khîmo

Crestron | Khimo

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1 | Overview

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Khimo's module for Crestron will allow access from Khimo's web panel to a set of Crestron signals defined by the installer.

Ideally, the installer should define the signal logic within the controller project, decide which signals should be exposed, and Khimo will take care of the rest. To simplify the configuration in Khimo, it is crucial that the installer follows the naming convention described in Signal naming convention section.

Khimo's web panel can control digital signals and display the status of both digital and analog signals.

- **Feedback**: The web panel will display the current status and value of digital and analog signals, respectively.

    - *Digital signals*: Khimo can be configured to show an icon which will change its color to reflect the current status of the signal.

    - *Analog signals*: They can be used only for feedback. A number showing the current value will be display on the panel (e.g.: Temperature).

- **Control**: Khimo will generate a PULSE on *digital signals* when a user presses the corresponding button on the web panel.

The following figures show an example Crestron configuration and the corresponding web panel displayed on Khimo.
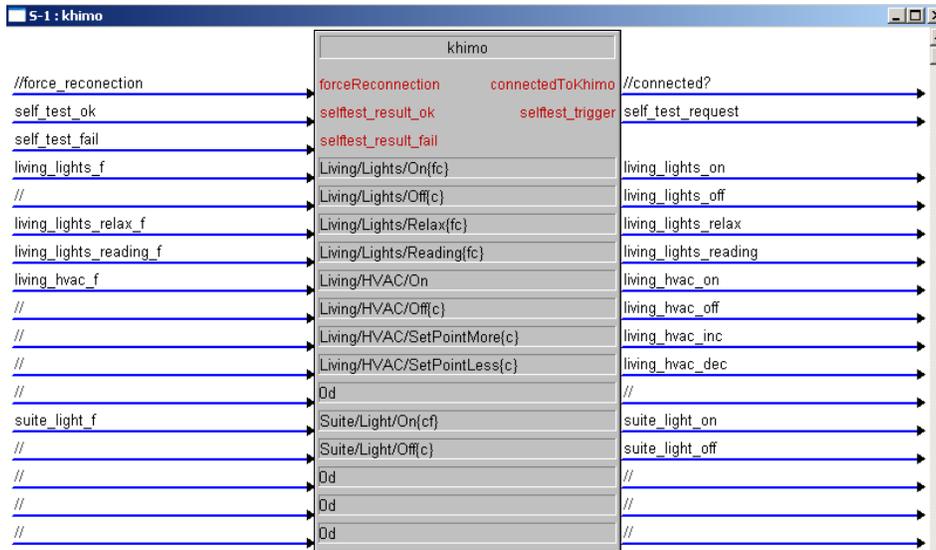
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Figure 1: Signals defined in Creston
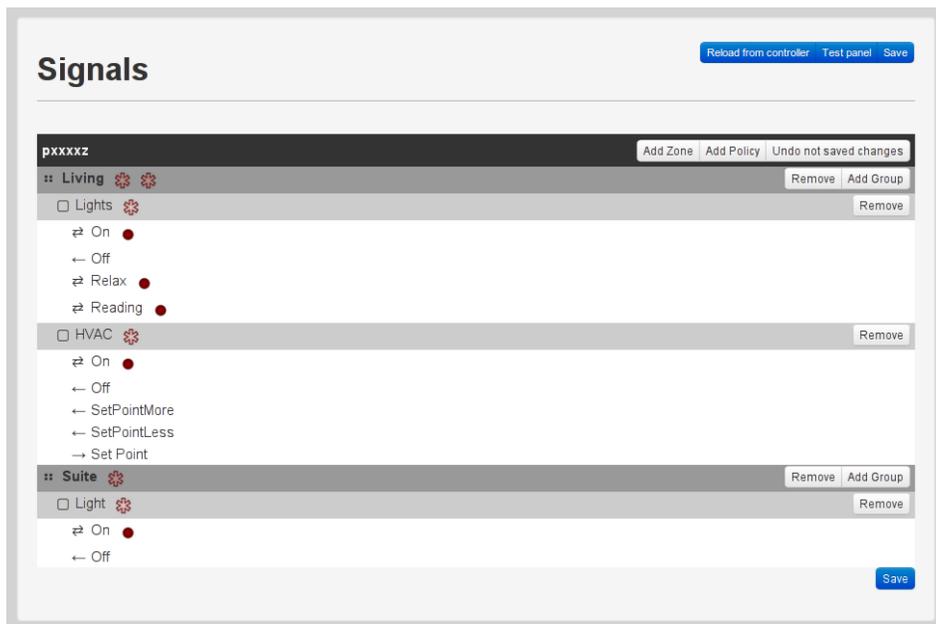
Figure 2: Signals automatically defined by Khimo from controller configuration.

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2 | Project credentials

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The Credentials generated when creating a Khimo project on the server must be loaded into the `project_id` and `project_psk` parameters of the controller configuration. Remember that the credentials should not be revealed to anybody, it could compromise the security of the project. If lost or forgotten, credentials for any project can be easily renewed from Installer Settings at Khimo.com, it is not necessary write down the credentials (After renewal, the controller must be updated to match the new credentials).

The following figure shows an example of credentials loaded into a Crestron project:
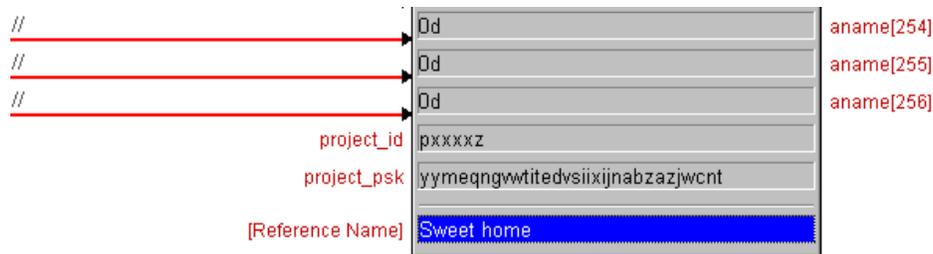
Figure 3: Parameters for handling project credentials.

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3 | Signal naming convention

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Khimo will create a default panel configuration based on the names of the signals defined in the controller. This requires the use of a convention when naming signals. Following this convention will allow Khimo to take care of most of work involved in configuring the panel, if it is ignored then the installer will have to take care of the configuration manually.

Note: Crestron modules only support ASCII characters when naming signals. If needed, the signal label can be modified in the web panel, which supports UNICODE characters. This is done from the Installer Settings at Khimo.com

Signals should be named according to the following structure:

```
ZONE_NAME/GROUP_NAME/SIGNAL_NAME{DIRECTION}
```

Where:

- `ZONE_NAME`: Identifies the zone where the signal will operate. If it is not set, will default to Global.

- `GROUP_NAME`: Identifies the group that the signal is in. A group should be used to aggregate signals of the same subsystem (e.g.: Lights, HVAC, Shades). If it is not set, will default to Common.

- `SIGNAL_NAME`: Identifies the signal name.

- `DIRECTION`: Indicates the direction of the signal, with the following possible values:

    - `fc` (default): Feedback/Command.

    - `f`: Feedback.

    - `c`: Command.

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Signal name examples:

- `Global/HVAC/Up{c}`

- `Global/HVAC/Temperature{f}`

- `Global/HVAC/Down{c}`

- `Living Room/Lights/On{fc}`

- `Living Room/Lights/Off{fc}`

- `LivingRoom/Shades/Up{fc}`

- `InnerLight`

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4 | Additional module signals

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The Khimo module provides some additional signals for:

- Connection monitoring (Figure 1).

- System self test (Figure 1).

- Logging (Figure 4).

4.1 | Connection monitoring

As shown in figure 1, the Khimo module provides 2 connection signals:

- `forceReconnection`: Will trigger a reconection to Khimo. This can be useful if something goes wrong during configuration.

- `connectedToKhimo`: Will be set to True if controller has successfully authenticated against Khimo.

4.2 | Self test

As an installer, you can define a *self test* on the system. Once the logic of the test has been defined, the Khimo module provides 3 signals to interact with the test from the web interface:

- `selftest_trigger`: Start *self test*.

- `selftest_result_ok`: Indicates *self test* was successfully completed.

- `selftest_result_fail`: Indicates the *self test* success condition check returned false.

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Note: As an installer you are responsible for implementing the *self test*, Khimo only provides an interface to execute it and check the result of the execution.

4.3 | Logging

Two logging signals are included in the Khimo module for Crestron: `logError` and `logDebug`. Whatever is written to these signals will be sent to Khimo.com and displayed in the *Monitoring* section.

Note: Any message written to `logError` will raise an alert on Khimo. If *email notifications* are enabled, on the project settings at Khimo.com, an email will be send to the installer.

These signals are not required but may be of use.
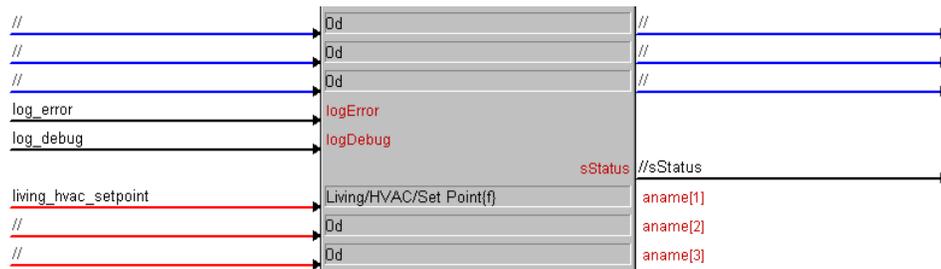
Figure 4: Signals for logging to monitoring log on Khimo.