

Intelli-Connect™ Mobile & Mobile+ FAQ

Diagnostics and Analytics
Frequently Asked Questions

Introduction

Downtime due to unexpected maintenance or equipment failure is expensive. Intelli-Connect™, a solution from Columbus McKinnon's Automation Division, can help enable predictive maintenance and minimize downtime. Intelli-Connect diagnostics and analytics enable quick and easy programming, maintenance, monitoring, and troubleshooting of overhead cranes and hoists. Using the Intelli-Connect Mobile and Mobile+ Apps, you can access detailed information right from the plant floor. With diagnostic information available at your fingertips, you can address issues more quickly, plan maintenance, and ultimately reduce downtime.

Overview

For the best wireless connectivity, the Intelli-Connect wireless operator (WOP-20) should be mounted on the outside of the cabinet/panel door with a remote mounting kit when utilizing Magnetek® IMPULSE®•G+/VG+ Series 4 variable frequency drives (VFDs). The WOP-20 can also operate with the Magnetek IMPULSE®•G+ Mini variable frequency drive but will require the mounting kit for installation.

Disclaimer: Before using VFD-controlled equipment, please read and adhere to all guidelines provided in the related technical manuals. Users should be trained, knowledgeable, and fully aware of all hazards associated with crane equipment, including hoists, lifting devices, and electrical controls. When installing Intelli-Connect, follow wiring practices provided in the VFD technical manuals and all applicable electrical codes. Be sure to remove power to the VFD before installation. Ensure the mounting of all components is secure and adhere to installation considerations and environmental conditions for VFDs.

General Product Questions

1. What is Intelli-Connect?

Intelli-Connect is the latest solution from Columbus McKinnon's Automation Division. Intelli-Connect allows a customer to easily access monitoring and programming parameters of a Magnetek variable frequency drive from a smartphone or tablet using the mobile app.

- a. Crane must have a Magnetek IMPULSE•G+/VG+ Series 4 or IMPULSE•G+ Mini VFD. The Intelli-Connect Mobile App and the wireless operator provide access to a selected Magnetek VFD and allow the user to monitor parameters, make edits, and save changes. The app does not allow an operator to start or stop the VFD.

2. Where can I download the Intelli-Connect Mobile App?*

The Intelli-Connect™ Mobile Application can operate on Android™ and Apple® devices. Specific devices are listed below. (See questions 6 and 7)



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3. Is Intelli-Connect Mobile free to download?

Yes. The app is free to download. Purchase of the wireless operator (WOP-20) is required for proper functionality with the app.



Figure 1: Mobile App Icon

4. What is the wireless operator?

The wireless operator (WOP-20) is a module that connects to the Magnetek VFD. It creates a unique wireless network that a user can connect to with the Intelli-Connect Mobile/Mobile+ Apps.

- a. The wireless operator is ordered using catalog number: **WOP-20**. A CAT5 Ethernet cable is not supplied with the wireless operator, but the panel mounting kit provides 3-foot and 10-foot CAT5 Ethernet cables for retrofit installations.

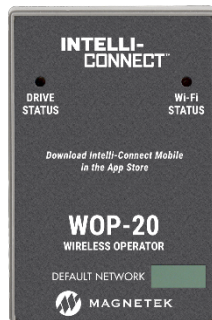


Figure 2: Wireless Operator

5. What Apple devices are compatible with Intelli-Connect Mobile and Mobile+?*

The Mobile App and Mobile+ upgrade are supported **for the operating system 14.0 and above**.

Supported Phones:

- | | |
|---------------------|---------------------------|
| - iPhone® 12 Mini | - iPhone Xr |
| - iPhone 12 Pro | - iPhone X |
| - iPhone 12 | - iPhone 8 |
| - iPhone 11 | - iPhone 8 Plus |
| - iPhone 11 Pro | - iPhone 7 |
| - iPhone 11 Pro Max | - iPhone 7 Plus |
| - iPhone Xs | - iPhone 6s |
| - iPhone Xs Ma | - iPhone 6s Plus (OLDEST) |

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Supported Tablets:

- iPad Pro® 12.9-inch (3-4th Generation)
- iPad Pro 11-inch (1-2nd Generation)
- iPad Pro 12.9-inch (1-2nd Generation)
- iPad Pro 10.5-inch
- iPad Pro 9.7-inch
- iPad Air® (3rd Generation)
- iPad Air 2
- iPad mini® (5-7th Generation) (OLDEST)

6. What Android™ devices are compatible with Intelli-Connect Mobile and Mobile+?*

The supported OS versions are Android 8.0 Oreo™ and above. However, the Samsung® Galaxy® S7 phone operating on Android 8.0 is **NOT** compatible.

Supported Phones:

- Google Pixel™
- Samsung Galaxy S9
- Samsung Galaxy S10

Supported Tablets:

- Samsung Galaxy Tab A
- Samsung Galaxy S5e Tablet

NOTE: Android Fragmentation

Different smartphone brands run on the Android operating system, but not every manufacturer uses the same software. Manufacturers have been known to make modifications to the Android operating system that occasionally cause parts of the API (application programming interface) to function differently. Specifically, installed apps that were coded with respect to Google API documentation may not function correctly. This functionality error, due to operating system modifications, is less likely to occur in newer Android phones.

7. How secure is this connection?

The wireless operator (WOP-20) is set with a unique SSID username and password from the factory. Users can change the network name and password.

NOTE: The WOP-20 **default network** can be found on the WOP-20 decal.

NOTE: The WOP-20 **default network password** is “magnetek”

8. Do I need to install the wireless operator outside of the cabinet?

Yes. The wireless operator (WOP-20) creates a Wi-Fi signal. For the best signal strength, it is recommended that the wireless operator is installed on the outside of the panel or cabinet. A panel mounting kit can be used to mount the wireless operator.

- a. The Wireless Operator with Panel Mount Kit is available to order. **WOP-20 Kit (113-16049)** includes the wireless operator (WOP-20) and the remote mounting kit hardware along with a 3-foot and 10-foot CAT5 Ethernet cable.

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9. Can I use Intelli-Connect if I already have a Magnetek DataLogger Series 4 (DLS4) installed?

The wireless operator and Intelli-Connect Mobile App and Mobile+ upgrade are designed to provide monitoring and programming from the plant floor. Users can install the wireless operator in place of a DataLogger Series 4. The DataLogger can record up to 180 hours of data, while the wireless operator records up to 30 hours of data.

10. Does the app include manuals?

Yes. The app has the latest user manuals available, which can be found in the in the “Support” section of the app. Currently, the app provides access to the manuals listed below. Additional manuals will be included with future updates of the app.

- IMPULSE•G+ & VG+ Series 4 Technical Manual #144-23910
- IMPULSE•G+ Mini Technical Manual #144-25085

11. Does the wireless operator or app allow you to create parameter backups?

Yes. Users can store a parameter set locally in the wireless operator or store parameter sets in the smartphone or tablet.

12. Can I send files to aftermarket support?

Yes. The app allows users to attach parx. files and email them to the aftermarket support group to help with setup and troubleshooting. The support team can then send the parx. file back to users to be downloaded into the Magnetek VFD.

13. Is Intelli-Connect compatible with Columbus McKinnon wire rope and chain hoists?

Yes. Intelli-Connect is compatible with select Columbus McKinnon wire rope and chain hoists equipped with Magnetek IMPULSE•G+/VG+ Series 4 and G+ Mini VFDs. Intelli-Connect is compatible with the following Columbus McKinnon products:

- CM Lodestar® VS (Use of the LodeStar VS requires specific mounting hardware for field upgrades. Please contact your Columbus McKinnon APS for details.)
- Shaw-Box® SK™ and 800
- Yale® YK™, Cable King, and LodeKing LT™

14. I lost the network password. How do I reset?

A button is hidden behind the ‘P’ on the WOP-20 overlay on the wireless operator. Press and hold the ‘P’ button for 15 seconds. After 15 seconds, both LEDs will illuminate in amber. Release the button, and the SSID/password will reset to factory default.

15. What is the range of the Wi-Fi signal created by the wireless operator?

The Wi-Fi signal that connects a Magnetek VFD to the corresponding phone or tablet will operate best at distances of 100 feet or less.

16. Can the Mobile App be used on multiple devices?

Yes. The Mobile App and Mobile+ upgrade are tied to your account/user ID on Google Play and the Apple App Store. If multiple devices use the same account/user ID, the Mobile App or Mobile+ upgrade can be purchased once and utilized across those devices.

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17. Does the Mobile App work with Apple Watch®? *

The app has not been designed to work with Apple Watch; however, Apple Watch will try to connect to the Wireless Operator (WOP-20) access point. This may cause a smartphone or tablet to disconnect. To prevent this from happening, take the following steps in your Apple Watch:

1. Tap the Settings Icon (Gear)
2. Tap Wi-Fi
3. Tap SSID
4. Disable Auto-Join, then tap Forget this Network
5. Accept the prompt



18. What is the Intelli-Connect Mobile+ upgrade? Is it free?

Intelli-Connect Mobile+ is an upgraded version of the app that provides additional monitoring, maintenance, and diagnostic tools. The upgrade is available for a one-time fee paid through the Mobile App.

Added Functionality:

- Trending of monitoring parameters
- Extended fault and alarm history (50)
- Pre and post fault data storage
 - 30 seconds prior to the fault and 10 seconds after the fault
- Approximately 30 hours' worth of data storage
- Remaining hoist life calculation (requires a load cell)
- Inspection log for maintenance and inspection tracking
 - 24 entries that can be added, edited, or deleted
 - After 24 entries the oldest entry is deleted when a new one is entered
- Event log with trigger and time and date stamps
- Monitoring of parameter subsets

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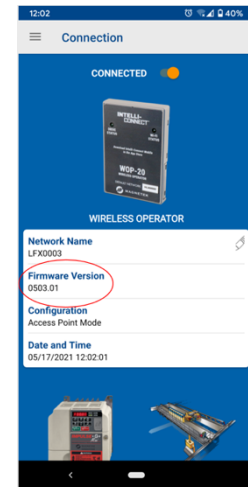
19. Do I need to update my wireless operator for Intelli-Connect Mobile+?

Yes. If you purchased a wireless operator (WOP-20) before June 2021, you need to update your WOP firmware. Firmware version 0504.00 (or later) is required for Mobile+ functionality. Connect with the app and check the firmware version on the connection page.

There are two ways to connect the wireless operator to a network that will allow it to download the latest firmware file.

1. Connect to a local wireless Wi-Fi network
2. Use a hotspot or hotspot function on a cell phone

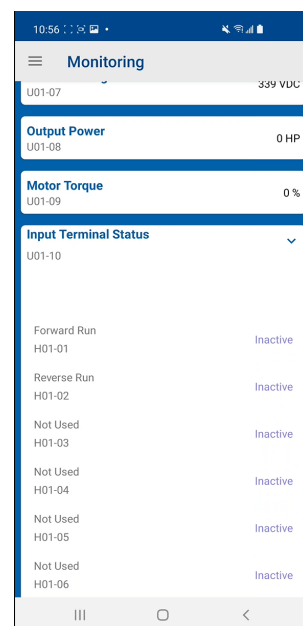
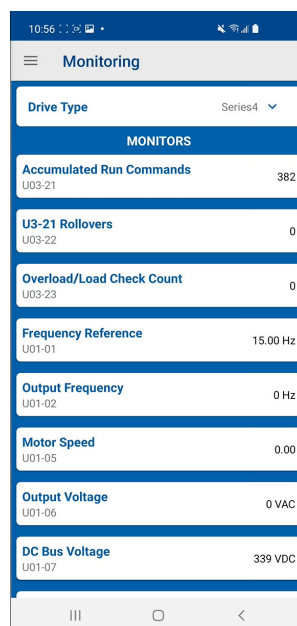
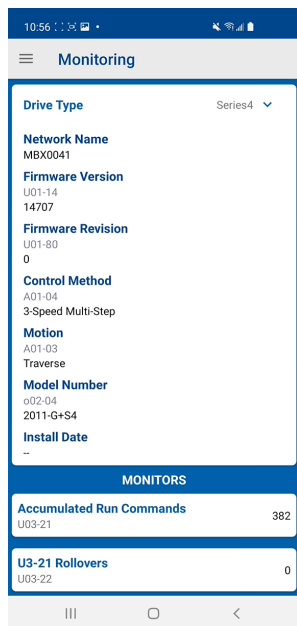
For details on downloading and updating the firmware, see [Appendix A](#) in this document.



20. What is the monitoring functionality?

Live monitoring continuously pulls data from the wireless operator and the Magnetek VFD. Users can monitor signals as they change or review status bits to help identify which function is tied to each bit or to troubleshoot an issue with control. Functionality includes:

- Detailed drive information
- Monitoring of parameters or signals
- Monitoring status bits
- Updates every ~100mS



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21. What is event data logging?

The wireless operator continuously monitors the VFD, collecting data each time the VFD is commanded to run or if there is a fault or an alarm. This data is then stored in an event log in the wireless operator with a time and date stamp. This data can be uploaded to the app and viewed. No setup is required.

Functionality includes:

- Selecting values to view
- Showing data trending
- Time and date stamp included in event log

Run	Value 1:	Value 2:
13 0 day 01:30:54.454	102	0
12 0 day 01:30:51.451	102	0
11 0 day 01:30:29.429	102	0
10 0 day 01:30:17.417	102	0
9 0 day 01:30:13.413	102	0
8 0 day ---	102	0

Select for Value 1:

- kVa
- Control
- Motion
- Direction
- Duration (s)
- Avg DC Bus (VDC)
- Peak DC Bus (VDC)
- Avg Iout (A)
- Peak Iout (A)
- Avg Speed (Hz)
- Peak Speed (Hz)
- Avg Motor Speed (Hz)
- Peak Motor Speed (Hz)

OK

Parameter	Value
kVa	102
Control	0
Motion	0
Direction	1
Duration (s)	11
Avg DC Bus (VDC)	347
Peak DC Bus (VDC)	350
Avg Iout (A)	20
Peak Iout (A)	25
Avg Speed (Hz)	1275
Peak Speed (Hz)	1500
Avg Motor Speed (Hz)	0
Peak Motor Speed (Hz)	0
Avg Motor Torque (%)	0
Peak Motor Torque (%)	0
Heat Sink (°C)	29
Last Alarm	65535

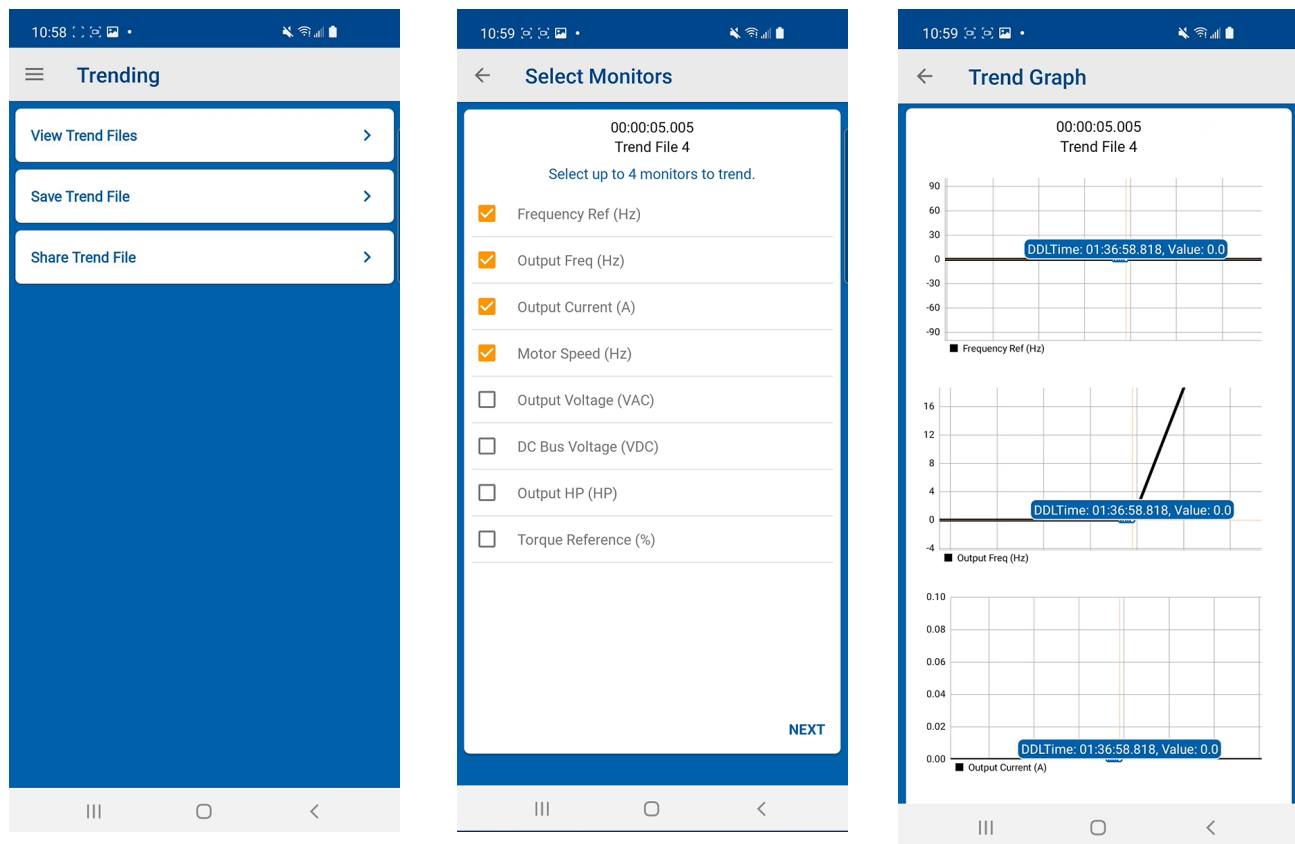
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22. What is trending data?

Data is stored in the wireless operator with a time and date stamp. Once the data is uploaded to the app, trending allows the user to select specific monitoring parameters within the VFD and display that data on a graph in both landscape and portrait mode.

The trend files can also be saved and shared with our technical support team or opened and viewed using the IMPULSE® Link 5 software for your PC.



23. How is the remaining service life of the hoist calculated? Do I need additional hardware?

1. For the remaining service life calculation, a load cell needs to be connected to the analog input of the Magnetek VFD. The feedback from the load cell, along with other drive parameters, is used to calculate the service life. To do this, simply:
Enable the function in the app
2. Connect the load cell (Not included – purchase separately)
3. Program the hoist type

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From there, users can monitor usage and remaining hoist life, plan maintenance, and prepare for modifications, upgrades and replacements.

The input signal to the Magnetek VFD from the customer-supplied load cell could be 0-10V, -10-10V, 0-20mA, or 4-20mA, depending on which analog input channel is available and which drive is being used.

Options include:

IMPULSE-G+ Mini

AI1 = 0-10V only

AI2 = 0-10V, 4-20mA, or 0-20mA

IMPULSE-G+/VG+ Series 4

AI1 = 0-10V or -10-10V

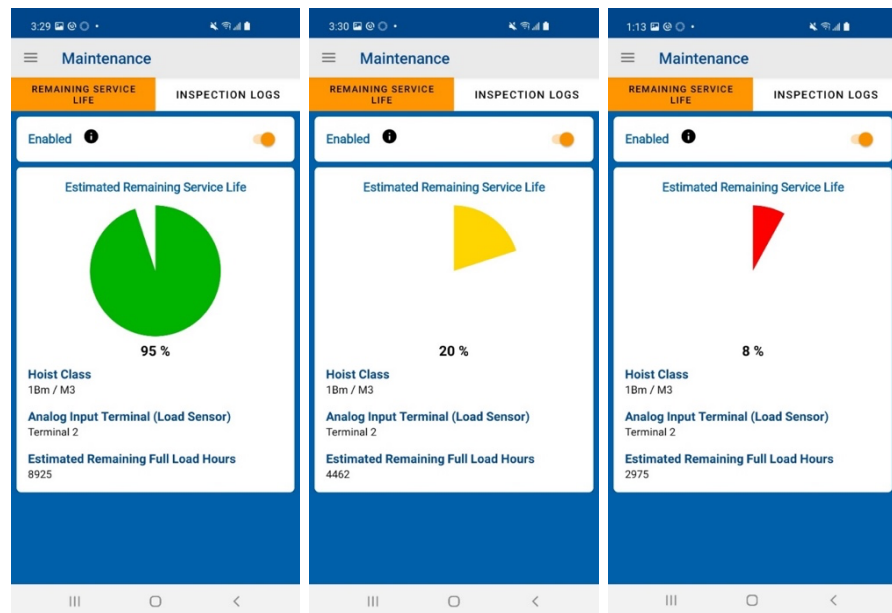
AI2 = 0-10V or -10-10V

AI3 = 0-10V, -10-10V 4-20mA, or 0-20mA

During setup, users configure the analog input used and program the hoist classification:

1. Analog input channel the load cell is wired to (Series 4: 1, 2, or 3) (G+ Mini: 1 or 2)
2. Hoist class from the manufacturer

The load cell and VFD need to be configured by scaling the load cell signal to align with the VFD ratings.



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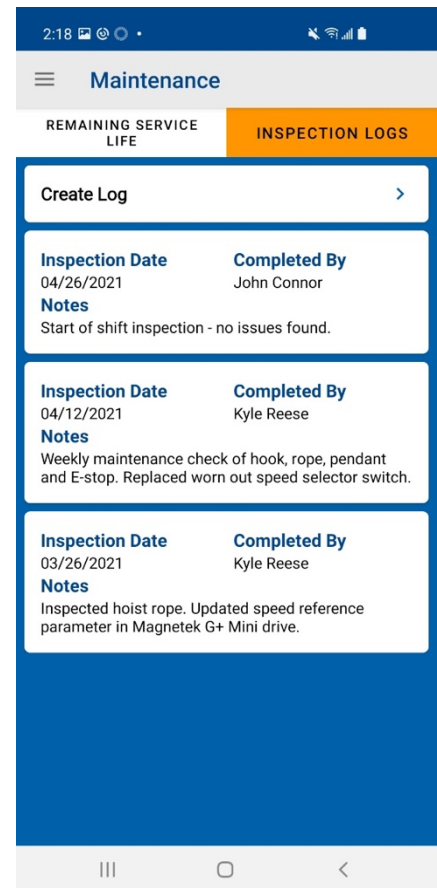
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24. What is the Inspection Log?

Users can keep track of inspections, maintenance, and modifications that are made to the hoist or VFD parameters.

The inspection log allows users to:

- Digitally store maintenance and inspection logs
- Create, edit, and delete posts
- Track inspections
 1. Shift
 2. Frequent
 3. Periodic
- Track maintenance
- Make drive parameter changes
- Order drive or spare part replacements



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Appendix A

1. How do I update the wireless operator (WOP-20) through a local wireless network (WLAN Wi-Fi network)?

Instructions for updating the hardware module can be found in the Intelli-Connect Mobile and Mobile+ apps in the “Support” section.

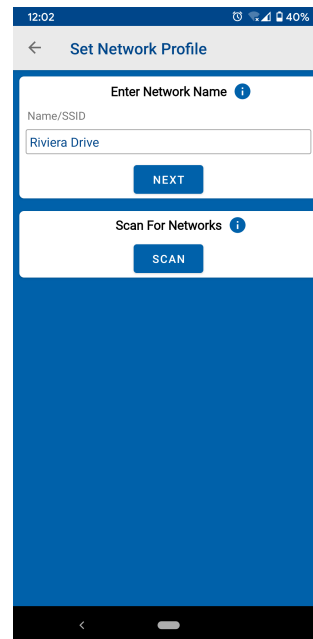
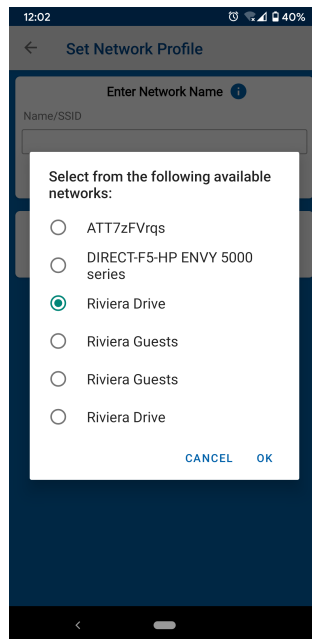
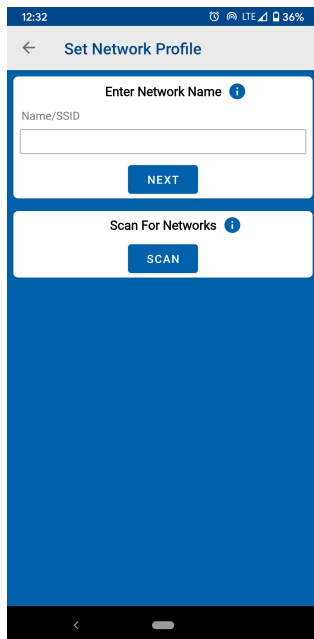
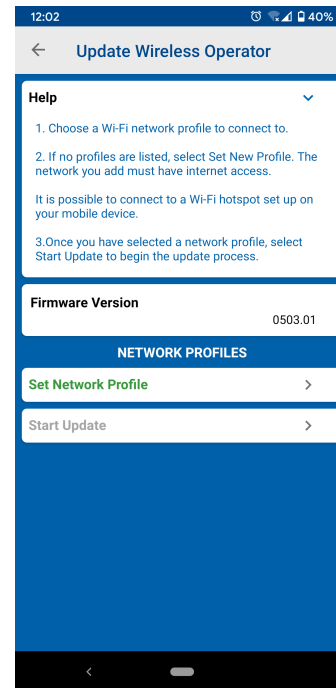
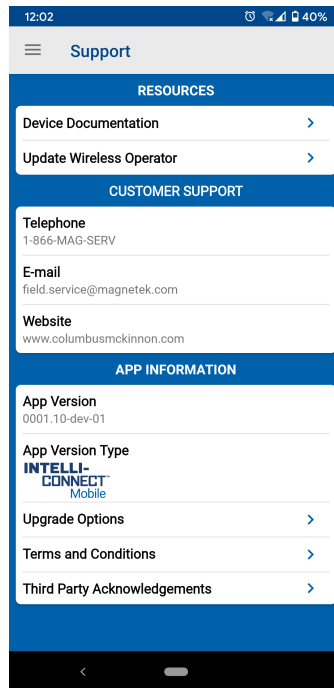
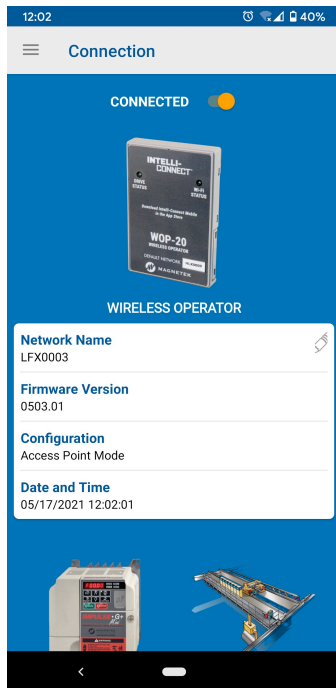
NOTE: The wireless network needs to be a 2.4GHz network. 5GHz networks will not work.

- Updating the WOP will take approximately 2 minutes to download and update.
- If download and update are successful, the WOP will reboot and can reconnect with app.
- Firmware version 0504.00 (or later), which can be found on the main connection page, is needed for Intelli-Connect Mobile+ functionality.

LED Indicators on the WOP-20 During the Process			
Status	Drive LED	Wi-Fi LED	Action
Unable to Connect	Solid Red	Slow Red Blinking	The WOP was unable to connect to the network. After approx. 10 sec., the WOP will reboot. Start process again.
Connected to Secure File Server	Rapid Green Blinking	Rapid Green Blinking	No steps needed. Wait for download and to complete. WOP will update when file has been downloaded.
Updating WOP	Slow Green Blinking	Slow Green Blinking	File has been downloaded and update in process. Wait approx. 2 minutes. WOP will reboot when complete
Loss of Connection	Slow Red Blinking	Solid Red	During the update process, the connection to the wireless network or hotspot was lost. After 10 sec., the WOP will reboot. Start the process again.

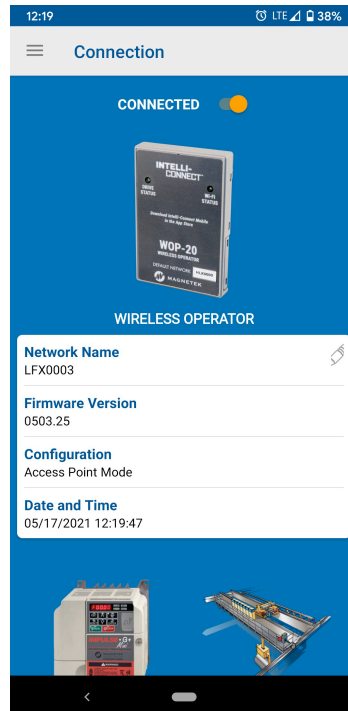
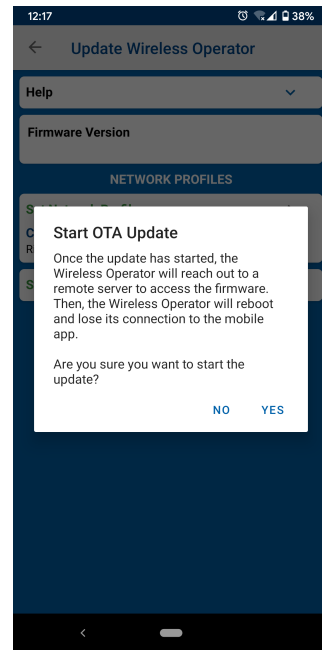
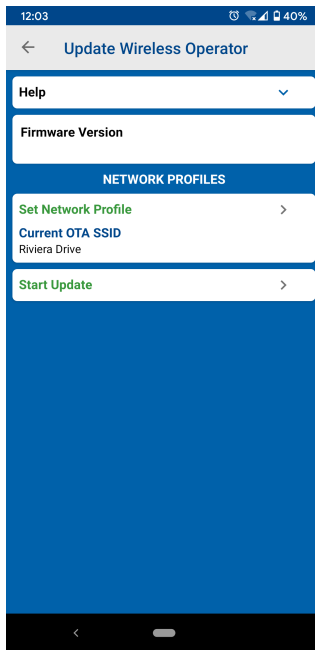
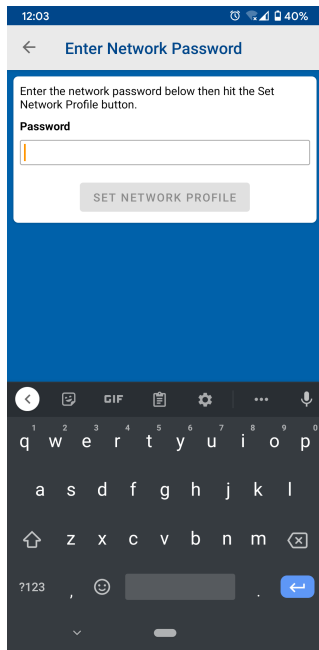
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2. How do I update the wireless operator (WOP-20) through a hotspot or cell phone hot spot?

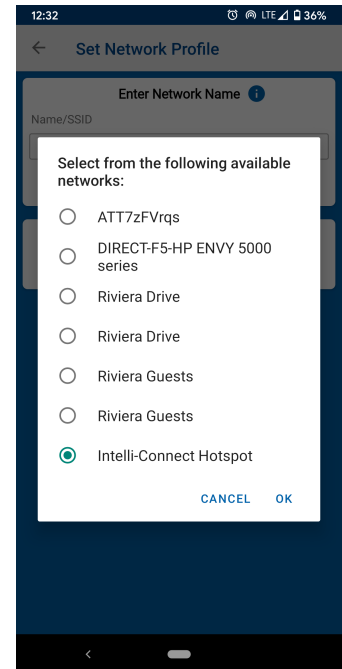
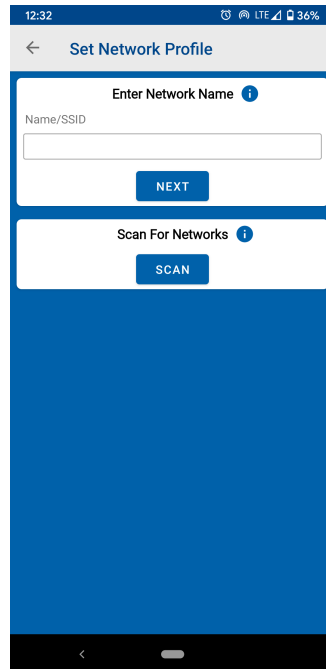
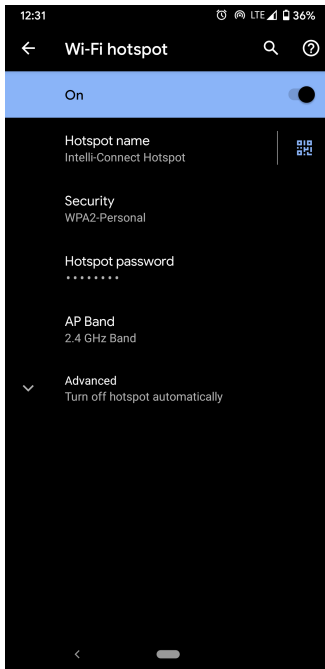
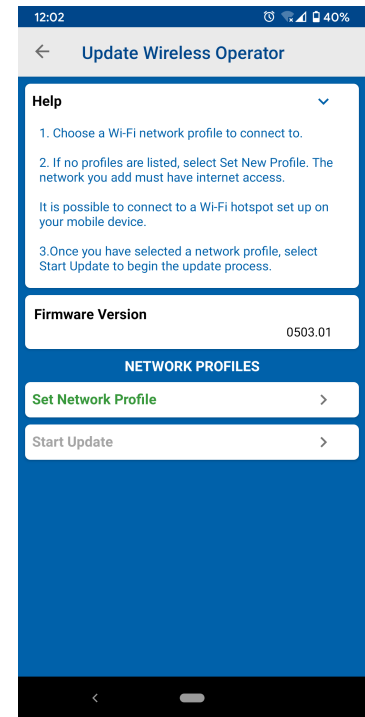
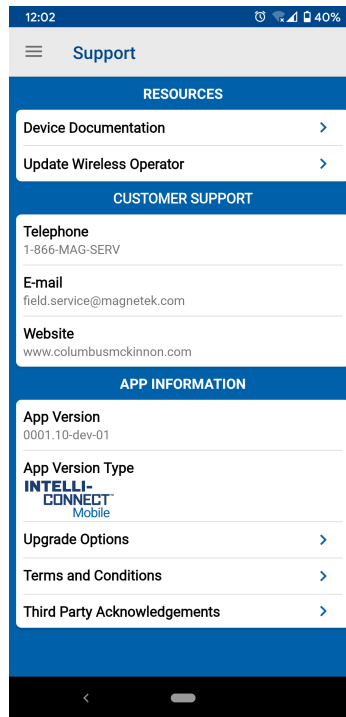
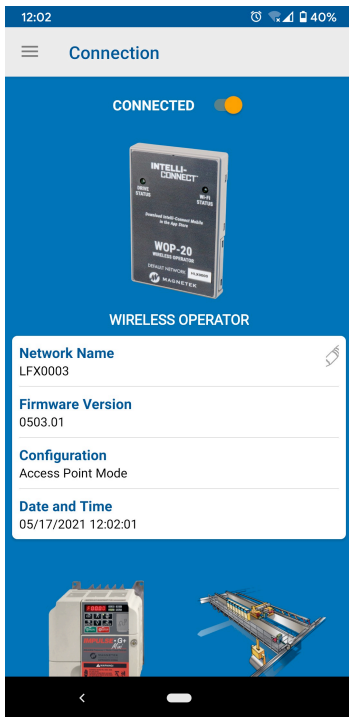
NOTE: This requires a data plan capable of turning the cell phone into a hotspot. Check with your carrier for data plans and charges.

- Updating the WOP will take approximately 2 minutes to download and update.
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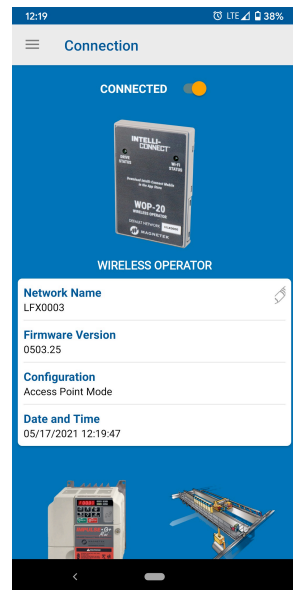
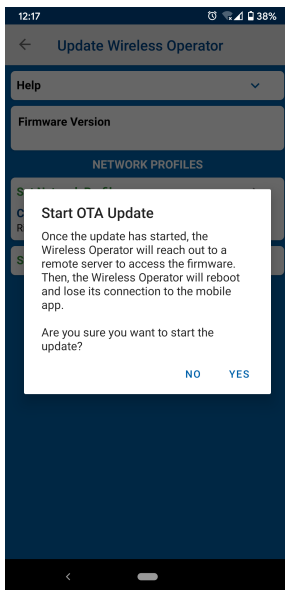
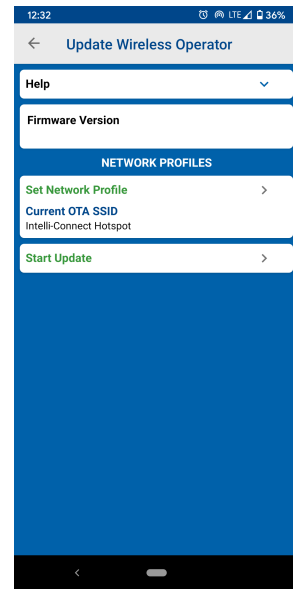
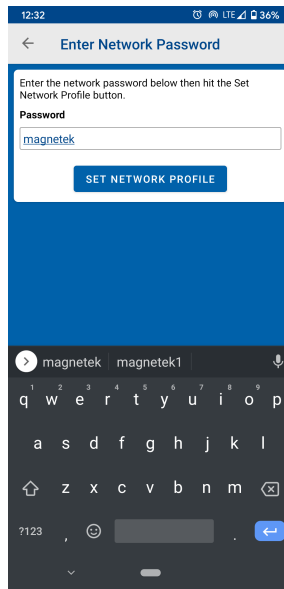
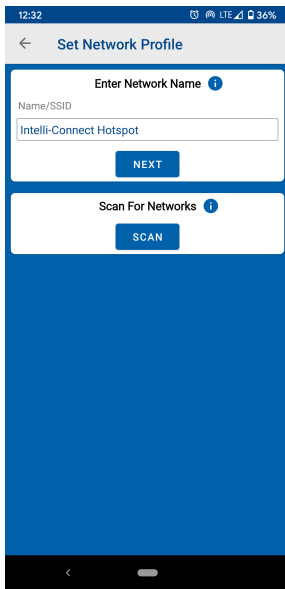
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