

**ETR-4000
Quick Start Guide****IB02602008E
Rev. A****Contents**

Description	Page
<u>Section 1: Navigation.....</u>	<u>3</u>
<u>Section 2: Saving Parameters.....</u>	<u>5</u>
<u>Section 3: Device Setup Using the Front Panel Soft Keys.....</u>	<u>7</u>
<u>Section 4: Device Setup Using PowerPort-E.....</u>	<u>13</u>

The purpose of this Quick Start Guide is to guide the User through the essential steps required to commission an ETR-4000. This Quick Start Guide is not a replacement for the complete manual that can be found on the CD shipped with the ETR-4000. For wiring instructions and complete descriptions of the protective functions, please consult the complete instruction manual.

Quick Start Guide

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Section 1: Navigation

1.1 Basic Navigation

Navigation through the ETR-4000 menus and settings is easily accomplished using the soft keys on the ETR-4000 control panel and their corresponding functions that appear near the bottom of the LED display (see Figure 1).

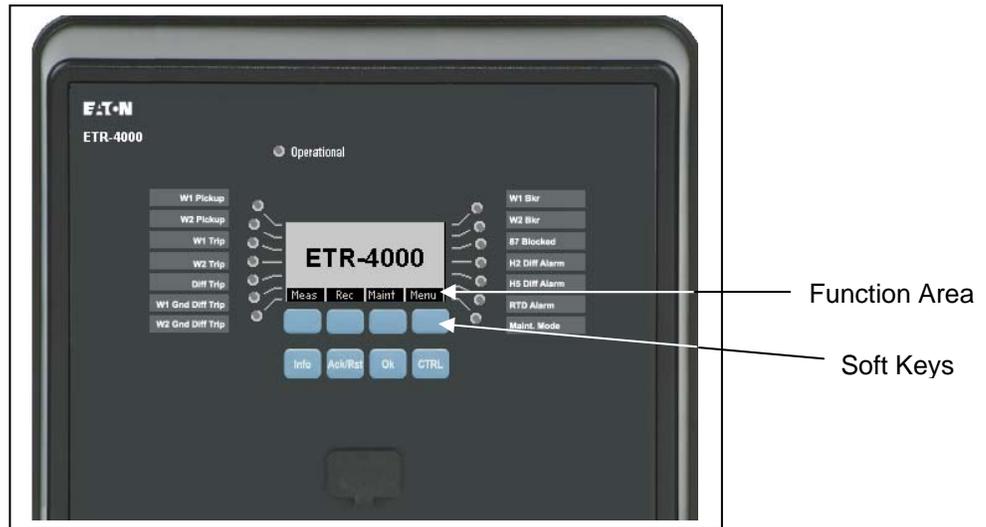


Figure 1. ETR-4000 Basic Navigation.

To select a function that appears in the function area, press the soft key that is directly under that function.

Once the Menu soft key is pressed, the ETR-4000 utilizes arrows and tools that appear in the function area of the display and correspond to the soft keys directly below (see Figure 2). Table 1 gives a summary of the arrows and tools that may appear in the function area and a brief description of each.

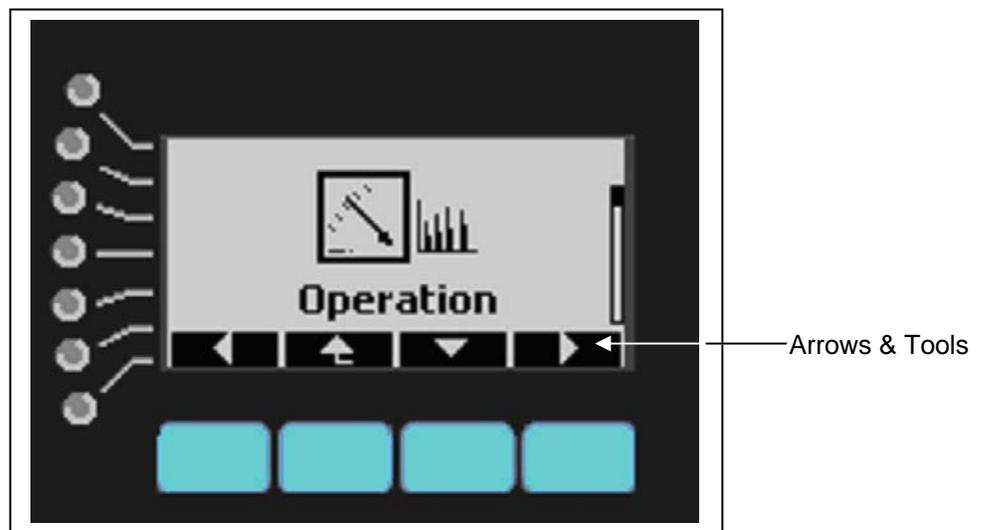


Figure 2. Arrows and Tools in the Function Area.

Quick Start Guide

Table 1. Arrows and Tools That Can Appear in the Function Area of the Display.

Arrow/Tool	Description
	The "Up" arrow scrolls up through the current menu.
	The "Down" scrolls down through the current menu.
	The "Left" arrow takes the User one step back to the previous menu.
	The "Right" arrow takes the User to the next sub-menu.
	The "Top of List" arrow takes the User directly to the top of the current menu list.
	The "Bottom of List" arrow takes the User directly to the bottom of the current menu list.
	The "Increase" icon will increase the active digit by one.
	The "Decrease" icon will decrease the active digit by one.
	The "Left Movement" arrow will take the User one digit to the left in a value.
	The "Right Movement" arrow will take the User one digit to the right in a value.
	The "Wrench" icon will give the User access to the parameter setting mode for a function.
	The "Delete" icon allows the User to delete data or a value.

1.2 Password Entry

Before any parameter of the ETR-4000 can be changed, the User must enter a valid password using the soft keys on the control panel. A password must be a user-defined, four digit combination of the numbers 1, 2, 3, and 4 (examples: 1224 or 2341).

Note: A default password (1234) was set at the factory. If the password has been changed, contact your System Administrator for the new password.

To enter the password, simply press the soft keys corresponding with the numbers appearing in the function area near the bottom of the LED display. An asterisk (*) will appear in the display as each number is entered.

Press the "OK" soft key after the password has been entered.

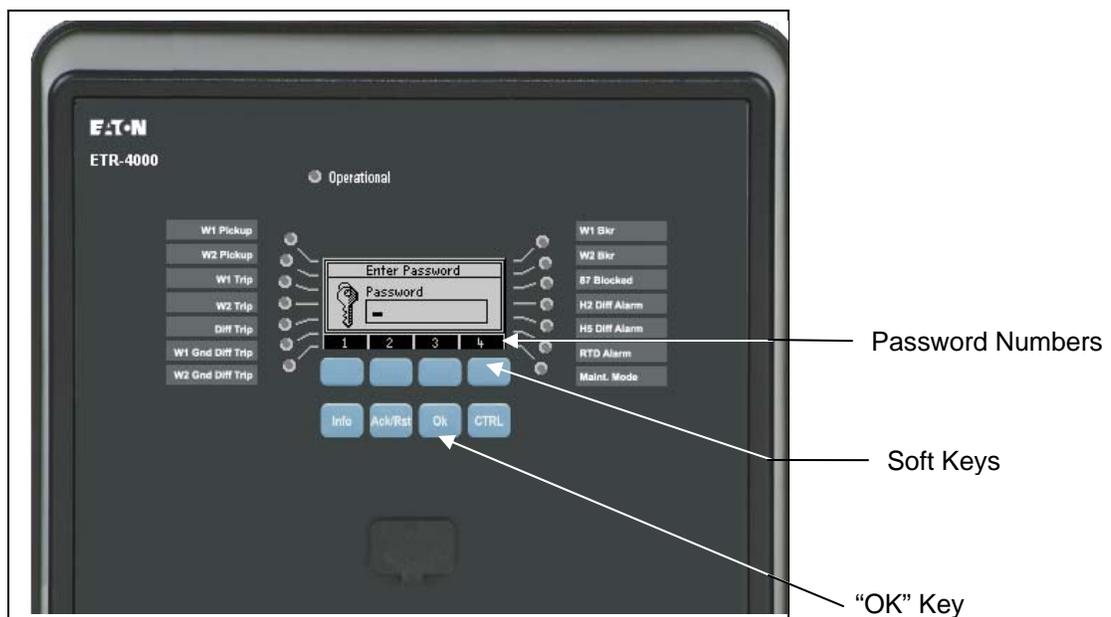


Figure 3. Entering the Password.

Section 2: Saving Parameters

When the User makes changes to the parameters, the ETR-4000 DOES NOT automatically save the changes. Changes MUST BE explicitly saved by the User. There are two ways changes can be saved: saving individual changes or saving multiple changes.

2.1 Making and Saving Parameter Changes

1. Use the soft keys under the display to access the parameter to be changed.
2. Press the soft key under the wrench icon then enter the password.



Figure 4. The Wrench Icon.

3. Use the soft keys to change the parameter then press the soft key under "OK". An asterisk appears in the display indicating a parameter has been changed.

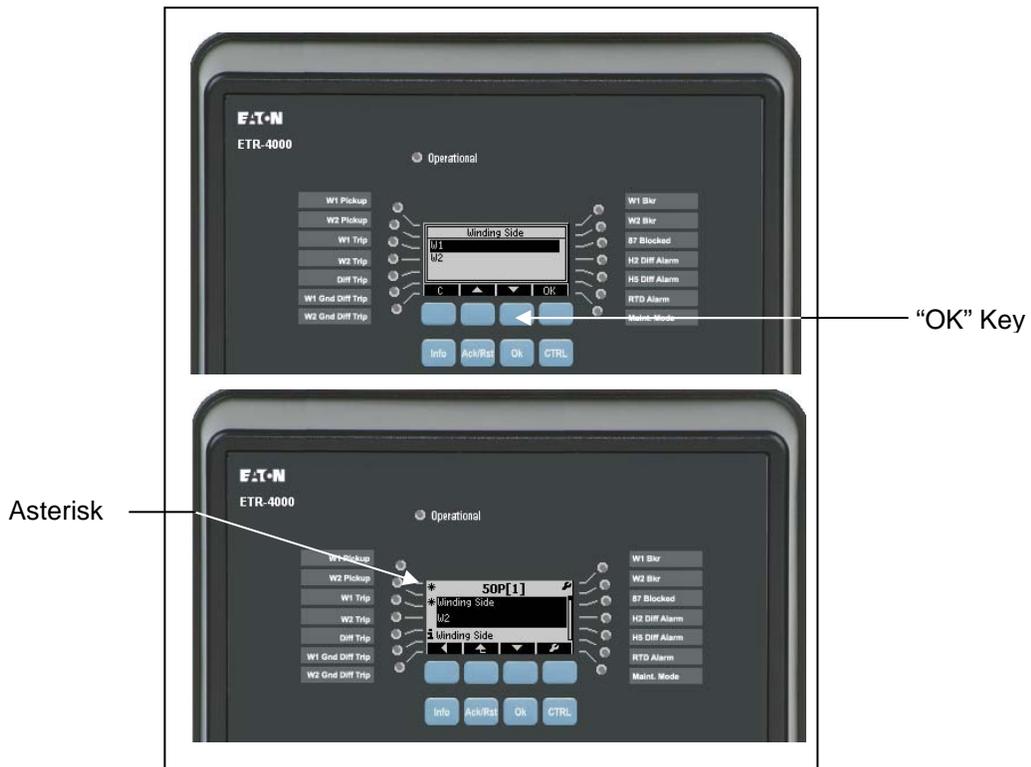


Figure 5. The "OK" Soft Key and the Asterisk Denoting a Parameter Change.

Quick Start Guide

Note: If the User wishes to change multiple parameters, please skip to Step 5. If the User wishes to save the individual parameter made at this time, complete Step 4 then end the process.

4. Press the “Ok” key. Then press the soft key under “Yes” to save the new value.

To Make and Save Multiple Parameter Changes

Note: The ETR-4000 utilizes a timeout function. If the timeout time has expired, the User may be asked to re-enter the password.

5. Use the soft keys to access and change the other parameters to be changed then press the soft key under “OK” after each change. An asterisk appears in the display indicating a parameter has been changed but not saved. Likewise, an asterisk next to a higher-level parameter menu implies that one of its constituent parameters has been modified but not saved.
6. Once all the parameters have been changed, press the “Ok” key. Then press the soft key under “Yes” to save the new values.



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Section 3: Device Setup Using the Front Panel Soft Keys



When the ETR-4000 is first powered up, the protective elements listed in Table 2 are enabled in each setting group.

Table 2. Default Protective Elements Enabled at Startup.

Protective Element	Description	Winding Assignment
I-Prot		
50P[1]	DEFT Overcurrent Protection	Wdg. 1
51P[1]	INV Overcurrent Protection	Wdg. 1
51P[3]	INV Overcurrent Protection	Wdg. 2
50X[2]	DEFT Measured Ground Fault Protection	Wdg. 2
51X[2]	INV Measured Ground Fault Protection	Wdg. 2
50R[2]	DEFT Calculated Ground Fault Protection	Wdg. 2
51R[2]	INV Calculated Ground Fault Protection	Wdg. 2
51Q[1]	Negative Sequence Overcurrent Protection	Wdg. 1
51Q[2]	Negative Sequence Overcurrent Protection	Wdg. 2
Tdiff-Prot		
87	Differential Protection	N.A.
87H	Unrestrained High Set Differential Current Protection	N.A.
87GD[2]	Restricted Ground Fault Protection	Wdg. 2
87GDH[2]	High Set Restricted Ground Fault Protection	Wdg. 2



Press the soft key under “Menu” to access the “Operation” screen.

Quick Start Guide



From within the “Operation” screen, press the soft key under the down arrow to access the next parameter screen “System Para” (System Parameters).



From the “System Para” screen, press the soft key under the right arrow to access the “System Para” menu.



To edit any parameter, press the soft key under the wrench icon. To edit parameters, the User must enter a valid password (see Section 1: Password Entry).

Quick Start Guide



Enter the four-digit password as described in Section 1: Password Entry. After the password has been entered, press the “Ok” soft key.

Note: The ETR-4000 utilizes a timeout function. If the timeout time has expired, the User may be asked to re-enter the password.



Select the desired Phase Sequence parameter setting using the soft keys under the up and down arrows. Press the soft key under “Ok”. Save the selected parameter (see Section 2 – Saving Parameters).

Note: If the time limit is exceeded, the User may need to re-enter the password.



The User may change the frequency or, if the frequency is correct, use the soft keys under the up or down arrows to access additional system parameters.

Quick Start Guide



Enter the desired CT setting using the soft keys. When the appropriate setting is displayed, follow the same procedure to change the setting:

wrench ->
select/change value
-> soft key under
"Ok".

Press the "Ok" key. Save the selected parameter (see Section 2 – Saving Parameters).



The CT pri (primary external CT settings), CT sec (secondary external CT settings), and XCT (ground / neutral CT settings) should all be set using similar steps. When all the CT settings have been selected and saved, select the soft key under the left arrow to return to the "System Para" level.

Quick Start Guide



Select the soft key under the down arrow key to reach the “Protection Para” (Protection Parameter) screen.



To set the protection parameters, use the soft key under the right arrow to enter the “Protection Para” menu.



Use the soft key under the down arrow to select / highlight Set 1.
Use the soft key under the right arrow to enter the Set 1 setting group. Set 1 is the only active setting group when the ETR-4000 is first powered up.

Quick Start Guide



To program current protection, press the soft key under the right arrow while "Tdiff-Prot" is highlighted. This will display a list of current protection settings under "Tdiff-Prot."

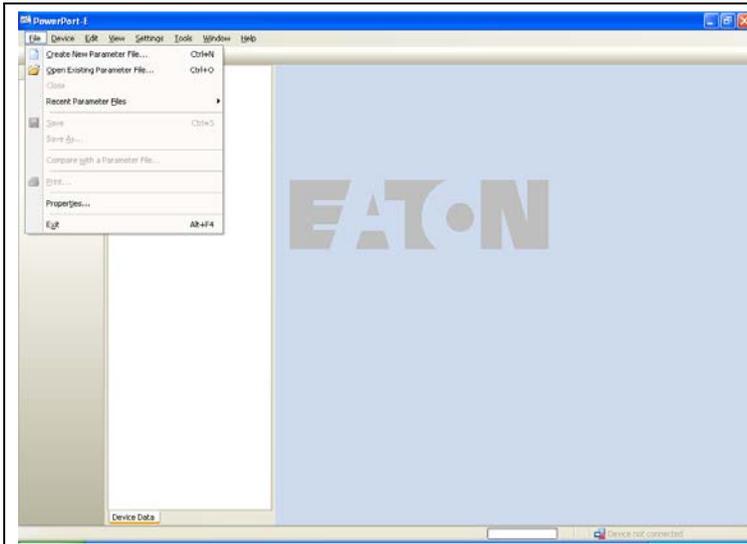


Press the soft key under the right arrow to enter the settings area for 87.

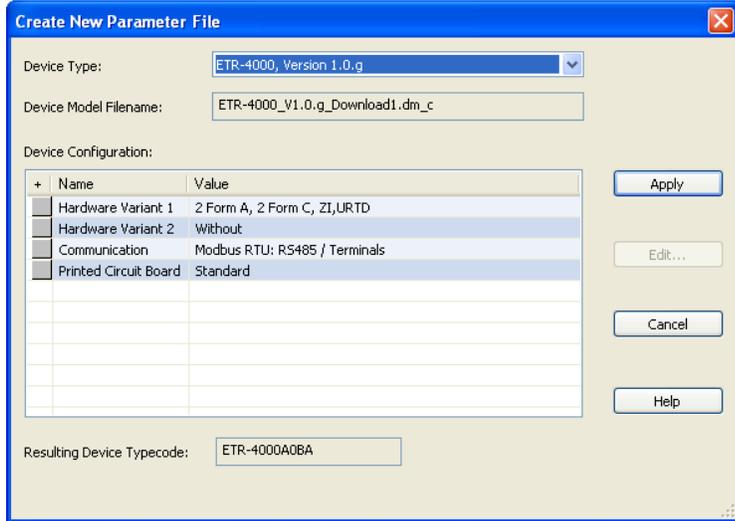
Congratulations! You have successfully setup the device using the front panel soft keys.

Quick Start Guide

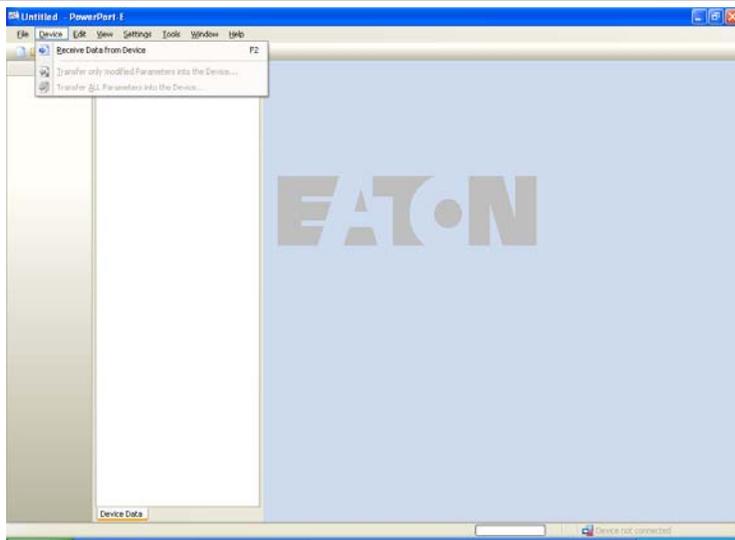
Section 4: Device Setup Using PowerPort-E



When programming the unit through PowerPort-E, start from an existing or default parameter file, or create a new parameter file. To create a new parameter file, select "Create New Parameter File" from the pull-down menu as shown on the left. This will lead to the dialog box shown below left.

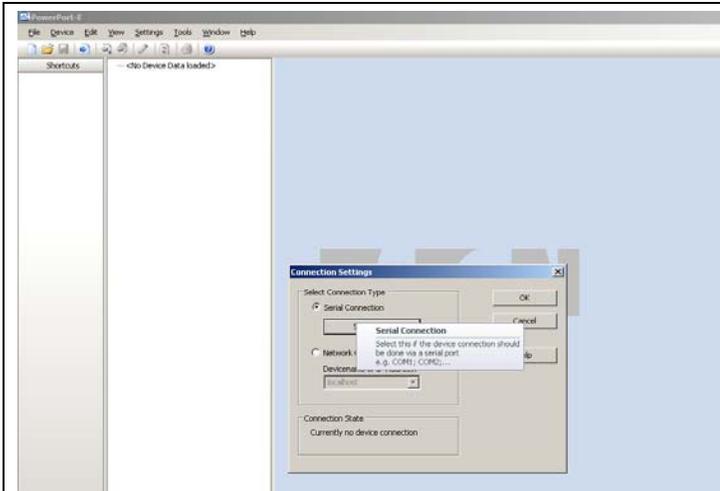


Select the device from the pull-down menu to load the default parameter file.

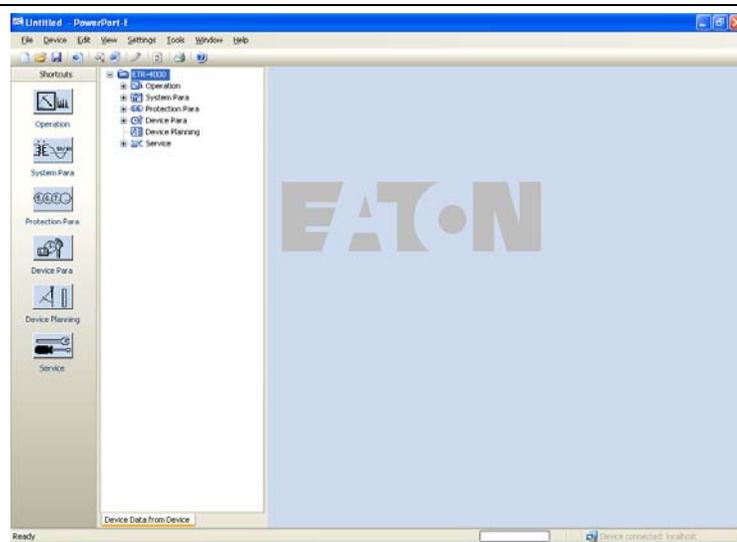


A parameter file can also be loaded from a connected device by selecting "Receive Data from Device" from the "Device" pull-down menu.

Quick Start Guide

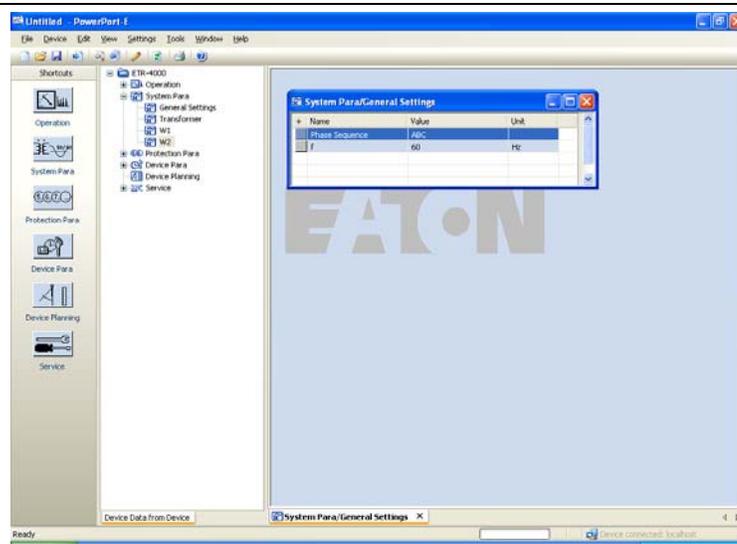


Note that to load parameters from the device the User may need to set up the connection to the device through the “Settings -> Connection Settings” pull-down menu.



The upper left portion of the PowerPort-E screen should now display:

- Operation;
- System Para;
- Protection Para;
- Device Para;
- Device Planning; and
- Service.

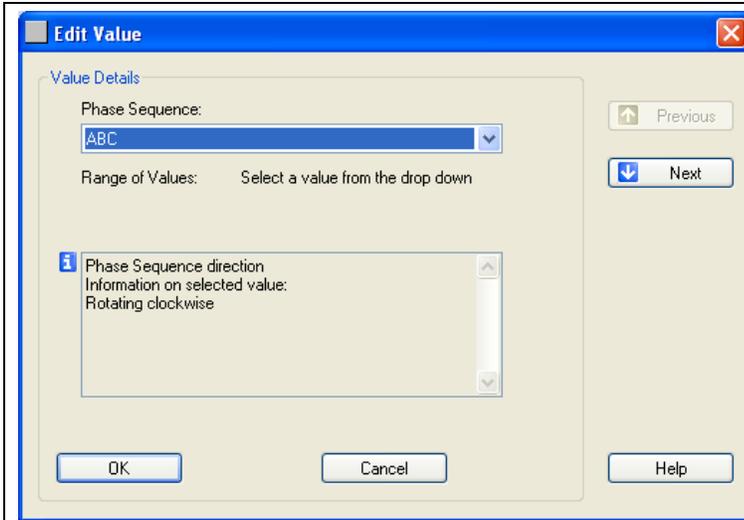


First, set up the System Parameters by double clicking on the “System Para” as highlighted to the left. This will result in the dialog box shown. When the User double clicks on a parameter within the dialog box, an interface appears that will allow the parameters to be modified.

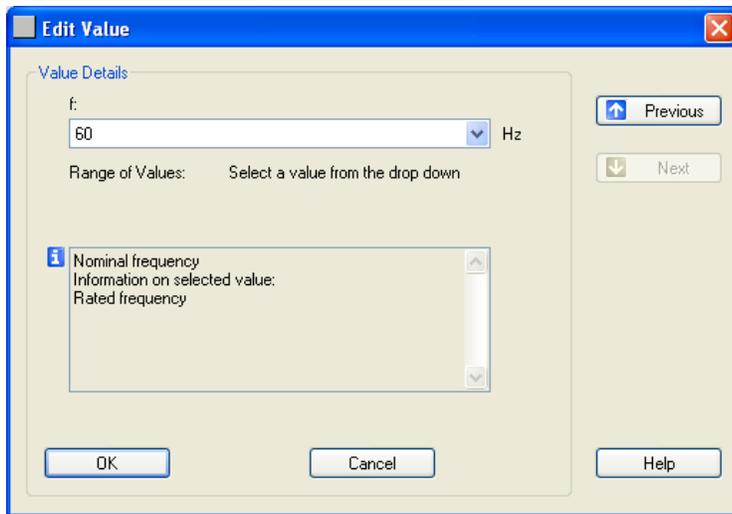


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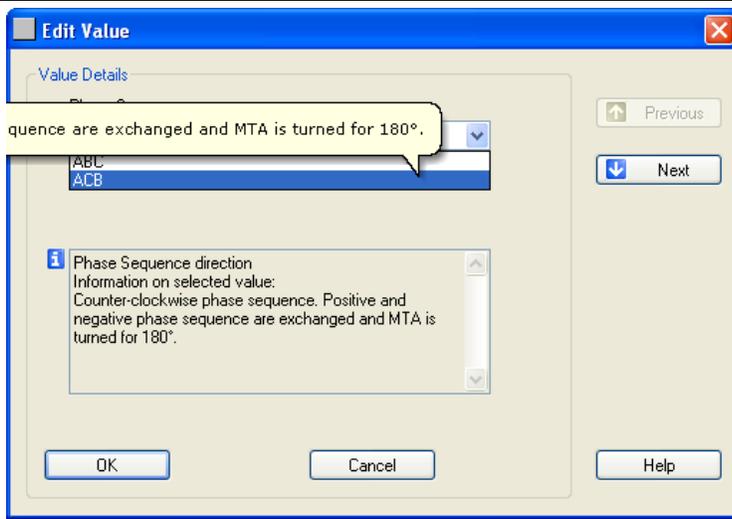
Quick Start Guide



For example, to modify the Phase Sequence System Parameter, double click “Phase Sequence.” This will result in the dialog box displayed to the left. The pull-down menu will allow the User to change the Phase Sequence setting. Note that although the value has been changed, it has NOT yet been saved.

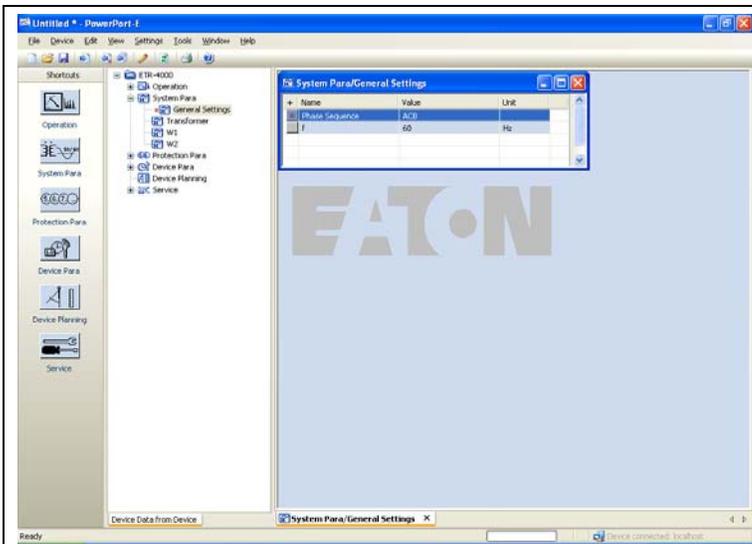


The “Previous” and “Next” buttons can be used to display the Previous and Next parameters within the System Parameter list.

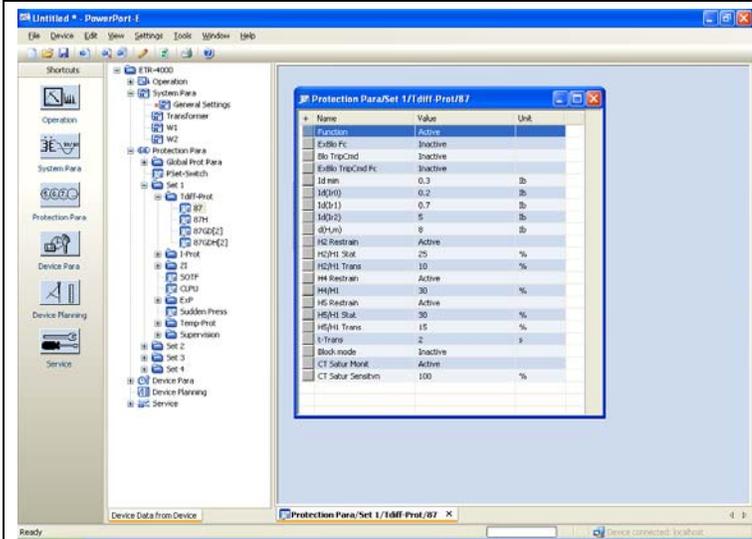


When a value has been changed, an asterisk will appear next to the changed parameter and also next to the higher-level menu item.

Quick Start Guide

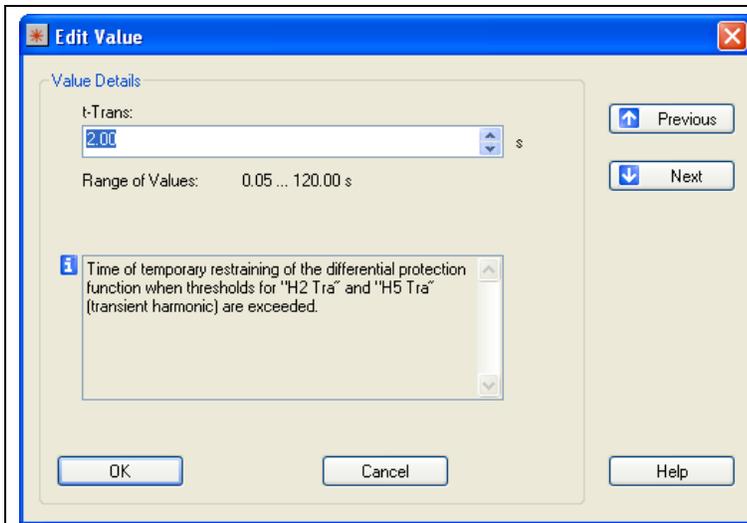


The asterisk next to “Phase Sequence” indicates this parameter has been changed. The asterisk next to “System Parameter” indicates a parameter contained within this set of parameters has been changed.

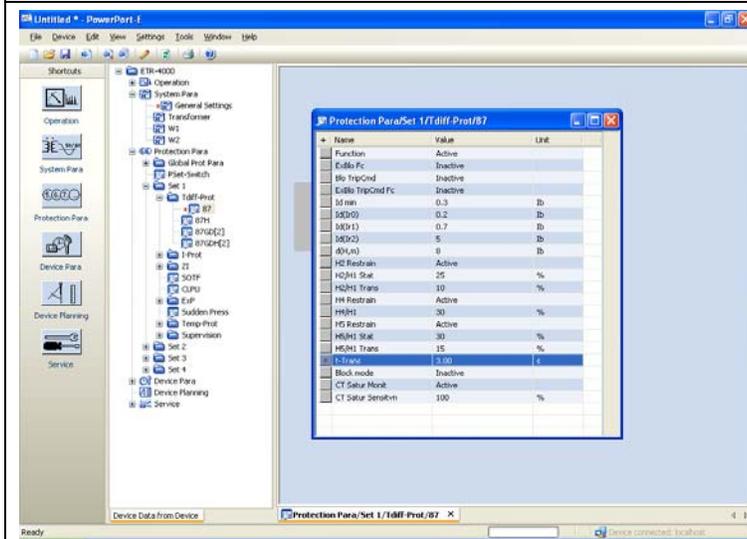


The same procedure should be used to modify the Differential Protection (Tdiff-Prot) Parameters, Binary Outputs Parameters, or Device Planning. The dialog box to the left is displayed, for example, by double clicking “87.” Note that four sets of Tdiff-Prot settings are available. Set 1 is usually used during normal operation. Other parameter sets can be used for abnormal operating conditions, such as to put the device into “Maintenance Mode.”

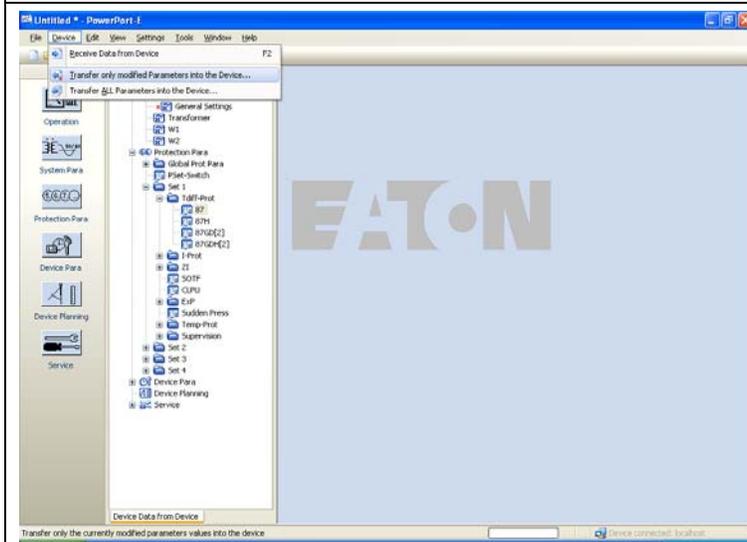
Quick Start Guide



From within the “87” dialog box, double click the parameter “t-Trans” to bring up the “Time of Temporary Restriction delay” dialog box. Set the value using the up and down arrows next to the time setting.

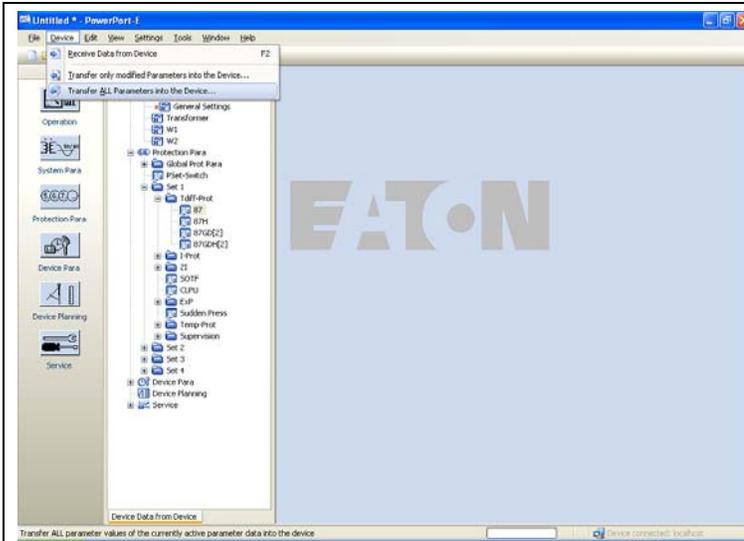


As shown in the screen shot to the left, the time was changed from 2 to 3 seconds and, therefore, an asterisk appears next to both the “t-Trans” setting and the higher level “87” menu.



To transfer parameters to the device, make the appropriate selection from the “Device” pull-down menu. The User has the option of downloading all settings or only those modified. Note that if settings were not originally uploaded from the device and the User downloads all parameters, then the defaults for the unmodified parameters will overwrite the parameters currently stored in the device. Transferring only modified parameters is the safer option.

Quick Start Guide



The pull-down allows for transfer of all parameters (including unmodified parameters) to the device. If the User is working with parameters that were not originally uploaded from the device, caution should be exercised when using this option.



To download the parameters, the User must enter the password (default password is 1234). Note that until a local copy is saved to the User's computer, the asterisks showing modified parameters will continue to be displayed.

Congratulations! You have successfully setup the device using PowerPort E.

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