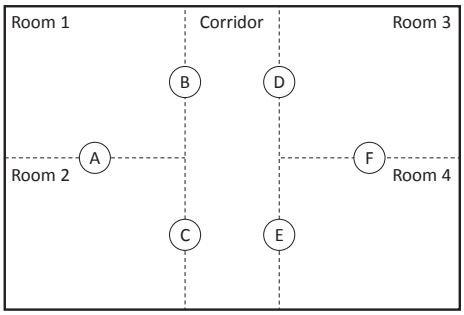


Frequently Asked Questions (continued)

Will other seeTouch QS keypads connected to the GRAFIK Eye QS obey partitioning?

- A “Scene” keypad, which activates scenes on the GRAFIK Eye QS, will obey partitioning.
- Any other type of keypad, such as a “Zone Toggle” or “Shade”, will not be affected by partitioning.
- A “Partitioning” keypad will obey partitioning. The LEDs on a partitioning keypad will display the partition wall status, regardless of whether or not they were used to set the partitioning status. The LED will be on if the wall is open, and off if the wall is closed.

Can I have a room with more than 2 partition walls in it? Yes. The various images above only show rooms with 2 walls maximum. However, you can have rooms with more than 2 partition walls. An example of a space like this is shown below. Notice how the corridor has 4 partition walls - B, C, D, and E.



Lutron Contact Numbers

WORLD HEADQUARTERS
USA
Lutron Electronics Co., Inc.
7200 Suter Road
Coopersburg, PA 18036-1299
TEL: +1.610.282.3800
FAX: +1.610.282.1243

support@lutron.com

www.lutron.com/support

North & South America
Customer Assistance
USA, Canada, Caribbean:
1.844.LUTRON1 (1.844.588.7661)
Mexico:
+1.888.235.2910
Central/South America:
+1.610.282.6701

EUROPEAN HEADQUARTERS
United Kingdom
Lutron EA Limited
125 Finsbury Pavement
4th floor, London EC2A 1NQ
United Kingdom
TEL: +44.(0)20.7702.0657
FAX: +44.(0)20.7480.6899
FREEPHONE (UK): 0800.282.107
Technical Support: +44.(0)20.7680.4481

lutronlondon@lutron.com

ASIAN HEADQUARTERS
Singapore
Lutron GL Ltd.
390 Havelock Road
#07-04 King's Centre
Singapore 169662
TEL: +65.6220.4666
FAX: +65.6220.4333
Technical Support: 800.120.4491

lutronsea@lutron.com

Asia Technical Hotlines
Northern China: 10.800.712.1536
Southern China: 10.800.120.1536
Hong Kong: 800.901.849
Indonesia: 001.803.011.3994
Japan: +81.3.5575.8411
Macau: 0800.401
Taiwan: 00.801.137.737
Thailand: 001.800.120.665853
Other Countries: +65.6220.4666