



App Note 204

Ten questions you had about PulseWorx keypads but were afraid to ask...

What's the difference between a KPC, KPLD, and KPLR?

The KPC (Keypad Controller) is a keypad, designed to be mounted in-wall or in a desktop enclosure, that transmits UPB commands. It doesn't control a load directly and is used to control other devices in a UPB installation by sending scene commands.

The KPLC (Keypad Load Dimmer) has all the features of the KPC but also directly controls a load. That is, the load is wired to the keypad, so no command need be transmitted to control it. This makes it easy to replace an existing wall switch with a keypad and still control the load that the switch was controlling.

The KPLR (Keypad Load Relay) is the same as the KPLD except that the triac dimmer in the KPLD is replaced by a relay. With the KPLR, only on-off control is possible.

When installing a KPC, KPLD, or KPLR, do I need a neutral wire?

Yes! Like the WS1DL wall switch, a neutral wire is needed.

Can I use a PulseWorx KPLD or KPLR with the HAI OMNI?

Yes! While it is easy to use a PulseWorx KPC as a room or house controller, you can also use a KPLD or KPLR for the same purpose and get the bonus of having a direct controlled load. This make retrofit jobs simpler as a separate keypad doesn't need to be installed. If you use a KPLD / KPLR, and you use the OMNI programming features available in UPStart, the keypad load is configured to respond to the same room scenes as other receivers in the room.

Can I replace the KPC / KPLD / KPLR bottom split-button – configured to perform scene level increase / decrease - with a button that controls a scene?

Yes! When the keypad ships from PCS it has buttons labeled: Scene1, Scene2, Scene3, Scene4, OFF, and the bottom button is a split button – tap left to increase level and tap right to decrease level.

However, when you use UPStart to add the KPLD to your UPB installation, UPStart asks a question in step 2 of the Add Wizard that lets you choose the action of the bottom button. Either as a Dim/Bright split-button or as an additional button that controls a scene or device.



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Room Name	Device Name	Unit Id
Kitchen	Keypad	3
<input type="checkbox"/> Erase existing configuration		
<p>Depending upon how you plan to use this keypad it can be configured to control scenes where only a single button is illuminated at a time, or to control different loads where each button operates independently of the others. Also the bottom you</p>		
<div>Select Configuration Must selected !</div>		

Pressing the “Select Configuration” button gives you these options:


Configuration

This device has different configurations based on the installed face plate or by the presence or absence of an attached slave switch.


Select which configuration you have. If you ever update the device by changing its face plate or attaching a slave switch, update UPStart by selecting the new choice on the Transmit Components tab of the device edit.



5-Scene Controller + Dim/Bright



6-Scene Controller



5-Load Controller + Dim/Bright

OK

Cancel



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The 5-scene Controller + Dim/Bright is the default as the keypad ships. But if you change to the 6-Scene Controller choice, then the bottom button is configured to transmit a scene command – when you press on the left or right side of the button it does the same thing.

Here is a *Keypad Tx* tab for a keypad configured without the bottom split-button for increase/decrease.

	Scene Name	Mode	Single-Tap	Double-Tap	Hold	Release
B1	Scene001	Activate	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command
B2	Scene003	Activate	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command
B3	Scene004	Activate	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command
B4	Scene005	Activate	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command
B5	Scene006	Activate	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command
B6	Scene002	Activate	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command

Can I get buttons engraved with text I want?

Absolutely, and UPStart makes it easy to do so! For each keypad you want engraved buttons, open its properties in UPStart and select the *Engraving* tab. This is the place where you provide the text you want on each button and how the button looks – its font and point size.



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Font Style:

Font Size:

Text:

Face plate color:

Use the Copy Scene Names button to make the button text match the scene name assigned to each button

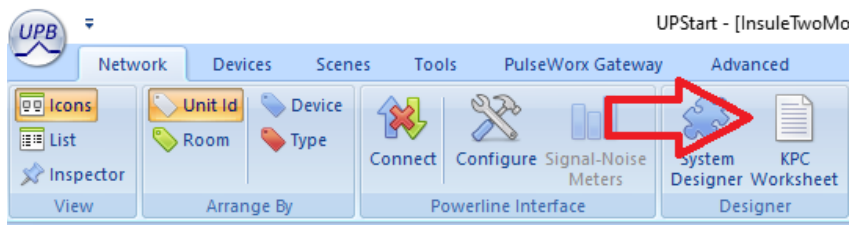
B1	<input type="text" value="Work"/>	<input checked="" type="checkbox"/> Order this button
B2	<input type="text" value="Dinner"/>	<input checked="" type="checkbox"/> Order this button
B3	<input type="text" value="Late Night"/>	<input checked="" type="checkbox"/> Order this button
B4	<input type="text" value="Kids Time"/>	<input checked="" type="checkbox"/> Order this button
B5	<input type="text" value="Conversation"/>	<input checked="" type="checkbox"/> Order this button
B6	<input type="text" value="Off"/>	<input checked="" type="checkbox"/> Order this button

Note

The buttons as shipped from the manufacturer are engraved with 10 point Arial with the first letter capitalized.

After creating button text for all keypads, select from the menu 7-Button Engraving Order to review and create the necessary files for ordering custom buttons

With the choices you make and the names you enter, UPStart builds the order form. After choosing for all your keypads, the last step is the *KPC Worksheet* button on the *Network* ribbon category.



That tool shows you all the buttons for all the keypads and lets you make last minute changes, and then the order form gets created. There is a link to a page on the PCS web site with ordering information. A link is provided to the 3rd party that does the actual engraving.

<https://laserengraverpro.com/products/pcs-kpcw-7-custom-buttons>



The Inventors Of:



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Can I use the keypad to control different scenes in a room so that only one button lights up to show the selected scene?

Yes! And it's all in how the keypad is configured. When the keypad was added to your installation using UPStart, the question on step 2 of the Add Wizard helps you with this. It gives you choices between a "Scene Controller" and a "Device Controller". So, what's the difference?

A scene controller is designed for an area where you want one or more lights to respond in a way that you want to create a scene – a certain look with some lights on, some off, some at the same and some at different levels. At any given time, all the lights reflect one scene or another - even if they are all off, that can be considered the "Off" scene. To show this the keypad has only one button ON at a time and that button shows the current scene. Press a button and that scene becomes the active scene and all the other buttons show OFF. The buttons cooperate to show what scene the room is on.

A device controller is different: Each button controls one or more devices or activates/deactivates a scene. But each button is independent of the others.

Here is an example that may help get the point home. Imagine a keypad in a kitchen that contains several lights – main overhead, countertop, above a table, near the coffee station. A scene controller keypad could be configured like this:



Press a button and the kitchen lights change to reflect how you want to use the kitchen space. Press another button and the lights change again as desired for that scene. And the keypad lights up the button for the active scene. The key to making this work is how the button indicators are configured.



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		B1	B2	B3	B4	B5	B6
01	Work	On	Off	Off	Off	Off	Opp
02	Dinner	Off	On	Off	Off	Off	Opp
03	Late Night	Off	Off	On	Off	Off	Opp
04	Kids Time	Off	Off	Off	On	Off	Opp
05	Conversation	Off	Off	Off	Off	On	Opp
06	Off	Off	Off	Off	Off	Off	On

These indicators are configured so only one button is on at a time.

Can I use the keypad to control different devices so each button acts independently?

Suppose you have a keypad configured like this, where each button controls a different device.

Entryway
Outside
Garden
Spots
Driveway
Off

The previous question discussed scene and device controllers and their differences. The answer here, like it was for the scene controller, is in how the indicators are configured. In this case, unlike for scene controllers, we want the button indicators not to cooperate but to act independently.

		B1	B2	B3	B4	B5	B6
01	Entryway	On	N/C	N/C	N/C	N/C	N/C
02	Outside	N/C	On	N/C	N/C	N/C	N/C
03	Garden	N/C	N/C	On	N/C	N/C	N/C
04	Spots	N/C	N/C	N/C	On	N/C	N/C
05	Driveway	N/C	N/C	N/C	N/C	On	N/C
06	All Off	Off	Off	Off	Off	Off	On



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Notice how each scene effects only a single button indicator and leaves the other unchanged. Except for the All Off scene and that's just because this keypad has an All Off.

If I remove the up/down button, can I still dim or brighten a device from a button?

Well, that depends how you configured the button. One of the possible ways that a button can be configured is called a Super Toggler. It configures the button like this:

Scene Name	Mode	Single-Tap	Double-Tap	Hold	Release
B1 Scene001	Super Toggler	Activate	Snap On	Fade Up	Fade Stop
		Deactivate	Snap Off	Fade Down	Fade Stop

The idea is that a quick tap on the button toggles the scene between activate and deactivate. But a press and hold fades the lights controlled by the scene up/down until released.

So even if you don't have the bottom button configured as an increase / decrease button, you still have that level of control.

If I want to adjust a scene so that the devices in the scene are brighter or dimmer, do I have to use UPStart to make this change?

UPStart isn't needed as there is a way to do this at the keypad. Follow this procedure:

First press the keypad button to activate the scene. Now, change the light level on any of the switches that are part of the scene by dimming up or down using the switch paddle until the levels look right for the scene you are trying to achieve.

Now tap the keypad button for the scene 5 times quickly – use the same rate as you 5-tap a switch to put into setup mode. You may hear the “buzz” of the keypad transmission and the loads attached to the switches will blink. The current levels in the switches are captured and stored as their scene level.

Now test the scene. Turn off the switches and then press the keypad “Scene 1” button and you will see they go to the new levels. Scene levels adjusted and no software involved!

The only downside of the technique is that next time you verify the network in UPStart the devices with the changed scene levels will not verify. You will have to remember to accept the configuration of the devices and save it in the UPB file.



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If I have a keypad button that controls a switch, can I make the keypad button light up or go off when I tap the switch paddle?

Here is the problem. You have a keypad button set to control a device but instead of controlling the device by the keypad you tap on the switch paddle and turn it on that way. But the keypad button should light up, right? That way the keypad knows that the device is on so when you press the keypad button it goes off. The way to do that is to configure the switch and not the keypad. Let's take an example.

The 3rd keypad button controls the kitchen-counter lights. The 3rd button has its indicators configured as:

03 Kitchen Counter N/C N/C On N/C N/C N/C

The key here is the scene named "Kitchen counters". All you need do is to configure the switch transmit like this:

Rocker Switch Transmission

Upon any type of rocker switch press, this device can be configured to transmit a specified command on a specified scene

	Scene Name	Mode	Single-Tap	Double-Tap	Hold	Release
Top	Kitchen Counter	Activator	Activate	Activate	Activate	No Command
Bottom	Kitchen Counter	Deactivator	Deactivate	Deactivate	Deactivate	No Command

Now when you tap the top of the switch paddle it not only turns the lights on – it's the load attached to the switch – but it also transmits the scene that illuminates the keypad button. And it does the same when you tap the bottom of the switch paddle.

##end##