



Push Controls

Module: C-Bus

Module: Luke Bowers

Guide: Luke Bowers

Version 3.8

www.pushcontrols.com

© Copyright 2016 Push by Schneider Electric

Contents

Step 1: Getting Started – Setting Up Your Hardware	4
Wiring Specifics	5
Serial RS232 connection.....	5
Ethernet (RJ45) connection.....	6
Configuring the Serial Port.....	7
Step 2: Setting Up Your Project – Importing the CBus Module	8
GUI Themes.....	9
Adding a GUI Component to a GUI page	9
Importing Measurement Application Components.....	11
Step 3 (Optional): Configuring the C-Bus Module – Manually Entering C-Bus Commands.....	12

Version History

Version No.	Date	Description
2.2	22/07/2014	Removed reference to feedback macro as it is no longer required due to the module utilising status MMI messages used to ensure C-Bus units stay in sync.
3.8	12/10/2016	Add Gen IV theme guidelines

Step 1: Getting Started – Setting Up Your Hardware

Connecting the hardware as follows:

- Connect the Clipsal 5500 PC into the C-Bus network via an Ethernet cable.
- Connect the Clipsal 5500 into the controller via a standard RS232 9pin connector or the RJ45 adapter from the 5500PC into the controllers RS232 Phoenix connector. *Refer to Figure 1.*

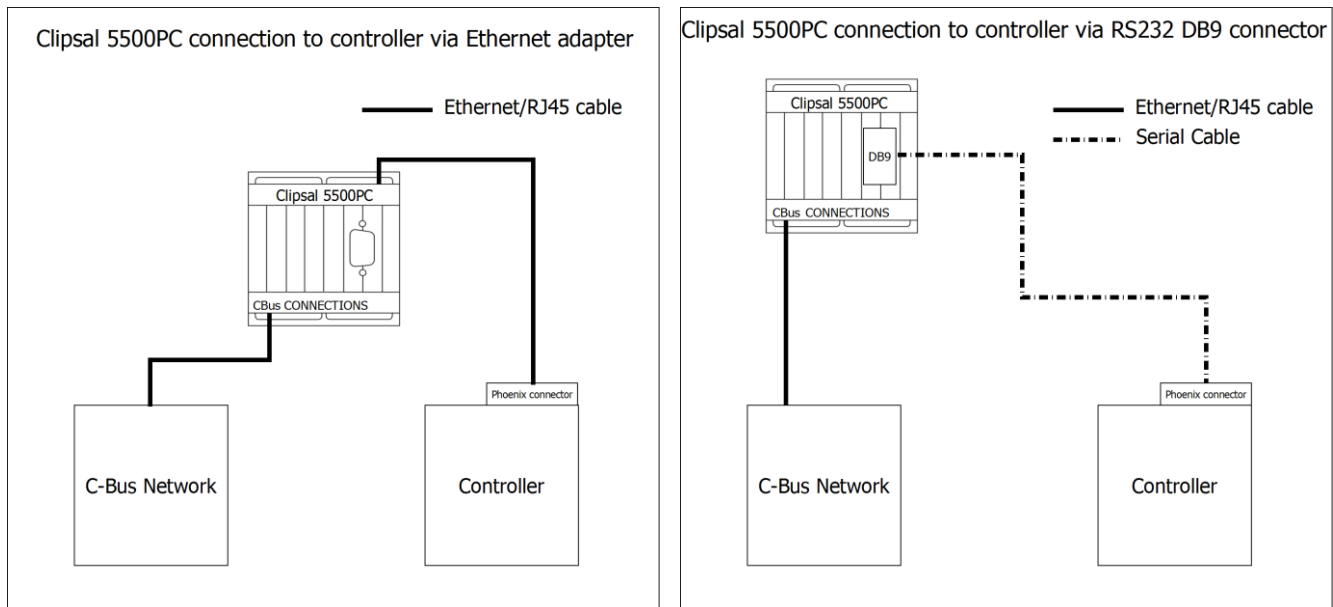


Figure 1 – Wiring diagrams for connecting the controller to the C-Bus network. Left: Shows connecting the Clipsal 5500PC to the controller using RJ45 cable. Right: Shows connecting the Clipsal 5500PC to the controller using RS232 serial cable.

Wiring Specifics

Serial RS232 connection

Cut or create a cable and use a multimeter to work out which colour wires correspond to pins 2, 3 & 5 on the male plug (with the five pins at the top the pins are 1 through 5 from left to right; if you look closely at most 9-pin D-Sub plugs the pins are numbered) *Refer to Figure 2*. The wiring of the serial cable to the Phoenix connector can be seen in **Figure 3**.

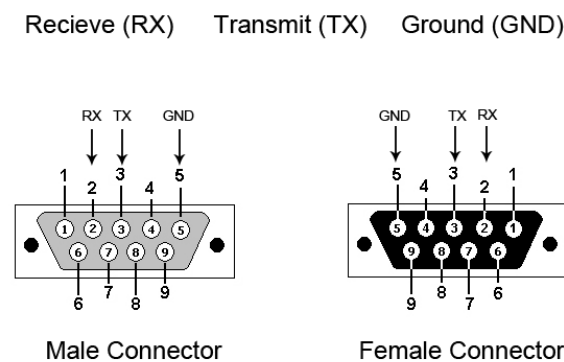
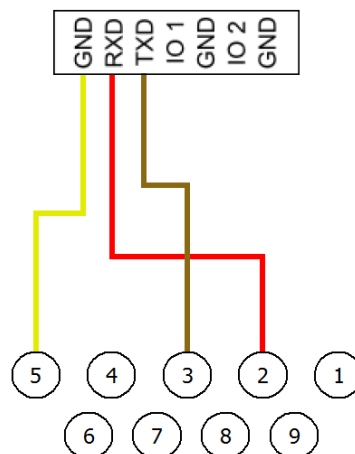


Figure 2 - Pin numbering for Male and Female DB9 connectors



NOTE: The colours depicted in this diagram do not refer to any specific type of Serial cable and have purely been used for clarity.

Figure 3 – Diagram showing the connection of a Serial cable to the Phoenix connector. The wiring is as follows, GROUND (GND) is always pin 5, RECEIVE (RXD) is pin 2 and TRANSMIT (TXD) is pin 3.

Ethernet (RJ45) connection

Prepare the RJ45 cable by cutting the cable at one end and stripping back the appropriate wires *Refer to Figure 4*. Looking at the RJ45 connector with the clip facing upward and the cable pointing away from you the pin numbering is 1-8 from left to right. The wiring of the RJ45 cable to the Phoenix connector can be seen in **Figure 4**. Once the wiring is complete plug the Ethernet connector into the connections port on the Clipsal 5500PC.

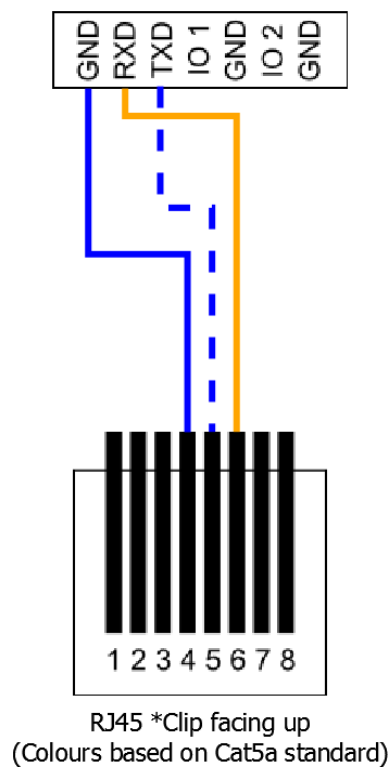


Figure 4 – Wiring diagram showing the connection between a RJ45 connector and the Phoenix connector. The wiring is, GND to pin 4, RXD to 6 and TXD to 5.

Configuring the Serial Port

- Open the controller tree. *Refer to Figure 5*
- Expand the 'Connected Devices'
- Right Click on 'Serial Port' and select 'Properties'
- Select the GUI Two-Way (RS232) option
- Ensure the Baud rate is set to '9600'
- Select 'Apply' then Select 'OK'

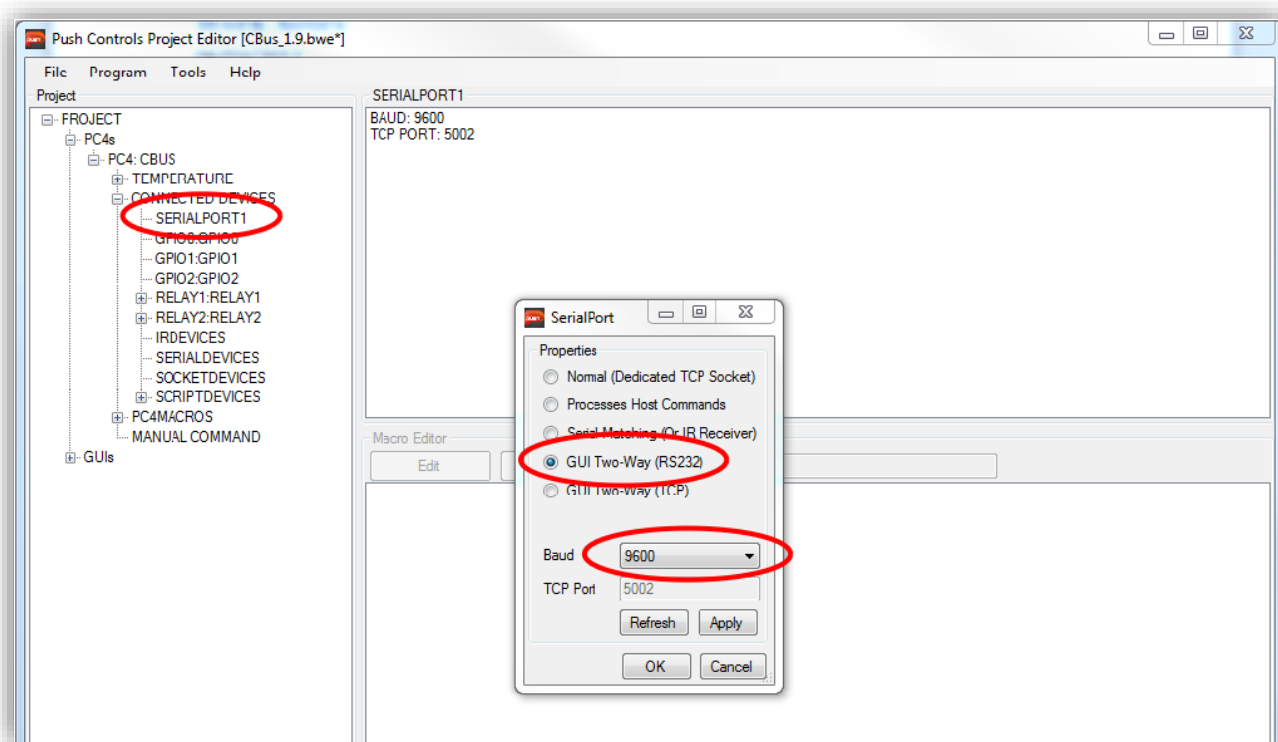


Figure 5 – Highlighting the location of the Serial Port in the project tree, along with the dialog box properties to set.
NOTE: dialog box is opened by right clicking SERIALPORT1 and clicking properties.

Step 2: Setting Up Your Project – Importing the CBus Module

Import the CBus module by completing the following actions:

- Right click on 'PROJECT' at the top of the tree and select 'Import Module'. *Refer to Figure 6*
- Locate and select 'CBus_X.pemod' (where X is the current version number)

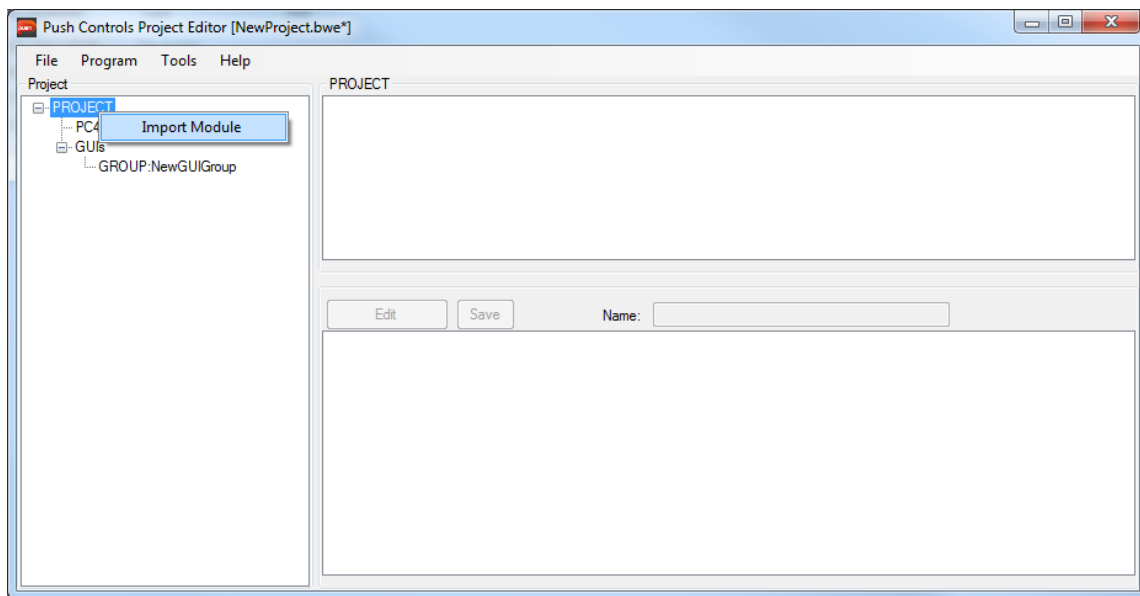


Figure 6 – Right click on PROJECT, inside the project tree, to import a module.

The selected module will now appear in the module browser window (See Figure 7), where you can see everything that is included in the module.

Note: A GUI group must be available in the GUI's section of the Project Editor, in order to import the CBus module.

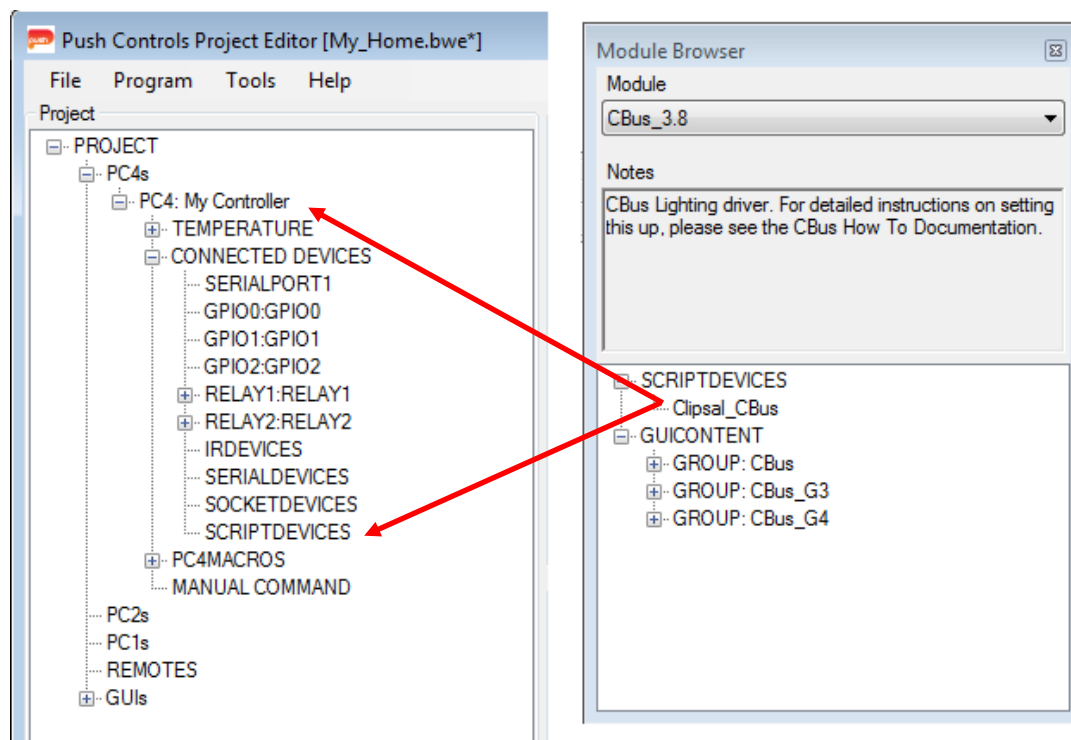


Figure 7 – Dragging and dropping script from the Module Browser window

GUI Themes

The C-Bus module contains 3 (three) GUI themes, each theme is grouped into a GUI Group as follows:

- CBus_G4: contains GUI components with Gen IV theme
- CBus_G3: contains GUI components with Gen III theme
- CBus: contains GUI components with an older theme

Adding a GUI Component to a GUI page

The example in this section will use Gen IV theme. If you are using other theme, please use the equivalent GUI components which are available under the 'CBus_G3' or 'CBus' group.

Each of the elements contained in the module need to be dragged and dropped into their respective positions within the project. The items under the SCRIPTDEVICES category need to be dragged onto the desired controller. The GUICONTENT area can include POPUP or CONTENT and are imported in the following manner *Refer to Figure 7:*

- POPUP content can be dragged directly into an existing GUI group
- CONTENT requires an existing page to be dragged in to. To include content you can either drag it onto the page name (see Figure 7) or drag onto an open GUI page (hold down shift to drag the content to any position on the page). Some modules will have examples of a full page and will have '_P' or '_L' appended to the content name, which denotes Portrait or Landscape. To import whole page content a page needs to be made, which matches the resolution of the page being imported.

Note: items should be imported in the order that they appear inside of the Module Browser window due to the dependencies certain modules contain.

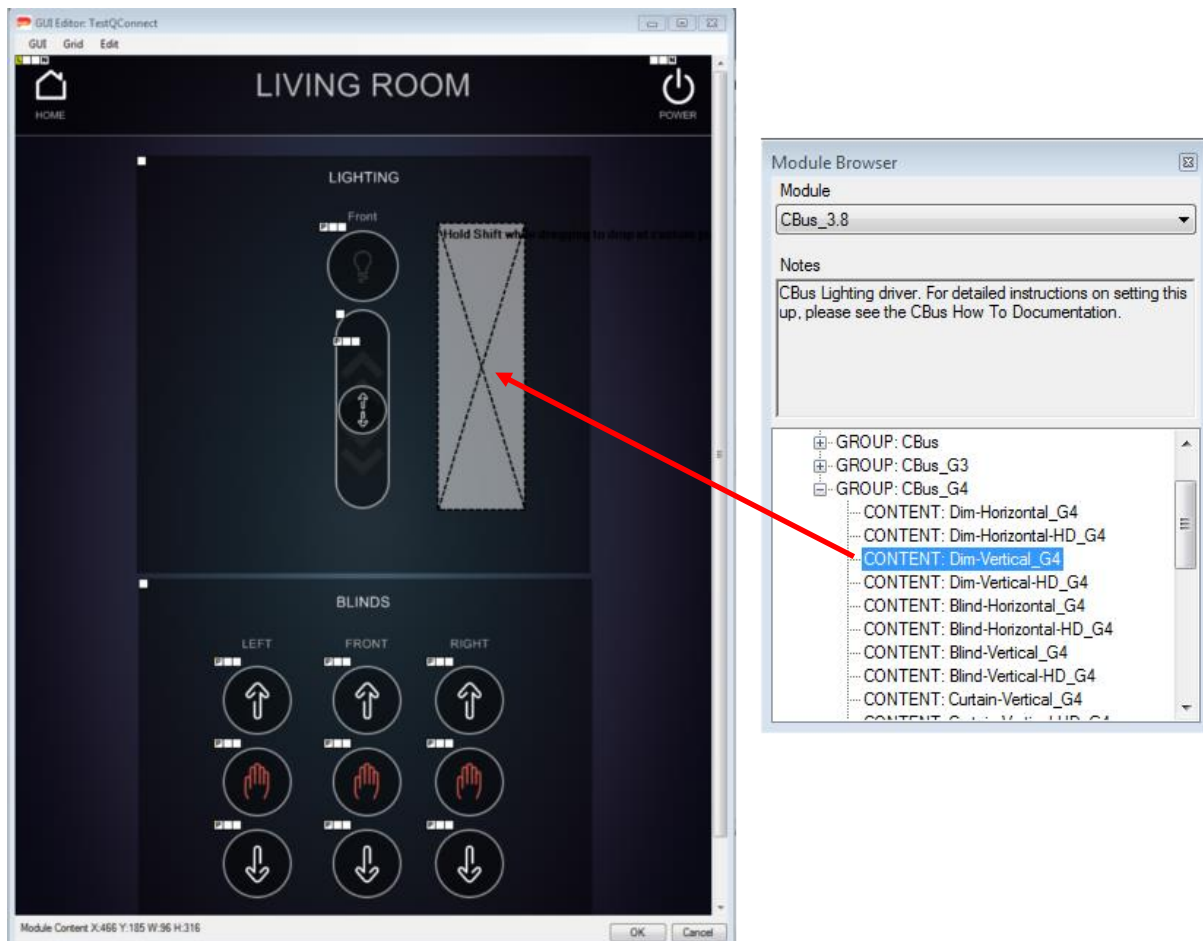


Figure 8 - Dragging content onto a GUI page

Each of the GUI content elements (except for demo pages) will prompt you to enter parameters required to program the content to the CBus module. For example in Figure 8 the Dim-Vertical content is dragged onto the page, whilst holding down shift to move its position. Once the mouse button is released a dialog box will open asking for parameters to be provided (Figure 9). In the case of the Dim-Vertical element the following data is required:

- CBus Application ID: The application ID of the CBus component you wish to control
- CBus Group Address: The group address of the CBus module to control
- CBus Dimmer Component: The name of the group you wish to control

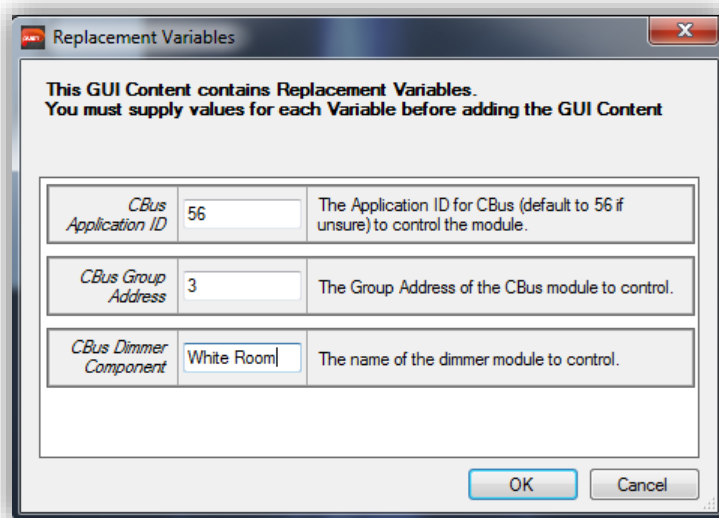


Figure 9 - GUI Content parameter dialog box

Importing Measurement Application Components

There are two types of content that can be imported to display the values provided by a measurement input unit on the C-Bus network these are Measure_Raw and Measure_Text. Measure_Raw is a label that will display only the value returned from the input sensor, i.e. if a temperature sensor has a reading of 35.7 °C it will display as 35.7 only, however Measure_Text will display the value plus the notation of the input so using the previous example the interface will display the full 35.7 °C. To import these components into the interface drag the CONTENT from the module browser into an open GUI page (see Figure 8 - Dragging content onto a GUI page). When importing a measurement component you will be asked for two parameters:

- C-Bus Device ID: This is the ID associated with the measurement unit connected to the C-Bus network
- C-Bus Channel Number: the channel number, which the input device is connected to on the measurement unit

Note unlike the other components, which will automatically poll for information pertaining to the GUI element on the page. The measurement device can't be directly polled via an external command, instead a trigger will need to be created to force the broadcasting of values from the measurement unit and this trigger will then be added to an onPageLoad macro to ensure that when a page is loaded that we have the latest value available from the C-Bus network. Please see relevant C-Bus documentation and support for implementation of the measurement device, triggers, and other programming required to have the C-Bus side running correctly.

Step 3 (Optional): Configuring the C-Bus Module – Manually Entering C-Bus Commands

Below is the list of Javascript commands that can be inserted into any GUI button to execute a C-Bus command. Ensure that the button's properties are set to 'Type' = External Javascript. Enter all Javascript commands into the 'Javascript Function Call' text box.

- Text highlighted in **RED** = adjustable Group Address 0-255
- Text highlighted in **GREEN** = adjustable lighting level 0-100%
- Text highlighted in **BLUE** = adjust delay in milliseconds 100 – 10000 (0.1-10seconds)

Table 1 – Mapping of GUI Functions to Javascript Function Calls

Function	Javascript Function Call
Group Address: ON	SmoothLights.setLevel:20:100
Group Address: OFF	SmoothLights.setLevel:20:0
Group Address: TOGGLE	SmoothLights.toggle:20
Group Address: PULSE (default 1 second)	SmoothLights.pulse:20
Group Address: PULSE (variable time)	SmoothLights.pulse:20:500
Group Address: PERCENTAGE **	SmoothLights.setLevel:20:100
Group Address: SLIDER Control	Go to <i>Error! Reference source not found.</i>
Trigger Scenes	SmoothLights.trigger:0:0

*Example: 'SmoothLights.setLevel:20:100' = Set the lighting level of group address 20 to 100%