

PlusConnect™ Nautel NV
PlusConnect™ Nautel XR
PlusConnect™ Nautel VS

Installation and Operation Manual



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Introduction

This manual describes the PlusConnect™ Nautel NV, PlusConnect™ Nautel XR and PlusConnect™ Nautel VS. The PlusConnect provides a connection between the Nautel NV, XR or VS transmitter series and the ARC Plus transmitter remote control system. The PlusConnect reads transmitter parameters using SNMP (Simple Network Management Protocol) over an existing LAN, WAN, or Internet connection. The PlusConnect then forwards real-time data to the ARC Plus, also via LAN, WAN, or Internet. Monitor and control PlusConnect channels via:

- The front panel of the ARC Plus
- A web browser, using the built-in web interface on the ARC Plus
- Web-enabled mobile device, using the built-in mobile web interface on the ARC Plus
- PC, using optional AutoPilot® 2010 or AutoPilot® Plus software
- Telephone, using the optional ESI Enhanced Speech Interface for the ARC Plus

The PlusConnect is part of the Plus-X family of Ethernet I/O products designed for the ARC Plus.

Important! The PlusConnect operates in conjunction with an ARC Plus system. Be sure to complete configuration of the ARC Plus before adding the PlusConnect to the system.

Installation Note

Even though you may operate the ARC Plus and PlusConnect on different subnets, Burk Technology strongly recommends installing the PlusConnect on the same LAN as the ARC Plus. In a network failure, an ARC Plus can only continue to monitor and control a PlusConnect on the same LAN. If the network link between the units is not available, ARC Plus macros, alarm monitoring and telephone control will be unavailable for the PlusConnect unit.

Compatibility

Transmitter Compatibility

Model	Compatible Transmitters
PlusConnect Nautel NV	Nautel NV series
PlusConnect Nautel XR	Nautel XR3, XR6, XR12, XR25, XR50. <i>(Requires Nautel NxLINK)</i>
PlusConnect Nautel VS	Nautel VS300, VS300HD, VS1, VS1HD, VS2.5, VS2.5HD

Transmitter models, firmware versions and options are subject to change. Visit www.burk.com for current information.

ARC Plus Compatibility

Before installing the PlusConnect, please verify that the ARC Plus firmware, AutoPilot software and AutoLoad Plus software versions are current. Updates are available at www.burk.com. The following are minimum software and firmware requirements

Software	Version
ARC Plus firmware	2.1.0
AutoLoad Plus software	2.0.0
AutoPilot Plus software	2.0.0
AutoPilot 2010 software	2.5.0

Unpacking

The PlusConnect ships with the following:

- Manual (on CD)
- PlusConnect unit
- Power cord
- 10' shielded CAT5 cable

Front Panel Indicators



Front panel of the PlusConnect unit

Indicator	State	Description
Power LED	On	Power is on
Power LED	Off	Power is off
Link LED	On (solid)	ARC Plus and transmitter connections are good
Link LED	Blinking	Transmitter connection is down
Link LED	Off	ARC Plus connection is down

Hardware Configuration

This step will link the PlusConnect to a specific ARC Plus unit and will identify the transmitter to which the unit will be connected.

Important! This procedure will reset the PlusConnect to its default IP address: 192.168.0.100.

1. Connect your PC and the PlusConnect to the same LAN.
2. Assign your PC the IP address 192.168.0.1, with the subnet mask 255.255.255.0
3. Use a paper clip or similar small object to press the **Config** button on the PlusConnect unit. The power LED will blink when the unit is in configuration mode.
4. Open a telnet session to the PlusConnect at the address 192.168.0.100 (port 23). Using Windows, you can launch telnet by typing "telnet 192.168.0.100" from a command prompt.
5. When prompted, enter the default password for the PlusConnect: *password*.

```
Burk Technology
PlusConnect Nautel XX v1.0.0

Password:
```

6. Telnet will display the main menu.

1.	Log Off	
2.	Help	
3.	Set IP Address:	192.168.0.100
4.	Set Subnet:	255.255.255.0
5.	Set Gateway:	192.168.0.1
6.	Set Telnet Port:	23
7.	Set Transmitter IP Address:	192.168.0.102
8.	Set Transmitter SNMP Port:	161
9.	Set SNMP Read Community String:	public
10.	Set SNMP Write Community String:	private
11.	SNMP Polling Rate:	3 seconds
12.	SNMP Timeout:	30 seconds
13.	ARC Plus IP Address:	192.168.0.101
14.	Plus-X Port:	45000
15:	Set Password	
16:	Diagnostics	
17.	Update Firmware.	
99.	Save Configuration and Reboot.	

To change a setting, enter the menu number for that setting and then press <Enter>.

7. Enter the appropriate configuration settings for the following parameters:

#	Setting	Description
3	IP Address	The IP address you want to assign to the PlusConnect unit
4	Subnet	The subnet mask for your LAN
5	Gateway	The gateway for your LAN
7	Transmitter IP Address	The IP address of your Nautel transmitter
13	ARC Plus IP Address	The IP address of your ARC Plus unit
14	ARC Plus Plus-X Port	The Plus-X port number configured on your ARC Plus (typically 45000)

8. Enter 99 and press <Enter> to save your changes and reboot the PlusConnect.

Additional SNMP Parameters

The main menu allows configuration of additional parameters beyond those described in the table above. The default values for these entries are appropriate for most installations. If you have made specific changes to the SNMP functionality of your transmitter, you should change the corresponding parameters using the PlusConnect telnet configuration tool.

Setting the Password

Changing your password is strongly recommended. The PlusConnect password is used to access the telnet configuration menu. To change the password, use option #15: Set Password.

Uploading New Firmware

To upload new firmware to the PlusConnect, use option #17: Upload Firmware. When prompted to start the firmware upload, enter “Y” for yes. The system will respond with the following message:

```
To load firmware run:  
tftp [IP Address] put [firmware.hex]
```

Open a command prompt in Windows and type the specified command, replacing [IP Address] with the IP address of your PlusConnect unit, and [firmware.hex] with the file name of the new firmware file.

Once the TFTP process is complete, your unit will reboot and run the new firmware. You can confirm the upload was successful by opening a telnet session and observing the firmware version from the log on prompt.

For the latest firmware updates, visit www.burk.com.

Installation

After entering the configuration settings, you are ready to install the PlusConnect in its permanent location. Simply connect the PlusConnect unit to your LAN and power it on. The PlusConnect will automatically begin reading data from the transmitter.

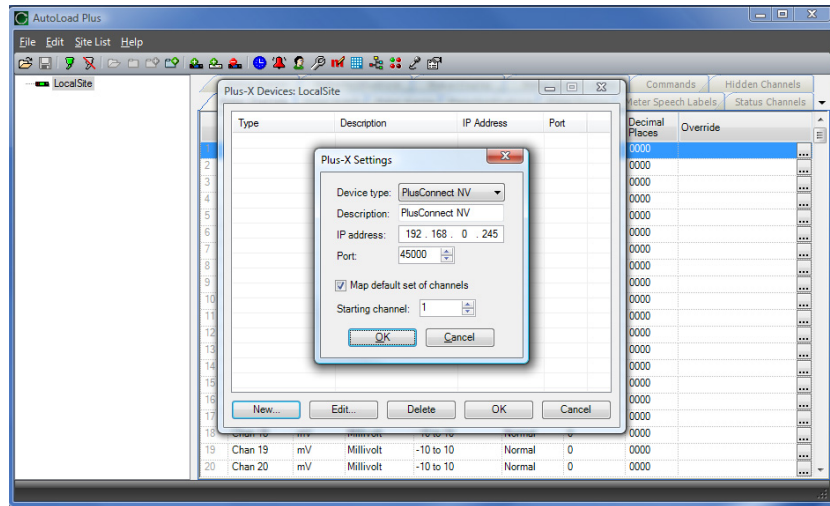
Software Configuration

Now that the PlusConnect is installed on the network and connected to the transmitter, you are ready to add the PlusConnect to the ARC Plus using AutoLoad Plus. AutoLoad Plus is included with the ARC Plus, and may also be downloaded from www.burk.com.

Configuration involves:

- Adding the PlusConnect unit to the ARC Plus site
- Mapping PlusConnect parameters to unused ARC Plus channels

Adding the PlusConnect Unit to the ARC Plus Site



Adding a Plus-X device in AutoLoad Plus

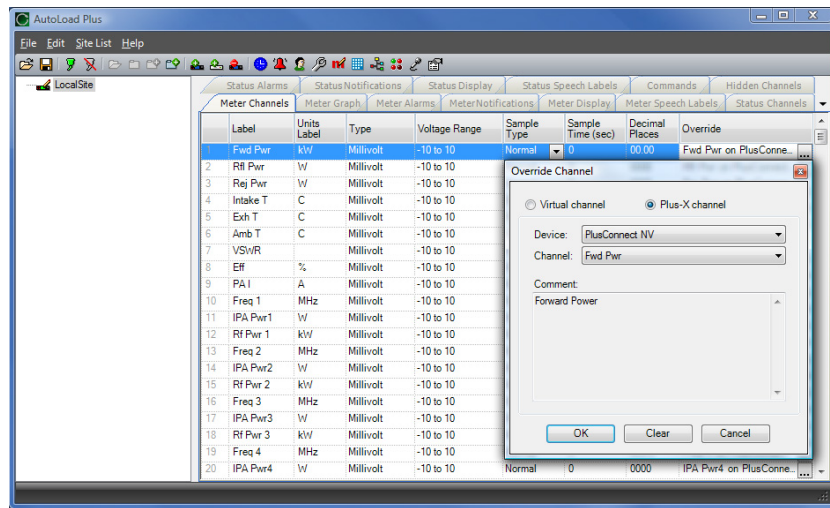
In order for the ARC Plus to recognize the PlusConnect, the PlusConnect must be added to the site:

1. Open AutoLoad Plus and connect to the ARC Plus site to which you are adding the PlusConnect.
2. From the **Edit** menu, select **Plus-X Devices** to open the Plus-X device configuration dialog.
3. Click **New...** to add the PlusConnect to the site.
4. AutoLoad Plus will prompt you to select the device type. Select "PlusConnect Nautel [X]" (select the appropriate Nautel transmitter model). You may optionally change the description for the PlusConnect. The description appears in AutoLoad Plus to identify each PlusConnect channel.
5. Enter the IP address and port number of the PlusConnect. These should be the same settings you used when you configured the PlusConnect using telnet.
6. Check the **Map default set of channels** box if you wish to automatically add the most commonly used PlusConnect parameters to the ARC Plus (recommended). This will replace unused ARC Plus channels with 19 PlusConnect status channels, 9 meters and 9 commands. **There must be 19 consecutive unused channels, including this starting channel.** You do *not* need to have additional Integrated Input Units and Integrated Command Relay Units in order to use these channels.

Important! PlusConnect channels take the place of normal I/O channels. If a metering input, status input, or command relay is connected to an ARC Plus channel and a PlusConnect parameter is subsequently mapped to that channel, the I/O channel will no longer be displayed.

7. Click **OK**.

Manually Mapping PlusConnect Parameters



Overriding channels in AutoLoad Plus

Even if you chose to map the default set of channels when you added the PlusConnect to the site, you may wish to map additional channels to the ARC Plus. The PlusConnect transmitter provides access to many remote control parameters, all of which are selectable for display on the ARC Plus (provided there is sufficient unused channel capacity).

Mapping additional channels is accomplished in AutoLoad Plus by selecting the **Meter Channels**, **Status Channels** or **Commands** tab, as appropriate:

1. Within any of these tabs, click the **Override** button to change a channel's assignment from a traditional I/O channel to a Plus-X channel.
2. When the Override Channel dialog appears, select **Plus-X channel** and choose the Plus-X device from the list.
3. Select the PlusConnect channel you wish to use in place of this I/O channel.
4. Click **OK**.

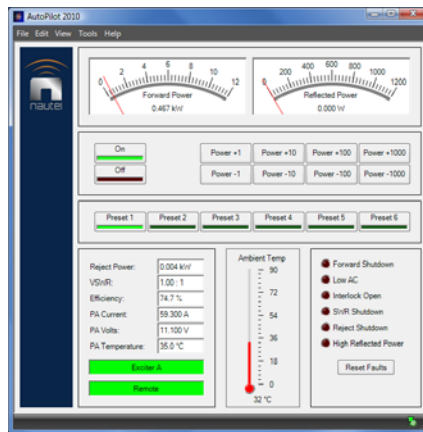
Once mapped, the PlusConnect channel will appear on the front panel of the ARC Plus, in AutoPilot, on the ARC Plus web page, and will be accessible via the ESI.

Setting up Labels, Limits and Alarms

Labels, limits and alarms for PlusConnect parameters are set up in AutoLoad Plus. The process is the same as for limits and alarms of other ARC Plus channels. Refer to the ARC Plus manual for information on channel configuration.

Important! Because operation preferences vary so widely, no alarms are pre-configured within the PlusConnect channels. You must use AutoLoad Plus to set up alarms for the PlusConnect channels.

Creating a PlusConnect Custom View in AutoPilot 2010

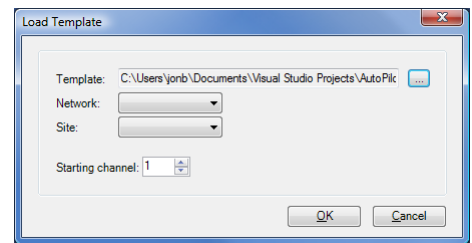


PlusConnect Custom View for the Nautel NV

The easiest way to monitor your PlusConnect parameters is by creating a Custom View in AutoPilot using a pre-built template specific to your transmitter model. In order to use templates, you must map the default set of channels to the ARC Plus during setup. If you have mapped a custom set of channels, you can still use a Custom View to display them, but the template will not function as intended.

To create a custom view with a PlusConnect template:

1. Open the Custom View Editor by selecting **File ► New ► Custom View**.
2. When the Custom View Editor opens, select **File ► New From Template...** This opens the Load Template dialog.
3. Browse for the desired template. The default location for templates is %ProgramFiles%\Burk Technology\AutoPilot 2010\Templates\Custom Views. Choose the **PlusConnect** folder, followed by **Nautel [X]** (select the appropriate Nautel transmitter model).
4. Select template for the PlusConnect Nautel [X].
5. Select the **Network** and **Site** for the Arc Plus connected to the PlusConnect.
6. Enter the **Starting channel** for the PlusConnect parameters. This starting channel must be the same as the starting channel you used when adding the PlusConnect to the ARC Plus site.
7. Press **OK**. AutoPilot will load the template in the editor and automatically populate the channels.
8. Save the Custom View using the **Save** icon in the tool bar.
9. Close the editor. You may then select the Custom View for display in AutoPilot.



Load Template dialog

Operation

Once the PlusConnect parameters are mapped to ARC Plus channels using AutoLoad Plus, accessing the transmitter parameters is no different from any other ARC Plus channel. You may view channels using:

- The front panel of the ARC Plus
- The front panel of any ARC Plus configured for site-to-site operation with this site
- The built-in web interface
- A mobile device, via the built-in mobile web interface
- AutoPilot
- The ESI

For more information on using the ARC Plus to monitor and control the remote site, please see the ARC Plus Installation and Operation Manual.

Note that the PlusConnect channels are routed only through the ARC Plus unit specified during PlusConnect configuration. In order to access the transmitter by any means, the ARC Plus unit must be powered and connected to the network.

Troubleshooting

Connection Errors

If the PlusConnect is unable to communicate with the transmitter using SNMP, the Link LED on the front panel of the PlusConnect will blink. Check that both the PlusConnect and transmitter are connected to the network and configured properly.

If the network connection between the PlusConnect and ARC Plus is lost, the ARC Plus will log an alarm after three minutes of network failure. The PlusConnect Link LED will also turn off.

Note: PlusConnect events and errors are logged to the ARC Plus event list, which is accessible by the ARC Plus front panel and from AutoPilot.

Getting Help

For customer support, please email support@burk.com or call our direct customer support line at 978-486-3711. We will be glad to assist you. The customer support office is open Monday – Friday, 9AM to 5PM Eastern time.

Warranty

Burk Technology, Inc. warrants the PlusConnect Nautel NV, PlusConnect Nautel XR or PlusConnect Nautel VS to be free of defects in materials and workmanship for a period of 24 months from the date of purchase. Equipment will be repaired or replaced at the option of Burk Technology and returned freight prepaid to the customer. Damage due to abuse or improper operation or installation of the equipment or caused by fire or flood or harsh environment is not to be covered by this warranty. Damage in shipping is not the responsibility of Burk Technology. A return authorization must be obtained before returning any equipment. Materials returned under this warranty must be shipped freight prepaid and insured in the original shipping carton or suitable substitute to Burk Technology, Inc., 7 Beaver Brook Road, Littleton, MA 01460. Repairs not covered under this warranty will be made at prevailing shop rates established by Burk Technology.

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