App Note 139

Simply Automated Switch Replacement

If you find, for whatever reason, you need to replace a Simply Automated (SAI) wall switch with a PulseWorx device, there are some things to consider. While you can achieve almost the exact same function when performing that replacement, you may want to take some time to consider using the extra capabilities of the replacement PulseWorx device. This application note discusses several of those ideas.

The SAI wall switches have a removable faceplate with many different variants possible. This makes your wall switch both able to control a load and act as a transmitter of scene commands that are received and control other devices.

While PulseWorx doesn't have a similar wall switch, it does have the Keypad Load Dimmer. The KPLD-7 keypad provides most of the same features you need.

In this application note, as an example, a SAI Wall switch with a 4-rocker faceplate is replaced by a KPLD-7. Similar techniques can be used for the other faceplate variants.

Here is the device configuration as shown in UPStart for the SAI switch to be replaced.

Edit Device: Unit 019 - Great Room - Lights

ID | Receive Components | Transmit Components | Rocker Switch | Options | Advanced | Test | Communications Test | Remote Access

	Scene Name	Mode	Single-Tap	Double-Tap	Hold	Release
RT 01	Work	Top Super Rocker	Activate	Snap On	Fade Up	Fade Stop
RB 01	Work	Bottom Super Rocker	Deactivate	Snap Off	Fade Down	Fade Stop
RT 02	Conversation	Top Super Rocker	Activate	Snap On	Fade Up	Fade Stop
RB 02	Conversation	Bottom Super Rocker	Deactivate	Snap Off	Fade Down	Fade Stop
RT 03	Nighttime	Top Super Rocker	Activate	Snap On	Fade Up	Fade Stop
RB 03	Nighttime	Bottom Super Rocker	Deactivate	Snap Off	Fade Down	Fade Stop
RT 04	Cleaning	Top Super Rocker	Activate	Snap On	Fade Up	Fade Stop
RB 04	Cleaning	Bottom Super Rocker	Deactivate	Snap Off	Fade Down	Fade Stop

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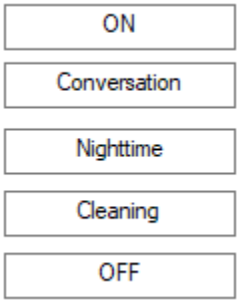
The physical KPLD-7 keypad looks like this:

While it appears to have only 6 buttons, the bottom button is split into two halves so a total of 7 buttons.

What we are going to do is to configure the buttons like this:



The top button controls the load ON – the same as the SAI switch first rocker – the next three buttons are for the scenes that were controlled by the SAI next three rockers. The last “full button” – the one above the bottom split button – controls the same load as the first button but to OFF. The split button implements the level up and down.

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The UPStart configuration for the KPLD is like this:

	Scene Name	Mode	Single-Tap	Double-Tap	Hold	Release
B1	Work	Activate	Activate	Activate	Activate	No Command
			Activate	Activate	Activate	No Command
B2	Conversation	Custom Button	Activate	Snap On	No Command	No Command
			Deactivate	Snap Off	No Command	No Command
B3	Nighttime	Custom Button	Activate	Snap On	No Command	No Command
			Deactivate	Snap Off	No Command	No Command
B4	Cleaning	Custom Button	Activate	Snap On	No Command	No Command
			Deactivate	Snap Off	No Command	No Command
B5	Work	Deactivate	Deactivate	Deactivate	Deactivate	No Command
			Deactivate	Deactivate	Deactivate	No Command
UP	Use Last Scene	Bright Button	No Command	No Command	Fade Up	Fade Stop
			No Command	No Command	Fade Up	Fade Stop
DN	Use Last Scene	Dim Button	No Command	No Command	Fade Down	Fade Stop
			No Command	No Command	Fade Down	Fade Stop

Unlike the SAI wall switch faceplate, the KPLD also has indicators to show the state of the load and the scenes. It is important to configure those:

		B1	B2	B3	B4	B5	UP	DN
01	Work	On	Off	Off	Off	Opp	Off	Off
02	Conversation	Off	On	Off	Off	N/C	Off	Off
03	Nighttime	Off	Off	On	Off	N/C	Off	Off
04	Cleaning	Off	Off	Off	On	N/C	Off	Off
05	Work	Off	Off	Off	Off	On	Off	Off

The Add Wizard for the KPLD-7 lets you pick the general operation of the keypad. When you do that UPStart pre-configures the indicators. After you add the scenes for the buttons, the “Indicators” tab has a method to copy those scene names over into the indicators.

Using this indicator configuration, the state of the load is shown: The ON button illuminates when ON, and the OFF button isn’t illuminated. And , of course, the opposite for the OFF state. The other buttons show the state of the scene either activated or deactivated.

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But does it need to be exactly the same?

While the operation of this keypad is a bit different than the rockers in the SAI switch, all the same functions are achieved – the load can be controlled ON, OFF, and the other scenes as well. Dim and brighten are done using the bottom split button.

Because this example SAI configuration wanted a snap-on / snap-off action for a button double-tap, a custom button mode was used. If that wasn't needed, then a "Toggle button" mode could be used.

B2	Conversation	Toggle Button	Activate	Activate	Activate	No Command
			Deactivate	Deactivate	Deactivate	No Command

Note that the load and scene dimming is not done using the hold / release on the button but by using the bottom split button. Again, if you want to better match the SAI switch faceplate actions, the "Super Toggler" button mode can be used.

B2	Conversation	Super Toggler	Activate	Snap On	Fade Up	Fade Stop
			Deactivate	Snap Off	Fade Down	Fade Stop

If you go this route of putting the dim and brighten actions on the button, then the final button – the split button – can be reused as a regular scene control button. When you add the KPLD to UPStart, as part of the add operation this step of the wizard looks like this:

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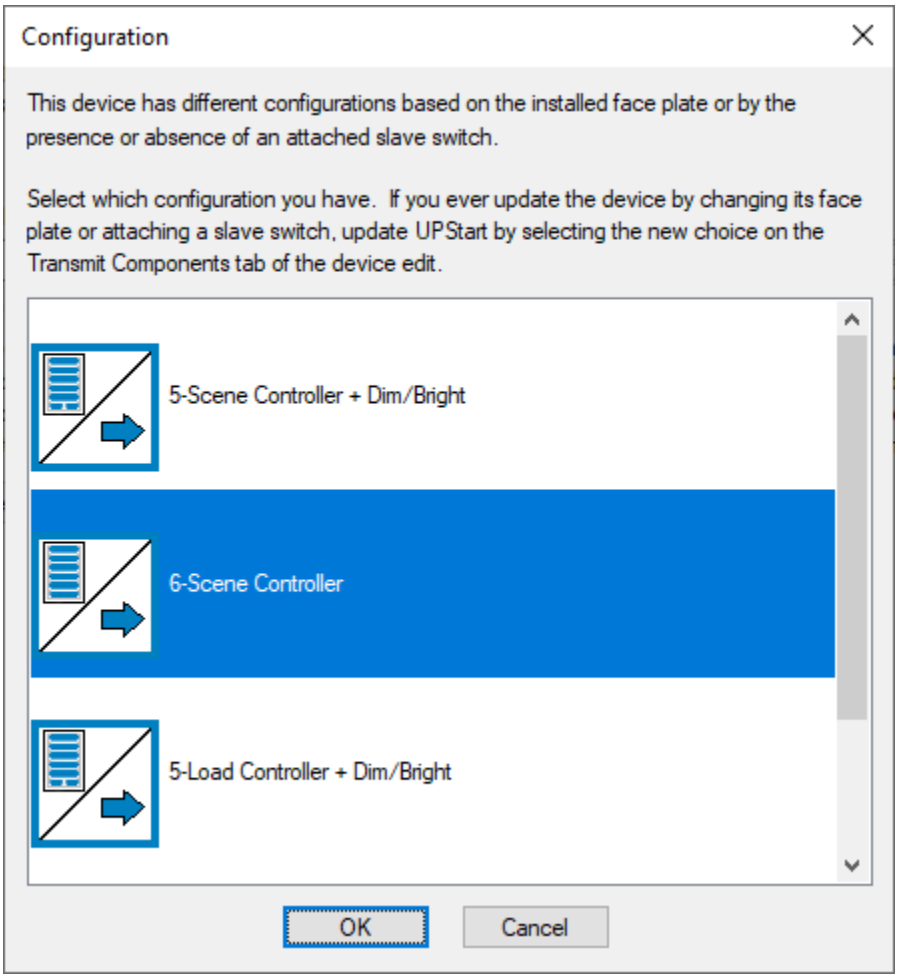

When you choose this option UPStart "repurposes" the bottom button into a single button that can be used in the same way as the other buttons. Like this:

B1	ON
B2	Conversation
B3	Nighttime
B4	Cleaning
B5	Outside
B6	OFF

The Inventors Of:

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Now we have an additional scene control button, and for this example we used it for the “Outside” scene.

But what about the 2-channle SAI Wall switch?

The Simply Automated product line also contained a wall switch that was, in effect, a 2-channel device. The ability to control two different loads. Unfortunately, there isn’t a direct replacement for that in the PulseWorx product line. What you can do is to use the KPLD as described here to control one load directly. To control the second load, use a PulseWorx “Fixture Module” either the dimming or relay variant. That device would be configured to receive scene activate and deactivate commands sent from the KPLD buttons. You achieve the same effect but you do need to install a second device.

Want to know more about the KPLD, its capabilities and the engravable buttons?

The PCS web site contains a series of application notes on the 7-button keypads in great depth.

- PWX 101: KPC7 Intro
- PWX 102: KPC7 Buttons
- PWX 103: KPC7 Indicators
- PWX 104: KPC7 Engraving
- PWX 105: KPC7 Options
- PWX 106: KPC7/KPLD7/KPLR7: One Keypad with Multiple Uses

There are all available on the PCS site.

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