## Wzzard<sup>™</sup> Mesh Gen2 Starter Bundles **Refrigeration Monitoring Kit**

Model BB-WSK-REF-2 SETUP MANUAL





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### **REFRIGERATION MONITORING STARTER KIT**

#### Kit Model BB-WSK-REF-2

The Wzzard<sup>™</sup> Mesh Refrigeration Monitoring Application Kit provides a non-intrusive, easily installed solution for monitoring internal and external temperature, door open/closed and current draw on refrigeration equipment without disrupting your existing facility operations. Email or text message alerts can be sent when user-configured high or low limits are exceeded in critical applications.

Installation costs are kept low using the Wzzard Mesh Wireless Sensing platform. The platform creates a self-forming, self-healing wireless mesh network that eliminates the need for wires and requires no special skills to install. Each Wzzard sensor node is powered by long life batteries.

Using Node-RED<sup>™</sup>, a simple, browser based application pre-installed on the gateway, you can monitor your cooler or freezer performance from any web browser on your network.

#### The contents of the kit include:

| Qty 1 | BB-WCD1H2102H   | Commercial Temperature/Humidity Wzzard Mesh Node |
|-------|-----------------|--|
| Qty 2 | BB-JC10F50-V    | 50A Clamp-on Current Sensor                      |
| Qty 1 | BB-WCHCBL       | Thermistor/Breakout Cable                        |
| Qty 1 | BB-WCHMS        | Door Sensor Cable                                |
| Qty 1 | SmartSwarm 342™ | Ethernet Wzzard Mesh Gateway                     |
|       |                 |  |

### WZZARD MESH NETWORK SETUP

The Wzzard Mesh Node and Gateway in this kit are preconfigured. If this is the only Wzzard Mesh device in your vicinity, it will need no further configuration. If other Wzzard Mesh gateways or nodes are nearby and unclaimed, you will need to claim the gateway and the node. See respective node and gateway manuals for instructions.

# DOWNLOADING REFRIGERATION MONITOR NODE-RED<sup>™</sup> FLOW TO THE GATEWAY

NOTE: The gateway must be in operational and online state in order to add the HVAC application (ie Eth1 must be plugged in).

- 1. Follow the instructions in the Gateway's Quick Start Guide to claim your gateway.
- 2. Select View Devices from the dropdown menu on the SmartWorx<sup>™</sup> Hub home screen:

|                        | Home | -<br>Help Log off               |
|------------------------|------|---------------------------------|
| AD\ANTECH              |      | Hello, knelson@advantech-bb.com |
|                        |      |                                 |
| Dashboard              |      |                                 |
| Devices -              |      |                                 |
|                        |      |                                 |
| Claim/Release Device   |      |                                 |
|                        |      |                                 |
| Technology Providers   |      |                                 |
| Configuration Profiles |      |                                 |
| Password -             |      |                                 |
| Contact                |      |                                 |
|                        |      |                                 |

3. Select your device from the list of available devices:

|   | ces - Users - | Technology Providers Config | uration Profiles | Password | - Cont | act    |        |  |  |  |
|---|---------------|-----------------------------|------------------|----------|--------|--------|--------|--|--|--|
| Dashboard > Devices > View Devices       Manage devices in list below       Download Client |               |                             |                  |          |        |        |        |  |  |  |
|   |               |                             |                  |          |        |        |        |  |  |  |
| Device ID   | Name          | Q Search                    | Profile          | Provider | Owner  | Status | Online |  |  |  |



4. Select Add/Upgrade Apps tab.

|         | B-B SMARTWORX<br>Powered by ADIANTECH Manage Device Help Log off Hello, knelson@advantech-bb.com |                   |            |                      |               |          |            |                           |  |  |  |
|---------|--|-------------------|------------|----------------------|---------------|----------|------------|---------------------------|--|--|--|
| Dash    | board  | Devices -         | Users -    | Technology Providers | Configuration | Profiles | Password - | Contact                   |  |  |  |
| Dashboa | ard > Device   | es > Manage Devic | е          |                      |               |          |            |                           |  |  |  |
| Device  | e ID   | 203-01-650043     | 33         |                      |               |          |            |                           |  |  |  |
| Name    |  | 203-01-65004      | 133        |                      |               |          |            |                           |  |  |  |
| Status  |  | Operational       |            | ¥                    |               | ٠        | MESH       | SMARTSWARM ®<br>300 Benes |  |  |  |
| Firmwa  | are  | 2.2.0             |            | ▼ Push               |               |          |            |                           |  |  |  |
| Device  | Туре   | SG30000525-4      | 2          |                      |               |          |            |                           |  |  |  |
| MAC A   | ddress   | 00:0A:14:86:77    | :C6        |                      |               |          |            |                           |  |  |  |
| Online  |  | 1                 |            |                      |               |          |            |                           |  |  |  |
| Setting | js   | Select            |            | ¥                    |               |          |            |                           |  |  |  |
| Save    | Can  | cel Histor        | Add/Upgrad | le Apps Geo Location | Wzzard Mesh   |          |            |                           |  |  |  |
| Mana    | ge App   | os                |            |                      |               |          |            |                           |  |  |  |
| Rem     | ove Sele   | cted              |            |                      |               |          |            |                           |  |  |  |
|         | Name   |                   | Tag        |                      | Туре          | Version  | Help       | Added                     |  |  |  |
|         | Wzzard   | Mesh              | Wzzar      | d Mesh               | Application   | 1.0.6    |            | 29/03/2018 17:55:17       |  |  |  |
|         | Compor   | nents-342         | Comp       | onents-342           | Component     | 1.4.0    |            | 29/03/2018 17:55:17       |  |  |  |
| 1       |  |                   |            |                      |               |          |            |                           |  |  |  |

5. Check the box next to REF. A list of components to be updated will appear.

| Dash  | board       | Devices -        | Users -           | Technology Providers | Configuration Profiles | Password -  | Contact | knelson@adva |   |
|-------|-------------|------------------|-------------------|----------------------|------------------------|-------------|---------|--------------|---|
| shboa | ard > Devic | es > Manage Devi | ce > Select Appli | cations              |                        |             |         |              |   |
| Add/  | Upgrade     | Selected         | Cancel            |                      |                        |             |         |              |   |
|       | Name        |                  |                   | Тад                  |                        | Туре        |         | Version      |   |
| )     | DustCl      | LI               |                   |                      |                        | Application | 1       | 1.0.1        |   |
| )     | NodeR       | RED              |                   |                      |                        | Applicatior | ı       | 1.0.10       |   |
| )     | RSMe        | ssageBroker      |                   |                      |                        | Application | 1       | 1.0.4        |   |
| )     | Wzzar       | d Mesh           |                   |                      |                        | Application | ١       | 1.0.6        |   |
| )     | Compo       | onents-342       |                   |                      |                        | Componer    | nt      | 1.4.0        |   |
| )     | NodeJ       | S                |                   |                      |                        | Componer    | nt      | 6.2.1        |   |
| )     | HVAC        |                  |                   |                      |                        | Package     |         | 1.0.0        | 1 |
| )     | NRG         |                  |                   |                      |                        | Package     |         | 1.0.0        | 6 |
| )     | REF         |                  |                   |                      |                        | Package     |         | 1.0.0        | 1 |
|       |             |                  |                   |                      |                        |             |         |              |   |

#### 6. Click **OK** to accept the download.

|         |   | Select Application            | s             |           |           | Help Log off<br>Hello, knelson@advantech-bb.com |
|---------|---|-------------------------------|---------------|-----------|-----------|---|
| Dashboa | rd Devices <del>+</del> U                         | Requirements                  |               |           | ×         | ict   |
|         | ard > Devices > Manage Devic<br>/Upgrade Selected | Wzzard Refrigeration M        | lonitoring Ap | plication |           | •   |
|         | Name  | File                          | Version       | Size MB   | Status    | Version   |
| 0       | DustCLI   | Firmware                      | 2.2.0         | 15.00     | <b></b>   | 1:0.1   |
|         | NodeRED   | Components                    | 1.4.0         | 06.00     | 0         | 1.0.10  |
|         |   | NodeRED                       | 1.0.10        | 00.01     | 0         |   |
| .0      | RSMessageBroker                                   | Endora                        | 1.0.6         | 02.00     | 0         | 1.0.4   |
|         | Wzzard Mesh                                       | RSMessageBroker               | 1.0.4         | 00.07     | 0         | 1:0.6   |
|         |   | BB.png                        |               | 00.00     | •         |   |
|         | Components-342                                    | BB-WSK-REF-2.txt              | 1.0.0         | 00.09     | •         | 1.4.0   |
| .0      | NodeJS  | Total Download size: 00.10 ME | 3             |           |           | 6.2.1   |
|         | HVAC  |                               |               | (         | OK Cancel | 1:0.0   |
| 0       | NRG   |                               |               |           | Package   | 1.0.0   |

### 7. Click Add/Upgrade Selected to start the download.

|        | owered by      | ARTWORX<br>AD\ANTECH | <ul> <li>Sele</li> </ul> | ct Applications      |                        |                           | LI-"-   | knalaan Ør tur | Help Log o  |
|--------|----------------|----------------------|--------------------------|----------------------|------------------------|---------------------------|---------|----------------|-------------|
| Dash   | board          | Devices -            | Users -                  | Technology Providers | Configuration Profiles | Password -                | Contact | , knelson@adva | ntech-bb.co |
| ashboa | ard > Device   | es > Manage Devic    | e > Select Appli         | cations              |                        |                           |         |                |             |
| Add/   |                | Selected             | ancel                    |                      |                        |                           |         | Manaian        |             |
|        | Name<br>DustCL | 1                    |                          | Tag                  |                        | <b>Type</b><br>Applicatio | מנ      | Version        |             |
|        | Dustol         | _'                   |                          |                      |                        | Approvide                 |         | 1.0.1          |             |
|        | NodeR          | ED                   |                          |                      |                        | Applicatio                | on      | 1.0.10         |             |
|        | RSMes          | ssageBroker          |                          |                      |                        | Applicatio                | on      | 1.0.4          |             |
|        | Wzzaro         | d Mesh               |                          |                      |                        | Applicatio                | an      | 1.0.6          |             |
|        | VVZZGIO        |                      |                          |                      |                        | Appleau                   | 511     | 1.0.0          |             |
|        | Compo          | onents-342           |                          |                      |                        | Compone                   | ent     | 1.4.0          |             |
|        | NodeJ          | S                    |                          |                      |                        | Compone                   | ent     | 6.2.1          |             |
|        | HVAC           |                      |                          |                      |                        | Package                   |         | 1.0.0          | •           |
|        | INAU           |                      |                          |                      |                        | Fackage                   |         | 1.0.0          | 1           |
|        | NRG            |                      |                          |                      |                        | Package                   |         | 1.0.0          | 1           |
| 1      | REF            |                      |                          |                      |                        | Package                   |         | 1.0.0          | 1           |
|        |                |                      |                          |                      |                        |                           |         |                |             |
| 1      |                |                      |                          |                      |                        |                           |         |                |             |

8. The download could take several minutes. To monitor the progress, select **History** from the **Manage Device** screen.

| B-B SMARTWORX<br>Powered by ADNANTECH Manage Device Help Log off<br>Hello, knelson@advantech-bb.com |                 |           |                      |                        |            |                          |             |  |  |  |
|---|-----------------|-----------|----------------------|------------------------|------------|--------------------------|-------------|--|--|--|
| Dashboard   | Devices -       | Users -   | Technology Providers | Configuration Profiles | Password - | Contact                  | -           |  |  |  |
| Dashboard > De  | evices > Manage | Device    |                      |                        |            |                          |             |  |  |  |
| Device ID   | 203-01-65       | 00433     |                      |                        |            |                          |             |  |  |  |
| Name  | 203-01-6        | 500433    |                      |                        |            |                          |             |  |  |  |
| Status  | Operatio        | onal      | T                    |                        | •          | SMARTSWARM<br>300 Series |             |  |  |  |
| Firmware  | 2.2.0           |           | • Push               |                        |            |                          | a<br>a<br>s |  |  |  |
| DeviceType  | SG300005        | 525-42    |                      |                        |            |                          |             |  |  |  |
| MAC Addres  | ss 00:0A:14:8   | 36:77:C6  |                      |                        |            |                          |             |  |  |  |
| Online  | 1               |           |                      |                        |            |                          |             |  |  |  |
| Settings  | Select          |           | •                    |                        |            |                          |             |  |  |  |
| Save C  | Cancel Hist     | ory Add/U | pgrade Apps Geo Loc  | ation Wzzard Mesh      |            |                          |             |  |  |  |

#### 9. As each component is updated, it will be indicated with a $\checkmark$ check mark:

NOTE: "AddNode" commands will show an X if they have already been installed.

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|                        |                              |                     |                        |               |              | не      | io, kneis        | on@auv          | antech-bb.co |
|------------------------|------------------------------|---------------------|------------------------|---------------|--------------|---------|------------------|-----------------|--------------|
| Dashboard De           | vices - Users -              | Technology Provider | s Configuratio         | on Profiles   | Password *   | Contact |                  |                 |              |
| ashboard > Devices > M | anage Device > History       |                     |                        |               |              |         |                  |                 |              |
| Device Name            | 203-01-650                   | 0433                |                        |               |              |         |                  |                 |              |
| Device ID              | 203-01-650                   | 0433                |                        |               |              |         |                  |                 |              |
| Registered On          | 29/03/2018                   | 17:45:58            |                        |               |              |         |                  |                 |              |
| Last Check In          | 19/04/2018                   | 16:40:47            |                        |               |              |         |                  |                 |              |
| how 10                 | * e                          | ntries              |                        |               |              |         |                  |                 |              |
| Command                | Created by                   | Name                | Queued                 | Comple        | eted         | Success | Respo            | onse            |              |
| UploadConfig           | 203-01-6500433               | 2.2.0               | 19/04/2018<br>16:38:42 | 19/04/2       | 018 16:38:42 | *       | {"conf           | ig":"swm        | _firewa      |
| JploadConfig           | 203-01-6500433               | 2.2.0               | 19/04/2018<br>16:38:31 | 19/04/2       | 018 16:38:31 | *       | {"conf           | ig":"swm        | _firewa      |
| AddFlow                | knelson@advantech-<br>bb.com | REF                 | 19/04/2018<br>16:38:26 | 4/19/20<br>PM | 18 4:42:23   | *       | Succe<br>["cfcc( | ess,<br>09de.5a | 9a48"]       |
| GetFlow                | knelson@advantech-<br>bb.com | REF                 | 19/04/2018<br>16:38:26 | 19/04/2       | 018 16:38:33 | *       |                  |                 |              |
| nstallNewApp           | knelson@advantech-<br>bb.com | REF                 | 19/04/2018<br>16:38:26 | 19/04/2       | 018 16:38:26 | *       | Comp             | leted           |              |
| GetBinaryFile          | knelson@advantech-<br>bb.com | -                   | 19/04/2018<br>16:38:26 | 19/04/2       | 018 16:38:31 | *       |                  |                 |              |
| DownloadSettings       | knelson@advantech-<br>bb.com | - swm_firewall      | 19/04/2018<br>16:38:26 | 19/04/2       | 018 16:38:31 | *       |                  |                 |              |
| DownloadSettings       | knelson@advantech-<br>bb.com | - swm_firewall      | 19/04/2018<br>16:38:26 | 19/04/2       | 018 16:38:30 | *       |                  |                 |              |
| GetVersions            | 203-01-6500433               |                     | 18/04/2018<br>21:27:59 | 18/04/2       | 018 21:28:05 | *       | {"apps           | s": [{"nar      | ne": "R      |
| RemoveFlow             | knelson@advantech-<br>bb.com | - HVAC              | 18/04/2018<br>21:23:46 | 18/04/2       | 018 21:23:52 | *       | Succe            | SS              |              |
| howing 1 to 10 of 1:   |                              |                     | 21:23:46               |               |              |         |                  |                 |              |

Note: If, for some reason all or a portion of the installation fails, repeat the procedure to install the rest of the package.

### **REFRIGERATION MONITORING KIT**

### POINT THE MQTT DATA TO THE INTERNAL MQTT BROKER

1. From the **Manage Device** screen, click the **Wzzard™ Mesh** application.

|        | B+B SMARTWORX<br>Powered by ADANTECH Manage Device Help Log off |                   |            |                      |                  |           |                      |                                 |  |  |
|--------|---|-------------------|------------|----------------------|------------------|-----------|----------------------|---------------------------------|--|--|
| Das    | hboard  | Devices -         | Users -    | Technology Providers | Configuration Pr | ofiles Pa | assword <del>-</del> | Hello, knelson@advantech-bb.com |  |  |
|        |   | es > Manage Devic |            | rechnology Providers | Configuration PT |           | 330010               | Contact                         |  |  |
| Devic  |   | 203-01-65004      |            |                      |                  |           |                      |                                 |  |  |
| Name   |   |                   |            |                      |                  |           |                      |                                 |  |  |
| Hume   |   | 203-01-65004      | 433        |                      |                  |           |                      |                                 |  |  |
| Statu  | s   | Operational       |            | •                    |                  | ۲         |                      | SMARTSWARM                      |  |  |
|        |   |                   |            |                      |                  |           | MEDH                 |                                 |  |  |
| Firmy  | vare  | 2.2.0             |            | • Push               |                  |           |                      |                                 |  |  |
|        |   | 2.2.0             |            | Fush                 |                  |           |                      |                                 |  |  |
| Devic  | еТуре   | SG30000525-4      | 12         |                      |                  |           |                      |                                 |  |  |
| MAC    | Address   | 00:0A:14:86:77    | 7:C6       |                      |                  |           |                      |                                 |  |  |
| Onlin  | e   | 1                 |            |                      |                  |           |                      |                                 |  |  |
| Settin | igs   | Select            |            | •                    |                  |           |                      |                                 |  |  |
|        |   |                   |            |                      |                  |           |                      |                                 |  |  |
| Sav    | e Can   | cel History       | Add/Upgrad | le Apps Geo Location | Wzzard Mesh      |           |                      |                                 |  |  |
|        |   |                   |            |                      |                  |           |                      |                                 |  |  |
|        | age Ap  |                   |            |                      |                  |           |                      |                                 |  |  |
| Ren    | nove Sele   | cted              |            |                      |                  |           |                      |                                 |  |  |
|        | Name  |                   | Tag        |                      | Туре             | Version   | Help                 | Added                           |  |  |
|        | NodeJS  |                   | Node       | JS                   | Component        | 6.2.1     |                      | 18/04/2018 14:51:22             |  |  |
|        | Wzzard  | Mesh              | Wzza       | ard Mesh             | Application      | 1.0.6     |                      | 29/03/2018 17:55:17             |  |  |
|        | NodeR   | ED                | Node       | RED                  | Application      | 1.0.10    |                      | 17/04/2018 20:57:46             |  |  |
|        | RSMes   | sageBroker        | RSM        | essageBroker         | Application      | 1.0.4     |                      | 17/04/2018 20:57:46             |  |  |
|        | Compo   | nents-342         | Com        | ponents-342          | Component        | 1.4.0     |                      | 29/03/2018 17:55:17             |  |  |
|        |   |                   |            |                      |                  |           |                      |                                 |  |  |

2. Fill in the **Application Settings** screen as shown and click the **Apply Changes** button:

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|      | Application Sett   | ings             |             |                  |
|------|--------------------|------------------|-------------|------------------|
|      | Device ID          | 203-01-6500433   |             |                  |
|      | Application Name   | Wzzard Mesh      |             |                  |
| MQTT | Version            | 1.0.6            |             |                  |
|      | Tag                | Wzzard Mesh      |             |                  |
|      | Save Tag Cance     | el Apply Changes | MQTT        | * Required Field |
|      |                    |                  |             |                  |
|      | Host:              |                  | 192.168.1.1 |                  |
|      | Port:              |                  | 1883        |                  |
|      | Username:          |                  |             |                  |
|      | Password:          |                  |             |                  |
|      | Client ID:         |                  | 122         | *                |
|      | Timeout (secs):    |                  | 60          |                  |
|      | Retry Interval (se | ecs):            | 10          |                  |
|      | Keep Alive (secs   | ):               | 60          |                  |
|      | Reliability:       |                  |             |                  |
|      | Clean Session:     |                  |             |                  |
|      | Enable TLS:        |                  | No          |                  |
|      | Verify Server Cer  | t:               |             |                  |

### WAKE UP WZZARD™ MESH EDGE NODE

- 1. Press and hold the **Config/Status** button for 5 seconds until the Status LED starts blinking.
- 2. Check LED.
- 3. After you have awakened the node, the LED will begin to blink. This indicates that the node is attempting to establish a network connection. The LED will cease blinking when a connection is made or after 10 seconds. Press the Config/Status LED for approximately 1 second to view the LED status.

| LED Indicator                 | Status   |  |
|-------------------------------|--|--|
| OFF<br>(after button press)   | Node is asleep or dead battery.                              |  |
| Slow Blink<br>(1 per second)  | Attempting to establish connection with Wzzard mesh network. |  |
| Solid ON                      | Node is connected to a gateway.                              |  |
| Fast Blink<br>(10 per second) | Firmware update in progress.                                 |  |

#### ACCESS Node-RED™ UI IN THE GATEWAY

- 1. Attach the antenna to the Wzzard<sup>™</sup> Mesh antenna port on the gateway.
- 2. Attach the Ethernet cable to the ETH0 port on the gateway and the other end to your PC. You will use an Ethernet connection to configure the gateway and to communicate with it.
- 3. Attach the supplied power supply and plug it in.
- 4. Open a browser on your computer and open the Node-RED Configuration page. The default address is: **192.168.1.1:1880/ui.** (Chrome or Firefox recommended.)

| ≡ Configuration |                                       |                                       |   |   |  |
|-----------------|---------------------------------------|---------------------------------------|---|---|--|
|                 | Wzzard                                |                                       |   |   |  |
|                 | Wzzard Node Info                      |                                       |   |   |  |
|                 | Dust MAC Address:<br>00170D0000310AA3 | ¢                                     | The software will automatically u           | use the Dust MAC Address of the device. |  |
|                 | Serial No :                           |                                       |   | Hardware Version :                      |  |
|                 | Model Type :                          | F                                     | irmware :                                   | Manufacture Date :                      |  |
|                 | Select Cellular Carrier Info for Tex  | t and Email alerts                    |   |   |  |
|                 | Select Carrier: Select an Option      | <ul> <li>Enable Text Alert</li> </ul> | ts: X Enter Phone # (no dashes) Enable Emai | il Alerts: × Enter an Email Address     |  |
|                 | Enable Alerts for Chamber Temp:       | × c                                   | hamber Temp Upper Alert (°F)                | Chamber Temp Lower Alert (°F)           |  |
|                 | Enable Alerts for Ambient Temp:       | × A                                   | mbient Temp Upper Alert (°F)                | Ambient Temp Lower Alert (°F)           |  |
|                 | Enable Alerts for Humidity:           | × H                                   | umidity Upper Alert (%)                     | Humidity Lower Alert (%)                |  |
|                 | Enable Alerts for Compressor Curren   | t: × <u>o</u>                         | ompressor Current Upper Alert (Amps)        | Compressor Current Lower Alert (Amps)   |  |
|                 | Enable Alerts for Fan Current:        | × Fe                                  | an Current Upper Alert (Amps)               | Fan Current Lower Alert (Amps)          |  |
|                 | Enable Open Door Alert:               | × D                                   | oor Open Timer (Minutes)                    |   |  |
| (               | NETWORK HEALTH DASHBOAR               | D                                     |   |   |  |

- 5. The Wzzard Node information values will populate when the node joins the network.
- 6. You can set up a phone number to receive text messages and/or an e-mail address for receiving alerts on this page. For text messaging, you will need to select the cell carrier of the receiving phone. If the carrier is not on the list, select custom, and add the URL of the carrier to the phone number (ie: <u>1-123-2345@txt.abcphone.com</u>). See Appendix A for carrier text addresses. If your carrier is not listed, contact your carrier for the address of their SMS gateway.
- 7. You can enable or disable alerts as well as setting the trigger values on this page also.

### NETWORK HEALTH PAGE

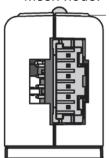
1. Click the **Network Health** button on the lower left corner of the **Configuration** page (see previous screen). The page below appears. This page shows the status of the network.

| $\equiv$ Network Health   |  |  |  |  |
|---|--|--|--|--|
| Wzzard  |  |  |  |  |
| Paths to Gateway. 1 Ambient Temp Mesh Network Reliability 5   |  |  |  |  |
|   |  |  |  |  |
| 0<br>We 14:00 Th 02:00 Th 14:00 Fro2:00 Fr14:00 Sa 02:00 Sa 14:00 Su 02:00 Su 14:00 Mo 02:00 Mo 14:00 Tu 02:00 Tu 16:00<br>Mesh Network Reliability History 101.0 100.0                             |  |  |  |  |
| 100 0         995         995         990         990         990         990         990         990         990         990         990         900         1000000000000000000000000000000000000 |  |  |  |  |

### ATTACHING THE SENSORS ON THE INTELLIGENT EDGE NODES

The Wzzard<sup>™</sup> Mesh Refrigeration Monitoring Kit comes with built-in sensors for ambient temperature and humidity, along with two AC current sensors, a door switch, and a breakout cable with 10K thermistor.

1. Plug the Breakout/Thermistor Cable into the Molex connector on the bottom of the Wzzard Mesh node.



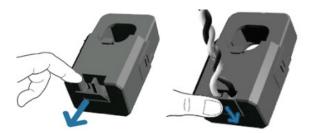
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- 2. Plug the door sensor into the 2-pin connector on the breakout cable.
- 3. Connect the sensors for compressor and fan current to the bare wires on the breakout cable.

| Sensor     | Breakout Cable                        | Connection  |
|------------|---------------------------------------|-------------|
| Compressor | Sensor (+) to Stripped & Tinned Cable | AIN1 RED    |
| Current    | Sensor (-) to Stripped & Tinned Cable | AIN1 BLACK  |
| Fan        | Sensor (+) to Stripped & Tinned Cable | AIN2 YELLOW |
| Current    | Sensor (-) to Stripped & Tinned Cable | AIN2 BLACK  |

#### Current Sensors

- 1. Open the wire protector clamp by pushing it away from the sensor body.
- 2. Attach your wires.
- 3. Close the wire protector clamp.



### MOUNTING YOUR SENSORS

#### **Current Sensors**

The sensor can be mounted in any position.

1. Open the clamp release by pushing it away from the sensor body. Run the wire you are monitoring through the opening in the sensor.



2. Close the sensor firmly around your wire and ensure that the clamp release has snapped back into place.

#### ACCESSING THE DASHBOARD

- 1. Open a browser on your computer and open the Node-RED<sup>™</sup> Configuration page. The default address is: **192.168.1.1:1880/ui**
- 2. Click on the **Dashboard** button on the lower left corner of the configuration page.
- 3. The dashboard should look like the following screen.
- 4. You can switch to the **Configuration** page or **Network Health** page by clicking on their respective buttons on the lower left.



### SETTING UP AN E-MAIL ACCOUNT

- 1. From your browser, open the Node-RED<sup>™</sup> flow at **192.168.1.1:1880**.
- 2. Enter your user name and password. Default is:
  - Username: NodeRED

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Password: 5mart5warm (set same as the SmartSwarm 342 password).

| 🖉 Node-RED : 10.1.201 x 🗸 💌 Workspace Webmail: E. I. x   | (8)(0)(8)               |
|--|-------------------------|
|  | Q 🖈 🔼 😘 🖸 🗐 🔒 🥥 🗄       |
| 🔛 Apps 🖬 Walktbrough Creation 🖬 MySQL Python tutors 🗭 Paho - Open Source : 📓 Hello MQTT — Michis 🖶 Simply Modbus - Das 🔩 Node-RED Dashbaard 🧻 New Folder | Other bookmarks         |
| Node-RED   | - Deploy -              |
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| - Input  | *                       |
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3. Find the green Send Email node on the right; double click on it.

### **REFRIGERATION MONITORING KIT**

|  |                        | -⁄ Deploy -  |
|--|------------------------|--|
| Store + RED: 101.0201 x ■ Making Windows Store: x ■ ← → C △ ◎ 101.02011880/#   |                        | то — с — с — с — с — с — с — с — с — с —   |
| rection Node-RED   |                        | - Deploy - 🚍   |
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| trp response to the first temp (such tem (such temp (such temp (such temp (such temp (such temp (s | 🛓 Userid               | johndoe@gmail.com  |
| udp dutos     dutos     telecos teleto     telecos teleto     telecos teleto   | Password               |  |
| function     compared           |                        |  |

3. Enter your **UserID** and **Password** for your e-mail server in the appropriate boxes. (Leave the "To" field blank.)

NOTE: If you are using a G-Mail account, you will need to enable "Less Secure Apps" in the Google security settings. See below.

| reating 🗖  | MySQL Python tutoria | <b>p</b> Paho - Open Source n | Hello MQTT — Micha | Simply Modbus - Data | RED Dashboard | New folder  |
|------------|----------------------|-------------------------------|--------------------|----------------------|---------------|---|
|            | Sign-in &            | security                      |                    |                      |               |   |
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| tes        |                      |                               |                    |                      |               |   |
| су         |                      |                               |                    |                      |               |   |
| activity   |                      |                               |                    |                      |               | Allow less secure apps: ON  |
| Jacunty    |                      |                               |                    |                      |               | Some apps and devices use less secure sign-in technology, which could leave<br>your account vulnerable. You can turn off access for these apps (which we<br>recommend) or choose to use them despite the risks. |
| ols        |                      |                               |                    |                      |               |   |
| orage      |                      |                               |                    |                      |               |   |

4. Click **Done**. Then click the **Deploy** button in the upper right corner of the page.

**Note:** Once you deploy the edited flow, you will have to re-enter any alert settings on the configuration screen of the dashboard.

### SETTING UP YOUR DROPBOX FOR LOGGING

- 1. Log in to your Dropbox account or sign up for a new one.
- 2. Once signed up or logged in:
  - Go to https://www.dropbox.com/developers
  - Click Create Your App box in the center of the screen.
  - Select Dropbox API App.
  - Choose an appropriate answer as to whether your node should be limited to its own folder or given full access. (TIP: This can be changed later, so select **Yes** to restrict the application while testing might be a good idea.)
  - Choose an app name.
  - Click Create App.

The subsequent app page will contain the App Key. Save this string so you can enter it into the application later.

- 3. From your browser, open the Node-RED<sup>™</sup> flow at **192.168.1.1:1880**.
- 4. Enter your user name and password. Default is:

#### Username: NodeRED

Password: 5mart5warm (set same as the SmartSwarm 342 password).

| S Node-RED 19218911 ×  |                      |
|--|----------------------|
| ← → C û [01921581.1:1880/#flow/9b17/186.fae2c  | ☆ 🖪 🗄                |
| Rode-RED   | Teploy 🔻             |
| Q filter nodes REF_342   | +                    |
| v input  | *                    |
| inject     Degging Into  |                      |
| catch Clock timestamp D Get Date   |                      |
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| b link   |                      |
| ) mqt Set filename Set filename Set Filename Set Default Filename Set Default Filename Set File Name Set File Name Set File Name Set File Name Set Filename Set F |                      |
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| 😵 websocket 🖟  |                      |
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|  |                      |
| ✓ output Log data to file  |                      |
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| http:response 😵  | <b>▲</b>             |
| websocket  |                      |
| tcp  |                      |
|  | al Filename 🛛 🔅      |
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5. Locate Log data to file, then scroll right to locate blue Write Local File node; double click on it.

### **REFRIGERATION MONITORING KIT**

| Node-RED : 10.1.0.201 | X The same same same in the provide state of the same same   |                   | -                 | 0-0-0      | *   |
|-----------------------|--|-------------------|-------------------|------------|-----|
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| - Node-RED            |  |                   |                   |            |     |
| Q filter nodes        |  | Edit dropbox ou   | it node           |            |     |
| ~ Input               | REF_342  |                   |                   | Cancel Don | ne  |
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| catch p               | ppd retry into 1.2011 1800 - 101 Excellent Login - retry   |                   |                   |            |     |
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| ink o                 |  | Local<br>Filename | timestamps.txt    |            |     |
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| A V                   |  |                   |                   |            |     |

5. Then click on the **pencil icon** next to the Dropbox text window.

| Rep: 19216811 ×  | Kevn - 0 - X  |
|--|---|
| ← → C û 0 Not secure   192.168.1.1:1880/#flow/9b17f186.fae2c   | @ ☆ 🗾 :   |
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| 9 filter nodes REF_342   | dropbox out > Add new dropbox-config config node  |
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| inject   icatch   istatus   inik   ini  | Access Token Name Name To obt in an access token, visit the <i>Dropbox developer home</i> . Onde signed up: dicik 'Create app'. 2. select 'Dropbox API app'. 3. choose either App folder or Full Dropbox access, 4. choose an app name 5. click 'Create app'. |
| image: wide wide wide wide wide wide wide wide   | On the subsequent page, click the button to generated an access token.<br>Copy it into the box above,   |
| Image: Serial interview     Write Local File       voutput   |   |
| Image: Second |   |
|  | On odes use this config     On all flows  |

6. Fill in the **Access Token** that you got from Dropbox. (See yellow box for more information.)

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  - 7. Click Update; then **Done** again to close both windows.
  - 8. Click the **Deploy** button in the upper right corner of the page.

**NOTE:** Once you deploy the edited flow, you will have to re-enter any alert settings on the Configuration screen of the Dashboard.

9. Enable logging on the dashboard web page.

### APPENDIX A. CARRIER TEXT MESSAGING URL ADDRESSES

| U.S.A. Carriers                |  |
|--------------------------------|--|
| Alitel                         | [10-digit phone number]@message.alltel.com<br>Example: 1234567890@message.alltel.com                             |
| AT&T (formerly Cingular)       | [10-digit phone number]@txt.att.net<br>[10-digit phone number]@cingularme.com<br>Example: 1234567890@txt.att.net |
| Boost Mobile                   | [10-digit phone number]@myboostmobile.com<br>Example: 1234567890@myboostmobile.com                               |
| Nextel (now Sprint Nextel)     | [10-digit telephone number]@messaging.nextel.com<br>Example: 1234567890@messaging.nextel.com                     |
| Sprint PCS (now Sprint Nextel) | [10-digit phone number]@messaging.sprintpcs.com<br>Example: 1234567890@messaging.sprintpcs.com                   |
| T-Mobile                       | [10-digit phone number]@tmomail.net<br>Example: 1234567890@tmomail.net   |
| US Cellular                    | [10-digit phone number]email.uscc.net (SMS)<br>Example: 1234567890@email.uscc.net                                |
| Verizon                        | [10-digit phone number]@vtext.com<br>Example: 1234567890@vtext.com   |
| Virgin Mobile USA              | [10-digit phone number]@vmobl.com<br>Example: 1234567890@vmobl.com   |

| International Carriers               | Email to SMS Gateway           |
|--------------------------------------|--------------------------------|
| 7-11 Speakout (USA GSM)              | number@cingularme.com          |
| Airtel (Karnataka, India)            | number@airtelkk.com            |
| Airtel Wireless (Montana, USA)       | number@sms.airtelmontana.com   |
| Alaska Communications Systems        | number@msg.acsalaska.com       |
| AqI                                  | number@text.aql.com            |
| AT&T Enterprise Paging               | number@page.att.net            |
| BigRedGiant Mobile Solutions         | number@tachyonsms.co.uk        |
| Bell Mobility & Solo Mobile (Canada) | number@txt.bell.ca             |
| BPL Mobile (Mumbai, India)           | number@bplmobile.com           |
| Cellular One (Dobson)                | number@mobile.celloneusa.com   |
| Cingular (Postpaid)                  | number@cingularme.com          |
| Centennial Wireless                  | number@cwemail.com             |
| Cingular (GoPhone prepaid)           | number@cingularme.com (SMS)    |
| Claro (Brasil)                       | number@clarotorpedo.com.br     |
| Claro (Nicaragua)                    | number@ideasclaro-ca.com       |
| Comcel                               | number@comcel.com.co           |
| Cricket                              | number@sms.mycricket.com (SMS) |
| СТІ                                  | number@sms.ctimovil.com.ar     |
| Emtel (Mauritius)                    | number@emtelworld.net          |
| Fido (Canada)                        | number@fido.ca                 |
| General Communications Inc.          | number@msg.gci.net             |
| Globalstar (satellite)               | number@msg.globalstarusa.com   |

### **REFRIGERATION MONITORING KIT**

| Helio                       | number@messaging.sprintpcs.com         |
|-----------------------------|--|
| Illinois Valley Cellular    | number@ivctext.com                     |
| Iridium (satellite)         | number@msg.iridium.com                 |
| lusacell                    | number@rek2.com.mx                     |
| i wireless                  | number.iws@iwspcs.net                  |
| Koodo Mobile (Canada)       | number@msg.koodomobile.com             |
| LMT (Latvia)                | number@sms.lmt.lv                      |
| Meteor (Ireland)            | number@sms.mymeteor.ie                 |
| Mero Mobile (Nepal)         | 977number@sms.spicenepal.com           |
| MetroPCS                    | number@mymetropcs.com                  |
| Movicom (Argentina)         | number@sms.movistar.net.ar             |
| Mobitel (Sri Lanka)         | number@sms.mobitel.lk                  |
| Movistar (Colombia)         | number@movistar.com.co                 |
| MTN (South Africa)          | number@sms.co.za                       |
| MTS (Canada)                | number@text.mtsmobility.com            |
| Nextel (United States)      | number@messaging.nextel.com            |
| Nextel (Argentina)          | TwoWay.11 <i>number</i> @nextel.net.ar |
| Orange Polska (Poland)      | 9digit@orange.pl                       |
| Personal (Argentina)        | number@alertas.personal.com.ar         |
| Plus GSM (Poland)           | +48 <i>number</i> @text.plusgsm.pl     |
| President's Choice (Canada) | number@txt.bell.ca                     |
| Qwest                       | number@qwestmp.com                     |
| Rogers (Canada)             | number@pcs.rogers.com                  |
| SL Interactive (Australia)  | number@slinteractive.com.au            |
| Sasktel (Canada)            | number@sms.sasktel.com                 |
| Setar Mobile email (Aruba)  | 297+number@mas.aw                      |
| Suncom                      | number@tms.suncom.com                  |
| T-Mobile (Austria)          | number@sms.t-mobile.at                 |
| T-Mobile (UK)               | number@t-mobile.uk.net                 |
| Telus Mobility (Canada)     | number@msg.telus.com                   |
| Thumb Cellular              | number@sms.thumbcellular.com           |
| Tigo (Formerly Ola)         | number@sms.tigo.com.co                 |
| Tracfone (prepaid)          | number@mmst5.tracfone.com              |
| Unicel                      | number@utext.com                       |
| Virgin Mobile (Canada)      | <i>number</i> @vmobile.ca              |
| Vodacom (South Africa)      | number@voda.co.za                      |
| Vodafone (Italy)            | number@sms.vodafone.it                 |
| YCC                         | number@sms.ycc.ru                      |
| MobiPCS (Hawaii only)       | number@mobipcs.net                     |

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- Web: www.advantech.com

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