

## 47 • BESTCOMSPPlus® Software

BESTCOMSPPlus is a Windows®-based, PC application that provides a user-friendly, graphical user interface (GUI) for use with Basler Electric communicating products. The name **BESTCOMSPPlus** is an acronym that stands for **B**asler **E**lectric **S**oftware **T**ool for **C**ommunications, **O**perations, **M**aintenance, and **S**ettings.

BESTCOMSPPlus provides the user with a point-and-click means to set and monitor the BE1-11m. The capabilities of BESTCOMSPPlus make the configuration of one or several BE1-11m Motor Protection Systems fast and efficient. A primary advantage of BESTCOMSPPlus is that a settings scheme can be created, saved as a file, and then uploaded to the BE1-11m at the user's convenience.

BESTCOMSPPlus uses plugins allowing the user to manage several different Basler Electric products. The BE1-11 plugin must be activated before use. The plugin can be activated automatically by connecting to a BE1-11m or activated manually by requesting an activation key from Basler Electric.

The BE1-11 plugin opens inside the BESTCOMSPPlus main shell. The same default logic scheme that is shipped with the BE1-11m is brought into BESTCOMSPPlus by downloading settings and logic from the BE1-11m or by selecting application type "M" on the Style Number screen. This gives the user the option of developing a custom setting file by modifying the default logic scheme or by building a unique scheme from scratch.

BESTlogic™Plus Programmable Logic is used to program BE1-11m logic for protection elements, inputs, outputs, alarms, etc. This is accomplished by the drag-and-drop method. The user can drag elements, components, inputs, and outputs onto the program grid and make connections between them to create the desired logic scheme.

BESTCOMSPPlus also allows for downloading industry-standard COMTRADE files for analysis of stored oscillography data. Detailed analysis of the oscillography files can be accomplished using BESTwave™ software.

Figure 47-1 illustrates the typical user interface components of the BE1-11 plugin with BESTCOMSPPlus.

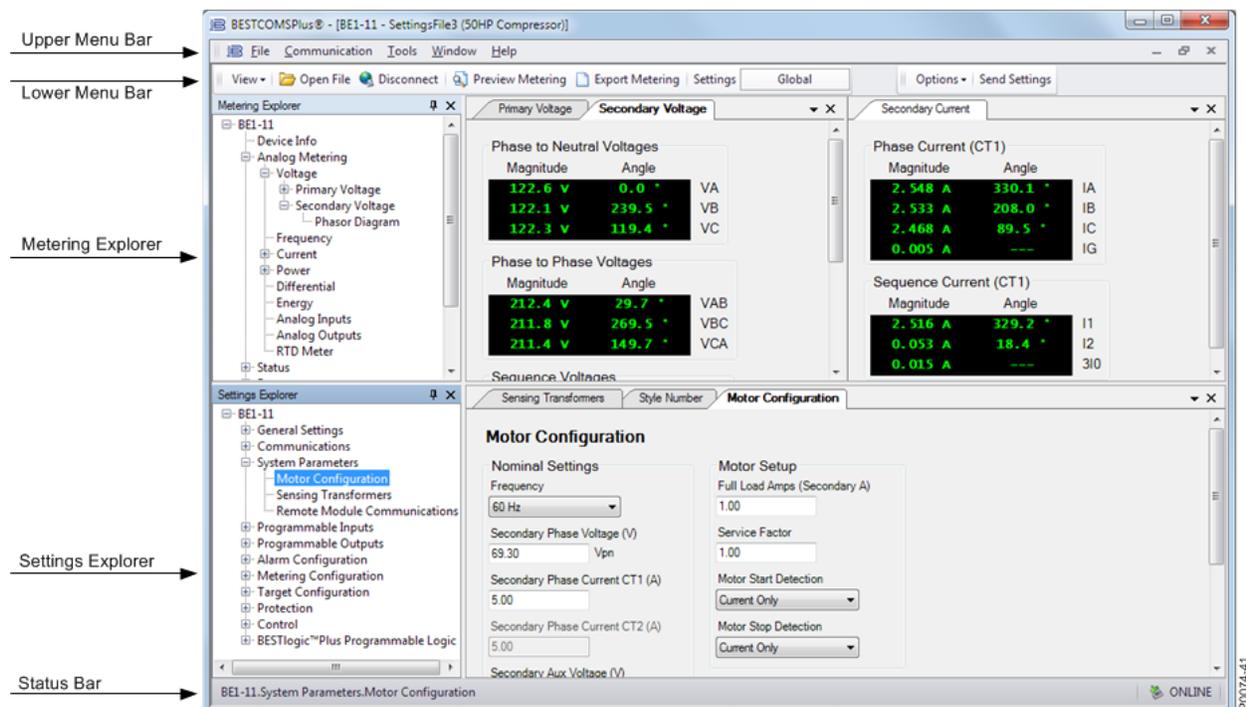


Figure 47-1. Typical User Interface Components

## System Recommendations

BESTCOMSP*lus* software is built on the Microsoft® .NET Framework. The setup utility that installs BESTCOMSP*lus* on your PC also installs the BE1-11 plugin and the required version of .NET Framework (if not already installed). BESTCOMSP*lus* operates with systems using Windows® 7 SP1, Windows 8.1, and Windows 10 version 1607 (Anniversary Edition) or later. System recommendations for the .NET Framework and BESTCOMSP*lus* are listed in Table 47-1.

**Table 47-1. System Recommendations for BESTCOMSP*lus* and the .NET Framework**

System Type	Component	Recommendation
32/64 bit	Processor	2.0 GHz
32/64 bit	RAM	1 GB (minimum), 2 GB (recommended)
32 bit	Hard Drive	200 MB (if .NET Framework is already installed on PC)
		4.5 GB (if .NET Framework is not already installed on PC)
64 bit	Hard Drive	200 MB (if .NET Framework is already installed on PC)
		4.5 GB (if .NET Framework is not already installed on PC)

To install BESTCOMSP*lus*, a Windows user must have Administrator rights.

### Installation

#### Note

Do not connect a USB cable until setup completes successfully. Connecting a USB cable before setup is complete may result in unwanted or unexpected errors.

Run the setup file for the BESTCOMSP*lus* application. The setup utility installs BESTCOMSP*lus*, the .NET Framework (if not already installed), the USB driver, and the BE1-11 plugin for BESTCOMSP*lus* on your PC.

When BESTCOMSP*lus* installation is complete, a Basler Electric folder is added to the Windows programs menu. This folder is accessed by clicking the Windows Start button and then accessing the Basler Electric folder in the Programs menu. The Basler Electric folder contains an icon that starts BESTCOMSP*lus* when clicked.

### Activate the BE1-11 Plugin for BESTCOMSP*lus*®

The BE1-11 plugin is a module that runs inside the BESTCOMSP*lus* shell. The BE1-11 plugin contains specific operational and logic settings for only the BE1-11*m*. Uploading settings to the BE1-11*m* is possible only after activating the BE1-11 plugin.

The BE1-11 plugin can be activated automatically or manually. Automatic activation is achieved by using a USB cable to establish communication between the BE1-11*m* and BESTCOMSP*lus*. Manual activation is initiated by contacting Basler Electric for an activation key and entering the key into BESTCOMSP*lus*. Manual activation is useful if you want to create a settings file prior to receiving your BE1-11*m*. Note that if a BE1-11*m* is not connected, you will not be able to configure certain Ethernet settings. Ethernet settings can be changed only when an active USB or Ethernet connection is present. Refer to the *Communication* chapter.

### Connect a USB Cable

The USB driver was copied to your PC during BESTCOMSP*lus* installation and is installed automatically after powering the BE1-11*m*. USB driver installation progress is shown in the Windows taskbar area. Windows will notify you when installation is complete.

Connect a USB cable between the PC and your BE1-11*m*. Apply operating power (per style chart in the *Introduction* chapter) to the BE1-11*m* at rear terminals A6 and A7. Wait until the boot sequence is complete.

### Note

In some instances, the Found New Hardware Wizard will prompt you for the USB driver. If this happens, direct the wizard to the following folder:

C:\Program Files\Basler Electric\USB Device Drivers\

If the USB driver does not install properly, refer to the *Troubleshooting* chapter.

## Start BESTCOMSP*Plus*® and Activate BE1-11 Plugin Automatically

To start BESTCOMSP*Plus*, click the Start button, point to Programs, Basler Electric, and then click the BESTCOMSP*Plus* icon. During initial startup, the BESTCOMSP*Plus* Select Language screen is displayed (Figure 47-2). You can choose to have this screen displayed each time BESTCOMSP*Plus* is started, or you can select a preferred language and this screen will be bypassed in the future. Click OK to continue. This screen can be accessed later by selecting Tools and Select Language from the menu bar.

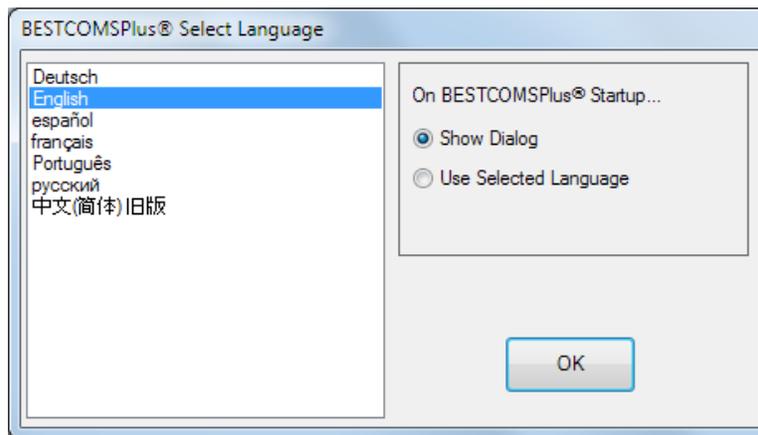


Figure 47-2. BESTCOMSP*Plus* Select Language Screen

The BESTCOMSP*Plus* splash screen is shown for a brief time. See Figure 47-3.

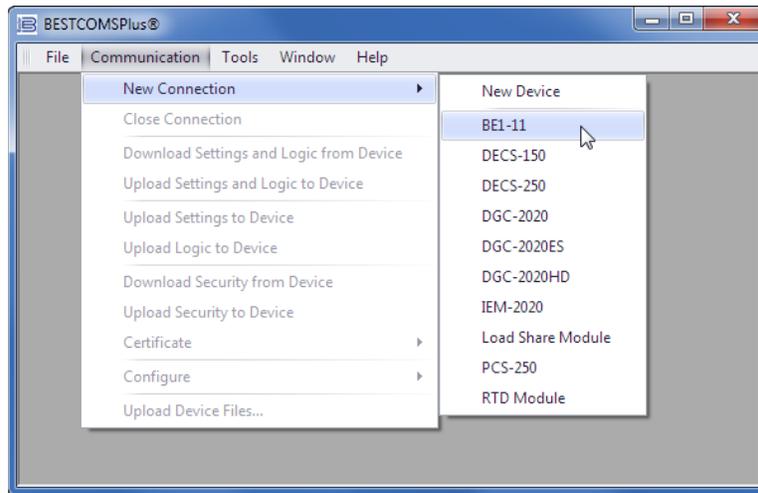


Figure 47-3. BESTCOMSP*Plus* Splash Screen

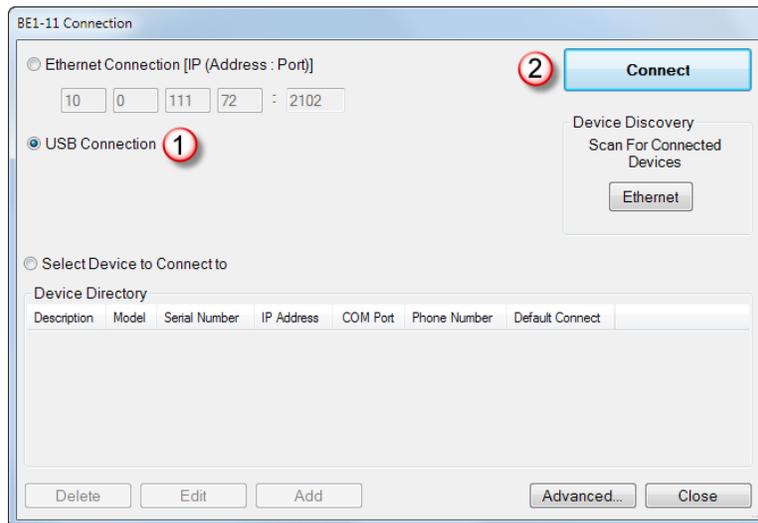
The BESTCOMSP*Plus* platform window opens. Select New Connection from the Communication pull-down menu and select BE1-11. See Figure 47-4. The BE1-11 plugin is activated automatically after connecting to a BE1-11*m*.

The BE1-11 Connection screen shown in Figure 47-5 appears. Select USB Connection and then click the Connect button.

The BE1-11 plugin opens indicating that activation was successful. You can now configure the BE1-11 $m$  communication ports and other BE1-11 $m$  settings.



**Figure 47-4. Communication Pull-Down Menu**



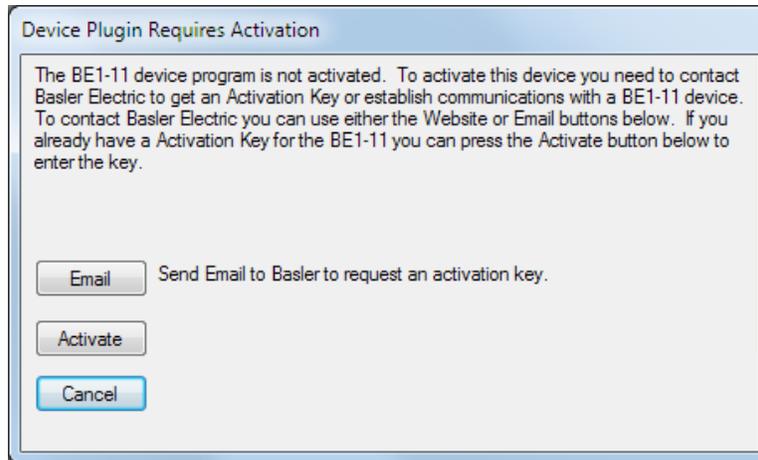
**Figure 47-5. BE1-11 Connection Screen**

### Manual Activation of the BE1-11 Plugin

Manual activation of the BE1-11 plugin is required only if your initial use of BESTCOMSPPlus will be on a PC that is not connected to a BE1-11 $m$ . Manual activation is described in the following paragraphs.

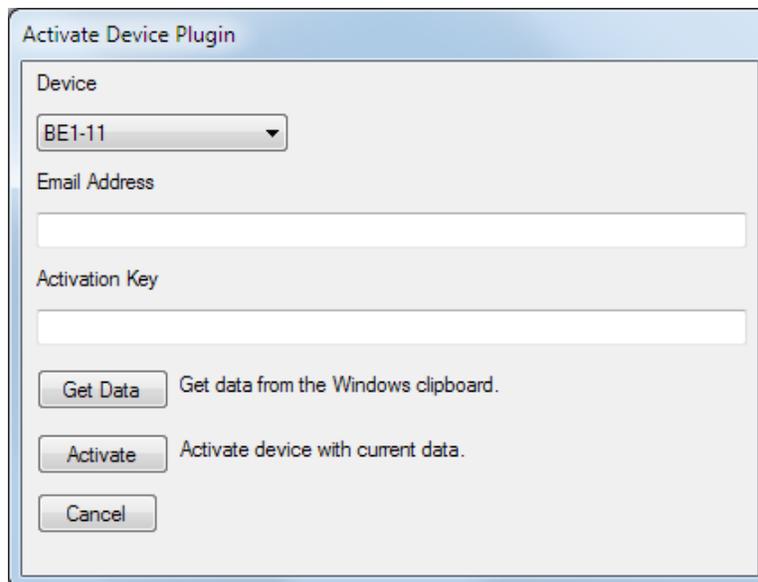
#### Requesting an Activation Key

When initially running the BE1-11 plugin, the Activate Device Plugin pop-up appears. You must contact Basler Electric for an activation key before you can activate the BE1-11 plugin. Click the Email button to request an activation key from Basler Electric. Once you receive your activation key, click the Activate button. See Figure 47-6.



**Figure 47-6. Device Plugin Requires Activation**

The Activate Device Plugin pop-up appears. Refer to Figure 47-7.



**Figure 47-7. Activate Device Plugin**

### Entering an Activation Key

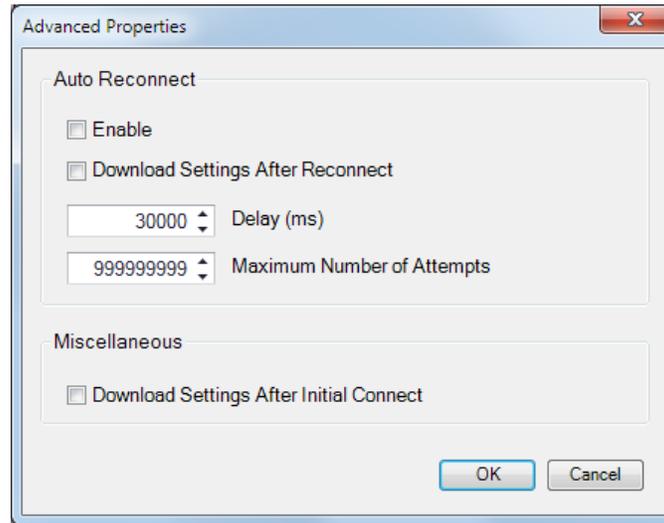
Select BE1-11 from the Device pull-down menu. Enter your Email Address and Activation Key provided by Basler Electric. If you received an email containing the Activation Key, you can select all of the text in the email and copy it to the Windows clipboard using normal Windows techniques as shown in Figure 47-8.

The Get Data button extracts the Device, Email Address, and Activation Key from the Windows clipboard and pastes it into the appropriate fields. See Figure 47-9. Click the Activate button to continue. The Activate Device Plugin screen is also found by selecting Activate Device from the Tools pull-down menu of the BESTCOMSP*lus* main screen.



### Advanced Properties

Click the Advanced button on the Connection screen to display the Advanced Properties dialog. Default settings are shown in Figure 47-11.



**Figure 47-11. Advanced Properties Dialog**

## **Menu Bars**

The menu bars are located near the top of the BESTCOMSP*lus* screen (see Figure 47-1). The upper menu bar has five pull-down menus. With the upper menu bar, it is possible to manage settings files, configure communication settings, upload and download settings/security files, and compare settings files. The lower menu bar consists of clickable icons. The lower menu bar is used to change BESTCOMSP*lus* views, open a settings file, connect/disconnect, preview metering printout, export metering, switch to live mode, and send settings after a change is made when not in live mode.

### **Upper Menu Bar (BESTCOMSP*lus*® Shell)**

Upper menu bar functions are listed and described in Table 47-2.

**Table 47-2. Upper Menu Bar (BESTCOMSP*lus* Shell)**

<b>Menu Item</b>	<b>Description</b>
<b><u>F</u>ile</b>	
New	Create a new settings file
Open	Open an existing settings file
Close	Close settings file
Save	Save settings file
Save As	Save settings file with a different name
Export To File	Save settings as a *.csv file
Print	Print, export, or send a settings file
Properties	View properties of a settings file
History	View history of a settings file
Recent Files	Open a previously opened file
Exit	Close BESTCOMSP <i>lus</i> program
<b><u>C</u>ommunication</b>	
New Connection	Choose new device or BE1-11

Menu Item	Description
Close Connection	Close communication between BESTCOMSP <i>lus</i> and BE1-11
Download Settings and Logic from Device	Download operational and logic settings from the device
Upload Settings and Logic to Device	Upload operational and logic settings to the device
Upload Settings to Device	Upload operational settings to the device
Upload Logic to Device	Upload logic settings to the device
Download Security from Device	Download security settings from the device
Upload Security to Device	Upload security settings to the device
Certificate - Upload Certificate to Device	Upload certificate to the device
Certificate - Remove Certificate from Device	Remove certificate from the device
Reset to Factory Defaults	Reset factory defaults in the BE1-11 <i>m</i> (Available only when the device does not contain default settings. Administrator access level required.)
Upload Settings, Logic and Security	Upload operational, logic, and security settings to the device (Available only when the device contains default settings. No password required.)
Configure	Ethernet settings
Upload Device Files	Upload firmware to the device
Upgrade Style Number	Upload a style upgrade file supplied by Basler Electric
<b>Tools</b>	
Select Language	Select BESTCOMSP <i>lus</i> language
Activate Device	Activate the BE1-11 plugin
Set File Password	Password protect a settings file
Compare Settings Files	Compare two settings files
Copy Settings Group	Copy Settings from Group to Group
Auto Export Metering	Exports metering data at a user-defined interval
Launch BEST61850™	Opens BEST61850 (if installed)
Event Log - View	View the BESTCOMSP <i>lus</i> event log
Event Log - Verbose Logging	Enable/disable verbose logging
Event Log - Verbose Communication Logging	Enable/disable verbose communication logging
Set Default Shell	Select the default shell for BESTCOMSP <i>lus</i>
Generate Certificate	Generate a certificate
Accepted Devices	View and delete accepted devices
<b>Help</b>	
Check for Updates	Check for BESTCOMSP <i>lus</i> updates via the internet
Check for Update Settings	Enable or change automatic checking for updates
About	View general, detailed build, and system information

### Lower Menu Bar (BE1-11 Plugin)

Lower menu bar functions are listed and described in Table 47-3.

Table 47-3. Lower Menu Bar (BE1-11 Plugin)

Menu Button	Description
	Enables you to show/hide the Metering Panel, Settings Panel, or Settings Info Panel. Opens and saves workspaces. Customized workspaces make switching between tasks easier and more efficient.
	Opens a saved settings file.
	Opens the BE1-11 Connection screen which enables you to connect to the BE1-11 <i>m</i> via USB or Ethernet. This button appears only when a BE1-11 <i>m</i> is not connected.
	Used to disconnect a connected BE1-11 <i>m</i> . This button appears only when a BE1-11 <i>m</i> is connected.
	Displays the Print Preview screen where a preview of the Metering printout is shown. Click on the printer button to send to a printer.
	Enables all metering values to be exported into a *.csv (comma-separated values) file.
	A pull-down menu allowing group selection is available when making protection settings. The settings can be applied to Group 0, 1, 2, or 3. If a global setting is being changed, Global will appear in place of the drop-down menu.
	Displays a drop-down list entitled Live Mode Settings which enables Live mode where settings are automatically sent to the device in real time as they are changed. The changed device settings are saved to non-volatile memory by clicking on the Save button.
	Saves all device settings to non-volatile memory. This button appears only when operating in Live mode.
	Sends settings to the BE1-11 when BESTCOMSP <i>lus</i> is not operating in Live Mode. Click this button after making a setting change to send the modified setting to the BE1-11 <i>m</i> .

## Settings Explorer

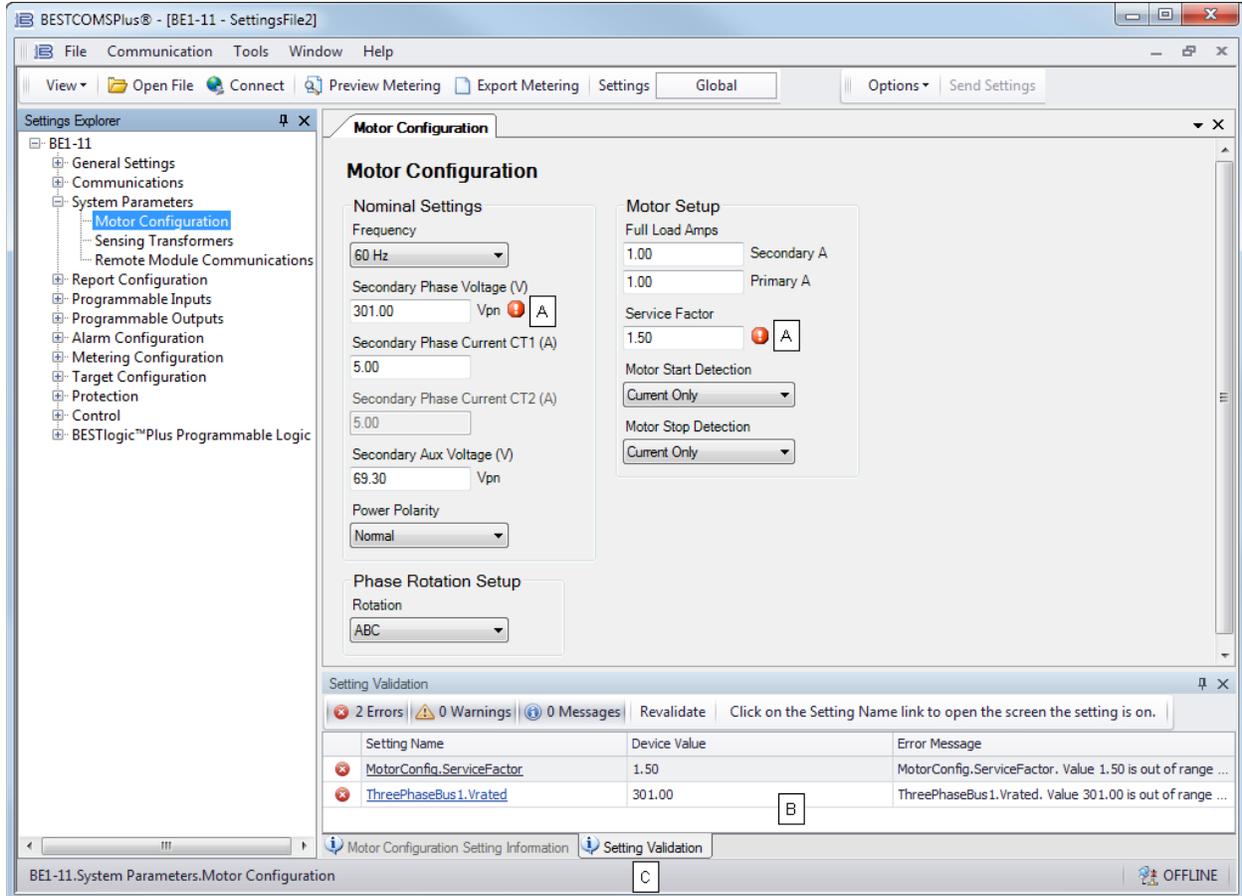
The Settings Explorer is a convenient tool within BESTCOMSP*lus* used to navigate through the various settings screens of the BE1-11 plugin. Descriptions of these configuration settings are organized as follows:

- General Settings
- Communications
- System Parameters
- Programmable Inputs
- Programmable Outputs
- Alarm Configuration
- Metering Configuration
- Target Configuration
- Protection
- Control
- BESTlogic*Plus* Programmable Logic

Logic setup will be necessary after making certain setting changes. For more information, refer to the BESTlogic*Plus* chapter.

## Settings Entry

When entering settings in BESTCOMSP*lus*, each setting is validated against prescribed limits. Entered settings that do not conform with the prescribed limits are accepted but flagged as noncompliant. Figure 47-12 illustrates an example of flagged, noncompliant settings (locator A) and the Setting Validation window (locator B) used to diagnose faulty settings.



**Figure 47-12. Flagged, Noncompliant Settings and the Setting Validation Window**

The Setting Validation window, viewed by selecting the Setting Validation tab (locator C), displays three types of annunciations: errors, warnings, and messages. An error describes a problem such as a setting that is out of range. A warning describes a condition where supporting settings are invalid, causing other settings to be noncompliant with the prescribed limits. A message describes a minor setting issue that was automatically resolved by BESTCOMSP*lus*. An example of a condition triggering a message is entry of a settings value with a resolution that exceeds the limit imposed by BESTCOMSP*lus*. In this situation, the value is automatically rounded and a message is triggered. Each annunciation lists a hyperlinked name for the noncompliant setting and an error message describing the issue. Clicking the hyperlinked setting name takes you to the setting screen with the offending setting. Right-clicking the hyperlinked setting name will restore the setting to its default value.

**Note**

It is possible to save a BE1-11 settings file in BESTCOMSP<sup>l</sup>us with noncompliant settings. However, it is not possible to upload noncompliant settings to the BE1-11.

## ***Metering Explorer***

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The Metering Explorer is described in the *Metering* chapter.

## ***Settings File Management***

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A settings file contains all BE1-11<sup>m</sup> settings including logic.

A settings file created in BESTCOMSP<sup>l</sup>us will have one of two file extensions. Settings files created in version 4.00.00 and later are given an extension of “bst4”. Settings files created in versions prior to 4.00.00 will have an extension of “bstx”.

It is possible to save only the BE1-11<sup>m</sup> logic displayed on the BESTlogicP<sup>l</sup>us Programmable Logic screen as a separate logic library file. This ability is helpful when similar logic is required for several BE1-11<sup>m</sup> systems. The file extension of a logic file created in BESTCOMSP<sup>l</sup>us will be either “bsl4” (version 4.00.00 and later) or “bslx” (versions prior to 4.00.00).

It is important to note that settings and logic can be uploaded to the device separately or together, but are always downloaded together. For more information on logic files, refer to the *BESTlogicP<sup>l</sup>us* chapter.

### **Opening a Settings File**

To open a BE1-11<sup>m</sup> settings file with BESTCOMSP<sup>l</sup>us, pull down the File menu and choose Open. The Open dialog box appears. This dialog box allows you to use normal Windows techniques to select the file that you want to open. Select the file and choose Open. You can also open a file by clicking on the Open File button on the lower menu bar. If connected to a device, you will be asked to upload the settings and logic from the file to the current device. If you choose Yes, the settings displayed in BESTCOMSP<sup>l</sup>us instance will be overwritten with the settings of the opened file.

### **Saving a Settings File**

Select Save or Save As from the File pull-down menu. A dialog box pops up allowing you to enter a filename and location to save the file. Select the Save button to complete the save.

### **Upload Settings and/or Logic to Device**

To upload a settings file to the BE1-11<sup>m</sup>, open the file or create a new file through BESTCOMSP<sup>l</sup>us. Then pull down the Communication menu and select Upload Settings and Logic to Device. If you want to upload operational settings without logic, select Upload Settings to Device. If you want to upload logic without operational settings, select Upload Logic to Device. You are prompted to enter the username and password. The default username is “A” and the default password is “A”. If the username and password are correct, the upload begins and the progress bar is shown.

### **Upload Settings, Logic, and Security to Device**

This function is available only when the device contains default settings. A password is not required. To upload settings, logic, and security to the BE1-11<sup>m</sup>, pull down the Communication menu and select Upload Settings, Logic, and Security.

## Download Settings and Logic from Device

To download settings and logic from the BE1-11*m*, pull down the Communication menu and select Download Settings and Logic from Device. If the settings in BESTCOMSP*lus* have changed, a dialog box will open asking if you want to save the current settings changes. You can choose Yes or No. After you have taken the required action to save or discard the current settings, downloading begins. BESTCOMSP*lus* reads all settings and logic from the BE1-11*m* and loads them into BESTCOMSP*lus* memory. See Figure 47-13.

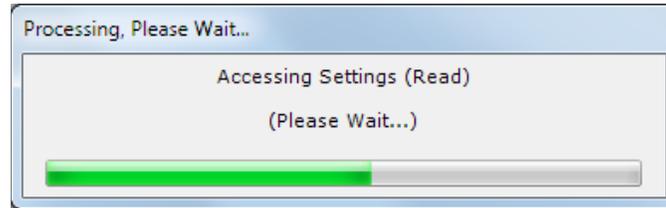


Figure 47-13. Processing, Please Wait...

## Printing a Settings File

To view a preview of the settings printout, select Print Preview from the File pull-down menu. To print the settings, select the printer icon in the upper left corner of the Print Preview screen.

You can skip the print preview and go directly to print by pulling down the File menu and selecting Print. A Print dialog box opens with the typical Windows choice to setup the properties of printer. Execute this command, as necessary, and then select Print.

## Comparing Settings Files

BESTCOMSP*lus* has the ability to compare two settings files. To compare files, pull down the Tools menu and select Compare Settings Files. The BESTCOMSP*lus* Settings Compare Setup dialog box appears (Figure 47-14). Select the location of the first file under Left Settings Source and select the location of the second file under Right Settings Source. If you are comparing a settings file located on your PC hard drive or portable media, click the folder button and navigate to the file. If you want to compare settings from a unit, click the Download settings from unit button to set up the communication port. Click the Compare button to compare the selected settings files.

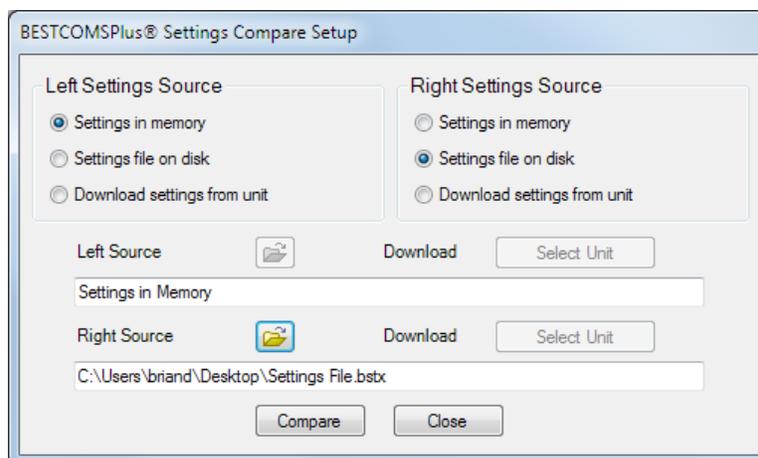


Figure 47-14. BESTCOMSP*lus* Settings Compare Setup

A dialog box will appear and notify you if any differences were found. The BESTCOMSP*lus* Settings Compare dialog box (Figure 47-15) is displayed where you can select to view all settings, settings differences, all logic paths, logic path differences, all DNP/Modbus options, or DNP/Modbus differences. If a settings file based on an older version of firmware was uploaded into the BE1-11*m*, the BE1-11*m* could contain additional settings that did not exist when the original settings file was created. The settings compare function detects these differences and displays them when the Include Missing box is checked.

Uncheck this box to ignore differences due to the additional settings. Click Print to print a report or click Close to close the window.

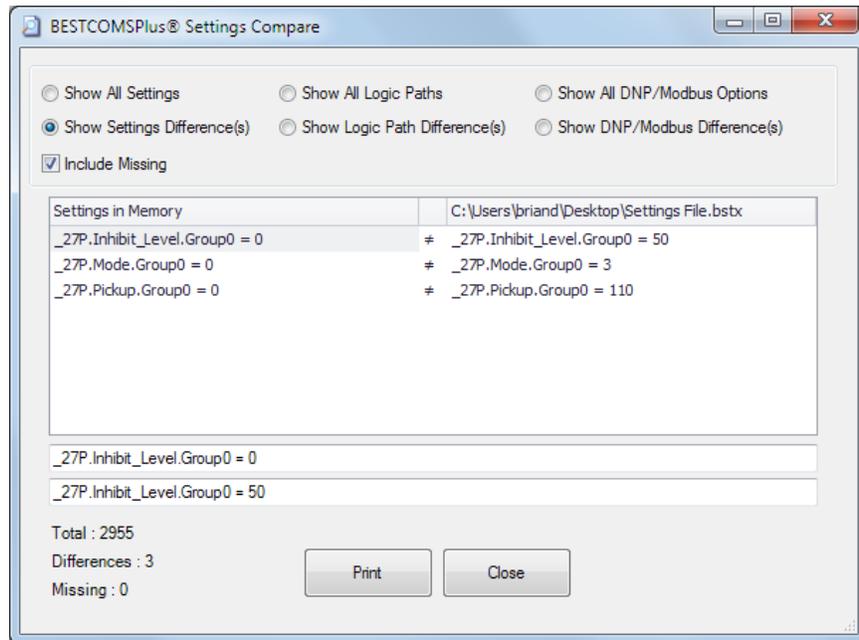


Figure 47-15. BESTCOMSPPlus Settings Compare

## Auto Export Metering

The auto export metering function automatically exports metering data over a user-defined period. The user specifies the Number of Exports and the Interval between each export. Enter a filename for the metering data and a folder in which to save. The first export is performed immediately after clicking the Start button. Click the Filter button to select specific metering screens. Figure 47-16 illustrates the Auto Export Metering screen.

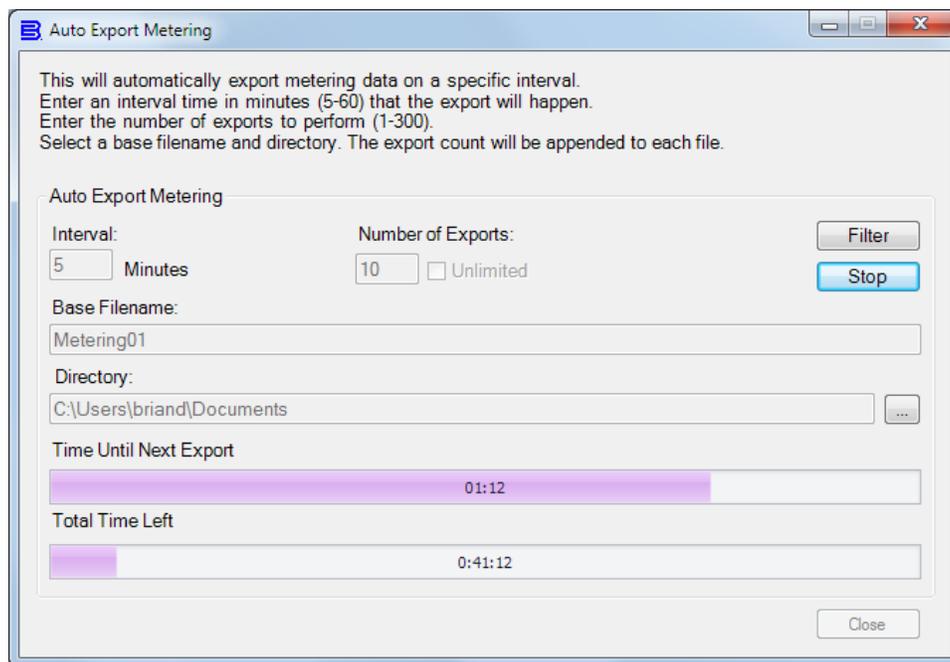


Figure 47-16. Auto Export Metering

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## ***BESTCOMSPi.us Updates***

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Ongoing BE1-11*m* functionality enhancements may make future BE1-11*m* firmware updates desirable. Enhancements to BE1-11*m* firmware typically coincide with enhancements to the BE1-11 plugin for BESTCOMSPi.us. When a BE1-11*m* is updated with the latest version of firmware, the latest version of BESTCOMSPi.us should also be obtained.

- You can download the latest version of BESTCOMSPi.us by visiting [www.basler.com](http://www.basler.com).
- BESTCOMSPi.us automatically checks for updates when Check Automatically is selected on the Check for Updates User Settings screen. This screen is accessed under the Help drop-down menu. (An internet connection is required.)
- You can use the manual “check for updates” function in BESTCOMSPi.us to ensure that the latest version is installed by selecting Check for Updates in the Help drop-down menu. (An internet connection is required.)

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## ***Firmware Updates***

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For information on updating firmware, refer to the *Device Information* chapter.