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# Asset Monitoring Gateway with Cloud ID™




222401 Rev E

## Instruction Manual

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# Materials Included



## Asset Monitoring Gateway

Expedite the deployment of your condition monitoring and preventative maintenance strategy with a powerful wireless gateway that is industry-hardened for tough environments.

The gateway offers seamless connectivity by creating a robust wireless network that will host the sensor radios used to acquire and transmit data from assets within the industrial application. The on-board display is used to bind the radios to the wireless network while Cloud ID™ intelligence automatically detects the sensor nodes and delivers that data to Banner's Cloud software.

## Software Services Authorization Card

Express activation and data-driven insights.

Our Direct-to-Cloud solution is pre-configured with a unique code generated for each individual gateway. All systems include a prepaid trial account for Banner Cloud Data Services.






## Power Supply and Ethernet Cable

Eliminates wiring and provides convenient power and connectivity.

A wall mount power supply and specialized ethernet cable is provided to get your system running quickly. The multi-blade outlet plug and 100-240 V AC 50/60 Hz input provides suitable power source for any application. The D-Code ethernet cable provides M12 connection to the gateway and RJ45 connectivity to a local network.



## Compatible Sensor Nodes (Sold Separately)

The Compatible Sensor Nodes for these systems are self-contained wireless solutions for battery powered monitoring. Their easy-to-deploy design allows monitoring of assets and equipment in remote and hard-to-access locations.

Measure phenomena such as rotary equipment vibration, temperature and relative humidity, material levels, and pressure with industrial grade sensors. Banner's Cloud ID™intelligence automatically detects up to 40 compatible devices per gateway within minutes. This allows you to scale the system and adapt or personalize for the application with a mix and match of sensor types quickly.

# Configuring the System

## 1 Unpack and Supply Power to All Devices

The Asset Monitoring Gateway arrives with a DC power supply to get the system operating quickly. Unless specified otherwise, the compatible Sensor Nodes arrive with batteries included.

### Asset Monitoring Gateway

1. Connect the power supply to the Gateway using the M12 connector of the cable assembly.
2. Insert the wall plug end of the power supply into a power outlet using the appropriate plug adapter for your region.

### Compatible Sensor Nodes

For one-button battery-powered models:

1. Loosen the clamp plate on the top of the device and lift the cover.
2. Slide the battery holder out of the housing.
3. Use two 3.6 V AA, one 3.6 V C-cell, or one 3.6 V D-cell lithium batteries (device dependent).
4. Verify the positive and negative terminals of each battery align to the positive and negative terminals of the battery holder. Caution: There is a risk of damage if the battery is installed incorrectly.
5. Slide the board containing the batteries back into the housing of the device and verify the arrows on the holder are pointing down into the housing. If the device does not automatically power on, press the button for 5 seconds or until the LED starts flashing red.

   The LED flashes red every three seconds to indicate the device is ready. DO NOT fasten the lid closed until instructed.

For two-button battery-powered models:

1. Remove the four screws mounting the face plate to the housing and remove the face plate.
2. Install the battery by verifying the positive and negative terminals are aligned with the corresponding terminals of the battery holder mounted within the case.
3. After installing the battery, allow up to 60 seconds for the device to power up.
4. Return the face plate upon the housing and securely tighten the screws.

For two-button 10 to 30 V DC powered models:

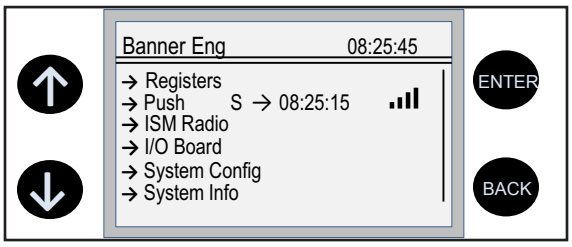
1. Remove the four screws mounting the face plate to the housing and remove the face plate.
2. Consult the wiring instructions on the data sheet for each device to ensure that those steps have been completed properly.
3. Connect the device to an appropriately rated power source. The device starts in RUN mode.
4. Return the face plate upon the housing and securely tighten the screws.

## 2 Bind the Sensor Nodes to the Wireless Network

The Asset Monitoring Gateway with Cloud ID™ system is specially designed to offer easy binding of sensor radios to the wireless network. Banner offers an array of compatible Sensor Nodes that can measure vibration, differential pressure, temperature and humidity, tank level, and other data signals that are critical to monitor within an operation.

Refer to the Compatible Nodes section of this guide for a list of nodes that are available for these systems or visit www.bannerengineering.com and use the Cloud ID Compatible facet to obtain the most recent list of nodes.

Use the on-board LCD display, buttons, and menu system of the Gateway to complete the next process. Follow these instructions to bind each Compatible Sensor Node to the system.




The top-level menu always displays the time in a 24-hour format.

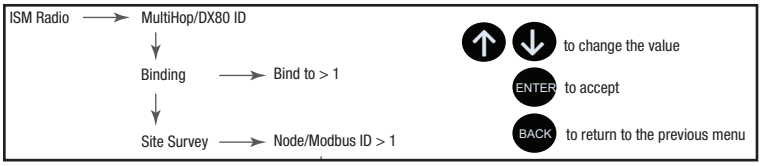
- The up and down arrows scroll through display items.
- The enter button selects the highlighted items on the display
- The back button returns to a previous menu option.

In the left column, an arrow indicates the menu has sub-menus. The right column shows a vertical line with an arrow at the bottom if the user can scroll down to see more menu items.

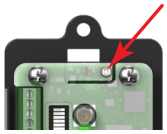
## Enter Binding Mode on the Gateway

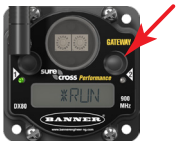
Before beginning the binding procedure, verify power is applied to all devices. Separate Gateway and Sensor Node radios by a minimum of 4.5 m (15 ft) when running the binding procedure. If multiple Gateways are available, put only one into binding mode at a time to prevent a Sensor Node from binding to an undesired network.

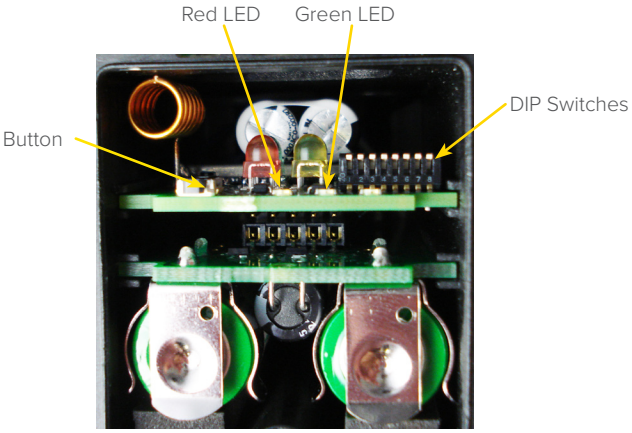
1. On the Gateway: Use the arrow keys to select the **ISM Radio** menu on the LCD and click **ENTER**.
2. Highlight the **Binding** menu and click **ENTER**.
3. Use the arrow keys to select the Node Address you intend to assign to the Sensor Node. You may only use Node IDs 1–40 with the Asset Monitoring Gateway. Banner suggests selecting Node ID 1 for the first device, then incrementing for each additional device.
4. Press **ENTER**. The Gateway display should now indicate the device is binding.




5. On the Sensor Node: Enter binding mode. For one-button Nodes, triple-click the button. For two-button Nodes, triple-click button 2.






The LEDs flash alternately and the Node searches for a Gateway in binding mode. After the Node binds, the LEDs stay solid momentarily, then they flash together four times.

The Node automatically exits binding mode and reboots.

The Node LEDs continue to flash red until the Gateway exits binding mode with that Node Address.

6. On the Gateway: Click BACK to exit binding for that specific Node Address.

   The Node LED flashes green after the Node and Gateway have synced and are communicating properly. This may take a few moments.

   Please note: Some node models will also illuminate an amber LED after the device syncs to the gateway to indicate the node is in fast-sampling mode. The node automatically exits fast-sampling mode after 15 minutes, otherwise, manually exit by clicking the button five times. Fast-sampling mode does not affect the sampling rate of a Cloud ID™system and may be disregarded.

7. Label the Sensor Node with the assigned Node Address.
8. Securely fasten the cover or face plate closed upon the Sensor Node.
9. Repeat steps 3 through 8 for as many Sensor Nodes as are needed for the network. Assign a unique Node Address for each Sensor Node as you repeat these steps.
10. After all Sensor Nodes have completed the binding procedure, click **BACK** on the Gateway until you have returned to the main menu.

After all radios have been bound to the wireless network, the next section guides you through the process of communicating the sensor data to the Cloud platform. This is achieved by connecting the Gateway to the local enterprise network and then accessing the data by completing the activation of the Cloud services.

# 3 Connect to the Local Network

By default, the Asset Monitoring Gateways are intended to push data to the Banner Cloud Data Services platform using a local area network. A specialized Ethernet cable is included with the Gateway to complete this connection.

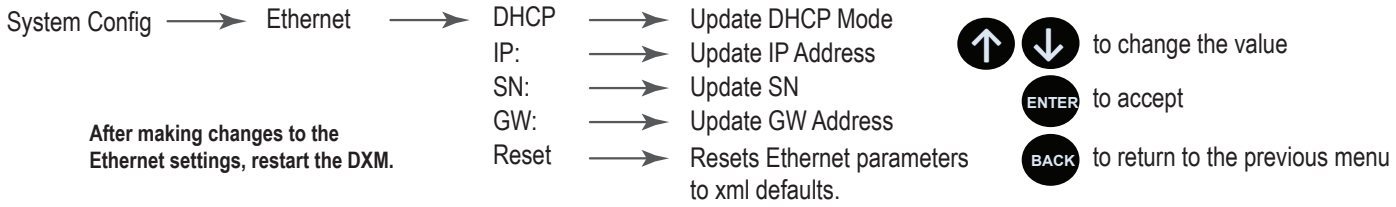
1. Connect the Ethernet cable to the corresponding port on the Gateway.
2. Insert the RJ45 Ethernet connector into a port on the local area network.
3. Configure the Ethernet communication parameters, if necessary.

### Default Settings

By default, the Gateway is configured to communicate to a local network using the Dynamic Host Configuration Protocol (DHCP) setting and act as a client on the network. This setting may work for most applications and no further configuration may be needed. Contact your IT professional to ensure the device is not blocked from the local network.

### Set a Static IP Address

In some applications, your IT professional may prefer to attribute a static IP Address to the DXM gateway device. This may be done using the LCD menu system.




1. On the Gateway, use the arrows and move to the **System Config** menu. Press **ENTER**.
2. Use the arrow keys to select the **Ethernet** menu. Press **ENTER**.
3. Highlight the **DHCP** selection and press **ENTER**. Set **DHCP** to **Off**.
4. The system will request a restart, press **ENTER** to confirm.
5. Follow steps 1 and 2 to reenter the **Ethernet** menu. Use the arrow keys to select **IP**. Press **ENTER**.

   The octet of the IP address displays (for example, 192.168.10.1).
6. Use the up and down arrows to change the IP address as desired. Press **ENTER** to move to the next octet.
7. Press **ENTER** on the final octet to accept the changes.
8. Cycle power to the Gateway.

   The changes are saved on the Gateway and the new IP address will be used.

Use the same procedures to set the subnet mask (SN) and default gateway (GW) to match your network requirements. Your IT department can provide these settings if needed.

## Configuring the Cellular Communication

By default, the Asset Monitoring Gateway with Cloud ID™ is intended to use Ethernet communication. However, it may be preferable to use cellular communication when adding the device to a local area network is difficult, not desired, or when some applications require remote monitoring through a widely available cellular network.

Follow these instructions to configure the Asset Monitoring Gateway for cellular communication, then activate the cellular modem onto the respective network by creating an account at celldata.bannercds.com and purchasing a cellular subscription plan.

1. Connect the power supply to Gateway using the M12 or barrel jack connector and plug the power supply into a wall socket.
2. If applicable, disconnect the Ethernet cable from the Gateway and the local area network.
3. On the Gateway: From the main menu, use the arrow keys to highlight **Registers** and press **ENTER**.
4. Scroll to the bottom of the Register list to highlight **ForceEthernet**. Press **ENTER**.
5. Use the arrow keys to change the Register value to **zero** (0). Press **ENTER**.

   By default, this Register value is set to one (1).
6. Press **ENTER** again until **SEND** is highlighted and blinking.
7. Press **ENTER** to send the command.

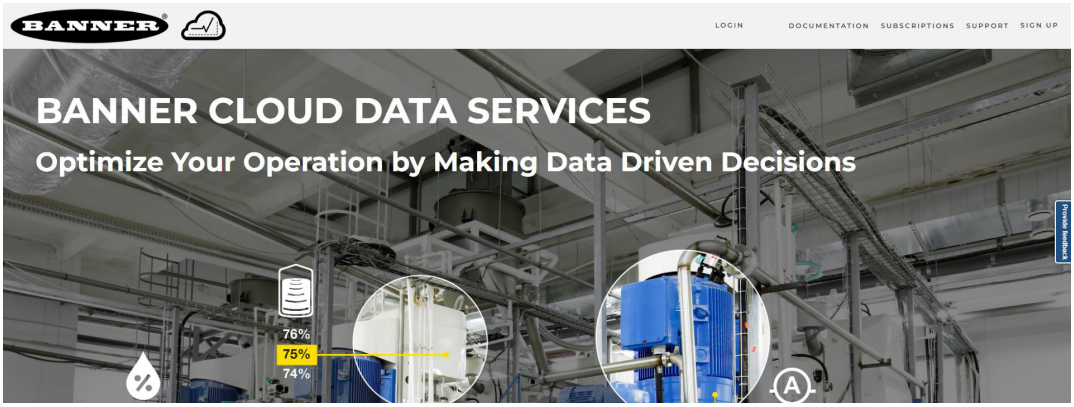
   The clock in the upper right corner of the Gateway display pauses briefly while the Gateway reboots. The Gateway has successfully rebooted when the screen returns to the main menu and the clock begins to operate again.

   The Gateway is now set to communicate through the embedded cellular module. The Asset Monitoring Gateway with Cloud ID™ system transmits data once every ten minutes when communicating via the cellular module, so please allow sufficient time to determine that a successful push has been received by the Banner Cloud Data Services platform.

# Activating the Services

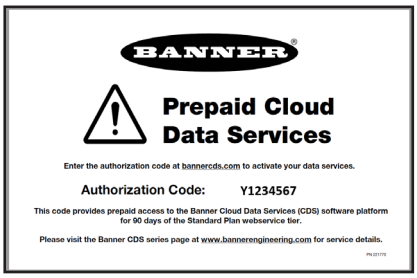
## 4 Banner Cloud Data Services (Banner CDS)

Using a web browser, navigate to bannercds.com.




### Enter Your Authorization Code

1. Register your account by going to the **Sign Up** menu.
2. Enter the Authorization Code, Email, Company Name, and desired Login Credentials. The authorization code is on the Authorization Card included with the Asset Monitoring Gateway.
3. Read and accept the Services Access and Use Agreement.




# Connecting the Data

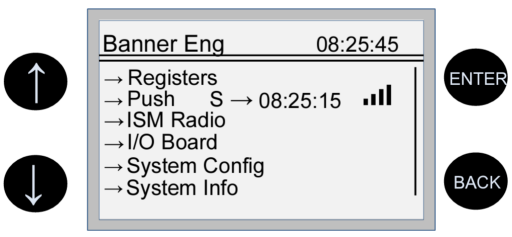
## 5 Add a Gateway

After launching the CDS webpage, the **Overview** screen appears. Use the **Overview** or **Device Management** screen to add the Gateway to the Cloud application and generate a Dashboard.

1. Click on **New Gateway** in the top right corner of the **Overview** page.
2. Create a new device for each Gateway that will be sending data to the web server.
3. A **New Gateway** prompt appears.
4. Verify that **Cloud ID** is selected as the **Gateway Type**.
5. Enter a **Gateway Name**.
6. Select the **Company** from the drop-down menu.
7. Enter the **DXM Serial** into the entry field. The DXM serial number is indicated on a label on the gateway or can be found by navigating the Gateway menu system to **System Info** > **Controller** > **Serial**.
8. Click **Save**.

The Banner CDS application creates a storage location for the system and begins searching for a data push from the Gateway. The Asset Monitoring System is designed to push data to the Cloud at a five-minute interval with Ethernet communication or a ten-minute interval with cellular communication. Therefore, the Gateway could take 5-10 minutes to complete recognition by the Cloud application.

A push success will be indicated on the Gateway display with an S followed by a timestamp on the PUSH line and then refreshing the Banner CDS webpage with **Connected** as the **Status**.



## 6 View Data and Dashboards

After the Banner CDS application has detected the Gateway, use the navigation pane on the left side to view the Gateway.

Click **Details** next to the Gateway Name. The device Details page provides a list of sensor objects for each Sensor Node bound to the system. The model number, connection status, and relevant data registers for each sensor are listed.

To edit the Sensor and Signal Names, click on the **Edit** button in the specific row.

To view the dashboard for this system, click on **Dashboards** in the navigation pane and select the Gateway name from the list. Use the system dashboard to visually understand the status of your assets. Each icon represents a node within the system. The icon colors indicate:

- Green for those latest measurements that are within acceptable parameters;
- Yellow for measurements that have surpassed a Warning threshold; and
- Red for measurements that have surpassed a Critical threshold.

To view and adjust alarm thresholds:

1. Hover over and click the icons to view the default alarms currently established for each Sensor Node.
2. Edit these alarms as needed by clicking on the **Edit** button next to each alarm signal, or by navigating to the **Alerts** screen and filtering the alert list to the appropriate gateway.
3. On the Alert edit prompt, adjust the **comparison operator** and **threshold values**.

Congratulations! You have successfully set up your Asset Monitoring Gateway with Cloud ID™ system. Please visit www.bannerengineering.com for detailed information regarding the Gateway, Compatible Sensor Nodes, and Banner Cloud Data Services.

Banner Engineering is available to assist with all your predictive maintenance and condition monitoring endeavors. After the Asset Monitoring Gateway with Cloud ID™ system has allowed you to gain insight into your operation and provided the value that Industrial IoT has to offer, please contact our applications team to assist in continuing services after the trial period has concluded.

Contact Banner Engineering's support team at 1-888-373-6767 or fill out the Contact an Engineer form at www.bannerengineering.com.

# Compatible Sensor Nodes for Your Asset Monitoring Gateway

Use the simple binding process to bind sensor nodes to a gateway, and monitor tank level, ambient temperature and humidity, and the health of rotating machines and pressurized systems. The radio frequency of compatible sensors must match the radio frequency of the gateway controller (or some other designator).



## All-in-One Vibration Sensor Node

Vibration and temperature sensors monitor the health and performance of motors, pumps, and similar equipment with rotating motion. Available accessories are shown below.

| Radio Frequency | Power Supply | Inputs | Models |
|---|---|---|---|
| 900 MHz ISM band | C cell lithium battery (included) | Vibration and temperature detection | **DX80N9Q45VAC** |
| 2.4 GHz ISM band | C cell lithium battery (sold separately) | | **DX80N2Q45VAC NB** |

Includes mounting bracket BWA-Q45VAC-FESS.

**Accessories**

| | | |
|---|---|---|
|  | Curved-surface magnet mount | **BWA-Q45VAC-CMSS** |
|  | Flat-surface epoxy mount | **BWA-Q45VAC-FESS** |
|  | 3.6 V C cell lithium replacement battery | **BWA-BATT-013** |



## Wireless Node and Compact Vibration Sensor

Vibration and temperature sensors monitor the health and performance of motors, pumps, and similar equipment. Available accessories are shown below.

| Radio Frequency | Power Supply | Bracket | Models |
|---|---|---|---|
| 900 MHz ISM band | D cell lithium battery | Aluminum flat-surface tape mount (BWA-QM30-FTAL) | **DX80N9Q45VTPD-QM30** |
| 2.4 GHz ISM band | D cell lithium battery (sold separately) | | **DX80N2Q45VTPD-QM30 NB** |

**Accessories**

| | | |
|---|---|---|
|  | Right-angle, low profile bracket | **LMB30LP** |
|  | Back-side magnet mount | **BWA-Q45VA-FMSSB** |
|  | Curved-surface magnet mount for sensor | **BWA-QM30-CMAL** |
|  | Flat-surface magnet mount for sensor | **BWA-QM30-FMSS** |
|  | Flat-surface screw mount with rapid-release set screw for sensor | **BWAQM30-FSALR** |
|  | 3.6 V D cell lithium replacement battery | **BWA-BATT-011** |

# All-in-One Temperature and Humidity Sensor Node



Temperature and humidity wireless nodes monitor environmental conditions in a variety of applications, such as refrigerators or chillers, warehouses, cleanrooms, incubators, storage rooms, and distribution centers. Available accessories are shown below.

| Radio Frequency | Power Supply | Measurement Range | Inputs | Models |
|---|---|---|---|---|
| 900 MHz ISM band | AA lithium cell batteries | -40 to +85 °C (-40 to +185 °F) 0 to 100% relative humidity | Temperature and relative humidity (%) | **DX80N9Q45THA** |
| 2.4 GHz ISM band | AA lithium cell batteries (sold separately) | | | **DX80N2Q45THA NB** |

**Accessories**

| | | |
|---|---|---|
|  | Right-angle, low profile | **LMB30LP** |
|  | Backside magnet mount | **BWA-Q45VA-FMSSB** |
|  | 2 x 3.6 V 2.4 Ah AA lithium cell replacement batteries | **BWA-BATT-006** |

# All-in-One Temperature Probe Sensor Node



Thermistor nodes measure temperature in key areas or processes like air- and liquid-handling applications. Available accessories are shown below.

| Radio Frequency | Power Supply | Measurement Range | Inputs | Models |
|---|---|---|---|---|
| 900 MHz ISM band | AA lithium cell batteries | -20 to +105 °C (-4 to +221 °F) | Temperature | **DX80N9Q45TA** |
| 2.4 GHz ISM band | AA lithium cell batteries (sold separately) | | | **DX80N2Q45TA NB** |

**Accessories**

| | | |
|---|---|---|
|  | Right-angle, low profile | **LMB30LP** |
|  | Backside magnet mount | **BWA-Q45VA-FMSSB** |
|  | 2 x 3.6 V 2.4 Ah AA lithium cell replacement batteries | **BWA-BATT-006** |

# Wireless Node and Pressure Sensor

Wireless node and pressure transducers measure air, gas, and liquid pressure systems and equipment. Available accessories are shown below.



| Communication | Power Supply | Pressure Range | Inputs | Models |
|---|---|---|---|---|
| 900 MHz ISM band | D cell lithium battery | 0–50 PSI | Pressure | **DX80N9Q45UPSD-PS50** |
| 2.4 GHz ISM band | D cell lithium battery (sold separately) | | | **DX80N2Q45UPSD-PS50 NB** |
| 900 MHz ISM band | D cell lithium battery | 0–150 PSI | | **DX80N9Q45UPSD-PS150** |
| 2.4 GHz ISM band | D cell lithium battery (sold separately) | | | **DX80N2Q45UPSD-PS150 NB** |
| 900 MHz ISM band | D cell lithium battery | 0–500 PSI | | **DX80N9Q45UPSD-PS500** |
| 2.4 GHz ISM band | D cell lithium battery (sold separately) | | | **DX80N2Q45UPSD-PS500 NB** |
| 900 MHz ISM band | D cell lithium battery | 0–3000 PSI | | **DX80N9Q45UPSD-PS3000** |
| 2.4 GHz ISM band | D cell lithium battery (sold separately) | | | **DX80N2Q45UPSD-PS3000 NB** |

**Accessories**

| | | |
|---|---|---|
|  | Right-angle, low profile | **LMB30LP** |
|  | 3.6 V D lithium cell replacement battery | **BWA-BATT-011** |

# Wireless Node and Differential Pressure Sensor



Wireless node and differential pressure sensors provide the ability to monitor low-pressure applications such as filter and vacuum lines, HVAC and duct pressure, dust collectors, clean rooms, and fume hoods. Available accessories are shown below.

| Communication | Power Supply | Pressure Range | Inputs | Models |
|---|---|---|---|---|
| 900 MHz ISM band | D cell lithium battery | ±1 inches of water column | Low-pressure differential sensor | **DX80N9Q45DPSD-DP1** |
| 2.4 GHz ISM band | D cell lithium battery (sold separately) | | | **DX80N2Q45DPSD-DP1 NB** |
| 900 MHz ISM band | D cell lithium battery | ±5 inches of water column | | **DX80N9Q45DPSD-DP5** |
| 2.4 GHz ISM band | D cell lithium battery (sold separately) | | | **DX80N2Q45DPSD-DP5 NB** |
| 900 MHz ISM band | D cell lithium battery | ±20 inches of water column | | **DX80N9Q45DPSD-DP20** |
| 2.4 GHz ISM band | D cell lithium battery (sold separately) | | | **DX80N2Q45DPSD-DP20 NB** |

**Accessories**

| | | |
|---|---|---|
|  | Right-angle, low profile | **LMB30LP** |
|  | 3.6 V D lithium cell replacement battery | **BWA-BATT-011** |

# FAQ and Troubleshooting Guide

A truncated list of Frequently Asked Questions (FAQ) and additional information to assist with the operation of a Banner Cloud ID(tm) System is provided below. For the complete guide, please consult the FAQ and Troubleshooting document on our website (b_51820899).

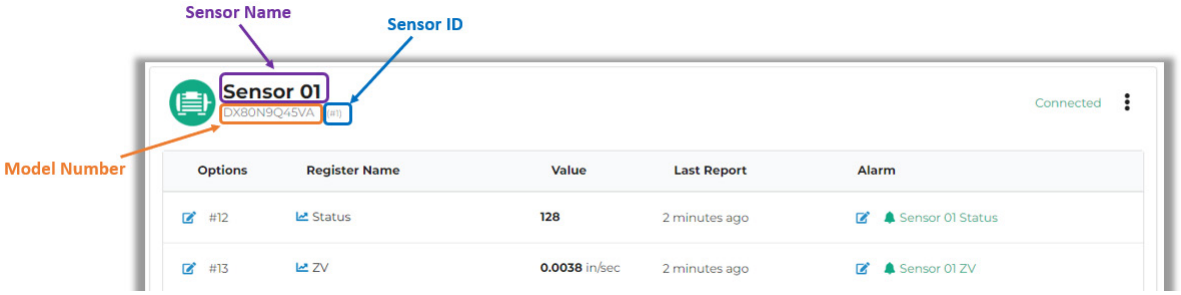
## How do I Add or Delete Compatible Sensor Nodes from the Banner Cloud ID™ system?

### Add or Replace a Compatible Sensor Node

1. Identify an available Sensor ID by navigating to the Gateway Details page to determine from the sensor list which Sensor IDs are unoccupied (IDs 1-40). A Sensor ID is occupied when it appears in the list.

   Note: When replacing a sensor node, simply use the same Sensor ID as the device you intend to replace. The replacement device can be the same as the original or a new type of Sensor Node.

   The Sensor ID is identified as the numerical figure in parentheses. For example: (#1) indicates Sensor ID 1, regardless of the alpha-numeric Sensor Name or Model Number indicated prior to this identifier.




2. Once an available Sensor ID has been identified, use the binding procedure described in the 'Bind the Sensor Nodes to the Wireless Network' section of the Asset Monitoring Gateway with Cloud ID™ System Manual (p/n 222401) or Quick Start Guide (p/n 236146). Ensure that the Gateway has exited binding mode before proceeding.
3. Refresh the Gateway Details page to view the sensor object and navigate to the Dashboard screen to verify the Alarm icon was also created. The Gateway may take up to two data pushes to deliver a full data set to the Cloud.

### Remove a Compatible Sensor Node

1. View the list of Sensor Nodes currently bound to the system by navigating to the Gateway Details page and determine which Node ID will be deleted.
2. Click on the Edit button next to the Sensor Name in the top left corner of the sensor object in the list. A prompt window for the sensor object will appear.
3. Click Delete at the bottom of this prompt window. Then click Delete again on the next prompt to confirm this action.

   Deleting a sensor node will remove the sensor and alarms associated with it. The alarm icon on the Dashboard will also be removed upon deletion. New data will not be recorded once the sensor is deleted.

### Restore a Compatible Sensor Node

Follow these steps to restore a deleted sensor node.

1. Navigate to the Gateway Details page and click Restore Sensor under the Modify section.
2. Select the sensor you would like to restore from the dropdown list within the Restore Sensor prompt. Then click Save.
3. Refresh the Gateway Details page to view that the sensor node has returned to the device list. Data will update upon the next successful push from the Gateway.
4. To restore the Alarm icon for this sensor node, navigate to the Dashboard for the Gateway. Then click Unlock Dashboard.
5. Click + Add New DashboardItem. The New DashboardItem window will appear.
6. Select Sensor from the available options.
7. Select the appropriate Gateway from the drop-down menu.
8. Select the restored sensor from the Sensor drop-down menu.
9. Click Save. Then drag and drop the Alarm icon onto the Dashboard as desired.
10. Click Lock Dashboard to save the changes.

## How do I set up alert notifications to be delivered via email or SMS text with the Banner Cloud ID™ system?

Follow these steps to configure the alert settings within the software platform so that technicians and other stakeholders can be alerted of potential failures and downtime.

### Step One: Enter the Contact Information

1. Navigate to the Contacts page by clicking on Alerts in the left navigation pane, then click on the Contacts tab.
2. Click the + New Contact button in the top-right corner of the page to open the entry prompt.
3. Attribute a Contact Name for the individual in the text field provided.
4. Select the Company this individual will operate within.
5. Select the Email or Phone Number (SMS) option for this Contact.

   Note: An email address is required for the email option and a 10-digit phone number is required for the phone (SMS) option. Two Contact profiles must be created if an individual is to receive both email and SMS messages.
6. If desired, enter an active alert schedule for the Contact by selecting Set Schedule. The default setting will alert the recipient 24 Hours a Day.

   Select each day of the week this individual is to receive alert notifications. Define the time period by unselecting the 24 Hours a Day checkbox and entering in the requested information. Note: Establishing a Set Schedule for a Contact defines the active alert periods for that contact. Alert notifications will not be delivered outside of this definition.
7. Once the requested information has been entered, click Save.
8. Repeat all previous steps for each Contact entry.

### Step Two: Define the Operational Group

1. Navigate to the Groups page by clicking on Alerts in the left navigation pane, then click on the Groups tab.
2. Click the + New Group button in the top-right corner of the page to open the entry prompt. This prompt controls the attributed responsibility for the alarms to their respective stakeholders.
3. Attribute a Group Name for the collection of Contacts and Alarm Groups in the text field provided.
4. Select the Company this Group will operate within.
5. Alarm Groups are a set of alarms that represent an asset within the operation. The Alarm Groups will be defined in the next step, so you may ignore this option for now.
6. Use the dropdown menu to assign the Contacts to this operational Group.
7. Once the requested information has been entered, click Save.
8. Repeat the process in this step to define each operational Group.

### Step Three: Define the Alarm Group

1. Navigate to the Alarm Group page by clicking on Alerts in the left navigation pane, then click on the Alarm Groups tab.
2. Click the + New Alarm Group button in the top-right corner of the page to open the entry prompt. This defines the digital representation of machines and processes within the operation.
3. Attribute an Alarm Group Name for the collection of Alarms in the text field provided.
4. Select the Gateway from which the Alarms will be organized into Alarm Groups.
5. From the dropdown menu, select all Alarms that will define this Alarm Group. Alarms should be bundled in a manner that organizes the information to represent assets or processes within an operation.
6. Select the operational Group that will monitor the alarms produced by this asset or process.
7. Once the requested information has been entered, click Submit.
8. Repeat the process in this step to define each Alarm Group.

### Step Four: Modify the Alarms

The default alarms created by the Banner Cloud ID™ systems can be modified to appropriately match the requirements of the application. Use the following steps to complete the edits needed for your deployment.

1. Navigate to the Alarms page by clicking on Alerts in the left navigation pane, then click on the Alarms tab.
2. Filter the list of Alarms to those that are related to the Cloud ID™ device by clicking in the Filter Results... text field and click Gateway.
3. Then use the new dropdown to select the Cloud ID™ device you wish to modify the alarms.
4. To modify alarms, click on the Edit button on the left side of the Alarm row to open the alarm Editing prompt.
5. The Name, Comparison Operation, and the Warning or Critical Values for the thresholds of the alarm can be edited using the prompt. Adjust these parameters according to the requirements of the application.

6. Optional features to be attributed to the alarm:
    - Duration:  This is the amount of time (in minutes) that the argument of the Comparison Operation is true before an alarm is triggered. Always choose a duration that is longer than the push rate of the gateway. This attribute is selected by default for vibration data only.
    - Manual Clear: Checking this box will require a User to log in to the software and click the Clear button to acknowledge and turn off the alarm. This attribute is selected by default.
7. After the parameters are established, click Submit.
8. Repeat the process in this step to modify each Alarm.

The chain of associations completed using this process offer the stakeholders responsible for the operation the alert notifications needed to maintain the equipment.

# What does the LED behavior indicate on the Asset Monitoring Gateway with Cloud ID™?

After power is applied to the Gateway, LED 2 begins to flash green about once a second after some time. This is the 'heartbeat' of the controller and indicates that the configuration files are running properly.

LED 3 is blue when the controller is gathering information from the nodes in the network.  This usually occurs just before the gateway performs a data push to the Cloud.

LED 4 is amber/yellow when the device is in the process of pushing data to the Cloud and will turn off once the push has completed.

# What do the colors of each Alarm Icon indicate on the Dashboard screen?

Each icon turns green to indicate the latest measurements are within acceptable parameters, yellow to indicate the latest measurement has surpassed a Warning threshold, and red to indicate a measurement has surpassed a Critical threshold.

These are your 'Check Engine Lights' and are a visual representation of the current state of your equipment.

# How do I delete a Gateway from my Banner Cloud Data Services account?

Follow these steps to delete a Gateway from the Cloud software:

1. Navigate to the gateway details page by clicking on Gateways in the left navigation pane of the software, then click the Details associated with the device within the View column.
2. Click Edit Gateway from the Modify menu in the bottom right corner of the gateway details page.
3. Click Delete in the Edit Gateway prompt that appears, then confirm the action with the next prompt.  Please note: Deleting a Gateway will remove all historical data for all sensor nodes bound to that device.

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