Honeywell

Advanced Controller

IO Module - Honeywell Niagara

PanelBus Driver Guide

TABLE OF CONTENT

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SYSTEM REQUIREMENTS

NIAGARA VERSION:
Niagara 4.10u7 and higher

Products and OS Numbers

For detailed information on the applicable controllers including their OS Numbers and licenses, please download the corresponding, product data, software release bulletin and/or the compatibility matrix.

PRODUCT DATA
Refer 31-00588 (IO_Modules_Datasheet)

Licenses and Point Handling

When a license allows only a limited number of points and you are deleting points, the free number of points are only available after some time. Please restart the station to make the free number of points available again.

Alternate Usage of Different Supervisor Versions on Same PC

In case you have different Supervisor versions installed on your PC and want to use them alternately before starting the Supervisor software, make sure you install its dedicated platform daemon.

This is necessary to ensure that all necessary services are properly running when using the software.

NOTE:
For Supervisor 4.10.xx, which will be installed via setup, the dedicated platform daemon is automatically installed, and the corresponding services are running, if you do not start another Supervisor version.

Example:

You are working with Supervisor 4.10.u5 and want to use the previous Supervisor 4.10.X version. Before the software starts, click the **Install Platform Daemon** entry in Supervisor 4.10.X program group.

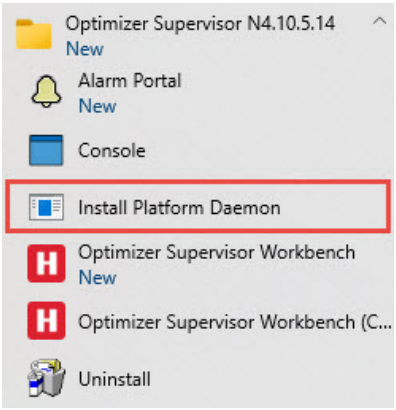


Figure 1. Start Menu

INSTALLATION

The Panel Bus driver will be installed with the Niagara setup by default.
Refer 31-00589 (IO-Modules_Installation_Instructions).

Products and OS Numbers detailed information on the applicable controllers, including their OS Numbers and licenses.

CREATE PANEL BUS NETWORK

The following procedure describes the commissioning of the Panel Bus network on a commissioned Advanced Controller, which contains all required Panel Bus modules.

Creating a new station with the Supervisor is recommended to ensure that the controller includes all necessary Panel Bus modules. This station should then be transferred to the controller using the Commissioning Wizard. The commissioning wizard ensures that all the modules required to operate a station are also transferred to the controller.

If a Panel Bus network has to expand an existing station in a controller, the following modules must be manually added to the controller using the Software Manager.

- clPanelBus rt
- clPanelBus wb
- platPanelBus rt

NOTE:

The Panel Bus driver cannot be operated with a PC (Optimizer Suite) because the necessary RS-485 interface is only supported by Niagara-based controllers in terms of license. However, a Panel Bus network can be pre-defined on a PC by adding Panel Bus devices from the Panel Bus range. This way of working is called offline mode.

Refer to the Installation Instruction & Commissioning Guide – Document number 31-00584 for connecting the controller to workbench, setting up Platform and Station, and commissioning the controller procedure.

Procedure

1. In the Nav tree, expand the Station folder, and then click on **Drivers**.

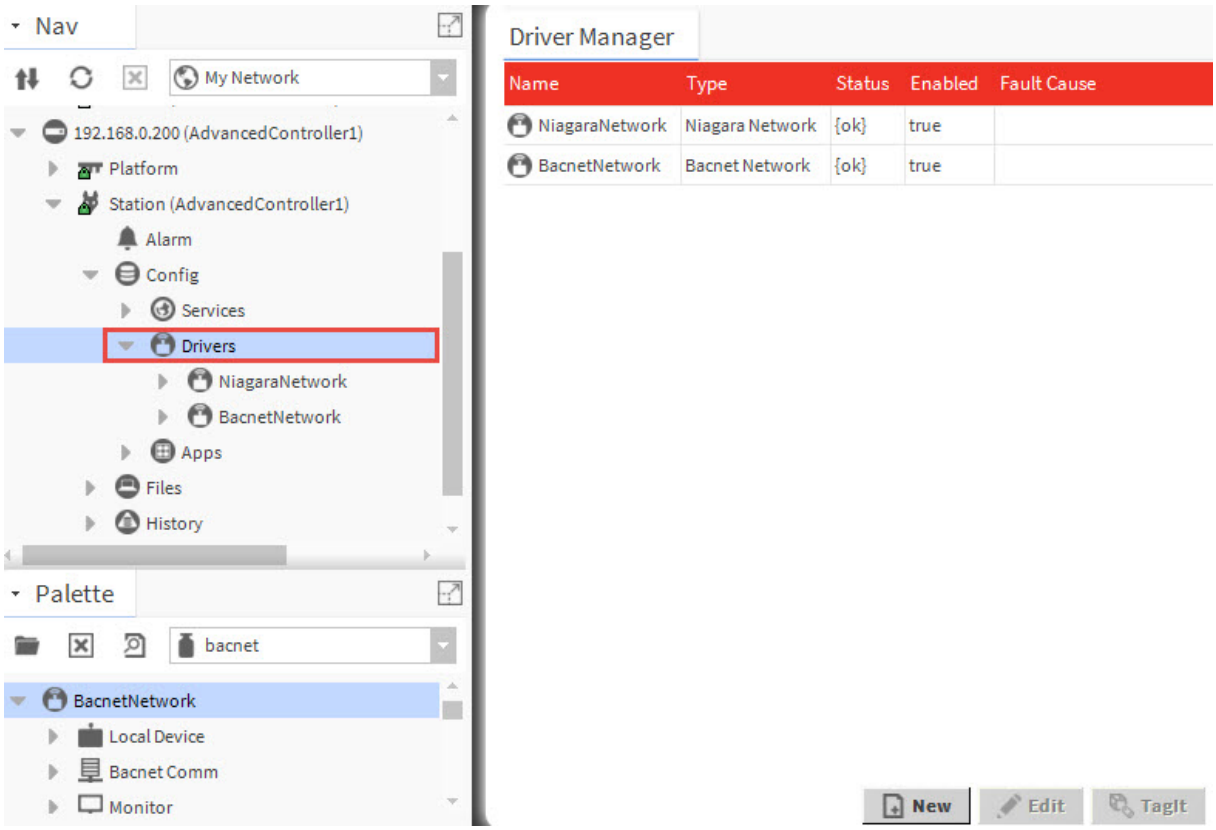


Figure 2. Property Sheet view

2. On the right pane, click **New**. The New dialog box displays.

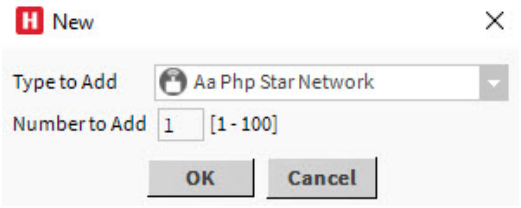


Figure 3. New Dialog Box

3. In **Type to Add**, select ´PanelbusNetwork`.

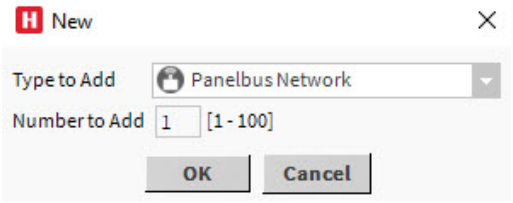


Figure 4. New Dialog Box

4. Click **OK**. The **New** dialog box is displayed.

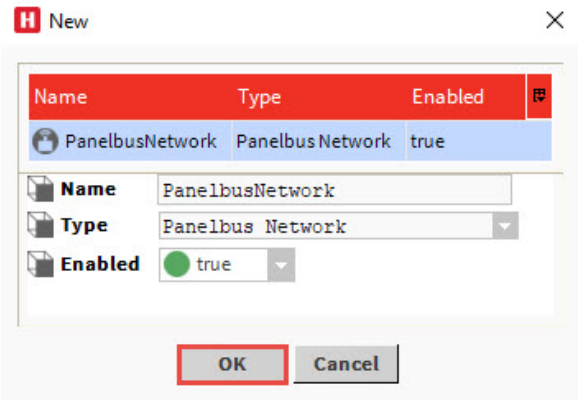


Figure 5. New Dialog Box

5. In Name, change the name of the network if desired, and then click **OK**. The **PanelbusNetwork** is created and added to the Driver Manager.

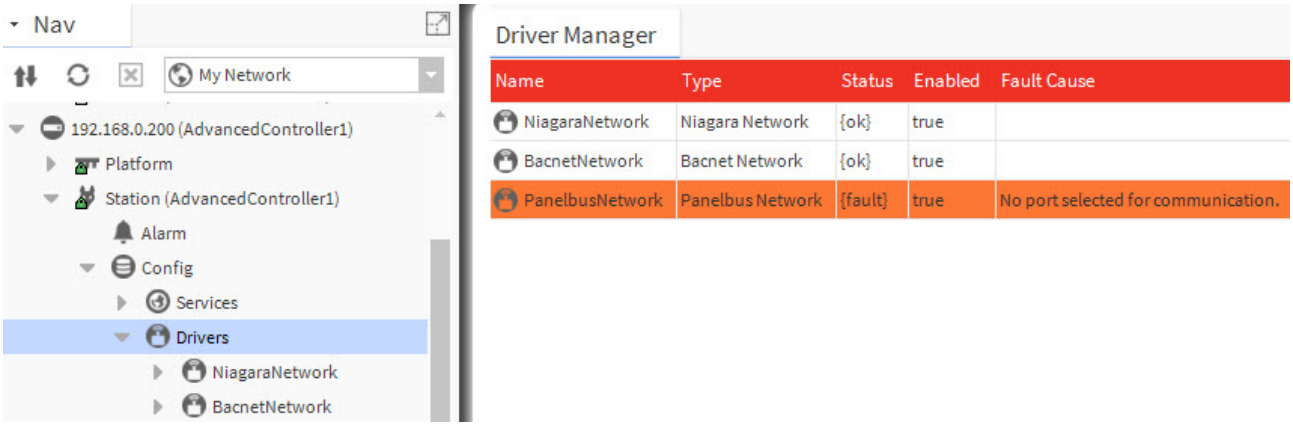


Figure 6. Property Sheet view

6. Display the property sheet for the PanelbusNetwork by right-clicking **PanelbusNetwork** in the Nav tree, selecting **Views**, and then selecting **AX Property Sheet** in the context menu.

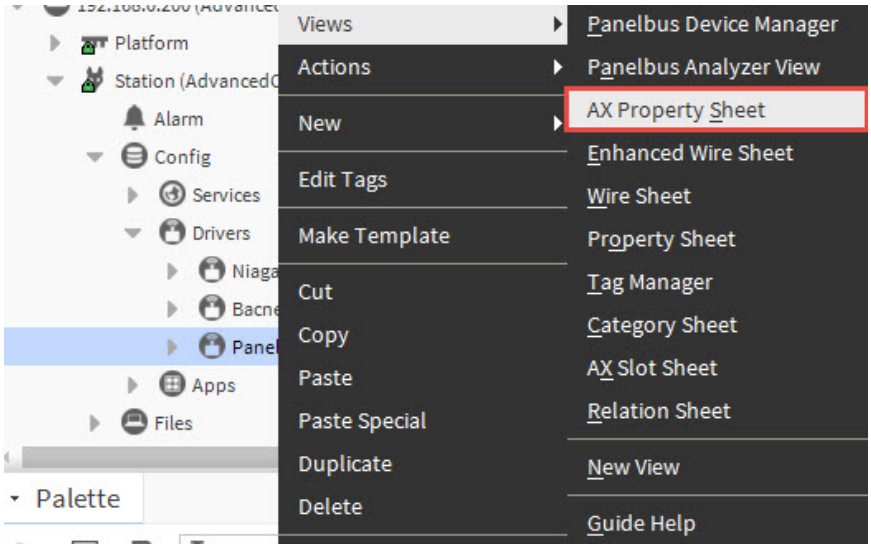


Figure 7. PanelbusNetwork Property Sheet View

The PanelbusNetwork properties are displayed on the right pane.

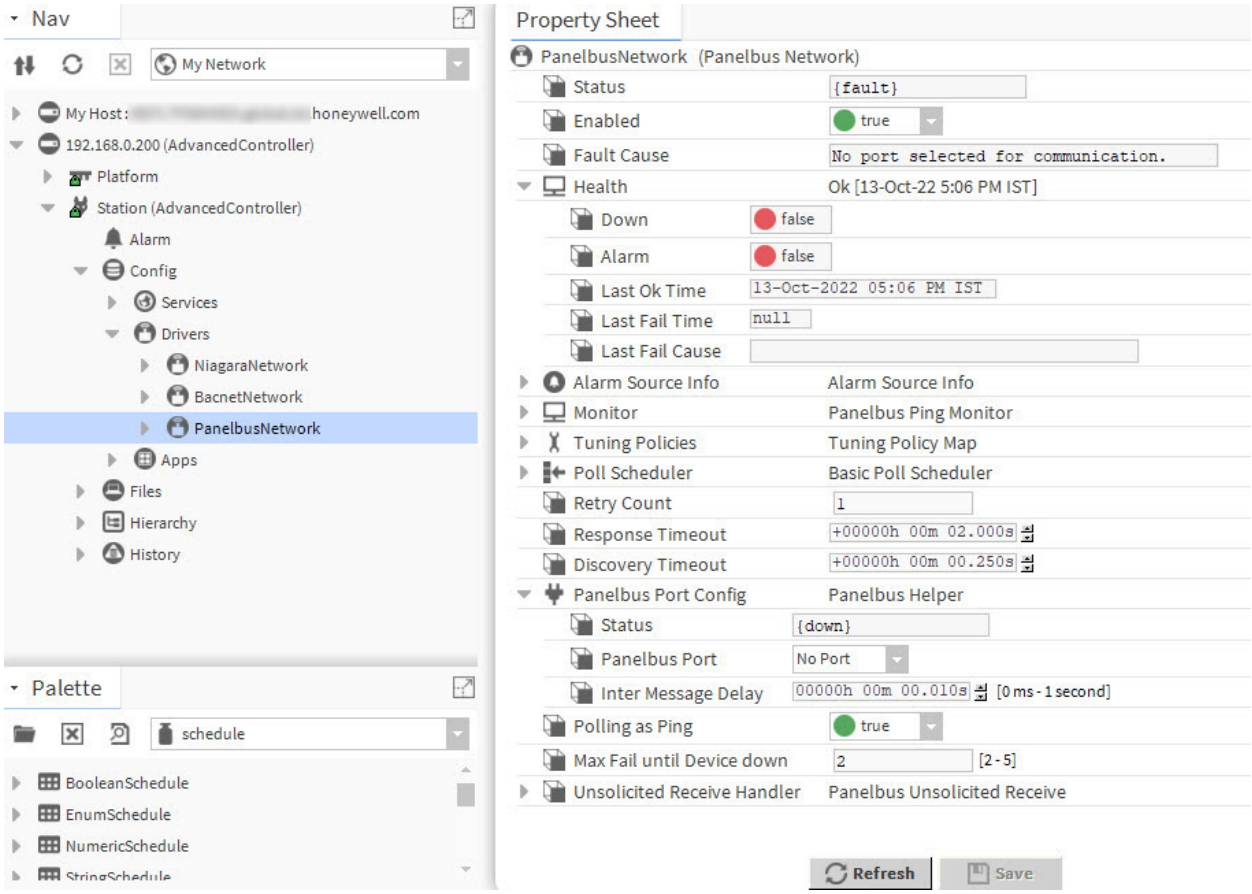


Figure 8. PanelbusNetwork Property Sheet View

7. Under **Panelbus Port Config**, select the port (RS485 port out of 5 ports) from the **Panelbus Port** drop-down list box.

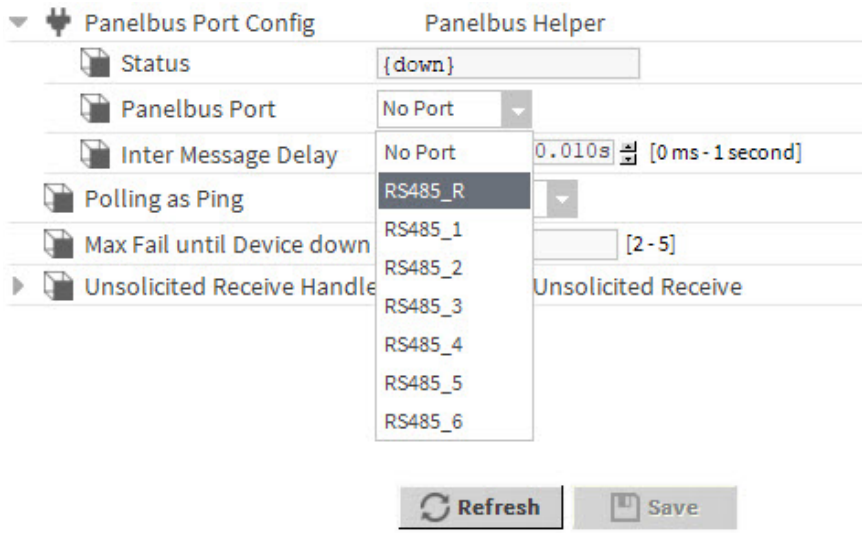


Figure 9. PanelbusNetwork Property Sheet View

NOTE:
This naming is different from all other RS485-based drivers within Niagara Supervisor. In this case, the Panel Bus Ports must match the labeling on the Advanced Controller.
Select the RS485_R port if the IO modules are connected to the Advanced Controller's touchflakes.

8. Click **Save** button.
The PanelbusNetwork properties are updated. The **Status** fields show **ok** indicating that the network is properly working.

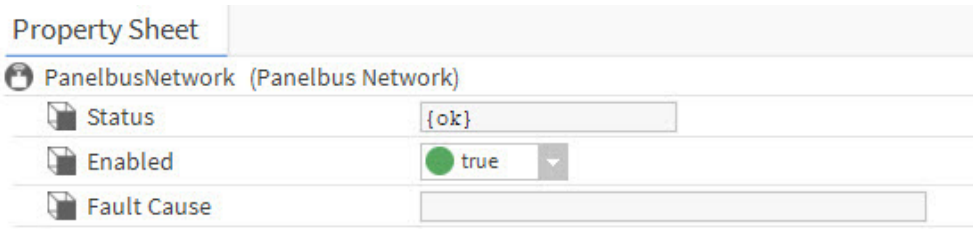


Figure 10. PanelbusNetwork Property Sheet View

DISCOVER PANEL BUS MODULES AND ADD THEM TO STATION

To discover the Panel Bus modules that resides on the Panel Bus network.

1. In the **Nav** tree on the left, expand the Station, Driver's folders, and Right-click on PanelbusNetwork.

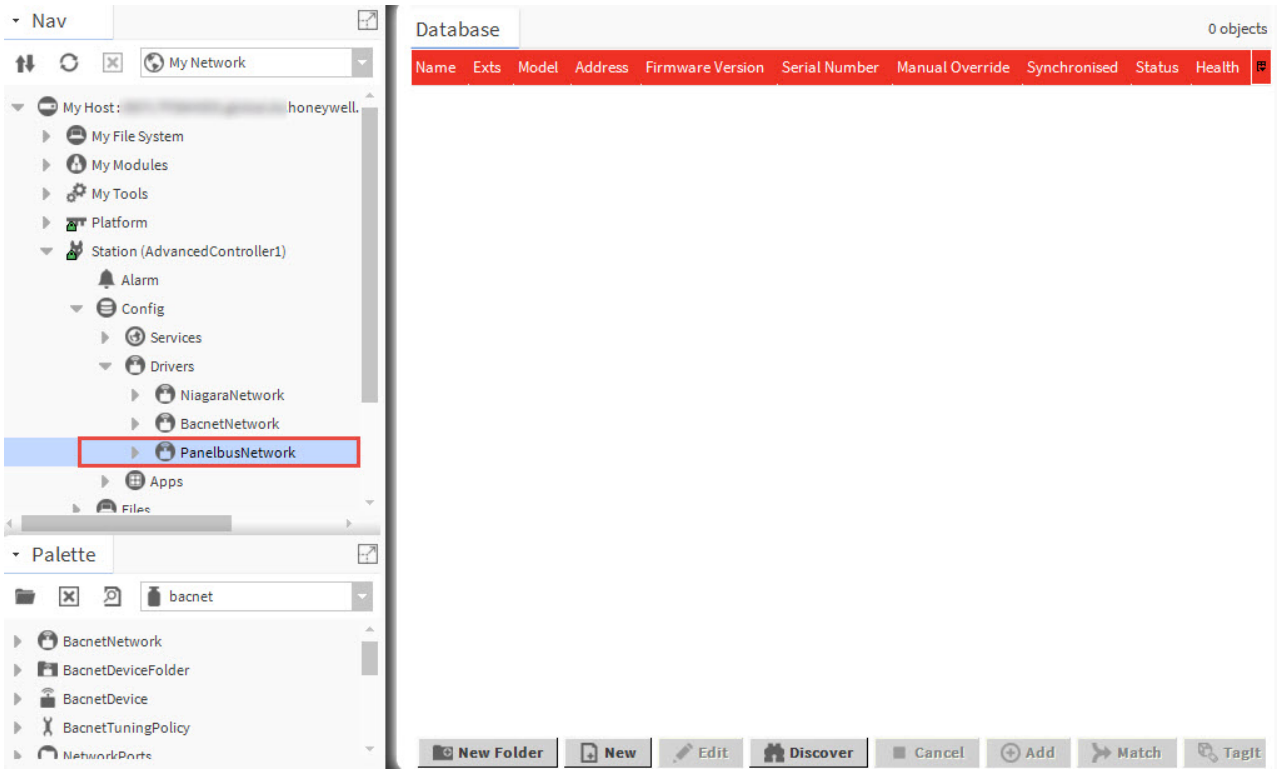


Figure 11. PanelbusNetwork Database View

2. Select **Panelbus Device Manager** from top right corner drop down list.

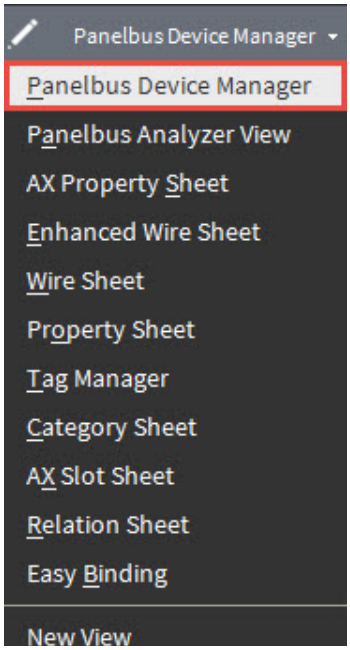


Figure 12. Panelbus Device Manager

3. Click the **Discover** button on the bottom right of the pane.

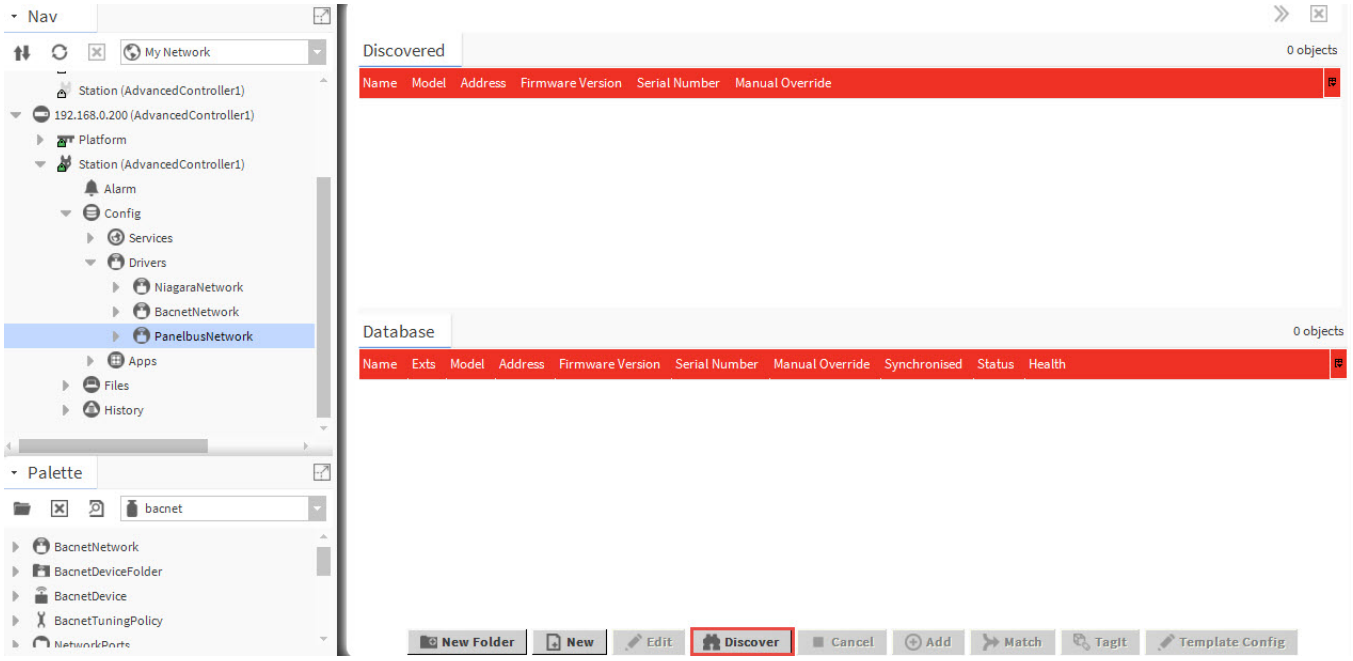


Figure 13. Panelbus Device Manager View

4. A Panel Bus discovered success message will appear at top right corner and all available Panel Bus modules will be listed in the upper **Discovered** pane.
Select the Panel Bus modules you want to add to the Database of station and click **Add** button on the bottom of the pane or Drag & Drop the selected Panel Bus modules into the Database pane.

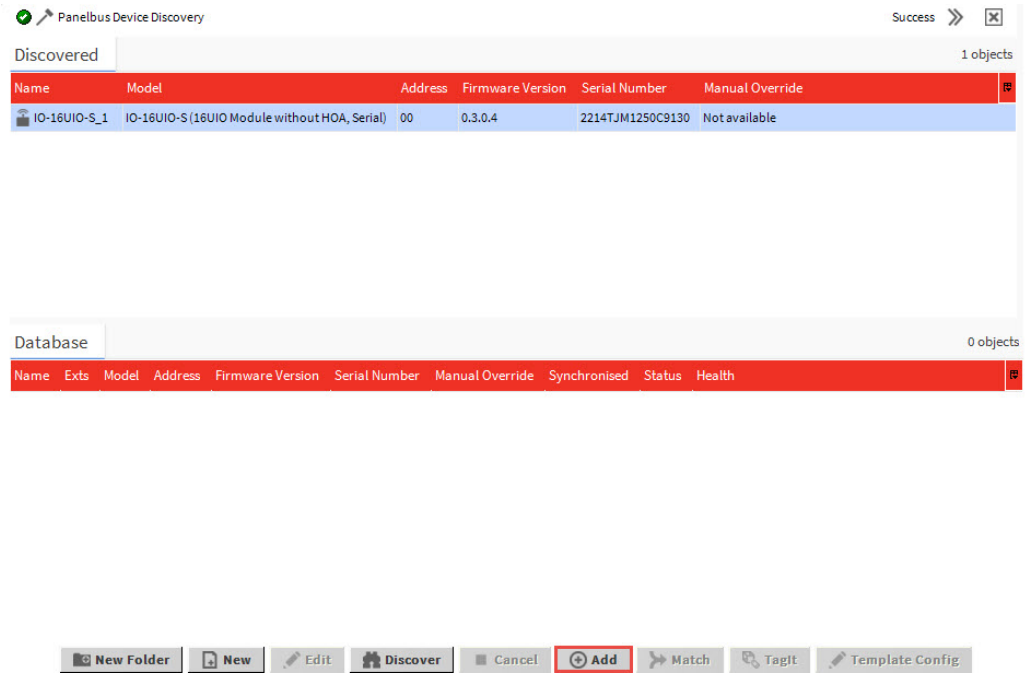


Figure 14. Panelbus Device Manager View

NOTE:
Multi-selection using the SHIFT of CTRL/STRG key is possible.

5. The Add dialog box displays a list of selected Panel Bus modules. This dialog allows you to customize the module name. Changing the model or the address makes clear if the actual module and the address switch are later adjusted. It is possible to deactivate the module so that error messages can be avoided when not existing/replacing a module.
   Click **OK**.

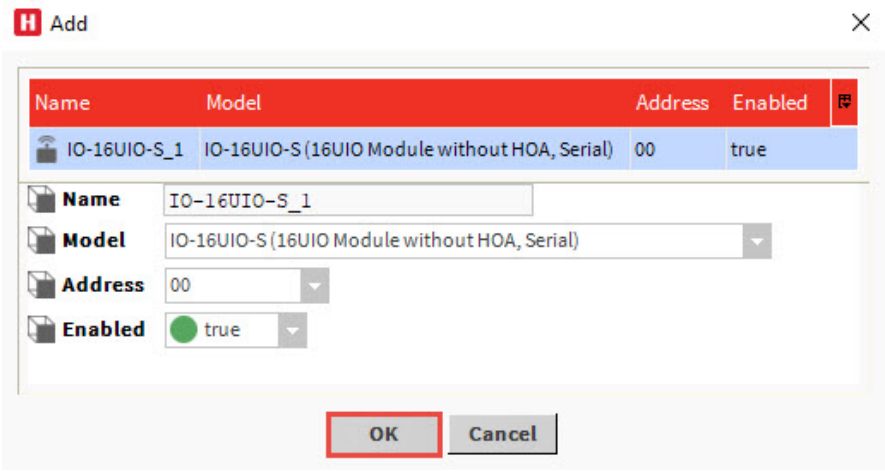


Figure 15. Add Dialog Box

NOTE:
While adding “Floating Digital Point” to the point database, it goes into a fault state and then returns to normal.

6. The selected Panel Bus modules are added to the station. They are displayed twice, in the lower Database pane and in the Drivers Folder in the Nav tree.

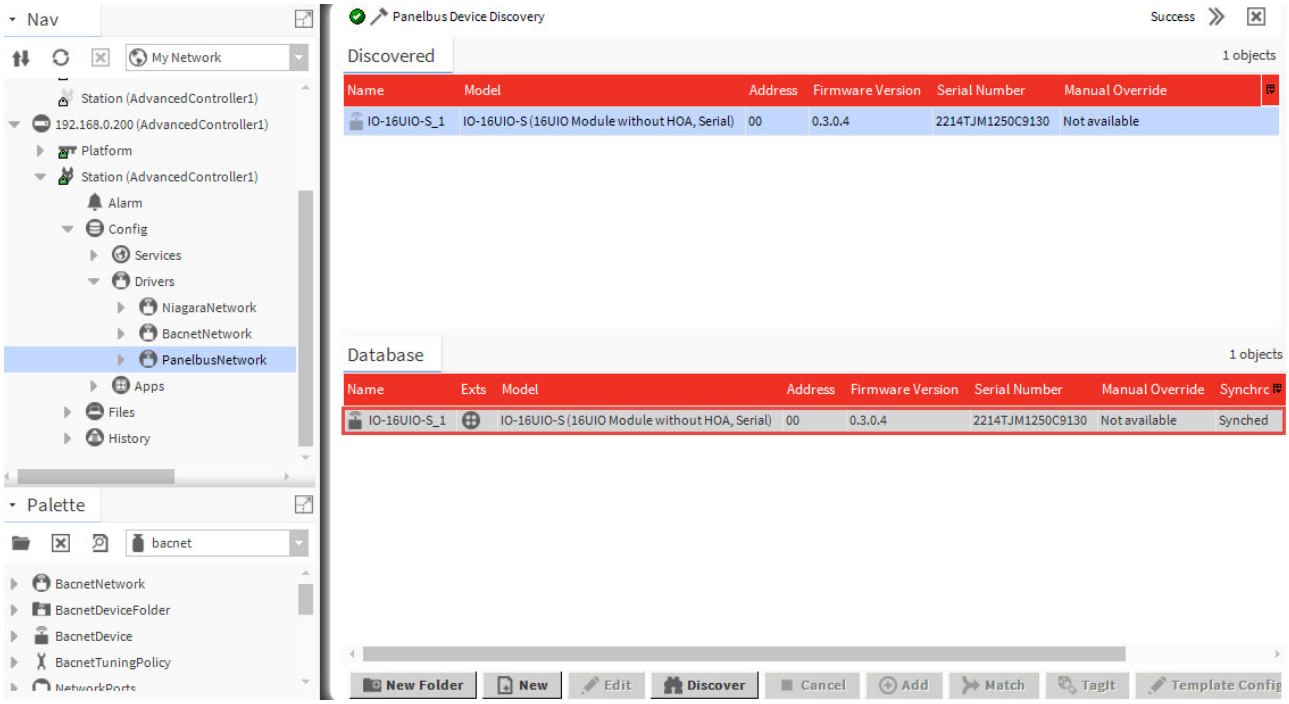


Figure 16. Panelbus Device Manager View

VIEW / MODIFY PANEL BUS MODULE PROPERTIES

The properties of the Panel Bus modules vary dependent on the module type. The module types are available in Supervisor:

- IO-16UIO
- IOD-16UIO
- IO-16UI
- IO-16DI
- IO-8DOR
- IOD-8DOR
- IO-8UIO
- IOD-8UIO
- IO-8AO
- IOD-8AO
- IO-4UIO
- IOD-4UIO
- IO-8DI
- IO-4DOR
- IOD-4DOR
- IO-4DORE
- IOD-4DORE

For detailed descriptions of the module properties, please refer to the Panel Bus modules product data, document no. 31-00588-02(IO_Modules_Datasheet).

The following procedure gives a short and general introduction on how to view and modify the properties of a module. The following properties can be edited:

- Name
- Technical address
- Status

PROCEDURE

1. To view/edit the properties, double-click the **PanelbusNetwork** folder in the Nav tree.
   On the Database pane, the Panel Bus modules are displayed.

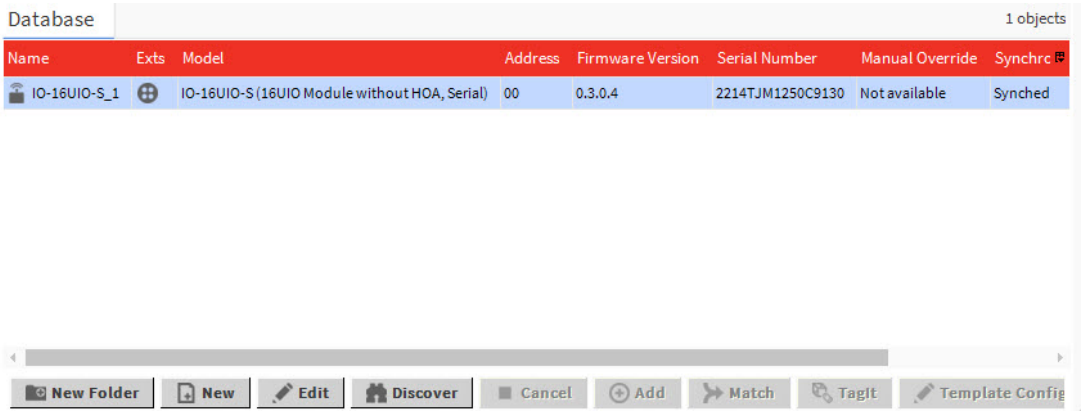


Figure 17. PanelbusNetwork View

2. Select the module you want to change, and then click the **Edit** button at the bottom.

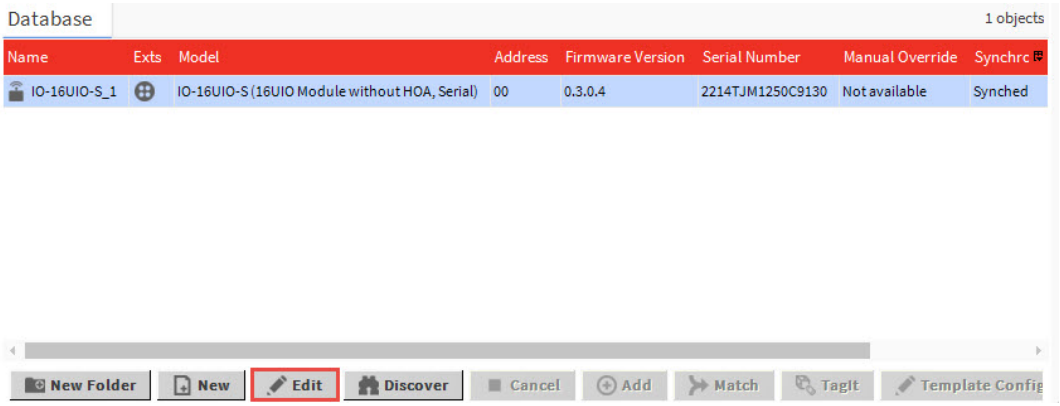


Figure 18. PanelbusNetwork View

3. The **Edit** dialog box is displayed.

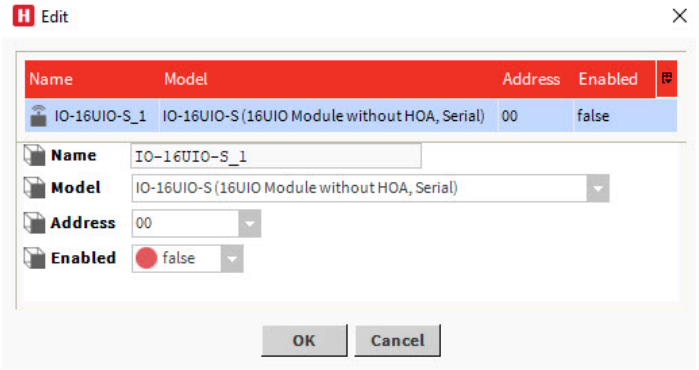


Figure 19. Edit dialog Box

4. Change the properties (Name, Address, Model and Enabled) as desired.

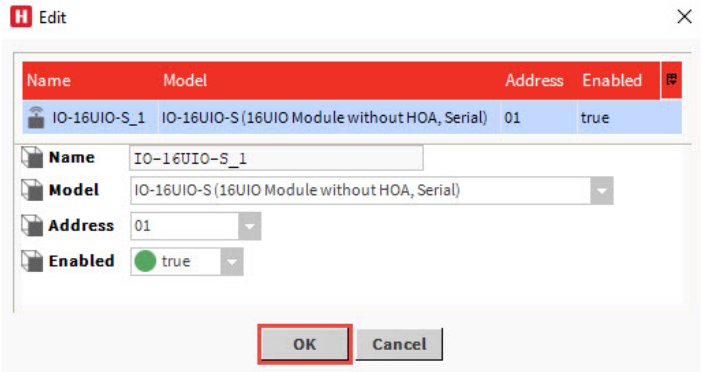


Figure 20. Edit dialog Box

5. Click **OK**.
   The IO module updated properties will show in the Database pane.

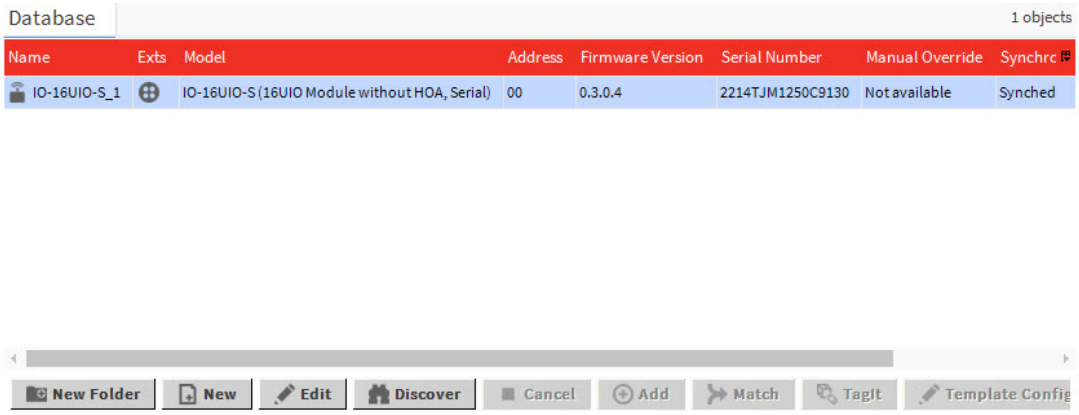


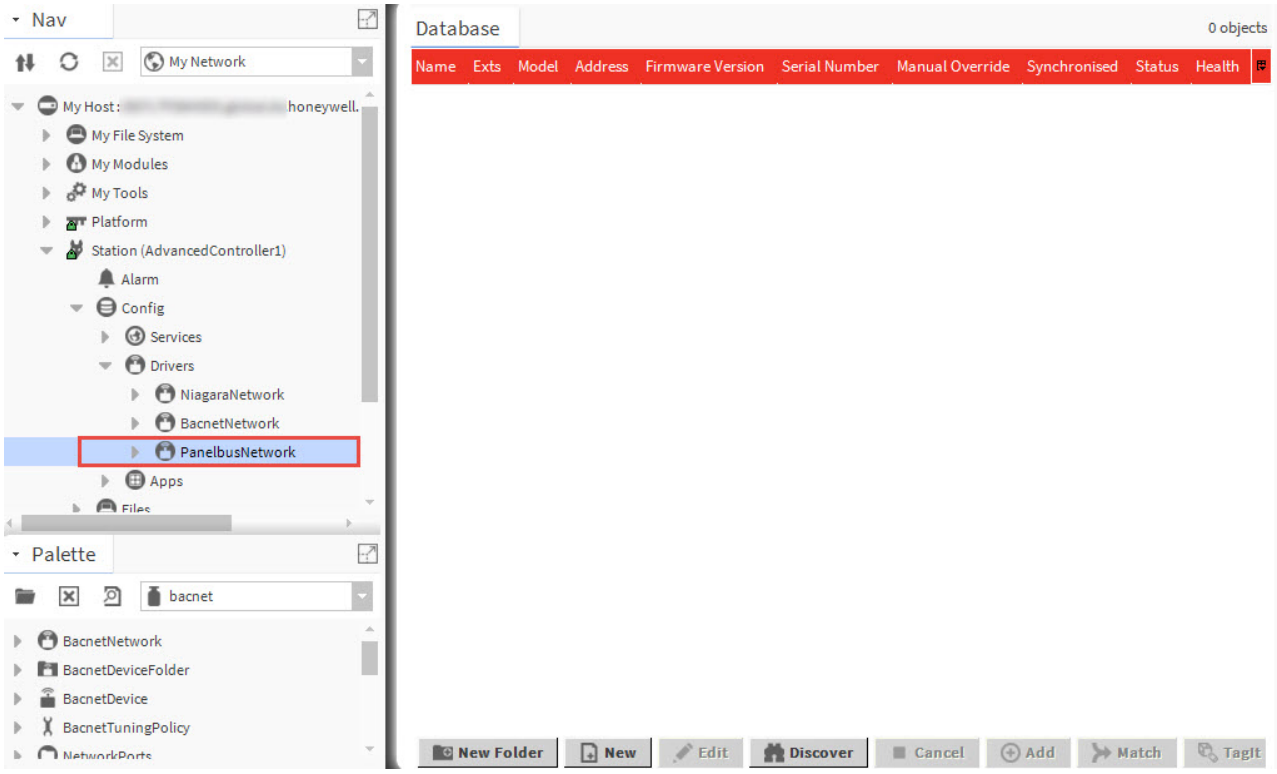
Figure 21. PanelbusNetwork View

NOTE:
If the address of a Panel Bus module is changed as described and no panel bus module is available for the newly selected address, the status of the Panel Bus module will change from Ok to Down. The Panel Bus module is displayed with an orange background in the Panel Bus device manager.

Configure Module Properties

PROCEDURE

1. To view/edit the properties, double-click on **PanelbusNetwork** folder from the Nav tree.



2. Select the module you want to configure
   The property sheet of the selected module displays.

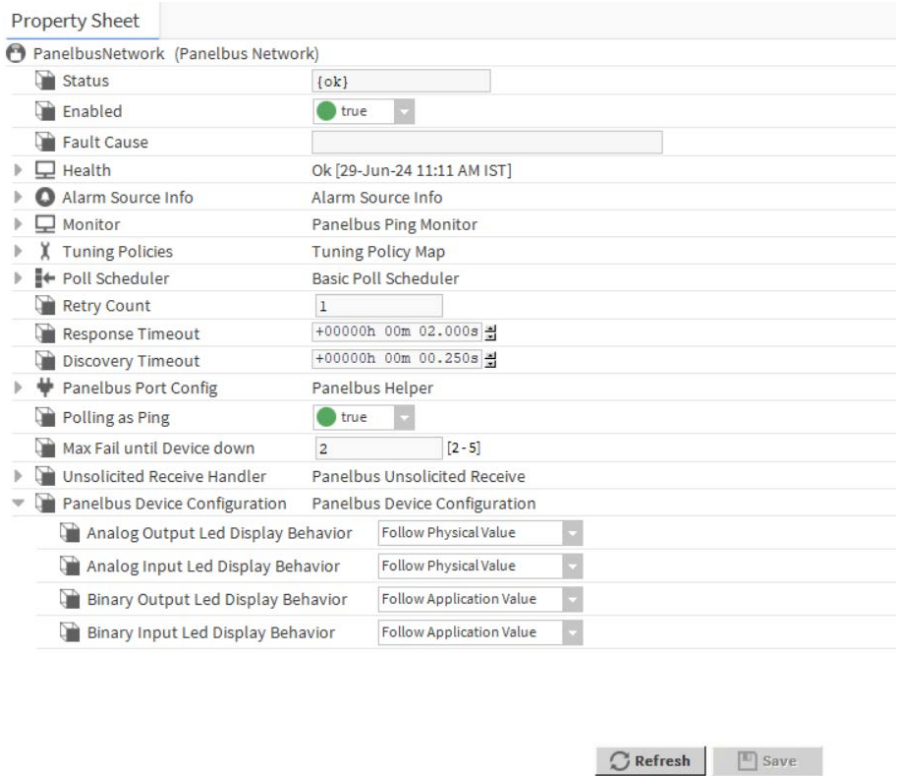


Figure 22. Module Property Sheet

Parameter Name	Description
Status	Status of the PanelbusNetwork
Enabled	Select options: **true** to enable the PanelbusNetwork false to disable the PanelbusNetwork
Fault Case	errors cause message will display
Response Timeout and Discover Timeout	Communication timeout frequency. User can configure the communication loss timing between the Advanced Controller and IO module with Responce and Discover Timeout values.
Panelbus Device Configuration	Led display behavior can be configued here. For default configurations, refer to the *"IO Default Configuration" on page 41*

3. Change the properties and click **Save.**

VIEW / MODIFY POINT PROPERTIES OF MODULE

To discover points and modify point properties.

PROCEDURE

1. In the Nav tree on the left, expand the PanelbusNetwork folder, followed by expanding one of the Panelbus Device folders. Double-click on Points. Select Panelbus Point Manger view from the top right corner.

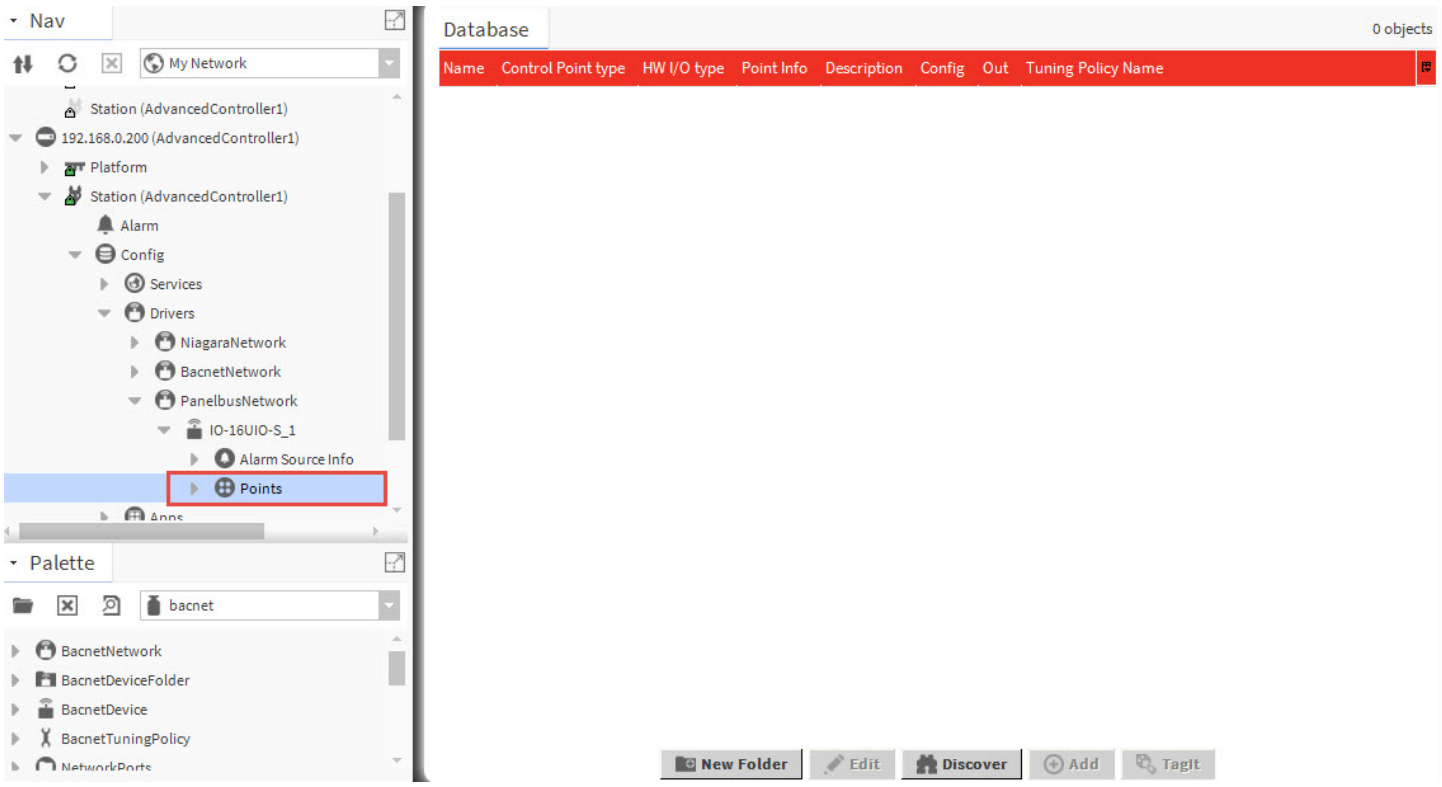


Figure 23. PanelbusNetwork View

2. Click the **Discover** button.
   All points will be listed in the upper **Discovered** pane.

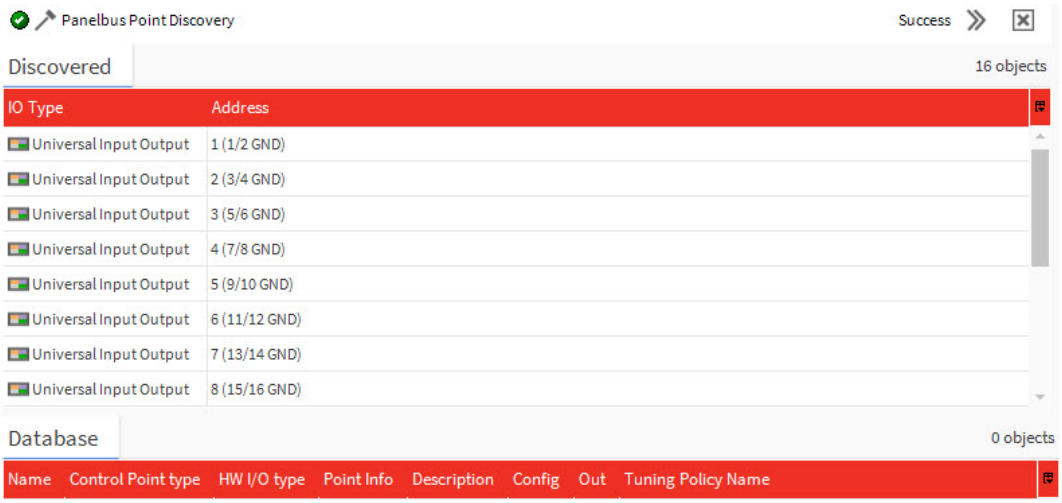


Figure 24. PanelbusNetwork View

3. Select the points you want to add to the Database of the station. Multi-selection using the SHIFT and CTRL/STRG keys is possible.

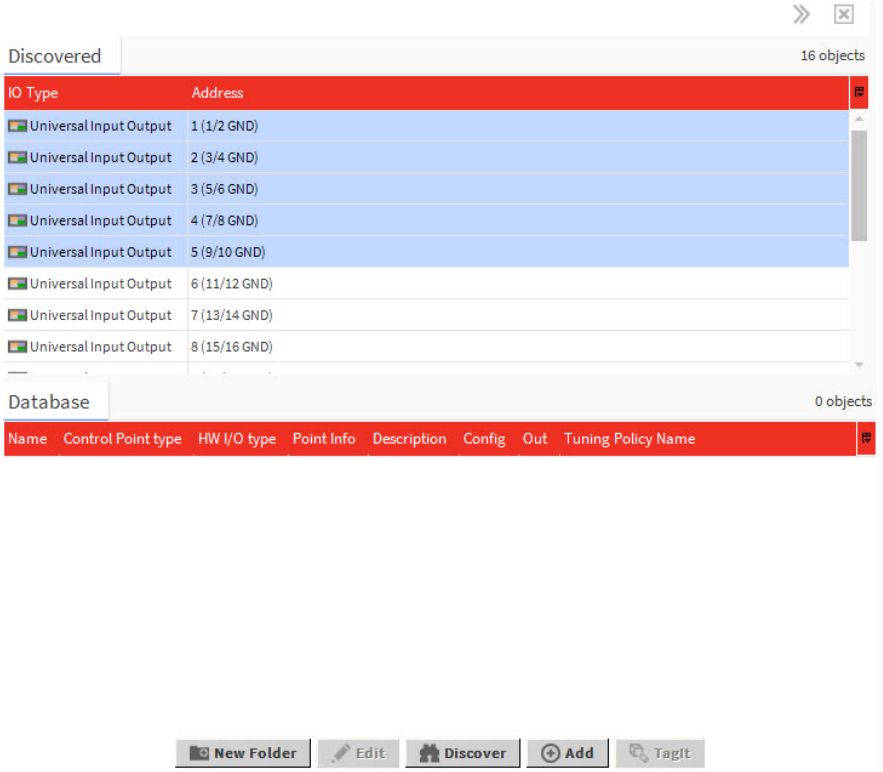


Figure 25. PanelbusNetwork View

4. Click **Add** button on the bottom of the pane. The Add dialog box displays.

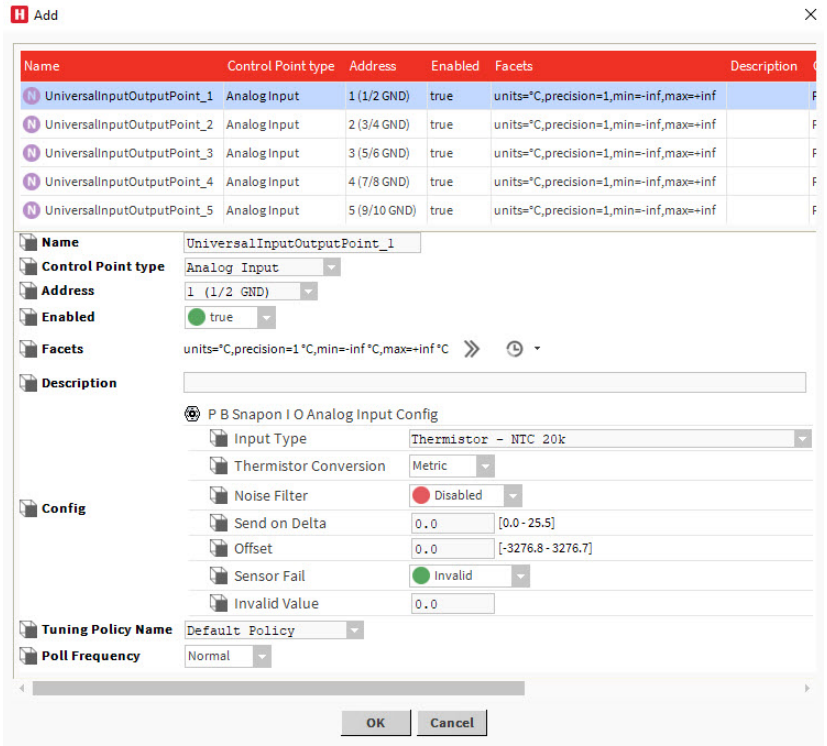


Figure 26. Add dialog Box

5. In this dialog, you can modify point properties before adding the points to the database. You can apply these changes to one or multiple points. To make settings for several points at the same time, the user should mark the points in the "Add dialog." The marked points are highlighted in blue. White colored fields are enabled and can be modified. Beige colored fields are display only.

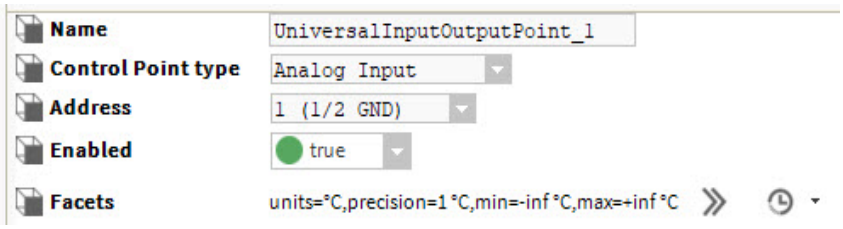


Figure 27. Add dialog Box

NOTE:

When changing the **Control Point Type** property of the point, its corresponding **Config** settings displayed below are updated accordingly. The control point type property cannot be reverted after the point has been added to database.
To be able to change the control point type, the data point must be deleted from the database and then added back to the database.

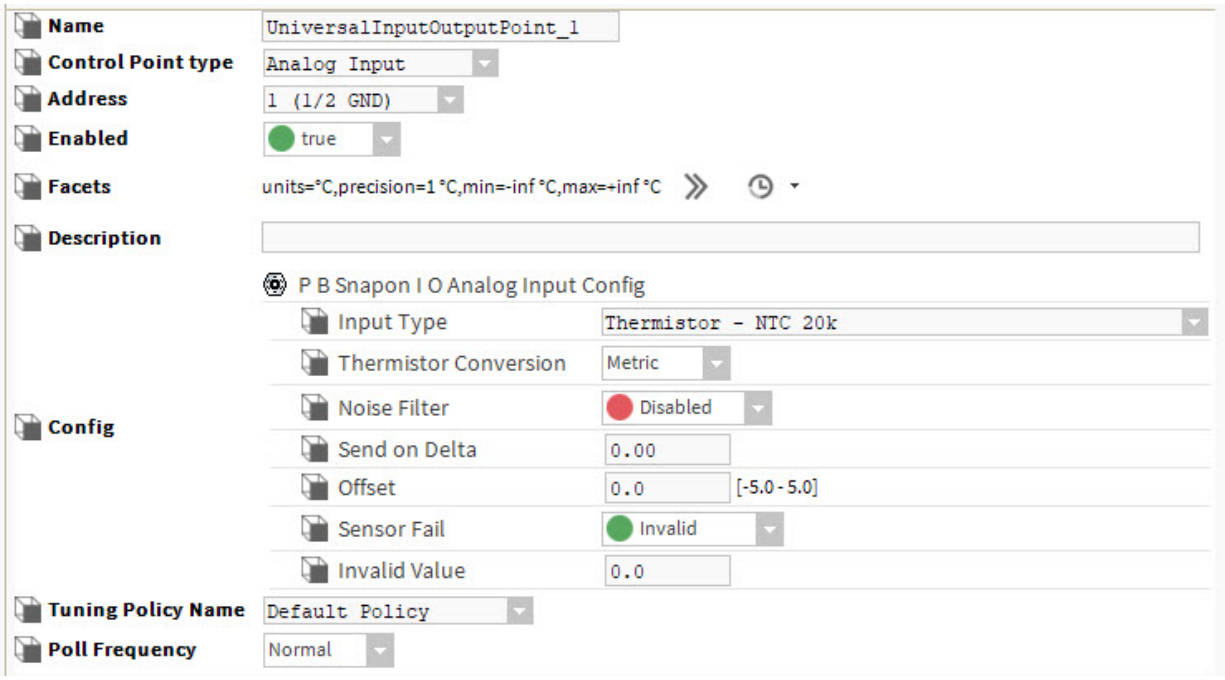


Figure 28. Add dialog Box

All other properties can be changed after the addition using the Edit function (see the following steps)

NOTE:

Regarding the license feature, only points added to the Database are counted. When the point limit of the license is exceeded, a point will go offline (fault state) and be marked in orange.

6. Select the points in the table of which settings you want to change.

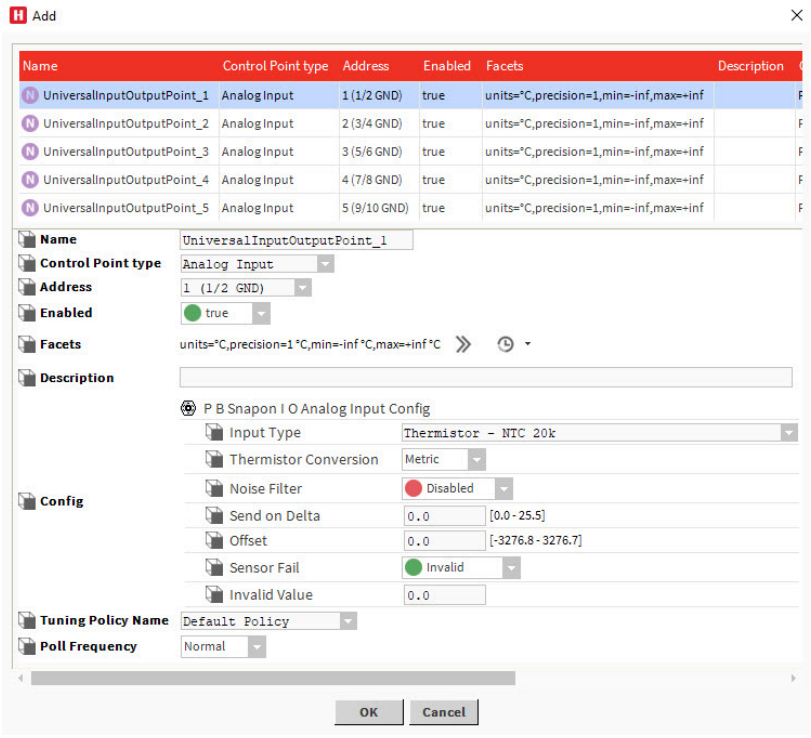


Figure 29. Add dialog Box

7. In **Control Point Type**, select the control point type.
According to their control point type, the datapoints are indicated by different colors in the table (example. green for digital control point type, violet for analog control point type).

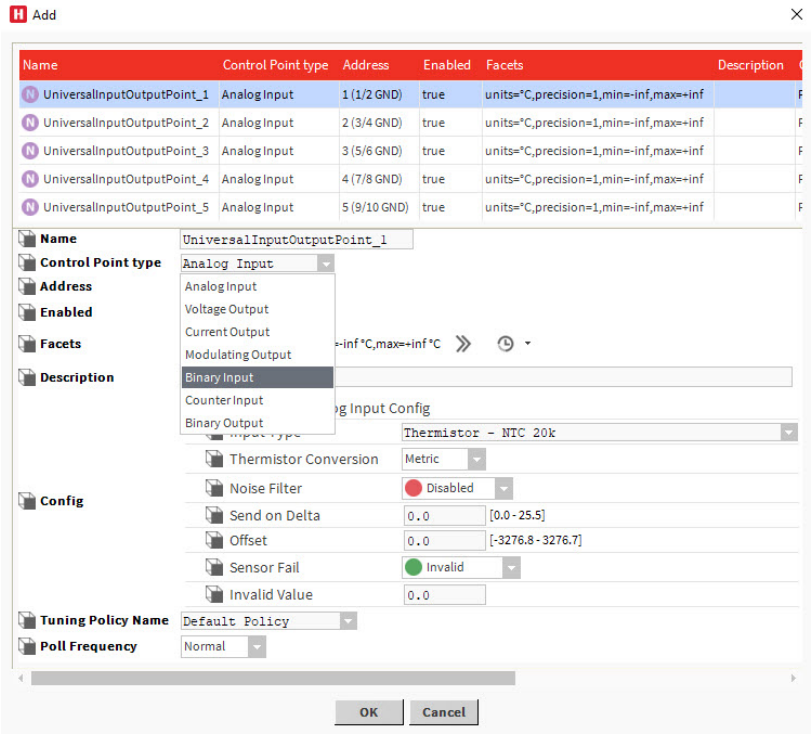


Figure 30. Add dialog Box

8. Click **OK**.
   The selected datapoints are added to the station.

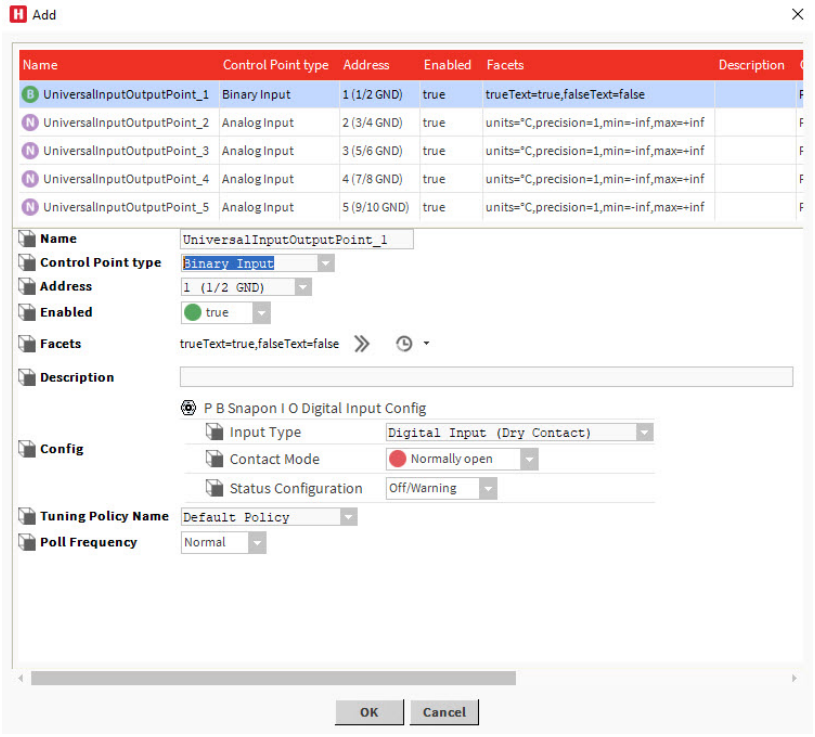


Figure 31. Add dialog Box

9. To modify point properties, select the datapoint(s) in the Database pane. Multi-selection using the SHIFT and CTRL/STRG keys is possible.
   Click **OK**. The Edit dialog box displays.

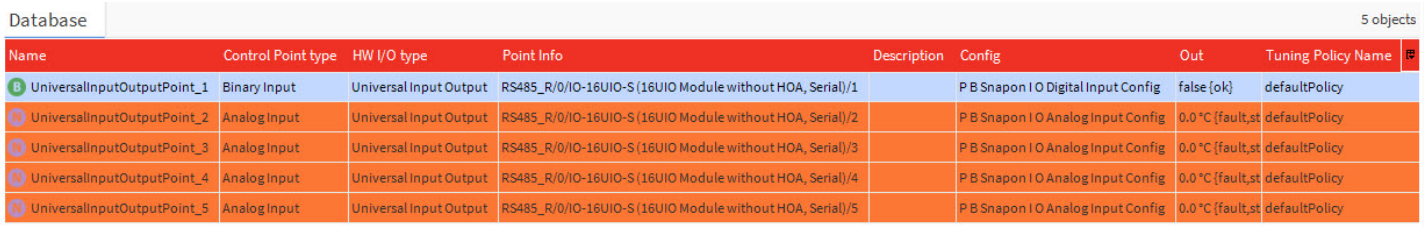


Figure 32. Edit dialog Box

10. To edit Control Point, Select Control Point Type and click **Edit**.

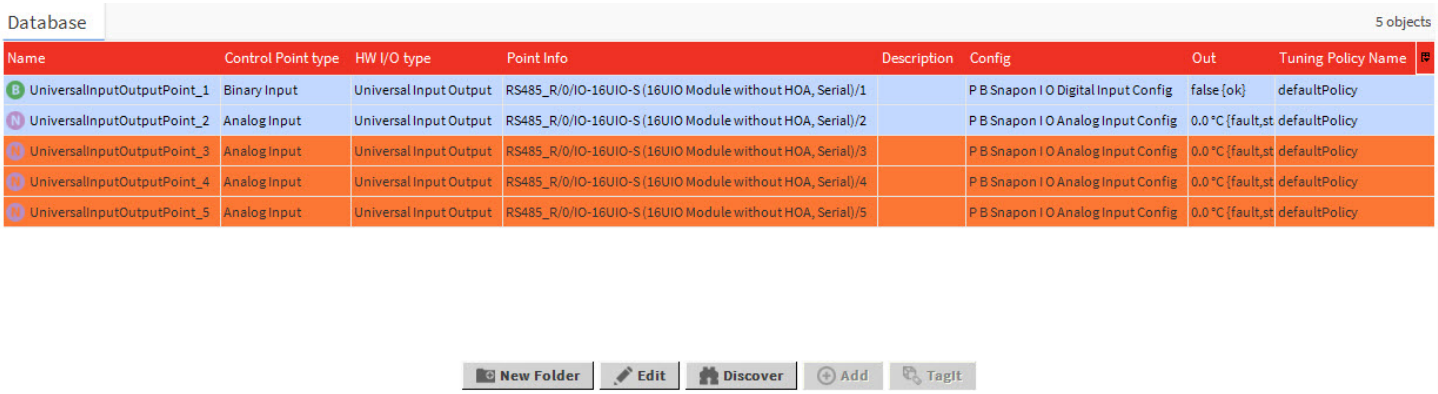


Figure 33. Edit dialog Box

11. Edit dialog box will be displayed. To change a datapoint property, enter the new value in the field.

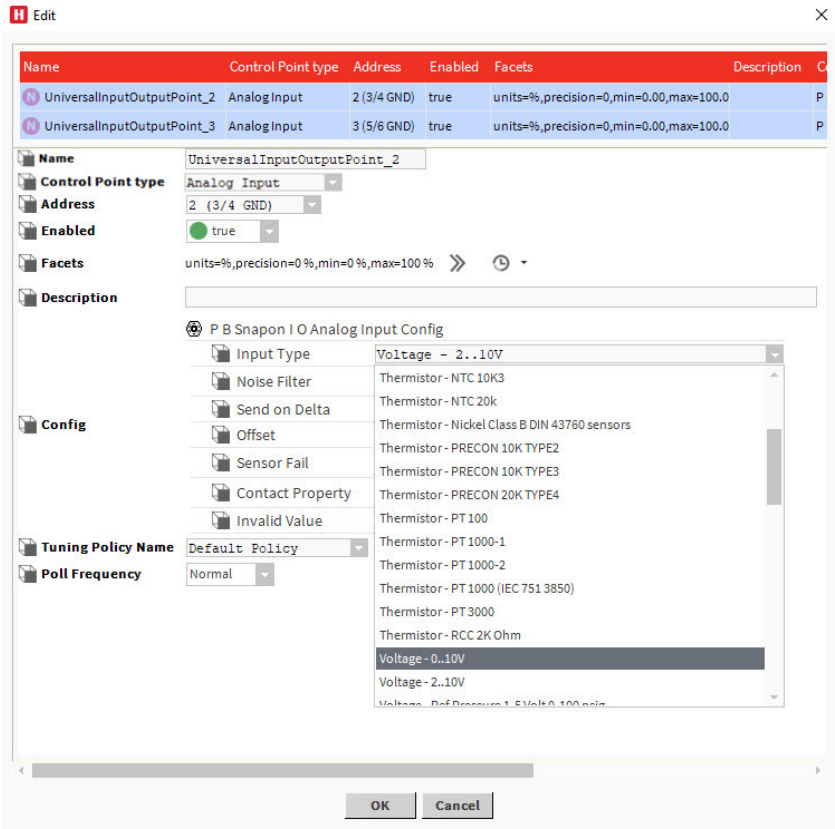


Figure 34. Edit dialog Box

or

Follow alternate step to select the Input type.

Select an option from the drop-down list box. The field indicator is highlighted in red.

NOTE:
Refer to *"Recommended workflow to change the datapoint Config property" on page 24.* for changing properties of datapoints without any error.

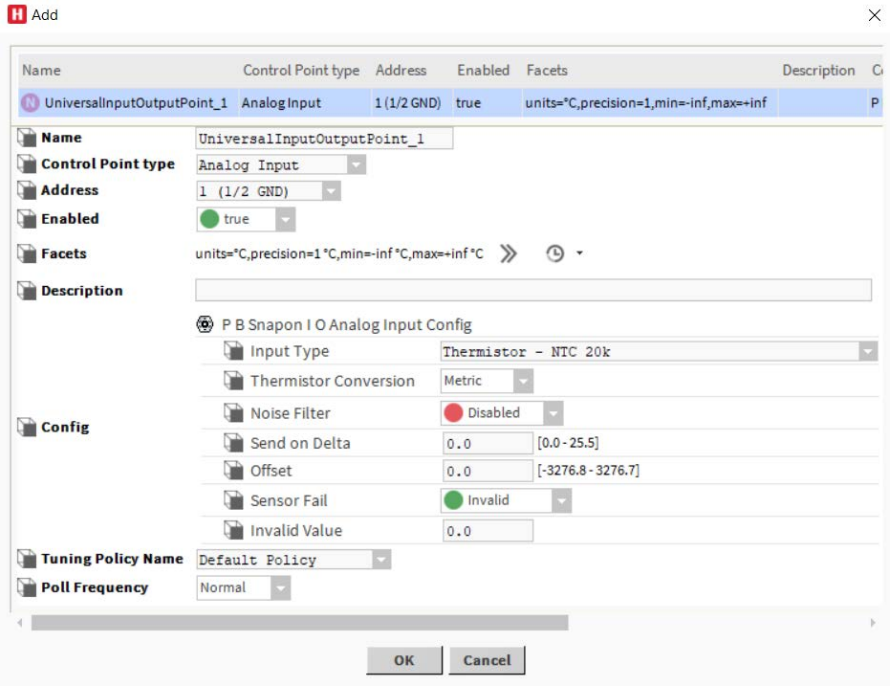


Figure 35. Edit dialog Box

12. To save the settings, click **OK**.
For detailed descriptions of the properties, please refer to the Panel Bus modules product data, 31-00588 (IO_-Modules_Datasheet).

Recommended workflow to change the datapoint Config property

Follow the below workflow to change the properties of datapoints to avoid errors while saving the changes.

1. Select the Input Type in config property.

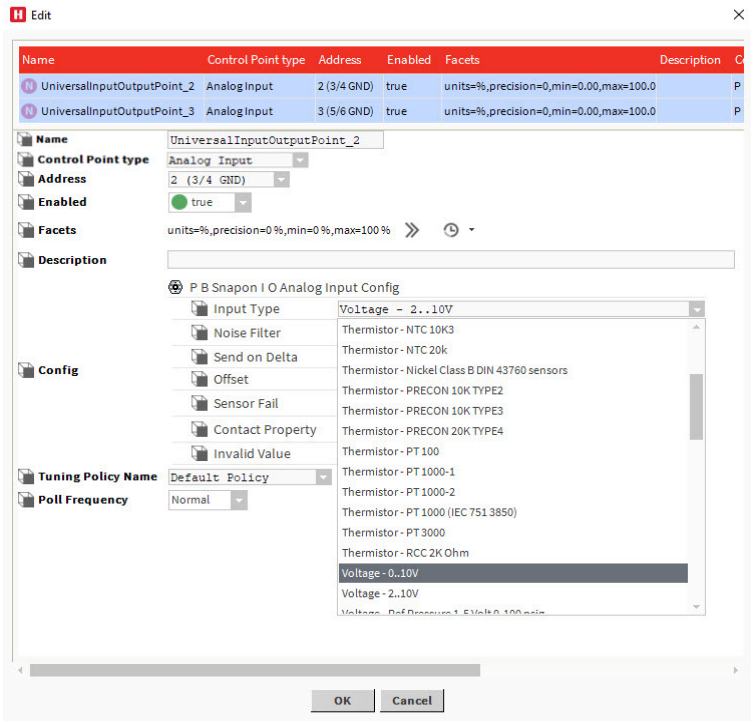


Figure 36. Edit dialog Box

2. Change the properties Send on Delta, Offset, Invalid Value, and click **OK**.

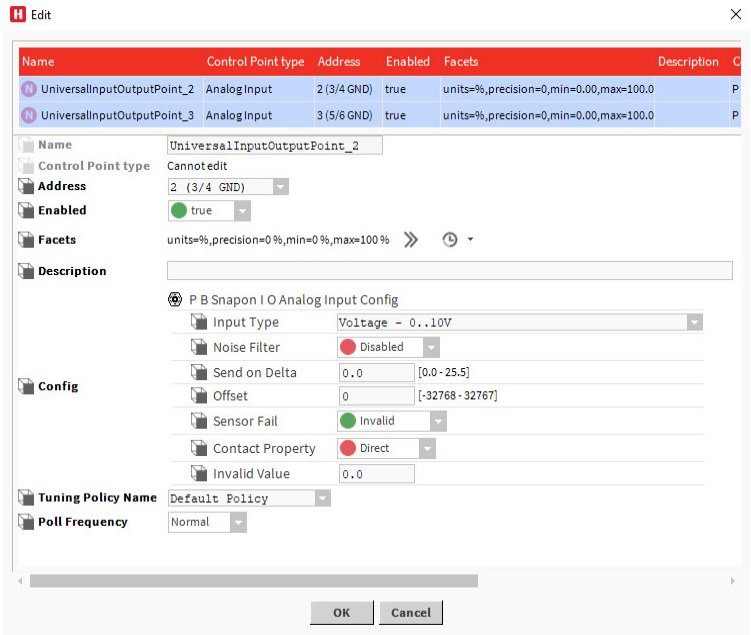
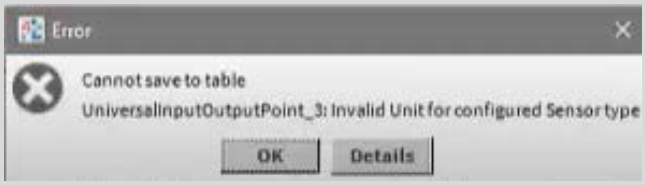


Figure 37. Edit dialog Box

NOTE:

If the config properties like Send on Delta, Offset, and Invalid Value are changed before selecting the Input Type then Input type specific unit will not get updated.
Now if user try to save the Config property, the user will get error message as shown below and user should set the correct unit in the facets specific manually or follow the recommended workflow give above. The below error message will display after clicking OK.



Thermistor Conversion, Noise Filter, and Sensor Fail config properties can be changed before or after selecting the Input Type in the config property.

AI and AO Point Configuration Parameter Descriptions

The following describes important individual configuration parameters points. Individual configuration parameters of the AI point are as follows:

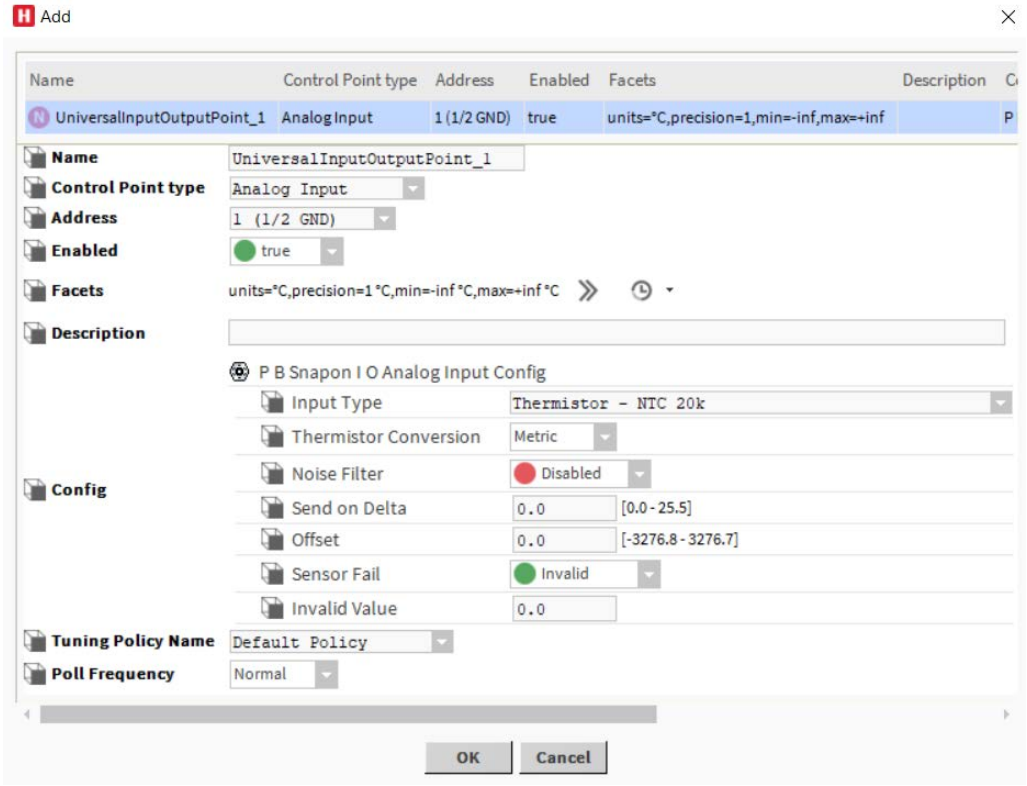


Figure 38. Edit dialog Box

Noise Filter:

If enabled, the analog input is less noisy, that means, the LSB bit toggling of the AD-converter is suppressed.

Disadvantage: slowly changing values are reported with a few seconds delay. However, significant value changes are reported immediately. The noise filter is recommended for temperature sensors and must not be used for pressure control.

⚠ CAUTION

If the Control Point type shows as **cannot edit**. It indicate that the multiple different point types are selected from the database. Select only one or similar point type to configure the Name and Control Point type.

DI and DO Point Configuration Parameter Descriptions

The following describes important individual configuration parameters points. Individual configuration parameters of the DI point are as follows:

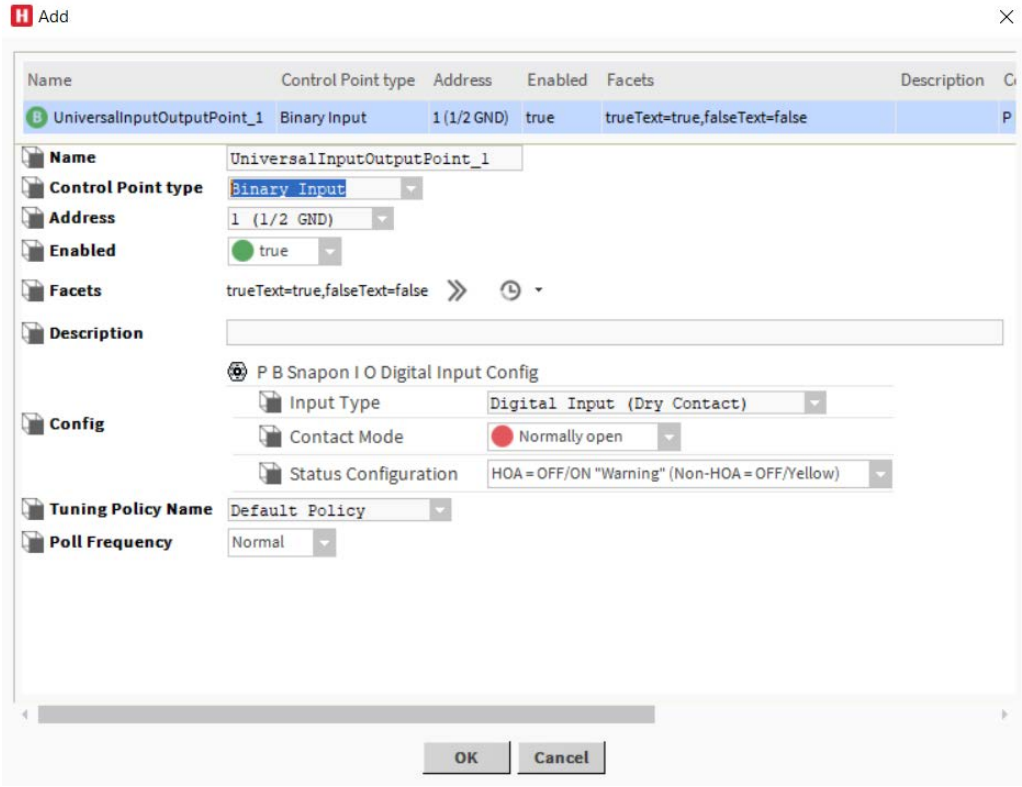


Figure 39. Edit dialog Box

Control Point type configurations

The following describes important individual control point type configuration parameters points. Individual configuration parameters of the point are as follows:

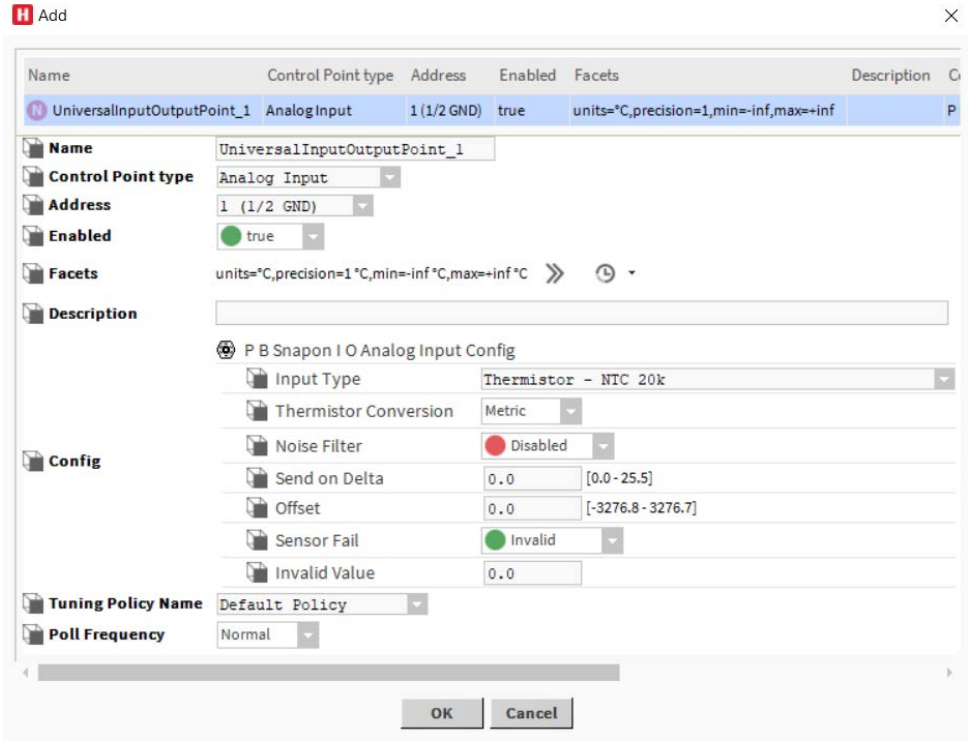


Figure 40. Edit dialog Box

Select Modulating output from the Control Point type. The Individual parameter are as follows:

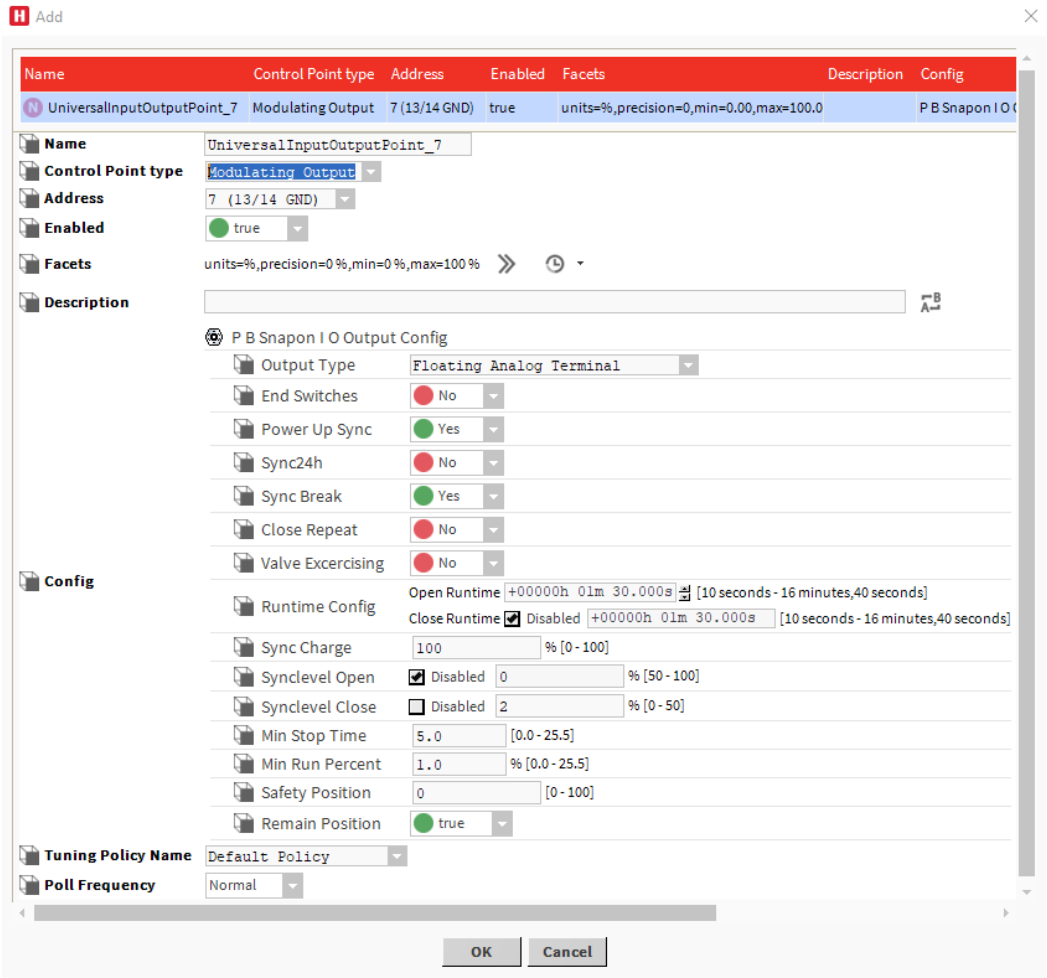


Figure 41. Control Point Parameters

Table 1. Configuration parameters

Parameter Name	Description
Safety Position Note: These parameters can be globally configured in the workbench. Refer to the *"IO Default Configuration" on page 41*.	If set to below drop-down list, The IO module reverts to safety position in case of communication loss between the controller and the IO module. The safety points can also be configured in *"Configuration and use of Enhanced Datapoint Creation Module" on page 41*. **Note:** • The IO module reverts to safety position in case of communication loss between the controller and the IO module. Range: 0-100 %. • Position Remain: The IO module will remain in the same position as it is, in case of communication loss.
End Switches	Should only be set to "yes" if the controlled motor has end switches (and will stop at the end positions). The open or close relays will not be switched off at the end positions.
Power Up Sync	If set to "yes", the motor is synchronized after power-up towards close position (0 %).
Input Type	To configure or select the sensor type, refer to the *"Configuring the IO Input Type parameter" on page 34*.
Sync 24h	If set to "yes", the motor is synchronized every 24h. Time is counted from startup.

Table 1. Configuration parameters

Parameter Name	Description
Sync Break	If set to “yes”, a sync level synchronization is broken off in case the setpoint returns to a value higher than Synclevel Close or lower than Synclevel Open.
	If set to “no”, the synchronization is completed first before the new setpoint is considered.
Close Repeat	If set to “yes” and the setpoint is 0 % (which means close), then the motor will run again after a while for a short time. This is used to compensate a sagging rubber seal.
Valve Exercising	If set to “yes”, the motor is moved once a week to approx. 50 % and back to Close position. This is useful if a valve is not used during whole summer period.
Sync Charge	A percentage level related to the Open/Close runtime which takes place at a synchronization. If e.g. the Close runtime is 100 sec and the Synch Charge is 50 %, then the motor will run additional 50 sec after reaching the closed position.
Synclevel Open	If not disabled, the motor will synchronize towards Open position in case the setpoint is >= the Synclevel Open. After synchronization, the motor remains at 100 %.
Synclevel Close	If not disabled, the motor will synchronize towards Close position in case the setpoint is <= the Synclevel Close. After synchronization, the motor remains at 0 %.
Min Stop Time	If the motor runs towards open or close position and a new setpoint forces a change of the running direction, then the motor will first stop for the Min Stop Time before moving in the opposite direction.
Min Run Time	If the setpoint changes only small amounts, then the motor will at least run with the Min Run Time, even this will overrun setpoint.
Synchronization Behavior of AO module configured as Floating output	To regularly update the real actuator position with the calculated position and ensure that the actuator reaches its end position, a synchronization process si performed by the IO module. During synchronization, the IO module will continue running for the configured runtime once it reaches the calculated end position.

UIO and UI Point Configuration Parameter Descriptions

The following describes important individual configuration parameters of UIO and UI points. Individual configuration parameters of the AI point are as follows:

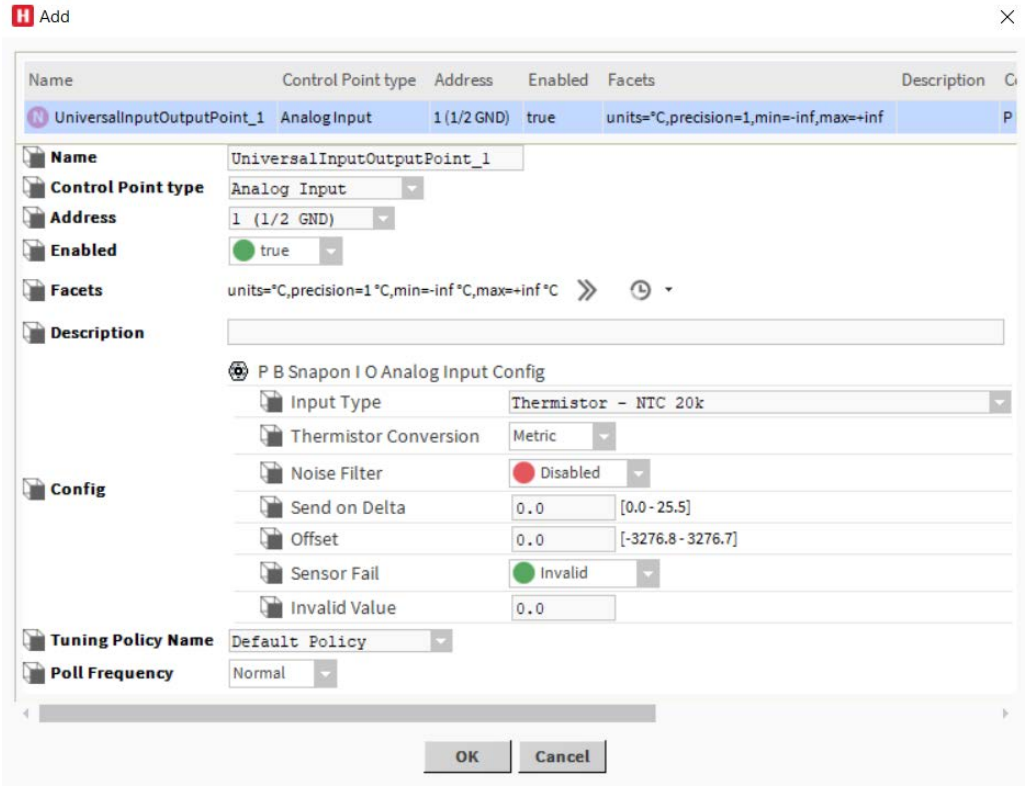


Figure 42. Edit dialog Box

Table 2. Configuration parameters

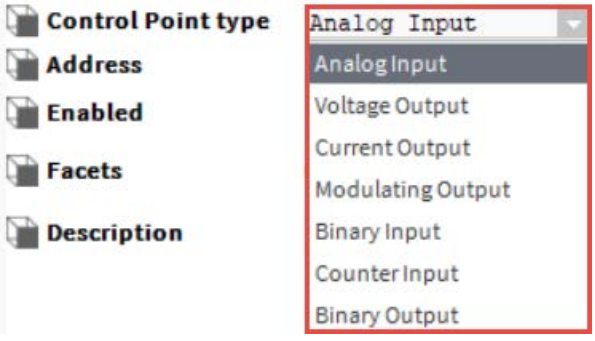
Parameter Name	Description
Name	Name of the IO module.
Control Point type	Choose one of the control point types from the drop-down list as per the requirements. The Config parameters will change based on the selected control point type. 

Table 2. Configuration parameters

Parameter Name	Description
Noise Filter	If enabled, the analog input is less noisy, that means, the LSB bit toggling of the AD-converter is suppressed. Disadvantage: slowly changing values are reported with a few seconds delay. However, significant value changes are reported immediately. The noise filter is recommended for temperature sensors and must not be used for pressure control.

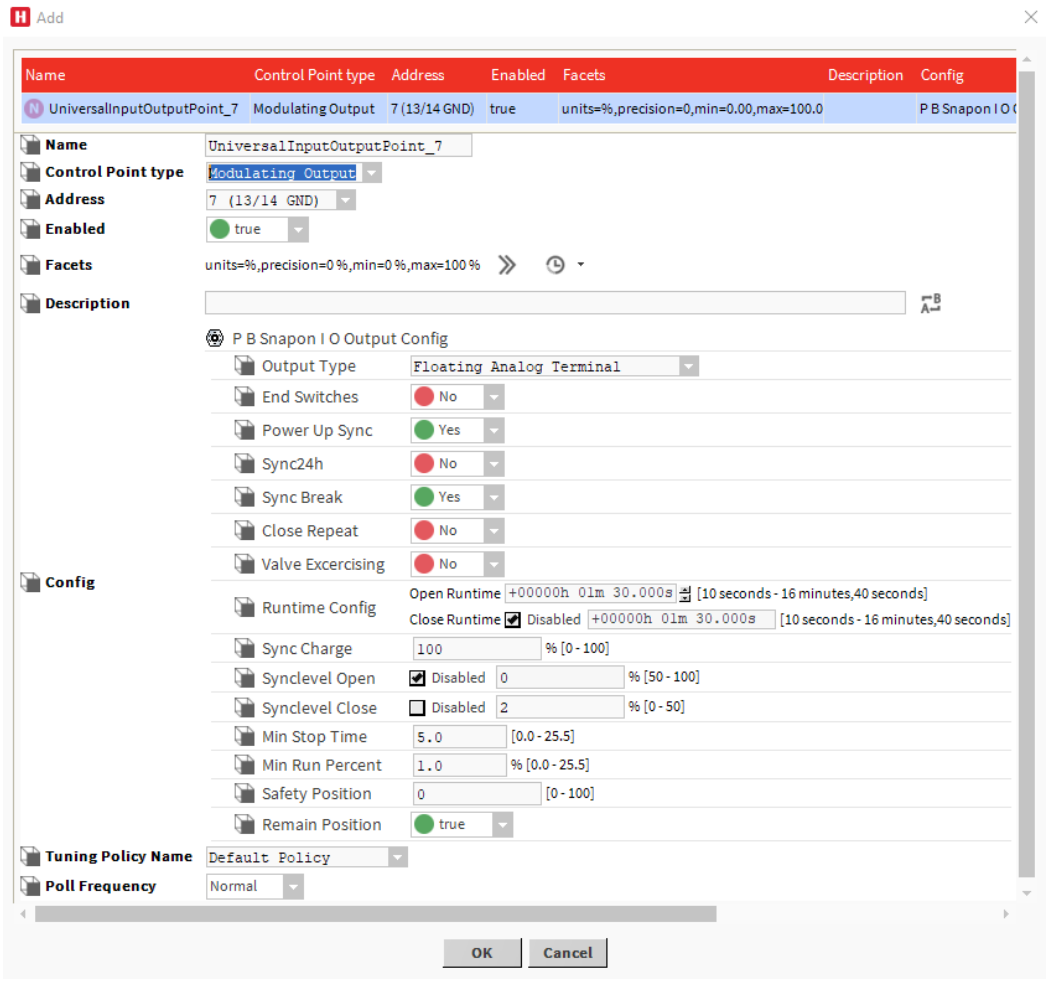


Figure 43. Control Point Parameters

Select Modulating output from the Control Point type. The Individual parameter are as follows:

Table 3. Configuration parameters

Parameter Name	Description
Safety Position	The IO module reverts to safety position in case of communication loss between the controller and the IO module. Range: 0-100 %
Remain Position	The IO module will remain in the same position as it is, in case of communication loss. Set “true” to remain in same position or Set “False” to go back to set safety position.

Table 3. Configuration parameters

Parameter Name	Description
End Switches	Should only be set to “yes” if the controlled motor has end switches (and will stop at the end positions). The open or close relays will not be switched off at the end positions.
Power Up Sync	If set to “yes”, the motor is synchronized after power-up towards close position (0 %).
Input Type	To configure or select the sensor type, refer to the *“Configuring the IO Input Type parameter” on page 34*.
Sync 24h	If set to “yes”, the motor is synchronized every 24h. Time is counted from startup.
Sync Break	If set to “yes”, a sync level synchronization is broken off in case the setpoint returns to a value higher than Synclevel Close or lower than Synclevel Open.
	If set to “no”, the synchronization is completed first before the new setpoint is considered.
Close Repeat	If set to “yes” and the setpoint is 0 % (which means close), then the motor will run again after a while for a short time. This is used to compensate a sagging rubber seal.
Valve Exercising	If set to “yes”, the motor is moved once a week to approx. 50 % and back to Close position. This is useful if a valve is not used during whole summer period.
Sync Charge	A percentage level related to the Open/Close runtime which takes place at a synchronization. If e.g. the Close runtime is 100 sec and the Synch Charge is 50 %, then the motor will run additional 50 sec after reaching the closed position.
Synclevel Open	If not disabled, the motor will synchronize towards Open position in case the setpoint is >= the Synclevel Open. After synchronization, the motor remains at 100 %.
Synclevel Close	If not disabled, the motor will synchronize towards Close position in case the setpoint is <= the Synclevel Close. After synchronization, the motor remains at 0 %.
Min Stop Time	If the motor runs towards open or close position and a new setpoint forces a change of the running direction, then the motor will first stop for the Min Stop Time before moving in the opposite direction.
Min Run Time	If the setpoint changes only small amounts, then the motor will at least run with the Min Run Time, even this will overrun setpoint.
Synchronization Behavior of UIO module configured as Floating output	To regularly update the real actuator position with the calculated position and ensure that the actuator reaches its end position, a synchronization process si performed by the UIO IO module. During synchronization, the UIO IO module will continue running for the configured runtime once it reaches the calculated end position.

Configuring the IO Input Type parameter

Select the Input type from the IO module device configuration. The alarm will trigger as per the standard alarm configuration. It is a user defined configuration values in the workbench depending on the user actual case. For more information on the IO Module Characteristics, refer to the document - 31-00589 (IO-Modules Installation Instructions).

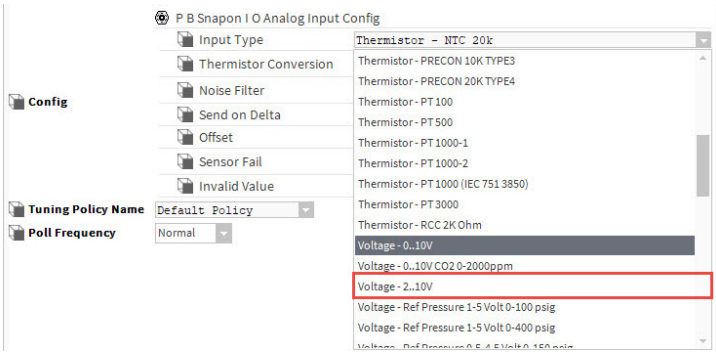


Figure 44. Edit dialog Box

For **Thermistor** Sensor characteristics range are standard and does not have any offsets. For Thermistor Sensor characteristics refer to the document - 31-00589 (IO-Modules Installation Instructions).

⚠ CAUTION

The selected Input Type limits may have some offsets values, refer to the below example for more information. These offset values are applicable only for Voltage Sensor and Current Sensor.

Example: If the UIO or UI Input type is set to Voltage - **2..10 V**.
The fault alarm goes off at voltage **1.5 V** which is before the voltage sensor characteristic low limit.
This **1.5 V** indicates the offset of sensor characteristic limit. To check the voltage and current sensor offset values, refer to the below Voltage Sensor and Current Sensor tables.

FOR VOLTAGE SENSOR

Table 4. Voltage Sensors limits

Characteristic	Sensor ID	Low Limit	High Limit	Out Range Alarm
0..10 V	1		10 V	Open loop
2..10 V	2	1.5 V	10 V	Open loop
Ref Pressure 1-5 Volt_0-100 psig	32	0.5 V	6 V	Open loop
Ref Pressure 1-5 Volt_0-400 psig	33	0.5 V	6 V	Open loop
Ref Pressure 1-5 Volt_0-400 psig	34	0.2 V	6 V	Open loop
Ref Pressure 0.5-4.5 Volt_0-300 psig	35	0.2 V	6 V	Open loop
Ref Pressure 0.5-4.5 Volt_0-500 psig	36	0.2 V	6 V	Open loop
0-10 V MLH Pressure 2.5 in. WC	57		10 V	Open loop
0-10 V MLH Pressure 0.25 in. WC	58		10 V	Open loop
0-10 V CO2 0-2000 ppm	59		10 V	Open loop

FOR CURRENT SENSOR

Table 5. Current Sensors limits

Characteristic	Sensor ID	Low Limit	High Limit	Out Range Alarm
0-10 mA	23		12 mA	Open loop
4-20 mA	24	2 mA	24 mA	Open loop
0-20 mA	25		24 mA	Open loop
4-10 mA	26	2 mA	12 mA	Open loop
ALS300_19.25-4.25 mA_0-300 fc	37	2 mA	24 mA	Open loop
ALS1.5K_19.25-4.25 mA_0-1500 fc	38	2 mA	24 mA	Open loop
LLO_4-20 mA_0-1000 lux	3E	2 mA	24 mA	Open loop
LLO_4-20 mA_0-2000 lux	3F	2 mA	24 mA	Open loop
LLO_4-20 mA_0-4000 lux	40	2 mA	24 mA	Open loop
LLO_4-20 mA_0-8000 lux	41	2 mA	24 mA	Open loop
LLO_4-20 mA_0-20000 lux	42	2 mA	24 mA	Open loop
LLS_4-20 mA_0-1000 lux	43	2 mA	24 mA	Open loop
LLS_4-20 mA_0-2000 lux	44	2 mA	24 mA	Open loop
LLS_4-20 mA_0-4000 lux	45	2 mA	24 mA	Open loop
LLS_4-20 mA_0-8000 lux	46	2 mA	24 mA	Open loop
LLS_4-20 mA_0-20000 lux	47	2 mA	24 mA	Open loop
4-20 mA MLH Pressure Sensors 0-50 psig	50	2 mA	24 mA	Open loop
4-20 mA MLH Pressure Sensors 0-150 psig	51	2 mA	24 mA	Open loop
4-20 mA MLH Pressure Sensors 0-300 psig	52	2 mA	24 mA	Open loop
4-20 mA MLH Pressure Sensors 0-500 psig	53	2 mA	24 mA	Open loop
4-20 mA MLH Pressure Sensors 0-1000 psig	54	2 mA	24 mA	Open loop

NOTE:

For custom characteristic input types that are set to “Reverse,” manual overrides do not function correctly. The manual override value will always go to 100 %. If you need to use custom characteristics and perform manual overrides, avoid using reverse characteristics.

SETTING DATAPOINT

Setting Datapoint into Manual Mode (Manual Override)

Sets the datapoint into Manual operating mode and overwrites the present value with a defined value entered manually.

This function is specific for Panel Bus input points. Niagara input points cannot be overridden. This feature allows, for example, overriding an input point in case of sensor failure. The function does not write to any priority array.

1. In the Database pane, right-click the datapoint, click **Actions** and then click **Override** in the context menu.

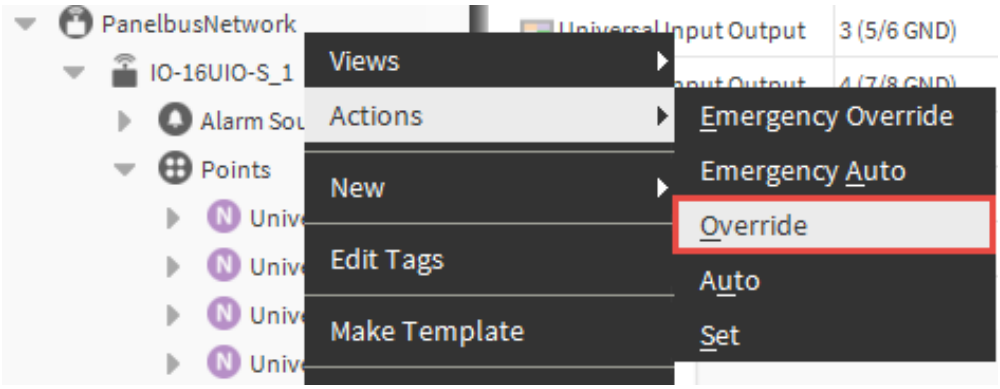


Figure 45. Points Options

2. The Override dialog box displays.
   Modulating Output control point override is shown as an example.

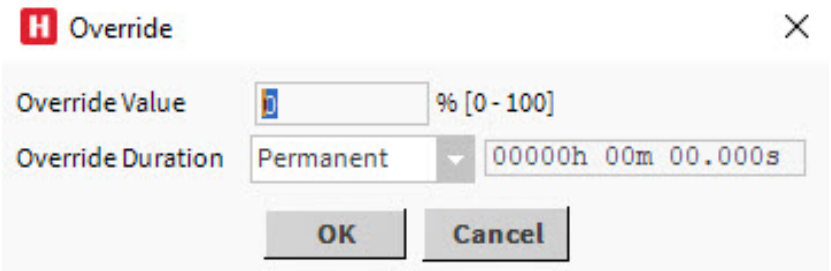


Figure 46. Override dialog Box

NOTE:
The Override dialog box will change based on the Control point type selection and Input type parameter selection.

3. Enter the value in Override Value and select the Override Duration from drop down list.

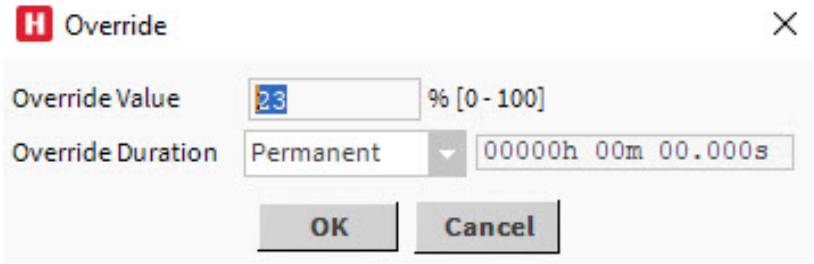


Figure 47. Override dialog Box

4. Click **OK**.
   On the Database pane, the changed value is updated in the Out column:

Figure 48. Database Pane

Setting Datapoint from Override Mode into Auto Mode

Sets a datapoint that is in override (manual) mode into Automatic mode.

1. In the Database pane, right-click the datapoint, click **Actions** and then click **Auto** in the context menu.

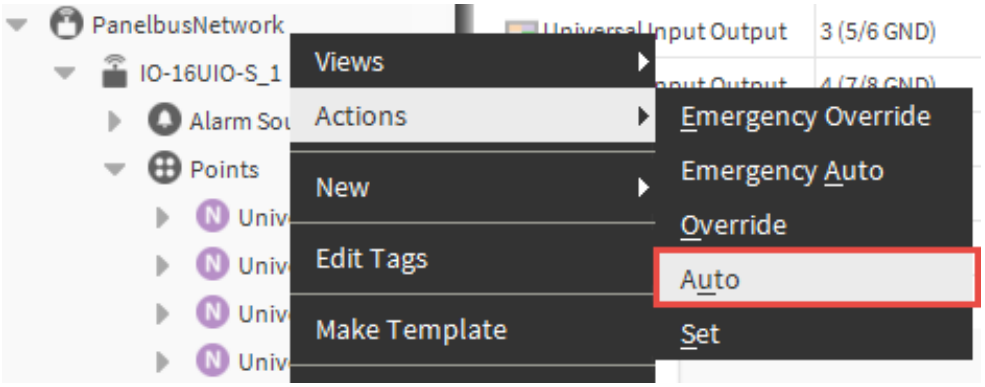


Figure 49. Points Options

2. On the Database pane, the changed value is updated in the Out column:

Figure 50. Database Pane

NOTE:
During Auto override the Out value will change to Set value.
To see/set the Set value:
In the Database pane, right-click the datapoint, click **Actions** and then click **Set** in the context menu.

IO MODULE HOA OVERRIDE

The Hand/Off/Auto (HOA) modules make it possible to override the plant directly via the display on the IO module when the controller/strategy is not achieving the required results. The modules can also be used to override the plant to test if it is working correctly.

"Auto" and "Hand" indicate the overwritten data point on the IO device. Thus, the point which is manually overwritten on the device can be recognized in the software.

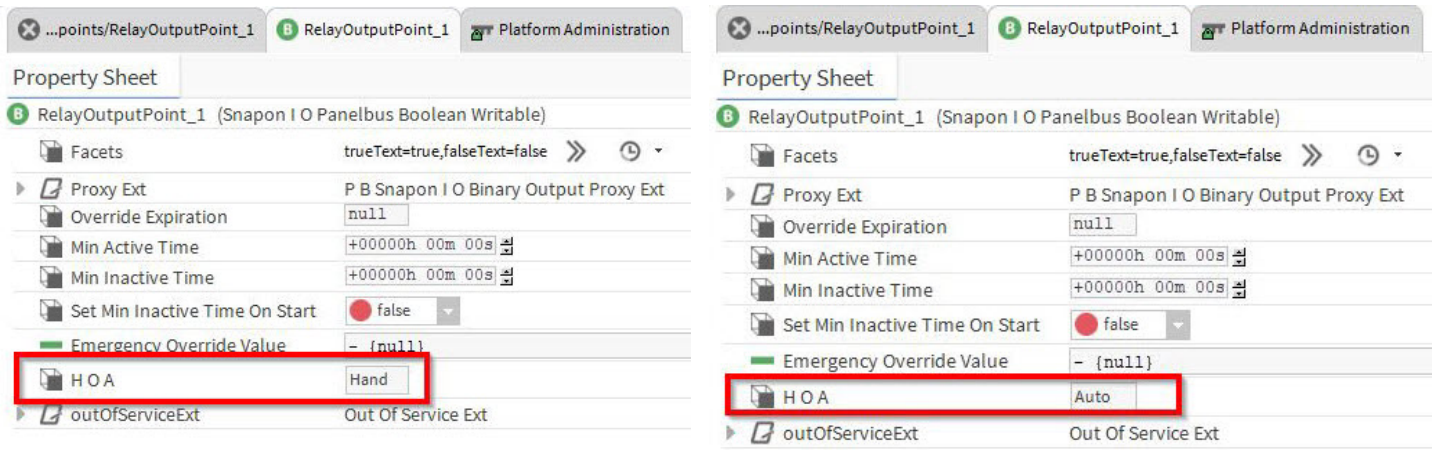


Figure 51. Point Property Sheet

The Emergency Override Value parameter shows the value to be expected if an auto switch resets the manual override on the IO module.

⚠ CAUTION

If both a manual override via the HOA display and an Emergency Override exists in software, they both write to priority 1, however the HOA override take precedence. One the HOA override is removed then the emergency override will take effect.

The Panel Bus Data points can be overridden with the Niagara workbench or manual override display (HOA) at the IO module.

- **From IO Module:** The IO Module has a Rotary dial for Hand mode and Auto button for Auto mode.
- **From Software:** The user can Emergency override value by navigating to device point, **Right click** on **Point**, Select **Action** > refer below figure for emergency options.

Figure 52. Point Options

Override from Software

The User can override the device points from the software (Niagara). There are three options: Active, Inactive and Auto.

HOA over Emergency override action

The Rotary dial can be used to overwrite an output data point on the IO module.

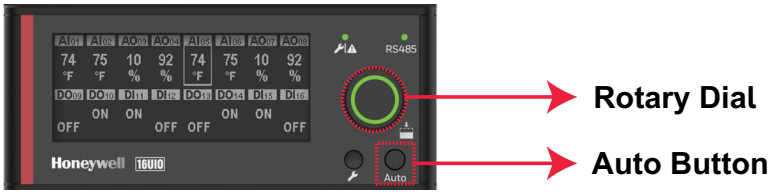


Figure 53. IO Module

If this HOA function is activated, it influences the In1 slot of the respective data point. The In1 sets the output of the data point to the specified manual value.

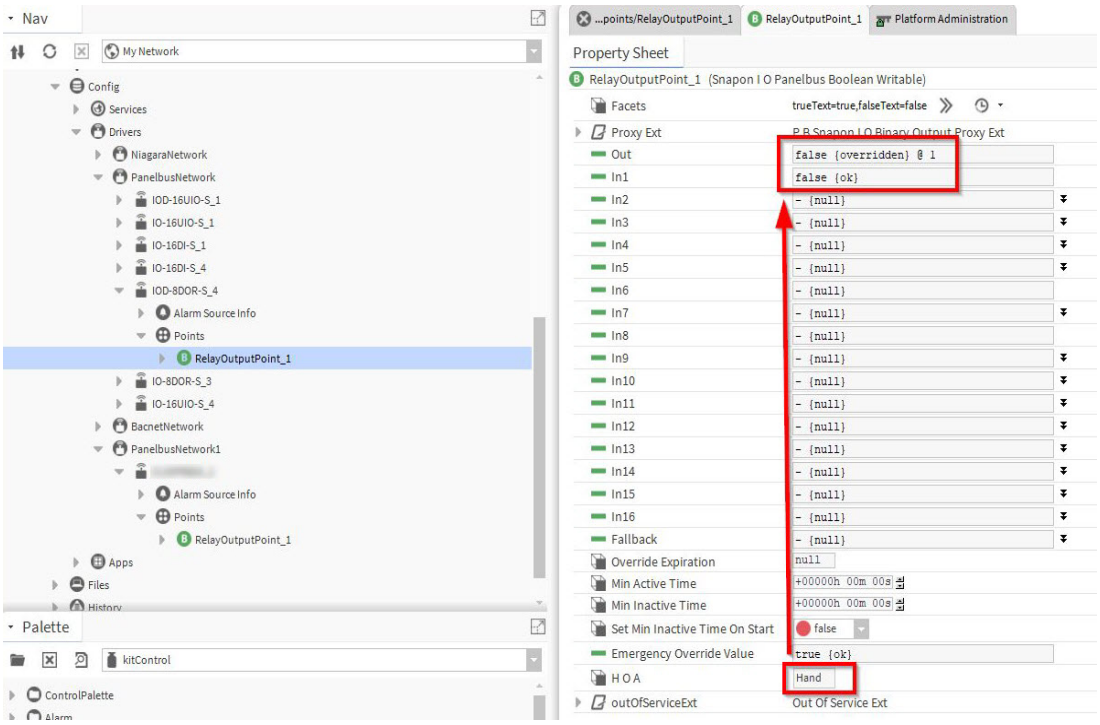


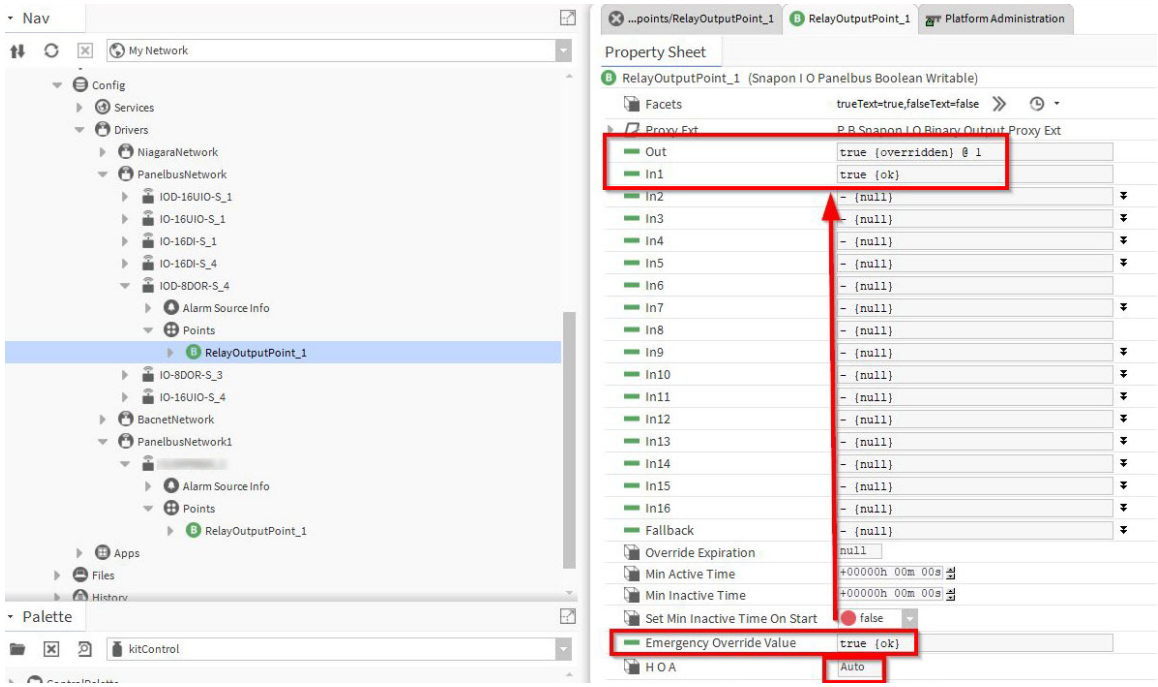
Figure 54. Point Property sheet

At the same time, the slot "HOA" of the datapoint is set to manual. This happens so that a user can recognize in the software that the manual mode was activated at the IO module.

The **In1** slot can also be overwritten by the emergency actions in the software. If both functions, HOA at the IO module and Emergency Active or Emergency Inactive or Emergency Auto are activated at the same time, the **In1** slot will take over the value from the HOA of the IO module. The background is the HOA at the IO module has the higher priority.

Figure 55. Point Options

For safety reasons, when using the HOA at the IO module and the Emergency Active or Emergency Inactive or Emergency Auto at the same time, it can be recognized in the parameter “Emergency Override Value,” which states the Emergency Active or Emergency Inactive or Emergency Auto will output as soon as the HOA at the IO module is reset.



NOTE:

The “Auto” reset on a IO module only resets the HOA specification carried out on the IO module. If a value was written to **In1** via the Emergency Action, this value remains unchanged by activating the Auto button on the IO module.

CONFIGURATION AND USE OF ENHANCED DATAPOINT CREATION MODULE

The following sections describe the configuration and use of the enhanced data point creation module. It can be used in offline and online mode.

It is recommended to do the engineering using Niagara workbench in offline mode. This means that the station is running on the PC.

Then in online mode, the station should be copied to the Advanced controller using the Commissioning Wizard. When following this procedure, the necessary files are copied automatically to the Advanced controller.

The enhanced data point creation module provides the following functions:

- IO creation configuration
- Datapoint creation via context menu in the Nav tree
- Datapoint creation via Drag&Drop of datapoints from palette or Nav tree.
- Copy Datapoints

IO Default Configuration

1. In the menu, click Tools and then click IO Default Configuration Tool.

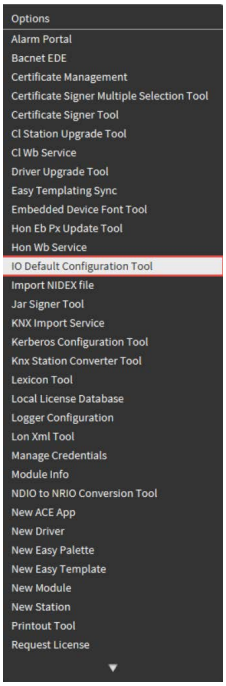


Figure 56. Tools menu

2. The IO Default Configuration dialog box displays.
   Specify the Snapon IO default settings for Points Config and LED/HOA Display Config by selecting desired options from the drop-down lists, and then click **OK**.

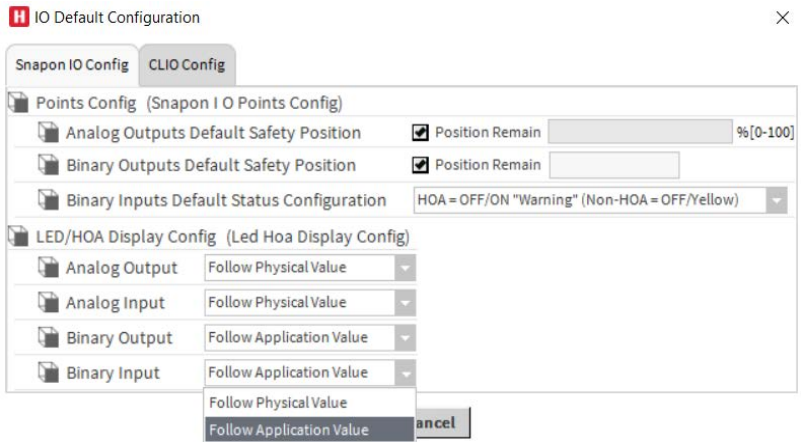


Figure 57. IO Default Configuration dialog Box

or
Click on **CLIO Config** (Legacy IO) Tab.
Specify the default settings for analog outputs and binary inputs and outputs by selecting desired options from the drop-down lists, and then click **OK**.

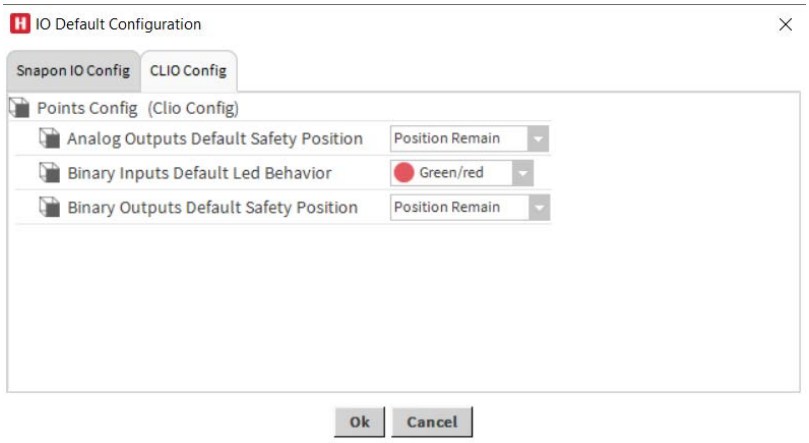


Figure 58. IO Default Configuration dialog Box

NOTE:
Once the default IO configuration is set, adding a new IO module device to the PanelbusNetwork will apply these configurations.

Create Datapoint via Context Menu

Datapoints can be created in:

- Individual folders
- the points folder
- points objects

1. Create an individual folder, e.g. for your control logic (Right click on Driver > select new > select Folder option > Type desired name and click OK).

2. Right-click on the individual folder, e.g. **CtrlLogic**, and then click in the **Views** menu.
Or click on the points folder or points object.

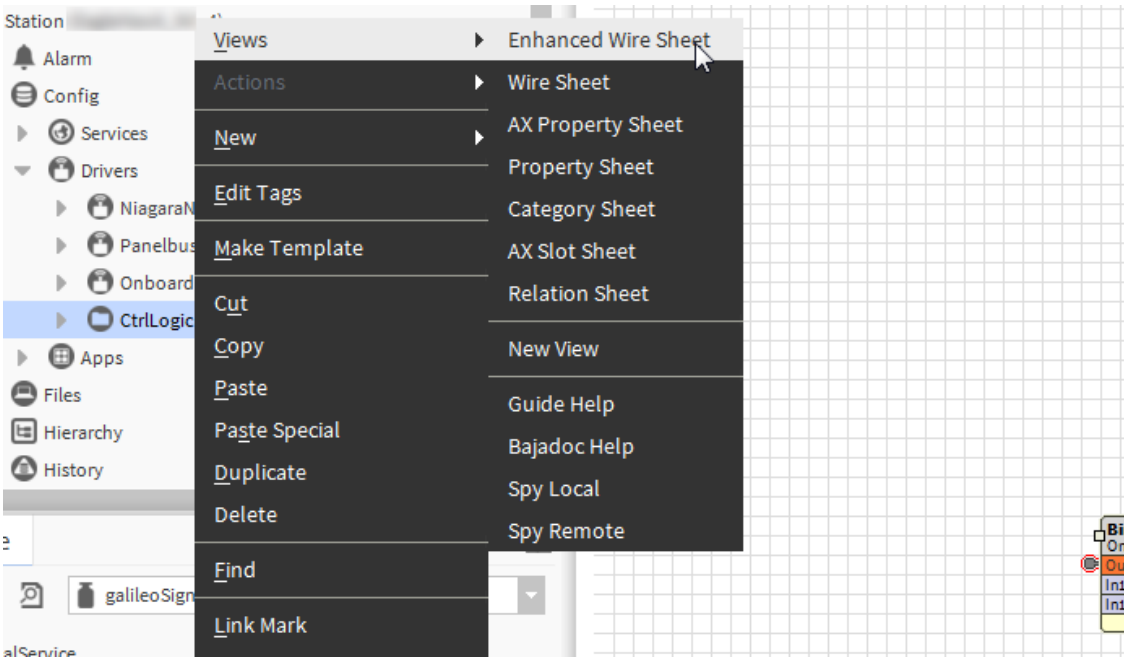


Figure 59. CtrlLogic Options view

3. Right-click in the Enhanced Wire Sheet view, then click the network driver (Panel Bus 1 or Panel Bus 2), and then click the datapoint type (Binary output, Analog output, Binary Input, or Universal Input, Relay output, Digital Input, Analog Input or Floating Output for Panel Bus driver).

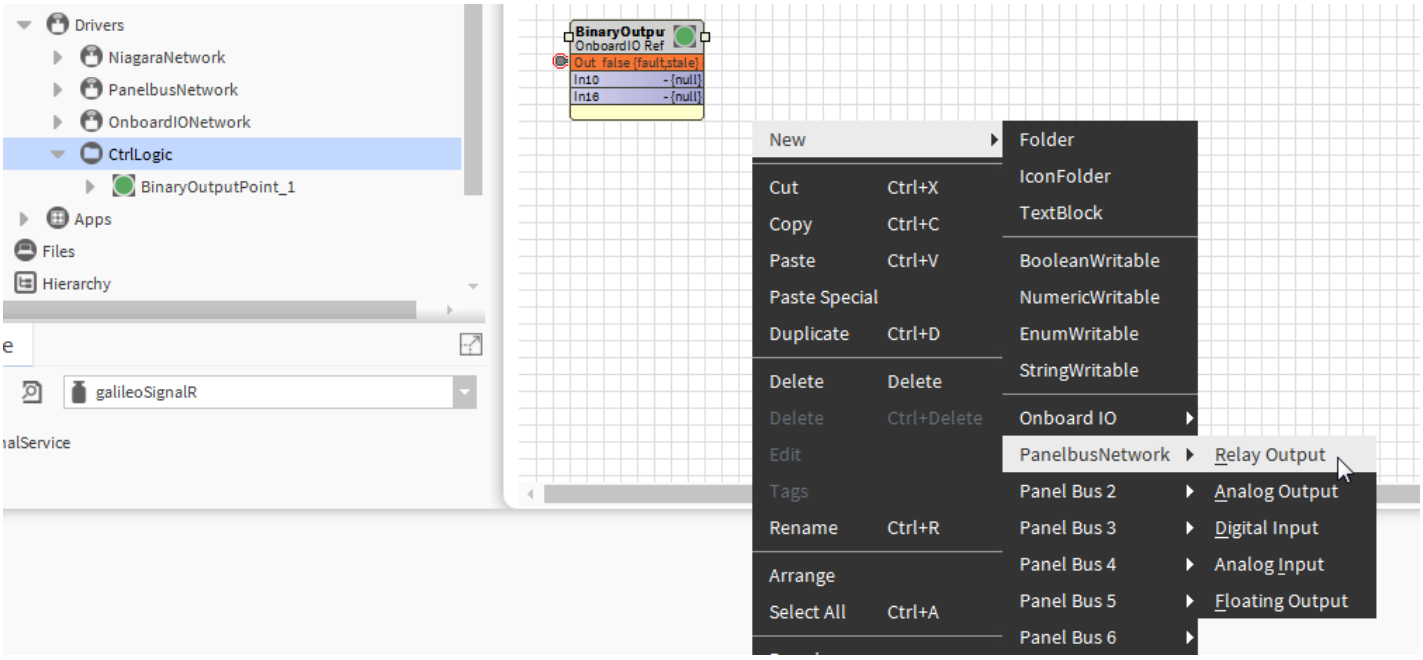


Figure 60. Wire Sheet view

4. The **Add** dialog box of the Panel Bus driver displays.
If desired, modify the point properties before the point will be created, and then click **OK**.

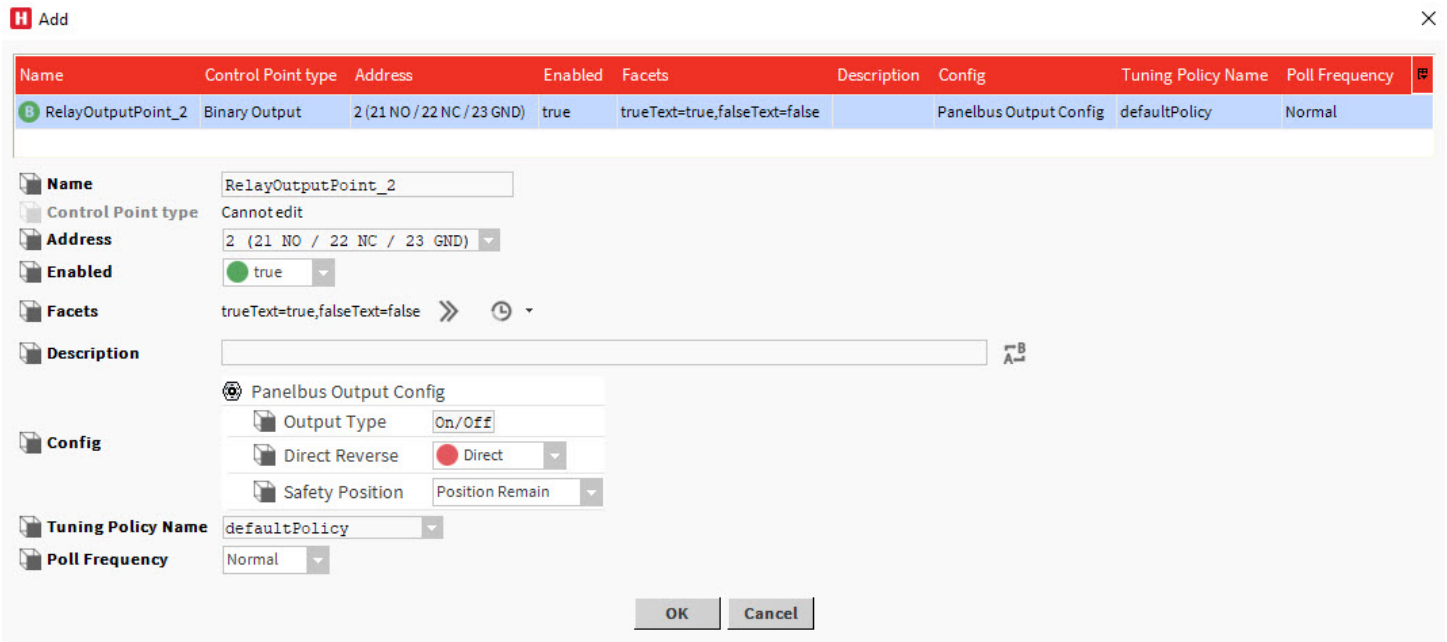


Figure 61. Add dialog Box

5. By default, the created datapoint will be assigned to the next bus specific device (Panel Bus) with a free suitable terminal according to the datapoint type. If there is no appropriate device available, a new device will be created.

   If in the Nav tree, an object is selected other than a points folder or a points object, in addition to the creation of the native datapoint, a reference datapoint will be created. A reference datapoint is indicated by ´Ref` in the point icon.

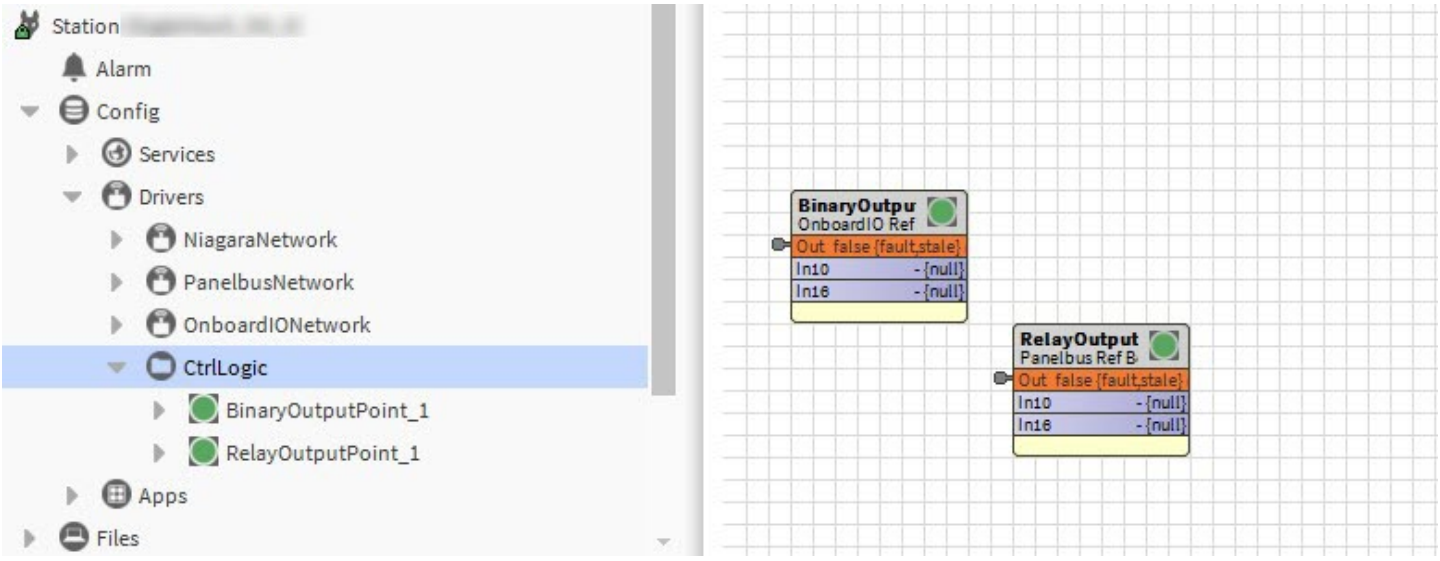


Figure 62. Wire Sheet view

As native datapoints, reference datapoints provide the same actions via right-clickable context menu.

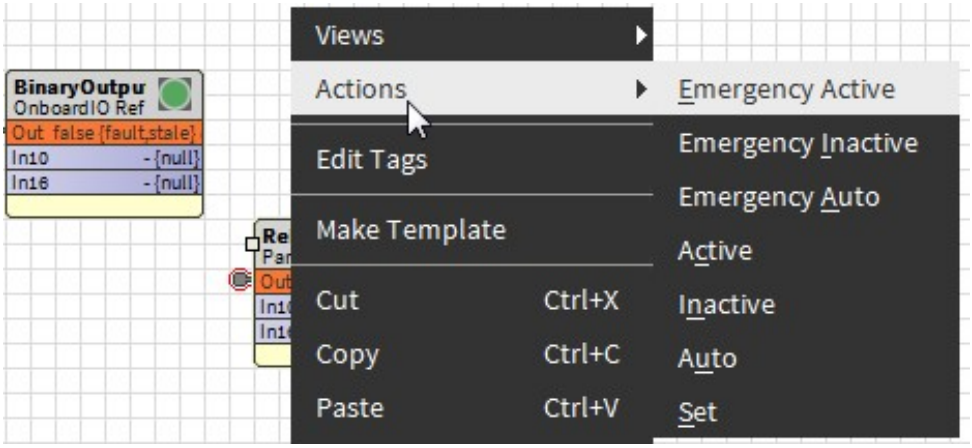


Figure 63. Wire Sheet Options

Reference datapoints and native datapoints can be deleted. When deleting a reference point on the enhance wire sheet, you will be asked if you want to delete the native point too.

The below figure shows datapoints created when the Points object was selected. In this case, no reference datapoints (as shown in the figure above) have been created.

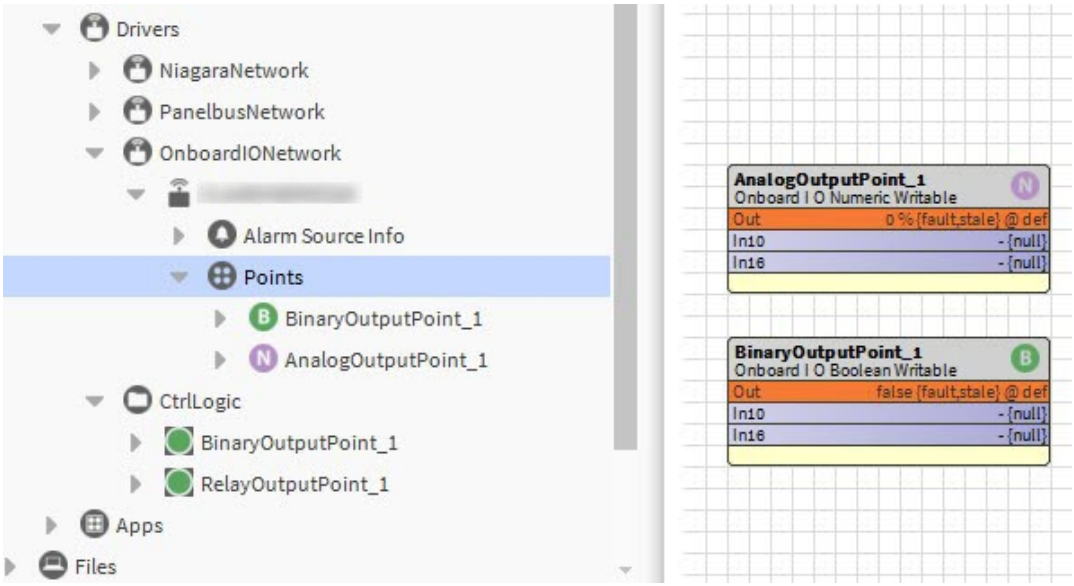


Figure 64. Wire Sheet view

NOTE:

Creating datapoints directly in controller will take much longer than creating datapoints in a station running on a PC. Best practice is to do the datapoint engineering offline (running the station on a PC) before copying station to the controller.

Drag & Drop Datapoint from Palette or Nav Tree

Datapoints can be created in:

- Individual folders
- The points folder
- Points objects

On the palettes of each supported driver, you will find the **EnhancedWireSheetPoints** folder including the datapoint types.

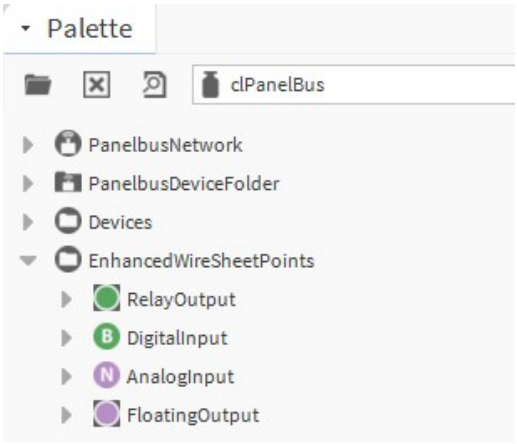


Figure 65. Palette

1. Drag&Drop the desired point type onto the Enhanced Wire Sheet.
   The **Add** dialog box of the Panel Bus Driver displays.

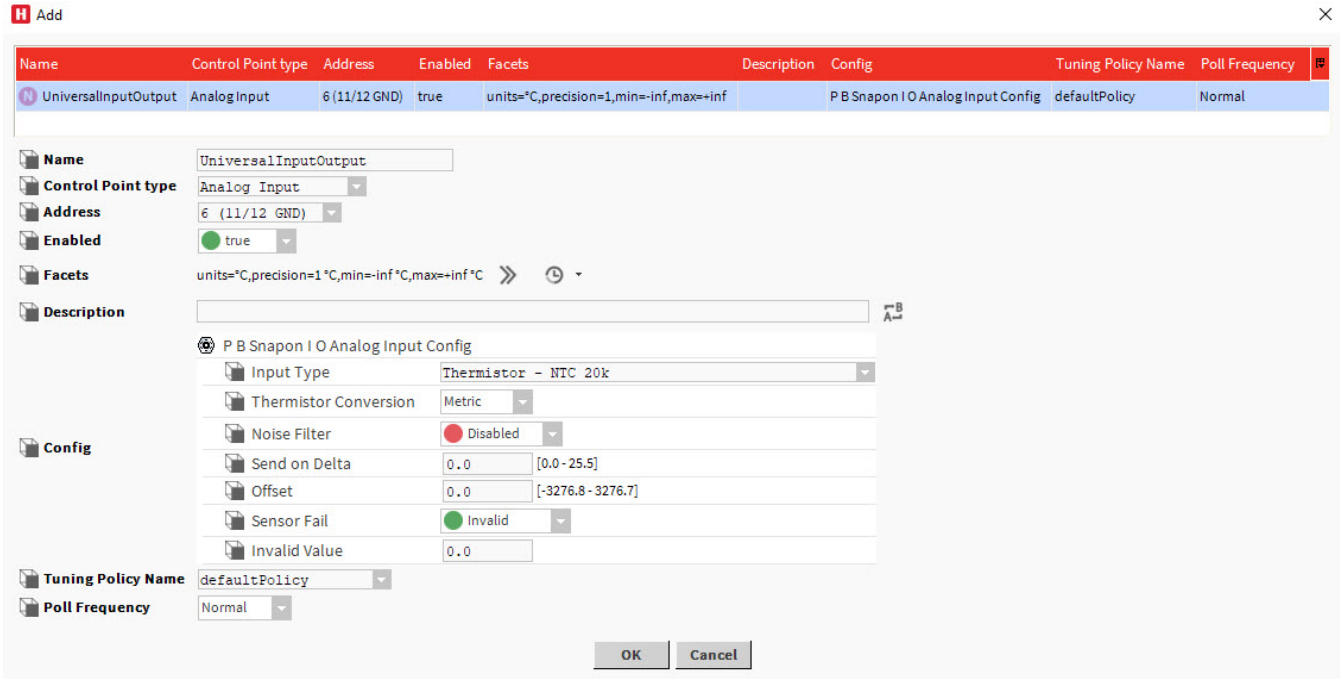


Figure 66. Add dialog Box

2. If desired, modify the datapoint properties before the datapoint will be created, and then click **OK**.

   By default, the created datapoint will be assigned to the next specific device (Panel Bus) with a free suitable terminal according to the datapoint type. If there is no appropriate device available, a new device will be created.

   For a Panel Bus datapoint, the Panel Bus network can be selected if two Panel Bus networks exist.

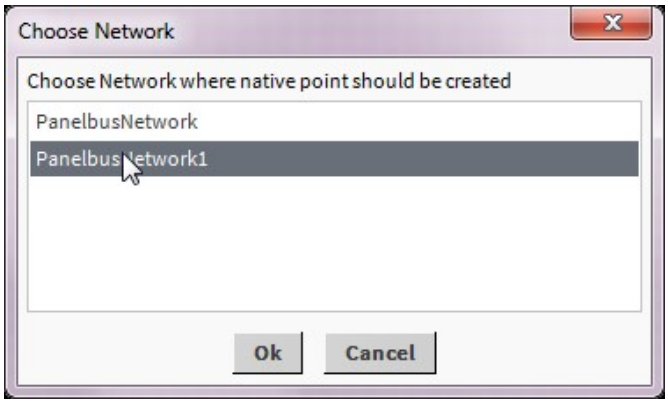


Figure 67. Choose Network dialog Box

3. If desired, modify the datapoint properties before the datapoint is created and click **OK**.

   As native datapoints, reference datapoints provide the same actions via the right-clickable context menu.

   Reference datapoints and native datapoints can be deleted. When deleting a reference point on the enhanced wire sheet, you will be asked if you want to delete the native point, too.

   The below figure shows datapoints created when the Points object was selected. In this case, no reference datapoints have been created.

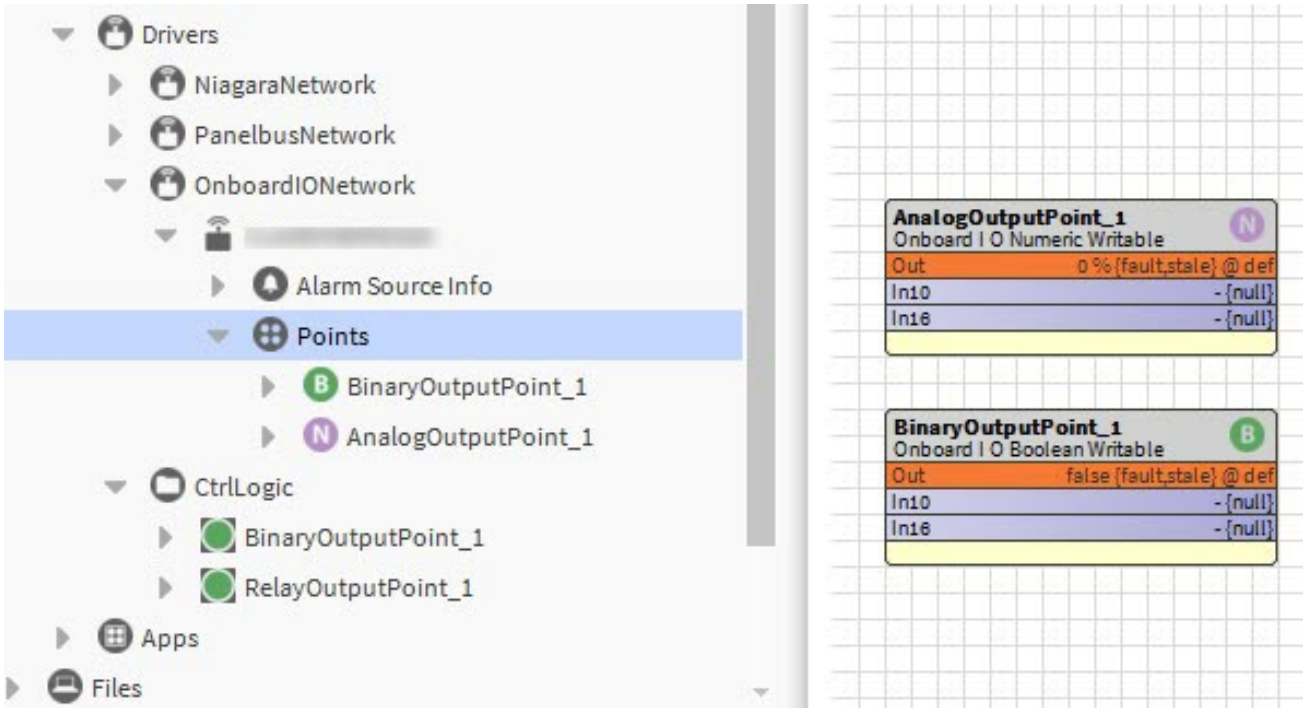


Figure 68. Enhanced Wire Sheet view

Copy Datapoints

The Enhanced Wire Sheet provides all the features of the standard Wire Sheet as well.

Example: You can copy native datapoints and reference datapoints by using Copy and Paste/Paste Special. Using Paste Special it is possible to create multiple copies. When copying a reference datapoint, the linked native datapoint will be copied too.

1. In the Enhanced Wire Sheet, select the datapoints you want to copy.

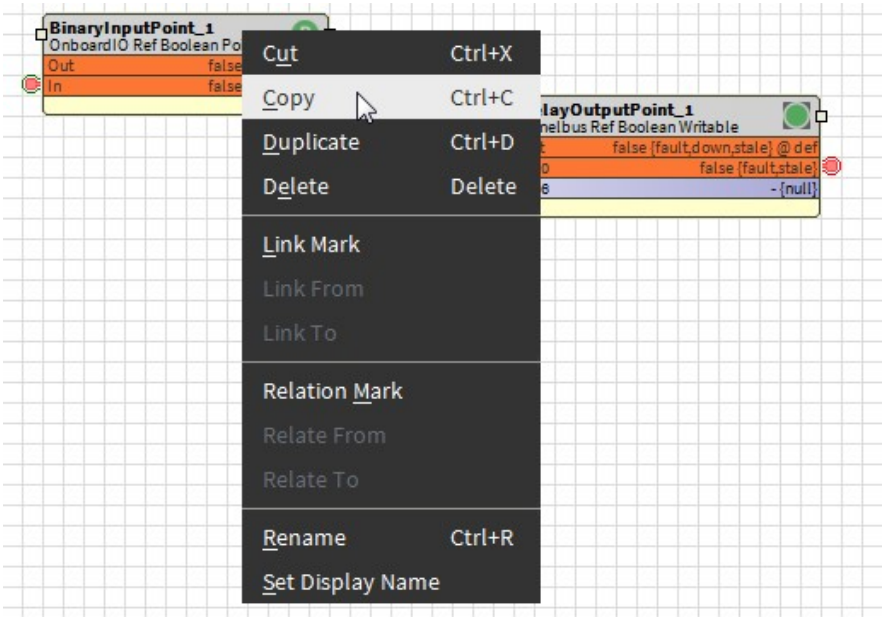


Figure 69. Enhanced Wire Sheet View

2. Right-click in the Enhanced Wire Sheet, and then select **Copy** in the context menu.
3. Right-click in the Enhanced Wire Sheet, and then select **Paste Special** in the context menu. The **Paste Special** dialog box displays.

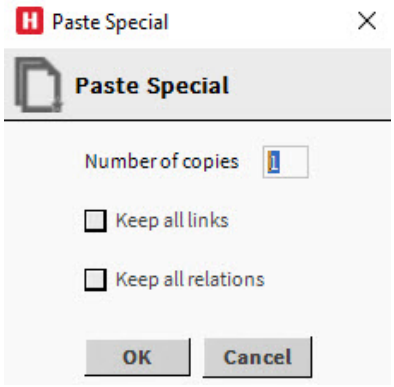


Figure 70. Paste Special dialog Box

4. In the Paste Special dialog box, enter the number of copies. Check if the links and/or relations should be kept. Uncheck these options if they should not be kept. Then click **OK**.

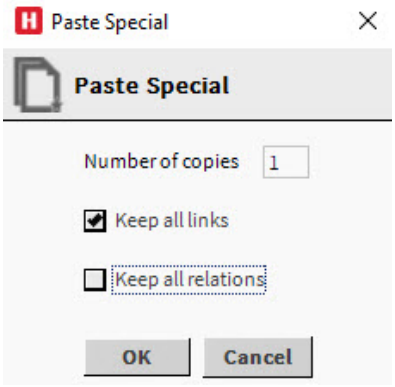


Figure 71. Paste Special dialog Box

5. The **Edit** dialog box displays.

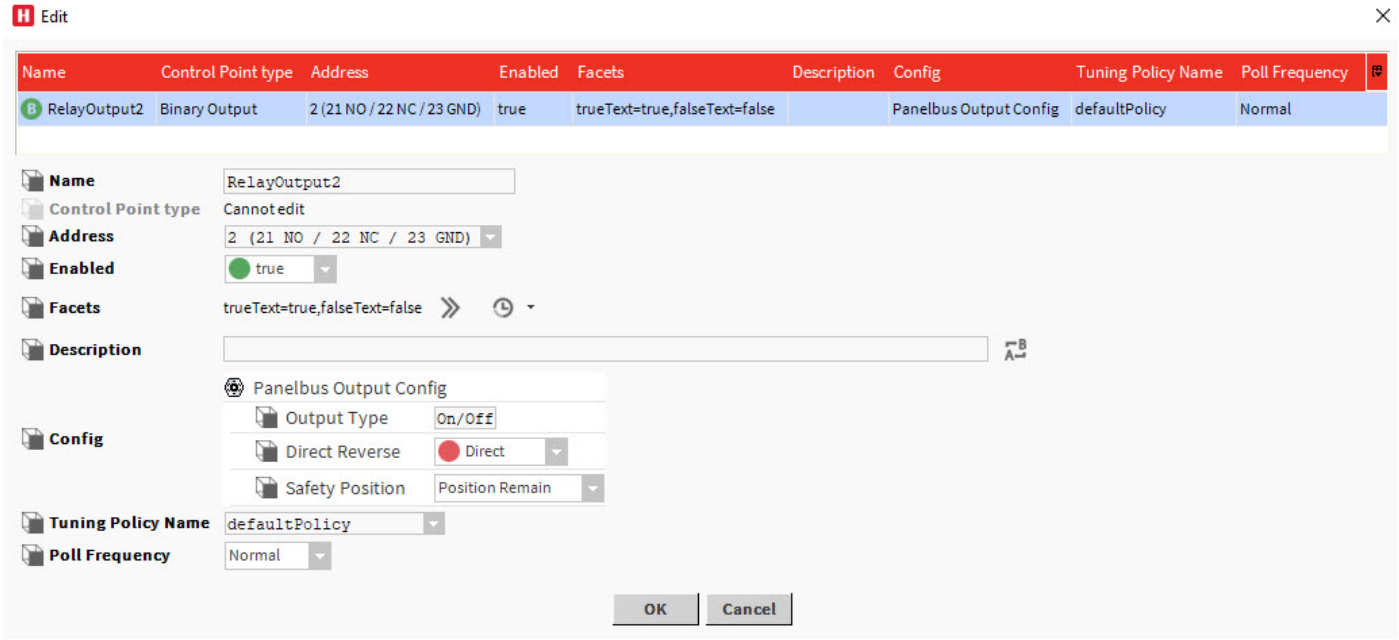


Figure 72. Edit dialog Box

6. Modify the datapoint properties if desired, and then click **OK**.

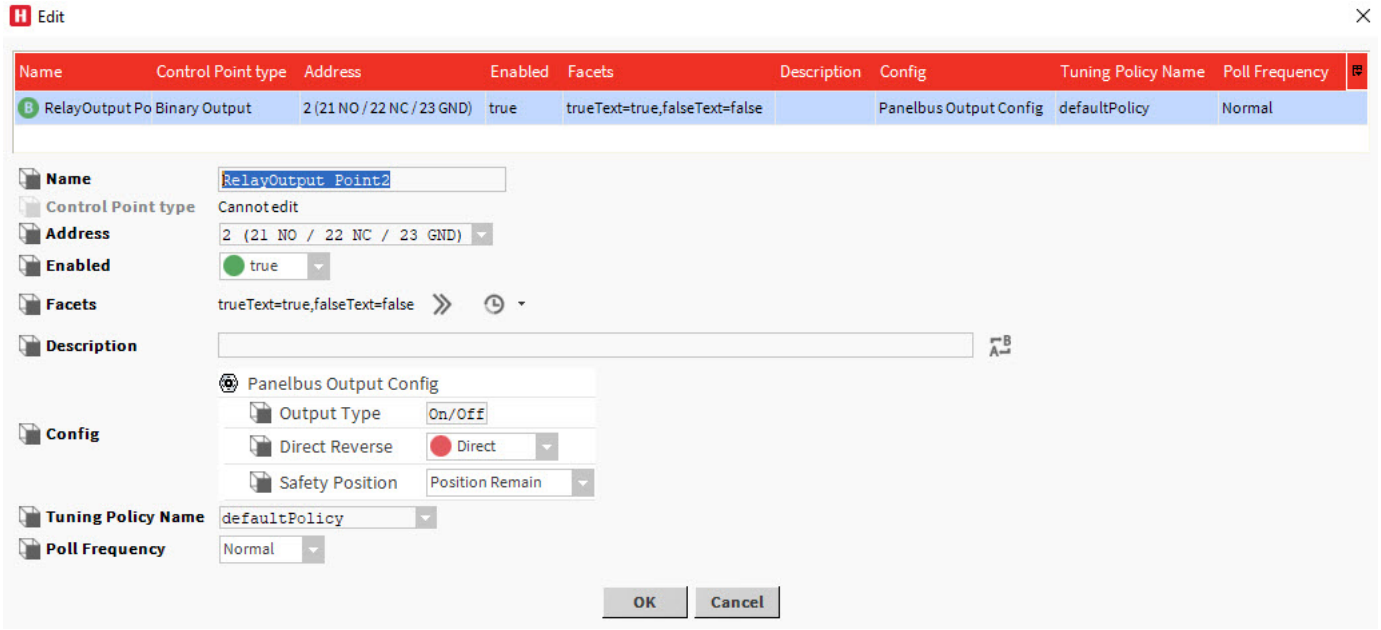


Figure 73. Edit dialog Box

The selected datapoints will be copied.

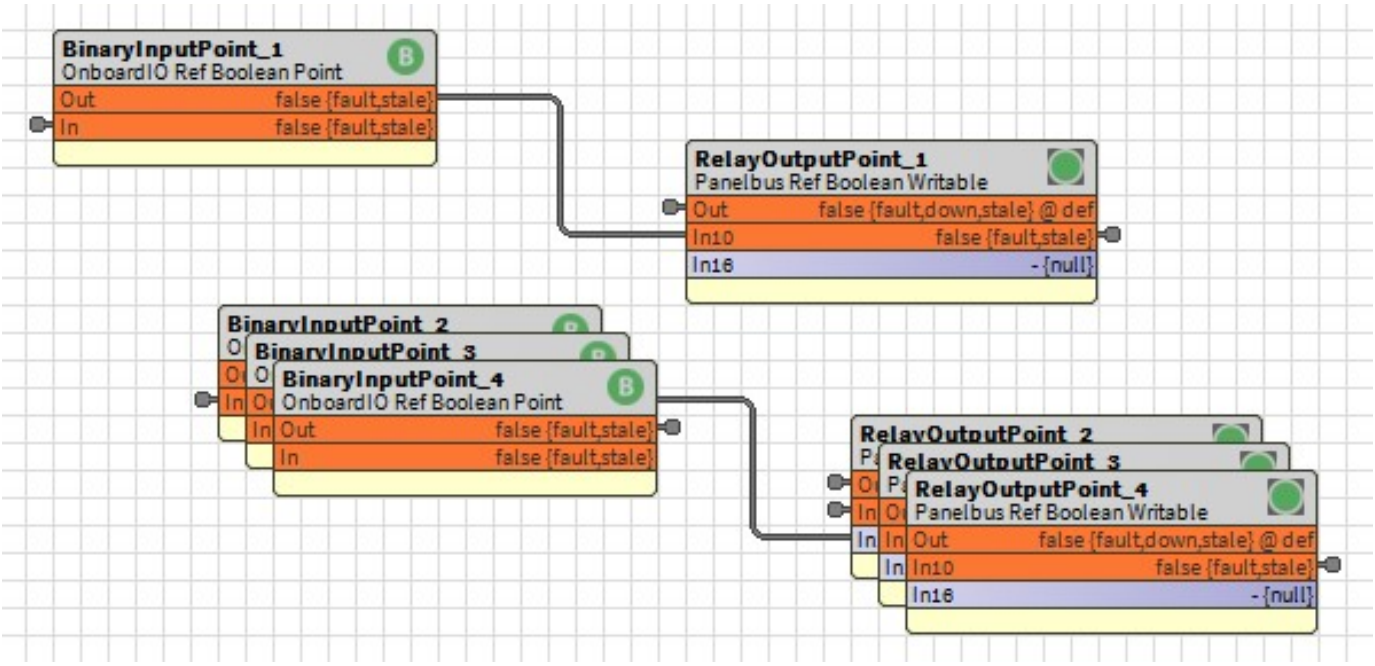


Figure 74. Enhanced Wire Sheet view

ALARM HANDLING

The Advanced controller Panel Bus Driver features alarm handling. Specifically, the Panel Bus Driver will automatically issue a sensor alarm when the sensor value passes certain predefined limit values (which depend upon the configuration of the given input). In the case of an input configured as an NTC sensor, for example, the Panel Bus Driver will automatically issue a sensor alarm if the sensor value drops below -58 °F (-50 °C) or rises above +300 °F (+150 °C). On the other hand, the sensor value displayed in the datapoint depends upon the configuration of the parameter “Communication failure,” and will be either “Last Valid Value” or “Safety Value.” Such alarms belong to the Default Alarm Class and indicate that a short circuit has taken place or that a sensor is broken.

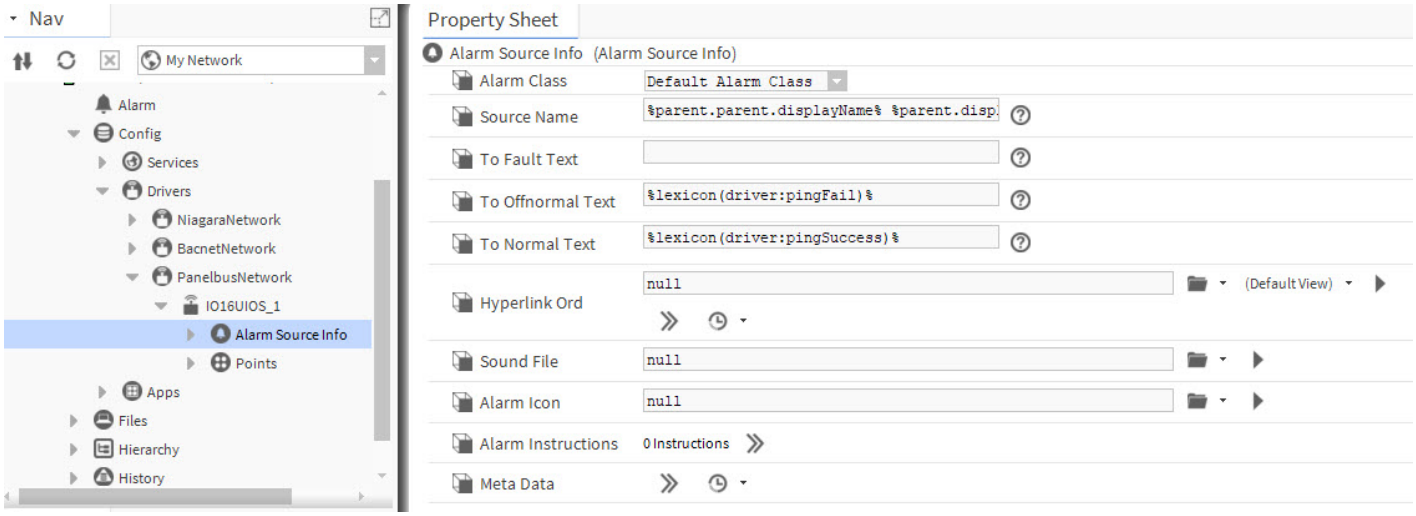


Figure 75. Alarm Property Sheet

If you require off-normal alarms, you must define standard alarm extensions to the given datapoint.

NOTE:
For fault alarm, please See *“Configuring the IO Input Type parameter” on page 34.*

CONFIGURE IO MODULE LED DISPLAY BEHAVIOR

The LED display behavior of the IO module device can be configured by using the **Panel Bus Device Configuration** functionality. For default configuration of the LED display behavior at a global workbench, refer to the *"IO Default Configuration" on page 41*. There are two options for Analog and Binary LED display:

1. Follow Application Value
2. Follow Physical Value

NOTE:
Not applicable for legacy devices.

IO module LED and HOA display behavior

All LED and HOA Display Indications are common to all I/O modules.

NOTE:
Logical and Physical are configurable options in the Optimizer Workbench and Comfort & Energy Workbench tools. CPO Studio tool does not have this configurable option. The CPO Studio Tool uses Logical for DI/DO and Physical for AI/AO which is the same as the XF8xx/XFR8xx Panel Bus IO modules

Table 6. IO module LED and HOA display behavior

Channel Type	Characteristics	Application/ Physical	Value on the Tools	Actual Physical Value	LED Indication	HOA Display
DO	DO (Direct)	Application	State (Off)	Contact is Open	LED Off	Direct Off
			State (On)	Contact is Closed	LED On	Direct On
	DO (Reverse)		State (Off)	Contact is Closed	LED Off	Reverse Off
			State (On)	Contact is Open	LED On	Reverse On
	DO (Direct)	Physical	State (Off)	Contact is Open	LED Off	Direct Off
			State (On)	Contact is Closed	LED On	Direct On
	DO (Reverse)		State (Off)	Contact is Closed	LED On	Reverse On
			State (On)	Contact is Open	LED Off	Reverse Off
DI	DI (Normally Open)	Application	State (Off)	Contact is Open	LED Off	Direct Off
			State (On)	Contact is Closed	LED On	Direct On
	DI (Normally Closed)		State (Off)	Contact is Closed	LED Off	Reverse Off
			State (On)	Contact is Open	LED On	Reverse On
	DI (Normally Open)	Physical	State (Off)	Contact is Open	LED Off	Direct Off
			State (On)	Contact is Closed	LED On	Direct On
	DI (Normally Closed)		State (Off)	Contact is Closed	LED On	Reverse On
			State (On)	Contact is Open	LED Off	Reverse Off
AO	0-10 V (Direct)	Application	0 %	0 V	LED Off	0-10 V 0 %
			10 %	1 V	LED On	0-10 V 10 %
			100 %	10 V	LED On	0-10 V 100 %
	0-10 V (Reverse)		0 %	10 V	LED Off	10-0 V 0 %
			10 %	9 V	LED On	10-0 V 10 %
			100 %	0 V	LED On	10-0 V 100 %

Table 6. IO module LED and HOA display behavior

Channel Type	Characteristics	Application/ Physical	Value on the Tools	Actual Physical Value	LED Indication	HOA Display
AO	0-10 V (Direct)	Physical	0 %	0 V	LED Off	0-10 V 0 %
			10 %	1 V	LED On	0-10 V 10 %
			100 %	10 V	LED On	0-10 V 100 %
	0-10 V (Reverse)		0 %	10 V	LED On	10-0 V 0 %
			10 %	9 V	LED On	10-0 V 10 %
			100 %	0 V	LED Off	10-0 V 100 %
AI	0-10 V (Direct)	Application	0 %	0 V	LED Off	0-10 V 0 %
			10 %	1 V	LED On	0-10 V 10 %
			100 %	10 V	LED On	0-10 V 100 %
	0-10 V (Reverse)		0 %	10 V	LED Off	10-0 V 0 %
			10 %	9 V	LED On	10-0 V 10 %
			100 %	0 V	LED On	10-0 V 100 %
	0-10 V (DIrect)	Physical	0 %	0 V	LED Off	0-10 V 0 %
			10 %	1 V	LED On	0-10 V 10 %
			100 %	10 V	LED On	0-10 V 100 %
	0-10 V (Reverse)		0 %	10 V	LED On	10-0 V 0 %
			10 %	9 V	LED On	10-0 V 10 %
			100 %	0 V	LED Off	10-0 V 100 %

NOTE:

16 UIO HOA / Non-HOA Module: Any IO Points go to Fault State, and the Main Ring Led Indication color is as below.
Yellow: Short circuit and open circuit.
Green: All other fault

Procedure to configure:

1. Expand **Panel Bus Device Configuration** from the **PanelbusNetwork** Property Sheet.

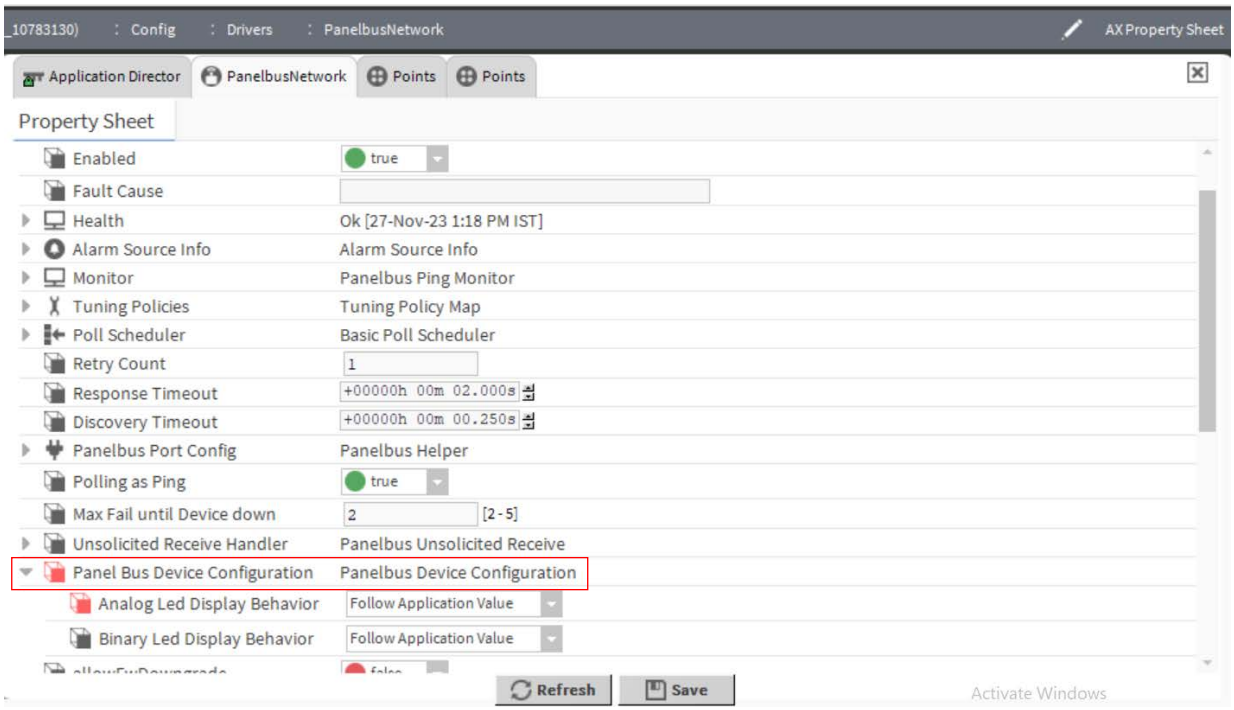


Figure 76. PanelbusNetwork Property Sheet

2. Select Follow Application Value or Follow Physical Value.

Figure 77. PanelbusNetwork Property Sheet

3. Click **Save**.

PANELBUS ANALYZER VIEW

The Advanced controller Panel Bus Driver features a Panel Bus Analyzer. Using the Panel Bus Analyzer, you can observe exactly when specific datapoint telegrams are written or read. Right click on **PanelbusNetwork** and navigate to **Panelbus Analyzer View** as shown in below figure.

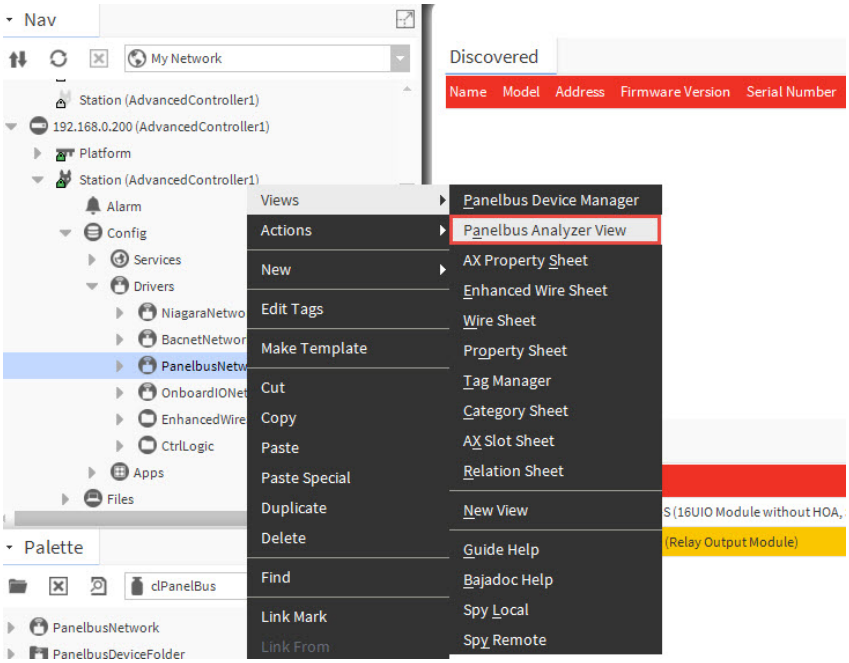


Figure 78. PanelbusNetwork Options

The Panelbus Driver Analyzer view will be display.

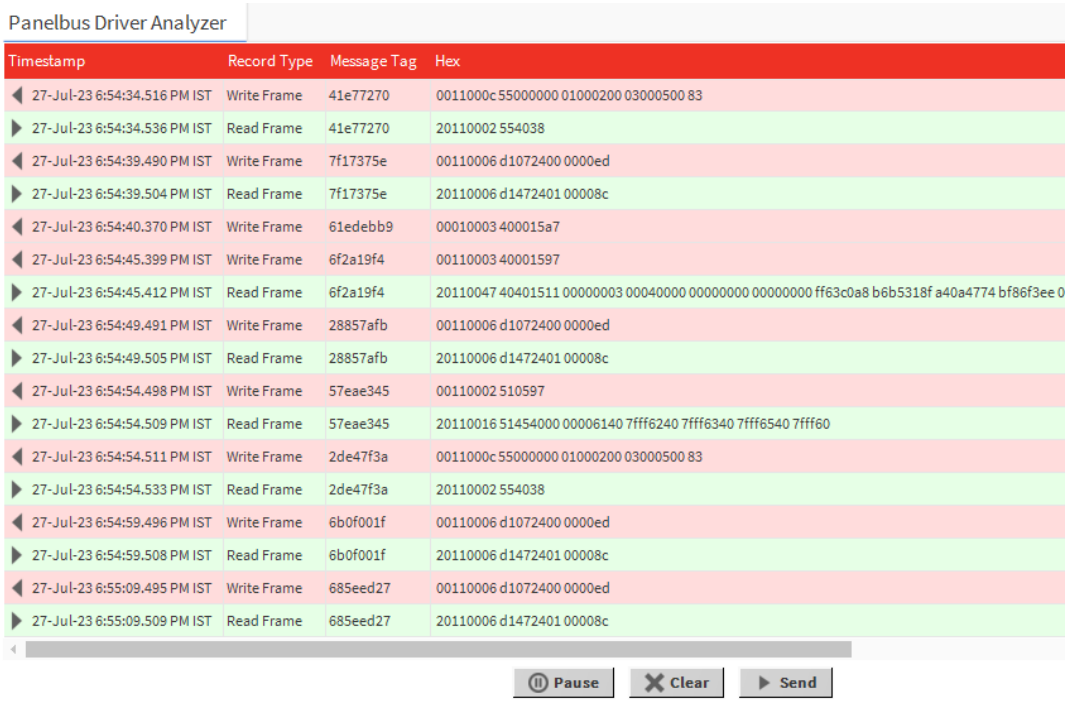


Figure 79. Panebus Driver Analyzer view

FIRMWARE UPDATE

The Advanced Controller will automatically detect and update the IO module firmware when a lower firmware version module is added to the bus.

⚠ CAUTION

IO modules can only be upgraded with Advanced controller.

Recommended: Check the Job services for any ongoing firmware update in progress. If the firmware job of existing IO module is active, wait till the successful update then discover or add new IO module devices. Firmware update will fail or get an error if new IO modules are discovered or added when the firmware update of existing modules are in progress.

Not Recommended: Upgrading the existing (legacy) IO modules with the Advanced Controller. If upgraded, the non- Snapon IO modules Panel Bus modules firmware upgrade will fail, and modules will go to Unreachable state.

NOTE:

IO module firmware update will take approx. 10 minutes; during this time, the modules will be placed into a disabled status. For each device firmware update, there is a provisioning time.

Provisioning Time

Once the IO module is upgraded successfully to any higher firmware version, wait for 30 min for the next upgrade.

Example:

If a user have IO module **A** with firmware **N4.X**. Now there are two more firmware upgrades are available **N4.Y** and **N4.Z**. User updated the IO module firmware with N 4.Y then the user must wait for 30 min to upgrade the IO module firmware with N4.Z. If user performs the firmware upgrade procedure before 30 min, the firmware may not be successful.

For multiple device connection

While connecting the multiple IO module to Advanced Controller follow below points to avoid error in the firmware update/download:

1. Connect all the IO module device to the Advanced Controller at a time do not connect the IO device one by one.
2. If you want to connect the IO module devices one by one, connect the devices one at a time and wait until the firmware update/download to complete and then connect another IO module.

CREATE POINT LABELS

The Optimizer Workbench, or the Comfort & Energy Workbench provides the option to print out IO Terminal Labels. The printed labels include:

- IO Module name
  Example: Ctr: AHU_1
  Name of the Controller controlling the IO module

- Panel Bus port number
  Example: RS485_R
  Number of the port RS485_R, RS485_1, RS485_2, RS485_3 or RS485_4

- IO module address (00-15)
  Example: 01
  00-15 = Defined

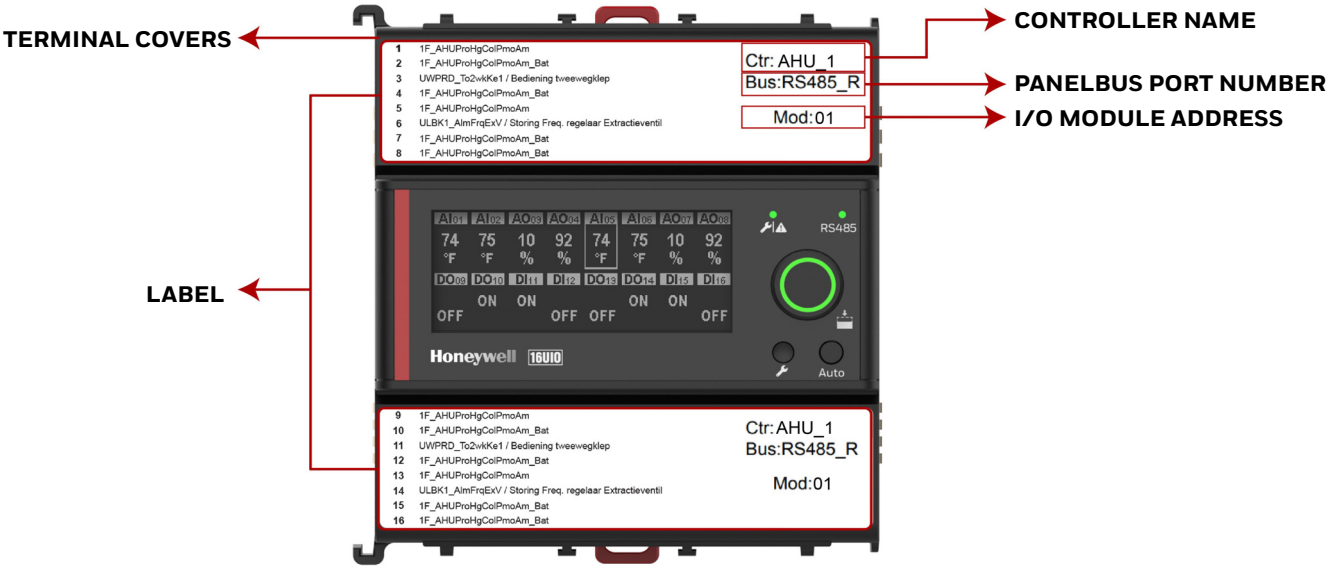


Figure 80. IO Module Labels Description

Labels are created from the Optimizer Workbench tool and Comfort & Energy Workbench tool and can be applied on the IO module terminal covers for identification. To create the labels from the Workbench tool, follow the below procedure.

Prerequisites:

1. *Create Panel Bus Network on page 6*.
2. *Discover Panel Bus Modules and Add them to Station on page 10*.
3. Configure the IO module.

To print the label, User MUST follow the below sequence of configurations:

1. Niagara configuration
2. Avery print configuration

Niagara Configuration

The pre-label print configuration must be done in the Niagara workbench. This configuration will be saved and can be used for other devices in the same PanelbusNetwork.

There are two steps in the Optimizer Workbench or Comfort & Energy Workbench to perform before printing the label from Avery website:

1. Configure the Label
2. Generate and save the Print Label file.

Configure the Label

1. Navigate to **Tools** from Niagara menu and click on **Printout Tool**.

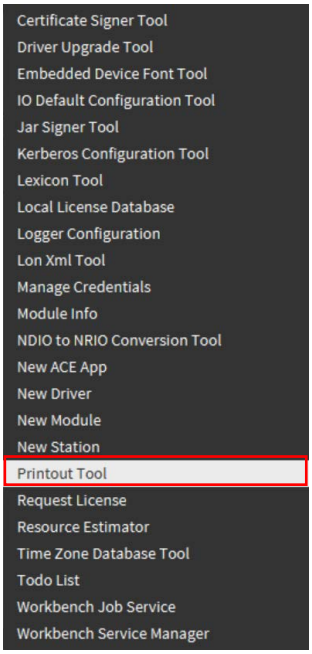


Figure 81. Tools Drop-down List

2. **Print Documentation** dialog box will appear.

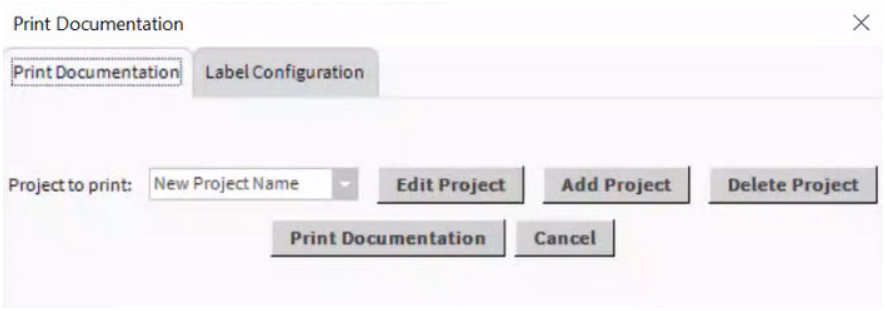


Figure 82. Print Documentation dialog Box

3. To configure label, Select **Label Configuration**.

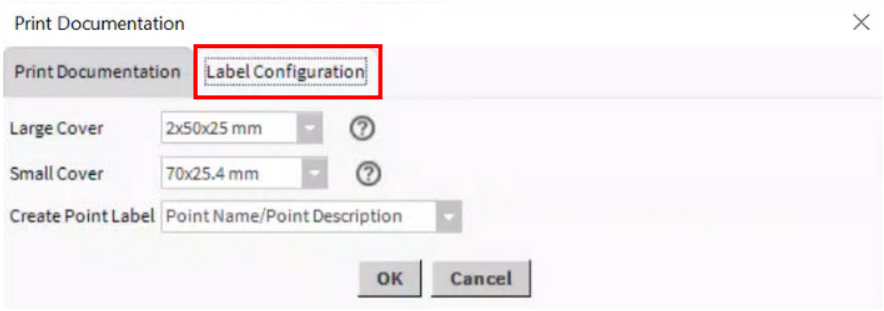


Figure 83. Print Documentation dialog Box

4. Select a **Large Cover** or **Small Cover**.
   Large Cover for 16UIO, 16UI, 16DI, 8DOR,
   Small Cover for 8UIO, 8AO, 8DI, 4UIO, 4DOR, 4DORE
5. Select label size as per your region's standard size from the drop-down list.

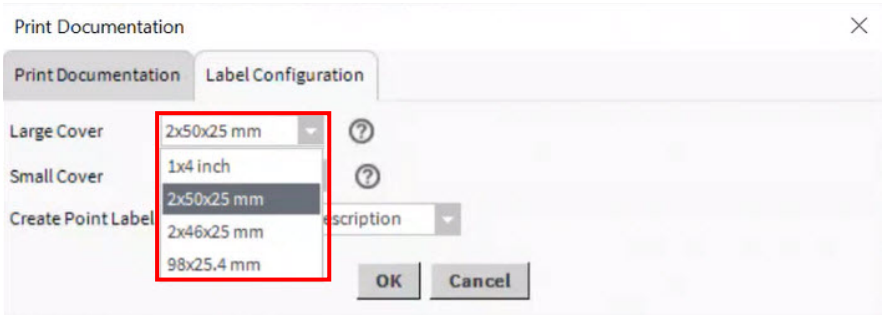


Figure 84. Print Documentation dialog Box

NOTE:
For more information on Cover label sizes based on the regions, Select .
A help dialog box will appear with standard-size details or refer to the below table for size.

Table 7. Template and label size

Region	Label size – Terminal cover size	Dimension	Template number	Quantity per Terminal	Format
Americas	Large - 105 mm IO modules	1"x 4"	94202	1	N/A
	Small - 70 mm IO modules	1" x 2.625"	94200	1	N/A
Germany/Austria/ Switzerland	Large - 105 mm IO modules	50x25mm	50x25-R	2	A4
	Small - 70 mm IO modules	70x25.4mm	70x25-R	1	A4
UK/Spain/Italy/France /Netherlands/Belgium	Large - 105 mm IO modules	46x25mm	46x25-R	2	A4
	Small - 70 mm IO modules	60x25mm	60x25-R	1	A4
Australia	Large - 105 mm IO modules	98 x 25.4mm	98x25-R	1	A4
	Small - 70 mm IO modules	70x25mm	70x25-R	1	A4

6. Navigate to the **Create Point Label** option and select one of the below options from the drop-down list.
   - Point Name
   - Point Description
   - Point Name/Point Description

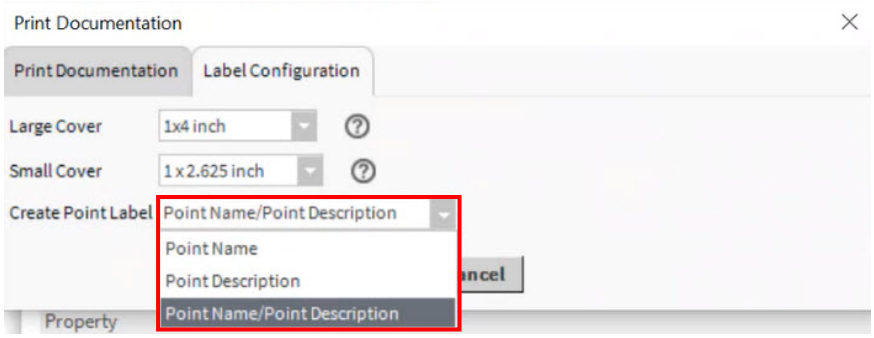


Figure 85. Print Documentation dialog Box

7. Click **OK** to save the configuration data.
   Continue with *Generate and save the Print Label file on page 61*.

Generate and save the Print Label file

This step helps you generate a file from the saved Niagara configuration.

1. Right-Click **PanelbusNetwork** from the Nav tree. Navigate to **Actions** and click **Create Point Labels**.

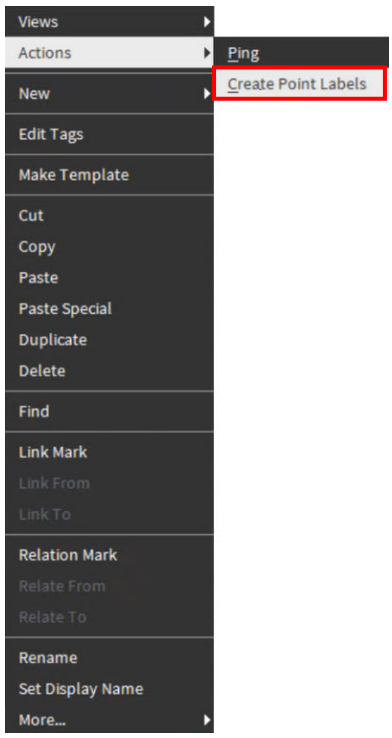


Figure 86. Panelbus Network Options

2. **Directory Chooser** dialog box will display. Navigate to the location folder, choose a folder, and click **Choose**.

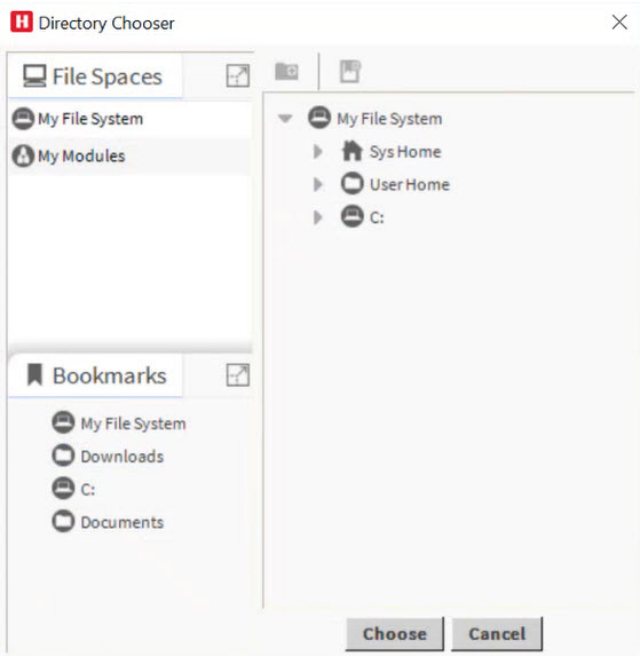


Figure 87. Directory Chooser dialog Box

3. Select a folder to save the configured label file.
   The below path is shown as an example.
   Go to the "C" drive and select **excels**, then click **Choose**.

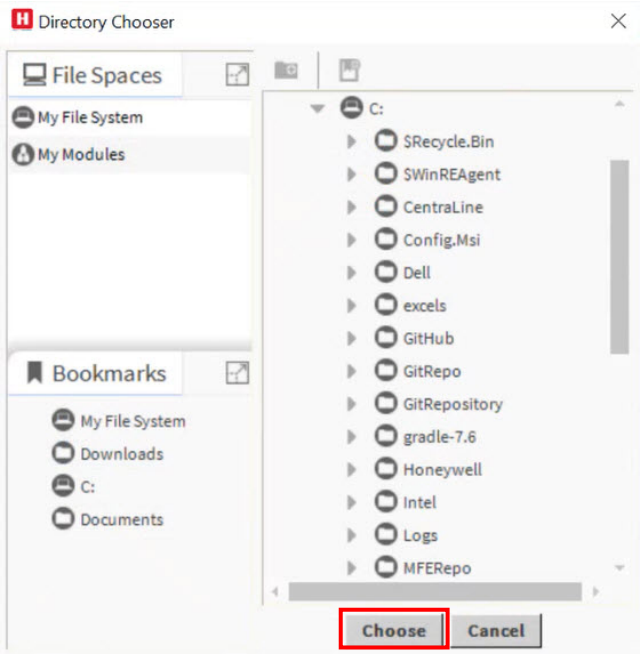
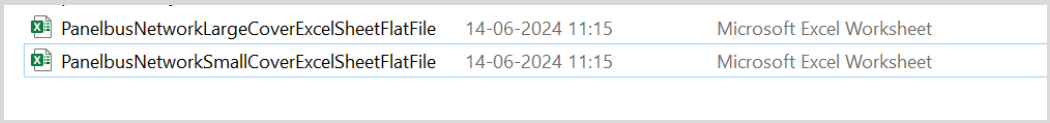


Figure 88. Directory Chooser dialog Box

4. The file is saved in excel formate.

NOTE:

Two files, Large and Small cover, will be saved at the folder location.
Example:



Continue with *Print Configuration on page 63*.

Print Configuration

This Print configuration helps the user import the file configured in Niagara and customize the print according to the user/IO module model requirements.

Use the Avery Design & Print web site to configure and customize the print. For sizes and region, refer to the table *Template and label size on page 60*.

The user MUST follow the below step-by-step procedure to customize the label:

1. Choose Template
2. Choose Design
3. Customize the Print
4. Preview & Print the Label

NOTE:

User can expect the UI interface and option changes as per your region.

For Region – Americas:

1. *Open Avery Site*
2. *Choose Template*
3. *Choose Design*
4. *Customize the Print*
5. *Preview & Print the Label*

For Region - Germany/Austria/Switzerland:

1. Sign in/Sign up for Avery site. Click the link below based on the terminal cover size.
   Large cover: *https://www.avery-zweckform.com/blanko-etiketten/rechteckig-50x25-mm*
   Small Cover: *https://www.avery-zweckform.com/blanko-etiketten/rechteckig-70x25-mm*
2. Avery Site will appear.
   Below size (Large cover) is shown as an example.
   Click on **To the Avery Online Templates** (**Zu den Avery Online Vorlagen**).

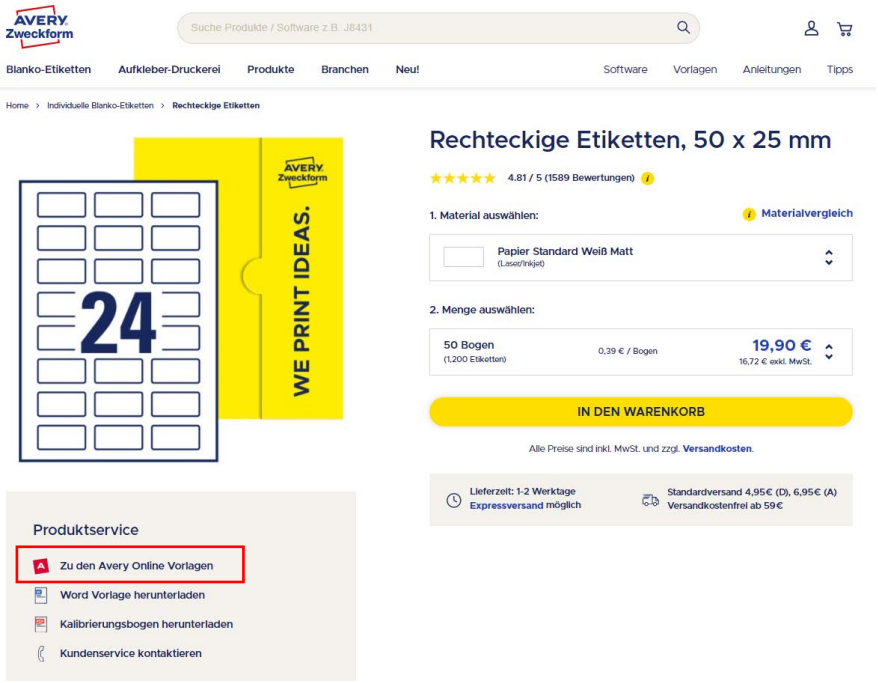


Figure 89. Avery Site

3. The Choose design screen will appear. Continue with the procedure *Choose Design*.
4. *Customize the Print*
5. *Preview & Print the Label*

For Region - UK/Spain/Italy/France/Netherlands/Belgium:

1. Sign in/Sign up for Avery site. Click the link below based on the terminal cover size.
   Large cover: *https://www.avery.nl/onbedrukte-etiketten/rechthoekige-46x25mm*
   Small cover: *https://www.avery-zweckform.com/blanko-etiketten/rechteckig-60x25-mm*
2. Avery Site will appear.
   Below size (Large cover) is shown as an example.
   Click on **To the Avery Online Templates** (**Avery Design & Print Free Online Templates**).

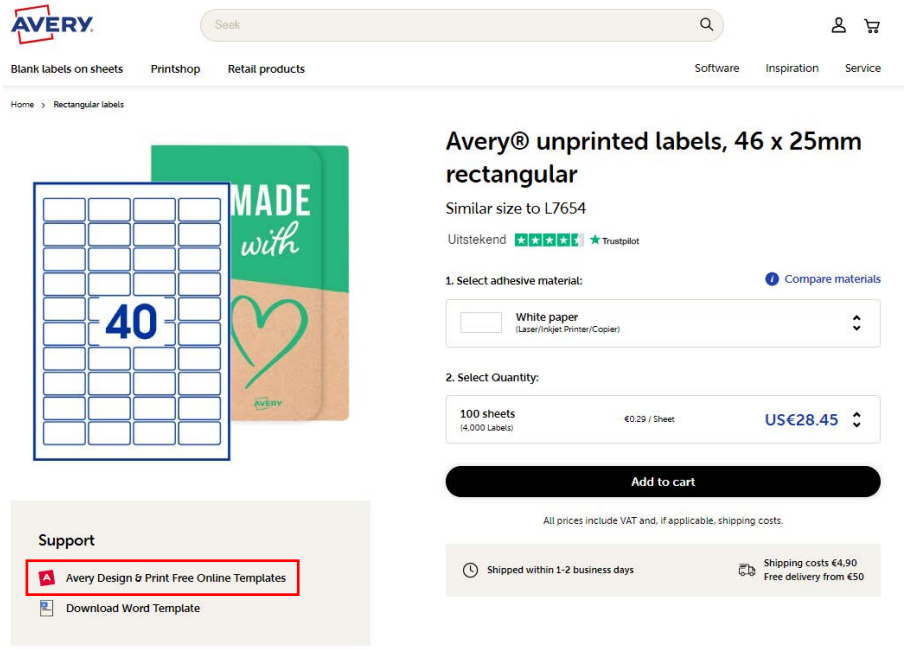


Figure 90. Avery Site

3. The Choose design screen will appear. Continue with the procedure *Choose Design*.
4. *Customize the Print*
5. *Preview & Print the Label*

For Region - Australia:

1. Sign in/Sign up for Avery site. Click the link below based on the terminal cover size.
   Large cover: *https://www.averyproducts.com.au/blank-labels/rectangle-98x25mm*
   Small cover: *https://www.averyproducts.com.au/blank-labels/rectangle-70x25mm*
2. Avery Site will appear.
   Below size (Large cover) is shown as an example.
   Click on **To the Avery Online Templates** (**Open This template in Avery Design & Print Online**).

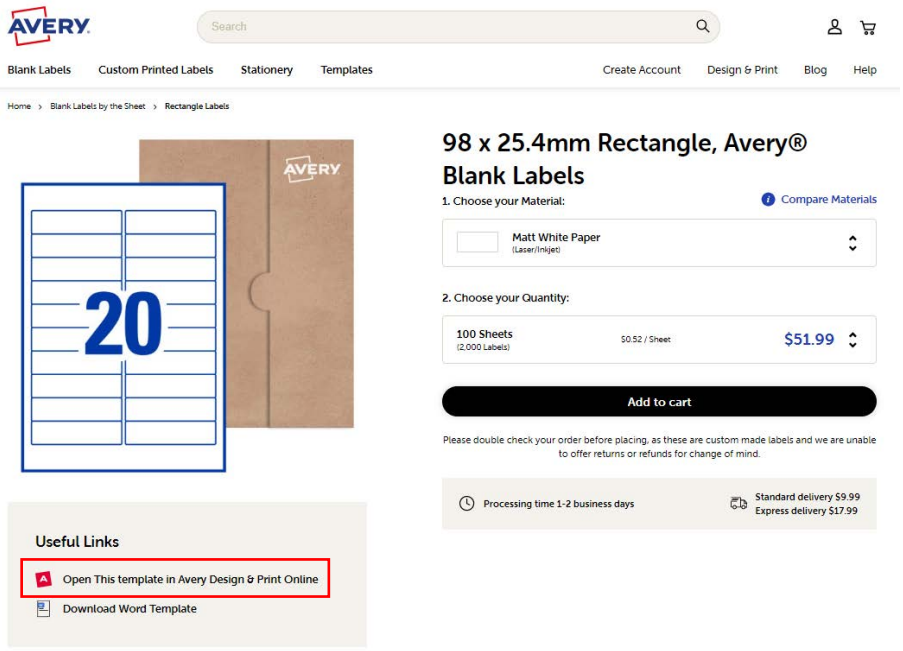


Figure 91. Avery Site

3. The Choose design screen will appear. Continue with the procedure *Choose Design*.
4. *Customize the Print*
5. *Preview & Print the Label*

Open Avery Site

1. Search for AVERY Design & Print in the browser.
2. Select Avery Design & Print - Free Label Making Software.
   The below Avery main site will appear.

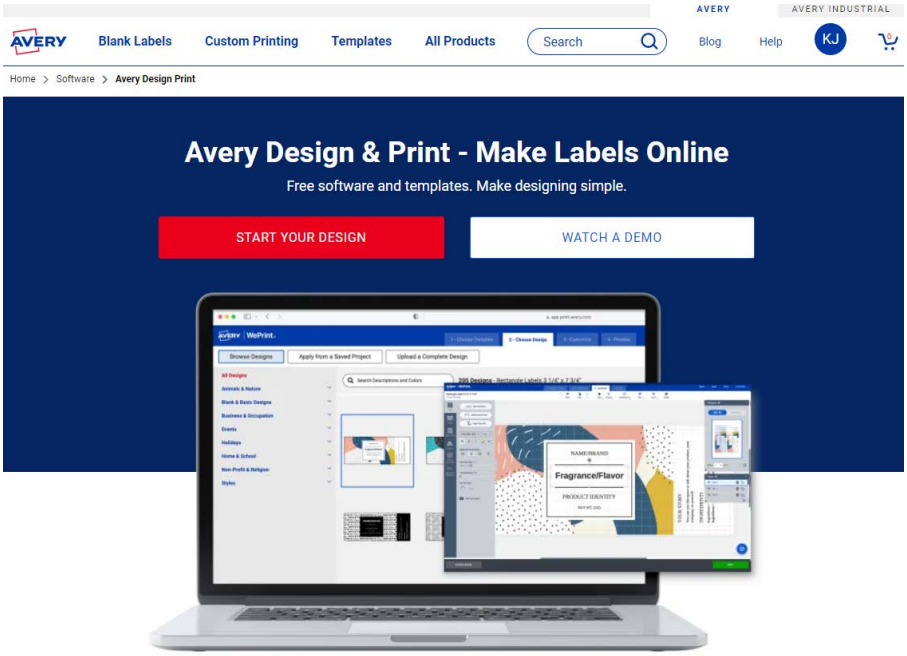


Figure 92. Avery Site

3. Sign up/Sign in.

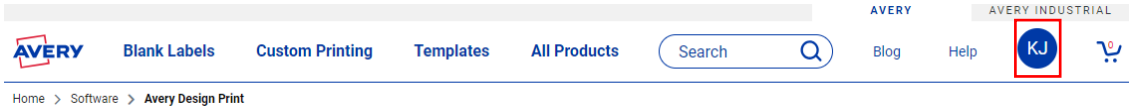


Figure 93. Avery Site

4. Click on **Start Your Design**.

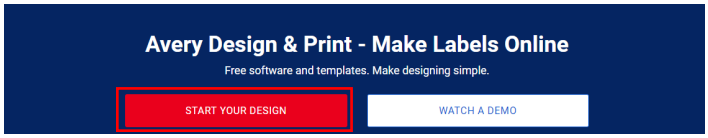


Figure 94. Avery Site

5. The Avery Design & Print screen will appear.

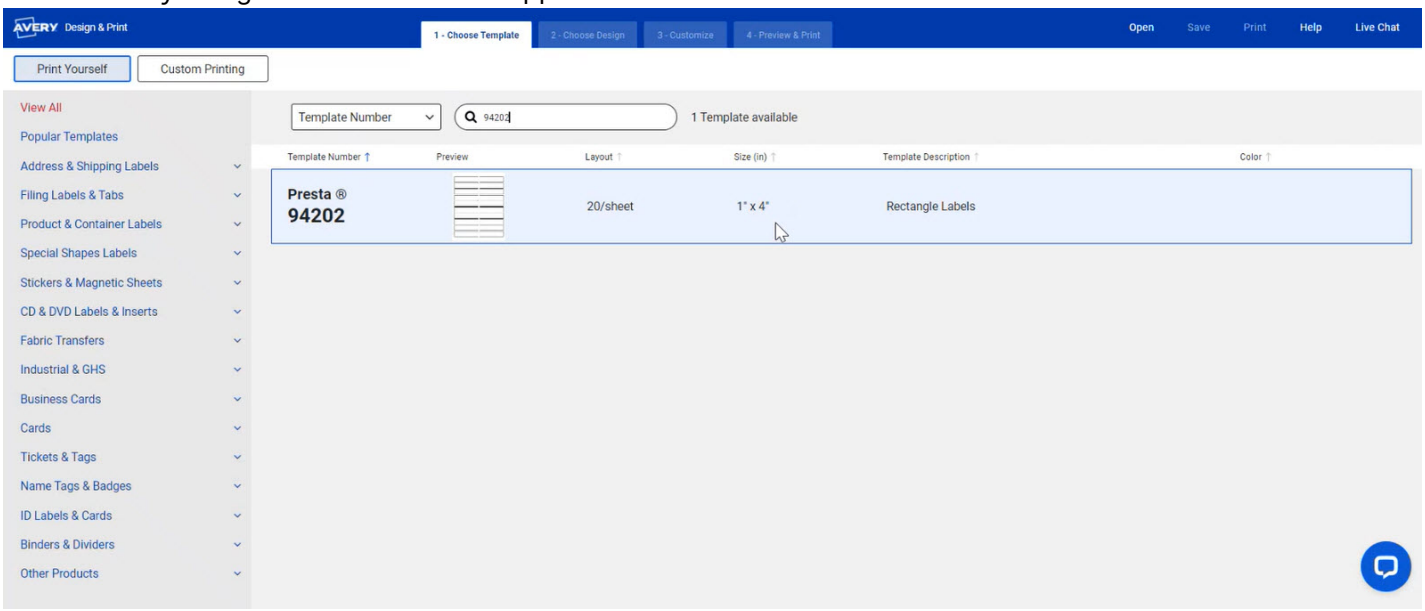


Figure 95. Avery Design & Print Web Page

Choose Template

1. Select the **Template Number** from the drop-down.
2. Select the **Search bar** and enter "Template Number = Large = **94202** or Small = **94200**".

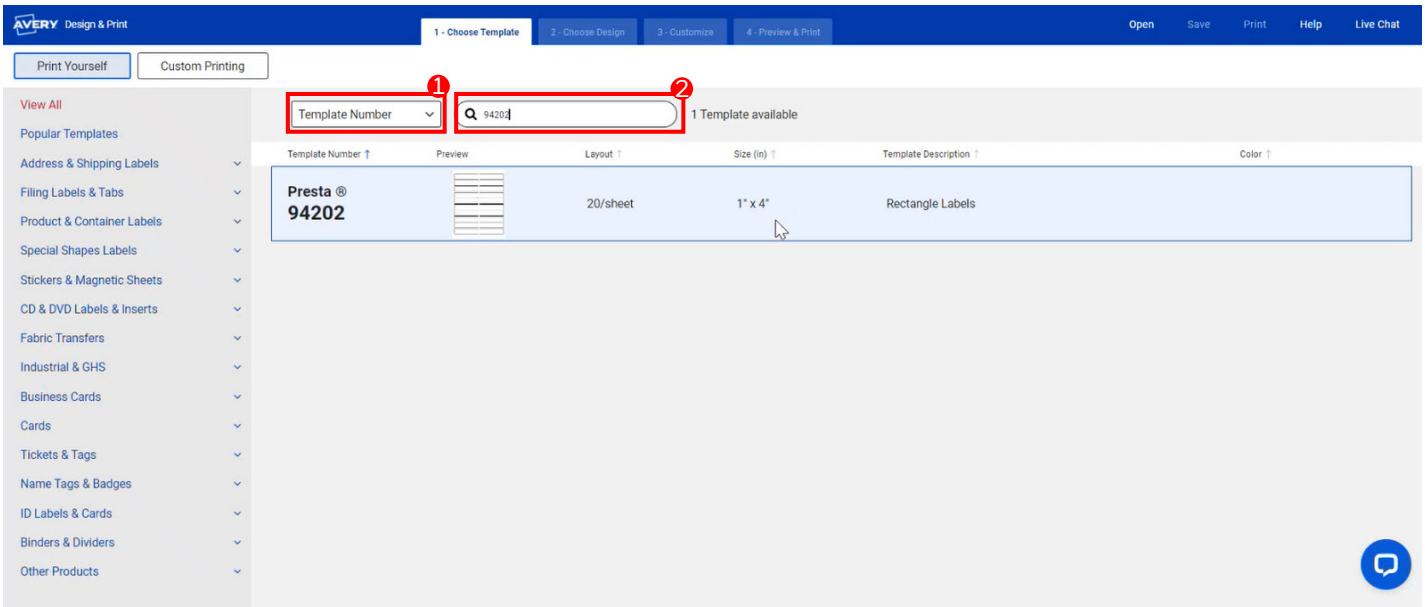


Figure 96. Avery Design & Print Web Page

Choose Design page will appear. Continue with the *Choose Design on page 69*.

Choose Design

1. Select the Design as per the desired size.

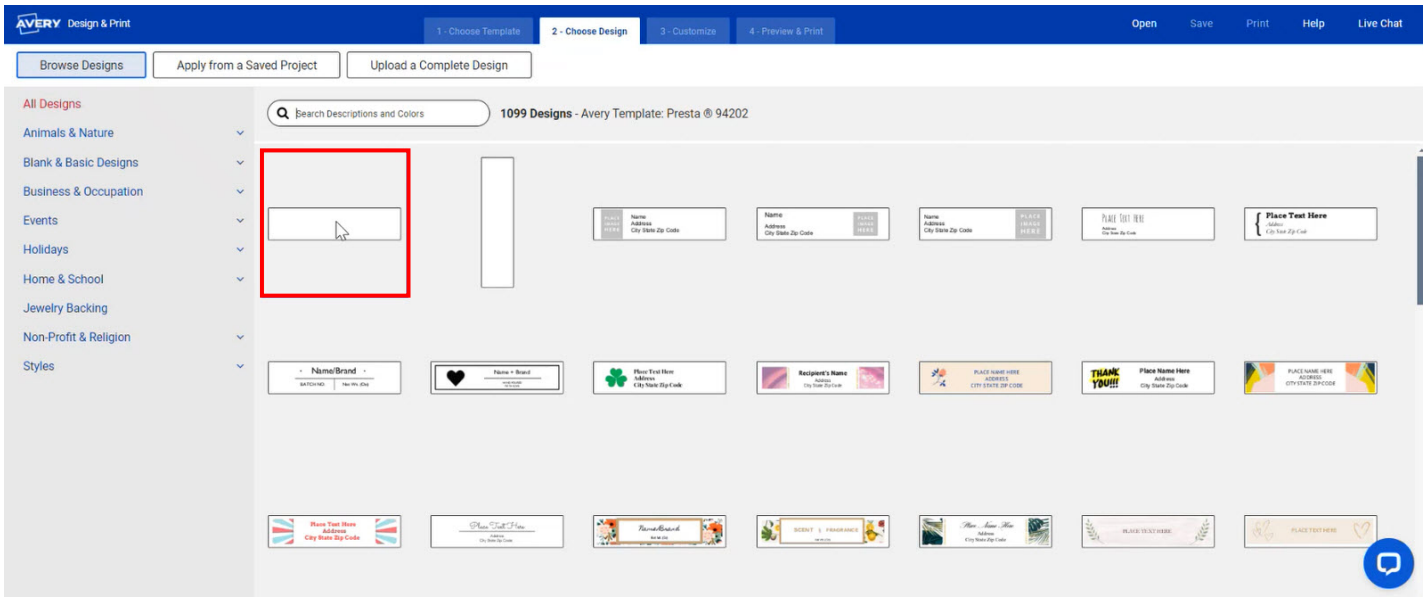


Figure 97. Avery Design & Print Web Page

Customize page will appear. Continue with the *Customize the Print on page 69*.

Customize the Print

1. Select the **Import Data** from the left pane.

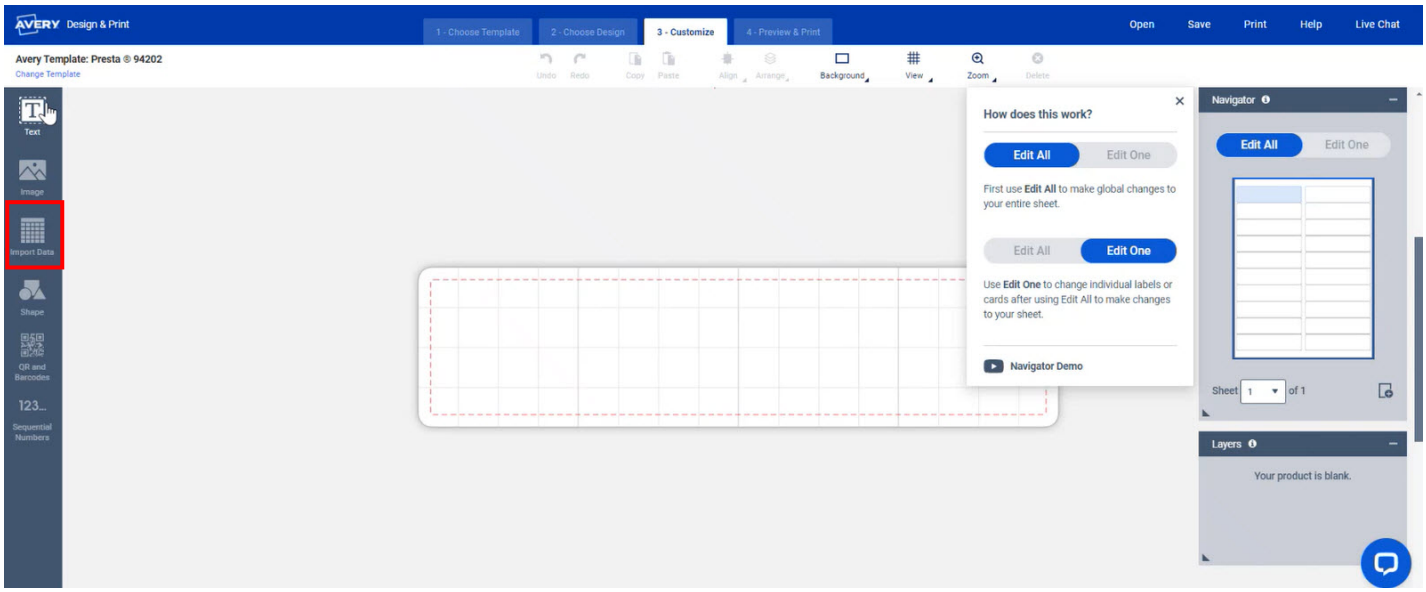


Figure 98. Avery Design & Print Web Page

2. Select the **Start Import/Merge** option.

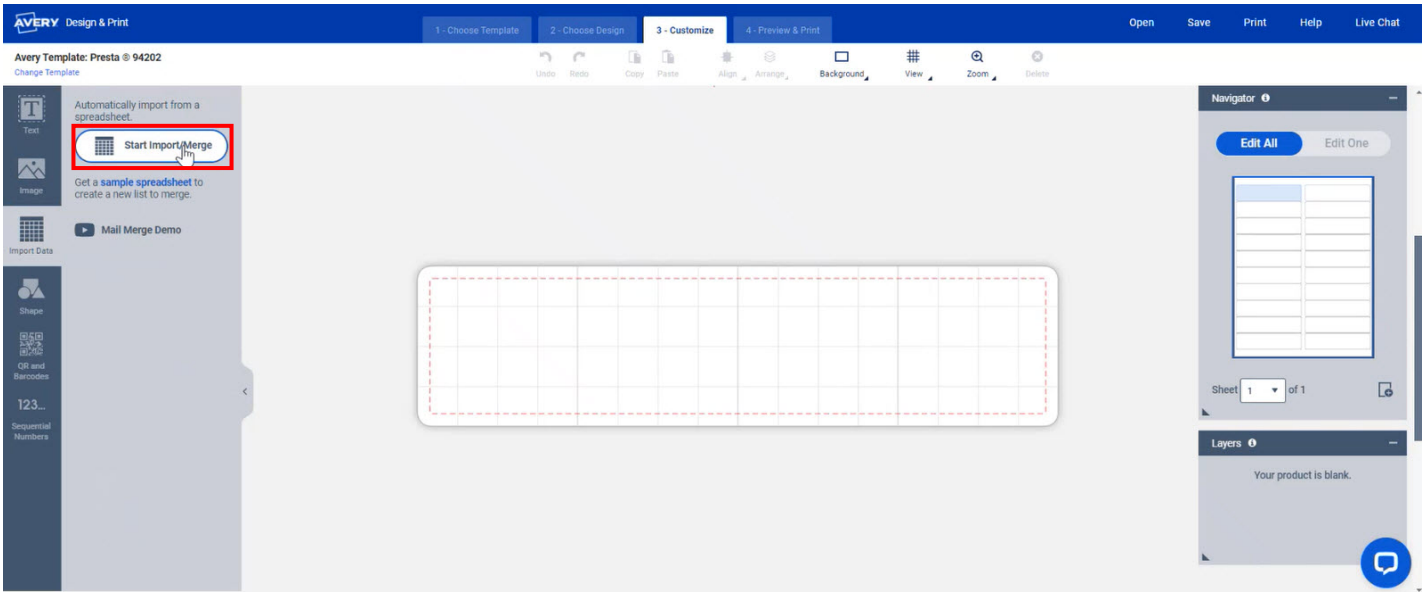


Figure 99. Avery Design & Print Web Page

3. **Choose Spreadsheet:** Select upload, then **BROWSE FOR FILE**.

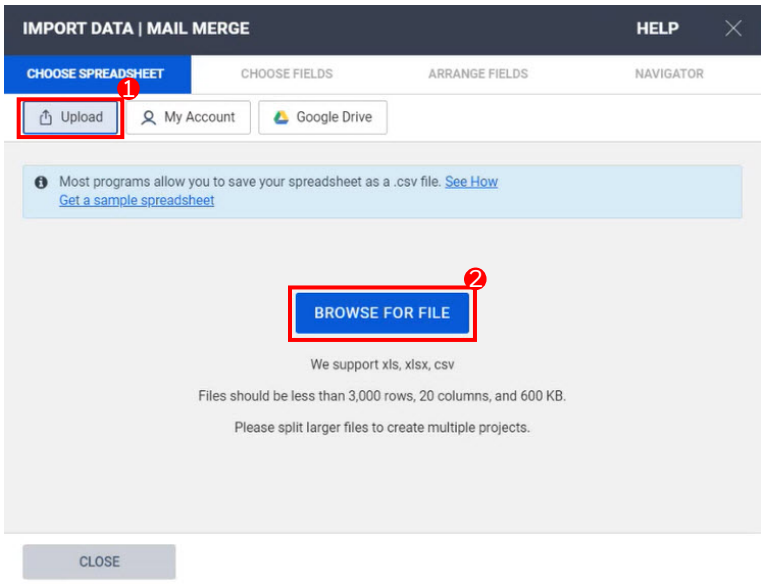


Figure 100. Import Data or Mail Merge dialog Box

4. Navigate to the folder location where the generated Excel sheet is saved and select the file. Refer to the *Generate and save the Print Label file on page 61*.

5. **Choose Fields:** The data from the Excel sheet is populated. Uncheck the box as shown for Controller Name, Bus and Module. Unchecked box do not print.

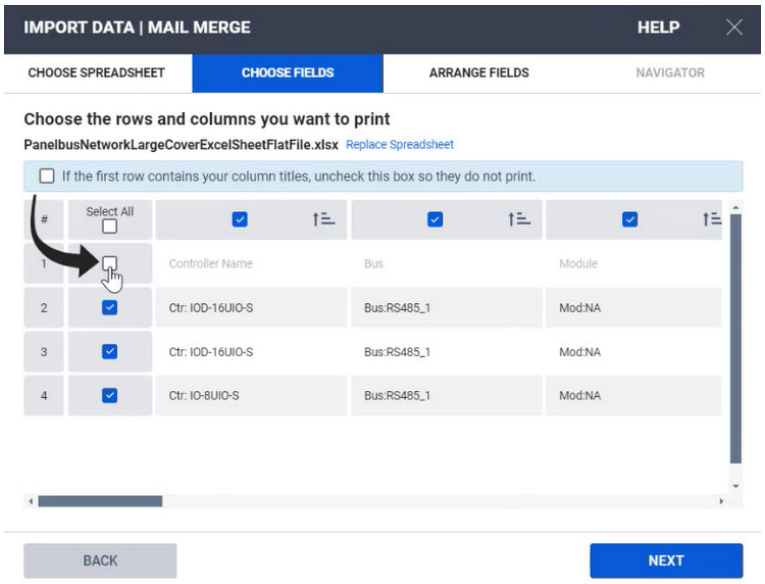


Figure 101. Import Data or Mail Merge dialog Box

6. Click **NEXT**.
7. **Arrange Fields:** Arrange the data which is populated from the excel. Double click or Drag & Drop from **Imported Data Fields** to **Arrange Data Fields**. Refer to the below examples.

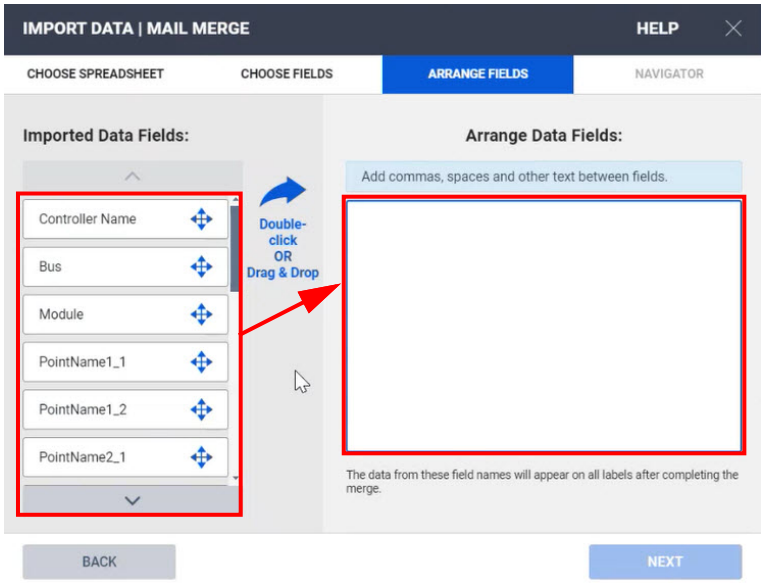


Figure 102. Import Data or Mail Merge dialog Box

Example: (Large Cover Terminal - 105 mm IO module)

The below devices will be added to the Panel Bus network.

Controller Name	Bus	Module	PointName1_1	PointName1_2	PointName2_1	PointName2_2	PointName3_1	PointName3_2
Ctr: IO-16UIO-S	Bus:No Port	Mod:NA	1. UniversalInputOutputPoint	_1	2. UniversalInputOutputPoint	_2	3. UniversalInputOutputPoint	_3
Ctr: IO-16UIO-S	Bus:No Port	Mod:NA	9. UniversalInputOutputPoint	_9	10. UniversalInputOutputPoint	_10	11. UniversalInputOutputPoint	_11
Ctr: IO-16UI-S	Bus:No Port	Mod:8	1. UniversalInputPoint_1		2. UniversalInputPoint_2		3. UniversalInputPoint_3	
Ctr: IO-16UI-S	Bus:No Port	Mod:8	9. UniversalInputPoint_9		10. UniversalInputPoint_10		11. UniversalInputPoint_11	

Figure 103. PanelbusNetworkLargeCoverExcelSheetFlatFile Details

1 column can support **25** characters and each point name and point description should be not more than **50** characters. So if the point name and point description exceeds **25** characters, it is distributed into two columns PointName1_1, PointName1_2 and PointName2_1, PointName2_2, etc. These two can be merged in one row by selecting the points one by one.

(1) PointName1_1PointName1_2 > Click **Enter**.
(2) PointName2_1PointName2_2 > Click **Enter**.
(3) PointName3_1PointName3_2 > Click **Enter**.
(4) PointName4_1PointName4_2 > Click **Enter**.
(5) PointName5_1PointName5_2 > Click **Enter**.etc,.

Refer to the Figure below for points arrangement.

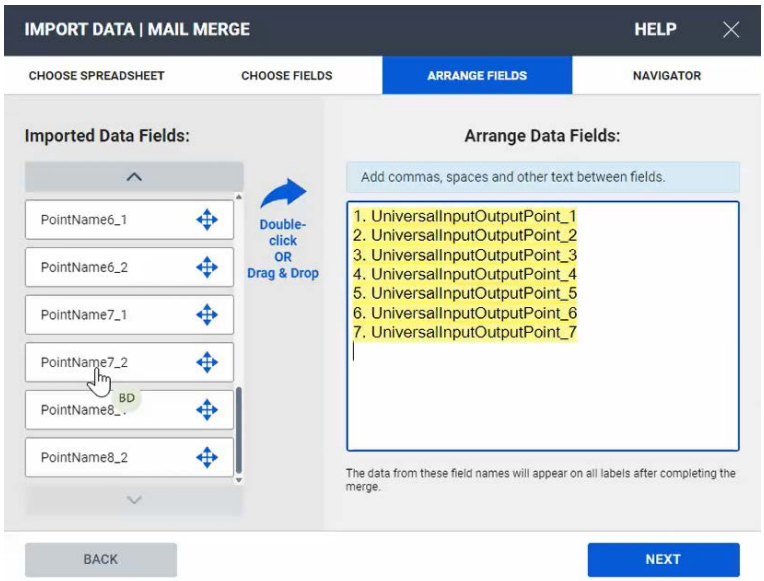


Figure 104. Import Data or Mail Merge dialog Box

Example: (Small Cover Terminal – 70 mm IO module)

The below devices will be added to the Panel Bus network.

Controller Name	Bus	Module	PointName1_1	PointName1_2	PointName2_1	PointName2_2	PointName3_1
Ctr: IO-4UIO-S	Bus:No Port	Mod:1	1. UniversalInputOutputPoint	_1	2. UniversalInputOutputPoint	_2	3. UniversalInputOutputPoint
Ctr: IO-8UIO-S	Bus:No Port	Mod:2	1. UniversalInputOutputPoint	_1	2. UniversalInputOutputPoint	_2	3. UniversalInputOutputPoint
Ctr: IO-8UIO-S	Bus:No Port	Mod:2	5. UniversalInputOutputPoint	_5	6. UniversalInputOutputPoint	_6	7. UniversalInputOutputPoint
Ctr: IO-4DOR-S	Bus:No Port	Mod:4	1. RelayOutputPoint_1		2. RelayOutputPoint_2		3. RelayOutputPoint_3
Ctr: IO-8DOR-S	Bus:No Port	Mod:5	1. RelayOutputPoint_1		2. RelayOutputPoint_2		3. RelayOutputPoint_3
Ctr: IO-8DOR-S	Bus:No Port	Mod:5	5. RelayOutputPoint_5		6. RelayOutputPoint_6		7. RelayOutputPoint_7

Figure 105. PanelbusNetworkSmallCoverExcelSheetFlatFile Details

1 column can support **25** characters and each point name and point description should be not more than **50** characters. So if the point name and point description exceeds **25** characters, it is distributed into two columns PointName1_1, PointName1_2 and PointName2_1, PointName2_2, etc. Because it is a Small Cover, the columns can be arranged one by one to fit as per the label size.

(1) PointName1_1 > Click **Enter**.
(2) PointName1_2 > Click **Enter**.
(3) PointName2_1 > Click **Enter**.
(4) PointName2_2 > Click **Enter**.
(5) PointName3_1 > Click **Enter**.
(6) PointName3_2 > Click **Enter**.
(7) PointName4_1 > Click **Enter**.
(8) PointName4_2 > Click **Enter**.etc,

Refer to the Figure below for points arrangement.

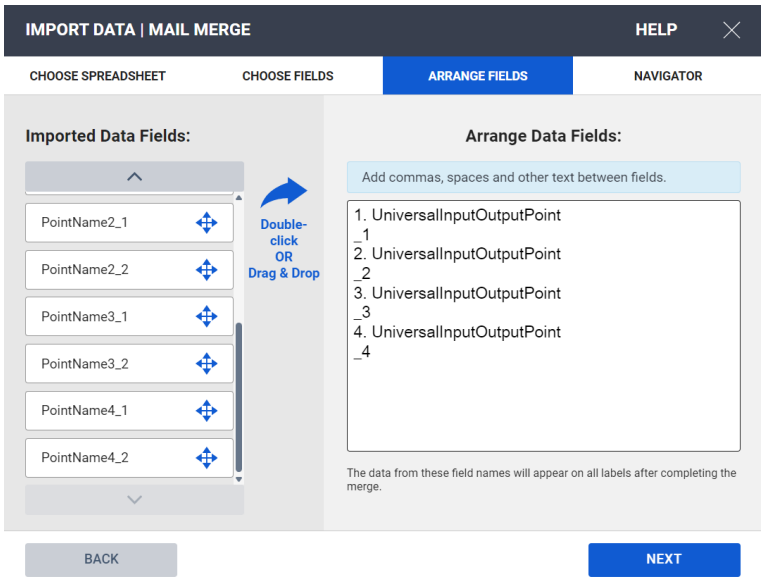


Figure 106. Import Data or Mail Merge dialog Box

NOTE:
Here for next steps the Large cover is used as an example.

8. Click **NEXT**.

9. Click **FINISH** from Navigator.

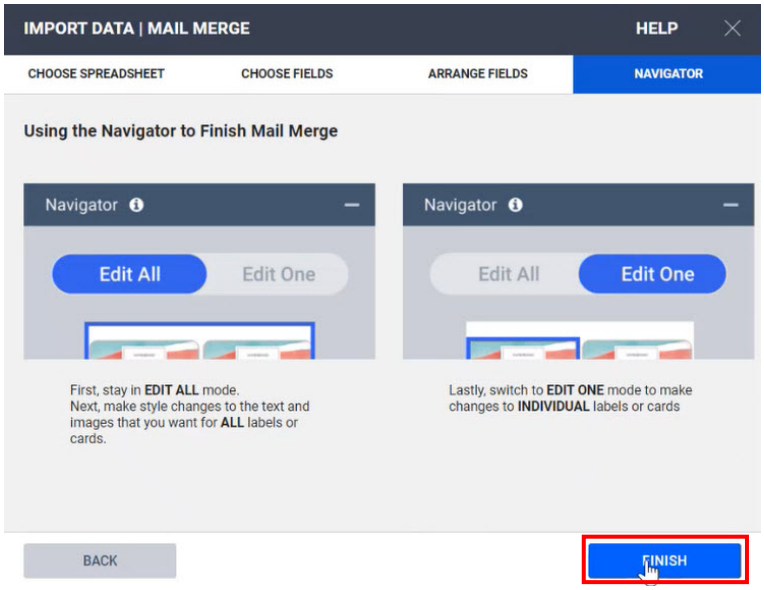


Figure 107. Import Data or Mail Merge dialog Box

Customize main screen will appear.

10. Set the text size from the text option.
    or
    Resize the text box and arrange it within the safe area until the box color changes from red to blue.
    1. Text options
    2. Safe area (Printable area)

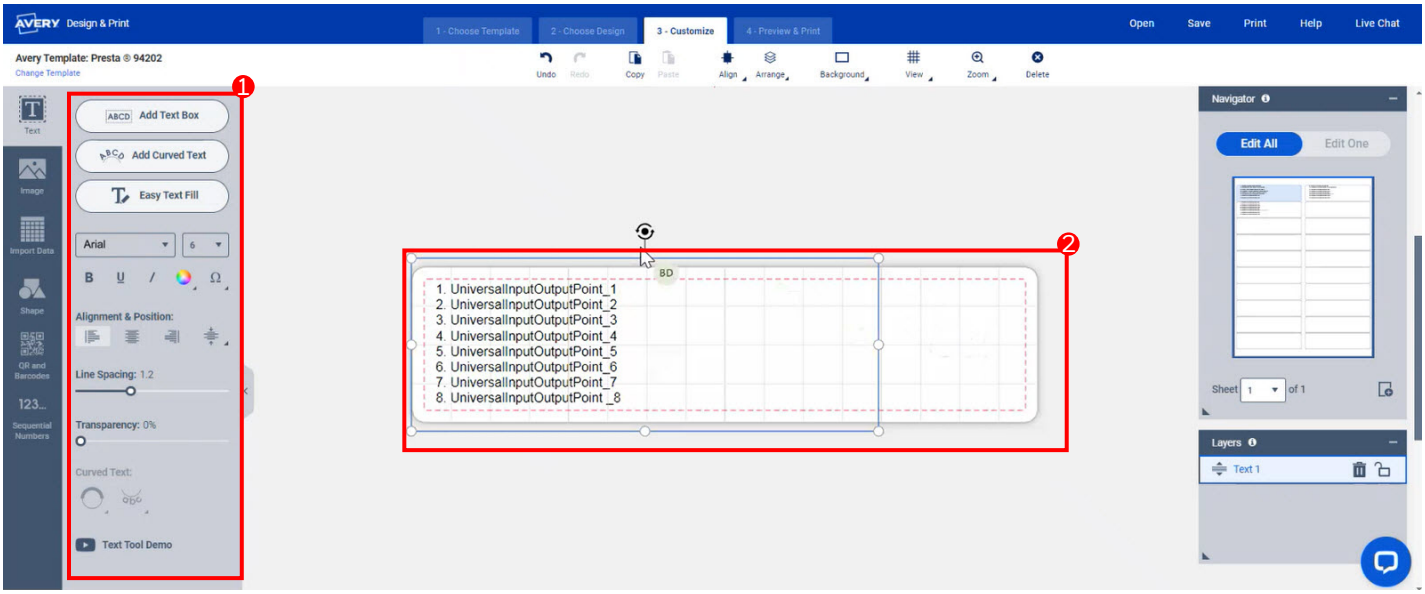


Figure 108. Avery Design & Print Web Page

NOTE:

Use **Arial** font for label.
Red = Text outside the Safe area may be cut off during the printing process.
Blue = Text is inside the Safe area.

11. Import other column data like Controller, Bus, and Module etc.,
    Select **Import Data**. Drag & Drop the column field into the safe area.

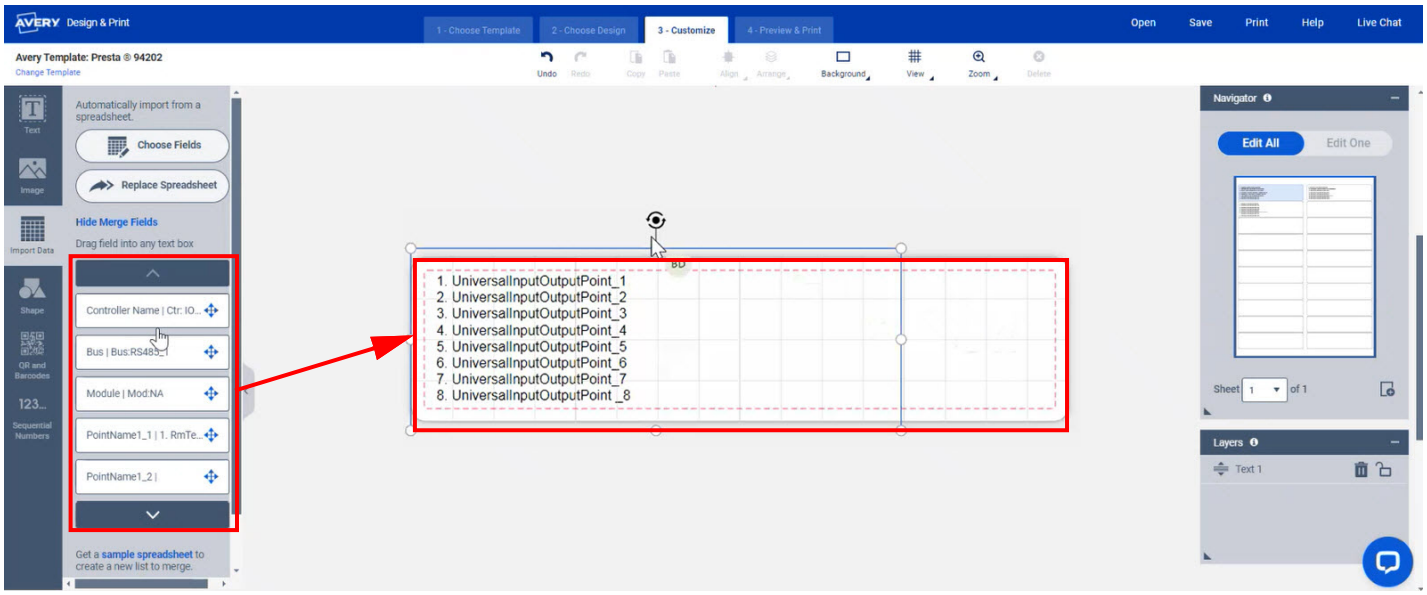


Figure 109. Avery Design & Print Web Page

12. Edit the text size.
13. Resize the text box and arrange it.

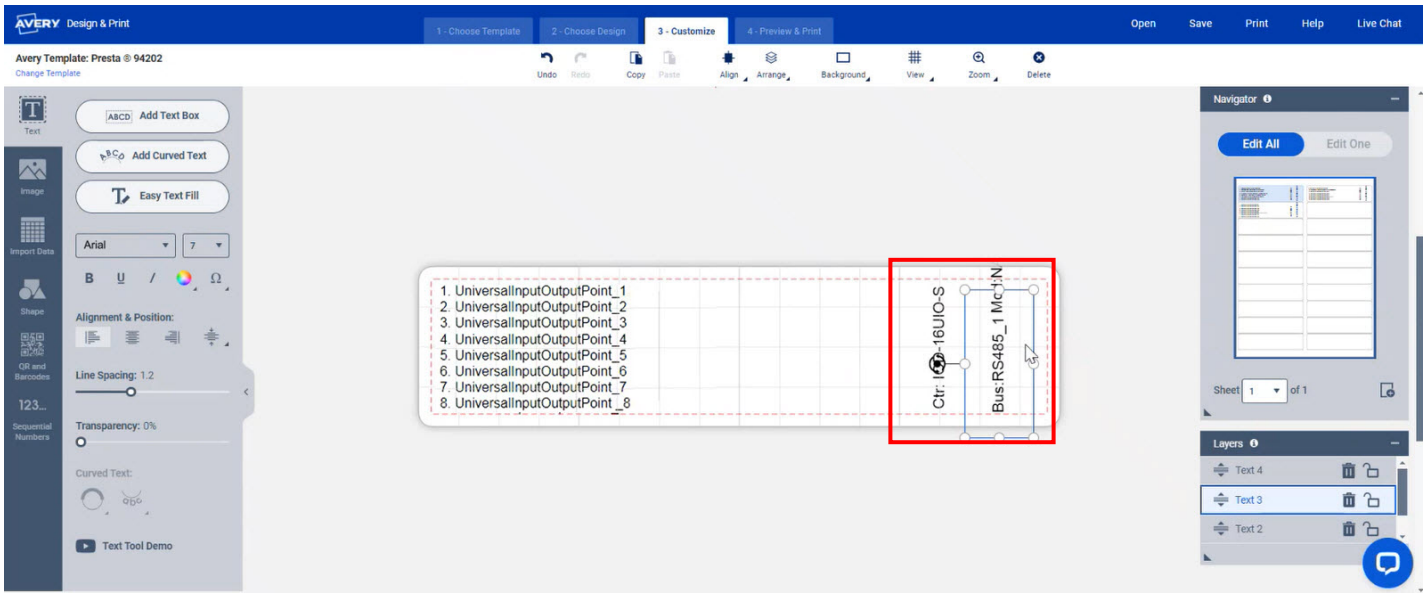


Figure 110. Avery Design & Print Web Page

14. Save and Continue with the *Preview & Print the Label on page 76*.

NOTE:

If you configure the Print label for one device while generating the label Preview & print, Avery will also generate the label for the other devices present in the PanelbusNetwork.

Preview & Print the Label

1. After customizing the print label, select Preview & Print option.

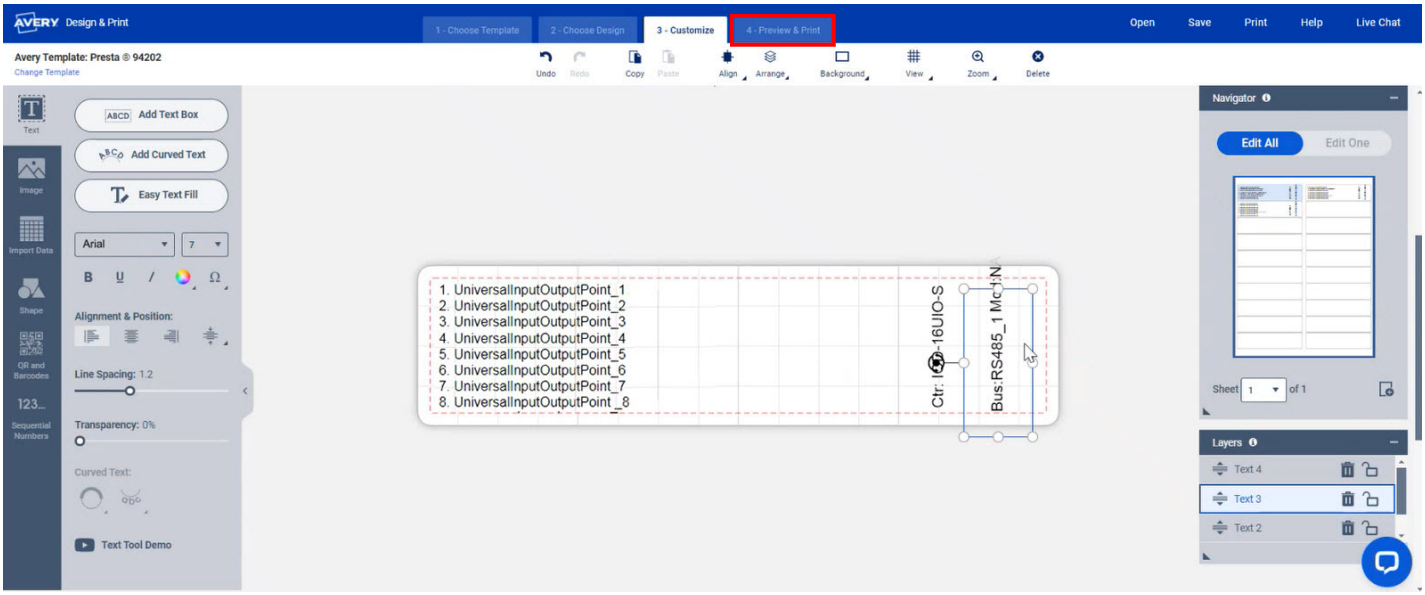


Figure 111. Avery Design & Print Web Page

2. A Warning dialog box will appear if there the text is outside the safe area.

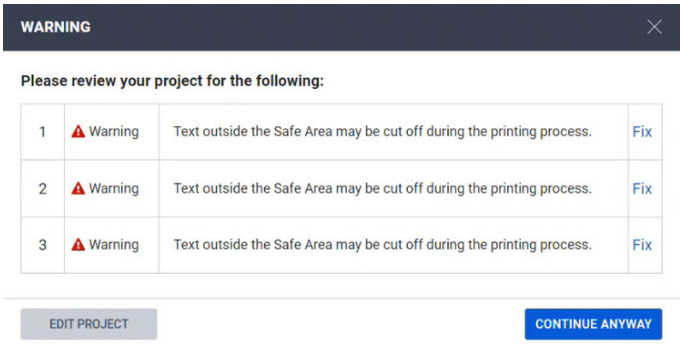


Figure 112. Warning dialog Box

3. Click **CONTINUE ANYWAY** if you want to print.
   or
   Click **Fix** to re-arrange the text.

A Preview Sheet will appear. Print the sheet from Avery Site.

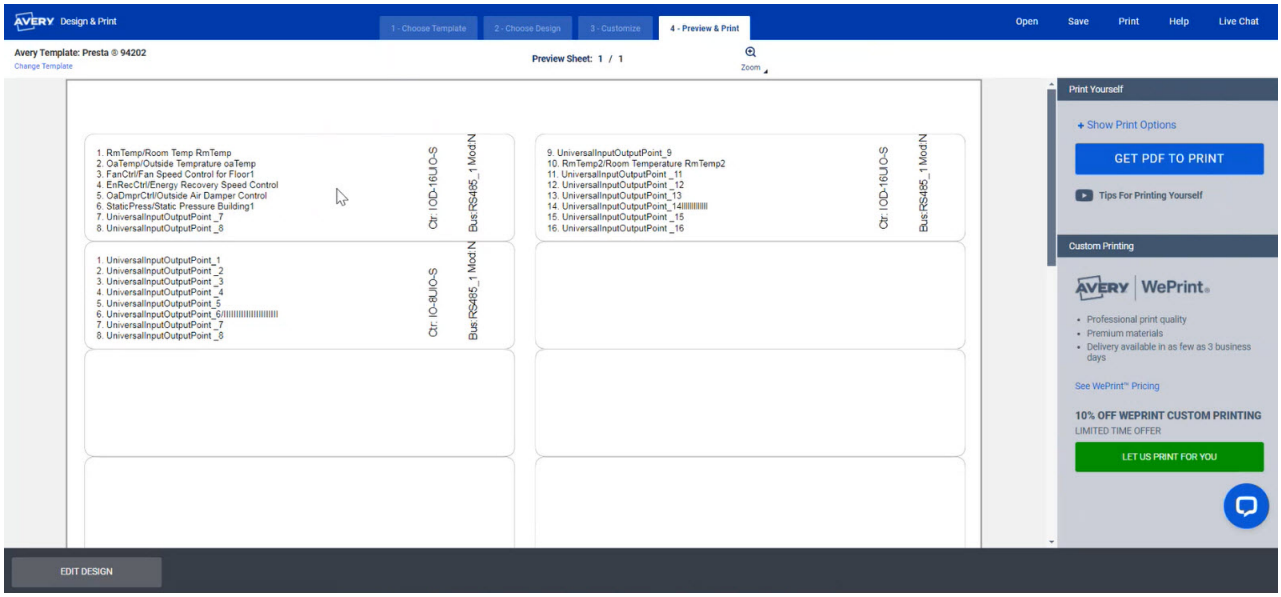


Figure 113. Avery Design & Print Web Page

Save the Print as PDF or directly print the label as per your choice.

TROUBLESHOOTING

Troubleshooting with LEDs

Table 8. Troubleshooting with IO LED

Case	LED Behavior	Meaning	Remedy
1	The IO module devices main ring LED's are going to Yellow, and the RS485 LED's to red, which returns to **Green** after some time. **NOTE:** This is applicable only for large cover variants. Refer to the below applicable IO module. -DI -UI	The IO module devices are added to the database, but they are not used in the logic and for trending/alarming, per default Niagara behavior, points will not be polled if not used, so IO modules added to the database are not polled. The only source of command from the station is the PING command. Example: 1. If the Panelbus IO device model 16DI ping frequency configured as 55 seconds and the Panelbus IO comm loss timeout is configured for 60 seconds. 2. If the panel IO device does not receive a command from the station for 60 seconds, it will take comm loss actions. 3. The device DIs are added to the database, but they are not used in the logic. 4. Since the DI is used in the logic and is not used for trending/alarming, per default Niagara behavior, points will not be polled if not used, so DIs added to the database are not polled. 5. Since there is no polling for points, the only source of command from the station is the PING command. 6. As per the device configuration, Niagara will ping the device once every 55 seconds. 7. Every command to be sent to Panelbus devices will be added to the queue, and when the station load is high, there is a probability that the commands added may take longer to execute. 8. When they are added to the queue, the PING message is not executed within 60 seconds, Panel IO will show a comm loss.	When ever the IO is added to the database, configure the IO and use the IO module in the logic and for trending/alarming. You will not observe the same issue when IO is configured, as IO will have a fast read/write cycle. At least one command will reach the Panel IO device, resulting in IO not going for a comm loss.

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31-00591-02 Rev. 07-24

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