UART Long Range Adaptor (LRA) User Manual

1. About Product

1.1. Product Overview

The UART Long Range Adaptor (LRA) is anywAiR iO's wireless (LoRa®) Long Range Adaptor (LRA) controller. Designed to interface directly with compatible RAC/PAC and VRF Air Conditioning units in a small package, reducing the installation time and bypassing the AT command interface.

LoRa® wireless IoT technology offers a long transmission range, low power consumption, and is less susceptible to object interference than other wireless technologies. This ensures seamless control integration for a range of applications.

1.2. Architecture

Long Range Adaptor (LRA): Acts as the communication device, interfacing with compatible RAC/PAC and VRF Air Conditioning units via the UART protocal. It manages data transmission to and from the central anywAiR iO gateway.
anywAiR iO Gateway: Serves as the central node, managing communication from multiple Long Range Adaptor (LRA) devices and distributing data as needed.
Control: The Long Range Adaptor (LRA) device directly manages data exchange with compatible Air Conditioning units using their specific UART protocol.

1.3. Product Features

Operation Control: Enable the unit on and off.
Mode Control: Switch between cool, heat, dry, auto, and fan modes.
Temperature Setpoint Control: Adjust heating/cooling temperature setpoint.

- Cooling setpoint 18 to 30 degrees Celsius
- Heating setpoint 16-18 to 30 degrees Celsius (low limit model dependent)

Fan Speed Control: Control fan speed (model dependent).
Louvre Direction Control: Adjust vertical and horizontal louvre position and louvre swing operation (model dependent).
Economy Control: Enable and disable the unit's economy mode.
Return Air Temperature Monitoring: Monitor the return air temperature.
Error Status Reporting: Retrieve the error status and error code.

2. Hardware Overview

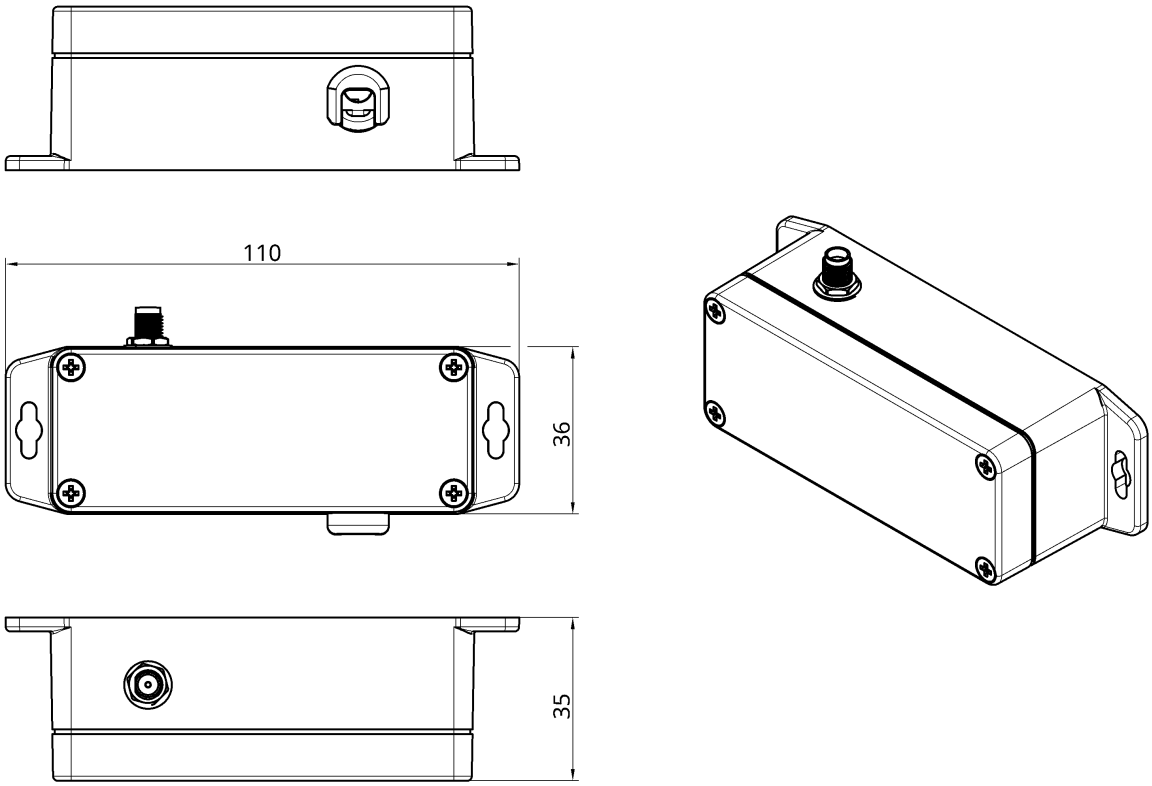
2.1. Packing List

- Installation & User Manual.
- UART Long Range Adaptor (LRA) Device
- LoRa Antenna.
- PAP-04V-S power/communication cable.
- Mounting screws/velcro tape.

Insert Packing list images

2.2. Product Dimensions

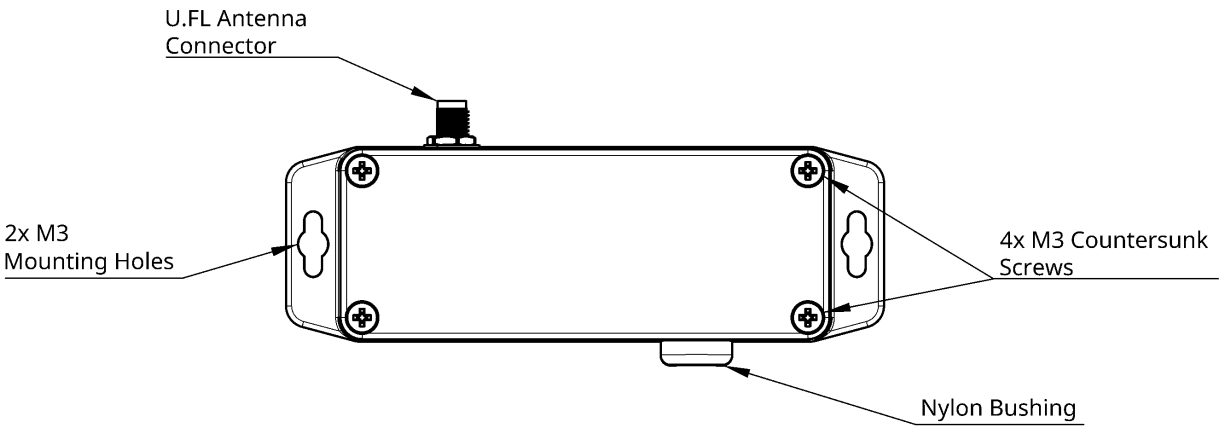
Height:	36 mm / 1.42 inches
Width:	110 mm / 4.33 inches
Depth:	35 mm / 1.38 inches
Enclosure	Light Grey Polycarbonate, IP68 Rated



2.3. Product Component Breakdown

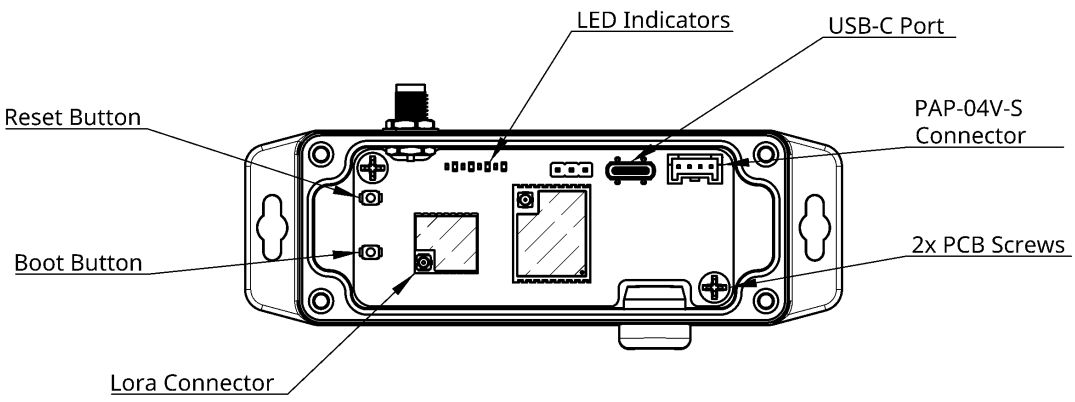
2.3.1 External

- U.FL Antenna Connector: Connects the antenna for wireless communication.
- Mounting Holes: Allows for secure mounting via appropriate fixings.
- Countersunk Screws: Allows for easy opening of the device.
- Nylon Bushing: Facilitates the entry of cables into the device.



2.3.2 Internal

- **Reset Button:** Pressing this button will reset the UART Long Range Adaptor (LRA), restart the firmware and publish a lora message.
- **Boot Button:** Used to enter the device into Boot mode for firmware updates
- **LED Indicators:** Used to indicate device operation status's.
  - Red PWR light - When active indicates the device is powered.
  - Green TX light - When periodically flashing indicates communication.
  - Blue RX light - When periodically flashing indicates communicationn.
  - Orange L1 light - Will be inactive in normal operation. If reset is pressed L1 will illuminate momentarily during the reboot cycle.
- **Lora Connector:** Connects the U.FL Antenna Connector to the internal PCB.
- **USB-C Port:** Provides a connection point to update the device firmware.
- **CN Connector:** Connection point for the PAP-04V-S Connector linking the Long Range Adaptor (LRA) to the Air Conditioner UART port (CN6, CN65 or CN75).
- **PCB Screws:** Used to secure the PCB in the enclosure.



3. Installation & Configuration

3.1. Mounting

The UART Long Range Adaptor (LRA) can be mounted in several ways depending on the type of air conditioning system. In all cases, the antenna must remain vertical (unless specifically noted). The UART Long Range Adaptor (LRA) should always be mounted in a location such that it will not experience extreme high or low temperatures, liquids or high humidity. Use either the provided Velcro tape or fixings, depending on the surface and accessibility.

General Notes

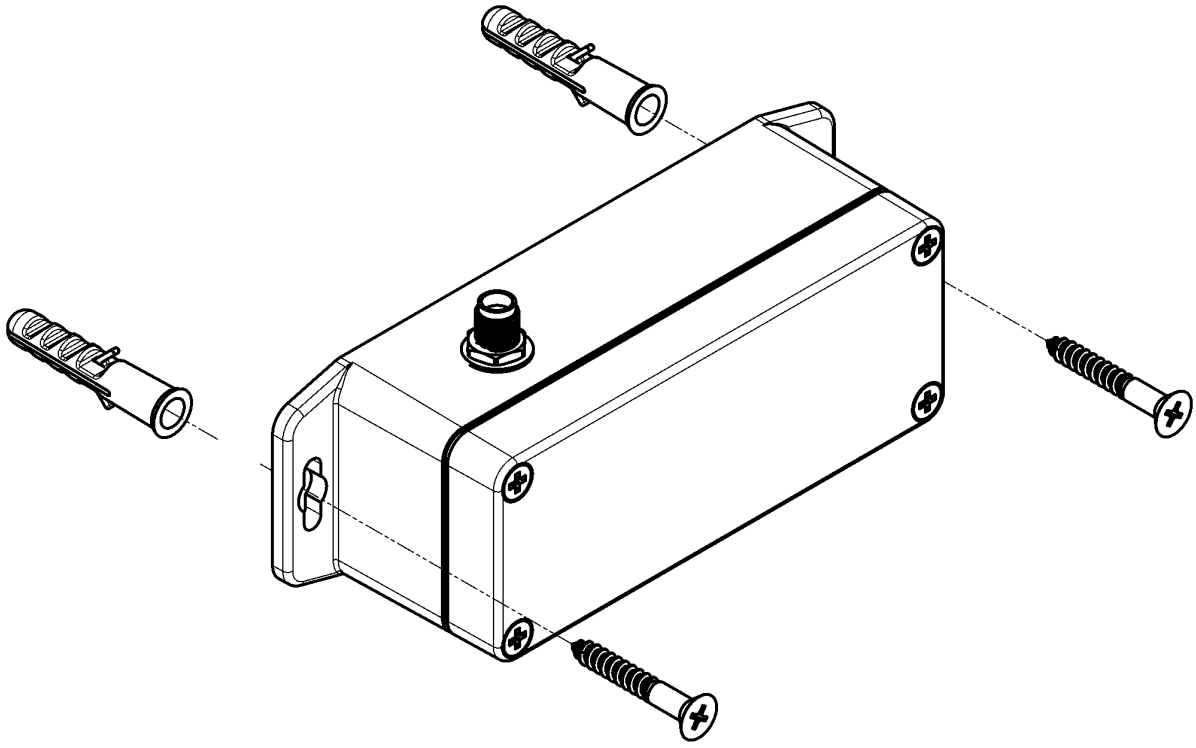
- Keep the antenna vertical and unobstructed for best signal performance.
- Use existing penetrations where possible to avoid damaging the air conditioning unit.
- Velcro tape is preferred where drilling may risk damage to internal components.
- Ensure the cable path is tidy, protected, and free from heat sources or moving parts.

3.1.1 Direct Mounting

The UART Long Range Adaptor (LRA) can be mounted via fixings utilising the mounting clips depending on the type of air conditioning system and mounting location.

Direct Mounting Process:

1. Position the UART Long Range Adaptor (LRA) against the mounting location & mark the fixing points.
2. Drill the holes & insert wall plugs if required.
3. Secure the UART Long Range Adaptor (LRA) using appropriate screws or fixings.
4. Gently pull forward to confirm it is firmly mounted.

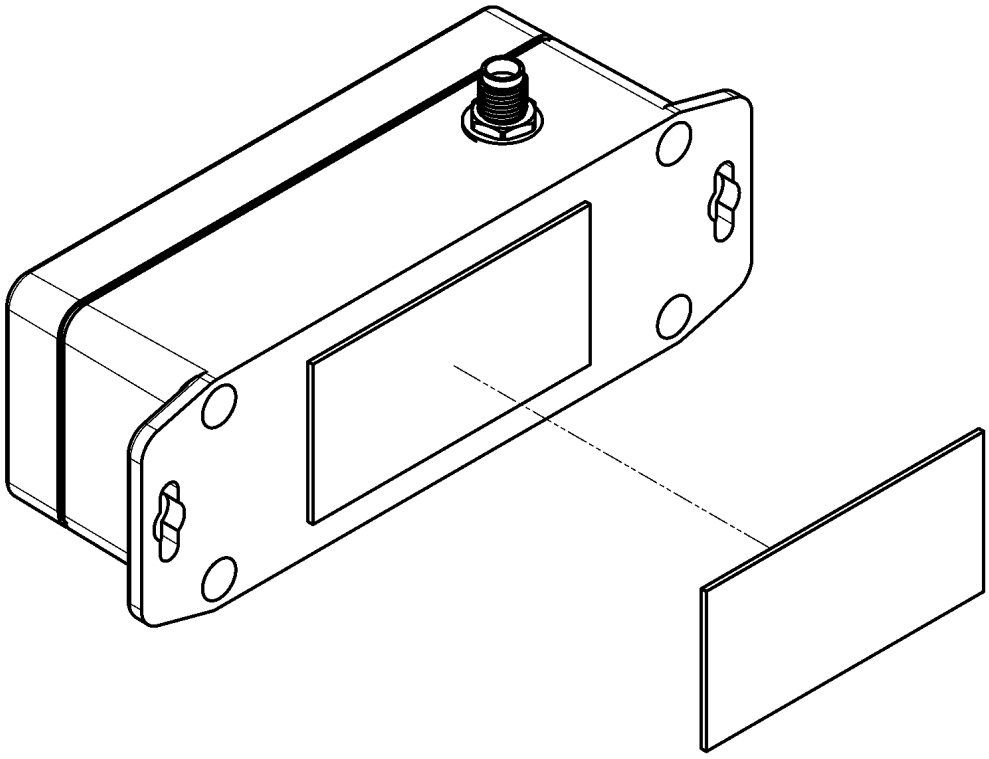


3.1.2 Adhesive Mounting

The UART Long Range Adaptor (LRA) can be mounted via adhesive velcro tape depending on the type of air conditioning system and mounting location.

Adhesive Mounting Process:

1. Clean the mounting surface with a suitable cleaner to remove dust, grease, or other contaminants.
2. Peel the backing strips off one side of the Velcro pads and stick them to the back of the UART Long Range Adaptor (LRA) device.
3. Then, remove the remaining backing strips and press the UART Long Range Adaptor (LRA) firmly against the wall or surface where it will be mounted. Maintain firm pressure for approximately 30 seconds to ensure a strong bond.



3.3 Unit Mounting Locations

The UART Long Range Adaptor (LRA) can be mounted in various locations depending on the type of air conditioning system. The following sections outline the recommended mounting locations for different system types.

3.3.1 Split Systems

The UART Long Range Adaptor (LRA) can be mounted:

- On the unit — either at the bottom, top, or side of the outdoor case.
- On the wall next to the unit — horizontally or vertically.
- Inside trunking — above or beside cable penetrations.

Choose the closest practical location to the electrical PCB. Ensure the antenna is vertical and that cables are routed cleanly via existing penetrations or wall cavities.

3.3.2 Ducted Systems

The UART Long Range Adaptor (LRA) can be mounted:

- Top of the indoor unit
- A nearby joist
- Side of the indoor unit

Velcro or screws can be used, depending on the surface. Maintain a clear vertical antenna position.

3.3.3 Under-Ceiling Systems

The UART Long Range Adaptor (LRA) can be mounted::

- Bottom right-hand side of the unit
- Top right-hand side of the unit
- Wall beside the unit

Use existing cable entry points. Attach with Velcro or screws as appropriate.

3.3.4 Cassette Systems

The UART Long Range Adaptor (LRA) can be mounted:

- On the ceiling surface
- On the side of the cassette unit
- In the roof cavity above the cassette

Choose the closest practical location to the electrical PCB. Ensure the antenna is vertical and that cables are routed cleanly via existing penetrations or roof cavities.

3.3.5 Floor Systems

The UART Long Range Adaptor (LRA) can be mounted:

- On the side of the floor unit
- On the wall next to the unit

Choose the closest practical location to the electrical PCB. Ensure the antenna is vertical and that cables are routed cleanly via existing penetrations or roof cavities.

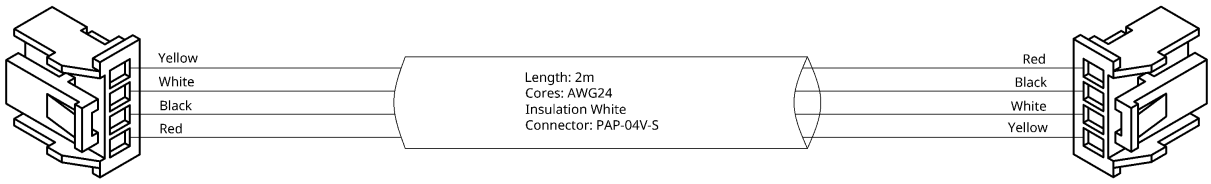
3.4. UART Connection

The UART Long Range Adaptor (LRA) is designed to connect to the indoor unit of the air conditioning system. The connection is made using the supplied PAP-04V-S cable, which has a 4-pin connector on one end for the indoor unit and a 4-pin connector on the other end for the UART Long Range Adaptor (LRA).

Note: If a different cable is used, ensure that the pinout matches the following configuration as pin 3 and 4 are reversed between the indoor unit and the UART Long Range Adaptor (LRA). the provided PAP-04V-S cable is designed to match the pinout of the indoor unit and the UART Long Range Adaptor (LRA) regardless of which end is connected to which device.

Indoor Unit	
Pin 1	12VDC
Pin 2	DC Ground
Pin 3	Sending Tx
Pin 4	Receiving Rx

UART Long Range Adaptor (LRA)	
Pin 1	12VDC
Pin 2	DC Ground
Pin 3	Receiving Rx
Pin 4	Sending Tx



3.5. Installation

Connect the UART Long Range Adaptor (LRA) follor the below steps:

1. Remove the cover of the UART device by loosening the 4 external screws. (Refer to section 2.3.1)
2. Attach the supplied LoRa antenna to the U.FL Antenna Connector. (Refer to section 2.3.1)
3. Locate the air conditioner unit that the UART Long Range Adaptor (LRA) device is to be installed on.
4. Remove the electrical panel cover from the air conditioner indoor unit.

- For **wall-mounted**, **floor-mounted**, and **under-ceiling** systems: remove the plastic case of the air conditioner.
- For **cassette systems**: remove the air intake cover.
- For **ducted systems**: remove the electrical door/panel.

5. Locate the **CN6**, **CN65**, or **CN75** plug base on the indoor unit's printed control board. The available plug depends on the unit model. Check the air conditioner's user guide and installation manual for details.

6. Plug the PAP-04V-S cable into the available CN6, CN65 or CN75 plug.

7. There are four LED indicators on the PCB inside the UART Long Range Adaptor (LRA) enclosure. (Refer to section 2.3.1.)
   When initially powered:

   - **PWR** and **TX** will illuminate and hold.

   After approximately 15 seconds:

   - **L1**, **TX**, and **RX** will begin alternating flashing — this indicates the UART Long Range Adaptor (LRA) is receiving and transmitting data.

   Then:

   - **L1** will stop flashing
   - **PWR** remains solid
   - **TX** and **RX** continue alternating flashes periodically as the Long Range Adaptor (LRA) communicates.

8. Once connected to the correct indoor unit, ensure the UART Long Range Adaptor (LRA) is mounted securely as per **Section 2. Mounting** and ensure the antenna is positioned correctly to maximise signal transmission.

9. After confirming the enclosure is correctly installed, reinstall the front cover. The device is now ready to be paired with the onsite dashboard.

10. Reinstall the electrical panel on the indoor unit. Then reinstall the air conditioner's plastic cover (if applicable).

3.6. Configuration

The UART Long Range Adaptor (LRA) can be configured in two ways.

Option 1 is to configure and manage the Long Range Adaptors (LRAs) via the anywAiR iO Mobile App. This method is the simplest and most efficient as the installer can add and manage devices from anywhere in the facility using only there mobile phone.

Option 2 is to configure and manage the Long Range Adaptors (LRAs) via anywAiR iO's engineering software, Rubix CE. Further details outlining Lora configuration in Rubix CE can be found using the following link: **LoraRaw**

3.6.1 Downloading the App

When officially released add the real Apple and Google play links

Downloads	
Google Play	
App Store	

3.6.2 Gateway Management

There are two methods to add a Rubix Compute Gateway via the mobile app.

1. Manually Entering the gateway configuration details
2. Scanning the local network for compatible Rubix Computes

Manually Adding a Gateway

1. Launch the mobile app and ensure Rubix Computes Screen is opened.
2. Press the `Add Rubix Compute` button located on the bottom right of the screen.
3. Press the `Enter Details Manually` button to select this method and navigate to the configuration.
4. Enter the appropriate information. The mandatory fields include:
    - Gateway Name
    - IP Address
    - Port
    - Username
    - Password
5. Press the `Connect` button located on the bottom of the screen to confirm the configuration and be automatically navigated to the Devices screen.

Note: If you are unsure of the username and password please contact your service provider or anywAiR iO technical suport via `support@nube-io.com`

Scanning Network to Add a Gateway

1. Launch the mobile app and ensure Rubix Computes Screen is opened.
2. Press the `Add Rubix Compute` button located on the bottom right of the screen.
3. Press the `Enter Details Manually` button to select this method and initiate the network scan. A progress bar will automatically be displayed showing the scan progress.
4. Any compatible Rubix Compute Gateways will show in the `Found Gateway's` section below the progress bar. Select the desired Rubix Compute to enter the configuration menu and fill out the mandatory fields:
    - Gateway Name
    - Username
    - Password

5. Press the `Connect` button located on the bottom of the screen to confirm the configuration and be automatically navigated to the Devices screen.

Note: If you are unsure of the username and password please contact your service provider or anywAiR iO technical suport via `support@nube-io.com`

Editing a Gateway

1. Launch the mobile app and ensure Rubix Computes Screen is opened.
2. Press on the `information` button ⓘ for the gateway you wish to edit and enter the gateway information view
3. Press the `pencil` button ✎ to enter the editable settings for the rubix compute gateway.
4. Update/edit gateway information and re-enter the password.
5. Press `Update` button to save and apply the changes. The App will then navigate to the devices screen for the updated gateway.

Deleting a Gateway

1. Launch the mobile app and ensure Rubix Computes Screen is opened.
2. Press on the `information` button ⓘ for the gateway you wish to edit and enter the gateway information view
3. Press the `Delete Gateway` button at the bottom of the gateway information screen.
4. A confirmation warning will appear with the following options
   - `Cancel`: Select this option if you wish to cancel the deletion.
   - `Delete`: Select this option to confirm the deletion.
5. If deletion is confirmed as per Step-4 the Rubix Compute gateway will be removed and user will be navigated back to the Rubix Computes gateways screen.

Accessing Gateway Information

1. Launch the mobile app and ensure Rubix Computes Screen is opened.
2. Press on the `information` button ⓘ for the Rubix Compute Gateway you wish to enter the Device information view.

3.6.3 Device Management

There are two methods to add a Long Range Adaptor (LRA) Device via the mobile app.

1. Manually Entering the Long Range Adaptor (LRA) device details
2. Scanning the device QR Code

Manually Adding a Long Range Adaptor (LRA)

1. Launch the mobile app and ensure Rubix Computes Screen is opened.
2. Select the Rubix Compute Gateway from the list of gateway that you intend to add a Long Range Adaptor (LRA) to by clicking on the Gateway card. You will be navigated to the Devices screen.
3. Press the `Add Device` button located on the bottom right of the screen.
4. Press the `Enter Device Details` button to select this method and navigate to the configuration.

5. Enter the appropriate information. The mandatory fields include:
    - Device Name
    - Address UUID (8 digit ID located on the product labelling on the Long Range Adaptor (LRA) device)
    - History Enable/Diable (Enabled as default)
6. Press the `Continue` button located on the bottom of the screen to confirm the configuration and the device will be created and points provisioned.
7. Once the Long Range Adaptor (LRA) device returns a response during the provisioning the controls dashboard will be automatically generated and opened for the newly added device.

Scanning the QR Code

1. Launch the mobile app and ensure Rubix Computes Screen is opened.
2. Select the Rubix Compute Gateway from the list of gateway that you intend to add a Long Range Adaptor (LRA) to by clicking on the Gateway card. You will be navigated to the Devices screen.
3. Press the `Add Device` button located on the bottom right of the screen.
4. Press the `Scan Device QR` button to select this method and navigate to the configuration.
5. Scan the QR Code displayed on the Long Range Adaptor (LRA) device.
6.

TBC

Editing a Device

1. Launch the mobile app and navigate from the Rubix Computes screen to the Devices Screen for the appropriate gateway.
2. Press on the `information` button  for the Long Range Adaptor (LRA) you wish to edit and enter the Device information view
3. Press the `pencil` button  to enter the editable settings for the Long Range Adaptor (LRA) device.
4. Update/edit device information.
5. Press `Update` button to save and apply the changes. The App will then navigate to the control dashboard for the updated device.

Deleting a Device

1. Launch the mobile app and navigate from the Rubix Computes screen to the Devices Screen for the appropriate gateway.
2. Press on the `information` button  for the Long Range Adaptor (LRA) you wish to edit and enter the Device information view
3. Press the `Delete Device` button at the bottom of the device information screen.
4. A confirmation warning will appear with the following options
    - `Cancel`: Select this option if you wish to cancel the deletion.
    - `Delete`: Select this option to confirm the deletion.
5. If deletion is confirmed as per Step-4 the Long Range Adaptor (LRA) device will be removed and user will be navigated back to the Devices screen.

Accessing Device Information

1. Launch the mobile app and navigate from the Rubix Computes screen to the Devices Screen for the appropriate gateway.
2. Press on the `information` button  for the Long Range Adaptor (LRA) you wish to enter the Device information view.

4. Operation Guide

The Long Range Adaptor (LRA) allows users to control and monitor compatible RAC/PAC and VRF Air Conditioning units in a small package, reducing the installation time and bypassing the AT command interface.

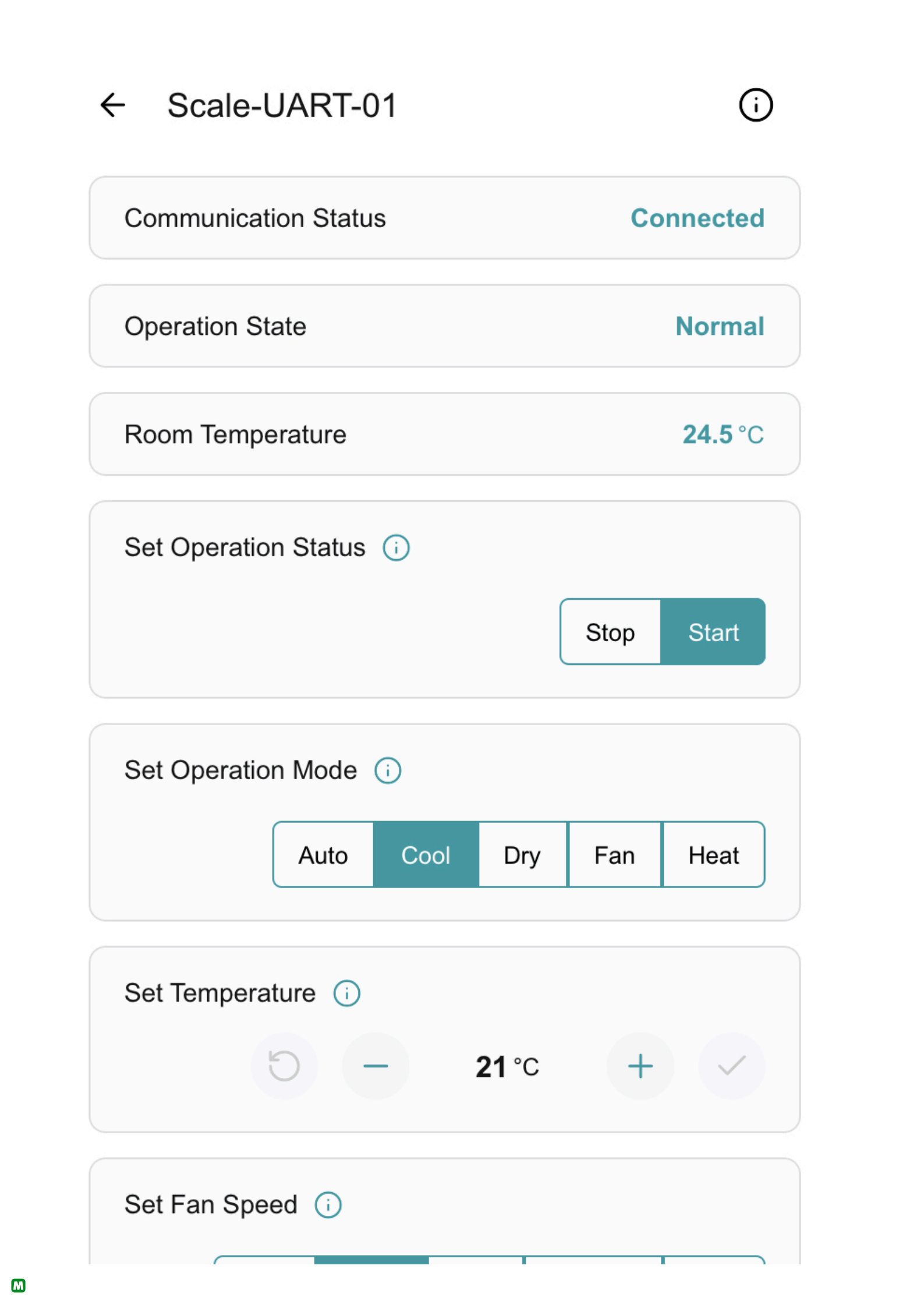
The Long Range Adaptor (LRA) interface dynamically configures the control panel based on the connected unit model, reflecting only the operating modes and control points supported by that model.

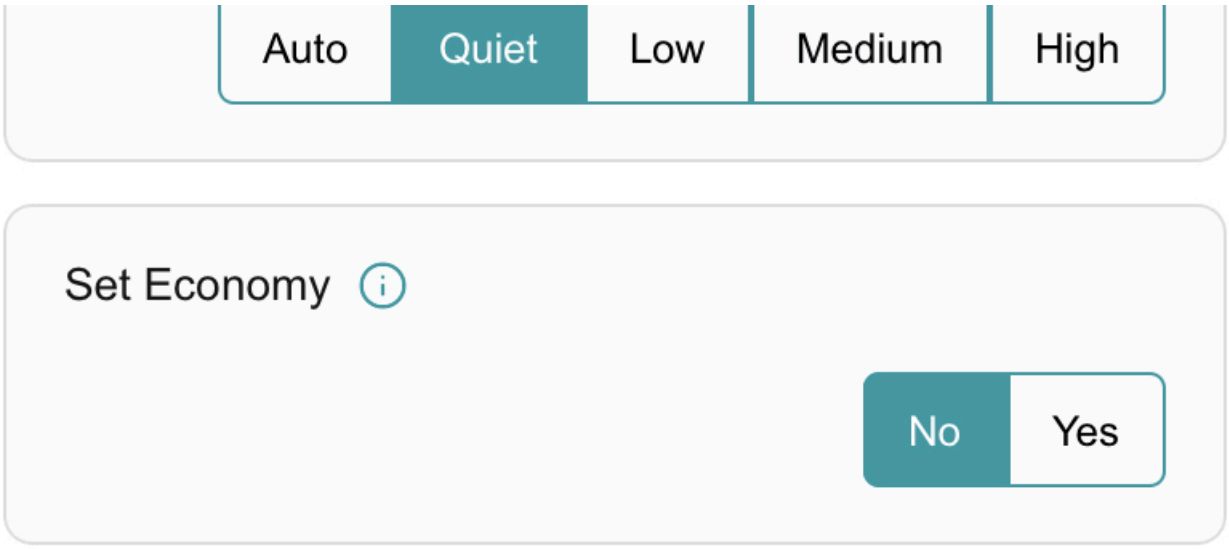
The following are key control and monitoring points available to the user:

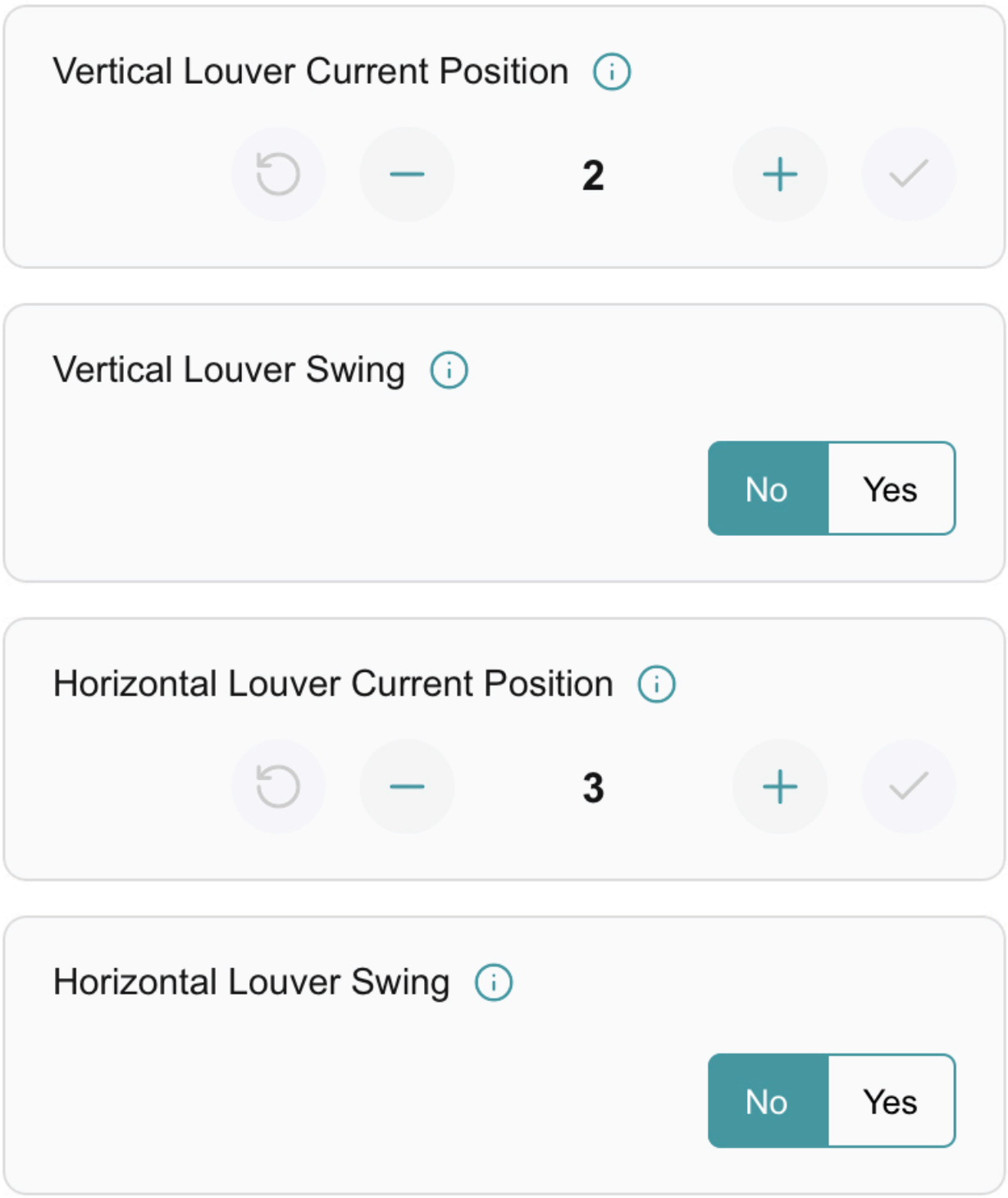
Operation Control: Enable the unit on and off.
Mode Control: Switch between cool, heat, dry, auto, and fan modes.
Temperature Setpoint Control: Adjust heating/cooling temperature setpoint.

- Cooling setpoint 18 to 30 degrees Celsius
- Heating setpoint 16-18 to 30 degrees Celsius (low limit model dependent)

Fan Speed Control: Control fan speed (model dependent).
Louvre Direction Control: Adjust vertical and horizontal louvre position and louvre swing operation (model dependent).
Return Air Temperature Monitoring: Monitor the return air temperature.
Error Status Reporting: Retrieve the error status and error code.


Scale-UART-01
Communication Status
Connected
Operation State
Normal
Room Temperature
24.5 °C
Set Operation Status
Stop
Start
Set Operation Mode
Auto
Cool
Dry
Fan
Heat
Set Temperature
21 °C
Set Fan Speed


Auto
Quiet
Low
Medium
High
Set Economy
No
Yes



4.1. Device Details

For additional device details press on the `information` button .

The Device Details screen displays additional information for device monitoring, including wireless signal quality, unit type, and available control and louver parameters.

Recieved signal strength indicator (RSSI): Indicates the strength of the wireless signal between the device and the gateway. Stronger signals improve communication reliability.

- GOOD = 0 to -90
- MODERATE = -90 TO -110
- POOR = Less than -110

Sound to Noise Ratio: Indicates the quality of the wireless signal relative to background noise. Higher values represent clearer and more reliable communication.

- GOOD = Greater than 0
- MODERATE = 0 to -10
- POOR = Less than -10

Unit Type: Identifies the type of air conditioning system connected.

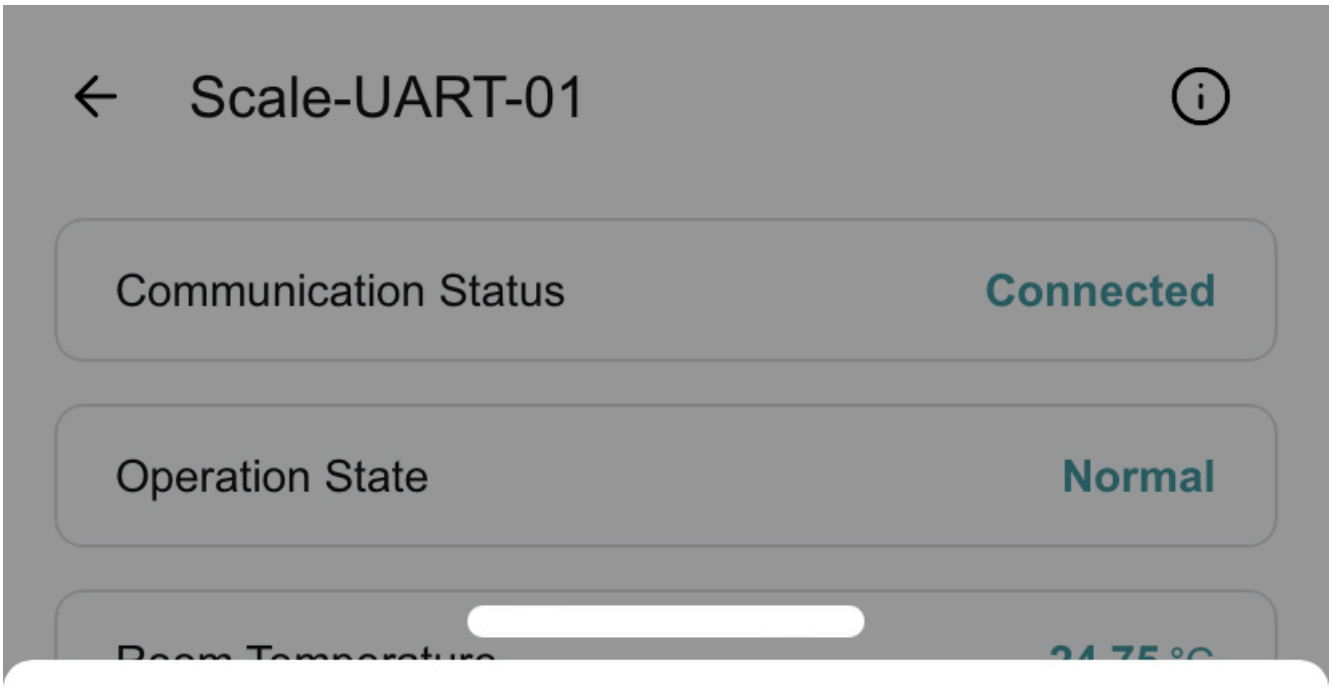
- Examples: Single, Ducted

Available control variables: Displays which control functions are supported by the connected unit model.

- Example: Has Mode Cool = Yes

Louver variables: Displays the supported louver control options for the unit.

- Example: Has Vertical Louver Swing = Yes
- Vertical Louver Step Count = 4 Steps



Device Details

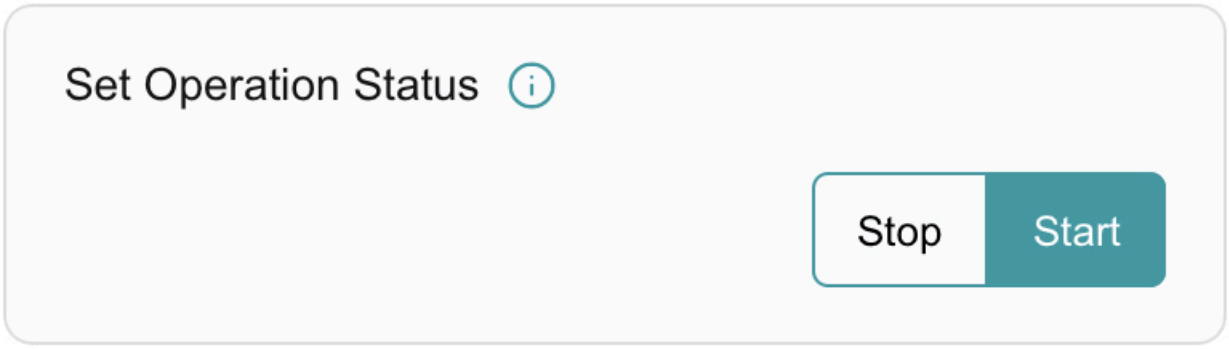
SNR:	Good (9.5)
RSSI:	Moderate (-91)
Unit Type:	Single
Has Mode Cool:	Yes
Has Mode Dry:	Yes
Has Mode Fan:	Yes
Has Mode Heat:	Yes
Has Mode Auto:	Yes
Has Fan Auto:	Yes
Has Fan High:	Yes
Has Fan Medium:	Yes
Has Fan Low:	Yes
Has Fan Quiet:	Yes

Vertical Louver Step Count:	4 step
Has Vertical Louver Swing:	Yes
Horizontal Louver Step Count:	21
Has Horizontal Louver Swing:	Yes
Has Economy:	Yes

4.2. Operation Control

Users can control the unit's operation using the `Stop/Start` toggle switch.

For additional point information press on the `information` button ⓘ.



4.3. Mode Control

Users can control the unit's operating mode by pressing on the desired mode within the selector switch. Available modes are model-dependent and may vary by unit. To check available modes on the selected unit please follow the steps outlined in section *4.1. Device Details.*

Available operating modes include:

- **Auto:** The unit automatically selects heating or cooling based on the current room temperature and the setpoint.
- **Cool:** Actively cools the space to reach and maintain the selected temperature.
- **Dry:** Reduces humidity in the space with minimal cooling, helping improve comfort in humid conditions.
- **Fan:** Circulates air within the space without heating or cooling.
- **Heat:** Actively heats the space to reach and maintain the selected temperature.

For further details on each operating mode, refer to the unit's user manual.

4.4. Temperature Setpoint Control

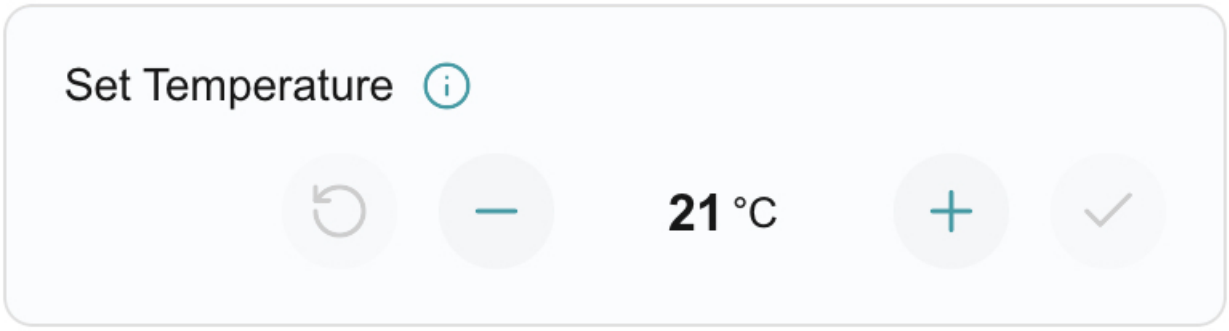
Users can adjust the temperature setpoint to control the temperature maintained by the unit. The setpoint can be increased or decreased in 0.5°C increments within the following ranges.

- Cooling/Auto/Dry: Setpoint range is 18 to 30 degrees Celsius
- Heating: Setpoint 16-18 to 30 degrees Celsius (Low limit model dependent. Refer to the unit's user manual)
- Fan: Setpoint control is diasbled in fan mode as the unit is circulating air within the space without heating or cooling.

Temperature Setpoint can be changed using the following steps.

1. Increase or decrease the setpoint value using the plus ⊕ and minus ⊖ buttons to the desired setpoint.
2. Once at the desired setpoint press the tick ✓ button to save and apply the new setpoint.

Canecling Changes: To cancel a setpoint change press the reset ↺ button prior to **Step-2**. This will revert the setpoint to the previous value.



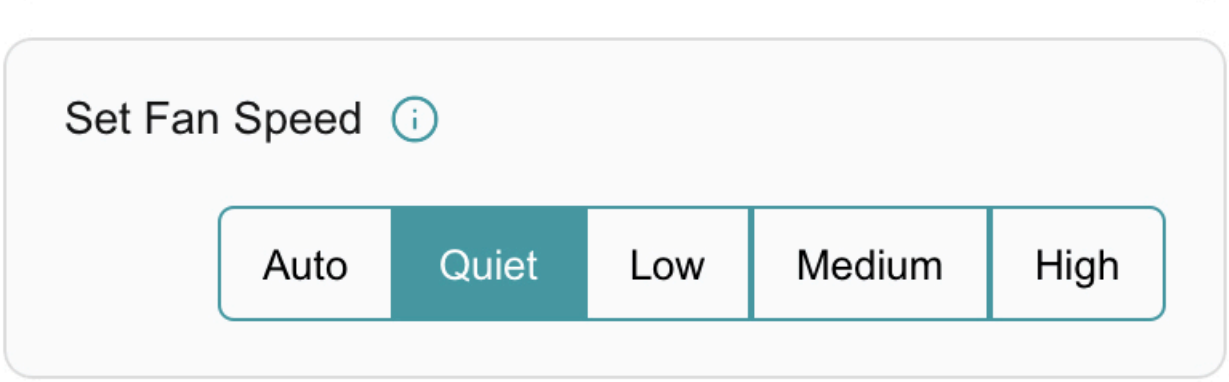
4.5. Fan Speed Control

Users can control the unit's fan speed by pressing on the desired speed within the selector switch. Available fan speeds are model-dependent and may vary by unit. To check available fan speeds on the selected unit please follow the steps

outlined in section *4.1. Device Details*.
Available fan speeds include:

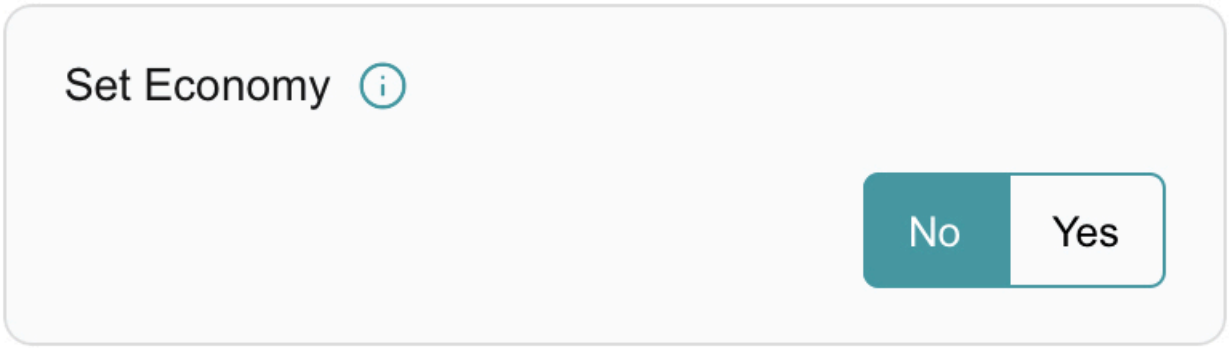
- **Auto:** The unit automatically adjusts the fan speed based on the current room temperature and the set temperature for optimal comfort and efficiency.
- **Quiet:** Operates the fan at a very low speed to minimize noise, ideal for sleeping or quiet environments.
- **Low:** Runs the fan at a low speed for gentle air circulation while maintaining comfort.
- **Medium:** Provides a balanced fan speed for effective cooling or heating while maintaining moderate noise levels.
- **High:** Runs the fan at maximum speed to quickly reach the desired temperature or improve air circulation.

For further details on each fan speed mode, refer to the unit's user manual.



4.6. Economy Mode Control

Users can enable or disable the unit's economy mode using the `No/Yes` toggle switch.



4.7. Vertical Louver Control

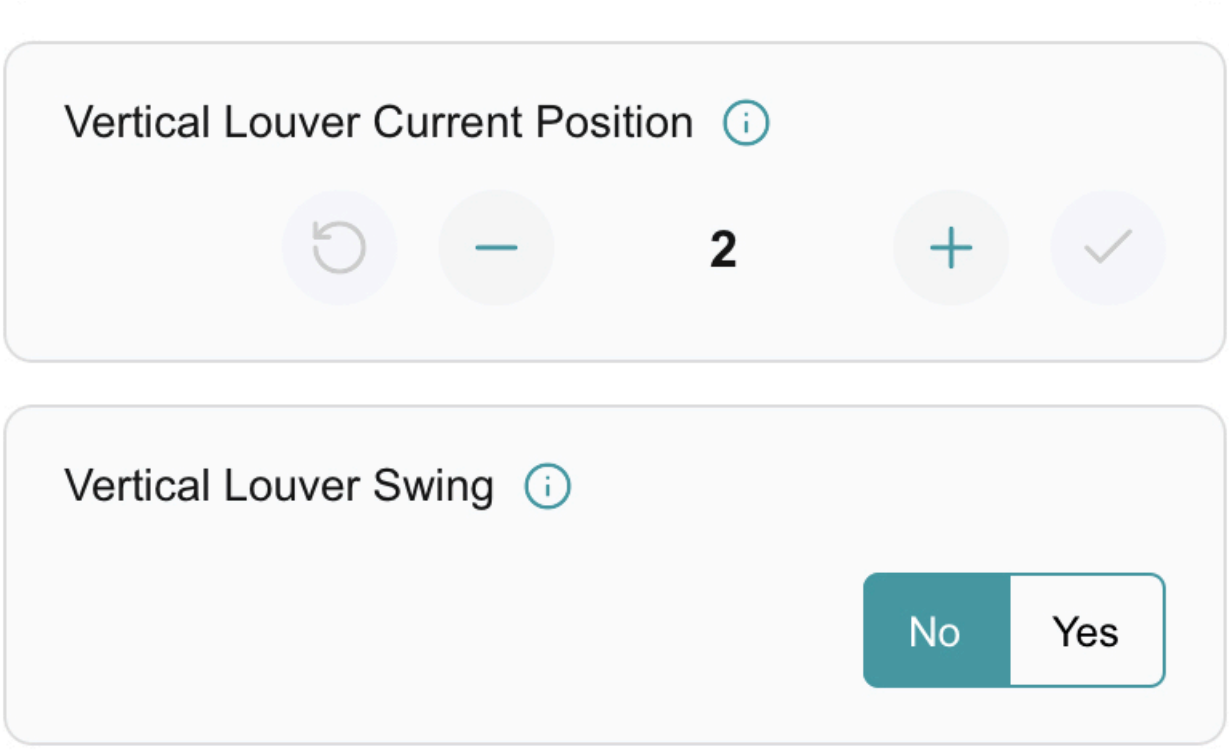
Users can adjust the vertical louvers to a position of their choosing or enable the louver swing function built into the unit. The louver steps can be increased or decreased in 1 step increments with the amount of steps available varying based on the unit the Long Range Adaptor (LRA) is connected to. To check the step count available refer to section *4.1. Device Details*.

Vertical louver positions can be changed using the following steps.

1. Increase or decrease the step position value the plus ⊕ and minus ⊖ buttons to the desired setpoint.
2. Once at the desired step position press the tick ⊙ button to save and apply the new position.

Canecling Changes: To cancel a position change press the reset ↺ button prior to **Step-2**. This will revert the step position to the previous value.

Vertical Louver Swing: Users can enable or disable the unit's vertical louver swing mode using the `No/Yes` toggle switch. When the vertical louver swing is enabled the manually set step position will be ignored. If a step postion is set by a user this change will overide the swing function and the vertical louver swing mode will automatically toggle to `No`.



4.8. Horizontal Louver Control

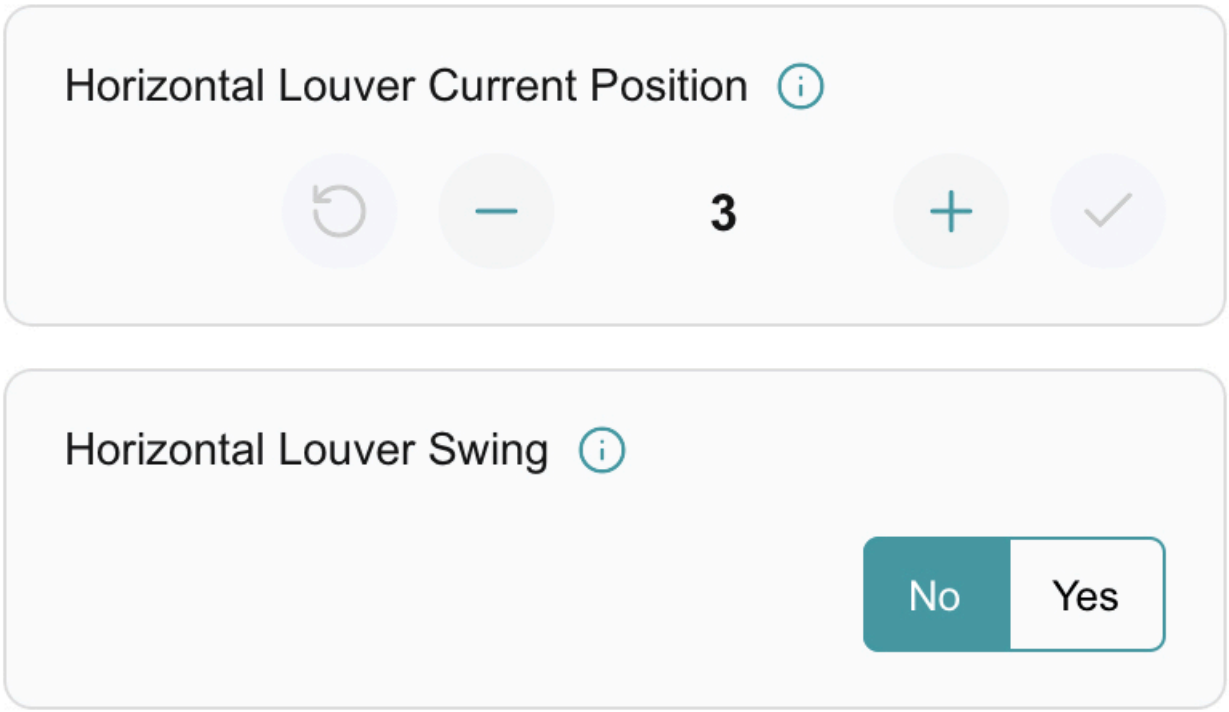
Users can adjust the horizontal louvers to a position of their choosing or enable the louver swing function built into the unit. The louver steps can be increased or decreased in 1 step increments with the amount of steps available varying based on the unit the Long Range Adaptor (LRA) is connected to. To check the step count available refer to section *4.1. Device Details*.

Horizontal louver positions can be changed using the following steps.

1. Increase or decrease the step position value the plus ⊕ and minus ⊖ buttons to the desired setpoint.
2. Once at the desired step position press the tick ⊙ button to save and apply the new position.

Canecling Changes: To cancel a position change press the reset ↺ button prior to **Step-2**. This will revert the step position to the previous value.

Horizontal Louver Swing: Users can enable or disable the unit's horizontal louver swing mode using the `No/Yes` toggle switch. When the horizontal louver swing is enabled the manually set step position will be ignored. If a step postion is set by a user this change will overide the swing function and the horizontal louver swing mode will automatically toggle to `No`.



5. UART Long Range Adaptor (LRA) Point Register

Point ID	Point Name	New Variable (Data Type)	Attribute
N/A	snr	float	Read Only
N/A	rssi	float	Read Only
1	Communication Status	uint8	Read Only
2	Unit Type	uint8	Read Only
3	Has Economy	bool	Read Only
10	Has Mode Cool	bool	Read Only
11	Has Mode Dry	bool	Read Only
12	Has Mode Fan	bool	Read Only
13	Has Mode Heat	bool	Read Only
14	Has Mode Auto	bool	Read Only

Point ID	Point Name	New Variable (Data Type)	Attribute
15	Has Fan Auto	bool	Read Only
16	Has Fan High	bool	Read Only
17	Has Fan Medium	bool	Read Only
18	Has Fan Low	bool	Read Only
19	Has Fan Quiet	bool	Read Only
20	Vertical Louver Step Count	uint8	Read Only
21	Has Vertical Louver Swing	bool	Read Only
22	Vertical Louver 1 Step Count	uint8	Read Only
23	Has Vertical Louver 1 Swing	bool	Read Only
24	Vertical Louver 2 Step Count	uint8	Read Only
25	Has Vertical Louver 2 Swing	bool	Read Only
26	Vertical Louver 3 Step Count	uint8	Read Only
27	Has Vertical Louver 3 Swing	bool	Read Only
28	Vertical Louver 4 Step Count	uint8	Read Only
29	Has Vertical Louver 4 Swing	bool	Read Only
30	Horizontal Louver Step Count	uint8	Read Only
31	Has Horizontal Louver Swing	bool	Read Only
32	Horizontal Louver 1 Step Count	uint8	Read Only
33	Has Horizontal Louver 1 Swing	bool	Read Only
34	Horizontal Louver 2 Step Count	uint8	Read Only
35	Has Horizontal Louver 2 Swing	bool	Read Only
36	Horizontal Louver 3 Step Count	uint8	Read Only
37	Has Horizontal Louver 3 Swing	bool	Read Only
38	Horizontal Louver 4 Step Count	uint8	Read Only

Point ID	Point Name	New Variable (Data Type)	Attribute
39	Has Horizontal Louver 4 Swing	bool	Read Only
40	Set Operation Status	bool	Write
41	Set Operation Mode	uint8	Write
42	Set Temperature	temp	Write
43	Set Fan	uint8	Write
44	Vertical Louver Current Position	uint8	Write
45	Vertical Louver Swing	bool	Write
46	Vertical Louver 1 Current Position	uint8	Write
47	Verticle Louver 1 Swing	bool	Write
48	Vertical Louver 2 Current Position	uint8	Write
49	Verticle Louver 2 Swing	bool	Write
50	Vertical Louver 3 Current Position	uint8	Write
51	Verticle Louver 3 Swing	bool	Write
52	Vertical Louver 4 Current Position	uint8	Write
53	Verticle Louver 4 Swing	bool	Write
54	Horizontal Louver Current Position	uint8	Write
55	Horizontal Louver Swing	bool	Write
56	Room Temperature	temp	Read Only
57	Error State	uint16	Read Only
58	Error Code	uint16	Read Only
59	Set Economy	bool	Write

FCC Caution.
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.
Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.