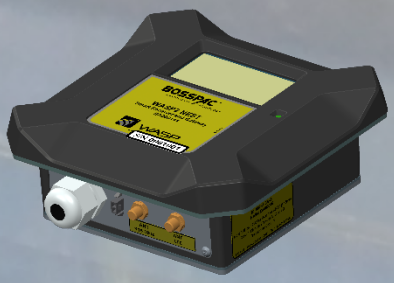
BossPac WASP™ NEST4

SMART RECEIVER AND GATEWAY



USER MANUAL

VERSION 1.0

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WARNING

READ THIS MANUAL BEFORE OPERATING THIS DEVICE.

MISE EN GARDE

LISEZ LE MANUEL AVANT UTILISATER

WARNING

TO PREVENT EQUIPMENT FAILURE, AND/OR DAMAGE, AND/OR PERSONAL INJURY, REGULAR CALIBRATION AND INSPECTION OF THIS DEVICE IS REQUIRED.

MISE EN GARDE

POUR PRÈVENIR LE DOMMAGE À L'EQUIPMENT, ET/AU AUX PERSON, LA CÀLIBRATION ET L'INSPECTION REGULIER EST ŔEQUIS.

WARNING - EXPLOSION HAZARD

SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS 1, DIVISION 2.

AVERTISSEMENT – RISQUE D'EXPLOSION

LA SUBSTITUTION DECOMPOSANTS RENDRE CE MATÉRIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE 1, DIVISION 2

WARNING - EXPLOSION HAZARD

DO NOT RECONNECT POWER IN A HAZARDOUS ENVIRONMENT.

AVERTISSEMENT - RISQUE D'EXPLOSION

NE PAS BRANCHEZ LA PRISE DANS UN ENVIRONMENT FLAMMABLE.

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1. Introduction

1.1 NEST Receiver Introduction

This Operations Manual provides basic information on how to operate the **WASP™Nest Smart Receiver and Gateway.** This manual covers the following topics:

- Installation of WASP™NEST
- Wiring of WASP™NEST
- Configuring of Individual WASP™Sensors
- System Information and Settings of WASP™NEST
- Maintenance of WASP™NEST

2. Installation

2.1 Included In The Package

The BossPac WASP™ NEST Receiver is shipped with an attachable antenna and required cables. The BossPac WASP™ sensors, (configurable), are typically shipped alongside.

2.2 Installation

2.2.1 Nest Receiver Installation

The equipment should be installed by a professional or certified technician conversant with the certification requirements of the installation site.

2.3 Wiring NEST Receiver

2.3.1 Nest Receiver Mounting

The BossPac NEST™ receiver may be installed into existing panels or an enclosure mounted within 300 meters (1000') of the WASP™s. Ideal location would have direct line of sight to the sensors. There are four mounting locations (threaded holes) and an environmental gasket on the flange of the receiver. A cutout mounting template is also included with the receiver.

2.3.2 Attaching the 915 MHz Antenna

An antenna is provided by BossPac, included, and shipped with the NEST Receiver. The following optional antennas may be purchased for use with the NEST4S Receiver.

BossPac PN	Gain
EH002058 (Standard)	3 dBi
EH002059	1.2 dBi
EH002060	8 dBi
EH000625	11 dBi

The technician must ensure proper mounting of antenna to meet certification requirements of installation site.

To attach the antenna, carefully screw the antenna cable to the SMA connection at the base of the BossPac NEST™ Receiver Gateway. See photo below. Attach antenna to opposite end of cable, (N type connector).

2.3.3 Attaching the LTE Antenna

Figure 1: Antenna Connections

WARNING – EXPLOSION HAZARD. DO NOT CONNECT OR DISCONNECT THE ANTENNA IN A HAZARDOUS ENVIRONMENT.

AVERTISSEMENT – RISQUE D'EXPLOSION. NE PAS BRANCHER OU DÈ-BRANCHER L'ANTENNE DANS UN ENVIRONMENT FLAMMABLE.

2.3.4 Wiring NEST Circuit Board

The rear cover, (backplate), needs to be removed to access the following connections: USB and SD Card connections.

2.3.5 Circuit Board Terminal Block

The NEST circuit board has a 16-pin terminal block. A diagram of the terminal block is shown below.

Pin 1 and Pin 2 are differential analogs inputs.

Pin 3 is a digital input.

Pin 4 is an analog output.

Pin 5 and Pin 7 are analog inputs.

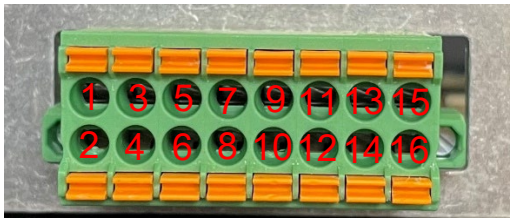
Pin 6 can be configured as a digital input or output.

Pin 8 is a digital output.

Pin 13 and Pin 14 are assigned for MODBUS connections.

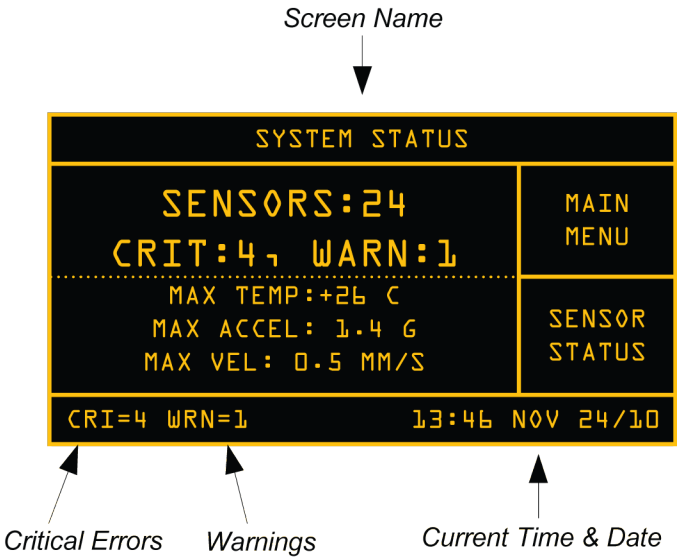
Pin 15(+5V to 24V) and Pin 16(GND) are the power connections. The NEST Receiver must be powered with a **Class 2** power supply providing an input voltage between 5 VDC to 24 VDC

Pins 9, 10, 11 and 12 are used for 4-wire serial connections.

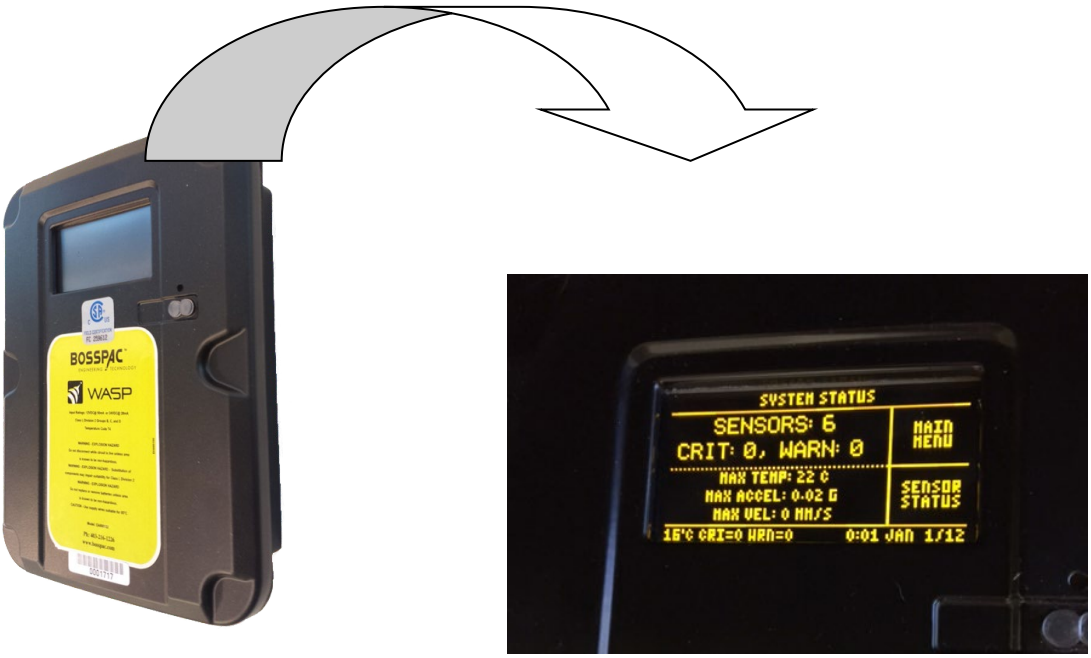


3. Interface

The touch screen interface on the BossPac NEST™ displays important current information throughout all its screens. The name of the current screen is displayed at the top center. The current time and date are displayed at the bottom right. Current critical error count and warning count are displayed in the bottom left of the interface. These information sections, top bar and bottom bar of the touch screen, are not interactive and are only intended to provide current system statistics to the viewer.



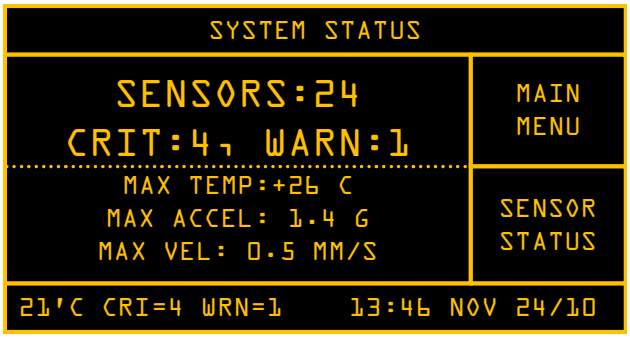
NOTE: Warnings indicate a sensor(s) has reached the warning limit pre-determined in the Sensor Setup screen. Critical Alarms indicate a sensor(s) has reached the pre-determined shutdown limit and a shutdown signal has been issued. See the section of this manual on "Configuring Individual Sensors" for details about setting warning and critical alarm limits.



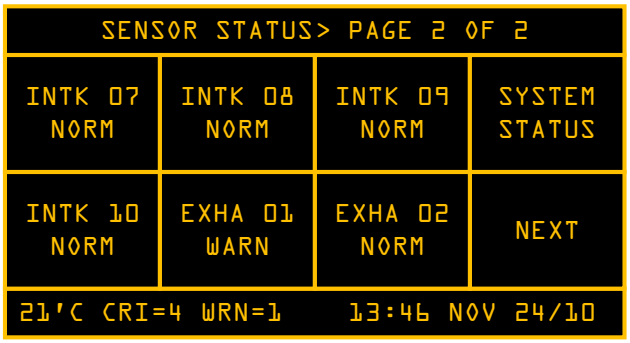
3.1 System Status Screens

When activating the BossPac WASP™ system for the first time the BossPac NEST receiver will automatically detect all sensor pucks within the working radius (assuming battery modules are attached to the sensors).

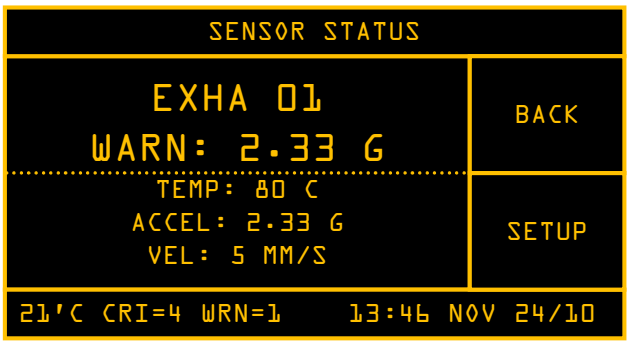
The default screen, when turning on the BossPac NEST™ receiver or waking the screen from sleep mode, is the SYSTEM STATUS screen. The SYSTEM STATUS screen displays the number of sensors attached to the system as well as any current critical or warning alarm. The screen will also cycle through the critical screen and warning screen when the top half of the screen is tapped. The max values displayed are the current max values of the entire sensor array.



Tapping on the **SENSOR STATUS** square will take you to the sensor status grid screen. Further tapping on a sensor square, **EXHA 01** for example, will take you to a status screen for that individual sensor. Tapping on **NEXT** will cycle through available status grid pages, (all other sensors).



Each individual sensor status screen will display the name of the sensor along with the current status. Tapping on the bottom half of the screen will cycle the screen through more status data and settings of the sensor. Tapping on the top half of the screen will cycle the screen through the available sensors. (For example: Tap on right side of the top section cycles to next listed sensor *EXHA 02*. Tap on left side of the top section cycles to previous listed sensor *INTK 10*). To configure a sensor, or modify the settings, tap on the **SETUP** section.

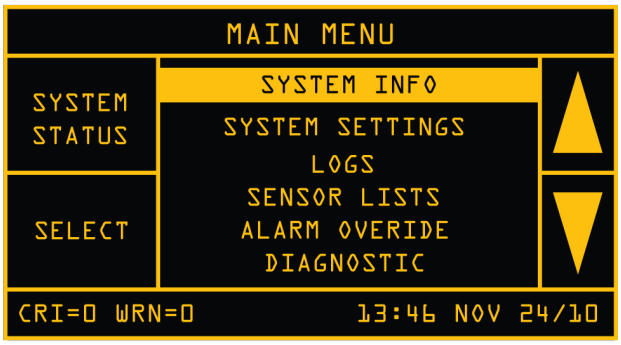


Instructions on configuring individual sensors are covered under Section 3.2.9

Note: if no limits have been set, zeros will be displayed beside the parameter.

3.2 Main Menu

The NEST system information, sensor settings, configuration area, and log options are accessed through the MAIN MENU tab of the SYSTEM STATUS default screen. Tapping **MAIN MENU** will bring up a list of options. Tap the **UP**/**DOWN** arrows to scroll through the available options. Choose **SELECT** to access the desired high-lighted option. Tap **SYSTEM STATUS** to return to the default startup screen.

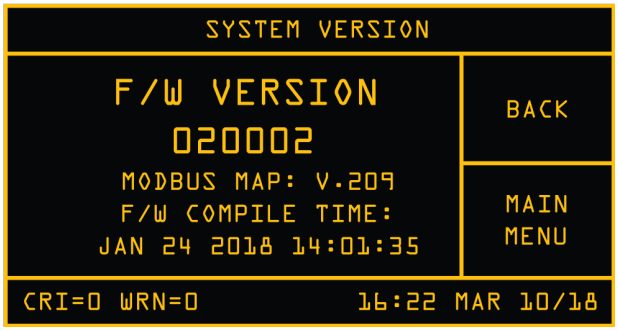


3.2.1 System Info

Choosing the SYSTEM INFO screen will display 3 options: VERSION, UPTIME, and RADIO. Use the UP/DOWN arrows to highlight the desired system information option and tap **SELECT**.

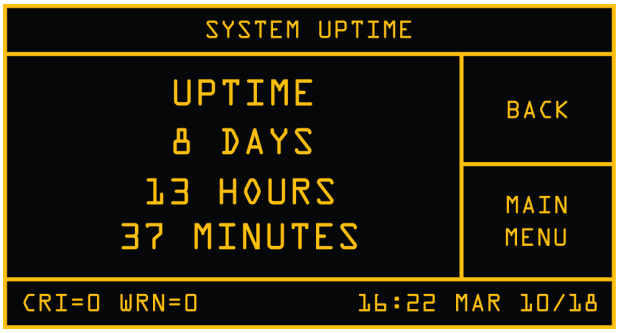
3.2.1.1 Version

Selecting **VERSION** displays the current NEST firmware version. The screen also displays the firmware compile date/time as well as the revision number. Tap **BACK** to return to the SYSTEM INFO screen, or **MAIN MENU** to return to the MAIN MENU screen.



3.2.1.2 Uptime

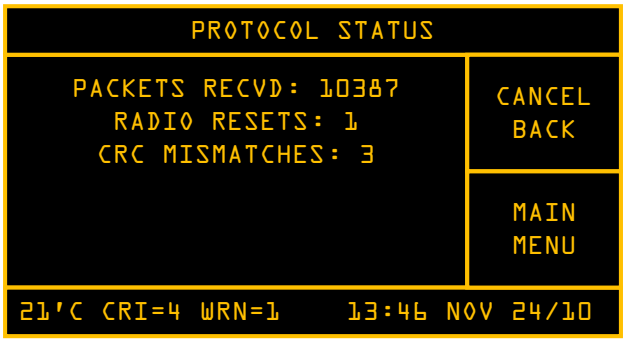
The uptime screen simply displays how long the NEST has been active.



3.2.1.3 Radio

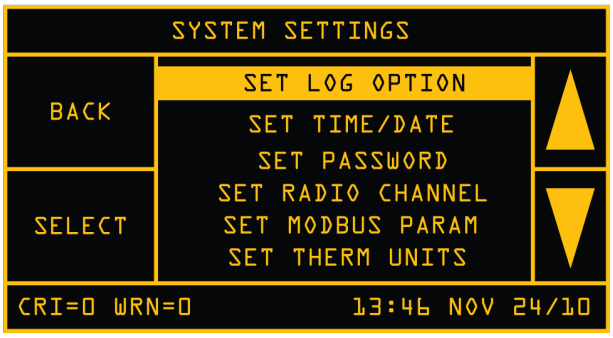
Selecting **RADIO** from the SYSTEM INFO screen will access the PROTOCOL STATUS screen.

This screen displays the number of data packets received by the NEST from active connected sensor pucks. RADIO RESETS displays the number of times the NEST has reset its internal radio. CRC MISMATCHES displays the number of packets received that contain incomplete or bad data.



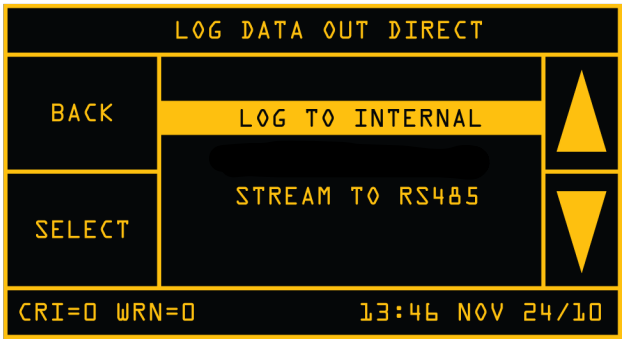
3.2.2 System Settings

To input or modify settings you will need to access the SYSTEM SETTINGS from the MAIN MENU screen. Use the UP/DOWN arrows to highlight the **SYSTEM SETTINGS** option and tap **SELECT**. The SYSTEM SETTINGS screen will be displayed with several options that can be configured or modified.



3.2.2.1 SET LOG OPTION

The NEST always logs data to the SD Card, options are presented here to additionally configure the NEST to stream live data over the RS485 port to an external device. The stream live data option is for use with the optional data logger or the accompanied NEST software on a personal computer.



Set the log data out direct option by choosing **SET LOG OPTION** from the SYSTEM SETTINGS menu.

> MAIN MENU > SYSTEM SETTINGS > SET LOG OPTION

Once in the LOG DATA OUT DIRECT screen simply choose: **SD-CARD ONLY, SD-CARD + USB STREAM,** or **SD CARD + RS485 STREAM,** and tap on **SELECT**.

SD CARD ONLY: Logs data only to the SD Card.

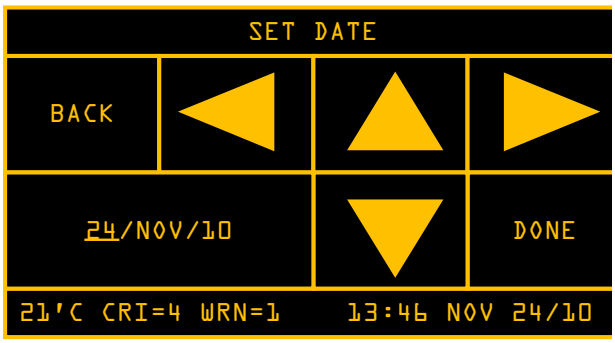
SD CARD + USB STREAM: Logs data to the SD Card and streams data out the USB port. This is intended for short term use to view readings. This option is intertwined with the SD Card logging process and MUST NOT BE CONNECTED when the NEST clock rolls over to a new day.

SD CARD + RS485 STREAM: Logs data to the SD Card and streams the data out the RS485 port. This option can be used for long term serial data output to an external device.

IMPORTANT: The RS485 port can be used either for Modbus Communications or Serial Stream. If RS485 STREAM is selected MODBUS COMMUNICATIONS WILL NOT FUNCTION PROPERLY.

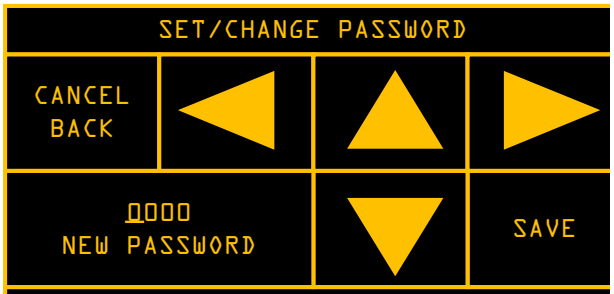
3.2.2.2 Set Time/Date

To set the time and date on the NEST select the **SET TIME/DATE** option from the SYSTEM SETTINGS screen. Set the time using the **UP / DOWN** arrows to change the numeric value of the hour character. Use the **LEFT / RIGHT** arrows to move the cursor to the minute character position. Once the time has been entered, tap **SET DATE** and use the arrows to input the correct date. Once both the time and date have been entered, choose **DONE** to save new time and date and return to the SYSTEM SETTINGS screen.



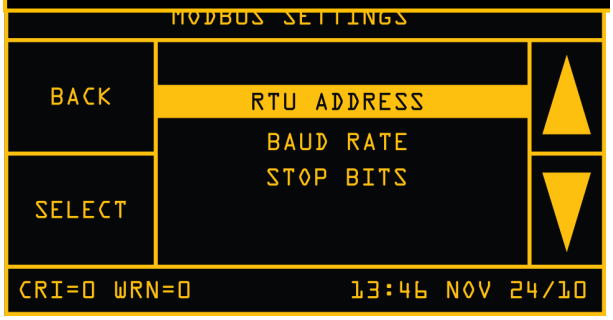
3.2.2.3 Set Password

You can setup a system password by selecting **SET PASSWORD** from the SYSTEM SETTINGS menu. Once in the SET/CHANGE PASSWORD screen choose a 4-digit password by using the up/down and right/left arrows. Click **SAVE** to save the new password.



3.2.2.4 Set Modbus Parameter

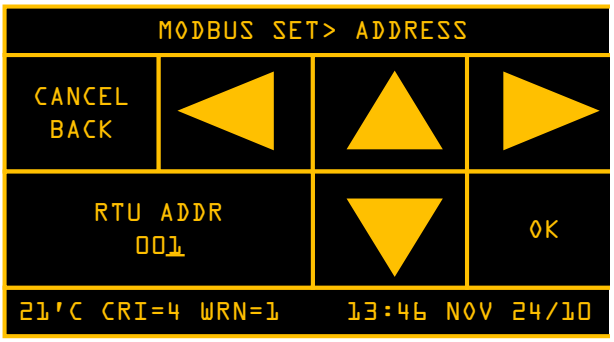
To configure MODBUS parameters, select **SET MODBUS PARAM** from the SYSTEM SETTINGS selection screen. A submenu will display the parameters to select: RTU ADDRESS, BAUD RATE, or STOP BITS. If the direct output option was enabled, you would be asked to disable it before modifying MODBUS parameters.



IMPORTANT: The non-volatile memory where Writable registers are stored has as an endurance of 100,000 program/erase cycles. Any automated MODBUS Write functions should only issue Write commands to the NEST when required. Continuously issuing Write commands will destroy the non-volatile memory and will void the warranty.

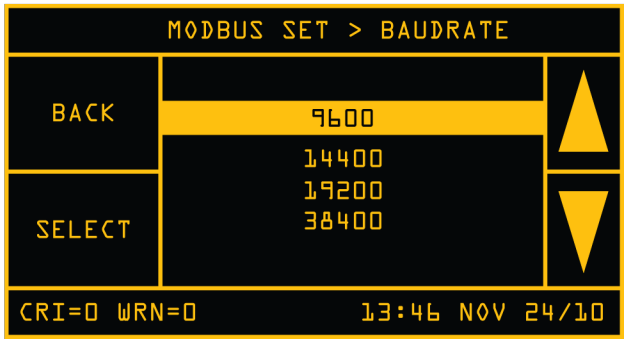
3.2.2.4.1 RTU Address

Configure the RTU ADDRESS of the receiver by using the arrow keys to navigate and input the digits.



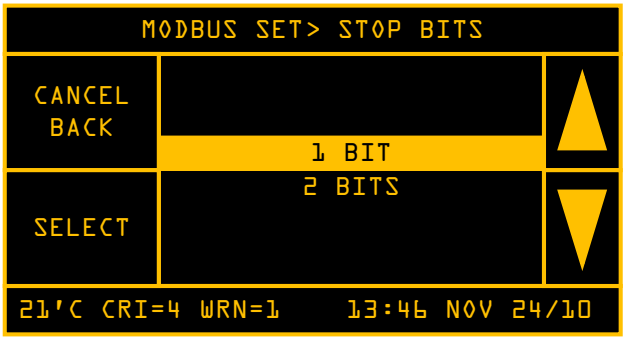
3.2.2.4.2 BAUD Rate

Configure the BAUD RATE of the receiver to either 9600, 14400, 19200 or 38400 by using the arrows on the right of the screen and choosing **SELECT**.



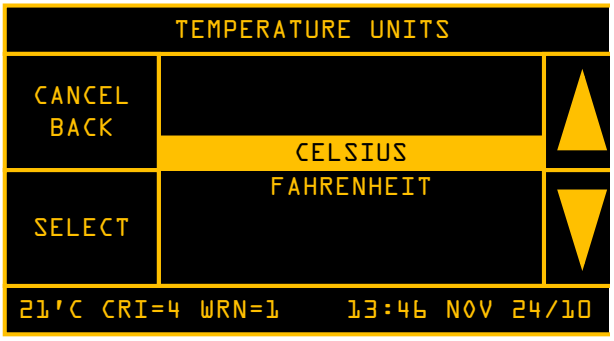
3.2.2.4.3 Stop Bits

Configure the STOP BITS of the receiver to either 1 or 2 by using the **arrows** on the right of the screen and choosing **SELECT**.



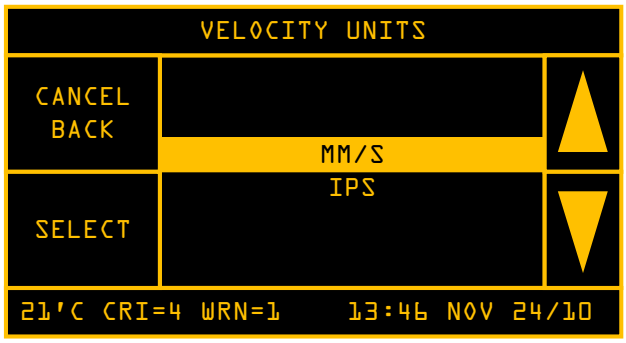
3.2.2.5 Set Temperature Unit

You can set the units of temperature to either Celsius or Fahrenheit by selecting **SET THERM UNITS** from the SYSTEM SETTINGS menu. Simply choose the unit of measurement and press **SELECT**.



3.2.2.6 Set Velocity Units

You can set the units of velocity to either mm/s or IPS (inch-per-second) by selecting **SET VEL UNITS** from the SYSTEM SETTINGS menu. Simply choose the unit of measurement and press **SELECT**.



3.2.2.7 Set Pressure Units

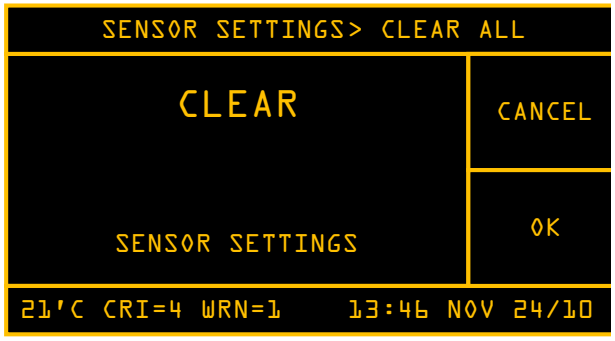
You can set the units of pressure to either BAR or PSI by selecting **SET PRESS UNITS** from the SYSTEM SETTINGS menu. Simply choose the unit of measurement and press **SELECT**.

3.2.2.8 Set Level Units

You can set the units to either METERS or FEET by selecting **SET LEVEL UNITS** from the SYSTEM SETTINGS menu. Simply choose the unit of measurement and press **SELECT**.

3.2.2.9 Clearing All Sensors

You can clear all sensors from the NEST's memory by choosing **CLEAR SENSORS** from the System menu. Once in the SENSOR SETTINGS> CLEAR ALL screen tap **OK** to clear the sensors or **CANCEL** to go back to the System screen.



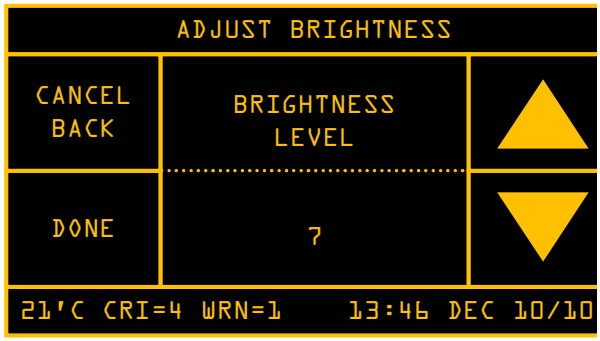
WARNING – CLEARING ALL SENSORS WILL REMOVE THE SENSORS AND ALL SETTINGS FROM THE NEST'S MEMORY. BE SURE THIS IS WHAT YOU <u>INTEND TO DO</u> BEFORE CLICKING "OK"

MISE EN GARDE – "CLEAR ALL" DÈGAGE LA LISTE DE CAPTEUR ET TOUT LEUR PARAMÈTRAGE. SOYEZ SURE AVANT DE CLIQUER "OK"

3.2.2.10 Adjust Brightness

The adjust brightness option allows you to change the brightness of the screen to improve the readability of the screen under different lightning conditions. *Note: the higher level of brightness will increase the current consumption.

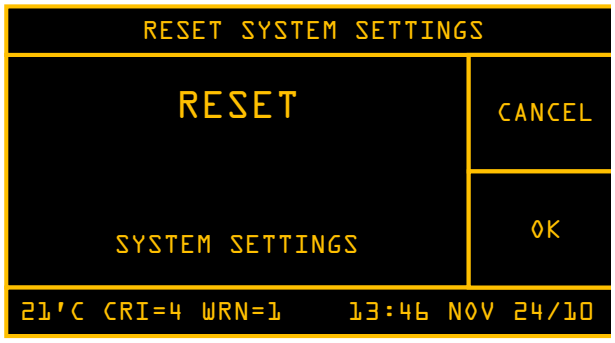
You can adjust and set the screen brightness by choosing **ADJUST BRIGHTNESS** from the SYSTEM SETTINGS menu. In the ADJUST BRIGHTNESS screen use the **UP/DOWN** arrows to change the brightness level and tap **DONE** to save the level.



3.2.2.11 Reset System Settings

The reset system settings option allows you to restore the receiver to its default setting.

You can restore the receiver default setting by choosing **RESET SYS SETTINGS** from the SYSTEM SETTINGS menu. Once in the RESET SYS SETTINGS screen tap on **OK** to authorize the system setting reset.



3.2.3 LOGS

The BossPac NEST System has extensive logging capabilities. The logs are stored on a microSD card in csv format.

3.2.3.1 Connecting to the USB port

The logs can be retrieved by connecting a computer to the USB micro-B connector on the NEST main board. As the NEST is itself certified as a stand alone electrical enclosure, the connector is located behind the back panel for Hazardous Location certification purposes.

**** IT IS NOT RECOMMENDED TO POWER THE DEVICE VIA THE USB PORT, AS THE SUDDEN REMOVAL OF POWER MAY CORRUPT THE MICROSD CARD. ****

3.2.3.2 Retrieving the Logs

The microSD card will appear on the computer as a removable storage drive. Navigate to the drive using the File Explorer. Copy the logs of interest from the microSD card to a folder on your computers hard drive.

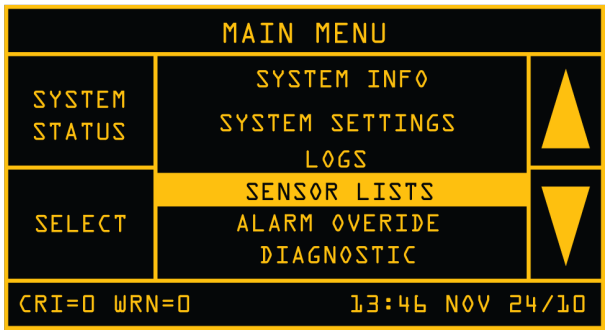
3.2.3.3 Formatting the microSD Card

From the Main Menu select LOGS and then FORMAT SD CARD to clear all logs from the microSD card.

3.2.3.4 microSD Card Specifications

The NEST will work with microSD cards using either a FAT or FAT32 file system. The NEST ships standard with a 2 GB microSD card rated down to -40C. Larger cards can be used; however, care should be taken in selecting the SD card for the operating environment. Consumer grade SD cards are typically only rated for temperatures down to -25C.

3.2.4 Sensor Lists

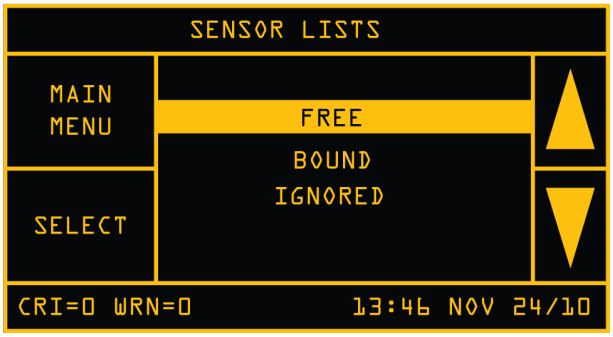


When first configuring or adding WASP™ Sensors to the WASP™ systems, it is necessary to "bind" the sensors to the receiver. The SENSOR LISTS will show all sensors that have been attached to the system to the system.

To access SENSOR LIST:

> MAIN MENU > SENSOR LISTS > SELECT.

This brings up the main SENSOR LISTS screen with 3 options: FREE, BOUND, and IGNORED.



FREE: Shows all available sensors within range.

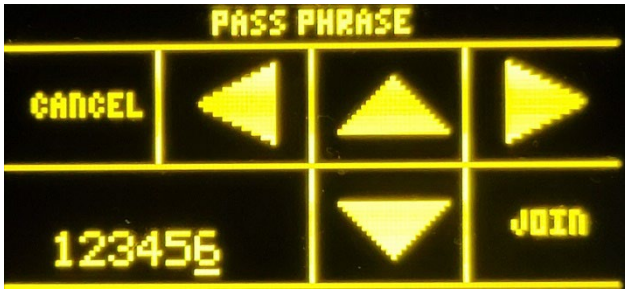
BOUND: Identifies all sensors currently "bound" to the NEST Receiver.

IGNORED: Identifies all sensors chosen to be ignored by the NEST Receiver, (if any).

3.2.4.1 Attaching a Device to the System

To add a sensor to the system.

> MAIN MENU > NETWORK > ADD DEVICE



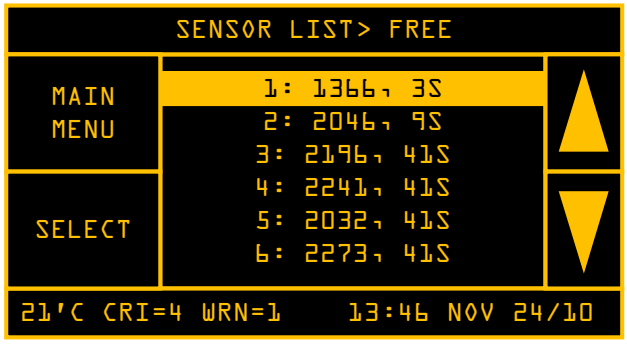
Enter a 6-digit numeric pass phrase and press **START**.

Using this pass phrase, perform the Network Join procedure on the sensor to be added to the Network.

3.2.4.2 Binding and Ignoring Sensor Pucks

To bind a sensor to the receiver, you will need to select a sensor from the **FREE** sensor list and bind it to the receiver. To access the FREE SENSOR LIST:

> **MAIN MENU** > **SENSOR LISTS** > **FREE**.

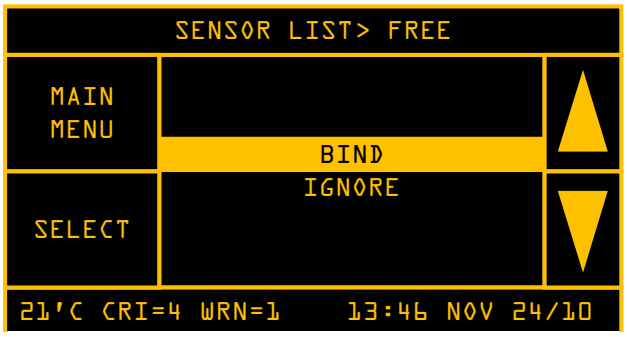


The FREE SENSOR LIST displays all sensors which are on the network, and currently not bound to the receiver. Each sensor listed is displayed with list index, sensor serial number, and the elapsed time since last update.

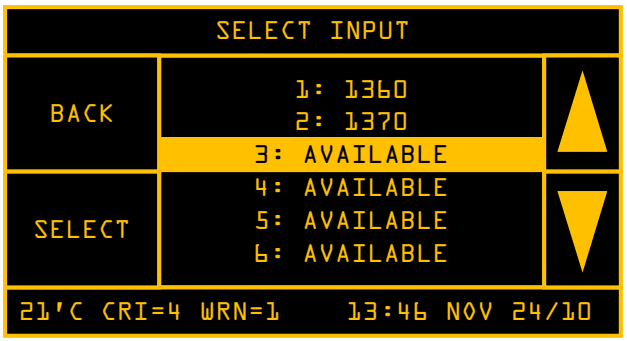
Example: "**1: 1366, 3S**" means the NEST received the last data update 3 seconds ago from the WASP sensor with serial number 1366.

To bind a sensor, scroll up/down and highlight a sensor from the FREE sensor list. Once found, tap **SELECT** to move to BIND/IGNORE screen.

BIND will add this sensor to this receiver's database. **IGNORE** will ignore the sensor allowing another receiver to pick up that sensor. This is useful in large installations where you may have overlap between the effective range of sensors and receivers.



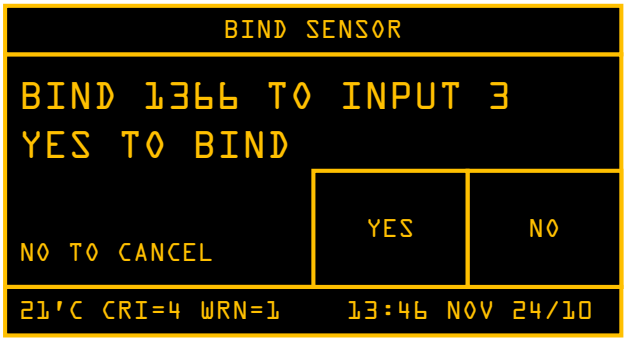
After BIND action is selected, you need to select an input to attach the sensor to. Attaching to an input allows the information to be pulled for that individual sensor via MODBUS. The SELECT INPUT screen will highlight the next "available" input and will also show the current bound sensor inputs. Choose **SELECT** to attach to next available input or scroll to desired input and SELECT.



The NEST Receiver will request confirmation to bind the sensor to the selected input, tap **YES** or **NO**.

The receiver will jump back to the FREE list screen after the confirmation allowing this process to be repeated.

Repeat this process until all the sensors you would like to bind are bound to the receiver.



If you happen to bind a sensor that you should not have - go to **SENSOR LISTS**. Then choose **BOUND** and scroll to find the sensor that should not have been bound. Select the sensor - then choose to **IGNORE** or **REMOVE**.

IGNORE places the sensor on the ignored list - it can be bound at a later time.

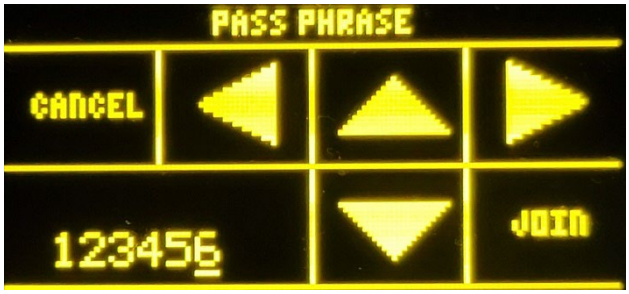
REMOVE- removes the sensor entirely from the system (until the next packet of information is received) allowing another sensor to take its place. There is a functional limit to the number of sensors that can be bound to the system. If the number of sensors in the area is greater than the functional limit, then the remove feature should be used to give the wanted sensor a chance to get on the list.

3.2.4.3 Adding the NEST To an Existing Network

To add the NEST to an existing network. Start the Network ADD process on the NEST that has the network that you would like to add this NEST to.

> MAIN MENU > NETWORK > JOIN NETWORK

Enter the 6-digit numeric pass phrase used on the existing network NEST and press **START**.



3.2.4.4 Removing the NEST From the Network

If you wish to remove the NEST from the Network, select:

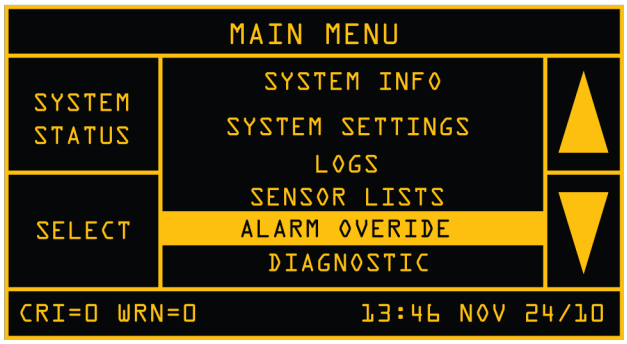
> MAIN MENU > NETWORK > CLEAR NETWORK

The previous network connection information will be removed from the NEST and all SENSOR LISTs will be cleared.

The NEST will automatically create a new network that devices can be connected to. If you wish to have any devices previously connected to the NEST on the new network, they will need to be added by following the procedure in **Attaching a Device to The System**.

3.2.5 Alarm Overide

The ALARM OVERIDE is used to ignore an alarm during the startup process of the machinery. During startup, or restart procedure, some machinery may run rougher than normal. The override provides a waiting period, (usually about 5 minutes), to allow the machinery to get into sync, or natural rhythm, prior to sending out warnings or alarms.



3.2.6 Diagnostic

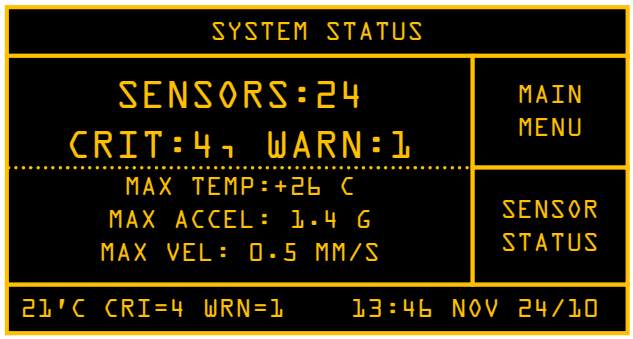
The DIAGNOSTIC info and sensor log are both set to “Disable” as a default.

3.2.7 Configuring Individual Sensors

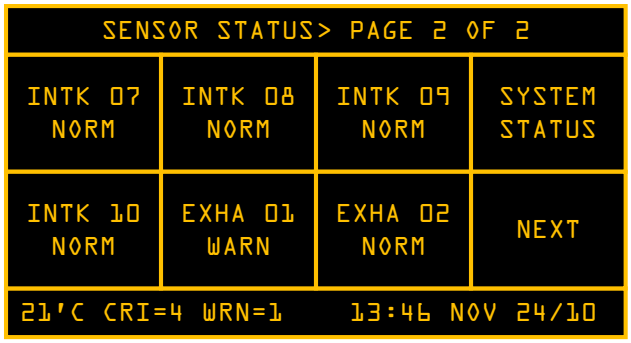
To configure an individual sensor, you must access that particular sensor's SENSOR SETTINGS screen.

To access this screen, follow the instructions, starting from the default SYSTEM STATUS screen.

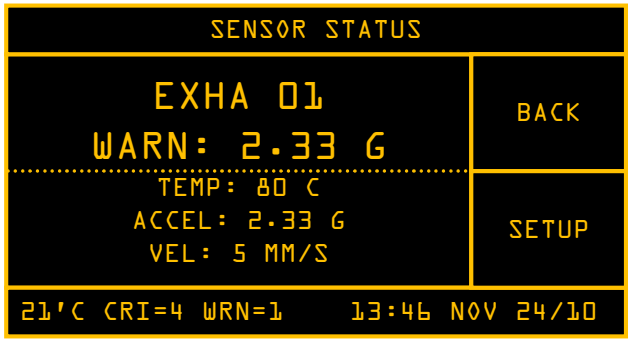
First tap the bottom right **SENSOR STATUS** section of the default screen. This will take you to the sensor status grid screen.



From this screen choose the sensor you would like to configure, (**EXHA 01** for example). Tapping on the sensor square, will take you to a status screen for this individual sensor.

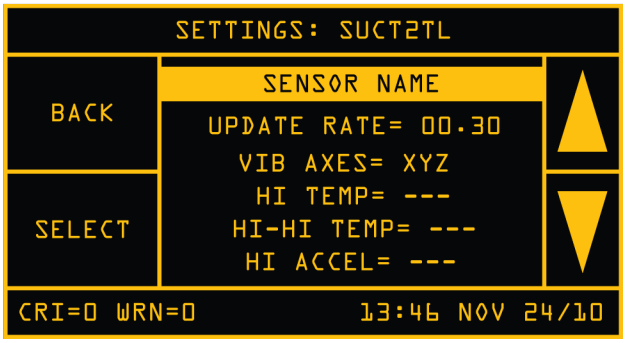


To configure or modify the settings for this sensor, tap the **SETUP** section, (bottom right), from the SENSOR STATUS screen. This will take you to the individual sensor SETTINGS screen.



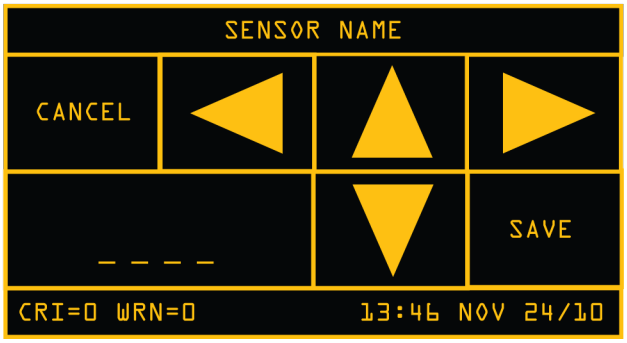
This SETTINGS screen allows the user to modify the sensor name, update rate, choose vibration axes, and configure the warning alarm and critical alarm thresholds for the supported parameters.

To set an individual parameter scroll the **UP/DOWN** arrows to the desired setting, or by tapping either the top or bottom part of the screen. Press **SELECT** when the desired option is highlighted.



3.2.7.1 Setting Sensor Name

The sensors are identified by serial number and can be named to display a descriptive nomenclature of up to 7 characters. To name a sensor, select the **SENSOR NAME** option from the SETUP menu and use the **UP / DOWN** arrows to toggle through the numeric and alphabetic option for each character. The **LEFT / RIGHT** arrows will move the cursor to the next character position. Tap **SAVE** when completed.

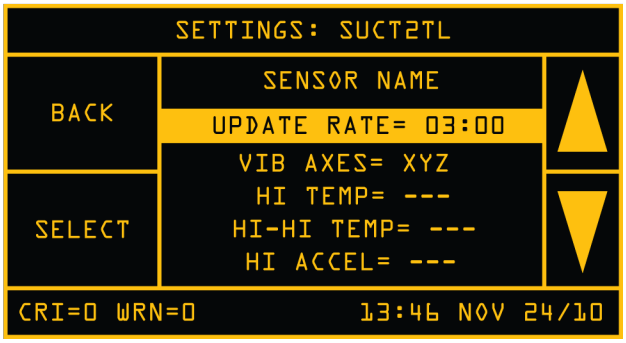


The new name will appear in the SENSOR STATUS windows. Serial numbers remain intact and visible in the SENSOR STATUS>DETAILS window.

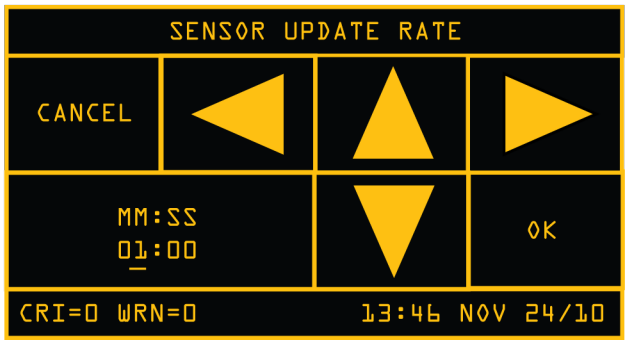
3.2.7.2 Setting Update Rate

The update rate of each sensor can be individually set within a range of 3 seconds to 10 minutes.

To modify the update rate, tap the **SETUP** section from the SENSOR STATUS screen. This takes you to the individual sensor SETTINGS screen. Scroll and highlight **UPDATE RATE** and tap **SELECT.**

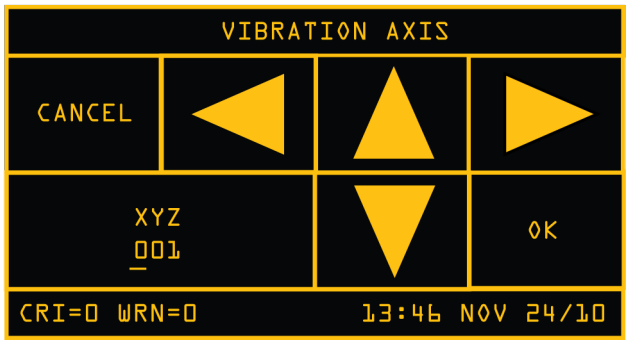


At the SENSOR UPDATE RATE menu use the arrow keys to move the cursor **LEFT / RIGHT** to the desired character position. Use the **UP / DOWN** arrows to add or subtract the minute or second numeric options. Tap **OK** to complete or **CANCEL** to return to settings screen.



*<u>Note:</u> The sensor will finish the current cycle, then complete one full cycle at the previous update rate prior to switching to the new update time. While the request is waiting to be sent, three dots (…) are shown instead of the update interval.

3.2.7.3 Setting Sensor Vibration Axes

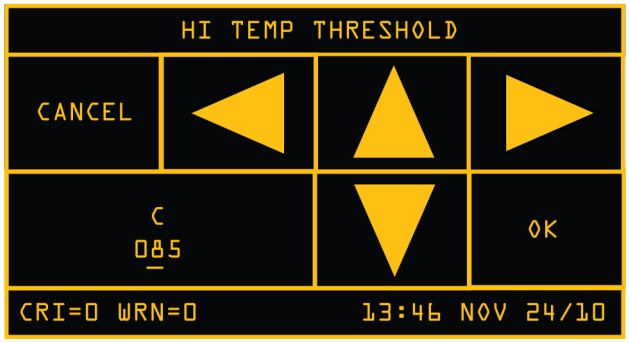


The sensors can be individually configured to measure all three vibration axes (XYZ) combined, a combination of, or independently. To set the preferred option, highlight **VIB AXES** from the sensor SETTINGS screen and tap **SELECT.**

Use the arrow keys to move cursor **LEFT / RIGHT** to the desired character position. Use the **UP / DOWN** arrows to toggle between 1 (enabled) or 0 (ignore).

*Note: The request is sent to the sensor at next complete update cycle. While the request is waiting to be sent, three dots (…) are shown instead of the axis's selection.

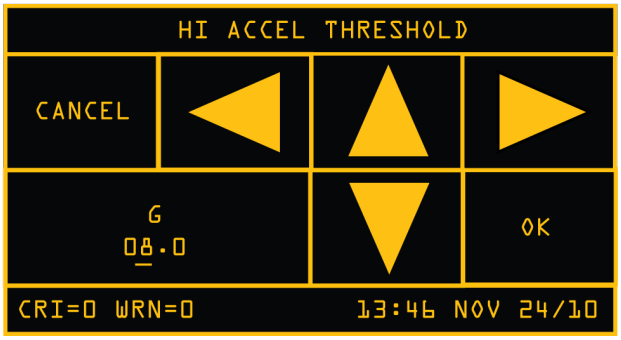
3.2.7.4 Setting Temperature Warning and Critical Alarm Thresholds



To set the desired temperature warning and critical alarm thresholds for each individual sensor, select the desired option from the SENSOR SETTINGS screen, **HI TEMP** / **HI-HI TEMP** / **LO TEMP** / **LO-LO TEMP**. Press **SELECT** when the desired option is highlighted.

The bottom left quadrant of the screen will display the current setting in Celsius (C) or Fahrenheit (F) or DISABLED if there is no current threshold setting. Select or modify the desired temperature by tapping the **UP / DOWN** and **LEFT / RIGHT** arrows. Once the desired number, (temperature), has been selected press **OK** to save, or **CANCEL** the editing and return to the SENSOR SETTINGS screen.

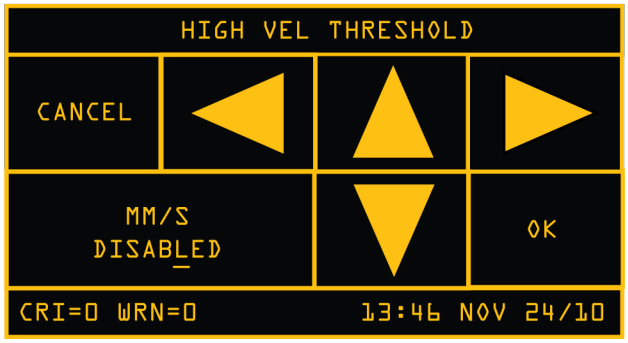
3.2.7.5 Setting Acceleration Warning and Critical Alarm Threshold



To set the desired acceleration warning and critical alarm thresholds for each individual sensor, select the desired option from the SENSOR SETTINGS screen, **HI ACCEL** / **HI-HI ACCEL** / **LO ACCEL** / **LO-LO ACCEL**

The bottom left quadrant of the screen will display the current setting (in G's) or DISABLED if there is no current threshold setting. Select or modify the desired maximum warning or maximum critical value by tapping the **UP / DOWN** and **LEFT / RIGHT** arrows. Once the desired value has been selected press **OK** to save or **CANCEL** the editing and return to the SENSOR SETTINGS screen.

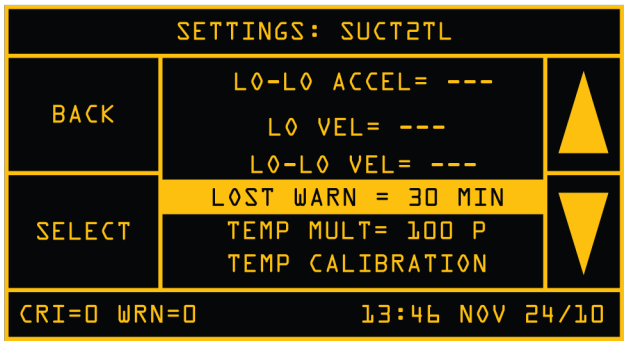
3.2.7.6 Setting Velocity Warning and Critical Alarm Thresholds



To set the desired velocity warning and critical alarm thresholds for each individual sensor, select the desired option from the SENSOR SETTINGS screen, **HI VEL** / **HI-HI VEL** / **LO VEL** / **LO-LO VEL**

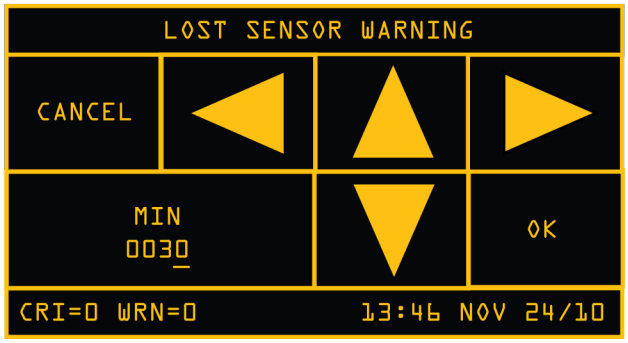
The bottom left quadrant of the screen will display the current setting (in mm/s) or DISABLED if there is no current threshold setting. Select or modify the desired maximum warning or maximum critical value by tapping the **UP / DOWN** and **LEFT / RIGHT** arrows. Once the desired value has been selected press **OK** to save or **CANCEL** the editing and return to the SENSOR SETTINGS screen.

3.2.7.7 Setting Sensor Lost Warning



A warning can be issued to alert that a sensor has not reported to the NEST Receiver for a pre-determined timeframe.

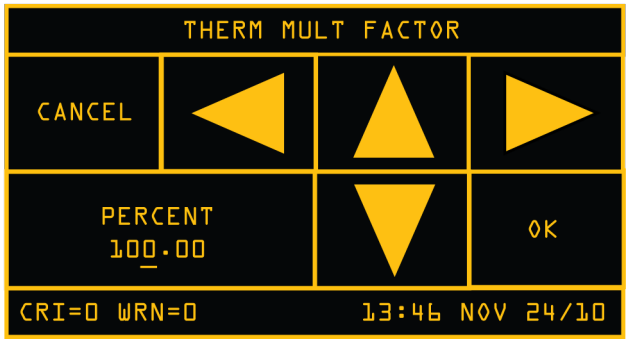
To set the amount of elapsed time a sensor can go without reporting, scroll down to, and highlight the **LOST WARN** parameter, and tap **SELECT** to access the LOST SENSOR WARNING screen.



The bottom left quadrant of the screen will display the current setting (in minutes) or 0000 if no setting. Tap the **UP / DOWN** and **LEFT / RIGHT** arrows to set the desired value and **OK** to save. Press **CANCEL** to cancel the editing and return to the SENSOR SETTINGS screen.

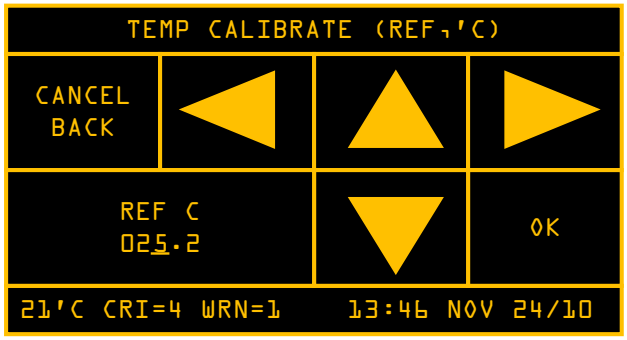
3.2.7.8 Setting Temperature Multiplier Factor

To change the default setting highlight the parameter and modify the PERCENT factor using the UP/DOWN and LEFT/RIGHT arrows. Tap **OK** to save.



3.2.7.10 Temperature Calibration

To set from the settings screen, scroll to, and select **TEMP CALIBRATION** to calibrate the sensor temperature reading to a reference reading. Using the UP/DOWN and LEFT/RIGHT arrows enter the reference reading from an external device such as thermometer gun. Tap on **OK** to save the calibration or tap on **CANCEL** to return to the settings screen.



Example: If the WASP™ reads 23 °C and the thermometer gun you are reading reads 26 °C, set the REF point to 26 °C for that sensor. This automatically applies a preset multiplier to the sensor ensuring accuracy.

4. Maintenance

4.1 Rear Cover

The rear cover of the NEST receiver should remain in place during operation. Do not remove except to access the NEST circuit board when necessary. Replace rear cover upon completion of task.

4.2 Replacing Batteries

The BossPac NEST™ Receiver uses a 3V Lithium Battery to maintain clock and memory function. After several years of use the battery may need to be replaced. Use a standard CR2032 Lithium Coin Cell. In some models the battery is a component of the circuit board and replacement is not necessary.

WARNING – DO NOT CONNECT OR DISCONNECT BATTERY UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.

NE PAS BRANCHER OU DÉ-BRANCHER LA BATTERIE DANS UN ENVIRONMENT FLAMMABLE.

5. Contact Info

BossPac engineers can be reached at:

Email: support@bosspac.com **Web:** www.bosspac.com

Phone: +1 403-216-1226 **Toll Free**: 866-616-1226

BossPac Engineering & Technology

1450 28th Street NE, Bay 8, Calgary, Alberta, CANADA T2A 7W6

FCC & IC Statements

FCC Class B Part 15

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.

Changes or modifications not expressly approved by BossPac Engineering Technology Inc. may void the user's authority to operate the equipment.

ISED RSP-100 Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

FCC/IC RF Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The antenna(s) used for this equipment must be installed to provide a separation distance of at least 8 inches (20cm) from all persons.

Cet équipement est conforme à l'exposition aux radiations de FCC et d'Industrie Canada établies pour un environnement non contrôlé. L'antenne (s) utilisé pour cet équipement doit être installé pour fournir une distance d'au moins 20cm à partir de toutes les personnes.