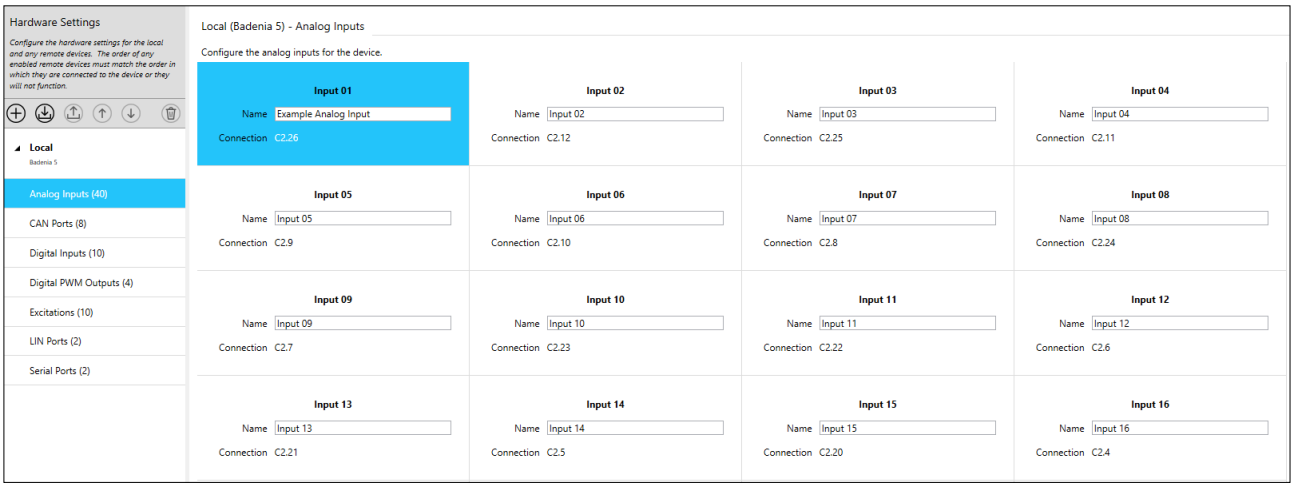
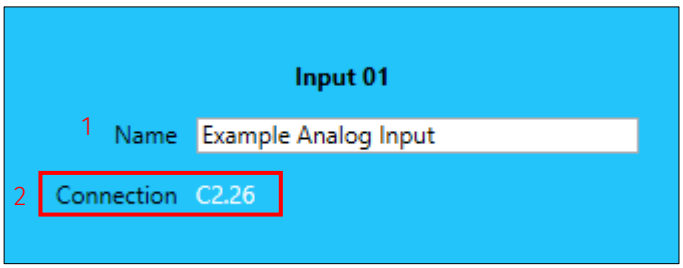
Hardware settings overview

The **Hardware Settings** node allows you to configure the settings for the hardware on the local device as well as any remote/secondary devices, such as an SJU.

Analog inputs

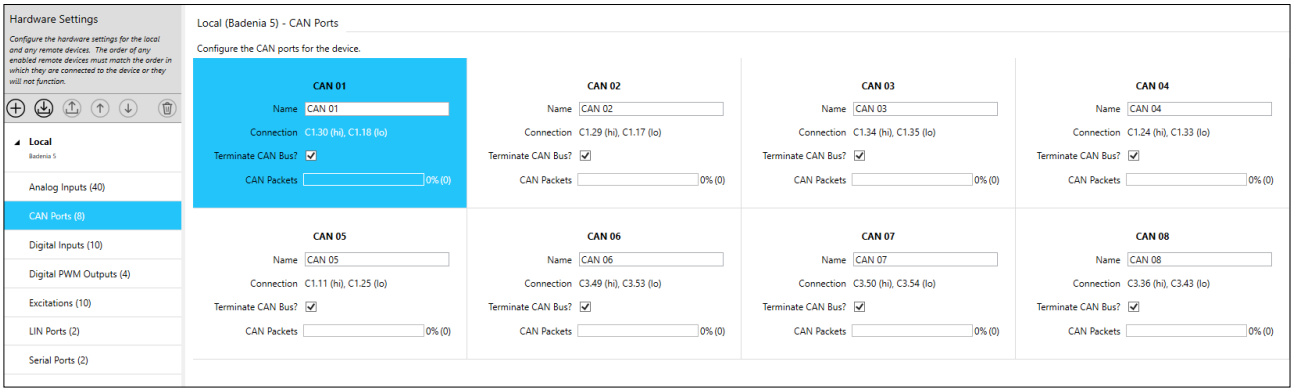
You can configure the name of analog inputs on the **Hardware Settings** node (1). Underneath each input label is a connection identifier in the format 'CX.Y', where X and Y are values that identify the connector and the pin of the device, respectively (2).

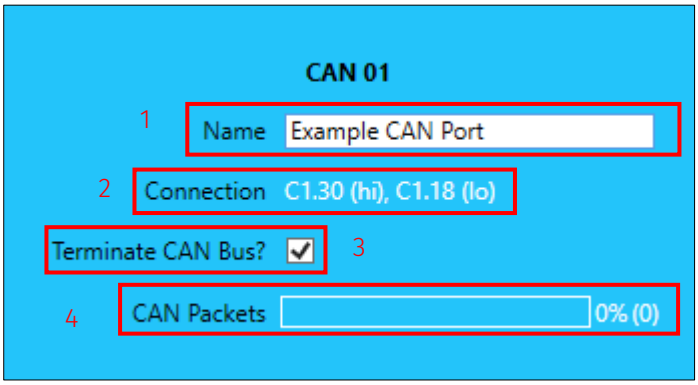




CAN ports

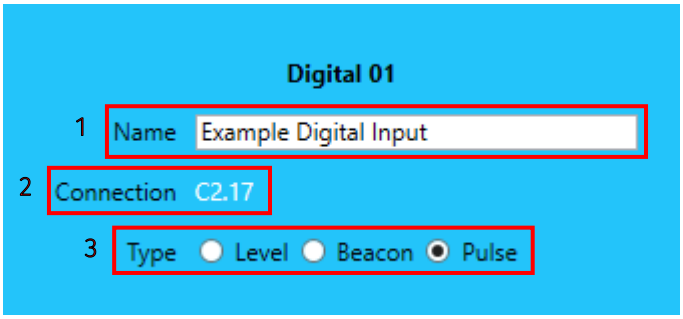
You can configure the name of the CAN ports on the **Hardware Settings** node (1). Underneath each CAN port label is a connection identifier in the format 'CX.Y', where X and Y are values that identify the connector and the pin of the device respectively (2). You can enable a selectable 120 Ohm CAN termination (3). The bar display shows the consumed bandwidth of the CAN port (4). This consumed bandwidth only represents the bandwidth allocation that Toolset can identify (configured in the CAN streams). Other messages on the bus are only visible to an external bus listener for the external devices.





Digital inputs

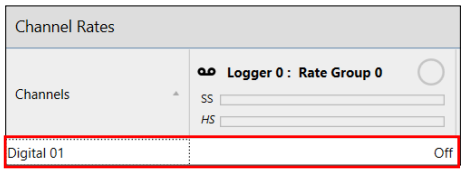
You can configure the name of digital inputs on the **Hardware Settings** node (1). Underneath each input label is a connection identifier in the format 'CX.Y', where X and Y are values that identify the connector and the pin of the device respectively (2). There are three digital input types (**Level**, **Beacon**, and **Pulse**) selected from the **Type** check boxes (3).



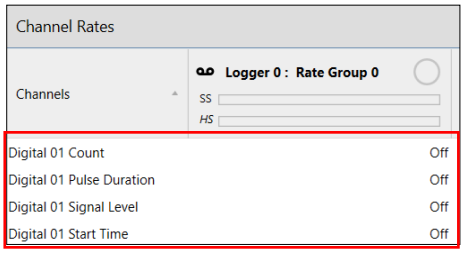
Types of digital inputs

When you configure the **Hardware** settings of a digital input, you can select from three options based on the application type. You can define sensors as shown below, but within the **Hardware** settings you can also configure the debug channels created.

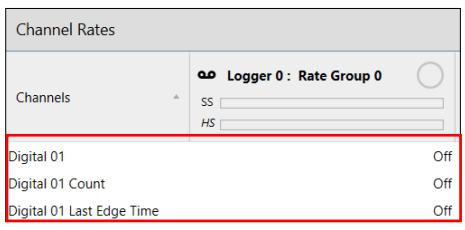
Level: Used for simple, digital push button, On/Off inputs. A standard configuration that allows you to generate channels to view the output level of the digital sensor.



Beacon: Used when you configure an end of lap timing beacon (see **Beacons**). You can generate multiple channels for debug from the digital pulse duration and start time. This is useful when you use an IR beacon to detect the start finish line, as a standard pulse time of ~12ms is usually required.

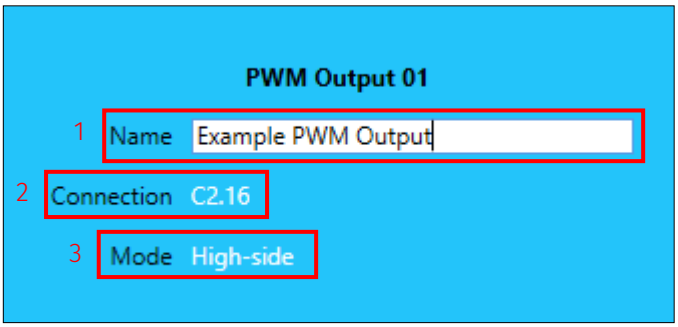


Pulse: Used when you configure rotational or DF11i wheel speed inputs where the number of pulses correlates to the number of revolutions. This generates frequency channels for rotational sensors and the time between teeth.



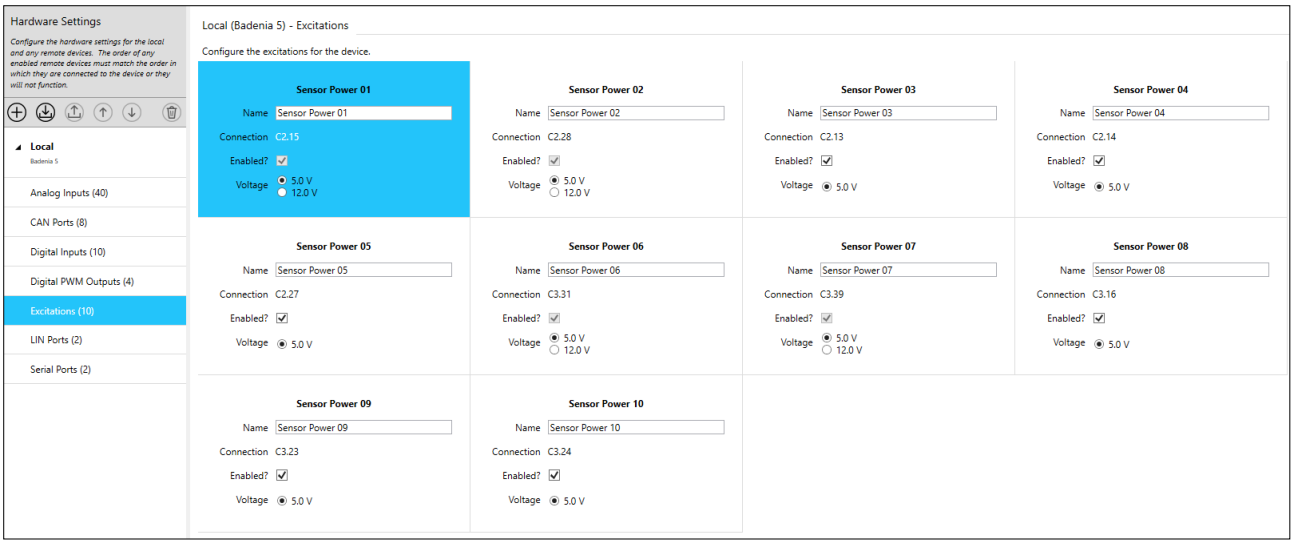
Digital PWM outputs

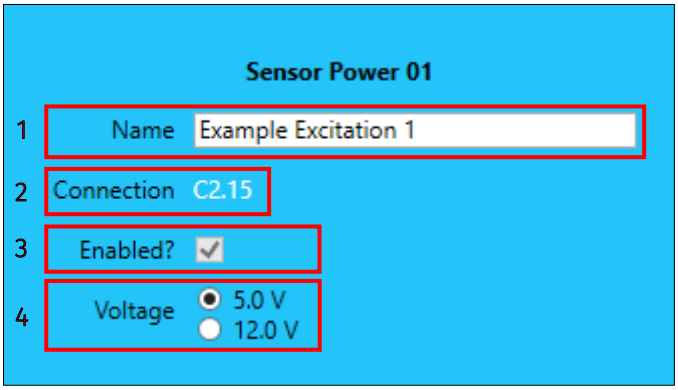
For devices with Digital PWM Output capability, you can configure the name of the Digital PWM Outputs on the **Hardware Settings** node (1.). Underneath each PWM Output label is a connection identifier in the format 'CX.Y', where X and Y are values that identify the connector and the pin of the device respectively (2). The PWM output **Mode** (high-side or low-side) is displayed (3).



Excitations

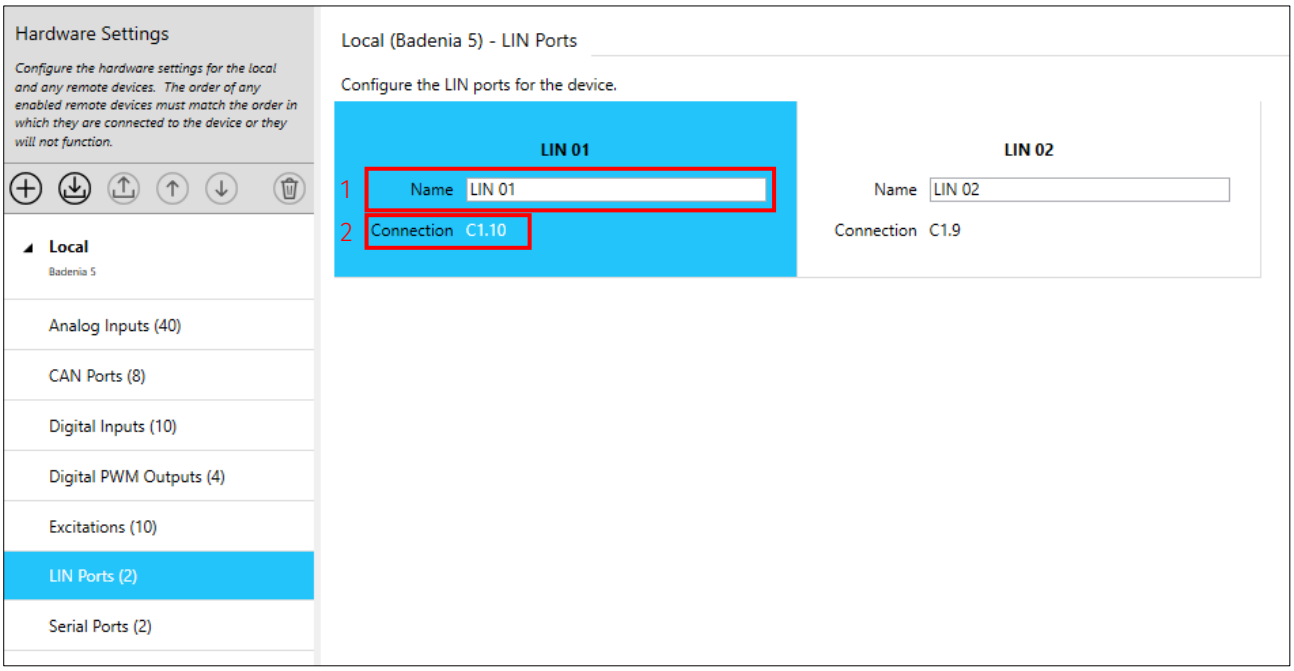
You can configure the name of power supplies (known as 'excitations') on the **Hardware Settings** node (1). Underneath each **Excitation** label is a connection identifier in the format 'CX.Y', where X and Y are values that identify the connector and the pin of the device, respectively (2). Select the **Enabled?** checkbox (3) to enable or disable the excitation by selecting the Some excitations offer variable output voltage capability. For these variable excitations you can click the required checkbox to set the output voltage (4).





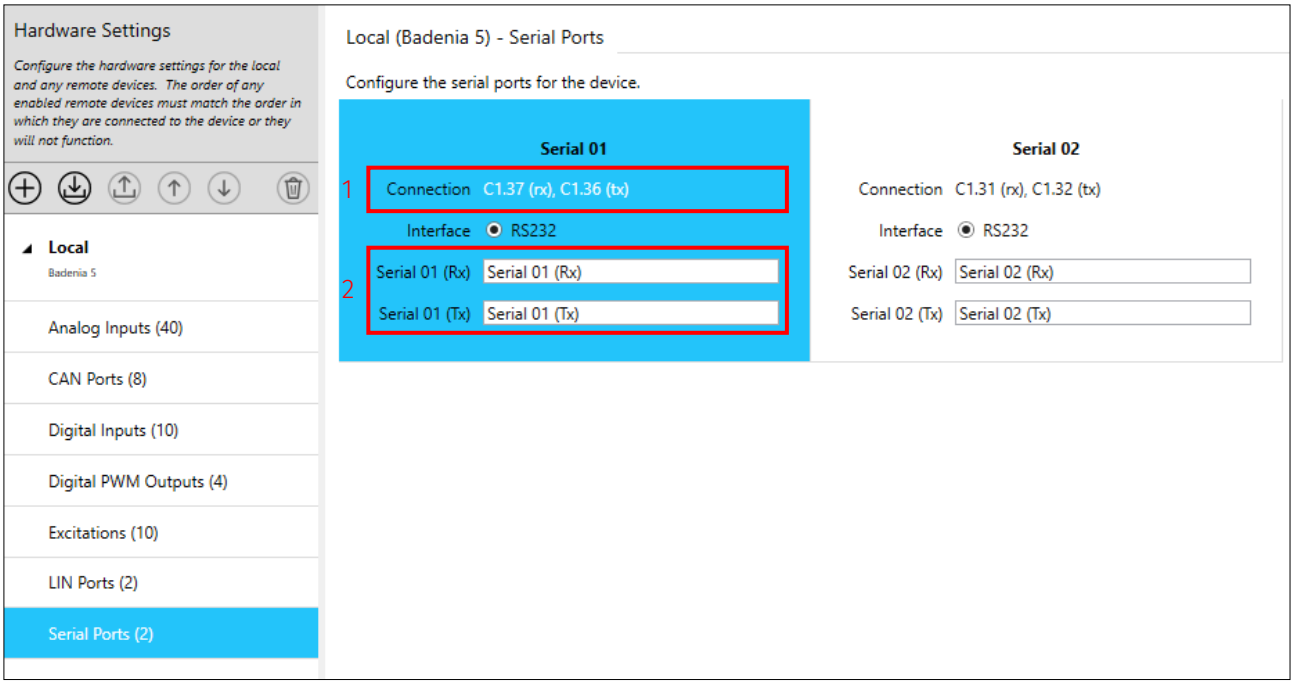
LIN ports

You can configure the name of the LIN ports on the **Hardware Settings** node (1). Underneath each LIN port label is a connection identifier in the format 'CX.Y', where X and Y are values that identify the connector and the pin of the device respectively (2).



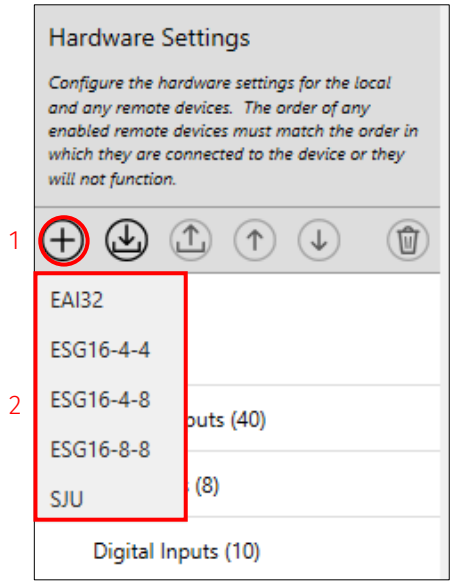
Serial Ports

On the **Hardware Settings** node, underneath each **Serial Port** label is a connection identifier in the format 'CX.Y', where X and Y are values that identify the connector and the pin of the device, respectively (1). You can configure the names of the **Serial Rx** and **Tx Ports** (2).

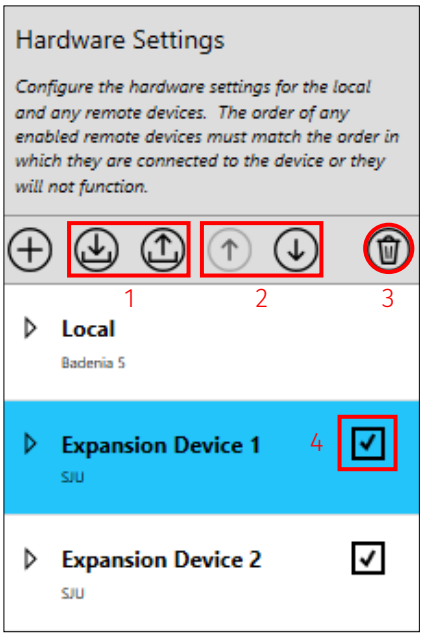


Configure an EtherCat expansion device

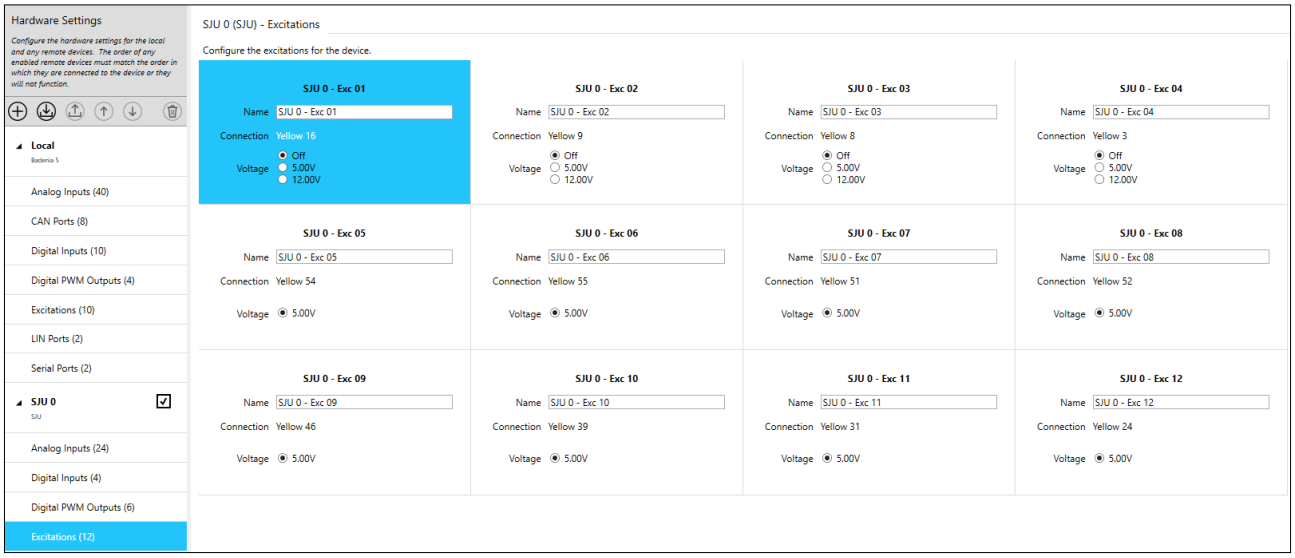
To add an EtherCat expansion device such as the EAI32 or SJU click the **+** button (1), and then select the device from the dropdown menu (2)



You can add multiple expansion devices and import and export previously configured expansion devices between existing setups (1). The order of the devices in the list must match the order in which they are physically connected on the EtherCat bus. Use the reorder tools (2) to change the order of the devices in the list up or down (2). Use the 'bin' option (3) to delete expansion devices from the list. If an expansion device is removed from the vehicle but you do not want to delete the device configuration from the list, deselect the 'enable' box (4).



The inputs and outputs for the expansion device appear in **Hardware Settings** in the same format and are configured in the same way as the local device hardware settings.



Note: When an expansion device is enabled, the expansion device channels are automatically populated on the **Channel Rates** node, but the logging rates must be set.