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About This Document

This document describes Safety, Data collection, Web and OPC Interface for the OneWireless Gauge Reader Application Gateway (WGRAG). There is also a Trouble shooting section and Technical Specifications.

Honeywell does not recommend using devices for critical control where there is a single point of failure or where single points of failure result in unsafe conditions. The OneWireless Gauge Reader is targeted at open loop control, supervisory control, and controls that do not have environmental or safety consequences. As with any process control solution, the end-user must weigh the risks and benefits to determine if the products used are the right match for the application based on security, safety, and performance. Additionally, it is up to the end-user to ensure that the control strategy sheds to a safe operating condition if any crucial segment of the control solution fails.

Reference Information

<table>
<thead>
<tr>
<th>Document Name</th>
<th>Document ID</th>
<th>Revision Number</th>
<th>Publication Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>OneWireless Gauge Reader Application Gateway Manual</td>
<td>34-XY-25-33</td>
<td>1</td>
<td>April 09</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>July 09</td>
</tr>
</tbody>
</table>

References

The following list identifies all documents that may be sources of reference for material discussed in this publication.

<table>
<thead>
<tr>
<th>Document Name</th>
<th>Document Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>OneWireless Gauge Reader Specification</td>
<td>34-XY-03-37</td>
</tr>
<tr>
<td>OneWireless Gauge Reader Installation Manual</td>
<td>34-XY-25-32</td>
</tr>
<tr>
<td>OneWireless Gauge Reader User Manual</td>
<td>34-XY-25-31</td>
</tr>
<tr>
<td>OneWireless Gauge Reader Model Selection Guide</td>
<td>34-XY-16-80</td>
</tr>
</tbody>
</table>

World Wide Web

Honeywell Solution Support Online:
http://www.honeywell.com/ps

Elsewhere

Call your nearest Honeywell office.

Training Classes

Honeywell Automation College:
http://www.automationcollege.com
Symbol Definitions
The following table lists those symbols used in this document to denote certain conditions.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATTENTION:</td>
<td>Identifies information that requires special consideration.</td>
</tr>
<tr>
<td>TIP:</td>
<td>Identifies advice or hints for the user, often in terms of performing a task.</td>
</tr>
<tr>
<td>CAUTION:</td>
<td>Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.</td>
</tr>
<tr>
<td>CAUTION:</td>
<td>Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.</td>
</tr>
<tr>
<td>CAUTION symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.</td>
<td></td>
</tr>
<tr>
<td>WARNING:</td>
<td>Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death.</td>
</tr>
<tr>
<td>WARNING symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.</td>
<td></td>
</tr>
<tr>
<td>WARNING, Risk of electrical shock:</td>
<td>Potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 VDC may be accessible.</td>
</tr>
<tr>
<td>ESD HAZARD:</td>
<td>Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices.</td>
</tr>
<tr>
<td>Protective Earth (PE) terminal:</td>
<td>Provided for connection of the protective earth (green or green/yellow) supply system conductor.</td>
</tr>
<tr>
<td>Functional earth terminal:</td>
<td>Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national local electrical code requirements.</td>
</tr>
<tr>
<td>Earth Ground: Functional earth connection. NOTE:</td>
<td>This connection shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.</td>
</tr>
<tr>
<td>Chassis Ground:</td>
<td>Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.</td>
</tr>
</tbody>
</table>

continued
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE</td>
<td>For radio equipment used in the European Union in accordance with the R&amp;TTE Directive the CE Mark and the notified body (NB) identification number is used when the NB is involved in the conformity assessment procedure. The alert sign must be used when a restriction on use (output power limit by a country at certain frequencies) applies to the equipment and must follow the CE marking.</td>
</tr>
</tbody>
</table>
# Table of Contents

1) **INTRODUCTION** .......................................................................................................................... I

2) **SAFETY PRECAUTIONS** ........................................................................................................... I

3) **OVERVIEW OF THE WGR APPLICATION GATEWAY** ......................................................... I
   - Components ........................................................................................................................................ 2
   - Planning for Installation ................................................................................................................... 2

4) **WEB INTERFACE** ....................................................................................................................... 3
   - Accessing the Web Application and General Navigation ............................................................... 3
   - Checking Node Readings ................................................................................................................. 4
   - Configuring Nodes .......................................................................................................................... 6
   - Checking the Node Status .............................................................................................................. 10
   - Using Alarms ................................................................................................................................. 10
   - Working with Graphs .................................................................................................................... 13
   - Using Historical Data Tables ........................................................................................................ 16

5) **DATA HISTORY** ......................................................................................................................... 18

6) **OPC INTERFACE** ...................................................................................................................... 19

7) **TROUBLESHOOTING** ............................................................................................................... 20

8) **TECHNICAL SPECIFICATIONS** .............................................................................................. 20

9) **WARRANTY INFORMATION** ................................................................................................. 20

10) **SUPPORT SERVICES / CONTACT INFORMATION** ............................................................... 22
1) Introduction

Thank you for purchasing the Honeywell OneWireless Gauge Reader System. A core component of this system is our OneWireless Gauge Reader WGR Application Gateway (WGRAG). Please read this guide thoroughly before using the gateway.

2) Safety Precautions

- Do not expose the WGR Application Gateway to water.

Do not try to repair yourself as it contains no user-serviceable parts. Contact a qualified service technician for repairs. See the Support section below for details.

Make sure the gateway is installed in a temperature-controlled environment.

3) Overview of the WGR Application Gateway

The Honeywell WGR Application Gateway (WGRAG), is a flexible industrial gateway that collects Honeywell OneWireless Gauge Reader data points and enables access to the readings from a variety of user interfaces. The WGR Application Gateway can be used as part of an overall existing systems infrastructure such as distributed control, supervisory control or asset management system or as a stand alone station.

Through the industry standard OPC Data Access protocol, the data can be connected to your existing plant systems. The data can also be viewed from any computer on the intranet using a standard web browser.
Components
The WGR Application Gateway comes with the following components:

![WGR Application Gateway](image1)
![Power Cord](image2)

Figure 2: WGR Application Gateway components

Planning for Installation
1) Application Gateway location selection
   a) The WGR Application Gateway will need to be located in a climate controlled room, preferably where other servers are housed.
   b) The Application Gateway can be mounted on the wall with an optional wall mounting bracket shown in Figure 3, or it can be placed on a sturdy horizontal surface.

2) The Application Gateway will need access to a power outlet and an Ethernet connection.

3) The WGR Application Gateway requires a static IP Address assignment from the IT department, so that the Application Gateway can be easily accessed by both the WGRs and by any clients retrieving data from the Application Gateway.

4) The unit has two Ethernet ports.
   a) The top port is configured as a Static IP port, with a default IP address of 192.168.254.1, and is intended to be connected to the customer LAN.
   b) The bottom port is configured for DHCP, and is only intended to be used for connecting a laptop during installation or for diagnostics.

5) The WGRAG can optionally be connected to an uninterruptable power source (UPS) in order to ensure that there is no loss or corruption of data in the event of a facilities power outage.

6) An optional WGR wall mounting bracket can be ordered for more convenient installation.

![WGR Application Gateway Wall Mount Bracket](image3)

Figure 3: WGR Application Gateway Wall Mount Bracket
4) Web Interface

The Honeywell WGR Web Application is a browser-based program that enables you to remotely monitor, configure, and review data from Honeywell OneWireless Gauge Readers. This section explains how to read and edit data points, set up alerts, graph and export data, and troubleshoot common problems.

Accessing the Web Application and General Navigation

To access the Honeywell Web Application, open a web browser on any computer connected to the same local area network (LAN) as the WGR Application Gateway. Type in the static IP address or host name of the WGRAG in the web browser address field, and click Enter.

Refer to Figure 4 for an example.

![Figure 4: Connect to the WGR Application Gateway Web Interface](image)

Once connected, the application opens to the READINGS page (by default), where you can find the latest data and status information on every node in the system.

At the top of the READINGS page and every page in the application is a Main Menu bar with tabs that enable you to navigate through the different pages in the program. (See Figure 5.)

![Figure 5: Main Menu bar used to navigate between pages](image)

Also on the top of the READINGS page is the Alarm Status button. The button turns red when a node reading has passed above or below a preset control limit threshold, or when a low battery alarm is detected. By clicking on the Alarm Status button, you can view the alarm history and also reset the alarms. This is described in detail later in the document.
Checking Node Readings

The **READINGS** page enables you to check the summary of node readings. It also provides other detailed information, such as the time of the reading, as well as the upper and lower control limits and the status of a particular node.

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>NodeID</th>
<th>Description</th>
<th>Reading</th>
<th>Units</th>
<th>LCL</th>
<th>UCL</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/30/2009 15:46:20</td>
<td>20</td>
<td>LAM 4520 #20</td>
<td>91</td>
<td>PSI</td>
<td>0</td>
<td>100</td>
<td>OK</td>
</tr>
<tr>
<td>03/30/2009 16:40:09</td>
<td>9</td>
<td>LAM 4520 #9</td>
<td>78</td>
<td>PSI</td>
<td>90</td>
<td>100</td>
<td>Lower Ctl Limit</td>
</tr>
<tr>
<td>03/30/2009 16:43:51</td>
<td>51</td>
<td>LAM 4520 #51</td>
<td>86</td>
<td>PSI</td>
<td>10</td>
<td>40</td>
<td>Low Battery</td>
</tr>
<tr>
<td>03/30/2009 16:51:18</td>
<td>118</td>
<td>LAM 4520 #5</td>
<td>100</td>
<td>PSI</td>
<td>90</td>
<td>100</td>
<td>Inactive</td>
</tr>
<tr>
<td>03/30/2009 16:51:38</td>
<td>18</td>
<td>LAM 4520 #18</td>
<td>100</td>
<td>PSI</td>
<td>90</td>
<td>100</td>
<td>Error - 28</td>
</tr>
</tbody>
</table>

Figure 6: Readings page shows summary of all nodes

Get Node Readings

To check the node readings, click on **READINGS** in the Main Menu bar. The **READINGS** page appears (see Figure 6) with the following information:

- **Timestamp**: Time when the last reading was taken.
- **NodeID**: Identification number that your Honeywell Field Representative originally assigns to a node for convenient reference.
- **Description**: A brief description of the node, for example, “Emergency Generator” or “Water Inlet Pressure.”
- **Reading**: Most recent reading taken from the node.
  - Your Field Service Representative configures the update rate of each node when the system is installed.
- **Units**: Unit of measurement that applies to the reading.
- **LCL**: Lower control limit.
  - When a node reading falls below this value, the system signals an alert. (See “Setting Up the Alarm.”)
- **UCL**: Upper control limit.
  - When a node reading rises above this value, the system signals an alert. (See “Setting Up the Alarm.”)
- **Status**: Indicates the general operating status of the node.
  - Values are: OK, Inactive, Error, Lower Ctl Limit, Upper Ctl Limit, Low Battery

Based on the status, individual rows are also highlighted to provide an extra visual cue. See Table 1 for a detailed description of each status and the highlighted color.
### Table 1: Status Column Details

<table>
<thead>
<tr>
<th>Status</th>
<th>Highlight Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OK</td>
<td>-</td>
<td>The reading was received without error and is within limits.</td>
</tr>
<tr>
<td>Error</td>
<td>Red</td>
<td>The WGR reported an error code. Consult with your installer to rectify any persistent error conditions.</td>
</tr>
<tr>
<td>Upper Ctr Limit (UCL)</td>
<td>Orange</td>
<td>If the reading exceeds the configured upper control limit. (Note: Each node has a separate control limit.)</td>
</tr>
<tr>
<td>Lower Ctr. Limit (LCL)</td>
<td>Orange</td>
<td>If the reading drops below the configured lower control limit. (Note: Each node has a separate control limit.)</td>
</tr>
<tr>
<td>Inactive</td>
<td>Light Blue</td>
<td>The node has stopped reporting data to the gateway for a period of time (4 * sample interval).</td>
</tr>
<tr>
<td>Low Battery</td>
<td>Yellow</td>
<td>The battery level has fallen below the low battery notification trip point.</td>
</tr>
</tbody>
</table>

**Tip:** Similar to standard Web pages, the Honeywell Web Application pages are static (they don’t update automatically). To get updated values for any new readings, you must reload the page by pressing F5 on your keyboard or clicking the Refresh button on your web browser.

**Sort Readings**
You can temporarily sort a column of readings by ascending or descending value by simply clicking on any column heading that is underlined. The system does not save the sorting option selected, however, and reverts back to the default view when the page reloads.
Configuring Nodes

You can add (commission), delete, and edit node configurations by going to the CONFIGURATION page. This page is password restricted, so that only the system administrator or authorized installer can access it.

Access Node Configurations

To access the WGR Node Configuration screen:

1) **Click CONFIGURATION in the Main Menu.**
   a) A dialog box (Figure 7) appears asking for a user name and password.

![Figure 7 : Administrator login page](image)

2) **In the dialog box, enter a user name and password, and click Log In.**
   a) The CONFIGURATION page (Figure 8) appears. It has two clearly defined sections. A top section, where you can add and delete individual or multiple nodes. The bottom section displays all the nodes in the system that are visible to the gateway.

![Figure 8 : Main Configuration page to add, edit, or delete nodes](image)

Delete a Node

To delete a node, enter the NodeID and click on the Delete button. Please note this action will delete the node and all of its associated historical data permanently.
Add (Commission) a Node
There are three options for adding (commissioning) a new node to the gateway:

Option 1)
Nodes are configured by the Configuration Tool, and they begin attempting to contact the gateway when configuration is complete. These nodes are auto-detected and added to the Node list by the gateway as uncommissioned nodes. All uncommissioned nodes will have a temporary NodeID automatically assigned by the WGRAG with a value of 2000 or above.

The user can commission the node by assigning a permanent NodeID between 1-1000. Click on the Edit link for the corresponding node in the table, which opens the dialog shown in Figure 11. Enter a new permanent NodeID value in the “Commission as new NodeID” box, and then click the Commission button. The Node is now officially added to the gateway and is fully commissioned. Please note, upon commissioning of the node, the temporary uncommissioned node and its temporary historical data is deleted.

Option 2)
Individual nodes can be manually added to the system prior to having them communicate to the gateway for the first time. Note that this requires manual entry of several additional pieces of data, which would otherwise be automatically entered in Option 1. The dialog box in the top section of the Configuration page enables adding or deleting nodes. (See Figure 9.)

To add a node, enter the new NodeID (between 1-1000) and press the Add button. This will bring up a pop-up dialog box (See Figure 11). This dialog box will allow you to enter details about the node, so that when it does communicate to the gateway for the first time, it will automatically be fully commissioned without further intervention. Please refer to the details in the section “Edit a Node” below for additional information about each parameter field.

Option 3)
Multiple nodes can be manually added to the gateway efficiently using a text file method. Simply enter the properly formatted node information to the NodeConfiguration.txt file on the gateway. This file is a tab-separated text file that lists all of the configuration parameters. An example file is shown in Figure 10. First click the Download button on the Configuration page in order to create the NodeConfiguration.txt file on your PC. Then make your desired edits, and use the Upload button to load the new nodes and parameters from the edited configuration file.

Figure 9 : Configuration page dialog box

Figure 10 : Example NodeConfiguration.txt (tab-separated) file
Edit a Node
To edit a node, go to the table in the lower half of the CONFIGURATION page. Click on the Edit link next to the node. This will launch a Node Configuration pop-up dialog box as shown in Figure 11.

Table 2 describes the node configuration parameters. After editing the parameters, the Ok button must be clicked to save the newly edited fields. To cancel the edits, simply click on the Close button to close the dialog box without saving.

**Table 2: Node Configuration Details**

<table>
<thead>
<tr>
<th>NodeID</th>
<th>The NodeID of the Device, which is a short and convenient ID used to reference the node when creating graphs and tables.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC Address</td>
<td>Specifies the unique MAC Address of the node. This value must contain a valid MAC address for the system to function properly when the node is commissioned.</td>
</tr>
<tr>
<td>Commission as new NodeID</td>
<td>Used to assign a permanent NodeID to an uncommissioned node. The new NodeID needs to be set between 1-1000.</td>
</tr>
<tr>
<td>Commission Button</td>
<td>Click to commission a new Node.</td>
</tr>
<tr>
<td>Name</td>
<td>Basic text description of the node</td>
</tr>
<tr>
<td>Unit</td>
<td>Unit of measurement for the monitored gauge. Enter any short descriptive string, such as PSI, Deg C, kPa, etc. A binary type may also be specified for special situations (TRUE/FALSE, ON/OFF, or ACTIVE/INACTIVE).</td>
</tr>
<tr>
<td>Node Math function</td>
<td>Allows simple computations to be made on two physical node readings, by referencing their two NodeIDs. The resulting value is displayed as a virtual node, by creating a new NodeID for displaying the result of the math function.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal Precision</td>
<td>Decimal Precision specifies the number of decimal places to display on the readings page for the node’s data. If no precision is specified, the number of decimal places will automatically be determined by the system for the node.</td>
</tr>
<tr>
<td>Alarm Excursion #</td>
<td>This is the number of consecutive times the node data limit must be exceeded before an Alarm condition is triggered.</td>
</tr>
<tr>
<td>Alarm Threshold Min</td>
<td>The lower control limit value. If the node reading drops below this number, an alarm condition is created.</td>
</tr>
<tr>
<td>Alarm Threshold Max</td>
<td>The upper control limit value. If the node reading rises above this number, an alarm condition is created.</td>
</tr>
<tr>
<td>WGR Configuration Min</td>
<td>This value is the minimum reading value on the gauge face. This value must be accurate for each gauge in order for the system to display the proper reading.</td>
</tr>
<tr>
<td>WGR Configuration Max</td>
<td>This value is the maximum reading value on the gauge face. This value must be accurate for each gauge in order for the system to display the proper reading.</td>
</tr>
<tr>
<td>IP Address</td>
<td>IP Address of the WGR device. This will automatically be updated by the WGRAG when it receives data packets from the node.</td>
</tr>
<tr>
<td>OK Button</td>
<td>Apply the changed settings to the node.</td>
</tr>
<tr>
<td>Close Button</td>
<td>Closes the dialog box</td>
</tr>
</tbody>
</table>

To see the change log of the nodes that have been added/deleted/edited, click on the icon in the upper right portion of the web page.
Checking the Node Status

The OneWireless Gauge Reader periodically transmits its health status to the WGR Application Gateway. The health status can be viewed by loading the **STATUS** page. This read-only screen (Figure 12) displays the status conditions of configured nodes on the Application Gateway. The status descriptions are shown in Table 3.

![Figure 12 : Health information is displayed in the Node Status page](image)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Status</td>
<td>The battery level as a percentage of full-charge.</td>
</tr>
<tr>
<td>Temperature</td>
<td>The internal temperature (Celsius) of the WGR</td>
</tr>
<tr>
<td>RSSI</td>
<td>The Received Signal Strength Indicator (RSSI). This is an indicator of wireless signal strength based on messages received by the WGR from its associated Multinode.</td>
</tr>
</tbody>
</table>

Using Alarms

The Honeywell Web Application provides alerts for potential problems as they arise in the monitored nodes. The system triggers an alarm when a node reading exceeds an upper control limit or drops below a lower control limit. When an alarm is triggered, the **Alarm Status** button on the **READINGS** page turns red (Figure 13). Each alarm event is stored in the **ALARM HISTORY** log, and a summary of nodes that have triggered an alarm condition are shown on the **ALARM STATUS** page.

![Figure 13 : Alarm Status button on the Readings page](image)
View Alarm Status
To view the current status of triggered alarms, click on the **Alarm Status** button on the **READINGS** page to bring up the **ALARM STATUS** page. (See Figure 14.) The **ALARM STATUS** page displays which nodes had triggered an alarm, and what was the reason for the alarm (above UCL, below LCL, or low battery). Nodes can be cleared from the **ALARM STATUS** page by resetting the alarm condition for each node or for all nodes. This is done by clicking the **Alarm Reset** button, to load the **ALARM RESET** web page.

![Figure 14 : Alarm Status page](image)

Reset Alarms
Once an alarm is triggered, it must be reset in order to receive new alarm indications. This is designed to avoid continuous alarm indications every time a new reading is received.

From either the **ALARM HISTORY** page, or the alarm status page, click on the **Alarm Reset** button. This will take you to the **ALARM RESET** page (Figure 15).

![Figure 15 : Alarm Reset page](image)

**To reset all alarms:**
1) Click the **Reset All** button.
   a) This will reset the alert status for all nodes.

**To reset alarms for individual nodes:**
1) Click the Reset button in the row corresponding to the desired node
   a) This will reset the alert status for only this node.

View Alarm History
To view a history of all past alarms in the system, click on the **Alarm History** item in the menu bar to bring up the **ALARM HISTORY** page (See Figure 16).
To specify an alarm history to display:

1) Specify the time period.
   a) In the dialog box, enter a value for Start Date & Time and End Date & Time.
   b) The format is m/dd/yyyy hh:mm:ss AM/PM

2) Select nodes to view.
   a) There are several ways to specify the desired nodes to display.
      i) You may type in a comma separated list of NodeIDs ("1,2,3") into the NodeID field
      ii) Type in a range of NodeIDs ("1-3") into the NodeID field
      iii) Use the pull-down menu in the List Of Nodes field, and click the down-arrow button to copy
           them to the NodeID field
      iv) Check the box next to Select All Nodes, which will populate the NodeID field with all
          commissioned nodes in the system.

3) Click the Update button to display the results.
   a) The alarm history displays at the bottom of the screen. (See Figure 17)

4) To optionally export the data, click the Export to Excel button.
   a) The system creates a data file and downloads it in an Excel format.

---

**Figure 17**: The Alarm History page shows all past alarms for a specified period you
Working with Graphs

The Honeywell Web Application provides basic graphing capability for the stored node readings data.

Create a Graph

To generate a graph from one or more node readings:

1) Click on Graph in the Main Menu bar to load the GRAPH web page.
   a) The GRAPH page appears.
   b) It includes two sections: a dialog box at the top (see Figure 18) and a graph portion at the bottom.

![Figure 18: Graph Dialog Controls](image)

1) In the graph dialog box, enter values for Start Date & Time and End Date & Time.
   a) The format includes both date and time as m/dd/yyyy hh:mm:ss AM or PM.
   b) You may also click on one of the numbered buttons next to “Days” in order to quickly specify a common time range from 1-30 days prior to the End Data & Time.

2) Specify the NodeIDs to graph in the NodeID text field.
   a) There are several ways to specify the desired nodes to display.
      i) You may type in a comma separated list of NodeIDs (“1,2,3”) into the NodeID field
      ii) Type in a range of NodeIDs (“1-3”) into the NodeID field
      iii) Use the pull-down menu in the List Of Nodes field, and click the down-arrow button to copy them to the NodeID field
      iv) Check the box next to Select All Nodes, which will populate the NodeID field with all commissioned nodes in the system.

3) Select from the additional options shown in Table 4.
<table>
<thead>
<tr>
<th><strong>Table 4 : Additional graphing options</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auto Scale</strong></td>
</tr>
<tr>
<td><strong>Min</strong></td>
</tr>
<tr>
<td><strong>Max</strong></td>
</tr>
<tr>
<td><strong>Y-Axis Zoom</strong></td>
</tr>
<tr>
<td><strong>Tooltip</strong></td>
</tr>
<tr>
<td><strong>Log</strong></td>
</tr>
<tr>
<td><strong>Legend</strong></td>
</tr>
<tr>
<td><strong>Reset Zoom</strong></td>
</tr>
</tbody>
</table>

4) Click Show Graph to display the graph.

a) An X-Y graph appears at the bottom of the page for the requested data range. (See Figure 19.)

**Tip:** If you click Clear Graph, all data in the dialog box clears, except for the NodeID list. If you want to remove a single node from the graph, you must look up the NodeID and then go into the list and delete it manually.

**Figure 19 : A sample graph showing captured data**
Graph Legend
When graphing multiple nodes, the graph legend will have the nodes listed in order from the highest reading value to lowest readings value based on the last displayed value of each series. This allows easier identification of each data series when graphing many nodes.

To improve graphing performance, very large sets of data will have some data compression. To ensure all desired points are graphed, adjust the Start Date and End Date to manually zoom into any area of interest for maximum detail.

Identify a Point
Tooltips can be used to conveniently determine the exact timestamp and data value for any point on the graph.

1) Enable Tooltips at the top of the page, which will cause the page to re-load with all of the additional required information.

2) Hover the mouse cursor over a point on the graph, and a small pop-up box will appear showing the corresponding NodeID, timestamp, and reading value.

Zoom
To zoom-in to a region of the graph, point the mouse cursor to the starting location on the graph, and then hold down the left button and drag to the right to define the zoom region, then release the button. You will be able to scroll the graph left and right to see the entire data set from the originally specified date range.

By default, zooming occurs in the X axis only. To zoom in on both the X and Y axis, first enable the “Y-Axis Zoom” option. When dragging the mouse cursor to define the zoom region, start with the upper left corner, and drag to the lower right corner of the desired zoom area.
Using Historical Data Tables

The Honeywell Web Application provides the ability to display historical data in table format. The historical data may also be exported and downloaded in Excel format.

![Honeywell Web Application](image)

**Figure 20**: Table page allows you to list the data and export to Excel

Create a Table

To generate a table from several node readings:

1. Click on Table History in the Main Menu bar to load the **TABLE HISTORY** web page.
   - It is very similar to the **GRAPH** page, with a dialog box on the top and data displayed at the bottom.

2. In the dialog box, enter values for Start Date & Time and End Date & Time.
   - The format includes both date and time as m/dd/yyyy hh:mm:ss AM or PM.
   - You may also click on one of the numbered buttons next to “Days” in order to quickly specify a common time range from 1-30 days prior to the End Date & Time.

3. Specify the NodeIDs to display in the NodeID text field.
   - There are several ways to specify the desired nodes to display.
     - You may type in a comma separated list of NodeIDs (“1,2,3”) into the NodeID field
     - Type in a range of NodeIDs (“1-3”) into the NodeID field
     - Use the pull-down menu in the List Of Nodes field, and click the down-arrow button to copy them to the NodeID field
     - Check the box next to Select All Nodes, which will populate the NodeID field with all commissioned nodes in the system.

4. A table appears at the bottom on the screen displaying the following historical data parameters
   - Timestamp: Timestamp of data reading
   - Node ID: The unique ID number of the WGR node
   - Description: The name of the node
   - Reading: The value read by the WGR
e) Units: The units of the gauge (e.g. PSI)
f) Above UCL: Indicates if an over-limit alarm occurred
g) Below LCL: Indicates if a below-limit alarm occurred
h) LCL: The lower control limit (LCL) value
i) UCL: The upper control limit (UCL) value

5) To optionally export the data table, click the **Export to Excel** button.
   a) The system creates an Excel file and downloads it onto your computer.
5) Data History

The OneWireless Gauge Reader Application Gateway stores data from gauge readers for a period of 12 months. After 12 months, data is cleaned from the application gateway’s database on a first in, first out priority. Historical data is periodically stored in the WGRAG in the “c:\wgrlog” folder every week. Users can manually restore this archived historical data to a MSSQL database, if desired. Alternatively, data can be preserved by exporting to an Excel file from the Web application.

When OPC Server is used and the gauge reader data is regularly accessed by other client systems such as Experion or Field Device Manager, data retention is determined by the policies set for these individual client applications.
6) OPC Interface

To interface to existing plant infrastructure, the WGR Application Gateway contains an OPC Data Access server. Please consult with your Honeywell support representative for interfacing to the WGRAG using OPC.

The name of the OPC server on the WGRAG is "WGR.OPC.1"

The following OPC tags are available:

- **WGRNodeID**: The configured WGR NodeID
- **WGRReading**: WGR device reading
- **WGRUnit**: WGR reading unit type (E.g. PSI, C, F)
- **WGRBatteryStatus**: WGR battery status reading (%)
- **WGRTemperature**: WGR internal temperature reading (C)
- **WGRRSSI**: Received Signal Strength Indicator
- **WGRTimestamp**: Timestamp when the data arrived
- **WGRIPAddress**: WGR IP address
- **WGRMACAddress**: WGR device MAC address
- **WGRFriendlyName**: WGR device friendly name
7) Troubleshooting
The most common problems with the WGR Application Gateway are listed below:

**The web page displays an error message.**
This happens sometimes when the cached version of the web page on a local PC is not compatible with the latest version on the Application Gateway. Try pressing CTL+F5 several times, which should force the web browser on your local PC to refresh the web page from the Application Gateway.

**I’m not able to create a graph. When I click, “Show Graph,” nothing happens.**
Generally, this means no data was available. Check your start and end time to make sure that it includes data.

**The graph takes a long time to load**
This typically means that a large amount of data was specified. Try reducing the date range, or number of nodes, or disable Tooltips in order to reduce the amount of data to load and render.

**The readings on the gateway do not match the readings on the device.**
The readings are based on a percentage of full scale determined from the “MinValue” and “MaxValue” parameters entered in the CONFIGURATION page. If the “MinValue” and “MaxValue” are not configured correctly on both the WGR and WGR Application Gateway, then the “Reading” value may be incorrect.

If you have additional problems, please contact us. See the Support section below for contact information.

8) Technical Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Interface</td>
<td>Built in Web Server for easy browser access to data and trending</td>
</tr>
<tr>
<td>Available Data Protocols</td>
<td>OPC Data Access Server</td>
</tr>
<tr>
<td>Approvals</td>
<td>CE and RoHS Compliant</td>
</tr>
<tr>
<td>Power Supply</td>
<td>90-240 VAC</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0°C to 45°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-20°C to +80°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>10-90%, non-condensing</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Ruggedized aluminum industrial chassis</td>
</tr>
<tr>
<td>Dimensions</td>
<td>12.0 in x 8.3 in x 4.1 in (300 mm x 210 mm x 104.5 mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>14 lbs (6.3 kg)</td>
</tr>
</tbody>
</table>

9) Warranty Information
Every product comes with a full one-year parts and labor warranty.
10) Support Services / Contact Information

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

**ASIA PACIFIC**

**Control Products**
- **Asia Pacific Headquarters**
  - Phone: +(65) 3359-2828
  - Fax: +(65) 6445-3033

**Asian Pacific Global Technical Support**
- **Field Instruments**
  - Phone: +65 6580 3156
  - Fax: +65 6445-3033
- **Process Instruments**
  - Phone: (603) 76950 4777
  - Fax: (603) 7958 8922
- **Australia**
  - Phone: +(61) 7-3840 6481
  - Toll Free 1300-36-39-36
  - Toll Free Fax: 1300-36-04-70
- **China – PRC – Beijing**
  - Honeywell Ltd.
  - Phone: +(86-10) 8458-3280
  - Fax: +(86-10) 8458-4650
- **China – PRC – Shanghai**
  - Honeywell China Inc.
  - Phone: (86-21) 5257-4568
  - Fax: (86-21) 6237-2826
- **China – PRC – Xi’an**
  - Honeywell China Ltd.
  - Phone: +(86-29) 8833-3000
  - Fax: +(86-29) 8833-7489
- **China – PRC – Shenzhen**
  - Honeywell Ltd.
  - Phone: +(86) 755-2518-1226
  - Fax: +(86) 755-2518-1221
- **Indonesia**
  - PT Honeywell Indonesia
  - Phone: +(62) 21-535-8833
  - Fax: +(62) 21-5367 1008
- **India Automation India Ltd.**
  - Honeywell Ltd.
  - Phone: +(91) 9603-9400
  - Fax: +(91) 9603-9600
- **Japan**
  - Honeywell Inc.
  - Phone: +(81) 3-6730-7150
  - Fax: +(81) 3-6730-7228
- **Malaysia**
  - Honeywell Engineering Sdn Bhd
  - Phone: +(60-3) 7950-4776
  - Fax: +(60-3) 7988-6922
- **New Zealand**
  - Honeywell Limited
  - Phone: +(64-9) 623-5052
  - Fax: +(64-9) 623-5060
  - Toll Free (0800) 202-088
- **Philippines**
  - Honeywell Systems (Philippines) Inc.
  - Phone: +(63-2) 638-3278
  - Toll Free 1-888-9-HONEY
  - Fax: +(63-2) 638-4013
- **Singapore**
  - Honeywell Pte Ltd.
  - Phone: +(65) 6445-3033
- **South Korea**
  - Honeywell Korea Co Ltd
  - Phone: +(82-2) 799 6315
  - Fax: +(82-2) 792 9015
- **Taiwan R.O.C.**
  - Honeywell Taiwan Ltd.
  - Phone: +(886-2) 2245-1000
  - Fax: +(886-2) 2245-3241
- **SE Asia Countries**
  - see Honeywell Pte Ltd. (Singapore)
  - For: Pakistan, Cambodia, Guam, Laos, Malaysia, Vietnam, East Timor
- **SE Asia Countries**
  - see Honeywell Automation India Ltd
  - For: Bangladesh, Nepal, Sri Lanka
- **EUROPE**
  - **Austria**
    - Honeywell Austria GmbH
    - Phone: +(43) 30091-0123
    - Fax: +(31) 364-017
  - **Belgium**
    - Honeywell S.A/N.V.
    - Phone: +(32) 2 728 24 01
    - Fax: +(32) 2 728 22 45
  - **Bulgaria**
    - Honeywell EOOD
    - Phone: +(359) 2 40 20 900
    - Fax: +(359) 2 40 20 990
  - **Czech Republic**
    - Honeywell spol. s.r.o.
    - Phone: +(420) 242 442 232
    - Fax: +(420) 242 442 131
  - **Denmark**
    - Honeywell A/S
    - Phone: +(45) 39 55 55 55
    - Fax: +(45) 39 55 55 58
  - **Finland**
    - Honeywell OY
    - Phone: +(358) 0270752
    - Fax: +(358) 027052 2753
  - **France**
    - Honeywell SA
    - Phone: +(33) 01 60 198075
    - Fax: +(33) 01 60 198201
  - **Germany**
    - Honeywell AG
    - Phone: +(49) 69/8064-299
    - Fax: +(49) 69/80649736
  - **Hungary**
    - Honeywell Kft.
    - Phone: +(36-1)-451-4300
    - Fax: +(36-1)-451-4343
  - **Italy**
    - Honeywell S.p.A.
    - Phone: +39 029146377
  - **The Netherlands**
    - Honeywell B.V.
    - Phone: +(31) 20 5065200
    - Fax: +(31) 20 5065210
  - **Norway**
    - Honeywell A/S
    - Phone: +(45) 39 55 55 55
  - **Poland**
    - Honeywell Sp.z.o.o.
    - Phone: +(48-22)-6060900
    - Fax: +(48-22)-6060901
  - **Portugal**
    - Honeywell Portugal Lda
    - Phone: +(351) 21 424 5000
    - Fax: +(351) 21 424 50 59
  - **Romania**
    - Honeywell Bucharest
    - Phone: +(40) 21 2316437
    - Fax: +(40) 21 2316439
  - **Russian Federation (RF)**
    - ZAO "Honeywell"
    - Phone: +(7) 965 796 98 00
    - Fax: +(7) 965 797 99 64
  - **Slovak Republic**
    - Honeywell s.r.o.
    - Phone: +(421-2)-8247 410
    - Fax: +(421-2)-8247 415
  - **Spain**
    - Honeywell S.A.
    - Phone: +(34) 01 6013 61 00
    - Fax: +(34) 01 6013 61 30
  - **Sweden**
    - Honeywell AB
    - Phone: +(46) 8 775 55 00
    - Fax: +(46) 8 775 56 00
  - **Switzerland**
    - Honeywell AG
    - Phone: +(41) 18552448
    - Fax: +(41) 1855 24 74
  - **United Kingdom**
    - Honeywell Control Systems Ltd.
    - Phone: +(44) 01344 655251
    - Fax: +(44) 01344 655554
  - **United States**
    - Honeywell Ltd.
    - Phone: +(800)-737-3350
    - Fax: +(800)-565-4130
  - **USA**
    - Honeywell Process Solutions
    - Phone: +(800)-343-0228
    - Fax: +(1)-717-771-8251
    - Email: sc-cp-appsales@honeywell.com
  - **LATIN AMERICA**
    - **Argentina**
      - Honeywell S.A.C.
      - Phone: +(54-11) 4383-3637
      - Fax: +(54-11) 4325-6470
    - **Brazil**
      - Honeywell do Brasil & Cia.
      - Phone: +(55-11) 7286-1900
      - Fax: +(55-11) 7286-1905
    - **Chile**
      - Honeywell Chile, S.A.
      - Phone: +(56-2) 233-0688
      - Fax: +(56-2) 231-6679
    - **Mexico**
      - Honeywell S.A. de C.V.
      - Phone: +(52) 55 5258-1966
      - Fax: +(52) 55 5257-2985
    - **Puerto Rico**
      - Honeywell Inc.
      - Phone: +(787) 792-7075
      - Fax: +(787) 792-0053
    - **Renal**
      - Honeywell Inc.
      - Phone: +(858) 624-3964
      - Fax: +(858) 624-3969
    - **Venezuela**
      - Honeywell CA
      - Phone: +(58-2) 238-0211
      - Fax: +(58-2) 238-3391