



AirWay

Wireless Signal Transceiver

Model AWT200



Installation and User Manual

Revision 03 – March 2023

© CASWA Pty Ltd – 2012



CONTENTS

1	OVERVIEW	3
1.1	Typical Applications.....	3
2	SPECIFICATIONS	4
2.1	Physical Specifications.....	4
2.2	Electrical Specifications.....	5
2.3	Communication Specifications.....	5
2.3.1	Communications Range.....	5
3	INSTALLATION DETAILS	5
3.1	Prior to Installation.....	5
3.2	Wiring Diagrams.....	6
3.2.1	Interlocking travel limits.....	6
3.2.2	Controlling two (or more) hoists.....	7
4	COMMISSIONING DETAILS	9
4.1	Installing and Launching the FSU Application	9
4.1.1	FSU Program Installation.....	9
4.1.2	Installing the FSU application.....	9
4.1.3	Launching the application	9
4.2	Connecting to the Device	10
4.3	Checking for Firmware	11
4.4	AirWay General Configuration Screen	12
4.5	Binding the AirWay to a Device.....	13
4.5.1	Advanced configuration	14
4.5.2	Enable Input.....	15
4.5.3	Bridge Input	15
4.5.4	Configuring the Outputs.....	18
5	REMOTE IO MODE	19
6	OPERATING BEHAVIOUR	19
7	ROUTINE MAINTENANCE	19
	APPENDIX A: FSU SYSTEM REQUIREMENTS	19



1 OVERVIEW

AirWay is an electronic device that wirelessly transmits and receives up to 4 input/output control signals. It can be used to provide remote I/O for products such as CASWA's Liftlog™ data logger, where the desired signals cannot be cabled into the logger directly. Alternatively, two AirWay units can be used together to provide up to 4 virtual connections.

1.1 Typical Applications

AirWay units can be used in a number of ways. The most common uses are for:

- a) Interlocking the travel limits of two hoist or two cranes so that one will slow and stop when the other does.
- b) Implementing dual hoisting with one hoist slaved to the other wirelessly.
- c) Preventing travel into certain zones when a door is open or machine is active



2 SPECIFICATIONS

2.1 Physical Specifications

Overall length (mm):	115
Overall width (mm):	100
Overall height (mm):	23
Weight (kg):	0.12
Mounting:	30mm DIN Rail

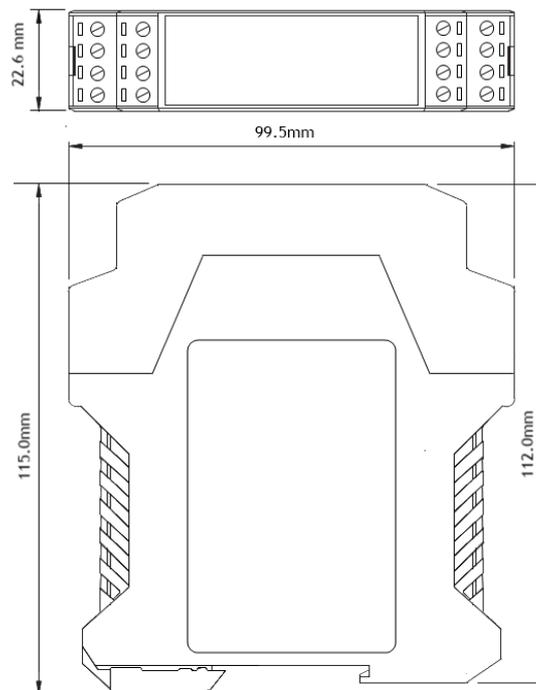


Figure 1: Case Dimensions



2.2 Electrical Specifications

Parameter	Description	Min	Typ	Max	Units
V_{in}	Supply voltage	24		250	VAC
I_{in}	Supply current	7	20	50	mA
L_{max}	Input pin voltage	24		250	V
V_{fault}	Max voltage for output relays			250	V AC
				30	V DC
I_{fault}	Max current sink per output set point relay			1	A
	Allowable operating temperature	-40		85 ^{Note1}	°C

Note1: Extended operation at maximum temperature will reduce the life the device.

2.3 Communication Specifications

Communications between the device and a host is usually via a Bluetooth radio link. The Bluetooth device name will be set to the Crane ID.

2.3.1 Communications Range

When installed in such a way as to create an uninterrupted path (ie line of sight) between the two units (either two AirWay units or an AirWay and a Liftlog™), range is approximately 100m. (when used with an external antenna kit)

3 INSTALLATION DETAILS

3.1 Prior to Installation

Before installing your Airway device visually inspect the device and check that:

- (a) the case is not damaged and fits together securely;
- (b) terminals are secure;
- (c) terminal numbering is as per the following diagram.



Figure 2: Terminal Positions

NB: As each block of 4 terminals can be removed (for installation) it is important that they be reinstalled in the positions shown.

3.2 Wiring Diagrams

3.2.1 Interlocking travel limits

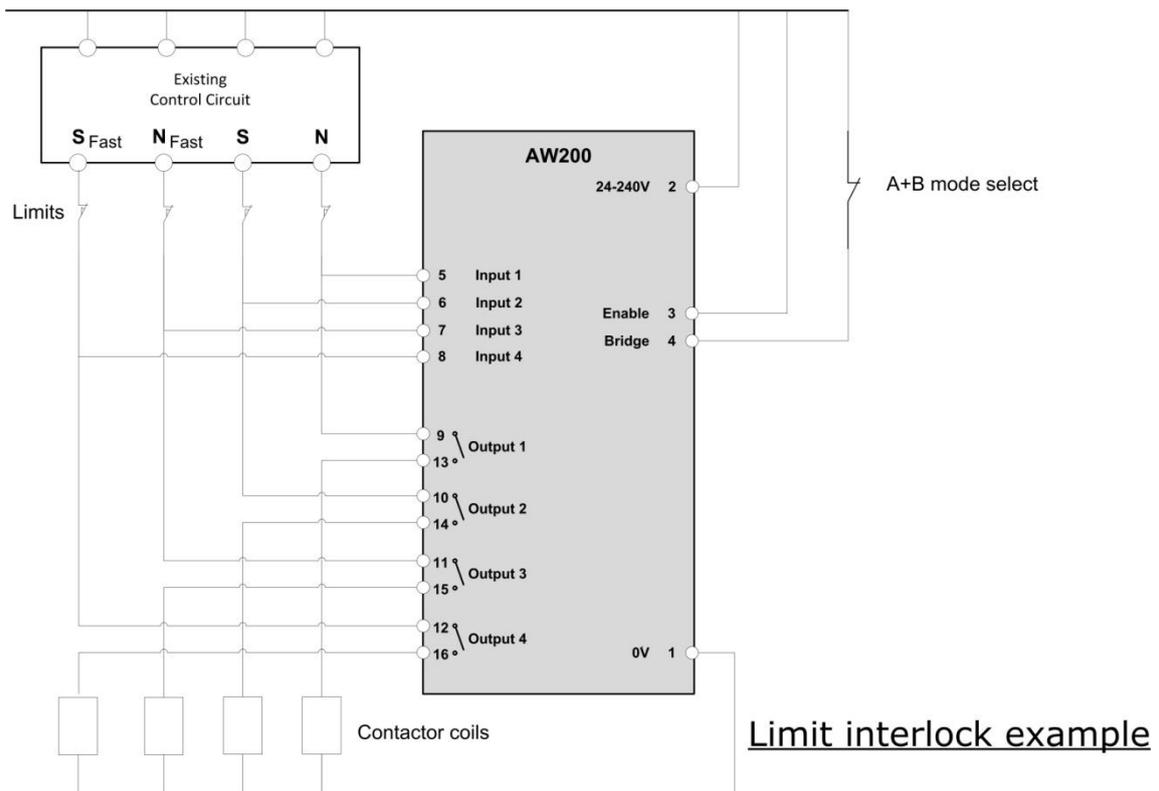


Figure 3: Limit Interlock example



3.2.2 Controlling two (or more) hoists

In a multi hoist installation one hoist is designated the master and the others slaves, and limit or overload that stops any hoist will stop all the hoists.

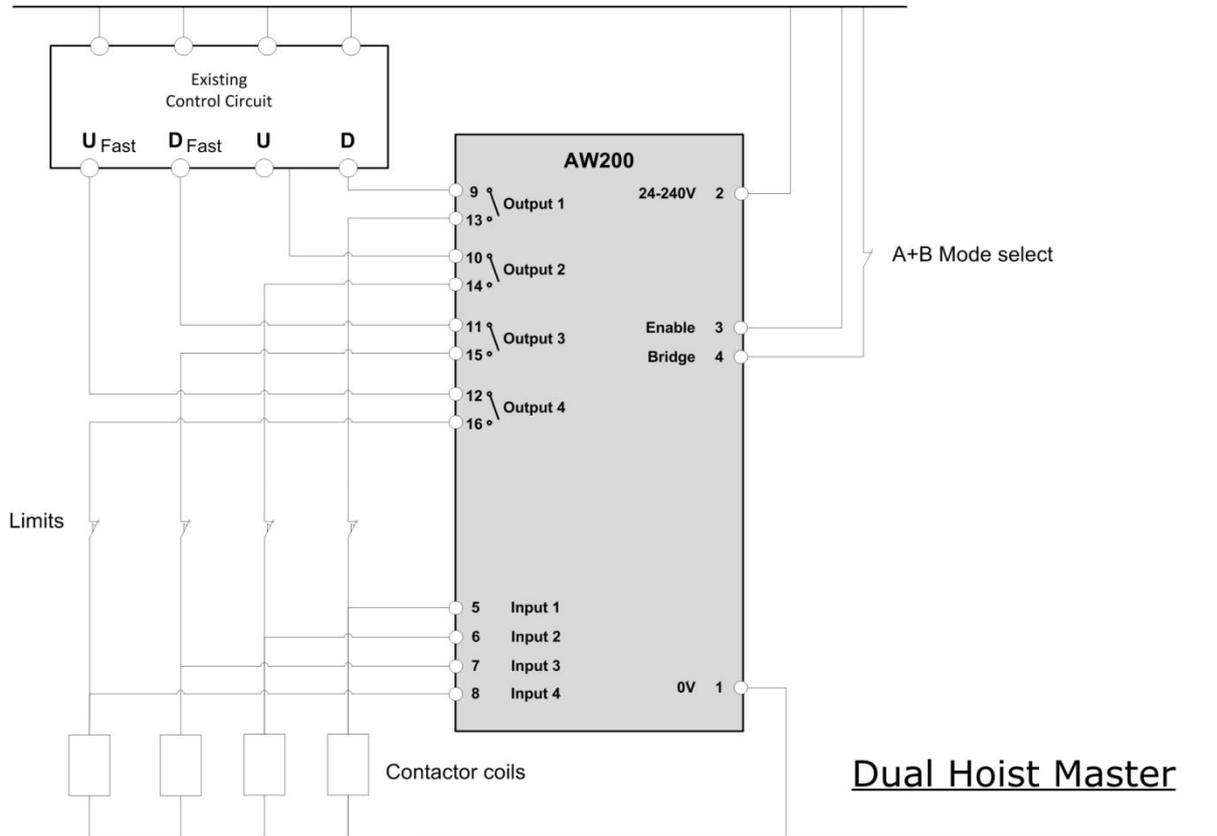


Figure 4: Master Hoist

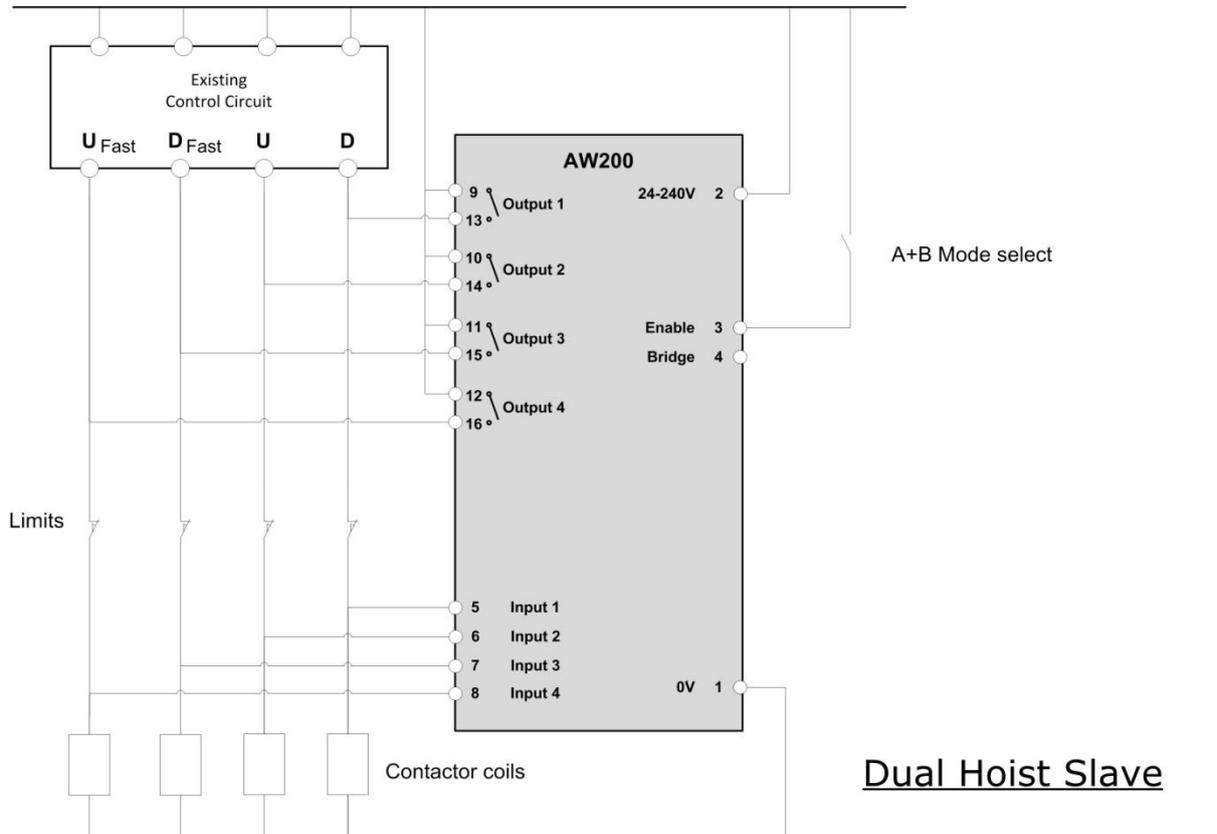


Figure 5: Slave Hoist



4 COMMISSIONING DETAILS

AirWay is designed to be commissioned using a laptop computer. You will need a CASWA Link-2 Bluetooth Modem and the Field Service Utility (FSU) software application loaded on a laptop.

4.1 Installing and Launching the FSU Application

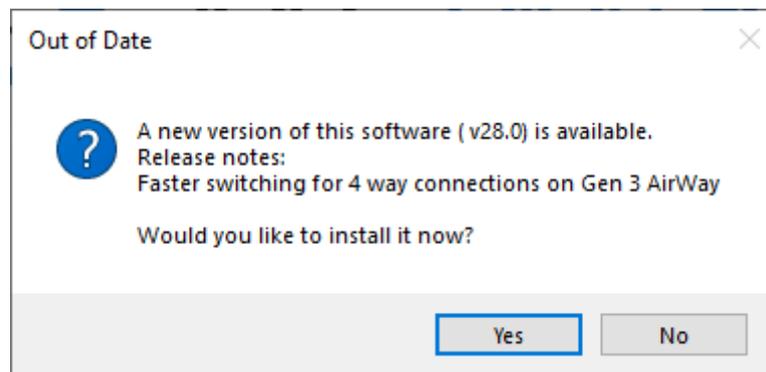
4.1.1 FSU Program Installation

Ensure that your computer is switched on, connected to the internet and that the minimum required software versions are installed (see Appendix A for minimum system requirements). Ensure that the Link-2 modem is installed and that the drivers have loaded.

4.1.2 Installing the FSU application

The latest Field Service Utility (FSU) software can be downloaded from the Downloads tab of the following page: www.soledigital.com.au/airway.html

You should check this location periodically for updates and information. If there is a newer version available for download, always select <Yes> to install.



4.1.3 Launching the application

Double click on the FSU program icon: .



4.2 Connecting to the Device

The FSU will scan for Bluetooth enabled devices. This process takes approximately 10 seconds, when complete a list of all CASWA devices within range will be displayed.

If a particular AirWay unit is not found, ensure it is powered up and press  to repeat the search.

NB: The Bluetooth link between the Laptop using a Link-2 and AirWay has a range of approximately 200m. Select the AirWay you wish to configure and double click to connect to device.





4.3 Checking for Firmware

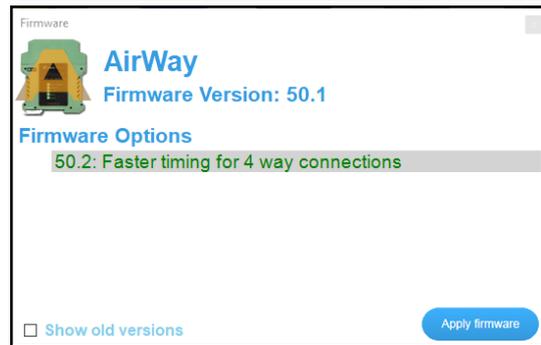
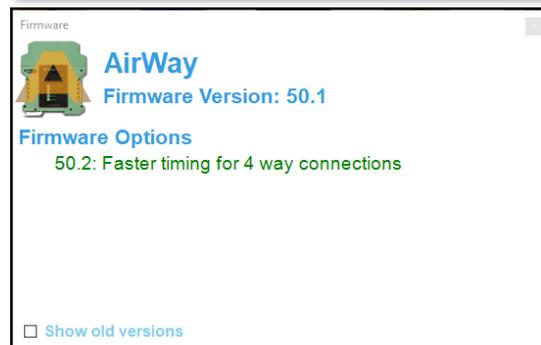
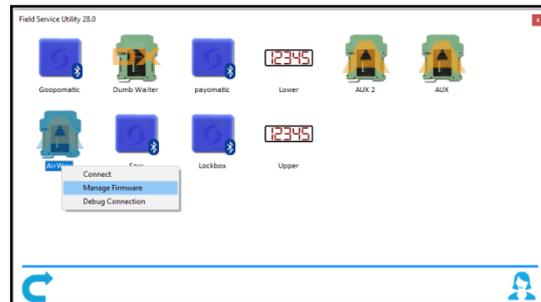
Follow the below procedure to check and update the firmware on an Airway. It is generally not recommended to update the firmware if the system is working. You should only update the firmware if you need one of the new features or you have been instructed to do so by someone from SoleDigital. It is recommended to unbind any connections from all devices before attempting to apply a firmware update.

Right click on your selected Airway icon and select **<Manage Firmware>**

Click on the latest available firmware version (recommended) and click **<Apply Firmware>**. The new firmware will be installed on the device.

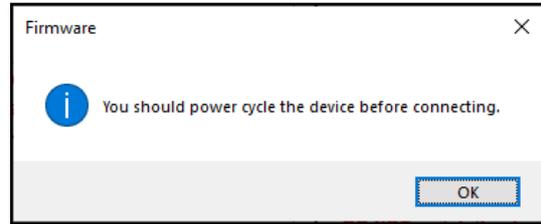
NB: If you did not see this window, then your device already has the most current firmware.

DO NOT switch off the computer or remove the Link2 modem until this is complete – doing so may leave the Liftlog™ in an unrecoverable state.





Once download is complete, you will need to power cycle the device.

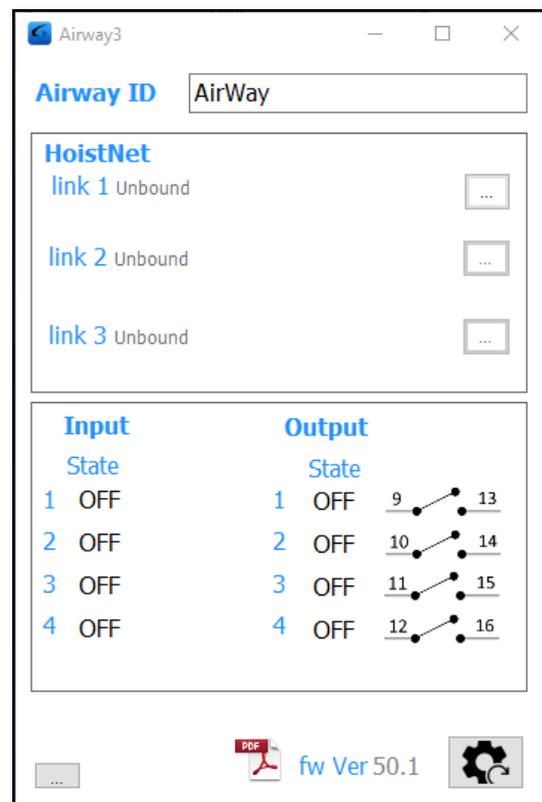


4.4 AirWay General Configuration Screen

This screen shows the:

- AirWay ID
- The devices it is bound to.
- Current firmware version operating on the device.
- The connected status of the AirWay being configured
- The state of all the inputs on the AirWay
- The state of all the outputs on the AirWay
- The state of all the relays on the AirWay

To enter/change the AirWay ID, type the desired name into the ID field.

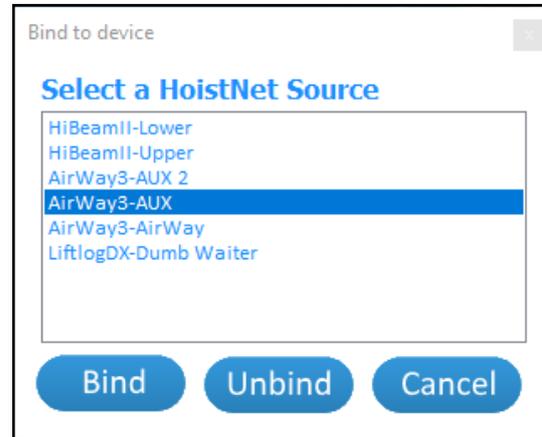




4.5 Binding the AirWay to a Device

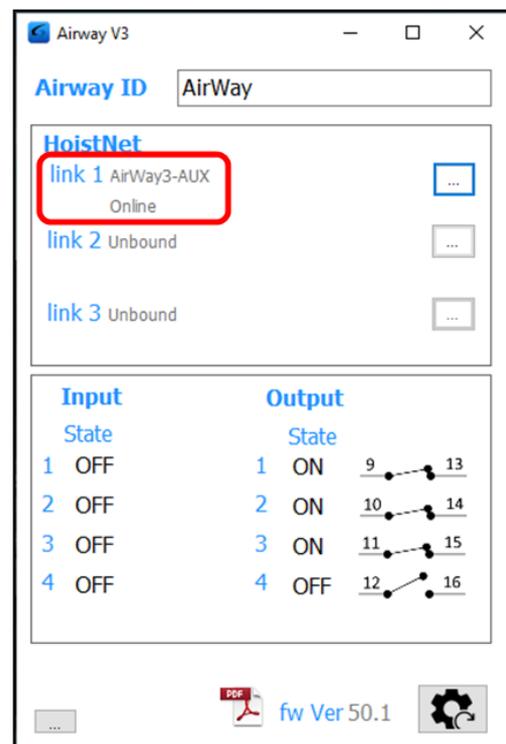
Unless your AirWay device has been preconfigured you will need to select the device it will communicate with.

Nb. If the installation consists of two AirWay units you only need to bind one unit to the other. Leave the second unit unbound.



Shortly after selecting the bound device and clicking <Bind> the connected status will change to **Online**.

For a simple install, this is all that is required.



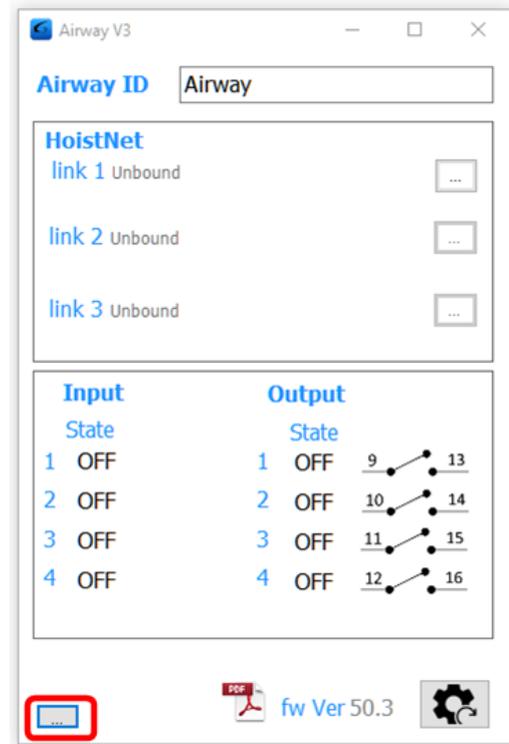


4.5.1 Advanced configuration

IMPORTANT

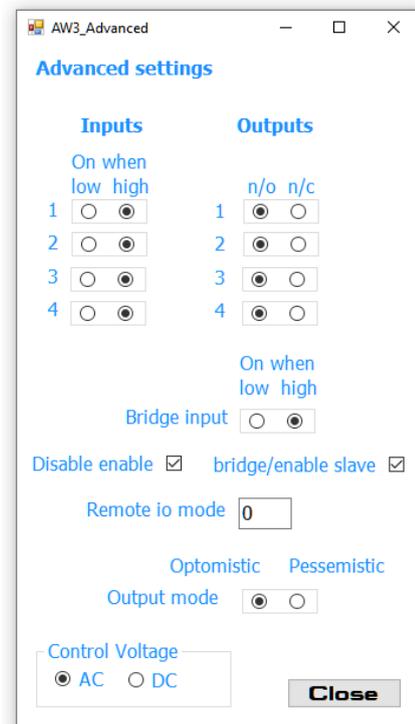
We highly recommend that you get in touch with us (see <https://www.soledigital.com.au/index.html>) before changing any of these settings.

To view and change the parameters for Inputs and Outputs you need to open the Advanced Settings window by clicking the  button.



The Airway has 2 types of inputs: Control Inputs and I/O Inputs.

The two control inputs are the Enable input and the Bridge input on pins 3 and 4 respectively.

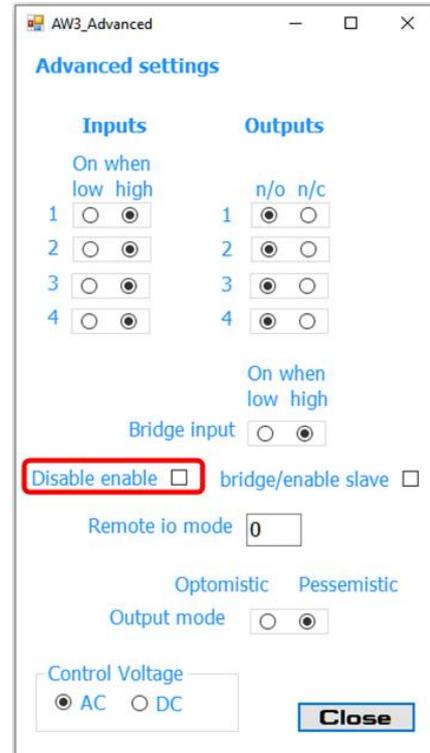




4.5.2 Enable Input

By default the Enable input needs to be connected to control voltage for the Airway to operate. The state of the Enable input is reflected in the indicator LED by either slowly flashing for disabled, or constantly on for enabled.

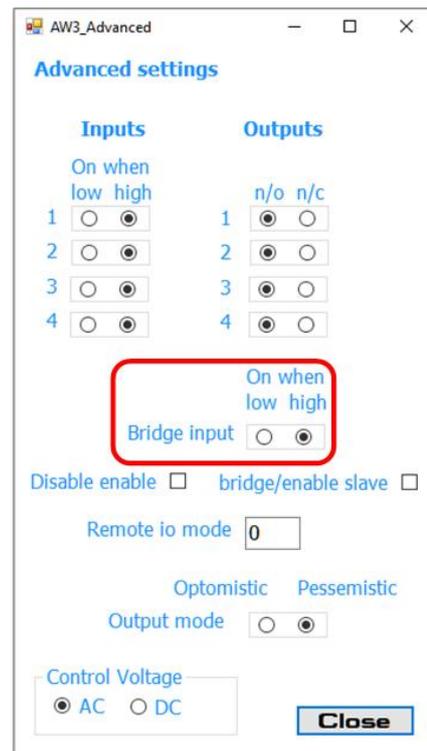
There is only one setting for the Enable pin which is called "Disable enable". This setting allows the Airway to ignore its enable input and always be enabled.



4.5.3 Bridge Input

The Bridge input is used to command the Airway to activate all 4 of its relays from their default state. That is to say if the relays are set to n/o, enabling the Bridge input will close all 4 relays. In this state, the AirWay will ignore any instruction from connected units to open or close its relays. Ie the unit is "Bridged out"

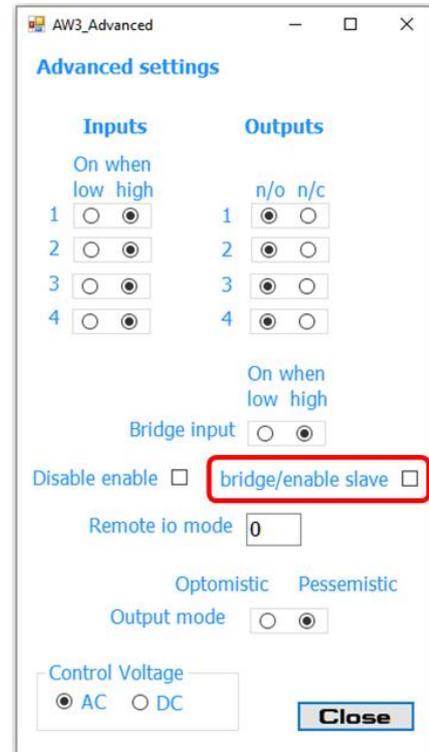
A second example would be to have relays 1 and 2 set to n/o and relays 3 and 4 set to n/c. When the bridge input is enabled relays 1 and 2 would close and 3 and 4 would open. This relay state change occurs regardless of the input state of the remote Airway.





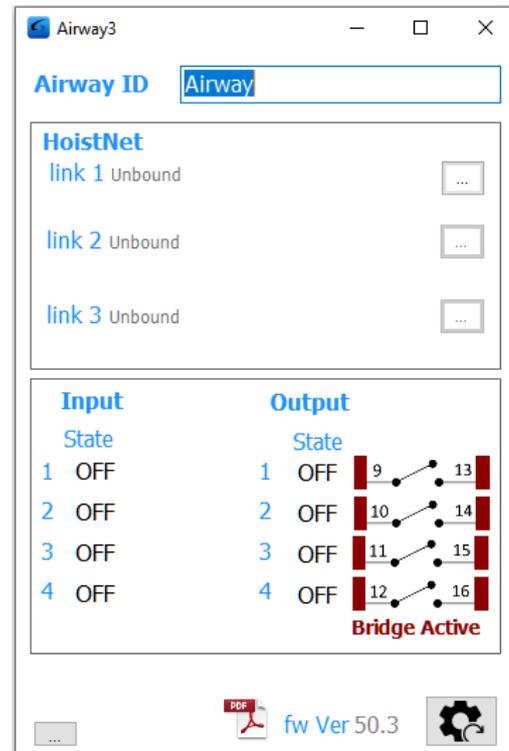
There are 2 settings for the Bridge input, Bridge invert and Bridge slave mode.

The Bridge invert setting allows the Airway to either be bridged when control voltage is present on the Bridge input, OR bridged when control voltage IS NOT present on the Bridge input.



The Bridge Slave input will make the Airway To accept a command to go into bridged mode when a bound device goes into bridged mode.

This setting is useful when you don't have the bridge signal available in both Airway locations. You can tell if bridge is enabled as the FSU will show **Bridge Active**.

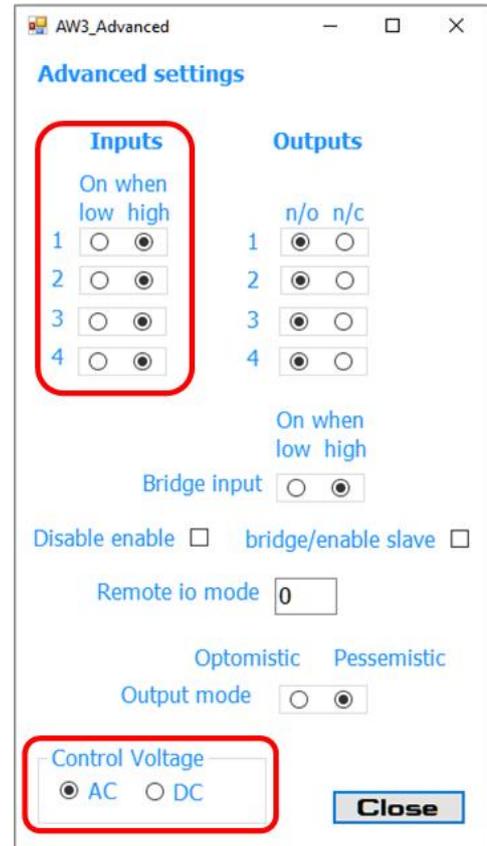




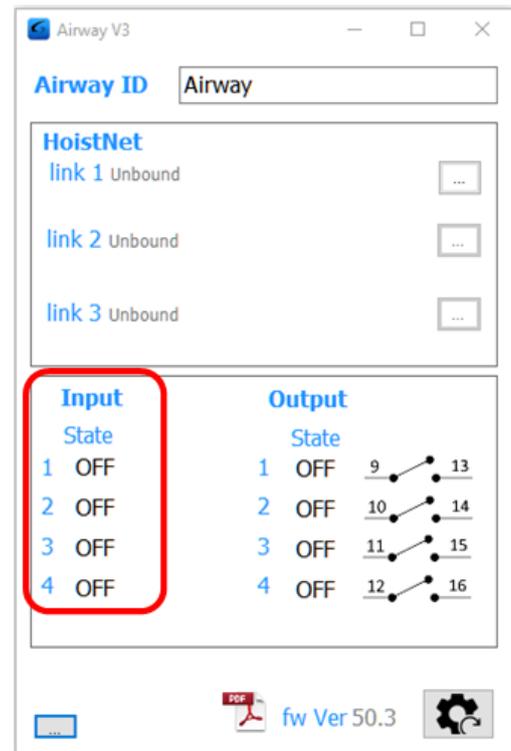
Inputs 1-4 (pins 5-8) are the remote IO Inputs of the Airway. The state of these inputs directly controls the state of the remote Airway's output relays.

As an example, Two Airways called Hoist A and Hoist B. If I connect input 1 to control voltage on Hoist A, Output 1 on Hoist B will change state (n/o to n/c).

Each input has the ability to be inverted (active when connected to control voltage OR active when NOT connected to control voltage) and there is a software setting for selecting AC or DC as the control voltage.



The state of each input can be seen on the FSU screen.

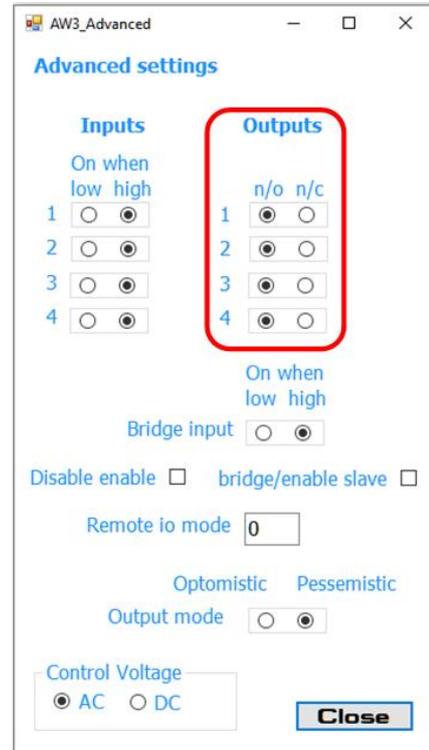




4.5.4 Configuring the Outputs

Each Airway has 4 Output relays which can be configured independently as n/o or n/c.

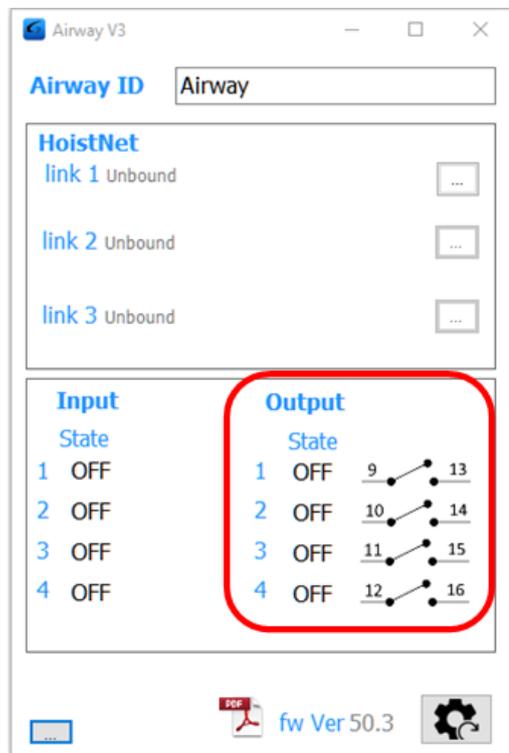
The state of each relay can be seen on the FSU screen.



The Pessimistic output mode setting is used when more than 2 airways are connected together and they all need to inhibit each other.

That is to say, none of the relays will change state until ALL of the Airways inputs are active.

We recommend that you contact us if you think you may need to change this setting as it may produce confusing behaviours in your installation.





5 REMOTE IO MODE

A single Airway can also be used with a LiftlogDX or MaxoutDX to have a remote overload relay or remote motion inputs for the LiftlogDX. If you want to use this functionality please contact SoleDigital Support.

6 OPERATING BEHAVIOUR

The AirWay is fitted with a multi-colour LED on the front panel that indicates state. These States are as follows:



Green = Connected
Blue = Connecting
Red = Not Connected
Flashing (any colour) = Enable signal inactive

A connection usually takes about 5 seconds to initiate after power-up.



Figure 6: An AWT200 Connected

7 ROUTINE MAINTENANCE

There is no routine maintenance for this device.

APPENDIX A: FSU SYSTEM REQUIREMENTS

The minimum requirements for operating CASWA's Field Service Utility (FSU) and Link-2 Bluetooth modem are:

- Windows 10 or later;
- One Spare USB port;
- Microsoft .NET framework 4.5;
- An internet connection.