



## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

### Scope

Wiring and configuration of Relays and/or Inputs (Binary and/or Analog) on ATevo Series Chargers equipped with one (1) or more optional Auxiliary Input/Output boards.

### Summary

When supplied with optional Auxiliary Input/Output boards, ATevo is normally equipped with one (1) or two (2), however special units may be equipped with up to four (4). Auxiliary I/O boards are used for one or more of the following purposes via the respective inputs/outputs that can be wired to/from each board:

- [Relay Outputs](#) that can be configured to indicate the status of six (6) different alarms or status points.
- [Binary Inputs](#) that can be configured to report the binary status of four (4) controls (e.g., ON/OFF, high/low)
- [Analog Inputs](#) that include input scaling and can be configured to report the status of four (4) continuously variable controls referenced to the dc bus.

This document will show how to wire relays and/or inputs to an Auxiliary I/O Board and how to configure these for proper operation. After viewing the Auxiliary I/O Board Requirements (which are common to relays and inputs), you may navigate to whichever section(s) needed with the links (or page references) below.

### Navigation Links to Document Sections

- [Auxiliary I/O Board Requirements for Relays &/or Inputs](#) (p.2)
- [Relays](#) (p.4)
- [Binary Inputs](#) (p.11)
- [Analog Inputs](#) (p.17)



## Auxiliary I/O Board Requirements for Relays &/or Inputs

1. Auxiliary I/O Board (A4) must be plugged into the Power Board (A2) ([Figure 1A and 1B](#)). All system connections are factory wired when the Auxiliary I/O option is ordered with the ATevo. If you purchased an ATevo without the Auxiliary I/O option and later need to install it, you will receive an installation kit with purchase. Refer to the standard drawing to see where the board is to be mounted for your ATevo model and enclosure type.



Figure 1A – Location to Connect Auxiliary I/O Board with Power Board

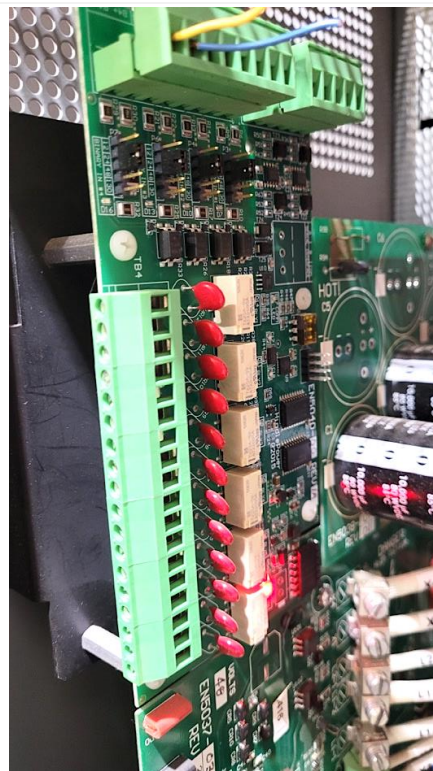


Figure 1B – Auxiliary I/O Board Installed on ATevo 6-25 Adc with 5054 Enclosure

2. Each Auxiliary I/O Board connected to ATevo must have a unique address setting to identify it to the system. The Auxiliary I/O dipswitch (A4-S1), located near the top center of the board ([Figure 2A](#)), determines the Auxiliary I/O Board Address using three (3) switches. The switch will be factory set for your system. It should not need to be changed unless an Auxiliary I/O Board is being replaced or added. Viewing the board with the S1 silkscreen label to the left ([Figure 2B](#)), the switch UP position is ON, and the DOWN position is OFF.
  - a. Auxiliary I/O Board #1: 1-ON, 2-ON, 3-ON
  - b. Auxiliary I/O Board #2: 1-OFF, 2-ON, 3-ON



## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

- c. Auxiliary I/O Board #3: 1-ON, 2-OFF, 3-ON
- d. Auxiliary I/O Board #4: 1-OFF, 2-OFF, 3-ON

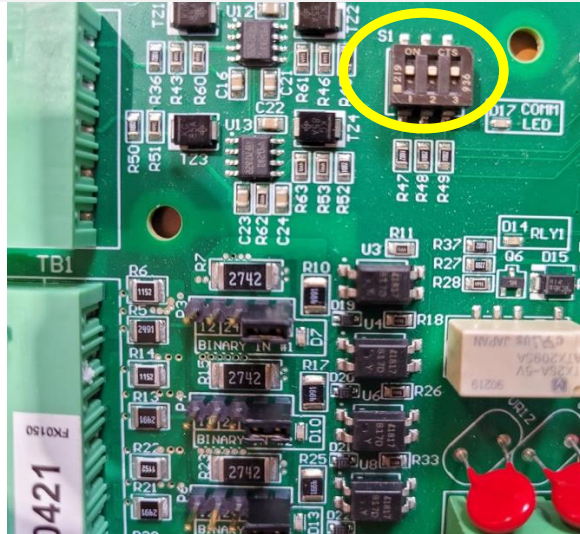


Figure 2A – Auxiliary I/O Board (A4) Dipswitch S1 seen with Silkscreened S1 to Left

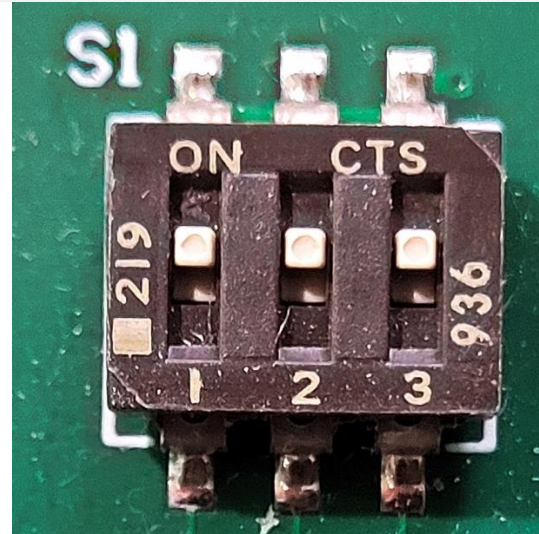


Figure 2B – 3 Switches to Adjust when Adding or Replacing an Auxiliary I/O Board

- 3. The Auxiliary I/O Board (A4) links to the Main Control Board (A1), via serial communications, through the ribbon cable connected to the Power Board (A2). A GREEN communications LED on the Auxiliary I/O Board (A4) is located adjacent to terminal block (A4-TB2). This LED blinks to indicate active communication between the Aux I/O Board and the Main Board.
- 4. For component details of the Auxiliary I/O Board (A4), refer to the standard drawing for your ATevo model and enclosure type.





## What are Relays Used for?

Relays are used along with the ATevo battery charger within dc systems to report alarms or status points, either on the ATevo or externally.

## Relay Design Features

The Auxiliary I/O Board (A4) contains six (6) configurable one (1) form-C relays as shown in [Figure 3](#). Relay contacts are rated for 0.5A @ 125 Vac/Vdc.

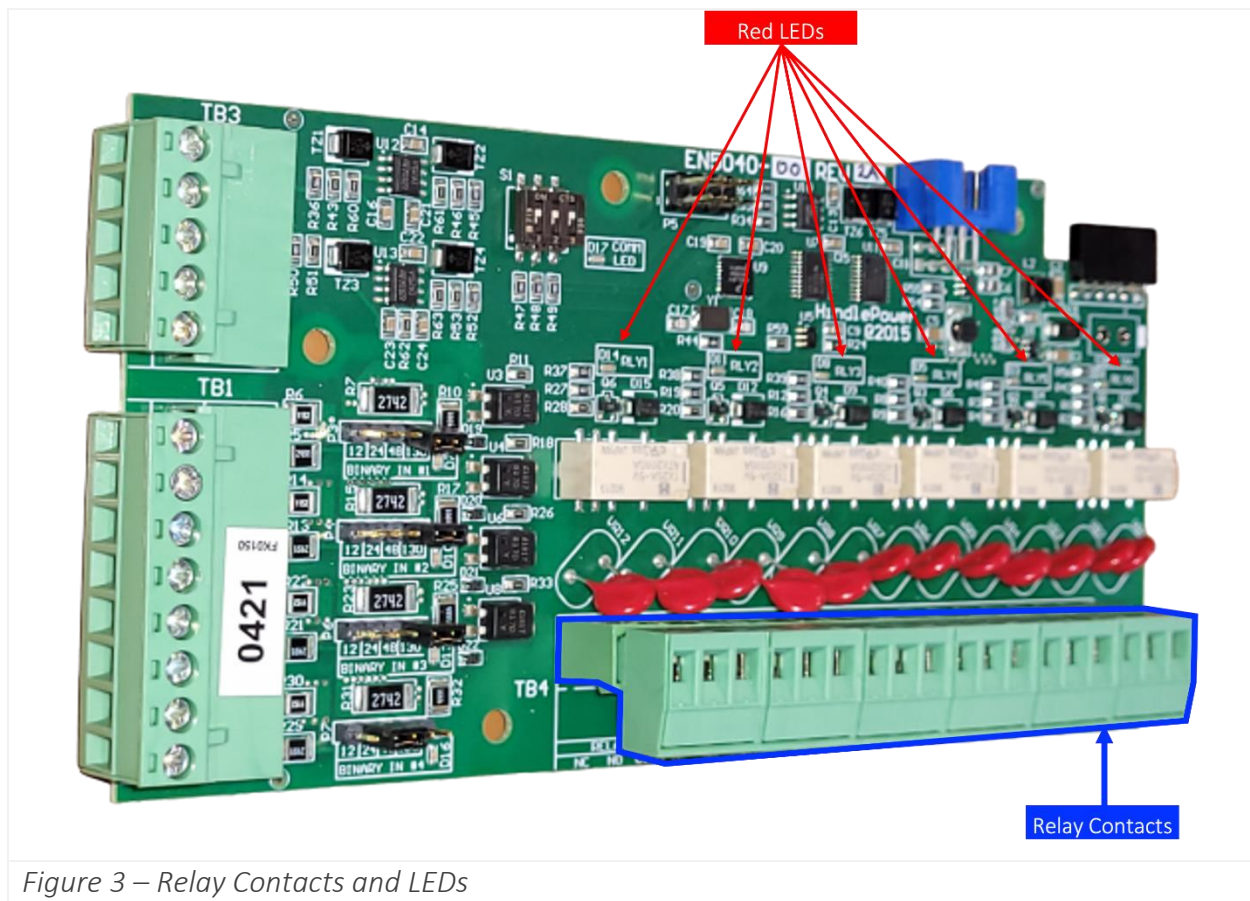


Figure 3 – Relay Contacts and LEDs

Each relay has:

- a RED LED that serves as a debugging aid that illuminates when the relay is in alarmed state.
- a second contact set which feeds back the relay's state to ATevo's main processor.



## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

Each relay is configurable to:

- change states based on any alarm condition or status point.
- be latching or non-latching.
- switch to active state after a pre-programmed delay.

All relays on the Auxiliary I/O Board (A4) are 'failsafe'. If communication is lost between the Main Control Board (A1) and the Auxiliary I/O Board (A4), the relays will switch to the alarm state.

### Wiring of Relays

Connections to the relays are made through an 18-position terminal block (A4-TB4). Connections to the six (6) programmable relay contacts are clearly labeled with NC (normally closed), NO (normally open) and COM (common) for each relay on the board as seen in **Figure 4**.



Figure 4 – Terminal Block for Relay Connections

To make relay connections, do the following:

1. De-energize and lock out all external ac and dc voltages to ATevo.
2. Allow internal voltages to dissipate.
3. Remove safety shield and verify no hazardous voltages are present with a voltmeter.
4. Route remote annunciator wiring to Auxiliary I/O Board (A4) through an unused enclosure knockout.
5. Connect wiring (#22-14 AWG) to appropriate terminals on the Auxiliary I/O Board (A4-TB4).
6. Strip each wire 0.25in / 6.4mm and tighten terminal screws.
7. Replace the safety shield and close the front panel door.
8. Restart ATevo.



## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

Note the following:

- Alarm contacts are rated at 0.5A @ 125 Vac/Vdc.
- Signal terminal block (A4-TB4) is compression screw type, accepting #22-14 AWG wire.
- Terminals are labeled in the non-alarm condition, with ATevo operating 'normally' and relays energized.

**NOTICE** not 'shelf state.'

- If user alarm contacts (A4-TB4) are to drive inductive dc loads (e.g., a larger dc relay) an external protective diode must be installed at the dc relay to avoid equipment damage. Refer to Application Note ([JD5011-00](#)).

### Configuration of Relays

After you have wired a relay, you configure it for use. There are three (3) configuration settings that you must address for each relay you use. **Table 1** below shows the typical factory defaults for these settings. If the default settings satisfy your requirements, no configuration is necessary.

**Table 1: Factory Default Alarm Relay Configuration**

Relay	Name	Latching	Delay
#1	High DC Voltage	disabled	30 seconds
#2	Low DC Voltage	disabled	30 seconds
#3	DC Output Failure	disabled	30 seconds
#4	Low AC Supply	disabled	30 seconds
#5	Positive Ground Fault	disabled	30 seconds
#6	Negative Ground Fault	disabled	30 seconds

If the default settings do not meet your requirements, see [Table 2](#) for a description of each setting, then the instructions for how to configure each one. It is useful in understanding why each relay configuration parameter might need to be changed to meet your specific needs.



## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

Table 2: Relay Configuration – What & Why

What to Configure?		Why?
#1	Identify Alarm Condition or Status Point that will activate relay.	If you will not be using the relay to monitor the default condition set at the factory, you will need to reassign its use.
#2	Select whether the relay should latch or not when it is activated.	<p>A latched relay stays active and reports an alarm even after the condition changes back from the alarm state to normal state. A non-latched relay only reports an alarm while the alarm condition is present; the alarm goes away when the condition returns to normal.</p> <ul style="list-style-type: none"><li>• <u>Example where latching may be desired:</u> A relay activates because of a ground fault.<ul style="list-style-type: none"><li>○ Ground fault may occur while it is raining but disappear after rain stops.</li><li>○ If latching is disabled, you may not notice that a ground fault has occurred because alarm for relay has turned off.</li><li>○ However, if alarm is set to latch, it will remain active, allowing you to see it after rain stops, and will remain active until you manually unlatch it using the “Unlatch selected relays” feature discussed in Section 7.6 (Resetting Latched Alarm Relays) of your charger’s ATevo Operations Manual.</li></ul></li></ul>
#3	Set delay time before relay switches to active state after a condition/state occurs.	<p>Typically, this avoids nuisance alarms.</p> <ul style="list-style-type: none"><li>• <u>Example:</u> Charger is in an area that experiences frequent, but short power outages that may cause the battery to discharge.</li></ul>

**NOTICE** Software Configuration Naming: Auxiliary I/O Board relays are specified by “A4” board number plus relay number on the associated board. For example: ‘Aux 1 relay 3’ specifies Relay #3 on Auxiliary I/O Board #1.



## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

To Select Relay to Configure

MENU > RELAYS > 'Relay Configuration' > select relay from options.

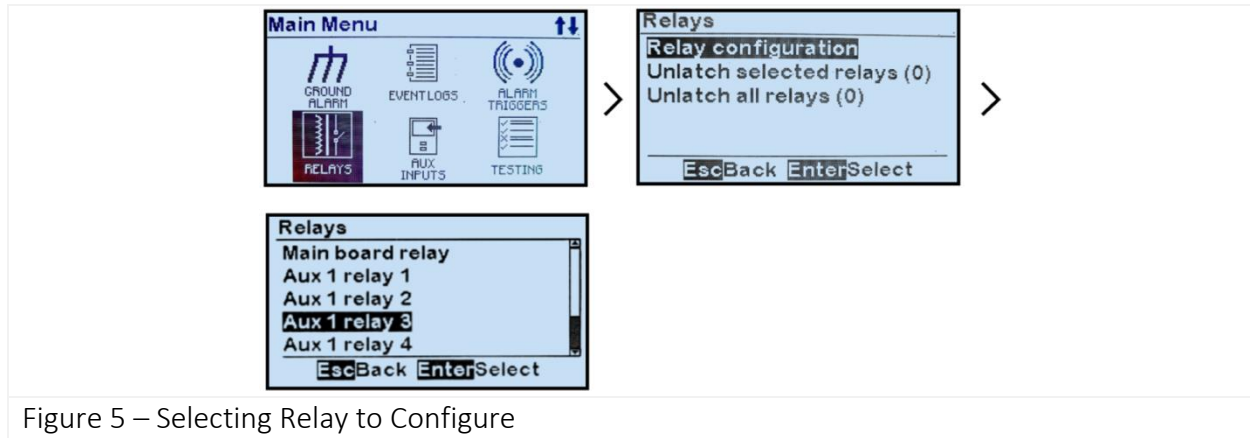


Figure 5 – Selecting Relay to Configure

To Change the Alarm Condition Assigned to Relay

MENU > RELAYS > 'Relay Configuration' > select relay from options ([see Figure 5](#)) > 'Fault:' > select condition from list.

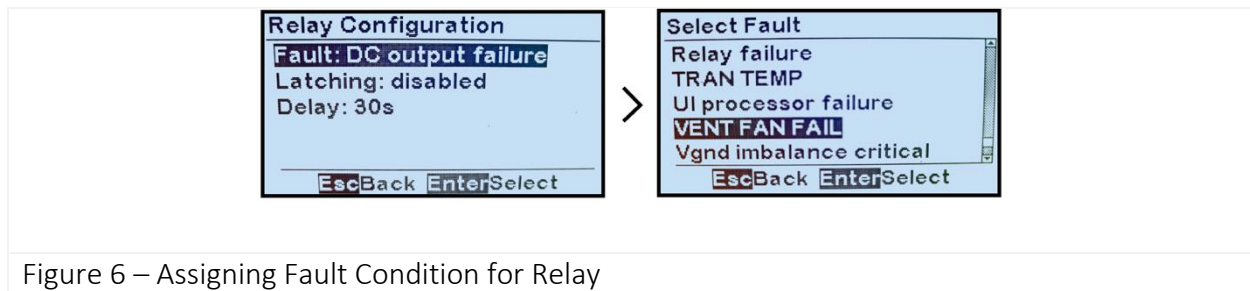


Figure 6 – Assigning Fault Condition for Relay

To Change a Relay's Latching Control Configuration

MENU > RELAYS > 'Relay Configuration' > select relay from options ([see Figure 5](#)) > 'Latching:' > select from 2 latching options.

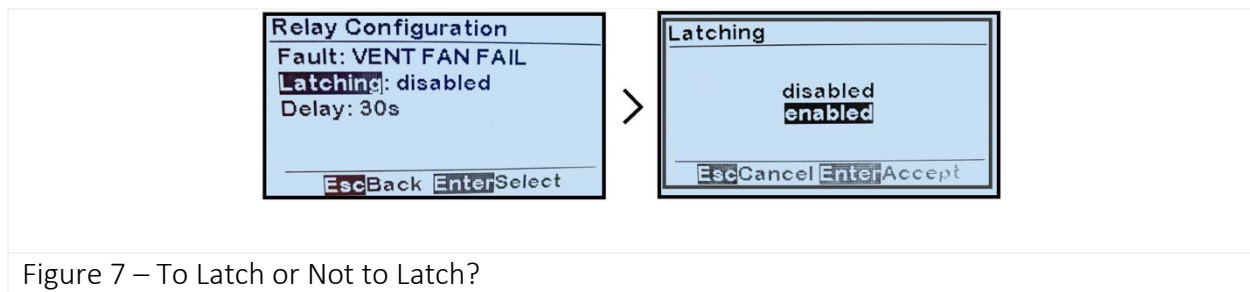


Figure 7 – To Latch or Not to Latch?





To Change a Relay's Time Delay Configuration

MENU > RELAYS > 'Relay Configuration' > select relay from options (see Figure 5) > 'Delay:' > set digits as desired.

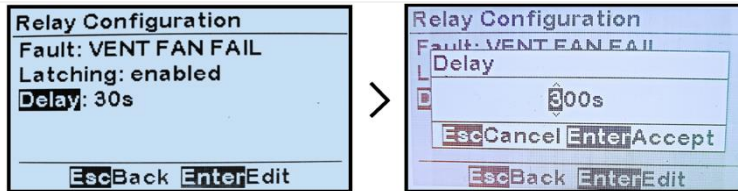


Figure 8 – Setting Time Delay

### Combining Relays

Auxiliary I/O alarm relays are set to the factory defaults in [Table 1](#) (p.6). Beyond the configuration changes discussed earlier, there are applications where you may wish to combine relays together. For example, to save space on your alarm board, you might wish to combine the Positive (+) Ground Fault Alarm (Relay#5) with the Negative (-) Ground Fault Alarm (Relay #6) into a combined Ground Fault Alarm.

To do so, the two relays must be physically wired together, in one of the two configurations shown in [Figure 9A](#) and [Figure 9 B](#):

- A. Wired in Parallel – Used if normally-open contacts are used.
- B. Wired in Series – Use if normally-closed contacts are used.

a) IF NORMALLY-OPEN CONTACTS ARE USED, RELAYS SHOULD BE WIRED IN PARALLEL.



Figure 9A – Parallel Wiring of 2 Relays with Normally-Open Contacts Used

b) IF NORMALLY-CLOSED CONTACTS ARE USED, RELAYS SHOULD BE WIRED IN SERIES.



Figure 9B – Series Wiring of 2 Relays with Normally-Closed Contacts Used

	<b>Auxiliary I/O Board Relays &amp; Inputs</b>	<b>Wiring &amp; Configuration</b>
		JD5089-00

After wiring the relays together, you can then wire the signal to your alarm board and name it accordingly using your respective software interface. No configuration of the ATevo is necessary.



## What are Binary Inputs Used for?

The Auxiliary I/O Board (A4) binary inputs are used to monitor, alarm, and/or report on the binary status of any external switch or contact (e.g., ON/OFF, high/low). Each input can be independently configured to be active high or low, activate an alarm, and/or activate a control (such as charger shutdown). ATevo assigns each input a unique generic name that you may configure to your needs (such as '2% Hydrogen' or 'Vent Fan Fail').

## Binary Input Design Features

The four (4) Binary Inputs are optically isolated from ATevo and each other. They can be configured via jumper selection to accept input voltages of 12Vdc, 24Vdc, 48Vdc, or 130Vdc (factory-default). Each Binary Input has an associated yellow LED and a jumper selection block (**Figure 10**). The LED serves as a debugging aid as it will illuminate when the associated Binary Input is high (in the 'ON' state).

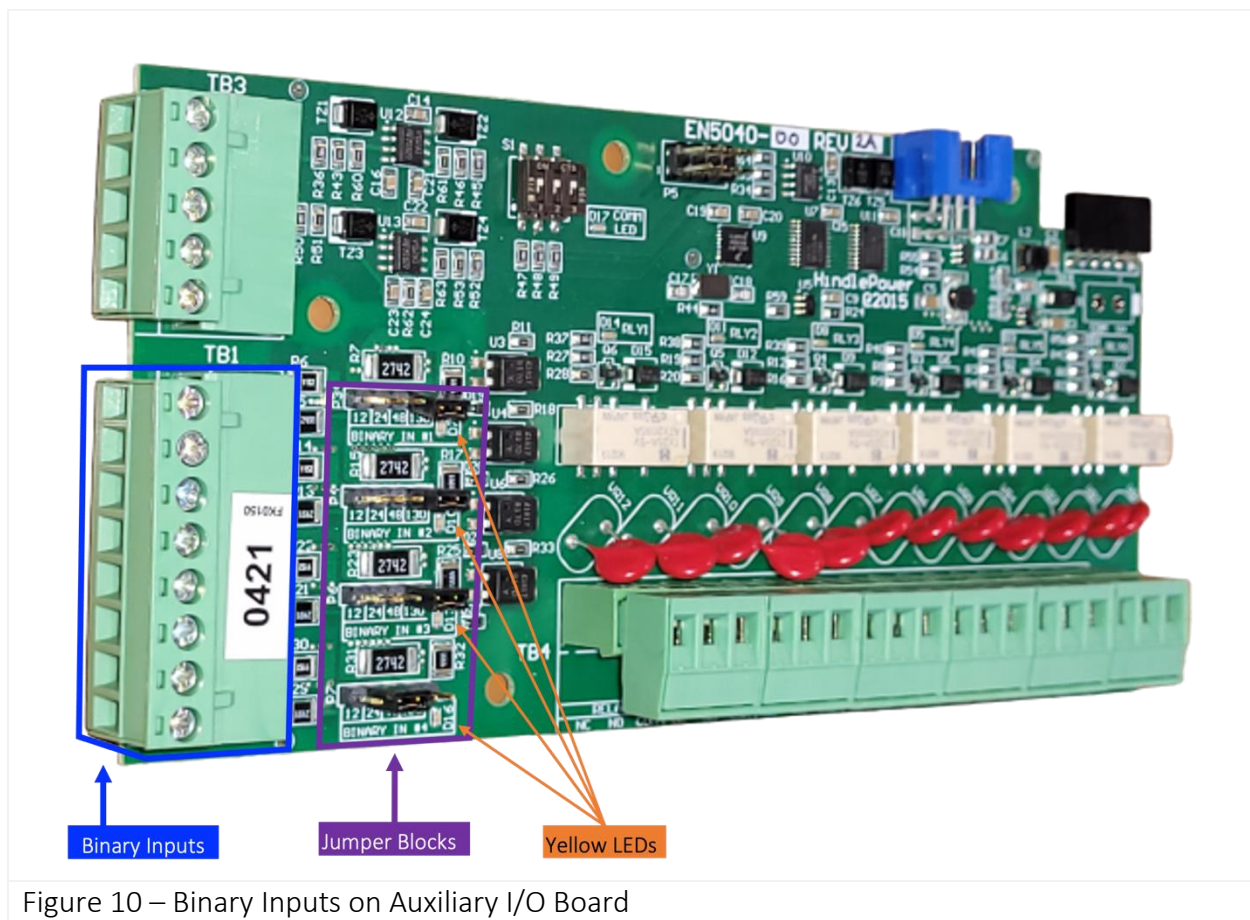


Figure 10 – Binary Inputs on Auxiliary I/O Board



**NOTICE** Binary Input Naming: Default names for Auxiliary I/O Board binary inputs are specified by [board number](#) and binary input number on the associated board. For example: 'Aux 1 input B2' specifies binary input #2 on Auxiliary I/O Board #1.

### Configuration of Binary Input Voltage Selection Jumpers

**NOTICE** Before wiring the Binary Inputs, verify the Binary Input voltage selection jumpers are configured for the correct input voltage. Incorrect voltage configuration may damage the Auxiliary I/O Board (A4).

Each Binary Input has an associated input voltage configuration jumper. The configuration jumpers (P3, P4, P6, and P7) are located adjacent to the Binary Input Terminal Block (A4-TB1) on the Auxiliary I/O Board. In **Figure 11A** we show the voltage jumper for Binary Input #4 in its factory default position. **Figure 11B** shows Binary Input #4 custom configured to 24 V.



Figure 11A – Binary Input Jumper #4 with Factory-Default of 130 V

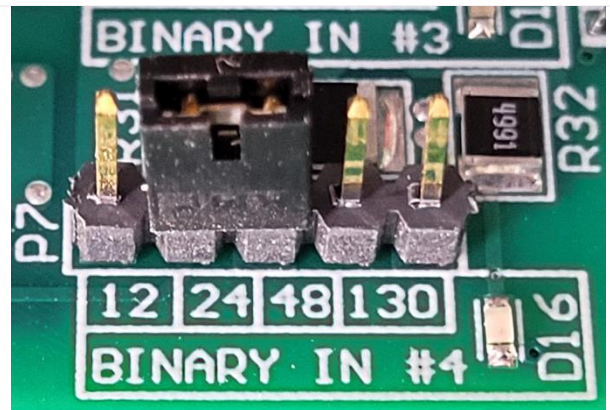


Figure 11B – Binary Input # 4 Jumper Configured for 24 V

### Wiring of Binary Inputs

**NOTICE** Before wiring the Binary Inputs, verify the Binary Input voltage selection jumpers are configured for the correct input voltage, as discussed in the previous section. Incorrect voltage configuration may damage the Auxiliary I/O Board (A4).

Connections to Binary Inputs are made through an 8-pos terminal block (A4-TB1). The upper piece of the terminal block can be removed to simplify wiring then reattached to the lower piece once wiring is completed.



## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

The terminal connections are labeled along the edge of the Auxiliary I/O Board next to terminal block (A4-TB1). Each Binary Input is optically isolated and has a polarized pair of terminals. Observe the pos (+) and neg (-) designators when wiring the terminal block.

To make binary input connections, do the following:

1. De-energize and lock out all external ac and dc voltages to ATevo.
2. Allow internal voltages to dissipate.
3. Remove safety shield and verify no hazardous voltages are present with a voltmeter.
4. Route binary inputs to Auxiliary I/O Board (A4) through an unused enclosure knockout.
5. Strip each (#22-14 AWG) wire 0.25in / 6.4mm.
6. Connect signal wiring to appropriate terminals (A4-TB1) of Auxiliary I/O Board and tighten terminal screws.
7. Replace safety shield and close front panel door.
8. Restart ATevo.

Note the following:

- Binary Inputs are configurable for 12Vdc, 24Vdc, 48Vdc, or 130Vdc (factory-default).
- Signal terminal block (A4-TB1) is compression screw type, accepting #22-14 AWG wire.
- Correct polarization is required.

### Configuration of Binary Inputs

Once you have set the binary input jumper to the voltage that matches the input and wired the input to the correct terminals on the Auxiliary I/O Board terminal block, you must configure the binary input in the software.

There are four (4) configuration settings that you must address for each binary input you use. [Table 3](#) shows the typical factory defaults for these settings. If the default settings satisfy your requirements, no configuration is necessary. With factory default settings, all binary inputs use default names for alarms, use 'high' as the active state, but are not enabled as alarms, and do not control any charger operations when active.





## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

**Table 3: Factory Default Binary Input Configuration**

Binary Input	Name	Alarm State	Action	Active State
#1	BI1-1	disabled	none	high
#2	BI1-2	disabled	none	high
#3	BI1-3	disabled	none	high
#4	BI1-4	disabled	none	high

If the default configuration does not satisfy your requirements, see **Table 4** for a description of each setting; it is useful in understanding why each binary input parameter might need to be configured to meet your specific needs. Instructions for configuring each parameter are found at the end of this section.

**Table 4: Binary Input Configuration – What & Why**

What to Configure?		Why?
#1	<b>Name</b>	The name of the input, whether default or custom, will appear in the alarm list once the input is enabled as an alarm, as described below. <ul style="list-style-type: none"> <li>It will be easier to recognize the alarm when it has a descriptive name such as 'Vent Fan Fail.'</li> </ul>
#2	<b>Active State</b>	To set the normal and alarmed state of the input. <ul style="list-style-type: none"> <li>For example, a binary input that checks for 'Vent Fan Fail' might have active state = 'high' if a fan failure causes a relay to switch to the 'high' state.</li> </ul>
#3	<b>Alarm Enable</b>	For a binary input to generate an alarm on ATevo when it senses an alarmed (active) state, it must be enabled.
#4	<b>Action Assignment</b>	To make the charger execute an action when the binary input's alarmed state is sensed. <ul style="list-style-type: none"> <li>For example, if '2% Hydrogen' is sensed, the action could be set to 'Disable Equalize' so that the battery will degas less.</li> <li>If 'none,' the default state, is selected, an alarm will be reported but no action on the charger will be initiated.</li> </ul>



## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

To Select Binary Input to Configure

MENU > AUX INPUTS > 'Binary Input Configuration' > select input from options.

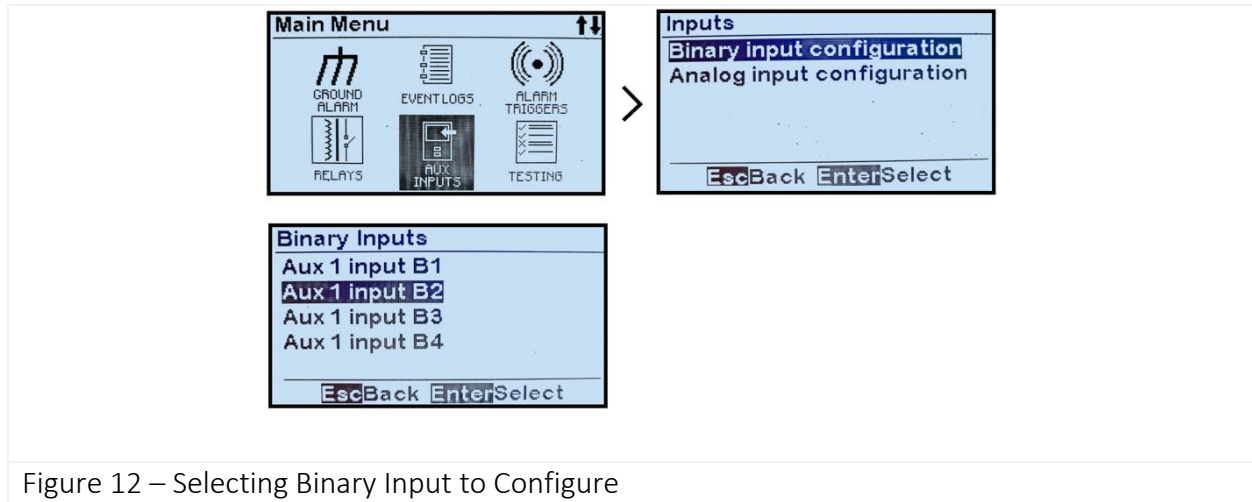


Figure 12 – Selecting Binary Input to Configure

To Assign a Name for a Binary Input

MENU > AUX INPUTS > 'Binary Input Configuration' > select input from options ([see Figure 12](#)) > 'Name:' > set characters as desired.

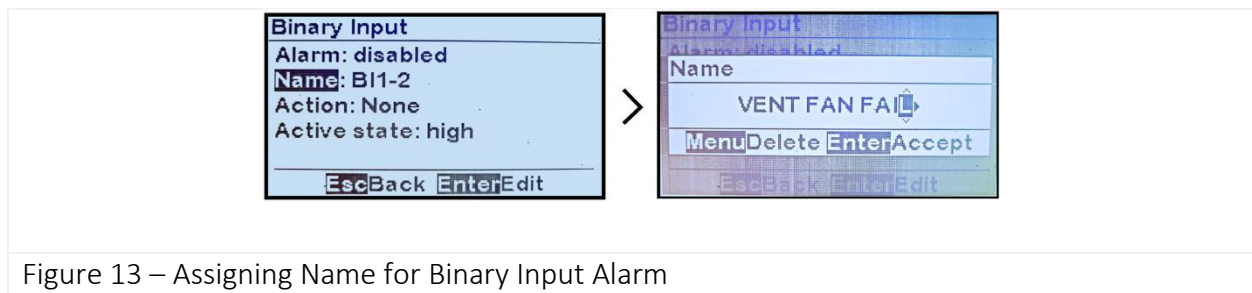


Figure 13 – Assigning Name for Binary Input Alarm



## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

To Enable a Binary Input as an Alarm

MENU > AUX INPUTS > 'Binary Input Configuration' > select input from options ([see Figure 12](#))> 'Alarm:' > select from 2 alarmed states.

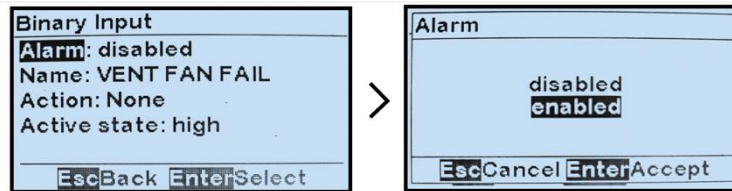


Figure 14 – Enabling Alarm for Binary Input

To Execute a Charger Action when a Binary Input is Active

MENU > AUX INPUTS > 'Binary Input Configuration' > select input from options ([see Figure 12](#))> 'Action:' > select from 3 options.

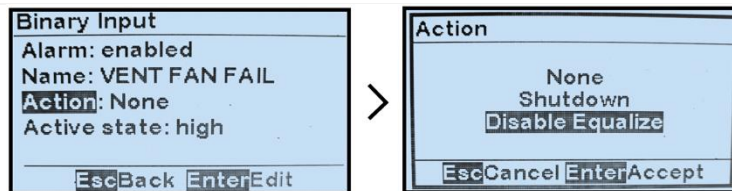


Figure 15 – Executing Charger Action when Binary Input is Active

To Set Which State is Active State

MENU > AUX INPUTS > 'Binary Input Configuration' > select input from options ([see Figure 12](#))> 'Active state:' > select from 2 options.

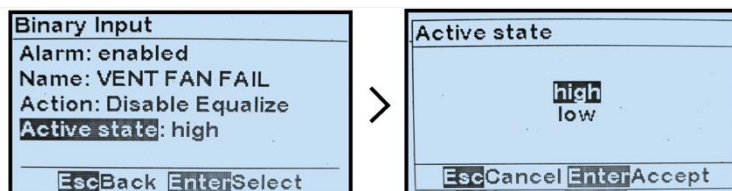


Figure 16 – Setting the Active State



## What are Analog Inputs Used for?

The Auxiliary I/O Board analog inputs are used to monitor, alarm, and/or report on the reading from any external transducer or sensor. Each input can be scaled such that the value is reported in primary units ( $^{\circ}\text{C}$ , Vac, etc.).

The analog inputs can also generate alarms when their reported values are below, above, or out-of-range of a configured value. ATevo assigns each input a unique generic name that you may configure to your needs.

## Analog Input Design Features

The four (4) Analog Inputs shown in **Figure 17** below are rated for 0-10 Vdc. They utilize common ground, referenced to DC OUTPUT NEG, and can be used to import generic analog values. ATevo assigns each Analog Input a unique generic name such as 'AUX 1 input AN1'. This name can be changed to be readily identifiable by users (e.g., 'Ambient Temp'). ATevo will report all status and alarms with the default name, or the custom name assigned.

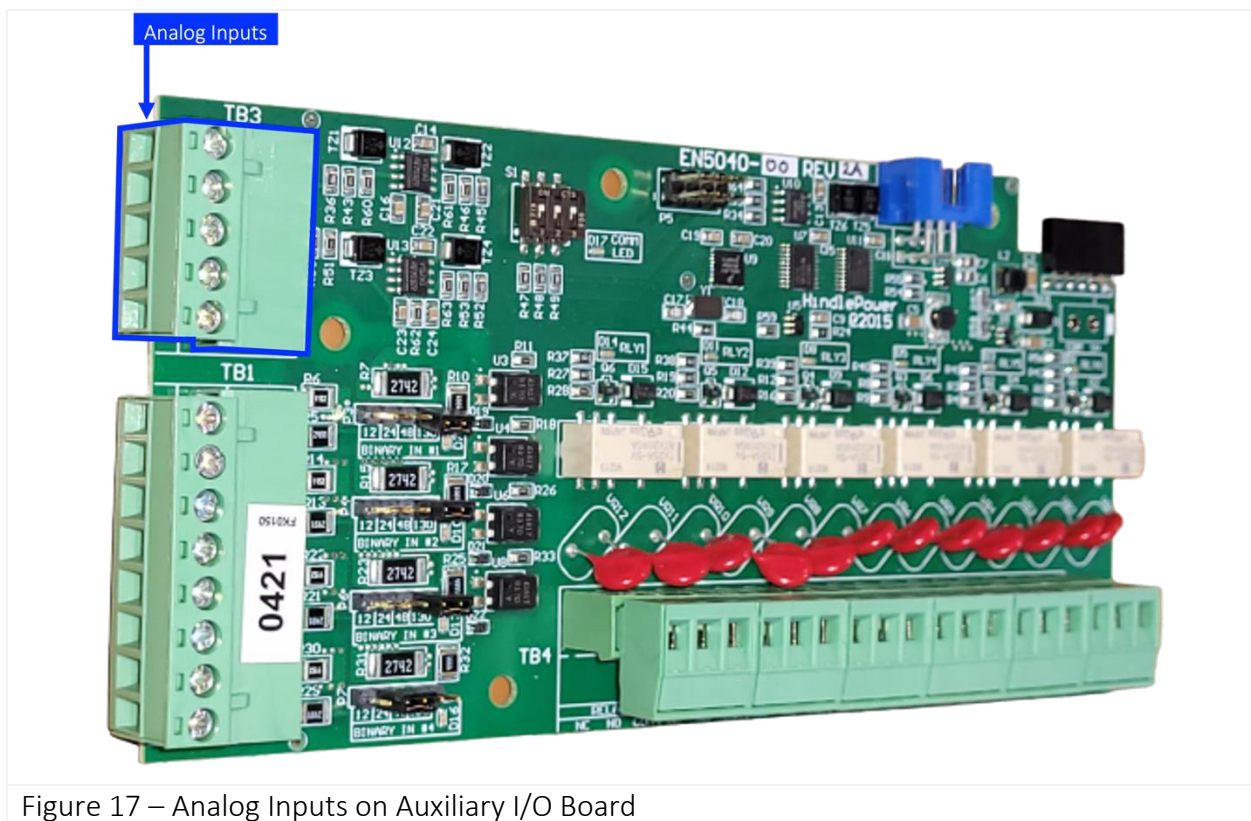


Figure 17 – Analog Inputs on Auxiliary I/O Board

	<b>Auxiliary I/O Board</b> <b>Relays &amp; Inputs</b>	Wiring & Configuration
		JD5089-00

**NOTICE** Analog Input Naming: Auxiliary I/O Board analog inputs' default names are specified by [board number](#) and analog input number on the associated board. For example: 'Aux 1 input AN2' specifies analog input #2 on Auxiliary I/O Board #1.

## Wiring of Analog Inputs

Connections to the Analog Inputs are made through 5-pos terminal block (A4-TB3). The terminal block is removable to simplify wiring. Terminal connections are labeled along the edge of the Auxiliary I/O Board next to terminal block (A4-TB3). The Analog Inputs are NOT isolated and must be referenced to the negative (-) dc bus.

To make analog input connections, do the following:

1. De-energize and lock out all external ac and dc voltages to ATevo.
2. Allow internal voltages to dissipate.
3. Remove safety shield and verify no hazardous voltages are present with a voltmeter.
4. Route remote analog inputs to Auxiliary I/O Board (A4) through an unused enclosure knockout.
5. Strip each (#22-14 AWG) wire 0.25in / 6.4mm.
6. Connect signal wiring to appropriate terminals (A4-TB3) of Auxiliary I/O Board and tighten terminal screws.
7. Replace safety shield and close front panel door.
8. Restart ATevo.

Note the following:

- Analog inputs are rated at 0-10Vdc.
- Signal terminal block (A4-TB4) is compression screw type, accepting #22-14 AWG wire.
- All Analog Inputs (AN1, AN2, AN3, AN4) must be references to the ATevo negative (-) bus voltage (COM) terminal.

## Configuration of Analog Inputs

Once you have wired your input(s) to the correct terminals on the Auxiliary I/O Board terminal block, you must configure the analog input(s) in the software.

There are four (4) configuration settings that you must address for each analog input you use. [Table 5](#) shows the typical factory defaults for these settings. If the default settings satisfy your requirements, no configuration is necessary. With factory default settings, all analog inputs use





## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

default names for alarms, use volts as units with a range between 0.0V and 10.0V, but are not enabled as alarms, and do not control any charger operations when active.

**Table 5: Factory Default Analog Input Configuration**

Analog Input	Name	Units	0V=	10V=	Trigger	Action
#1	AN1-1	V	0.0V	10.0V	off	none
#2	AN1-2	V	0.0V	10.0V	off	none
#3	AN1-3	V	0.0V	10.0V	off	none
#4	AN1-4	V	0.0V	10.0V	off	none

If the default configuration does not satisfy your requirements, see **Table 6** for a description of each setting; it is useful in understanding why each analog input parameter might need to be configured to meet your specific needs. Instructions for configuring each parameter are found at the end of this section.

**Table 6: Analog Input Configuration – What & Why**

What to Configure?		Why?
#1	<b>Name</b>	The name of the input, whether default or custom, will appear in the alarm list once a trigger with one or more threshold values has been set, as described below. <ul style="list-style-type: none"> <li>For example, it may be easier to recognize an alarm when it has a descriptive name such as 'Transformer Temp.'</li> </ul>
#2	<b>Primary Unit</b>	This is the unit for what is being measured by the transducer. The ATevo will scale to this unit from Volts once a scaling assignment is performed, as discussed below. <ul style="list-style-type: none"> <li>For example, a temperature transducer that measures temperature values in Fahrenheit has F as the primary unit.</li> <li>After assigning the primary unit, ATevo will display the analog input value with the primary unit; for example, it will display 80.3F instead of 6.2 Vdc.</li> </ul>
#3	<b>Scaling Assignment</b>	Scaling means that we assign a primary unit value to both 0.0V and 10.0V, ATevo's upper and lower limit values for analog inputs. By doing so, ATevo



## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

		<p>will display an analog input value that is within the range of the upper and lower limit values in the primary unit (e.g., 32F and 212F). For example, it will display 80.3F instead of 6.2 Vdc.</p> <ul style="list-style-type: none"><li>• A temperature transducer connected to ATevo reads 32F when its analog input is 0 V and 212F when its input is 10V. To set up scaling on ATevo, we assign 0V=32F and 10V=212F.</li></ul>
#4	<b>Trigger Assignment</b>	<p>For an analog input to generate an alarm on ATevo, you must set a condition that will trigger an alarm. This condition will make use of one or more threshold values which must be set once the trigger has been set.</p> <p>An alarm can be generated if the analog value is:</p> <ul style="list-style-type: none"><li>• above a threshold,</li><li>• below a threshold,</li><li>• within a defined range, or</li><li>• outside a defined range.</li></ul> <p>The threshold values required will depend on the trigger selected. Threshold values must be within the range of the scaling.</p> <ul style="list-style-type: none"><li>• For example, if you want to trigger an alarm for transformer overheating you will use an 'above a threshold' alarm trigger, and you will need to set the 'high threshold set point' next.</li></ul>
#5	<b>Threshold Assignment</b>	<p>Once a trigger condition has been defined, you need to set the threshold value(s) at which the alarm occurs. ATevo will automatically determine which threshold(s) is/are needed based on the trigger selected previously.</p> <ul style="list-style-type: none"><li>• For example, if an 'above a threshold' alarm trigger has been set to alarm when a transformer overheats (exceeds 150F), you will need to set the 'high threshold set point' to 150F.</li></ul>
#6	<b>Action Assignment</b>	<p>To make the charger execute an action when the alarmed state of the analog input is sensed.</p> <ul style="list-style-type: none"><li>• For example, if the 'above threshold' value for 'Transformer Temp' is reached or exceeded, the alarm will trigger. The action for this alarm could be set to 'Shutdown' so that the battery charger output is disabled.</li><li>• If 'none,' the default state, is selected, an alarm will be reported but no action on the charger will be initiated.</li></ul>



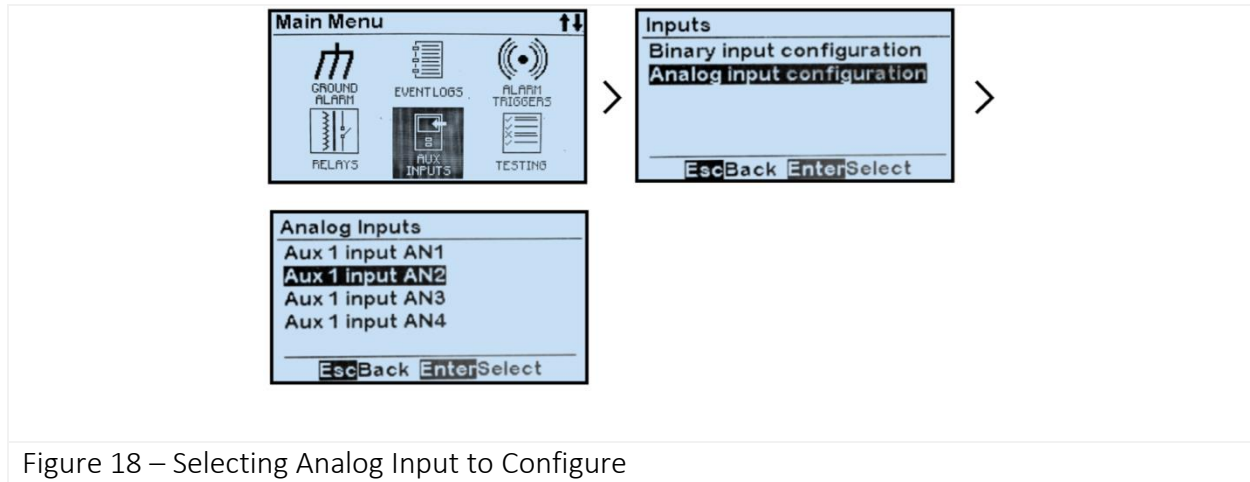
## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

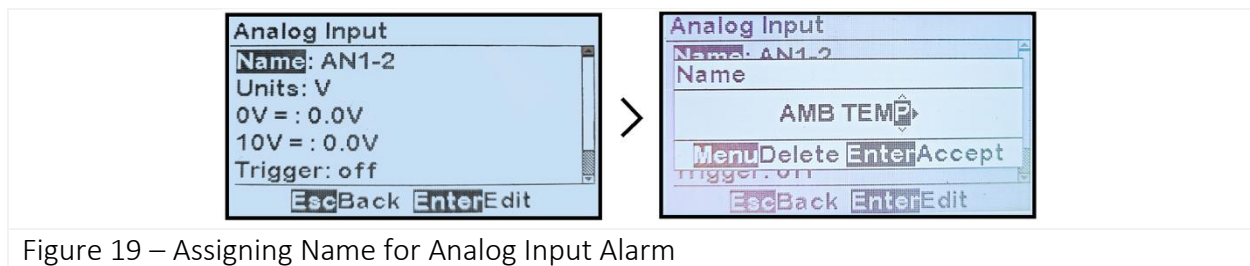
To Select Analog Input to Configure

MENU > AUX INPUTS > 'Analog Input Configuration' > select input from options.



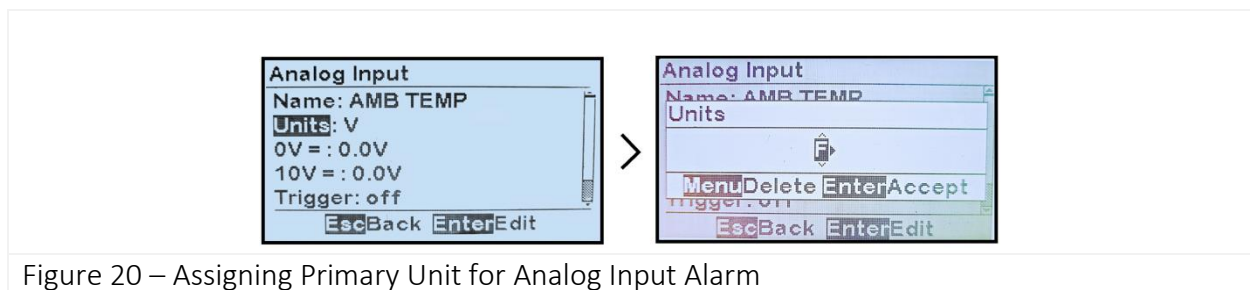
To Assign a Name for an Analog Input

MENU > AUX INPUTS > 'Analog Input Configuration' > select input from options ([see Figure 18](#)) > 'Name:' > set characters as desired.



To Assign a Primary Unit for an Analog Input

MENU > AUX INPUTS > 'Analog Input Configuration' > select input from options ([see Figure 18](#)) > 'Units:' > set characters as desired.





## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

To Set Scaling for an Analog Input (for both low scale value = 0.0V and high scale value 10.0V)

To change the low scale value:

MENU > AUX INPUTS > 'Analog Input Configuration' > select input from options ([see Figure 18](#)) > '0V=: ' > set digits as desired.

**NOTICE** This number must represent the primary value when the input value is 0 V. If no scaling is required, set 0.0V.

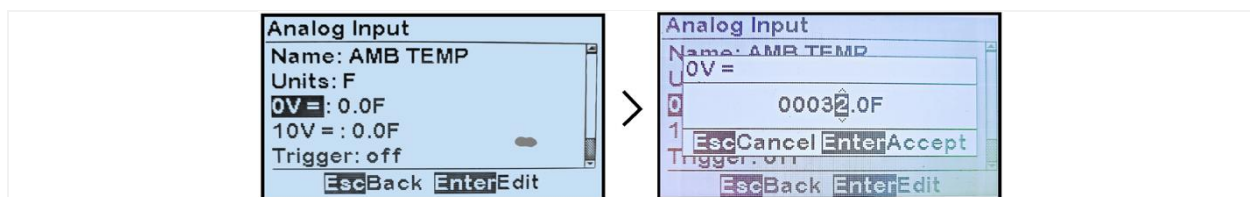


Figure 21 – Setting Low Scale Value for TEMP

To change the high scale value:

MENU > AUX INPUTS > 'Analog Input Configuration' > select input from options ([see Figure 18](#)) > '10V=: ' > set digits as desired.

**NOTICE** This number must represent the primary value when the input value is 10 V. If no scaling is required, set 10.0V.

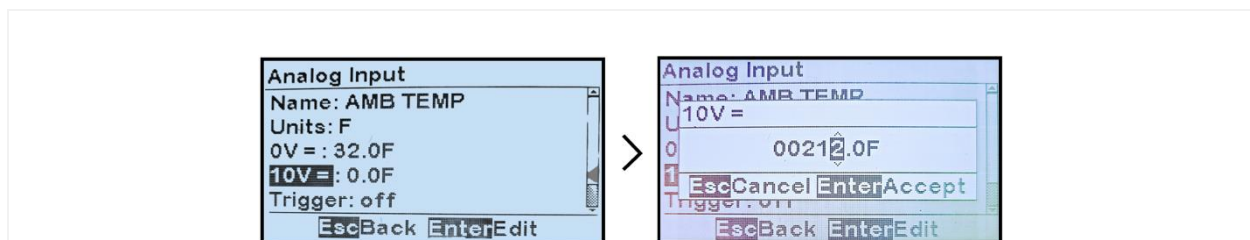


Figure 22 – Setting High Scale Value for TEMP



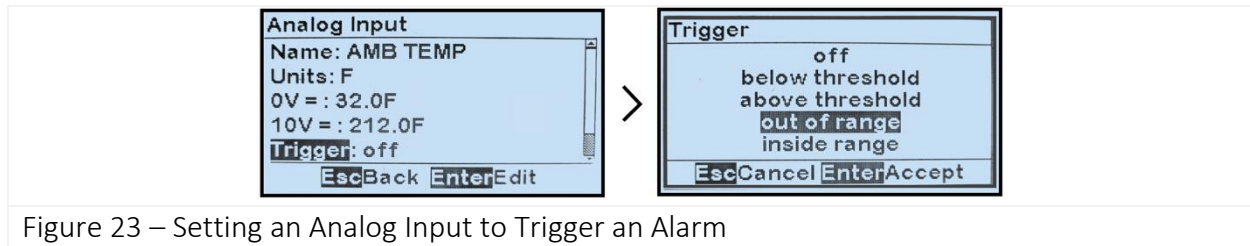
## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

To Set an Analog Input as an Alarm Trigger

MENU > AUX INPUTS > 'Analog Input Configuration' > select input from options ([see Figure 18](#)) > 'Trigger:' > select from 5 trigger options.

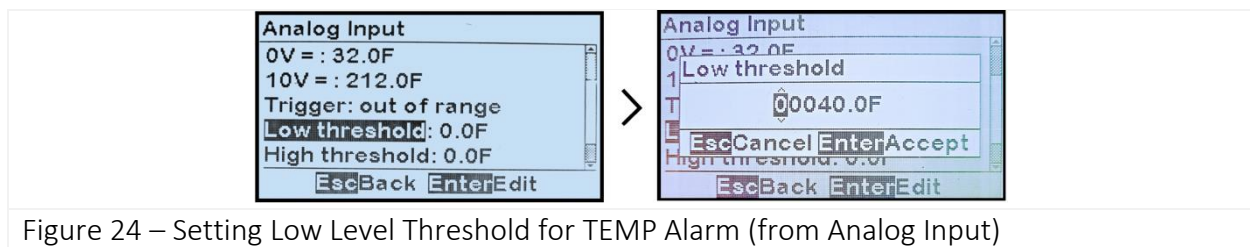


To Set Threshold(s) for A Triggered Analog Input Alarm (high and low threshold values are shown, but it may not be necessary to set both)

To change the low-level threshold set point:

MENU > AUX INPUTS > 'Analog Input Configuration' > select input from options ([see Figure 18](#)) > 'Low threshold:' > set digits as desired.

**NOTICE** This number may be in the primary values and must be within the two setpoints for scaling.







## Auxiliary I/O Board Relays & Inputs

Wiring & Configuration

JD5089-00

To change the high-level threshold set point:

MENU > AUX INPUTS > 'Analog Input Configuration' > select input from options (see Figure 18) > 'High threshold:' > set digits as desired.

**NOTICE** This number may be in the primary values and must be within the two setpoints for scaling.

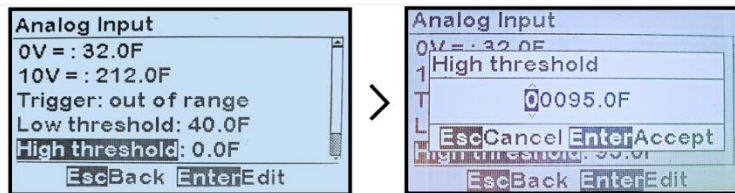


Figure 25 – Setting High Level Threshold for TEMP Alarm (from Analog Input)

To Execute a Charger Control when an Analog Input Alarm is Triggered

MENU > AUX INPUTS > 'Analog Input Configuration' > select input from options (see Figure 18) > 'Action:' > select from options.

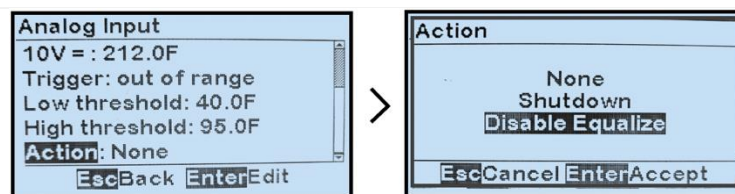


Figure 26 – Executing Charger Action when Analog Input Alarm is Triggered

## References

Additional information is available from the following sources:

- [JA5011-51 – Operations Manual \(6-25 Adc, Single Phase Inputs\)](#)
- [JA5011-52 – Operations Manual \(30-100 Adc, Single Phase Inputs\)](#)
- [JA5011-53 – Operations Manual \(All Three Phase Inputs\)](#)

## Version History

Date	Firmware Version	Changes
05/10/2024	3.2.0+	Date document originated.