

Application Note

BESTCOMSPUs® Series – Use the BESTCOMSPUs® BESTspace™ Feature to Easily Set Your Relay

Modern numeric relays have many thousands of settings, which makes it very difficult and time consuming to set them correctly. In the U.S., a recent nationwide study of electrical reliability has identified incorrect settings as one of the top causes of misoperation.

BESTCOMSPUs, software that comes standard with the BEI-11 family of protective relays, is a graphical user interface that works to reduce that effort and help make setting relays easy. The newest addition to BESTCOMSPUs is a feature called BESTspace. Where BESTCOMSPUs makes it easy to set relays, BESTspace makes it easy to configure BESTCOMSPUs.

Beyond configuring BESTCOMSPUs to match your current task, human errors can be minimized by only displaying the applicable settings for the selected relay.

The name BESTCOMSPUs is an acronym for Basler Electric Software Tool for Communications, Operations,

Maintenance, and Settings. As the name implies, different people with different tasks and different needs will use it. If you are responsible for setting up communications, the screens you want to see are much different than if you are responsible for operations. With BESTspace, you can create your own BESTCOMSPUs configuration to meet your specific needs for an upcoming task.

Creating your Custom BESTspace File

In this example, you will learn how to set up a BESTspace file for a person responsible for setting up Modbus over RS-485. The following steps demonstrate how to create and save a BESTspace file for setting up Modbus over RS-485 in BESTCOMSPUs.

Open BESTCOMSPUs, select File> New>BEI-11 as shown in Figure 1.

Figure 2 shows the default BESTspace file. Notice it has Metering Explorer open, as well as Settings Explorer.

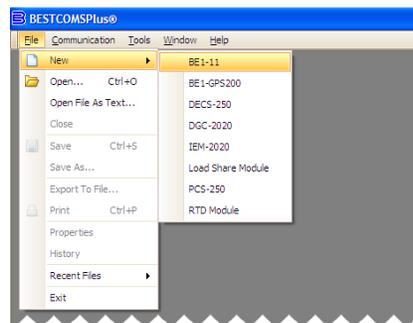


Figure 1 - Opening a new BEI-11 file

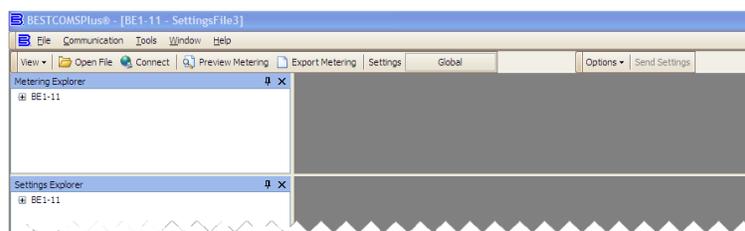


Figure 2 - The default BEI-11 BESTspace is open and ready to customize

Since this BESTspace will be used only for setting up Modbus® communications over RS-485, we will not need the Metering Explorer. To close the Metering Explorer, go to View>Metering Panel>Show and deselect it as shown in Figure 3.

Next, select every tab needed to set Modbus over RS-485. To do this, browse through the Settings Explorer menu as shown in Figure 4 on and select:

- Style Number
- Device Info
- RS485 Setup
- Miscellaneous Modbus Settings
- Modbus Mapping

Now the five tabs are selected, but the Modbus Mapping tab is not the first tab needed. Click on the Style Number

tab and it will be brought to the front so that it is the first tab visible. Also collapse the Settings Explorer menus since they will not be needed. Figure 5 shows how the final BESTspace appears.

To save the BESTspace file, go to the menu and select View>BESTspace>Save as shown in Figure 6.

The screen in Figure 7 will appear. There are some options available, but for this example, use the defaults and press save again. The BESTspace file can be saved in the folder of your choice with the name of your choice.

For this example, put it in the Documents folder using the name 'ModbusoverRS-485BESTspace.bswx'. You have now created the BESTspace. The next step is using it, which is even easier.

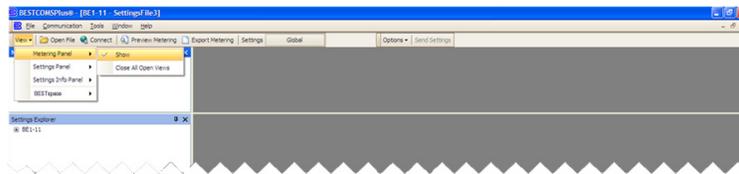


Figure 3 - Close the Metering Explorer if not needed

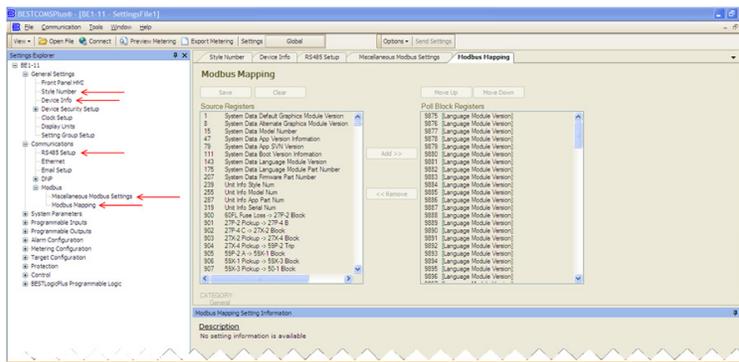


Figure 4 - Customize your BESTspace using the Settings Explorer menu

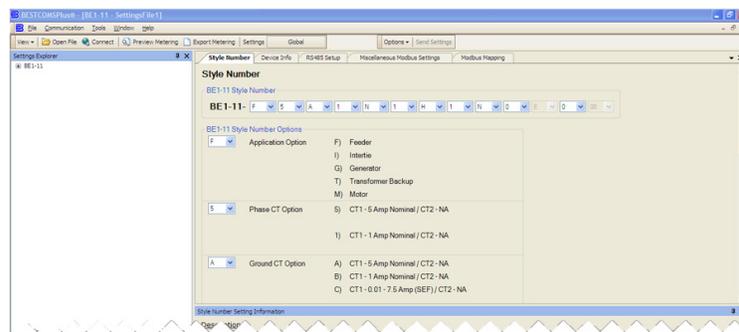


Figure 5 - Bring the Style Number tab to the top on your BESTspace

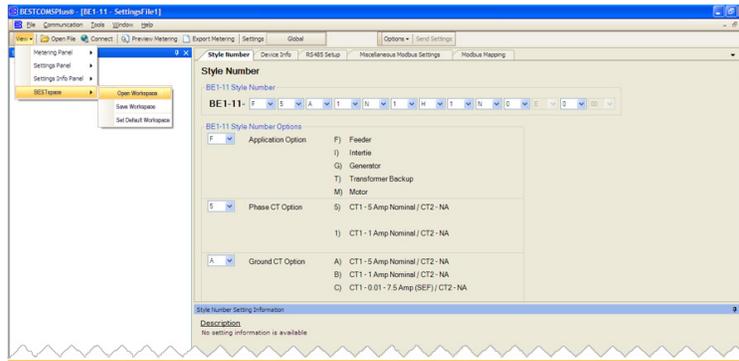


Figure 6 - Save your customized BESTspace file

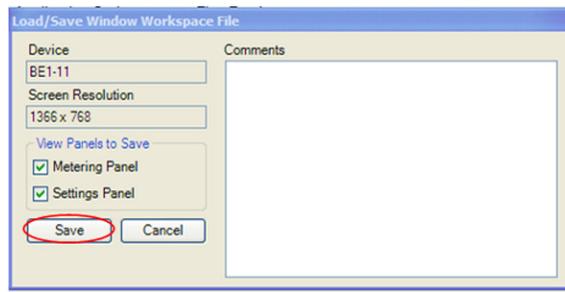


Figure 7 - BESTspace Save options

Using your BESTspace

The concept of BESTspace is to configure BESTCOMSPiush once and use it many times. Luckily, using a BESTspace file is even easier than creating it.

First, open any BE1-11 file. For this example, start with a new file like you did in Figure 1. It will look like Figure 2.

Accessing certain settings is now more convenient. Before BESTspace, every time you wanted to change or view a setting, you needed to expand multiple

menus in the Settings Explorer to access it. By opening a BESTspace file, relevant settings menus are opened in tabular form automatically without the need to remember menu structure and settings locations. For this example of setting up Modbus communication, open the BESTspace you just created. From the screen in Figure 8, you can select your BESTspace by going to the menu bar and selecting View>BESTspace>Open.

The screen shown in Figure 9 will appear. Select Load and open the BESTspace you have previously created, as shown in Figure 10.

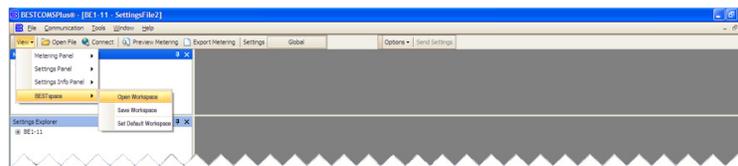


Figure 8 - Open a BESTspace file

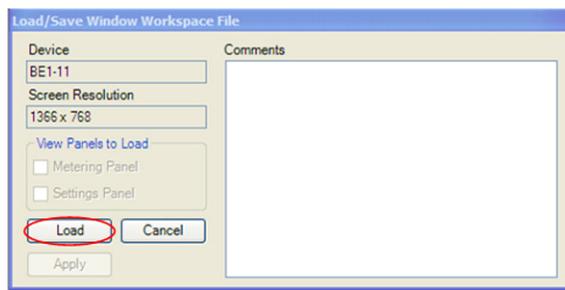


Figure 9 - Load a BESTspace file

Select Apply, as shown in Figure 11, and BESTCOMSPPlus will be configured the way you previously defined it.

As shown in Figure 12, the first screen you see is the Style Number tab.

Enter the style number if this is a new file, or confirm it if this is an existing file. When you are finished with the style tab and you want to return to it, minimize it with the down arrow. Otherwise, close it with the 'X'.

The next tab you will go to is Device Info, then RS-485 Setup, Modbus Settings and Modbus Mapping, just as you did previously when creating the BESTspace.

When you have entered your data, save the entire settings file by clicking on 'File' at the top left-hand corner of the BESTCOMSPPlus window and select 'Save' or 'Save As...' from the dropdown menu.

BESTspace Benefits

In addition, to making your tasks of setting a relay more efficient and troublefree, the BESTspace feature makes many tasks easier.

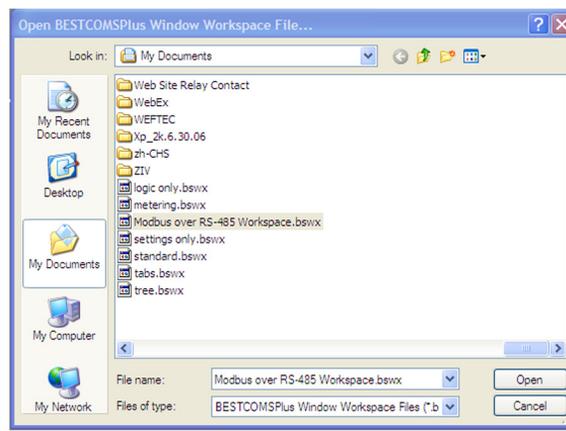


Figure 10 - Select the BESTspace file you created

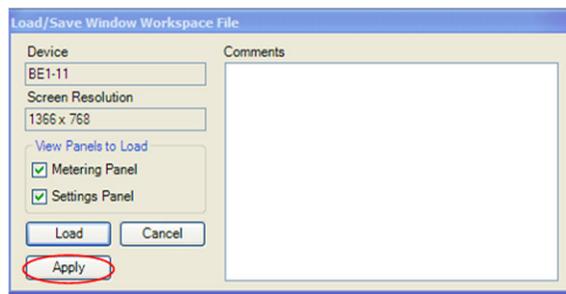


Figure 11 - Apply the BESTspace

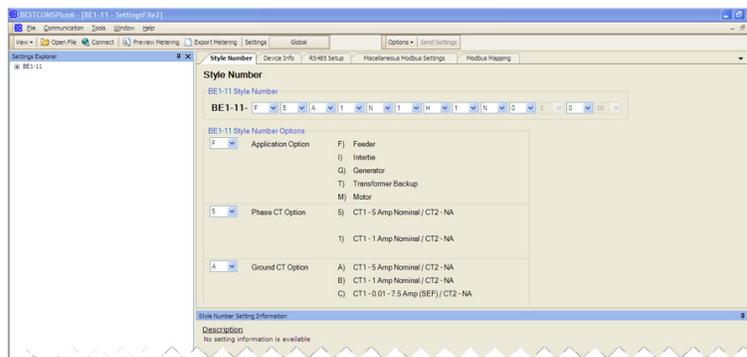


Figure 12 - Your BESTspace if ready

Following are a few examples:

- Guide for Relay Settings - Setting up a BESTspace allows identification of what screens need to have settings. This provides a guide or template for junior engineers in your department.
- Testing - Standardize BESTCOMSP/plus working environments for testing with a BESTspace that automatically opens the most often used Metering and/or Settings screens.
- Technical Assistance via phone - Instead of Frequently Asked Questions, set Frequently Used Screens in a BESTspace. Time spent describing menu structure to access a setting can be reduced by providing the BESTspace saved with screens relevant to the problem at hand.

Other Standard BESTspace Files

The advantage of BESTspace is not limited to only BESTspace files you create. Basler plans to create more BESTspace files to help make the process of setting relays easier. These files are intended for use to configure BESTCOMSP/plus as a guide through the process of setting the BEI-II protective relay family with one of our pre-configured logic files.

See <http://www.basler.com/html/pcs-logic.htm> for the logic files, BESTspace files and Application Notes that make it easy to set the BEI-II for any of the following applications.

- Intertie protection
- Basic overcurrent protection
- Overcurrent protection with control
- Overcurrent protection with reclosing
- Feeder protection with interlock
- Primary bus overcurrent protection
- Backup bus overcurrent protection
- Basic low impedance grounded generator protection
- Basic high impedance grounded generator protection
- Low impedance grounded generator protection with sequential trip
- High impedance grounded generator protection with sequential trip
- Low impedance grounded generator protection with sequential trip and sync-check

For More Information

To get more information on BESTCOMSP/plus and the BEI-II product line, including additional application notes, product bulletins and instruction manuals, go to www.basler.com or contact Technical Support at 618-654-2341.



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