

EXP-LWHUB NODE-LW-1P



Wireless Hub & Wireless Node
Guide

JULY 2022

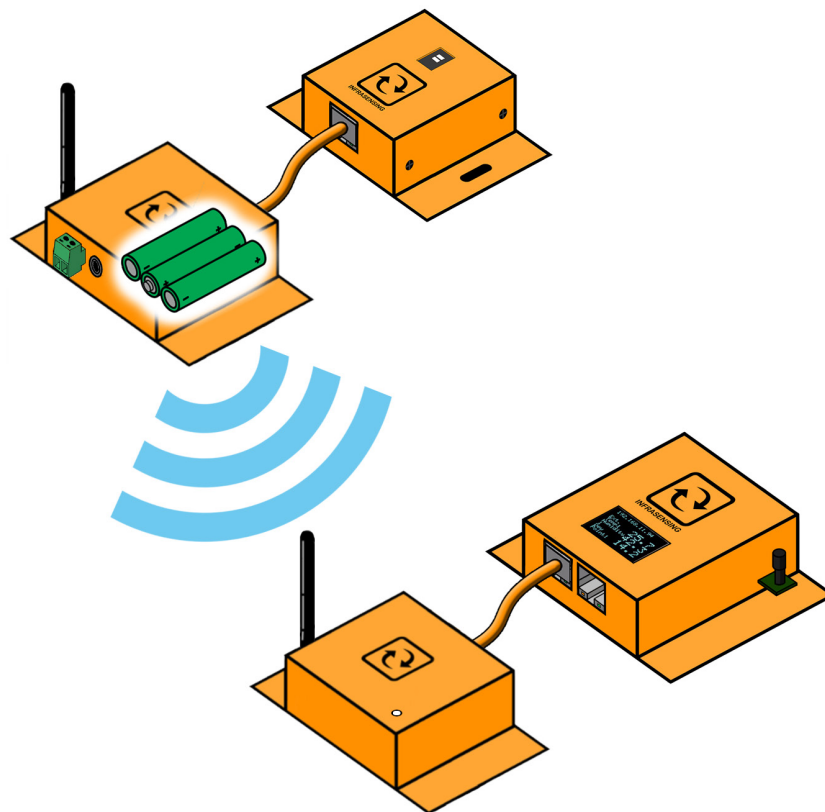


Sensor Overview

By default our InfraSensing sensors are connected with an RJ45 cable to the base unit, But with the Wireless hub (EXP-LWHUB) and Node (NODE-LW-1P), any sensor can be connected wirelessly.

It works when we connect our wireless hub to our base unit (BASE-WIRED) then any of our sensor to one of the nodes, The node then transmits sensor data over a wireless communication protocol to the Wireless Hub.

The wireless protocol used is called LoRa, a long range and low power communication protocol in the free spectrum.





What you need

EXP-LWHUB



BASE-WIRED



NODE-LW-1P



Ethernet Cable



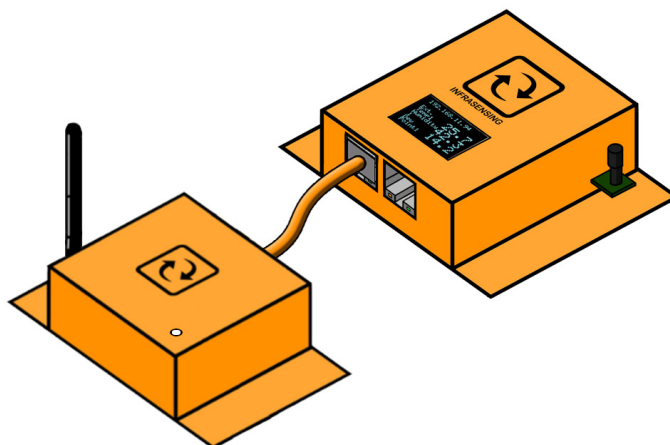
Sensors





1. Connect the Wireless Hub to the SensorGateway via ethernet cable.

The SensorGateway should be running firmware version 8.9.



Wireless LoRa should appear in the SensorGateway GUI.

Sensors

Edit

Status	Type	Name	Value	Warning Range	Down Range	Repeat Alarm	Email	SMS	SNMP Trap	Set Output To
<div></div>	Temperature	Int_Temp1	31.67 °C	<18 OR >37	<15 OR >41	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DISABLE <div></div>
<div></div>	Ping	Int_Ping1	179 ms	>50	>60	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DISABLE <div></div>

Wireless LoRa

PING Sensor



2. On the SensorGateway GUI, click on Wireless LoRa and you will be taken to the Wireless LoRa Configuration page.

Sensors

Edit

Status	Type	Name	Value	Warning Range	Down Range	Repeat Alarm	Email	SMS	SNMP Trap	Set Output To
<div></div>	Temperature	Int. Temp1	31.67 °C	<18 OR >37	<15 OR >41	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<div>DISABLE</div>
<div></div>	Ping	Int. Ping1	179 ms	>50	>60	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<div>DISABLE</div>

Wireless LoRa

PING Sensor

Wireless LoRa Configuration

Node No.	Status	Sensor Name	Sleep Time, s	Timeout, s	TX Power, dBm
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Pairing Status:

Not Pairing

Start Pairing

LoRa Band

LoRa Channel

EU (863-870 MHz)

0

Update

Reset

Note

Chainging LoRa Band and/or Channel will delete Pairing and would need to re-pair the sensors.



3. Setup your Band and Channel prior to connecting nodes. After choosing your desired band and channel, click on “Update”. Changing the band and channel will disconnect any previously connected nodes and re-pairing them would be required.

It is a good practice to keep adjacent hubs in different channels to avoid wireless congestion.

NOTE:

When adding a new node to an existing group of paired nodes, please note that all previously connected nodes will also be unpaired and have to be repaired again. This is done by design.

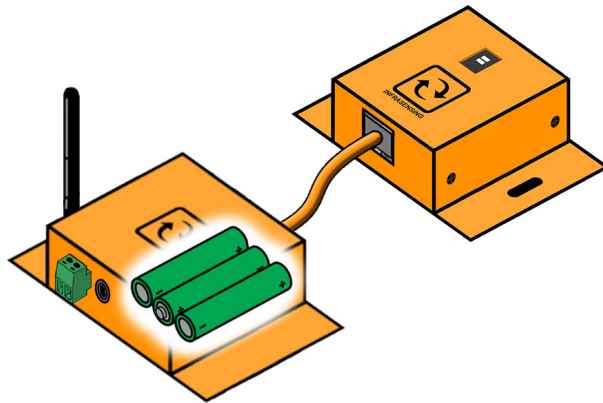
4. To start the pairing process, on the Wireless LoRa Configuration page, click on start pairing. The LED on the LoRa hub will blink red and green which indicates pairing mode is active.

The pairing status will also show “Pairing” when in pairing mode



5. To pair a node, you would need to power it up and see the LED blink once, that means that the node is paired successfully. If the LED stays ON for more than 10 seconds it would mean that the pairing failed and we would need to start over. To avoid a pairing miss we need to power and pair each node one at a time.

The node can be powered via 24v DC with a terminal block, 12v DC with a barrel jack for an AC/DC adapter, - 5v DC with a USB-C connector or 3x AAA batteries.



NOTE:

- You can pair the node even without a sensor connected.
- Up to 16 nodes can be connected

6. Click on “Stop Pairing” when done. Refresh the page and the list will populate with the connected nodes.

Wireless LoRa Configuration

Node No.	Status	Sensor Name	Sleep Time, s	Timeout, s	
1			<input type="text" value="0"/>	<input type="text" value="1.8"/>	<button>Apply</button>
2			<input type="text" value="0"/>	<input type="text" value="1.8"/>	<button>Apply</button>

Pairing Status:

Start Pairing

Not Pairing

LoRa Band

LoRa Channel

UpdateReset

Note



Changing LoRa Band and/or Channel will delete Pairing and would need to re-pair the sensors.





7. After pairing, the sensor connected to the wireless node should be ready to go. You may then setup the timeout and Sleep time for your Nodes.

To ensure no data is lost when transmitting, The minimum Polling Time for the SensorGateway is 5 seconds when connected to a Wireless Hub.

The Sleep Time should always be the SensorGateway's Polling time minus 4 seconds. (example: if the polling time is 10 seconds, the sleep time should be 6 seconds.) Higher sleep times would result in better power savings



Wireless LoRa Configuration

Node No.	Status	Sensor Name	Sleep Time, s	Timeout, s	
1		Air Flow1	<input type="text" value="0"/>	<input type="text" value="1.8"/>	<input type="button" value="Apply"/>
2		H2 Sensor1	<input type="text" value="0"/>	<input type="text" value="1.8"/>	<input type="button" value="Apply"/>

Pairing Status: Not Pairing

LoRa Band:

LoRa Channel:

Note

Changing LoRa Band and/or Channel will delete Pairing and would need to re-pair the sensors.

Unpairing Nodes

To unpair connected nodes, click on "Start Pairing" then click "Stop Pairing", this will disconnect all previously connected nodes on the hub. To start the pairing process again, please proceed to "Step 3" of this document.