Wanco® AFAD Wireless Controller

User's Manual

February 2026

WANCO® The industry leader.

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1 Introduction

1.1 Read before using

This is the user's manual for the wireless controller for Wanco® Automated Flagger Assistance Devices (AFADs).

This manual describes how to use the controller for operating Wanco AFADs. It does not include instructions for AFAD trailers. For trailer instructions, see the Wanco AFAD Owner's Manual.

For your safety and protection from injury, carefully read, understand, and observe all instructions in this manual. Always read all instructions before performing a procedure.

Keep this manual with the AFAD. Additional and replacement manuals are available from the factory (see Section 1.2).

If you have questions regarding this product, please contact Wanco Service or Sales using the information in Section 1.2.

1.2 Where to obtain service

IMPORTANT!

Electronics are serviceable only by the factory.

Do not disassemble the controller or attempt to access electronics inside the controller housing unless instructed to do so by an authorized Wanco service technician. Failure to comply may invalidate warranty.

Issues are sometimes due to the AFAD in addition to or instead of the controller. Therefore, it is useful to have the AFAD model number and VIN ready. This information is displayed on the AFAD vehicle identification tag (see Figure 1-1, page 2).

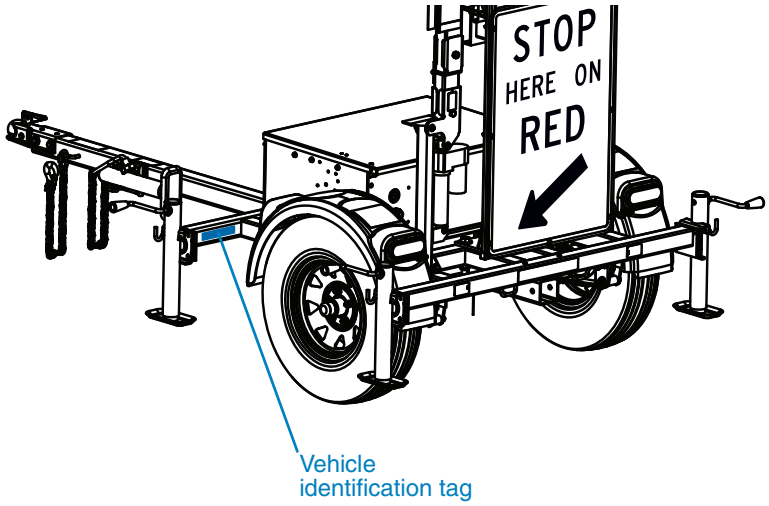
Contact our service department using the following information:

Wanco Inc.
5870 Tennyson Street
Arvada, Colorado 80003 USA

303-427-5700
fax 303-427-5725

www.wanco.com
info@wanco.com

Figure 1-1. Vehicle identification tag



2 Safety

2.1 Safety statements in this manual

This manual contains the following types of callouts, which must be followed to reduce the possibility of personal injury, damage to the equipment, or improper service. Each alert has a specific meaning, as described below:

⚠ The safety alert symbol alerts you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.

⚠ WARNING

Indicates an imminently hazardous situation which, if not avoided, COULD result in death or serious injury.

⚠ CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

CAUTION

Used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, could result in property damage.

IMPORTANT!

Indicates information that is of particular importance when transporting, operating, or servicing the equipment.

2.2 General safety

⚠ WARNING

Improper use of equipment could cause serious injury or death.

- Before using this product, carefully read, understand, and observe all instructions in this manual and in the AFAD owner's manual.
- Follow all safety precautions.
- Follow all regulatory guidelines.

CAUTION

Improper use can cause damage to the controller, possibly resulting in its failing to function.

To prevent damage to the controller:

- Do not press any heavy, hard, or sharp object to the screen.
- Do not expose touchscreen to direct sunlight for extended periods.
- Avoid dropping, crushing, or otherwise mishandling the controller.

2.3 Service safety

IMPORTANT!

Electronics are serviceable only by the factory.

Do not disassemble the controller or attempt to access electronics inside the controller housing unless instructed to do so by an authorized Wanco service technician. Failure to comply may invalidate warranty.

2.4 California Proposition 65

⚠ WARNING

Batteries and battery components can expose you to lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

2.5 FCC statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

3 Before You Begin

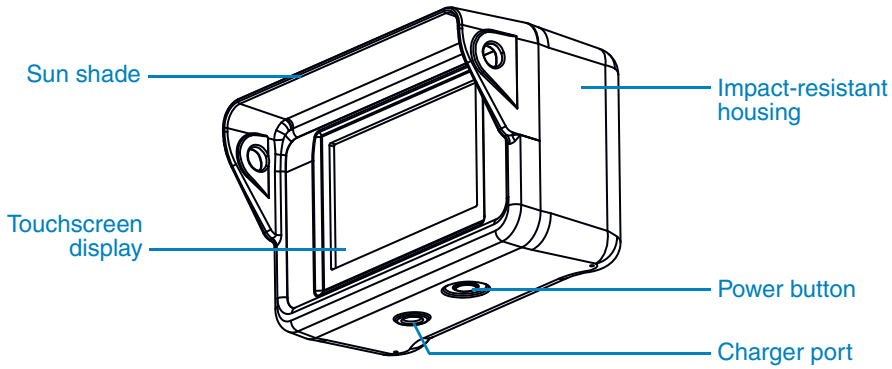
3.1 Deploying the AFAD

Instructions for transporting and deploying the Wanco AFAD in a temporary traffic control (TTC) zone are provided in a separate document: the Wanco AFAD Owner's Manual. This manual, for the wireless controller, describes how to operate the AFAD after it has been deployed.

3.2 Controller

The wireless controller (Figure 3-1) lets you set up and operate the AFAD system. The controller is stored inside the AFAD battery box.

Figure 3-1. Controller



3.2.1 Touchscreen display

The controller display is a touchscreen interface for operating the AFAD system. Use the touchscreen by pressing your finger on the "buttons" displayed on the screen.

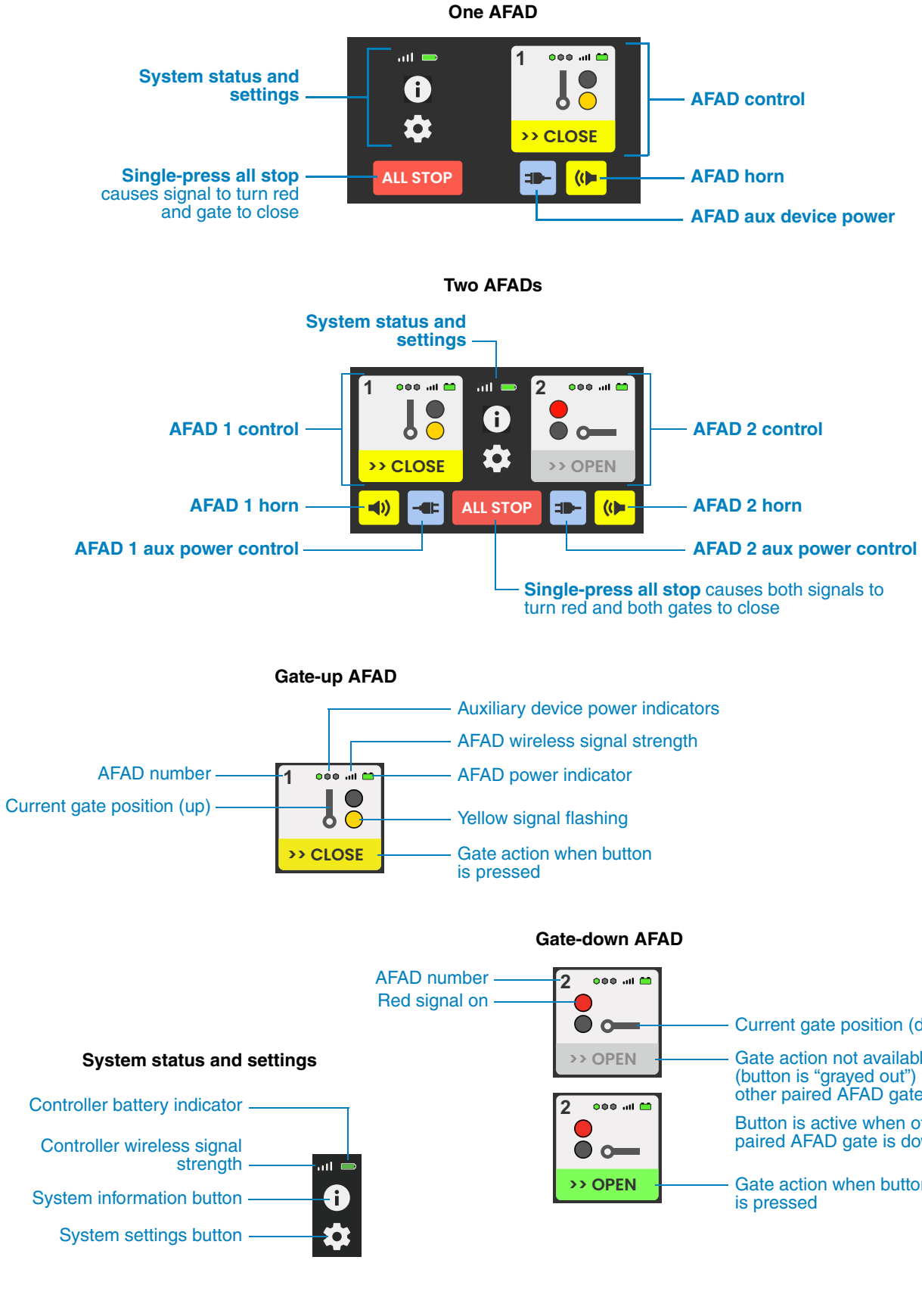
- Use care not to press buttons unintentionally. Handle the controller by the housing and only touch the screen when operating the AFAD or accessing controller functions.
- The touchscreen is pressure-sensitive and will work with some gloves, but not all. Do not press any heavy, hard, or sharp objects to the screen.

The display brightness can be changed from the Settings screen (see Section 4.5.2, page 18).

Operating screens

Operating screens (Figure 3-2, page 8) let you control the gate arms on one or two AFADs, and give you access to system status, alerts, and settings. For operating instructions, see Section 5, page 23.

Figure 3-2. Operating screens



Settings screen

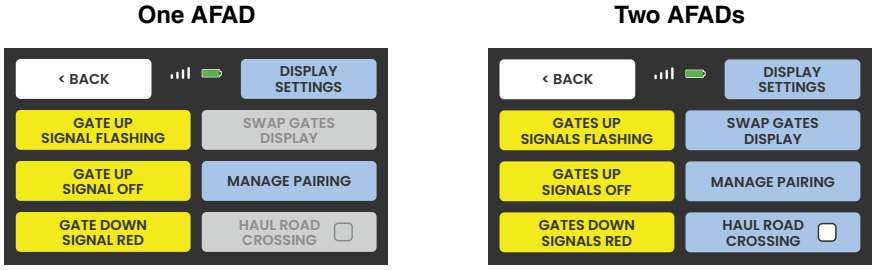
The Settings screen (Figure 3-3) lets you choose from several preset AFAD operating modes, and give you access to controller and system settings. See Section 4, page 13.

To access the Settings screen, press the ⚙ button.

On the Settings screen:

- Blue buttons change controller settings and gate-control options:
  - ☐ For pairing, see Section 4.4, page 16.
  - ☐ For display settings, see Section 4.5, page 18.
  - ☐ For swapping the gates display on the touchscreen, see Section 5.4, page 28.
  - ☐ For haul road crossing mode, see Section 5.5, page 30.
- Yellow buttons immediately change gate positions and signal lights. See Section 5.9, page 36.
- Gray buttons are inactive and unavailable.
- White buttons exit the current screen.

Figure 3-3. Settings screen



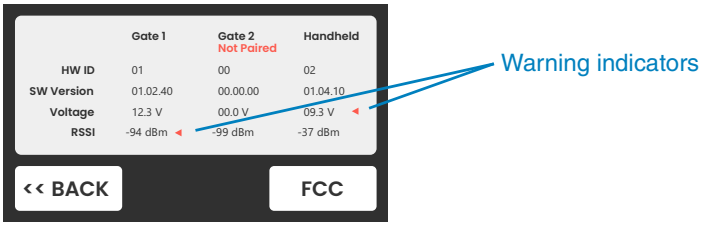
Information screen

The Information screen (Figure 3-4) lists system status information and provides system warnings if any are present.

To access the Information screen, press the ⓘ button.

- Press the **FCC** button to view the FCC statement for the controller.
- When finished, press the **BACK** button to return to the previous screen.

Figure 3-4. Information screen



3.2.2 Pairing

Before the controller will work with an AFAD, the controller and AFAD must be "paired." Until they are paired, the AFAD will not respond to commands from the controller.

The controller can be paired with one or two AFADs. For pairing instructions, see Section 4.4, page 16.

3.2.3 On/off behavior

The controller touchscreen display remains active and ready to use while you are using the controller.

After 15 minutes of inactivity, the touchscreen automatically shuts off to reduce battery use, and the controller enters standby mode. To reactivate the controller, press the screen or press and release the power button on the bottom of the controller.

After 60 minutes of inactivity, the controller automatically shuts off. To turn the controller on, press and release the power button.

If the display does not turn on after you press the power button, the controller batteries need to be charged. See Section 4.3, page 14.

3.2.4 On start-up

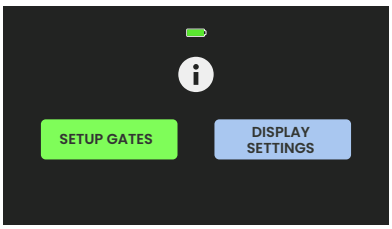
When the controller first turns on, the display will show one of the screens in Figure 3-5. The screen it shows depends on whether the controller is paired, whether it is paired with one or two AFADs, system settings, and the current operating status of the trailers.

For pairing instructions, see Section 4.4, page 16.

Figure 3-5. Screens you may see on controller power-up

Controller not paired
(see Section 4.4, page 16)

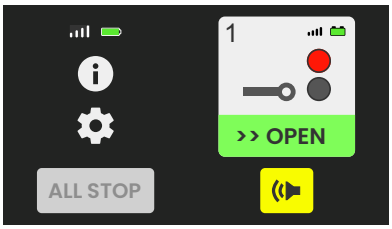
Settings screen



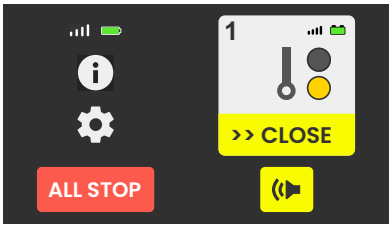
No gate control

Controller paired with one AFAD
(see Section 5.2, page 24)

Gate control screens



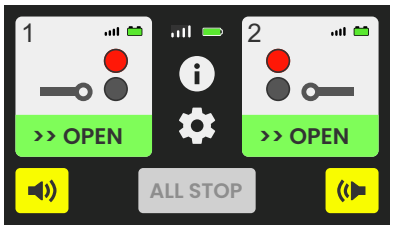
Gate down, red signal on



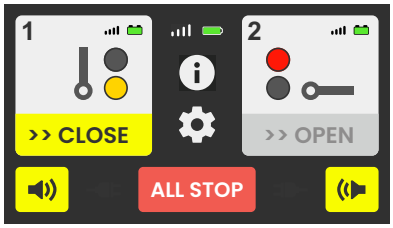
Gate up, yellow signal flashing

Controller paired with two AFADs
(see Section 5.3, page 26)

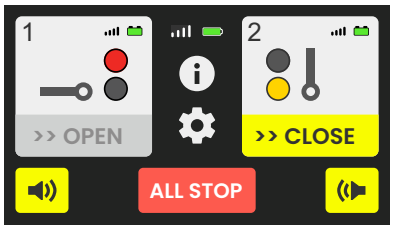
Gate control screens



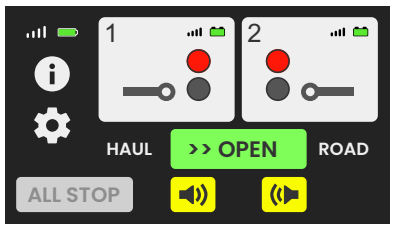
Gates down, red signal on

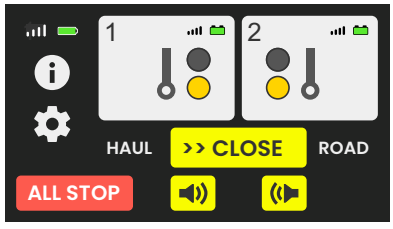


Gate 1 up, yellow signal flashing
Gate 2 down, red signal on



Gate 1 down, red signal on
Gate 2 up, yellow signal flashing





Haul Road Crossing enabled
see Section 5.5, page 30

4 Getting Started

4.1 Before using the AFAD

Before using the Wanco AFAD:

- Read and follow all safety instructions (see Section 2, page 3).
- Ensure the AFAD batteries are fully charged (see the AFAD owner's manual).
- Ensure the wireless controller is fully charged (see Section 4.3, page 14).
- Ensure the AFAD operator is a flagger who has been trained to operate the AFAD.
- Ensure the AFAD system has been tested for proper functioning before being deployed in the temporary traffic control (TTC) zone. See Section 4.6, page 21.
- Follow all regulatory guidelines.

4.2 Lithium ion batteries

The manufacturer of the controller batteries recommends the following use and handling of the lithium ion battery pack:

- Do not charge the batteries when the temperature is below freezing.
- Use only the included battery charger.
- For optimum performance and battery life, see Table 4-1.

Table 4-1. Lithium ion battery temperature ranges

Operating condition	Temperature range
Charging	32 to 113°F (0 to 45°C)
Discharging	–4 to 167°F (–20 to 75°C)
Storage	below 140°F (60°C)

4.3 Charging

The controller battery pack is charged by the AFAD power system using a charger located inside the AFAD battery box. A fully charged controller can operate approximately 60 hours before recharging is required.

If the controller battery pack is fully discharged, you can expect to charge the controller for up to 4 hours for a full charge.

IMPORTANT!

Do not charge the controller batteries when the temperature is below freezing. See Section 4.2, page 13.

To charge the controller, refer to Figure 4-1 and follow these steps:

1. Open the AFAD battery box and locate the loose end of the power charger cord.
2. Insert the plug at the end of the power cord into the charging port on the bottom of the controller.
3. Ensure the cord is secured to the controller by fully tightening its locking collar and attaching the retainer clip, if present. Place the controller in its cradle inside the battery box. Ensure the controller is fully seated so it will not come loose during transport.
4. Close and latch the battery box cover. Lock the battery box if desired.

When the controller is in use, leave the power cord loose inside the battery box.

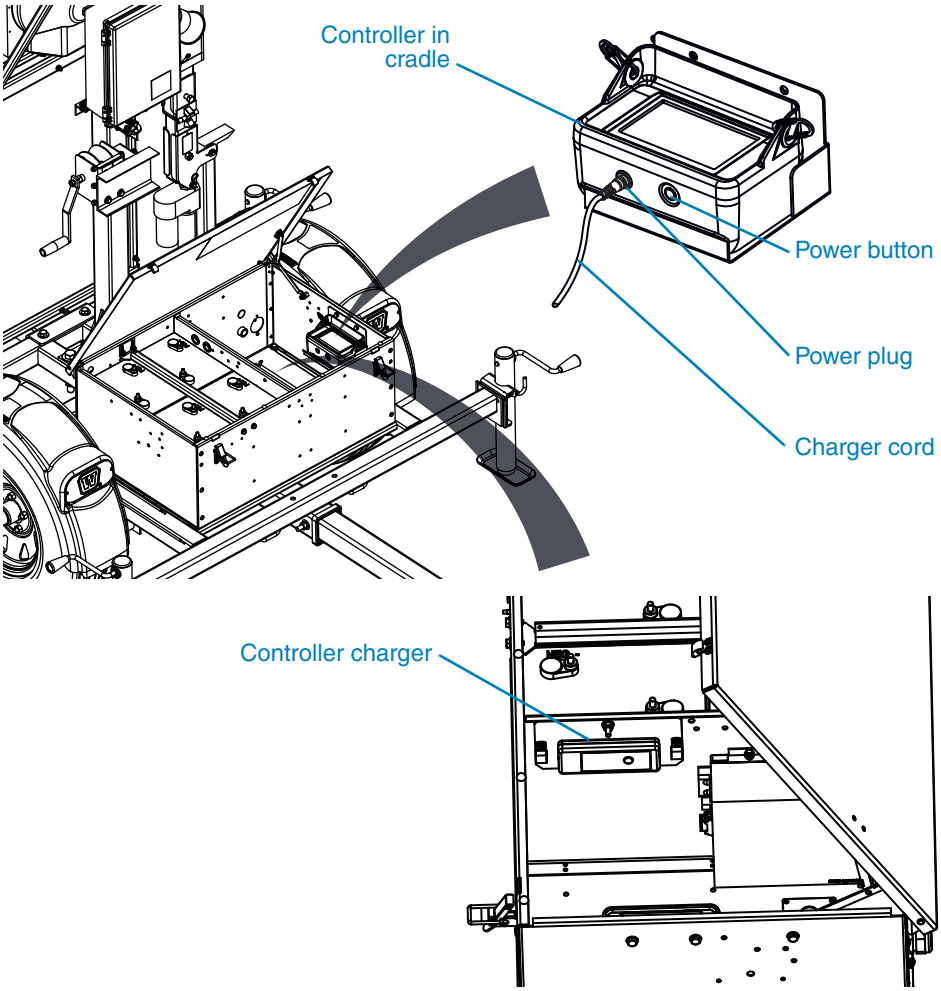
IMPORTANT!

When removing the power plug from the controller, first remove the retaining clip, if present. Then unscrew the locking collar, grasp the plug firmly, and pull it from the port on the bottom of the controller.

DO NOT pull on the cord. Pulling on the power cord will damage it.

Whenever the controller is not being used, plug in its charger cord and set it in the travel cradle. Ensure the power plug is secured to the controller by fully tightening its locking collar.

Figure 4-1. Controller, cradle, and charger



4.4 Pairing

Before the controller will work with the AFAD, the two must be "paired." Until they are paired, the AFAD will not respond to commands from the controller.

- To pair the controller with an AFAD, you must press a pairing button on the AFAD control box and then press a button on the controller screen.
- The controller can be paired with one or two AFAD trailers.
- Ensure the controller and AFAD are paired before deploying the AFAD in the TTC zone.

To pair the controller and AFAD:

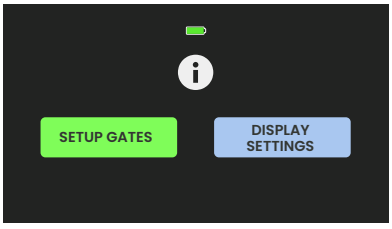
1. Access the controller and turn it on (see Figure 4-1):
   a. Remove the controller from its cradle and unplug the power plug from the bottom of the controller.

> **IMPORTANT!**
>
> When removing the power plug from the controller, first remove the retaining clip, if present. Then unscrew the locking collar, grasp the plug firmly, and pull it from the port on the bottom of the controller.
>
> DO NOT pull on the cord. Pulling on the power cord will damage it.

   b. Turn on the controller by pressing the screen or pressing the power button on the bottom of the controller.
2. When the controller first turns on, if you see any screen other than the one shown in Figure 4-2, the controller and AFAD may already be paired.

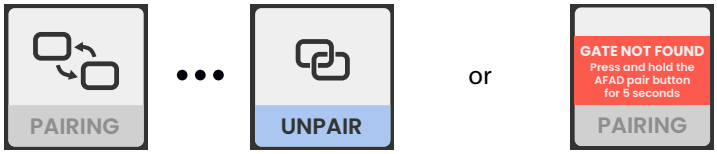
- If you see a green **SETUP GATES** button, press it to access the Pairing screen, then skip to Step 5.
- If you see a green **OPEN** button or yellow **CLOSE** button (as shown in Figure 3-5, page 11), the controller and AFAD may already be paired. Press the button.
  - ☐ If the AFAD gate opens or closes, then pairing is complete. Press the **BACK** button and skip the steps below.
  - ☐ If the gate does not open or close, go to Step 3.

Figure 4-2. Main screen, not paired



With no AFADs paired, press the **SETUP GATES** button to get started.

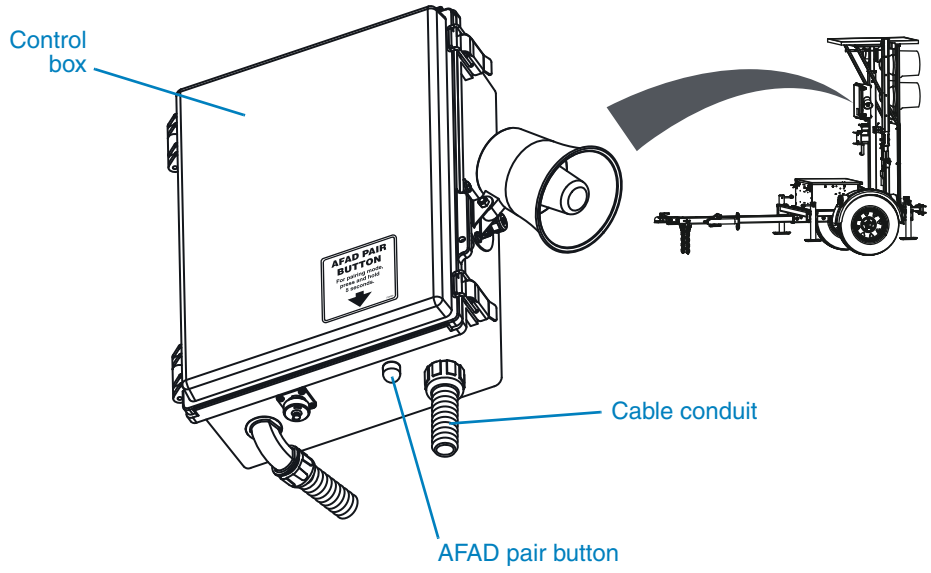
3. Press the ⚙ button, then press the blue **MANAGE PAIRING** button to access the Pairing screen.
4. Press any **UNPAIR** button as needed for resetting the controller's previous pairings, and then go to Step 5.
5. Locate the AFAD pair button on the bottom of the AFAD control box (see Figure 4-3).
6. Activate pairing mode by pressing and holding the AFAD pair button for 5 to 7 seconds. Both the red and yellow signal lights on the AFAD flash to indicate paring mode is active.
7. On the controller, press either of the green **PAIR** buttons.
8. The resulting screen will show pairing in process, and then show that pairing was successful. If an error occurs, repeat Step 5.



9. To pair a second AFAD, repeat the procedure, starting with Step 5, using the pair button on the second AFAD control box.
10. When pairing is complete, press the **BACK** button on the touchscreen.

    If you paired two AFADs and want to swap the positions of their control buttons on the controller display, see Section 5.4, page 28.

Figure 4-3. AFAD pair button



4.5 Display setup

4.5.1 Display settings screen

The Display Settings screen (Figure 4-4) provides the following settings:

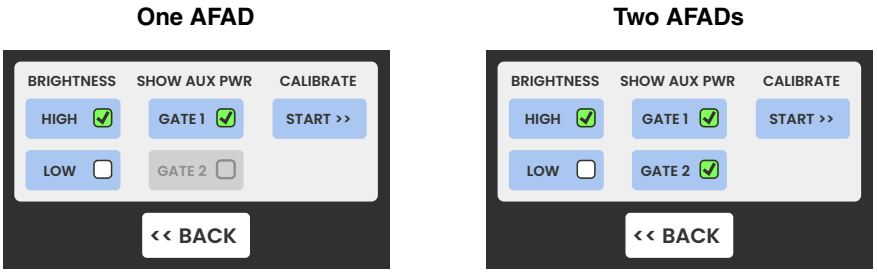
Brightness — Sets the brightness of the wireless controller display (see Section 4.5.2).

Show Aux Pwr — Enables on/off control of auxiliary devices, such as the optional AFAD camera (see Section 4.5.3).

Calibrate — Launches the touchscreen calibration process (see Section 4.5.4).

To access the Display Settings screen, press the ⚙ button, then press the blue **DISPLAY SETTINGS** button.

Figure 4-4. Display Settings screen



☑ symbol indicates the selection is enabled.

GATE buttons are inactive and unavailable until the controller is paired.

START button launches the touchscreen calibration process.

4.5.2 Set display brightness

You can choose either of two brightness settings for the controller display.

1. On the controller, press the ⚙ button, then press the blue **DISPLAY SETTINGS** button.
2. The current display brightness setting, low or high, is indicated by the ☑ symbol. To change the display brightness:
   - For high display brightness, press the **HIGH** brightness button.
   - For low display brightness, press the **LOW** brightness button.
3. When finished, press the **BACK** button to return to the Settings screen.

4.5.3 Enable aux power controls

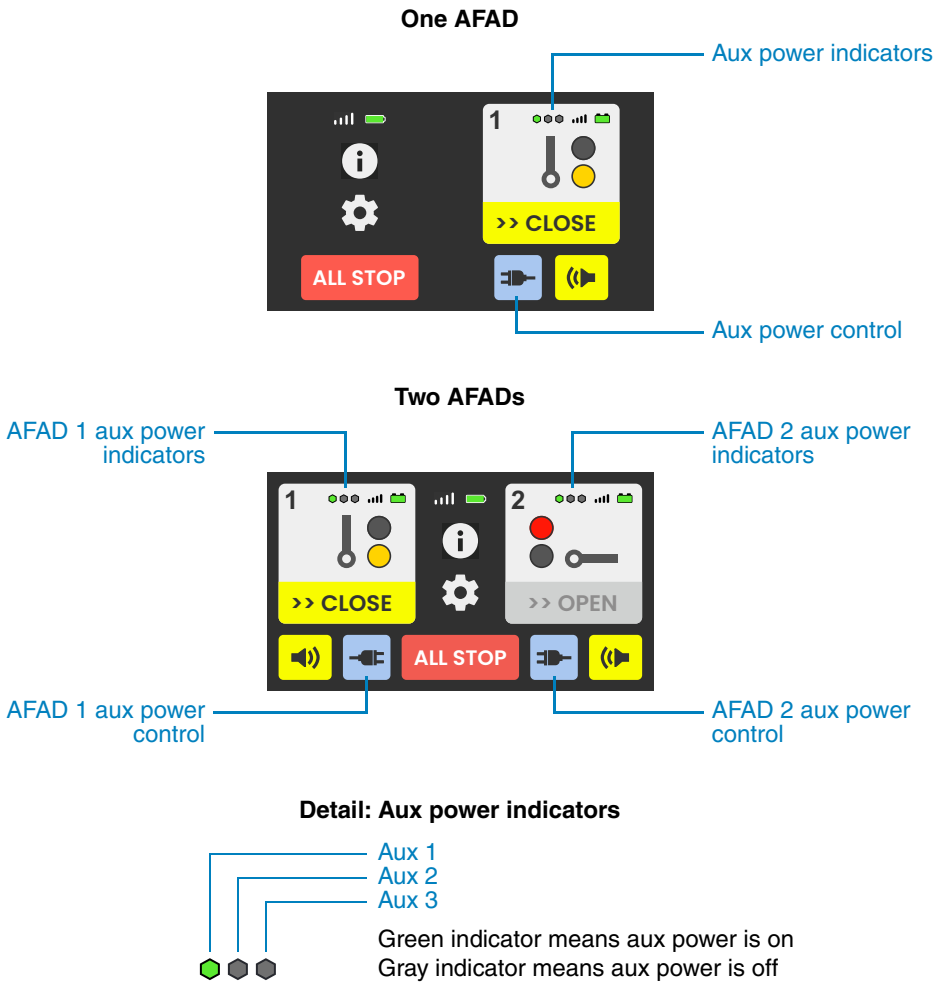
The AFAD has three auxiliary (aux) power ports. Installed devices, such as the optional AFAD camera, are wired into these ports. When enabled, the controller displays aux power on/off controls and aux power indicators on the operating screen (see Figure 4-5).

To enable on/off control of aux device power, follow these steps:

1. On the controller, press the ⚙ button, then press the blue **DISPLAY SETTINGS** button.
2. Access to aux power on a paired AFAD is indicated by the ☑ symbol. To enable auxiliary power:
   - For a single AFAD, press the **GATE 1** button.
   - For two AFADs, press the **GATE 1** button and the **GATE 2** button.
3. When finished, press the **BACK** button to return to the Settings screen, then press the **BACK** button again to return to the Main screen.

To switch aux power on and off, see Section 5.10, page 37.

Figure 4-5. "Show aux power" enabled



4.5.4 Calibrate display

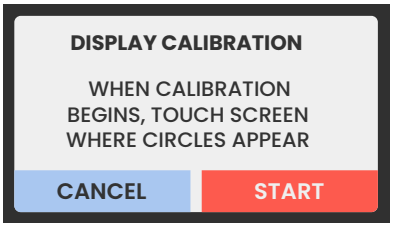
If the touchscreen is out of calibration, it may misinterpret where you press when you use the controller. In this case, a display calibration is necessary.

When you start the calibration, the touchscreen display shows a series of targets, one at a time, until the calibration sequence is complete. To calibrate the display, press the screen where each target appears. After the calibration, the touchscreen will restart.

To start the calibration sequence:

1. On the controller, press the ⚙ button, then press the blue **DISPLAY SETTINGS** button.
2. Press the blue **START** to launch the Display Calibration screen (Figure 4-6).
3. Follow the on-screen instructions.
   - Pressing the **START** button launches the calibration sequence.
   - Pressing the **CANCEL** button returns the controller to the Display Settings screen without calibrating the display.

Figure 4-6. Display Calibration screen



4.6 System test

Before deploying the AFAD in the TTC zone, use the wireless controller to operate the AFAD and ensure proper functioning as described below.

1. Access the wireless controller and turn it on.

   IMPORTANT!

   When removing the power plug from the controller, first remove the retaining clip, if present. Then unscrew the locking collar, grasp the plug firmly, and pull it from the port on the bottom of the controller.

   DO NOT pull on the cord. Pulling on the power cord will damage it.

2. Pair the controller and the AFAD (for instructions, see Section 4.4, page 16).

3. While using the controller to open and close the gate arm, watch the AFAD and ensure it responds as follows:

   Press Close… Yellow signal is on steady for five seconds and the gate remains open… After five seconds, the red signal is on steady and the gate closes.

   Press Open… Red signal is on steady while the gate opens… After the gate opens, the yellow signal flashes.

   If the gate and signal do not respond as described, then either the controller is not paired with the AFAD or the AFAD is not functioning properly.

4. If applicable, repeat the process for the second AFAD.

   - Use the same controller if both AFADs will be controlled by one flagger/operator.
   - Use a second controller if a second flagger/operator will control the second AFAD.

5. If the system test is successful, deploy the AFADs in the TTC zone when ready. For deployment instructions, see the AFAD owner's manual.

5 Operation

5.1 Before using the AFAD

⚠ WARNING

Improper use of equipment could cause serious injury or death.

- Before using this product, carefully read, understand, and observe all instructions in this manual and in the AFAD owner's manual.
- Read and follow all safety instructions.
- Follow all regulatory guidelines.

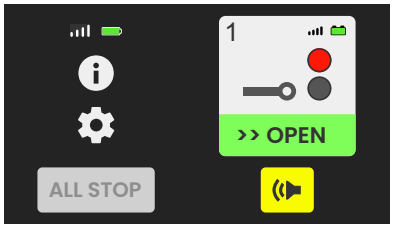
- Read and follow all safety instructions (see Section 2, page 3).
- Ensure the AFAD batteries are fully charged (see the AFAD owner's manual).
- Ensure the wireless controller is fully charged (see Section 4.3, page 14).
- Ensure the AFAD operator is a flagger who has been trained to operate the AFAD.
- Ensure the AFAD system has been tested for proper functioning before being deployed in the TTC zone. See Section 4.6, page 21.
- Follow all regulatory guidelines.

5.2 Single gate control

When paired with one AFAD, the controller provides control of the AFAD gate arm and other functions.

- To open the gate, see Figure 5-1.
- To close the gate, see Figure 5-2.
- The system automatically changes the signal lights according to the gate position (see Section 5.6, page 34).
- You can press and hold the button at any time to activate the AFAD warning siren (see Section 5.8, page 35).

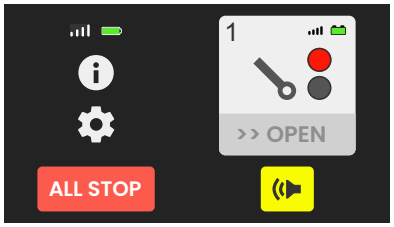
Figure 5-1. Single gate control: open gate



When the gate is closed, the signal is red.

Press the **OPEN** button to open the gate.

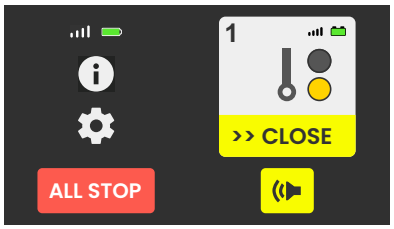
The **ALL STOP** button is “grayed out” because the gate is already down.



After you press the **OPEN** button, the gate immediately starts tilting up to open.

While the gate is opening, the signal is red and the gate position indicator is animated. Note that the animation and the gate are not perfectly synchronized.

To immediately close the gate while it is opening, press the **ALL STOP** button (see Section 5.7, page 34).

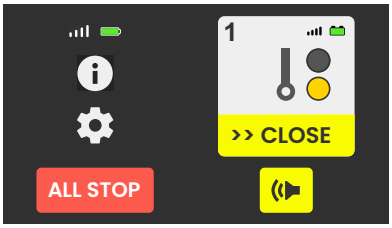


When the gate is open, the signal flashes yellow.

Press the **close** button to close the gate (see Figure 5-2).

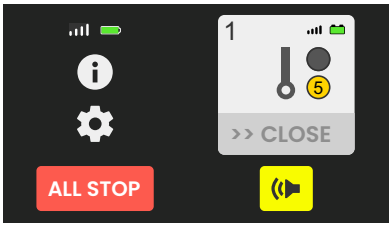
To immediately close the gate, press the **ALL STOP** button (see Section 5.7, page 34).

Figure 5-2. Single gate control: close gate



When the gate is open, the signal flashes yellow.

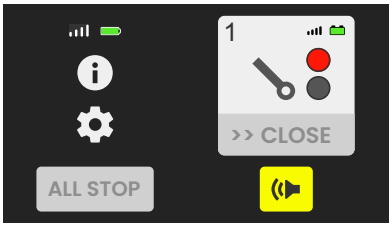
Press the **CLOSE** button to close the gate.



After you press the **CLOSE** button, the gate remains open while the yellow signal stops flashing and is on steady for five seconds.

Meanwhile, the screen shows a countdown indicator. Note that the indicator and the signal are not perfectly synchronized.

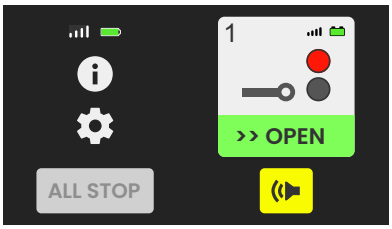
To immediately close the gate without the five-second delay, press the **ALL STOP** button (see Section 5.7, page 34).



After the five-second delay, the signal changes to red and the gate begins tilting down to close.

While the gate is closing, the signal remains red and the gate position indicator on the controller is animated. Note that the animation and the gate are not perfectly synchronized.

The **ALL STOP** button is “grayed out” because the gate is already moving down to close.



When the gate is closed, the signal is red.

Press the **OPEN** button to open the gate (see Figure 5-1).

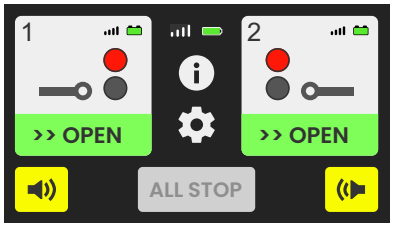
The **ALL STOP** button is “grayed out” because the gate is already down.

5.3 Dual gates control

When paired with two AFADs, the controller provides control of both AFAD gate arms and other functions.

- To open a gate, see Figure 5-3.
- To close a gate, see Figure 5-4.
- The system automatically changes the signal lights according to the gate position (see Section 5.6, page 34).
- You can press and hold the button at any time to activate the AFAD warning siren (see Section 5.8, page 35).

Figure 5-3. Dual gates control: open gate

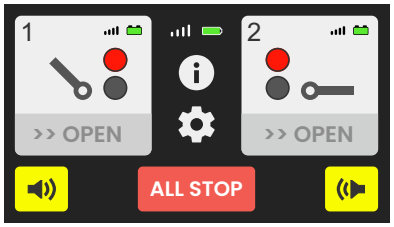


When controlling two gates in normal operating mode, both gates may be closed (down) at the same time, but only one can be open.

When the gates are closed, the signals are red.

Press an **OPEN** button to open a gate.

The **ALL STOP** button is “grayed out” because both gates are already down.



After you press the **OPEN** button (in this example, the left one), the gate immediately starts tilting up to open. The other gate stays closed.

While the gate is opening, the signal remains red and the gate position indicator on the controller is animated. Note that the animation and the gate are not perfectly synchronized.

To immediately close the gate while it is opening, press the **ALL STOP** button (see Section 5.7, page 34).

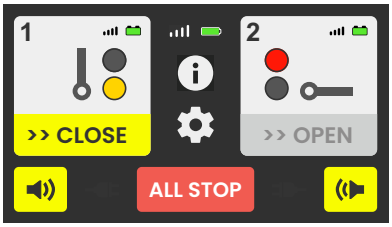
When a gate is open, the corresponding signal flashes yellow. The other gate stays closed and its signal is steady red.

Press the **CLOSE** button to close the gate (see Figure 5-4).

The **OPEN** button is “grayed out” because the other gate is open (up). Before opening a gate, the other gate must be closed (down).

To immediately close the gate, press the **ALL STOP** button (see Section 5.7, page 34).

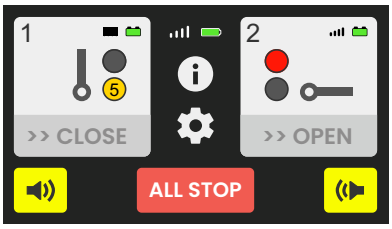
Figure 5-4. Dual gates control: close gate



When controlling two gates in normal operating mode, only one gate can be open at a time. Before opening a gate, the other gate must be closed (down).

When a gate is open, the corresponding signal flashes yellow. The other gate is closed and its signal is steady red.

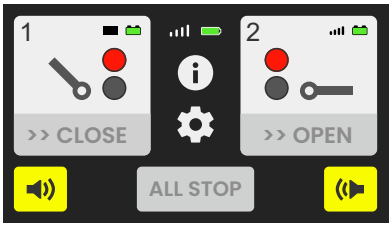
Press the **CLOSE** button to close the gate.



After you press the **CLOSE** button, the gate remains open while the yellow signal stops flashing and is on steady for five seconds.

Meanwhile, the screen shows a countdown indicator. Note that the indicator and the signal are not perfectly synchronized.

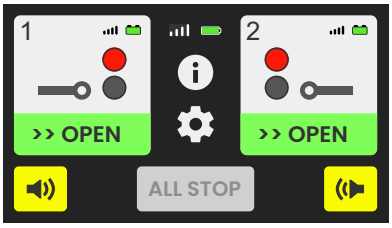
To immediately close the gate without the five-second delay, press the **ALL STOP** button (see Section 5.7, page 34).



After the five-second countdown, the signal changes to red and the gate begins tilting down to close.

While the gate is closing, the signal remains red and the gate position indicator on the controller is animated. Note that the animation and the gate are not perfectly synchronized.

The **ALL STOP** button is “grayed out” because the gate is already moving down to close.



When the gates are closed the signals are red.

Press an **OPEN** button to open a gate (see Figure 5-3).

The **ALL STOP** button is “grayed out” because the gates are already down.

5.4 Swap gates display

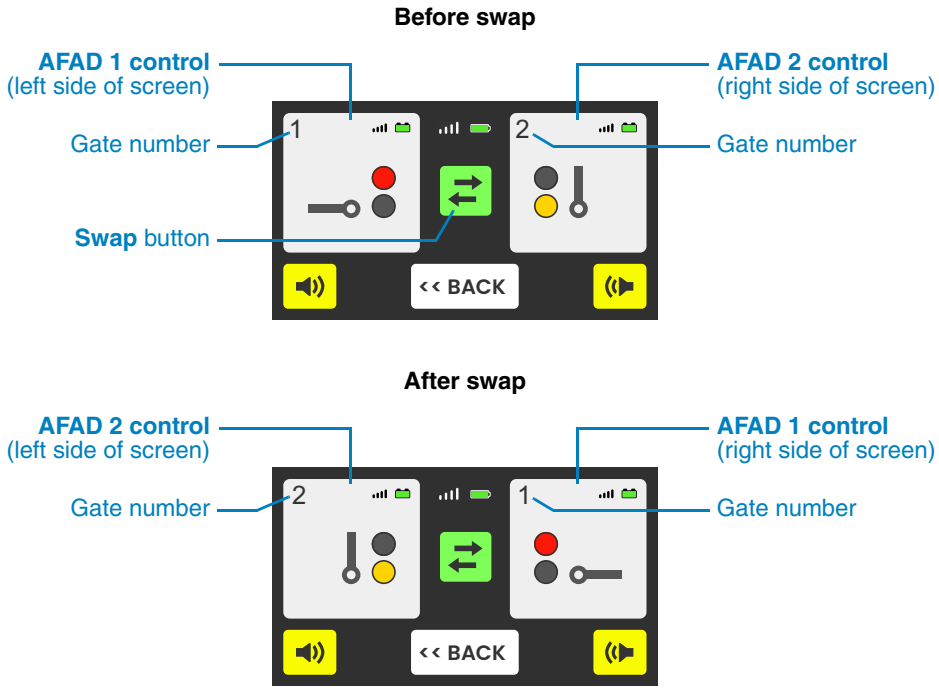
When the controller is paired with two AFADs, you can swap the positions of the AFAD controls on the touchscreen.

IMPORTANT!

The Swap Gates Display option does not alter the controller's pairing with either gate, and it does not change the gate arm positions or control of the gates by the controller. When you swap the gates display, the only thing that changes are the positions of the two AFAD controls on the touchscreen.

1. On the controller, press the ⚙ button, then press the blue **SWAP GATES DISPLAY** button.
2. Take note of the two gate controls:
   - Each control is identified with a gate number (see Figure 5-5). It does not matter which gate number is on the left or right, or if they match the number decals on your AFAD trailers. The gate numbers are for reference only.
   - The AFAD controls indicate the current gate arm positions, which may be up or down, and the status of the red and yellow signal lights. The gate arms can not be changed from this screen. Figure 5-5 is for illustrative purposes only; the indicators on your controller may be different than shown here.
3. Press the ⇄ button. The gate controls have switched positions: the one that was on the left is now on the right, and vice versa.
4. Press the **BACK** button to return to the Settings screen.
5. Press the **BACK** button again to return to the Main screen.

Figure 5-5. Swap Gates Display screen



Examples shown above are for illustrative purposes only. The gate and signal indicators on your controller may be different than shown.

5.5 Haul road crossing mode

5.5.1 Overview

For deployment in haul road crossing applications, the controller includes an optional operating mode that controls two AFAD gates together at the same time. This mode is only available when the controller is paired with two AFADs (see Section 4.4, page 16).

Haul road crossing mode ensures both gates are open at the same time, and then also both closed at the same time.

In haul road crossing mode, the controller provides control of the AFAD gate arms and other functions.

5.5.2 Enabling and disabling

To enable or disable haul road crossing mode:

1. On the controller, press the ⚙ button to access the Settings screen.

   On the Settings screen, the current state—disabled or enabled—is indicated on the **HAUL ROAD CROSSING** button:

   Empty check box indicates the operating mode is disabled.

   Check mark indicates the operating mode is enabled.

2. To enable or disable haul road crossing mode, press the **HAUL ROAD CROSSING** button.

- The screen displays a message about changing the operating mode, and includes a pair of buttons: either **ENABLE** and **CANCEL**, or **DISABLE** and **CANCEL**. Press the appropriate button for your needs.
- Pressing the **CANCEL** button returns the controller to the Settings screen and does not change the operating mode.

IMPORTANT!

Enabling or disabling haul road crossing mode does not alter the state of either AFAD. Both gate positions and all signal lights remain as they were.

To change the gate positions, return to the Main screen and operate the AFADs as described in Section 5.5.3, page 32.

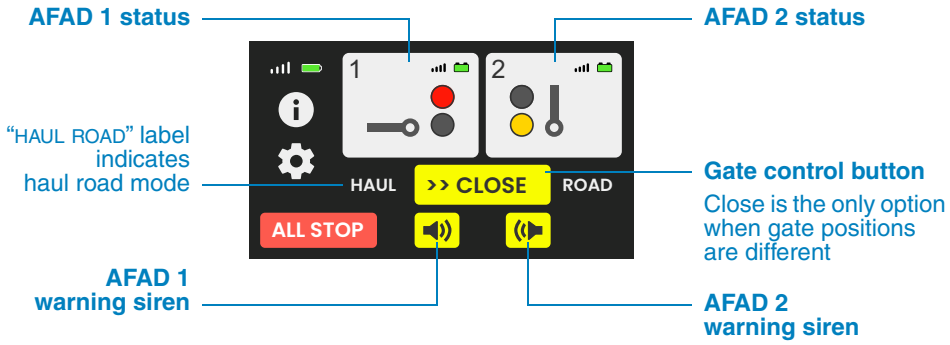
3. Press the **BACK** button to return to the Main screen.

After enabling haul road crossing mode:

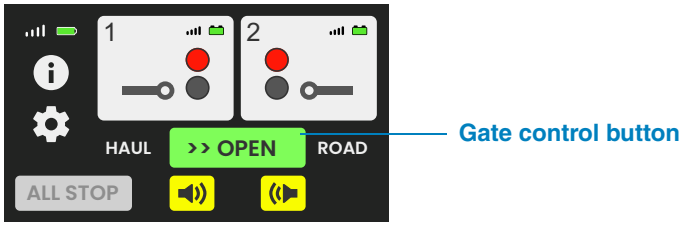
- The Main screen on the controller shows a single button for opening or closing both gates, and displays the "Haul Road" title aside the button (see Figure 5-6). The status for both AFADs—gate positions and signal lights—is also indicated.
- The gate positions remain as they were before you enabled haul road crossing mode. If one gate was open and one was closed (Figure 5-6, Example 1), you must first close the open gate before operating the two gates in unison (i.e., both up/open or both down/closed).
- To operate the gates in haul road crossing mode, see Section 5.5.3, page 32.

Figure 5-6. Main screen in haul road crossing mode

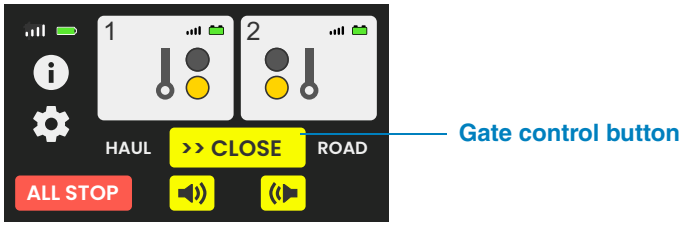
Example 1. One gate open and one gate closed



Example 2. Gates closed



Example 3. Gates open

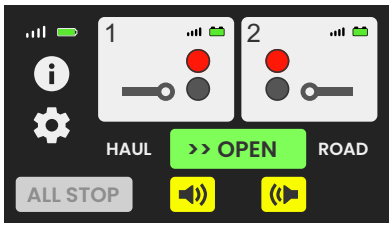


5.5.3 Operating the gates

To operate the gates in haul road crossing mode:

- To open the gates, see Figure 5-7.
- To close the gates, see Figure 5-8.
- The system automatically changes the signal lights according to the gate positions (see Section 5.6, page 34).
- You can press and hold the button at any time to activate the AFAD warning siren (see Section 5.8, page 35).

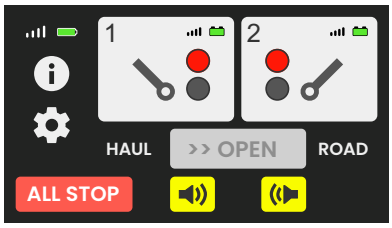
Figure 5-7. Haul road crossing gate control: open gates



When the gates are closed, the signals are red.

Press the **OPEN** button to open both gates.

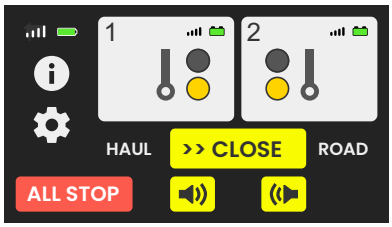
The **ALL STOP** button is "grayed out" because the gates are already down.



After you press the **OPEN** button, both gates immediately start tilting up to open.

While the gates are opening, both signals are red and the gate position indicators on the controller are animated. Note that the animation and the gates are not perfectly synchronized.

To immediately close the gates while they are opening, press the **ALL STOP** button (see Section 5.7, page 34).

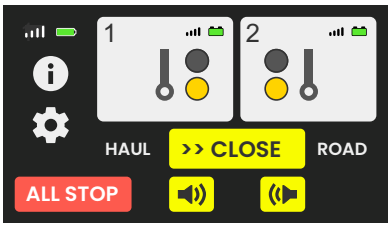


When the gates are open, the signals are flashing yellow.

Press the **CLOSE** button to close both gates (see Figure 5-8).

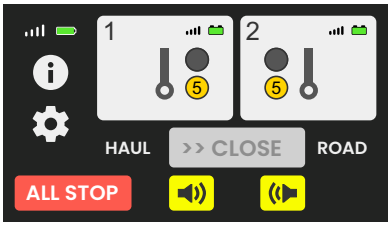
To immediately close the gates, press the **ALL STOP** button (see Section 5.7, page 34).

Figure 5-8. Haul road crossing gate control: close gates



When the gates are open, the signals are flashing yellow.

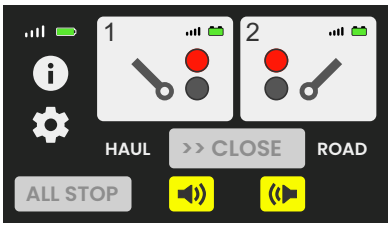
Press the **CLOSE** button to close both gates.



After you press the **CLOSE** button, both gates remain open while the yellow signals stop flashing and are on steady for five seconds.

Meanwhile, the screen shows countdown indicators. Note that the indicators and the signals are not perfectly synchronized.

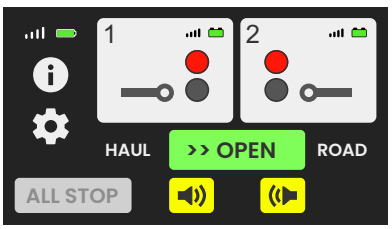
To immediately close the gate without the five-second delay, press the **ALL STOP** button (see Section 5.7, page 34).



After the five-second countdown, the signals change to red and the gates begin tilting down to close.

While the gates are closing, both signals remain red and the gate position indicators on the controller are animated. Note that the animation and the gates are not perfectly synchronized.

The **ALL STOP** button is “grayed out” because the gates are already moving down to close.



When the gates are closed, the signals are red.

Press the **OPEN** button to open both gates (see Figure 5-7).

The **ALL STOP** button is “grayed out” because the gates are already down.

5.6 Signal lights

The system is programmed to control the signal lights automatically based on the operator's control of the AFAD gate arm. The automatic behavior is as follows:

Gate closed — red signal on steady

Gate opening — red signal on steady

Gate open — yellow signal flashing

Gate closing — after the operator issues the command to close the gate, but before the gate starts closing, the yellow signal is on steady for five seconds; the instant the gate starts closing, the signal changes from yellow to red, and the red signal is on steady

Two conditions override the signal lights behavior described above:

- When you press the **ALL STOP** button on the controller, the signal instantly changes to steady red and the gate starts closing immediately, without the five-second delay. See Section 5.7.
- When the operator presses a gate override button on the Settings screen, the signals behave as described on the override button. See Section 5.9, page 36.

5.7 All stop

The all-stop function closes all open AFAD gates for AFADs that are paired with the controller. When you press the **ALL STOP** button:

- All red signals immediately change from off to steady on
- All yellow signals immediately change from flashing or steady on to off
- All open gates immediately close, without the five-second delay that is normally part of the gate-closing process

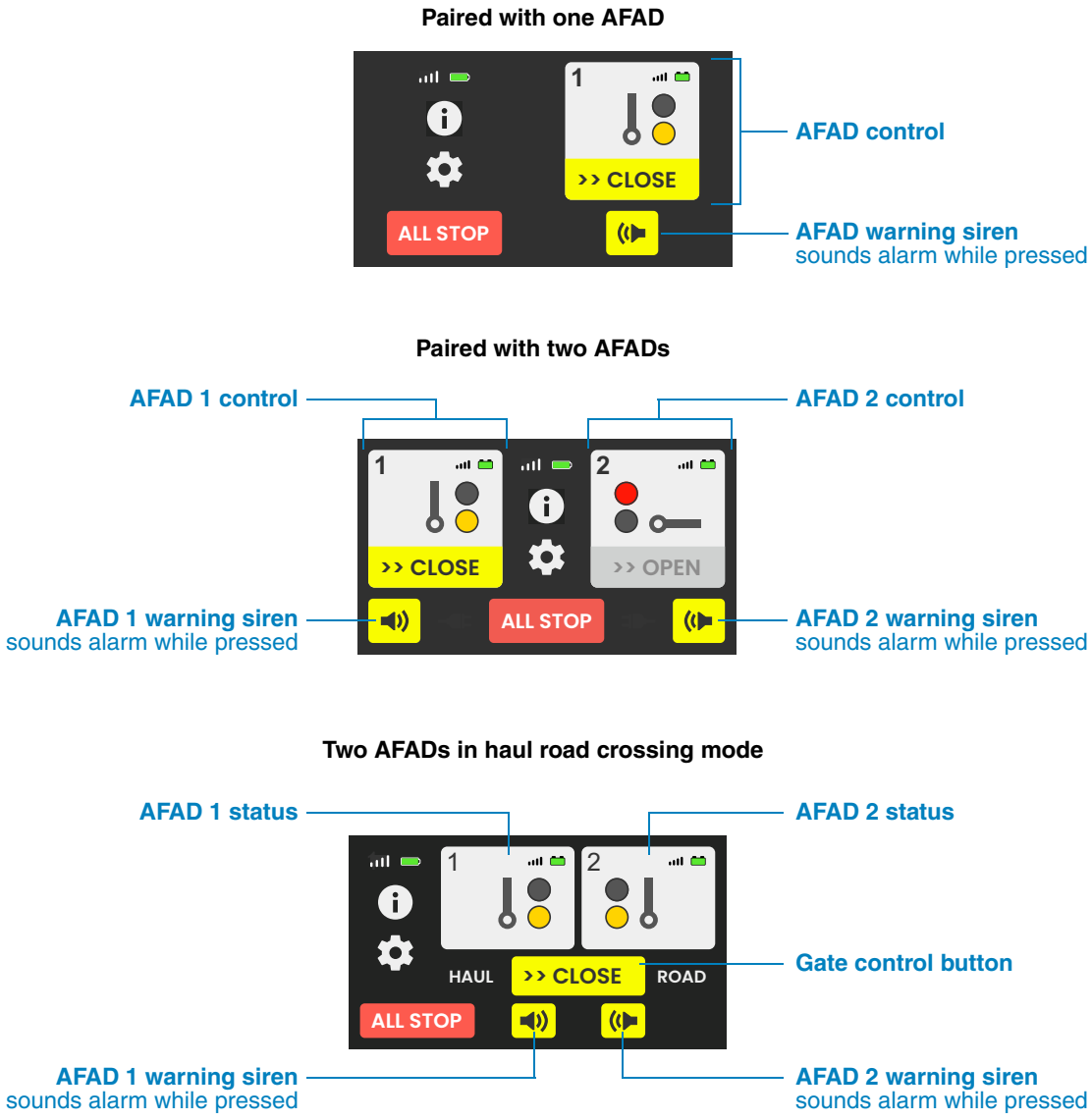
The **ALL STOP** button appears on the controller's Main screen and is always available when any paired AFAD gate is open or in the process of opening, and during the five-second delay period when any paired AFAD gate is about to close but has not yet started moving. The button is "grayed out" (inactive or unavailable) when all paired AFAD gates are closed or already moving down to close.

5.8 Warning siren

The AFAD includes a warning siren that can be activated using a button on the controller's Main screen. When the controller is paired with two AFADs, each AFAD's siren has its own button. See Figure 5-9.

The siren sounds only while you press the button. When you take your finger off the button, the siren is off (silent).

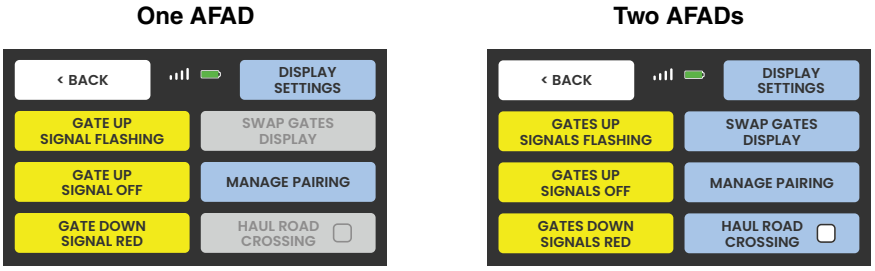
Figure 5-9. Warning siren buttons



5.9 Gate and signal overrides

The Settings screen (Figure 5-10) lets you choose from several preset overrides for AFADs that are paired with the controller. When paired with one or two AFADs, the yellow override buttons control the AFAD gates and signals as described below.

Figure 5-10. Settings screen



1. Access the Settings screen by pressing the ⚙ button.
2. To activate an override, press the appropriate button for your needs.

■ When paired with one AFAD:

GATE UP, SIGNAL FLASHING opens the AFAD gate. When the gate is open, the yellow signal is flashing.

GATE UP, SIGNAL OFF opens the AFAD gate. When the gate is open, both the red and yellow signals are off. Use this option to shut off system power (see Section 5.11).

GATE DOWN, SIGNAL RED closes the AFAD gate. After you press the button, the gate remains open for five seconds while the yellow signal is on steady and the controller screen shows a countdown indicator. (Note that the indicator and signal are not perfectly synchronized.) After five seconds, the yellow signal is off, the red signal is on steady, and the gate begins to close. When the gate is closed, the red signal remains on steady.

■ When paired with two AFADs:

GATES UP, SIGNALS FLASHING opens both AFAD gates. When the gates are open, both yellow signals are flashing.

GATES UP, SIGNALS OFF opens both AFAD gates. When the gates are open, all the signals are off. Use this option to shut off system power (see Section 5.11).

GATES DOWN, SIGNALS RED closes both AFAD gates. After you press the button, any gate that is currently open remains open for five seconds while its corresponding yellow signal is on steady and the controller screen shows a countdown indicator. (Note that the indicator and signal are not perfectly synchronized.) After five seconds, the yellow signal is off, the red signal is on steady, and the gate begins to close. When the gates are closed, both red signals remain on steady.

3. After you press a yellow override button, the screen displays a message about changing the gate position, and includes a pair of buttons: **PROCEED** and **CANCEL**. Press the desired button:

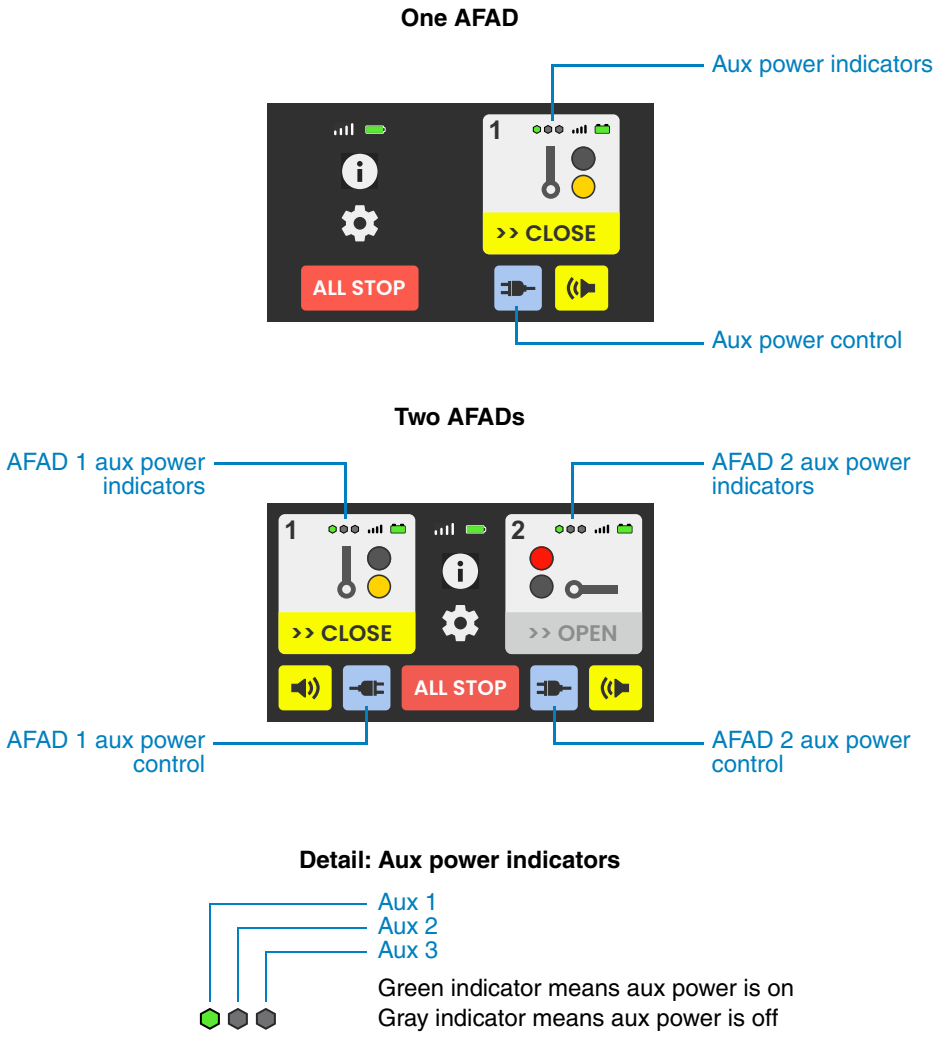
   - Pressing the **PROCEED** button results in the behavior described in Step 2.
   - Pressing the **CANCEL** button returns the controller to the Settings screen and does not change the gate position or signals.

   Press the **BACK** button to return to the Main screen.

5.10 Aux device power

When "Show Aux Power" is enabled (see Section 4.5.3), the controller provides on/off control and power indicators on the operating screen (Figure 5-11).

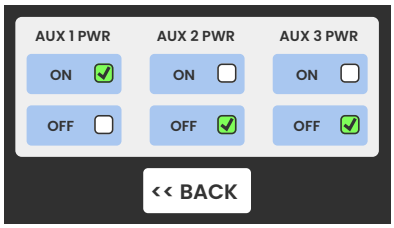
Figure 5-11. "Show aux power" enabled



To toggle power to any auxiliary device, such as the optional AFAD camera:

1. Press the button to view the Aux power screen (Figure 5-12).

Figure 5-12. Aux power screen



The Aux power screen indicates the current state—on or off—for each aux power circuit, Aux 1, 2, and 3. The current state is indicated by the check marks:

ON ☑ ON with check mark indicates aux power is enabled or on.

OFF ☑ OFF with check mark indicates aux power is disabled or off.

2. To switch power on or off for any auxiliary device click the appropriate check box.
3. When finished, press the **BACK** button to return to the Operating screen.

IMPORTANT!

When an auxiliary device is powered (i.e., the aux power circuit is enabled), the device is drawing power from the AFAD batteries.

To avoid a power failure when the AFAD is not in use, disable aux power for all auxiliary devices before taking the trailer out of service.

5.11 Shutting off system power

While the AFAD signal lights are on, the system is consuming battery power. Reducing power consumption when the system is not in use helps ensure the batteries remain charged and ready to power the system when it is needed. For an overview of the AFAD power system, see the AFAD owner's manual.

To reduce power consumption when the system is not in use, ensure the gate arm is up and the lights are off:

1. Access the Settings screen by pressing the ⚙ button.
2. Turn off the signals and raise the gate or gates:
   - When paired with one AFAD, press the **GATE UP, SIGNAL OFF** button.
   - When paired with two AFADs, press the **GATES UP, SIGNALS OFF** button.
3. Turn off power to auxiliary devices, such as the optional AFAD camera:

> **IMPORTANT!**
>
> When an auxiliary device is powered (i.e., the aux power circuit is enabled), the device is drawing power from the AFAD batteries.
>
> To avoid a power failure when the AFAD is not in use, disable aux power for all auxiliary devices before taking the trailer out of service.

4. Press the blue **DISPLAY SETTINGS** button.
   a. On the Display Settings screen, press the **OFF** button for any aux power circuits that are on.
5. Press the **BACK** button to return to the Settings screen.
6. Press the **BACK** button again to return to the Main screen.

6 Troubleshooting

6.1 Controller will not turn on

If the controller does not turn on after you press the power button on the bottom of the controller, its battery pack needs to be charged.

For charging instructions, see Section 4.3, page 14.

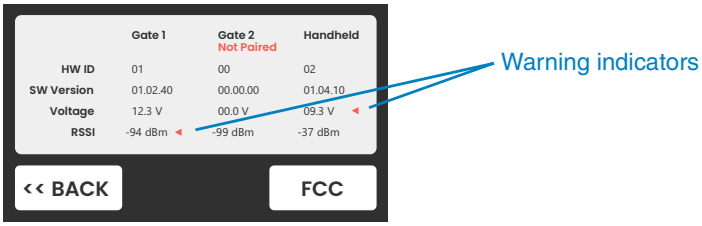
6.2 Voltage and RSSI warnings

6.2.1 Overview

The controller's Information screen lists system status information and provides system warnings if any are present (see Figure 6-1).

To access the Information screen, press the ⓘ button.

Figure 6-1. Warning indicators on information screen



6.2.2 Voltage warnings

When battery voltage for a paired AFAD or the controller drops below a preset level, the controller's Information screen shows a low-voltage warning indicator (see Figure 6-1).

When power is restored after a power failure, the controller should remain paired with the AFAD trailers it was previously paired with. If pairing is lost, it may indicate additional issues.

For pairing instructions, see Section 4.4, page 16. For other issues, contact the factory for assistance (see Section 1.2, "Where to obtain service," page 1).

AFAD trailer

If the AFAD trailer power shuts down:

- Its gate position remains unchanged and its signal lights are off. The AFAD cannot function when power is shut down.
- The controller indicates a communication failure and ceases to control the AFAD. If the controller is paired with two AFADs, then control of both AFADs is suspended until the communications failure is resolved.

IMPORTANT!

In the event of a wireless controller power failure, you may choose to operate the AFAD with its cable-connected controller. For information, see the AFAD owner's manual.

When operating two AFADs, in the event of a communication failure with just one AFAD, you may choose to operate the other AFAD with its cable-connected controller. For information, see the AFAD owner's manual.

The cable-connected controller has limited functionality. It does not offer all the control features of the wireless controller.

To avoid an automatic low-voltage shutdown, ensure the system provides sufficient power for continuous operation. If the system shuts down, charge the batteries as described in the AFAD owner's manual. For information about the AFAD power system, see the AFAD owner's manual.

After restoring power to optimal, turn on the controller (see Section 3.2.3, page 10) and then use the Information screen to check for warnings. If it shows the same warning, contact the factory for assistance (see Section 1.2, "Where to obtain service," page 1).

Controller

If the controller runs out of power, it will not operate. Paired AFADs will continue to function but cannot be controlled with the wireless controller.

To prevent controller battery failure, charge the controller when the Information screen shows a voltage warning for the controller. See Section 4.3, page 14.

After recharging the controller battery pack, turn on the controller (see Section 3.2.3, page 10), then use the Information screen to check for warnings. If it shows the same warning, contact the factory for assistance (see Section 1.2, "Where to obtain service," page 1).

If the controller does not turn on after charging the battery pack, contact the factory for assistance (see Section 1.2, "Where to obtain service," page 1).

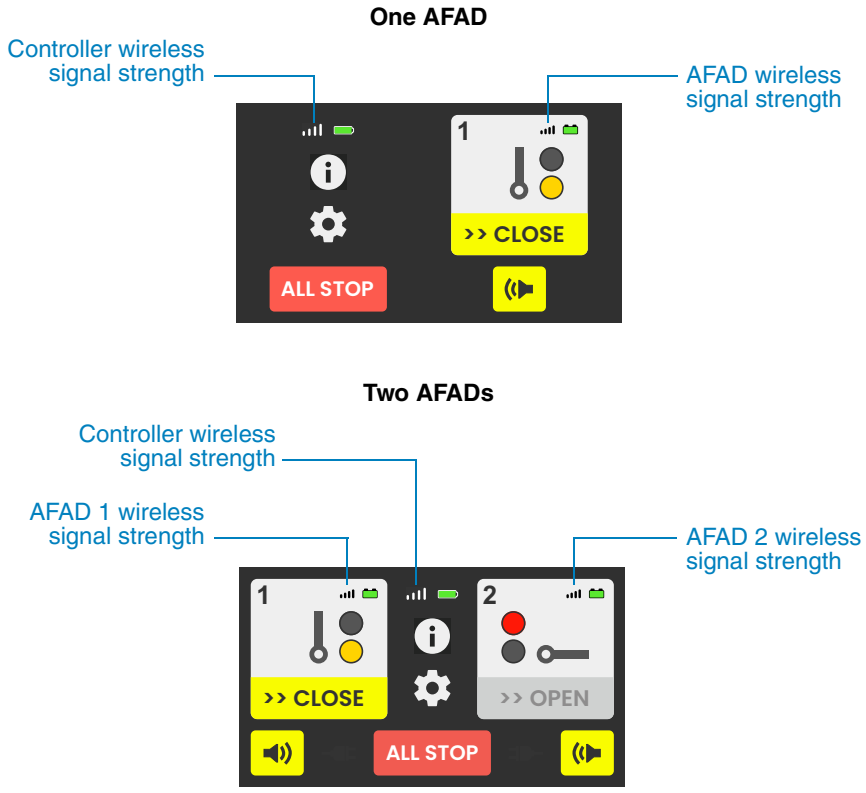
6.2.3 Connectivity warnings

The wireless signal strength indicators on the controller's Main screen (Figure 6-2) give you a sense of the quality of the wireless signals between the controller and paired AFADs. The controller's Information screen provides you with meaningful values for signal strength.

The Information screen presents connectivity strength as RSSI (received signal strength indicator) values in dBm, or decibel-milliwatts (see Figure 6-1, page 41). The closer the value is to zero (0), the stronger the signal. For example, a value of –94 dBm represents a relatively weak signal, while –33 dBm is a relatively strong signal.

Signal strength can be affected by a variety of technical and environmental factors, including distance to the paired device and weather conditions.

Figure 6-2. Wireless signal indicators



6.3 Comm failure

6.3.1 Overview

The "Comm Failure" message tells you that the controller cannot communicate with one or both paired AFADs (see Figure 6-3). A communications failure can be temporary and automatically resolve itself, or it can be long-lasting and require intervention.

If a communications failure occurs when the controller is paired with two AFADs, control of both AFADs is suspended until the communications failure is resolved.

Conditions that can cause a communications failure include but are not limited to:

- An object is blocking transmission of the wireless radio signal
- Issues with the AFAD power system, control system, or an installed device
- AFAD wiring and wiring connections
- The AFAD's cable-connected controller is plugged into the AFAD control box
- Inclement, stormy, or severe weather

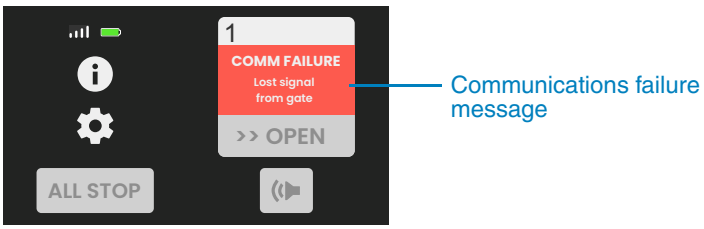
IMPORTANT!

In the event of a wireless controller power failure, you may choose to operate the AFAD with its cable-connected controller. For information, see the AFAD owner's manual.

When operating two AFADs, in the event of a communication failure with just one AFAD, you may choose to operate the other AFAD with its cable-connected controller. For information, see the AFAD owner's manual.

The cable-connected controller has limited functionality. It does not offer all the control features of the wireless controller.

Figure 6-3. "Comm failure" message



6.3.2 Blocked wireless signal

The wireless radio signal can be blocked by some solid objects, particularly large metal objects such as construction equipment and transport vehicles.

- If the AFAD or its antenna is obstructed, either move the AFAD or the object blocking it.
- If the controller is obstructed, move the controller or the object blocking it.

6.3.3 System failures

If the control system fails, the wireless radio signal will be lost.

- The most common system failure is a power shutdown. Use the controller to check voltage levels (see Section 6.2.2, page 41). If voltages are optimal, access the AFAD battery box and look for a blown fuse, check wiring connections, and inspect for wiring damage.

⚠ DANGER

Batteries and power wiring pose hazards that can cause blindness, severe injury, and death.

Before accessing batteries, observe battery safety precautions in the Wanco AFAD Owner's Manual.

- Examine the AFAD for obvious signs of damage and electronics failures. Check installed devices, such as the AFAD antenna, for damage and loose connections. Open the AFAD control box and examine the interior for any obvious signs of trouble.
- If necessary, contact the factory for assistance (see Section 1.2, "Where to obtain service," page 1).

6.3.4 Wiring issues

If the AFAD was recently serviced, particularly if the batteries were charged, replaced, or stored and returned to service, the battery wiring may be reversed or improperly connected. For battery service and wiring, see the AFAD owner's manual.

⚠ DANGER

Batteries and power wiring pose hazards that can cause blindness, severe injury, and death.

Before accessing batteries, observe battery safety precautions in the Wanco AFAD Owner's Manual.

Wiring should be checked regularly for loose connections and signs of damage. If a comm failure occurs and the power system, electronics, and installed devices appear to be functioning properly, check all system wiring.

6.3.5 Cable-connected controller

When you connect the pendant cable to the control box, the wireless controller loses its wireless connection to the AFAD. The connection is restored within seconds of disengaging the cable from the control box if the wireless controller remains paired with the AFAD.

Alternatively, if the controller is paired with two AFADs and you want to control the other AFAD wirelessly, you may choose to unpair the controller and the AFAD that is causing the comm error.

To unpair, follow these steps:

1. Access the Settings screen by pressing the ⚙ button.
2. Press the **MANAGE PAIRING** button.
3. Press the appropriate **UNPAIR** button.

6.3.6 Weather

Operating any equipment in inclement weather presents risks and hazards, and wireless communications can be adversely affected in any unsettled weather.

If a comm failure occurs during poor weather, avoid using the equipment, or operate the AFAD with its cable-connected controller. For information about the cabled controller, see the AFAD owner's manual.

IMPORTANT!

The cable-connected controller has limited functionality. It does not offer all the control features of the wireless controller.

6.3.7 Auxiliary equipment

If an aux device (such as the optional camera) isn't working, ensure aux power controls are enabled and power is switched on (see Section 4.5.3, page 19).

If the aux power is switched on and the device still isn't working, contact the factory for assistance (see Section 1.2, page 1).

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