

Alarm Coordination Connected Components Building Block



Quick Start

Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication [SGI-1.1](#) available from your local Rockwell Automation sales office or online at <http://literature.rockwellautomation.com>) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.





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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

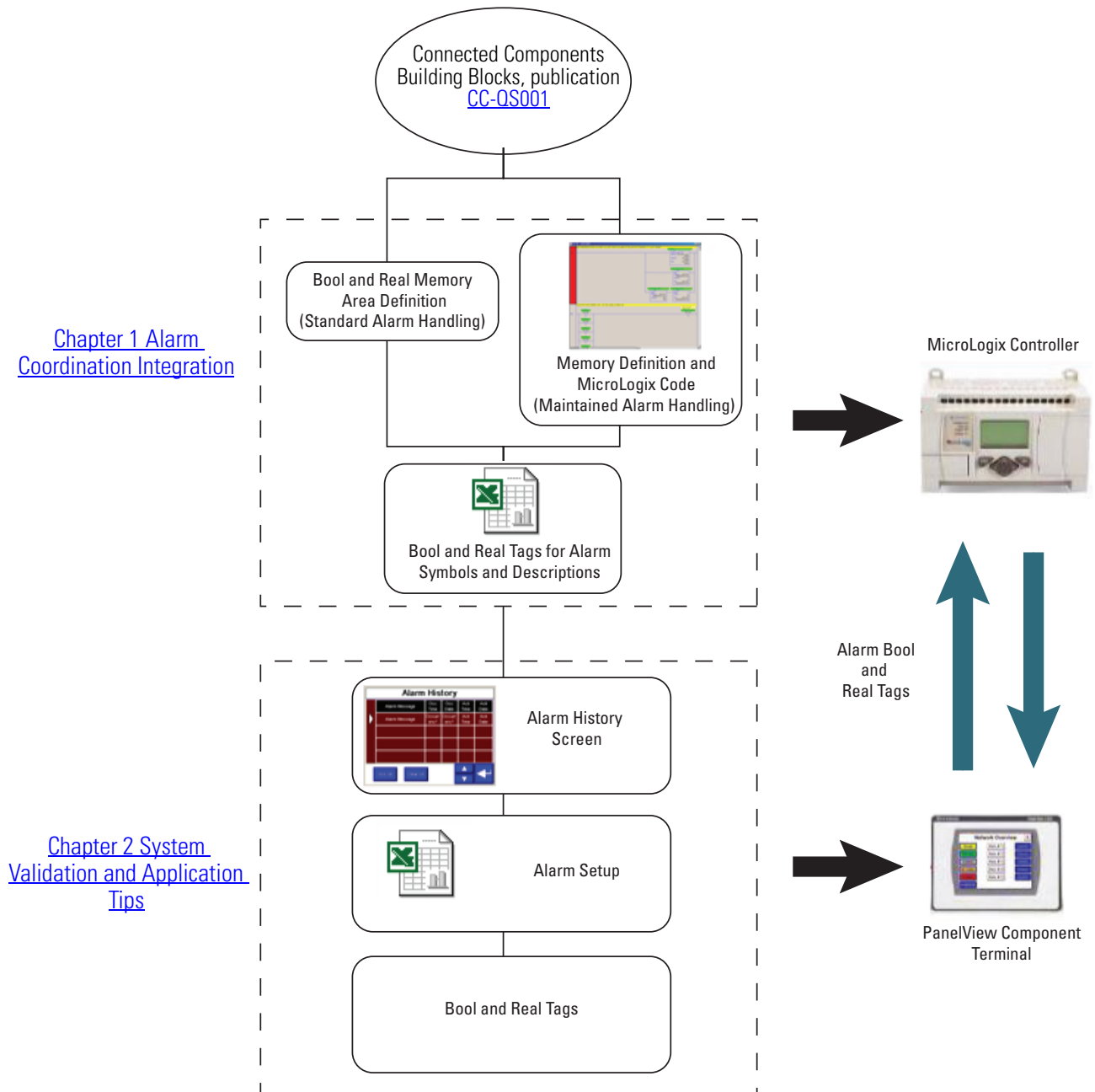
WARNING 	Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.
ATTENTION 	Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence
SHOCK HAZARD 	Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.
BURN HAZARD 	Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

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Connected Components Building Block Outline

Follow the path below to complete your connected components building block.



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About This Publication

This quick start is designed to provide the necessary information to implement alarm handling. It's goal is to show an easy-to-follow, structured alarm-handling template for connected components building block users. The Alarm Coordination Building Block is an add-on component, which can be used with some existing projects.

IMPORTANT

Use the Alarm Coordination Connected Components Building Block Quick Start in conjunction with the Connected Components Building Blocks Quick Start, publication [CC-QS001](#).

Refer to [Additional Resources](#) on [page 8](#) for a listing of quick starts.

To assist in the design and installation of your system, application files and other information are provided on the Connected Components Building Blocks Overview CD, publication CC-QR001. The CD provides bills of materials (BOM), CAD drawings for panel layout and wiring, control programs, Human Machine Interface (HMI) screens, and more. With these tools and the built-in best-practices design, the system designer is free to focus on the design of their machine control and not on design overhead tasks.

The beginning of each chapter contains the following information. Read these sections carefully before beginning work in each chapter:

- **Before You Begin** - This section lists the steps that must be completed and decisions that must be made before starting that chapter.
- **What You Need** - This section lists the tools that are required to complete the steps in the current chapter. This includes, but is not limited to, hardware and software.
- **Follow These Steps** - This illustrates the steps in the current chapter and identifies which steps are required to complete the examples.

Conventions

Convention	Meaning	Example
Check or uncheck	To activate or deactivate a checkbox.	Check Disable Keying.
Click	Click the left mouse button once while the cursor is positioned on object or selection.	Click Browse.
Double-click	Click the left mouse button twice in quick succession while the cursor is positioned on object or selection.	Double-click the application icon.
Expand	Click the + to the left of a given item /folder to show its contents.	Expand 1768 Bus under I/O Configuration.
Right-click	Click the right mouse button once while the cursor is positioned on object or selection.	Right-click the 1768 Bus icon.
Select	Using the mouse to highlight a specific option.	Select the New Module folder.
Press	Pressing a specific key on the keyboard or button on a touchscreen.	Press Enter.
>	Use this symbol to indicate the sub-menu name.	Choose File>Menu>Options.

Additional Resources

Resource	Description
Connected Components Building Blocks Quick Start, publication CC-QS001	Provides information on how to select products and gain access to panel and wiring information.
Connected Components Building Blocks Overview CD, publication CC-QR001	Provides files for the Connected Components Building Blocks.
MicroLogix 1100 Programmable Controllers User Manual, publication 1763-UM001	Provides information on using the MicroLogix 1100 Programmable Controller.
MicroLogix 1400 Controller User Manual, publication 1766-UM001	Provides information on using the MicroLogix 1400 Programmable Controller.
PanelView Component Operator Terminals User Manual, publication 2711C-UM001	Provides information on using the PanelView Component HMI Terminals.
http://www.ab.com	Provides access to the Allen-Bradley website.
http://rockwellautomation.com/knowledgebase	Provides access to self-service support.
http://rockwellautomation.com/components/connected/blocks.html	Provides access to the Connected Components website.

Alarm Coordination Integration

Introduction

This Quick Start shows two approaches:

- Standard alarm handling
- Maintained alarm handling

In the standard approach, an alarm banner appears immediately after the alarm occurs. Once you acknowledge the alarm, the notification disappears even if the alarm bit is still set. Acknowledging an alarm does not clear the cause of the alarm.

In the maintained approach, you are only notified when the alarm occurs. If the alarm bit remains set, the 'Show Alarms' button continues to blink to indicate that the alarm sources are still active even after you acknowledge the alarm.

This chapter provides information on implementing alarm handling into your application from the controller side. You will create binary and real files by using RSLogix 500 software as a place for alarm-related data exchange.

For the Standard approach, you will create an Excel spreadsheet containing alarm addresses, alarm symbols, and their descriptions. You will import this spreadsheet into RSLogix 500 software, an additional step that simplifies the process of inserting alarm-related variables. For the Maintained approach, you will import some MicroLogix program code, which contains the binary and real files for the alarm-related data and also some logic for alarm handling. This eliminates the need to create the binary and real files, as in the Standard approach.

Before You Begin

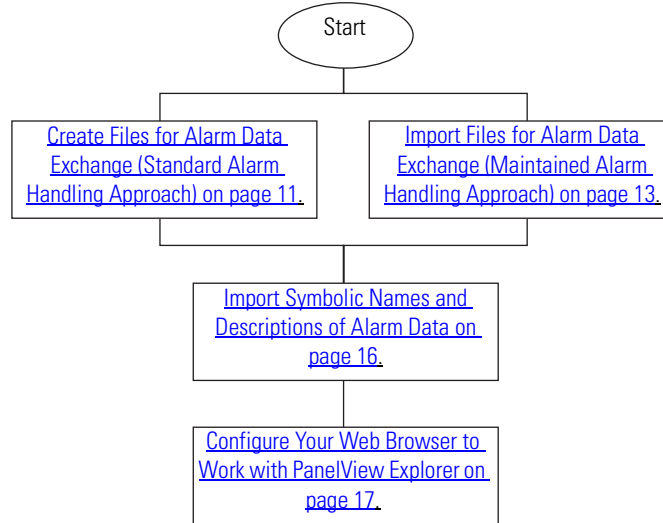
- Review the Connected Components Building Blocks Quick Start, publication [CC-QS001](#), verifying that you have completed the hardware design and installation as well as software installation.
- Run the Alarm Handling Demo to observe the difference in alarm behavior.
 1. Load the Alarm_Handling_Demo.RSS application to your MicroLogix controller. MicroLogix 1100 and MicroLogix 1400 versions are available on the CD.
 2. Load the Alarm_Handling_Demo.cha application to the PanelView Component terminal.
 3. Toggle bits B3:0/0 B3:0/1, and B3:0/2, observing the Standard alarm handling behavior.
 4. Clear bits B3:0/0 B3:0/1, and B3:0/2, as well as the bits used in the B150 file.
 5. Switch to Maintained alarm handling on the PanelView Component terminal.
 6. Toggle bits B3:0/3 B3:0/4, and B3:0/5, observing the Maintained alarm handling behavior.
- Select the appropriate solution for your application.

What You Need

- Personal computer
- Microsoft Excel software
- Internet Explorer version 7 or Mozilla Firefox version 2.0 software
- RSLogix 500 software, version 8.10 or later
- Connected Components Building Blocks Overview CD, publication CC-QR001
- MicroLogix 1100 or 1400 controller

Follow These Steps

Follow these steps to create an alarm handling template on the controller side.



Create Files for Alarm Data Exchange (Standard Alarm Handling Approach)

In this building block, the B150 binary file named ALARM STS is used for notification that an alarm has occurred. Every device has a reserved 2 x 16 area (bit-wise). Every bit represents one alarm. When an alarm occurs, the related bit is set. The bit arrangement in the assigned area for a particular device depends on the application designer’s preference. The file organization is shown below.

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
B150:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	} Dev 1
B150:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B150:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	} Dev 2	
B150:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
:																:	
B150:98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	} Dev 50	
B150:99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B150:100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	} Special bits for data exchange	
B150:101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

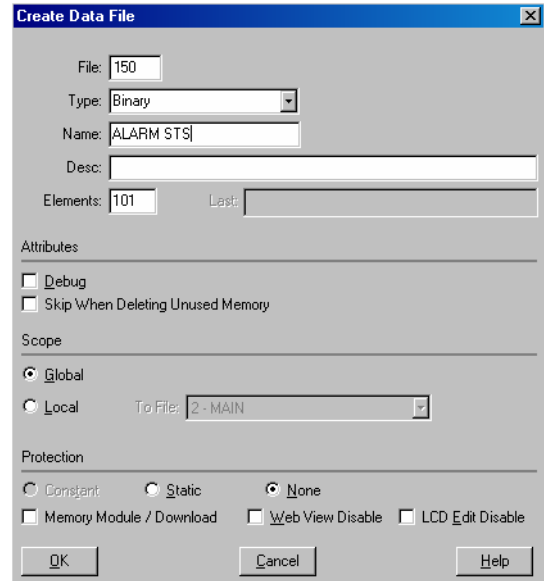
ALARM STS Data File Organization

Bits	Description
B150:0...B150:99	Alarm words reserved for 50 devices
B150:100	Alarm related bits going from the PanelView Component terminal to the controller
B150:101	Alarm related bits going from the controller to the PanelView Component terminal

In some cases, you may also need to use the real (float) values memory area F151, named ALARM VAL (Alarm Values). These memory locations are dedicated to store process values like speed and temperature. If necessary, these values can be shown in alarm messages as embedded variables. The ALARM VAL area starts at F151:0 and finishes at 151:249. It is dedicated for 50 devices, with 5 values per device.

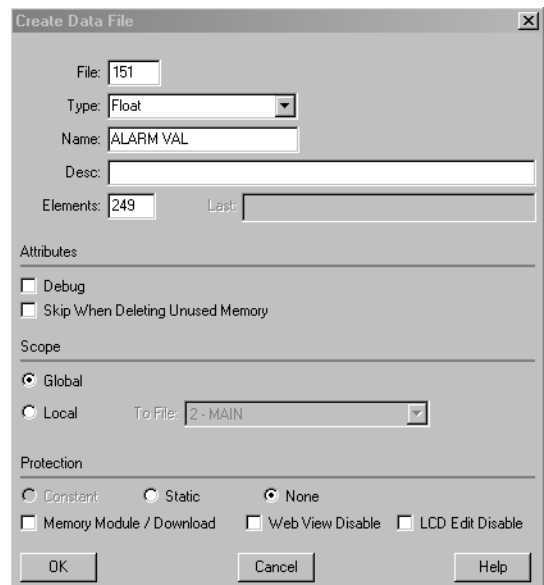
Follow these steps to create the alarm handling memory areas.

1. Create a new binary data file B150 and name it ALARM STS.



2. Create new float data file F151 and name it ALARM VAL.

Go to Import Symbolic Names and Descriptions of Alarm Data on page 16 to link your alarm sources to the B150 file that holds the alarm data.



Import Files for Alarm Data Exchange (Maintained Alarm Handling Approach)

This part of the Quick Start is for users who have chosen the Maintained alarm handling approach. The code is written for a MicroLogix 1400 controller. The instructions at the end of this section address changing the controller type for those using a MicroLogix 1100 controller.

In this approach, two binary data files, B150 and B151, are used. File B150 is set up identical to the file used in the standard approach and is similarly linked to the appropriate alarm tags on the PanelView Component terminal. Additionally, a B151 file, named ALARM CPY, is created. In this approach, when an alarm occurs, the related bit in file B151 is set. The imported code performs a bitwise OR operation into the whole alarm area (B151:0...B151:99) of the B151 file. If any alarm occurs, the B151:101/0 bit is set. This bit is used by the PanelView Component terminal to indicate that an alarm has occurred. The indication can be a blinking button, as shown in the Alarm Handling Demo example.

- If no alarm occurs, a green button reading 'No Alarms' is visible.
- If the alarm occurs, the button flashes red and reads 'Show Alarms'.
- Pressing the 'Show Alarms' button sets the B151:100/0 bit, which causes the content of the B151 ALARM CPY file to be copied to the B150 ALARM STS file.
- An alarm banner appears on the display.

Once you have removed the cause of the error, return to the operator panel and press Show Alarms. The button returns to the 'No Alarms' state.

IMPORTANT

Alarm code should use Output Latch (OTL) instructions to avoid losing transient errors. Write your program code to manage the B150 file to unlatch the appropriate bits once the cause of an alarm has been removed.

If an alarm source remains active, the relevant bits stay latched in the B151 file and you are notified by the blinking Show Alarms button.

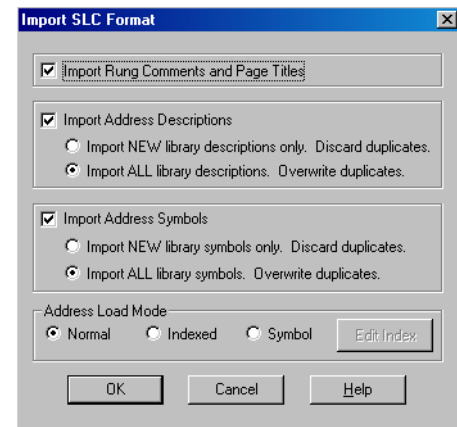
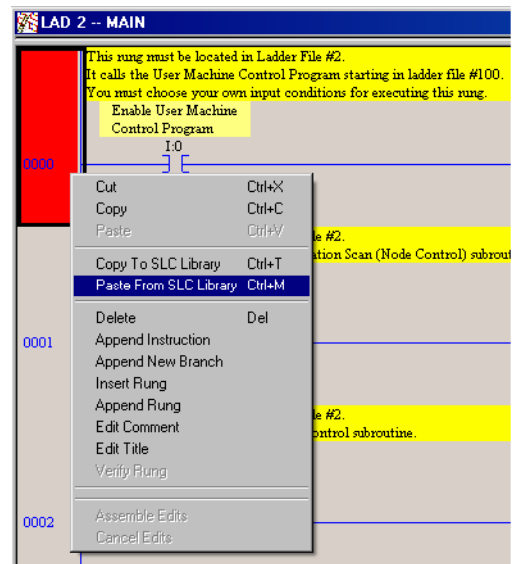
In the Maintained alarm handling approach, three files are used.

- B150 - ALARM STS file
- B151 - ALARM CPY file
- F152 - ALARM VAL file

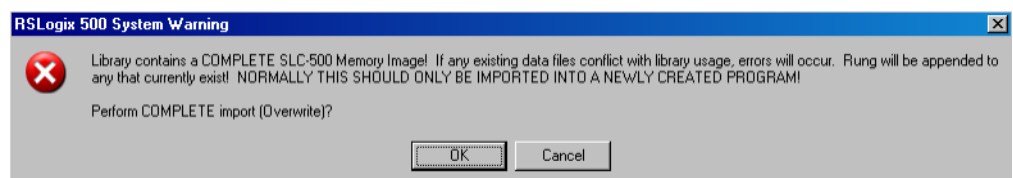
As in the Standard alarm handling approach, the F152 file is used to store process values. These values can be used as embedded variables in alarm messages.

Follow these steps to import the files used for alarm data exchange together with the MicroLogix controller program code.

1. Open your MicroLogix controller project.
2. Make sure that the data files B150, B151, and F152 are not being used.
3. Make sure that program file 250 is not being used.
4. If any of the files mentioned above are being used, rearrange your file order.
5. Select any rung in your Main file and right-click the rung.
6. Choose Paste from SLC Library.
7. Browse to the file named 'Alarm_Handling_SLC' in the Maintained Alarm Handling Code folder.
8. Select the file and click Open.
9. Make sure that all import options are set as shown here.
10. Click OK.



11. Click OK when the system warning appears.



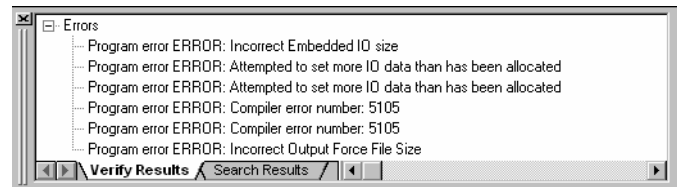
12. Click OK for any 'Overwrite' messages.

The program file LAD 250 ALRM HANDL and data files B150 ALARM STS, B151 ALARM CPY, F152 ALARM VAL are now present in the project tree.

13. Click Verify Project

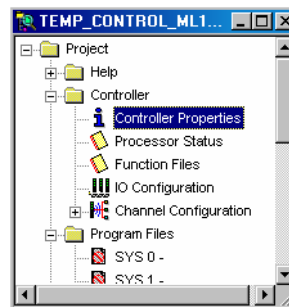


If your controller is a MicroLogix 1400, the verification should be successful. If your controller type is different, these errors may occur. They are caused by a mismatch between your application and the imported Alarm Handling library.

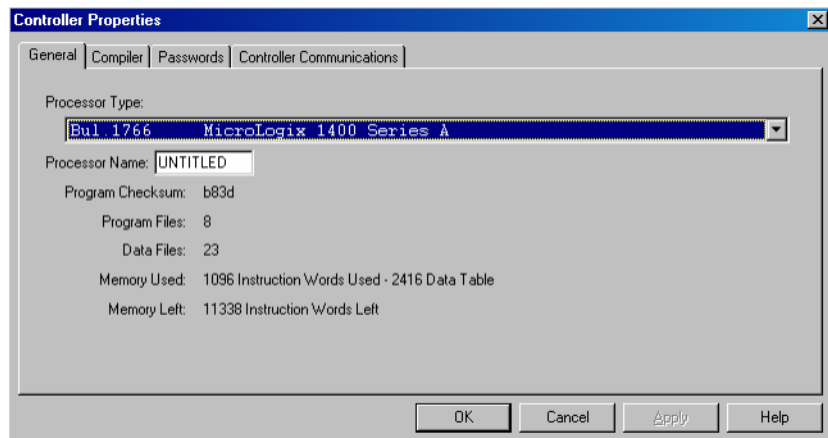


Follow these steps to correct the errors.

1. Double-click Controller Properties.



2. Change the Processor Type to MicroLogix 1400 Series A.



3. Click Apply and then OK to confirm the change.

4. Change the Processor Type back to the type in your application, for example, MicroLogix 1100.

5. Click Apply and then OK to confirm the change.

The project should now verify without any errors.

6. Adapt the alarm handing example to your application by creating the appropriate links to the B151 file.

Import Symbolic Names and Descriptions of Alarm Data

The bits in binary file B150 ALARM STS together with the values in the real file ALARM VAL (F151 for standard or F152 for maintained approach) constitute data that describes every possible kind of alarm in a building block application. Symbolic names of bits and real values along with their descriptions can be either inserted manually or imported from an Excel spreadsheet.

Follow these steps to import symbolic names and descriptions from a spreadsheet.

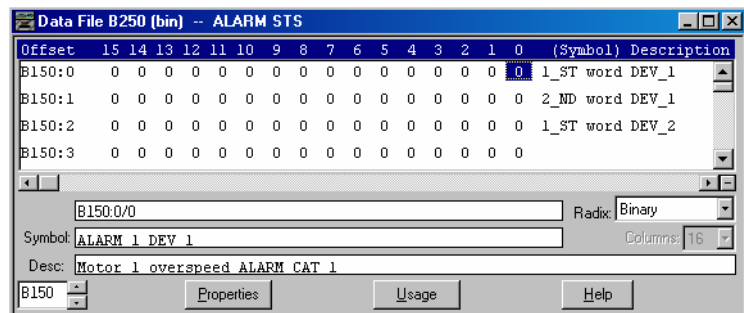
1. Prepare an Excel spreadsheet that describes alarm bits as shown in this example.

- column A = address
- column B = blank
- column C = symbolic description
- column D = blank
- column E = description (first row)
- column F = description (second row)

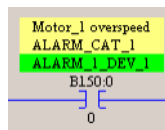
	A	B	C	D	E	F	G
1	B150:0				1_ST word DEV_1		
2	B150:0/0		ALARM_1_DEV_1		Motor_1 overspeed	ALARM_CAT_1	
3	B150:0/1		ALARM_2_DEV_1		Motor_1 overheated	ALARM_CAT_1	
4	B150:				2_ND word DEV_1		
5	B150:1/0		ALARM_3_DEV_2		Motor_2 overspeed	ALARM_CAT_2	
6	B150:2				1_ST word DEV_2		
7							
8	F151:0		SPEED		Motor_1_Speed		
9	F151:1		TEMP		Temperature_1		
10							

2. Save the Excel spreadsheet as a .csv file.
3. Import the spreadsheet into your RSLogix 500 project.
 - a. Open your MicroLogix controller project.
 - b. From the Tools menu, choose Database>ASCII Import.
 - c. Choose Import Source Format as CSV File.
 - d. Make sure Addr/Symbol Desc. is selected in the Data to be Imported checkbox.
 - e. Click OK.
 - f. Browse to your .csv file and click Open.

After importing the symbolic names and descriptions, your binary file should look like the example shown here.



In the RSLogix 500 program, every alarm bit and real variable used should have a symbolic name and description.



Configure Your Web Browser to Work with PanelView Explorer

PanelView Explorer is a web-browser application for designing and managing PanelView Component HMI applications. For optimal performance, use a Firefox version 2.0 or Internet Explorer version 7 web browser. Internet Explorer version 6 is supported but not recommended.

You must set up your web browser to enable cookies, disable your pop-up blocker, and set the PanelView Component terminal as a trusted site within Internet Explorer. You also need to enable your browser to access the Windows clipboard so that you can copy and paste data from Excel spreadsheets or text documents. If you do not make these changes, your data will not paste into the Excel spreadsheet.

Update Your Firefox Browser Configuration

Follow these steps to configure your Firefox browser.

1. Open your browser.
2. Type the URL `about:config`.
3. Look for the preference name 'signed.applets.codebase_principle_support'.
4. If the preference name exists, go to step [7](#).
5. If the preference name does not exist, right-click in the main window and choose `New>Boolean`.
6. Type the name `signed.applets.codebase_principle_support`.
7. Type `true` for the Value.

Update Your Internet Explorer Browser Configuration

You must enable copy and paste functionality as well as add the PanelView Component terminal as a trusted site in Internet Explorer.

From the Tools menu, choose `Internet Options>Security` to access the settings for the Windows clipboard.

The Internet, Local intranet, and Trusted sites have custom settings for clipboard access. The options are Disable, Enable, or Prompt. Enable is the recommended option for this building block.

Setting	Description
Disable	Copy and paste operations between PanelView Explorer and Windows applications are limited to a single input element, for example, the tag name in a Tags view.
Enable	Copy and paste operations between PanelView Explorer and external Windows applications work as expected provided the range of copied data compatible with the target application into which you are pasting.
Prompt	You are prompted every time you attempt a copy and paste operation involving the state editor. In Internet Explorer version 6, the prompt indicates paste for both copy and paste operations.

TIP

When pressing Ctrl+v to paste data into a single cell, such as tag name, the input cell loses focus when you click in the prompt confirmation dialog. The 'v' character is pasted into the cell instead of the copied data. Internet Explorer version 7 does not prompt in this case.

Follow these steps to set up the PanelView Component terminal or emulator you are working with as a Local intranet or Trusted site.

1. Launch your Internet Explorer browser.
2. From the Tools menu, choose Internet Options.
3. Choose the Security tab.
4. Click Local intranet and then Custom Level.
5. In the Security Settings dialog, scroll down to Scripting.
6. For Internet Explorer 7, click Enable under Allow Programmatic clipboard access.
7. For Internet Explorer 6, click Enable under Allow paste operations via script.
8. Click Local intranet and then Sites.
9. Click Advanced.
10. In the Add this Web site to the zone field, type the IP Address of your PanelView Component terminal, in the format http://192.168.100.20.
11. Click Add.
12. Click OK until you exit the Internet Options dialog box.

System Validation and Application Tips

Introduction

In this chapter, you validate that communication is occurring as intended between the MicroLogix controller and the PanelView Component terminal. Next, you import an alarm screen and configure the PanelView Component application to work with the alarms you configured in the first chapter. Lastly, you verify that alarm handling functionality is working according to your needs.

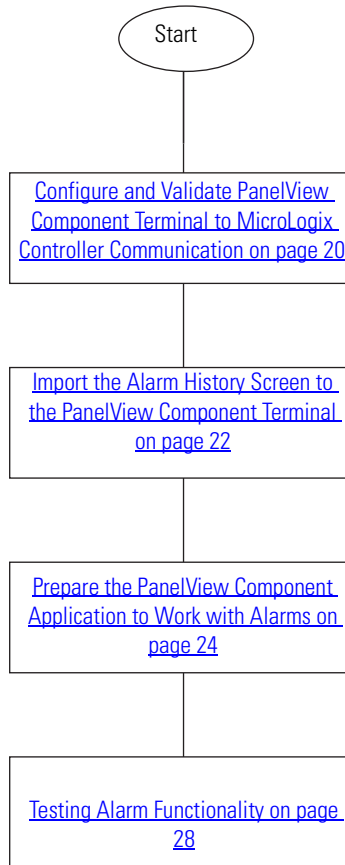
Before You Begin

- Verify that the MicroLogix controller and the PanelView terminal have power applied to them.
- Review the Connected Components Building Blocks Quick Start, publication [CC-QS001](#), verifying that you have completed all of the steps in Chapter 3 of that publication.
- Verify that you have completed all of the steps in [Chapter 1](#) of this document.

What You Need

- Personal computer
- Connected Components Building Blocks Overview CD, publication CC-QR001
- PanelView Component terminal
- MicroLogix 1100 or 1400 controller
- Standalone Ethernet switch so that you can connect your personal computer to both the MicroLogix controller and PanelView terminal over an isolated Ethernet network
- Your application containing the pre-defined alarm memory areas downloaded to the MicroLogix controller

Follow These Steps





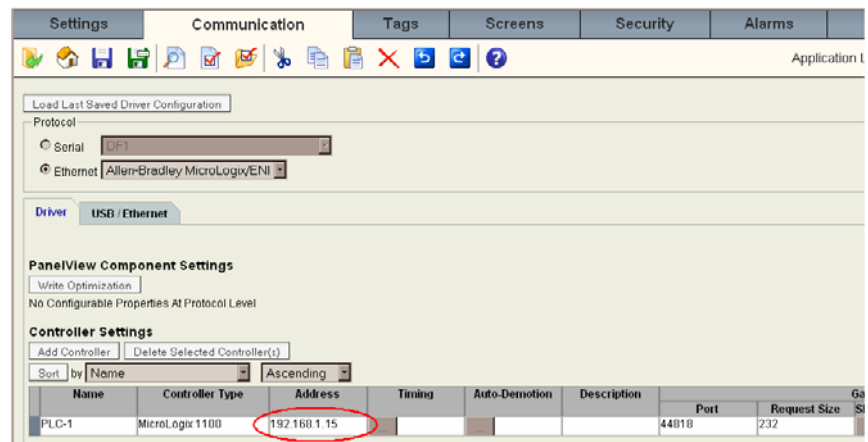
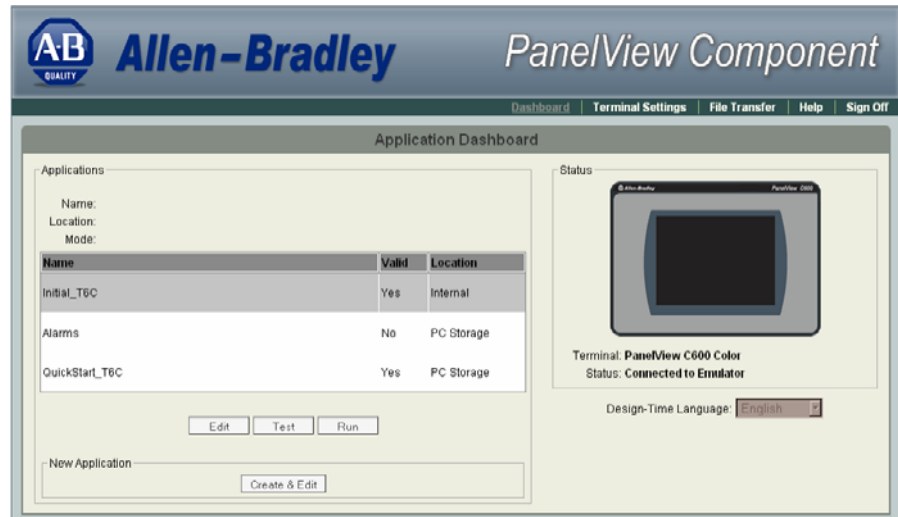
Configure and Validate PanelView Component Terminal to MicroLogix Controller Communication

The six-inch color touchscreen PanelView Component terminal communicates with the MicroLogix controller of the Ethernet network. The PanelView Component application reads from and writes to the data table of the MicroLogix controller.

The sample CCBB Alarm Handling Demo program for the PanelView Component terminal assumes that the static IP address for the MicroLogix controller is 192.168.100.15. If you are using a different IP address for the controller, the first thing you must do is modify the MicroLogix 1100 or MicroLogix 1400 IP address in the PanelView Component application.

Follow this procedure to modify the MicroLogix IP address in the PanelView Component application.

1. Connect the PanelView Component terminal to your Internet Explorer or Firefox web browser by typing the terminal address in the web browser location bar.
2. Select the application name in the PanelView Component dashboard dialog box and then click Edit.
3. From the Edit dialog box, click the Communication navigation tab.
4. Type the IP address of the MicroLogix controller.
5. Click  to validate the PanelView Component application and save it.
6. Click  to return to the Application Dashboard.
7. Click Run to run the application.



Import the Alarm History Screen to the PanelView Component Terminal

To effectively work with alarms, you should create the Alarm History screen to show and handle all the alarms that occur. The screen shows all alarms chronologically. The type of alarm is displayed as a text message. The occurrence time and date as well as the acknowledge time and date are available. This screen can be prepared manually. However, you can use the prepared User Defined Object (UDO) to make the process more efficient.

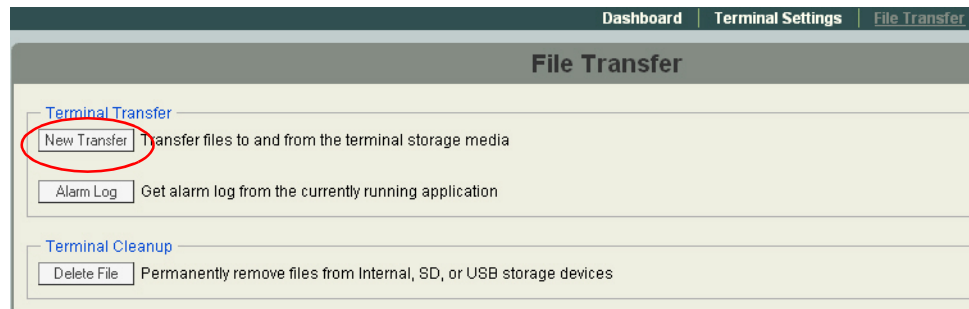
TIP

Rockwell Automation recommends using the Alarm History screen because it can improve alarm clearance. Using the Alarm History screen is optional. Alarm handling can work without it.

Import the Alarm History User Defined Object

Follow these steps to import the Alarm History UDO into the PanelView Component application.

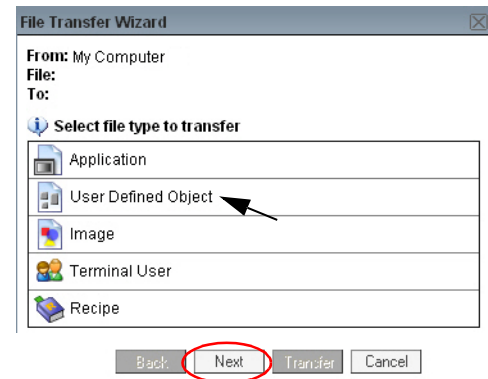
1. Launch PanelView Explorer.
2. Load the application to which you want to add the Alarm History screen.
3. Make sure that your application is stored in the internal memory of the PanelView Component terminal.
4. From the PanelView Explorer Startup window, click the File Transfer link.
5. Click New Transfer.



6. Select My Computer as the file source location and click Next.

7. Select User Defined Object and click Next.
8. Browse for the 'Alarm_History.chu' file in the Alarm Handling building block folder.
9. Select Internal Storage as the file destination and click Transfer.
10. Go to the Application Dashboard and click Edit to continue working on the application.

If the current application is open, you may need to click Refresh in the Library Object Palette.



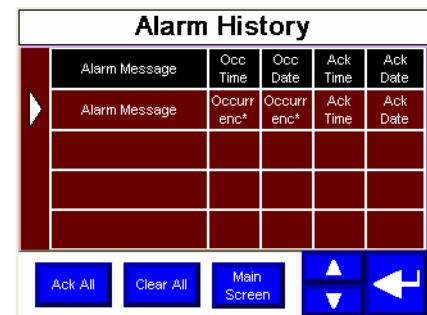
The Alarm History UDO appears in the Object Palette of the Library and is now ready to be used.

Add the Alarm History Screen to Your PanelView Component Application

Follow these steps to add the Alarm History Screen.

1. On the Screen List, click Add to create a new screen.
2. Name the screen 'Alarm History'.
3. Drag and drop the previously-imported User Defined Object (UDO) to the empty Alarm History screen.
4. Add a navigation button. This button can be a link, for example, to the Main screen.
5. Add an Alarm History navigation button on the Main screen.

The Alarm History screen should look similar to the example shown here.



Prepare the PanelView Component Application to Work with Alarms

Now that you have a working project consisting of a MicroLogix controller application and a PanelView Component application, you can prepare your PanelView Component application to work with alarms. PanelView Component applications usually have several screens, one of which should be the Alarm History screen created in the previous section.

In this section, you will create external BOOL and REAL tags for alarm messages, create an alarm indicator (for the Maintained alarm handling approach), and set up the alarms.

Create External Boolean and Real Tags

1. Launch PanelView Explorer.
2. Select your PanelView Component application, which contains the Alarm screen you created previously and click Edit.
3. Click Tags.
4. Make sure that the External tab is selected.
5. Click Add Tag.
6. Add Alarm tags of the Boolean data type.

Alarm addresses have to correspond to the addresses used for the alarms in the controller application. The number of Boolean tags must be equal to the number of alarms you are dealing with.

7. Add Alarm tags of Real data type.

The number of Real tags must equal the number of alarms for which you want to show process variables embedded in the alarm text messages.

8. To make your PanelView Component application clear and readable, include a description for each tag you add.

Your declared alarm Boolean and Real tags should be similar to this example.

	Tag Name	Data Type	Address	Controller	Description
1	Alarm_1	Boolean	B150:0/0	PLC-1	Tag reserved for Alarm 1
2	Alarm_2	Boolean	B150:0/1	PLC-1	Tag reserved for Alarm 2
3	Alarm_3	Boolean	B150:0/2	PLC-1	Tag reserved for Alarm 3
4	Alarm_1_PV	Real	F151:0	PLC-1	Process Value for Alarm 1 DEV 1
5	Alarm_2_PV	Real	F151:1	PLC-1	Process Value for Alarm 2 DEV 1
6	Alarm_3_PV	Real	F151:5	PLC-1	Process Value for Alarm 3 DEV 2

9. Click Save Application  .

TIP

In the Standard Alarm Handling approach and the Maintained alarm handling approach, the alarm tags used by the PanelView Component application have to point at the bits of the B150 file in the controller. Real alarm tags have to point at values of F151 file for Standard alarm handling or F152 for Maintained alarm handling.

Create Alarm Indicator (Maintained Alarm Handling) Buttons

Complete the steps in this section if you have chosen the Maintained alarm handling approach. In this approach, you are only notified that an alarm has occurred. In the Alarm Handling Demo, the Momentary Push Button is used as the alarm indicator. However, you can change its shape to suit your preferences. The button-indicator changes its appearance depending on the emerging alarms. If no alarm is present, the button is green and reads 'No Alarms'. If an alarm occurs, the button blinks red and reads 'Show Alarms'.

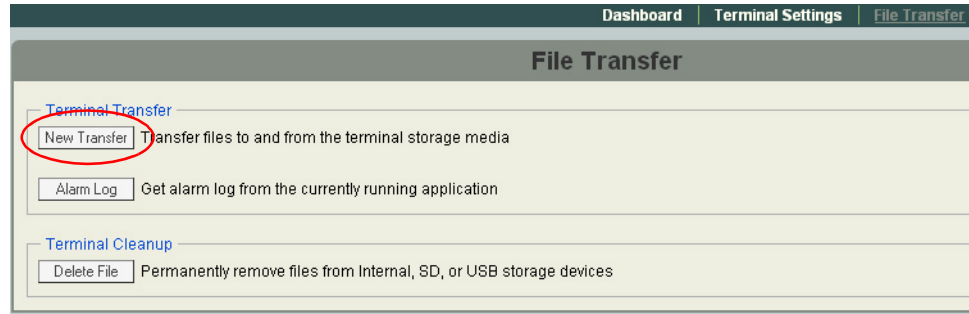


To see information about the alarms, you must press the blinking button. You can create this alarm button manually or import it into the PanelView Component application as a User Defined Object. The alarm button indicator used in the Alarm Handling Demo is called 'Alarm_Button_Indicator.chu' and the file is in the Alarm Handling Building Block folder.

Follow these steps to import the prepared alarm button indicator.

1. Load your PanelView Component application.
2. Make sure your application is stored in the internal memory of the PanelView Component terminal.

3. From the PanelView Explorer Startup window, click the File Transfer link.



4. Then click New Transfer.

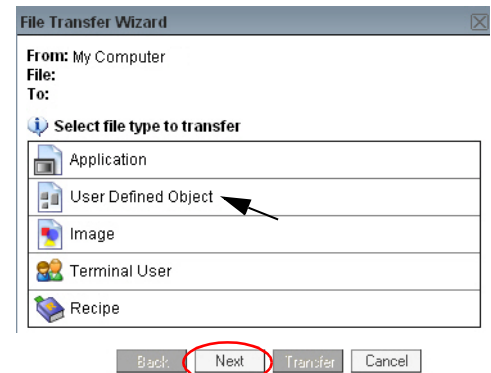
5. Select My Computer and click Next.

6. Select User Defined Object and click Next.

7. Browse for the 'Alarm_Button_Indicator.chu' file in the Alarm Handling building block folder and click Open.

8. Select Internal Storage and click Transfer.

9. Go to the Application dashboard and click Edit to continue working on the application.

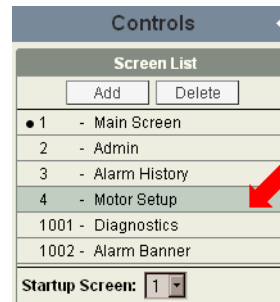


If the current application is open, you may need to click Refresh in the Library Object Palette.

The alarm button indicator User Defined Object appears in the Object Palette of the Library and is now ready to be used.

Follow these steps to add the alarm button indicator to your PanelView Component application.

1. From the Screen List, select the screen to which you want to add the button.

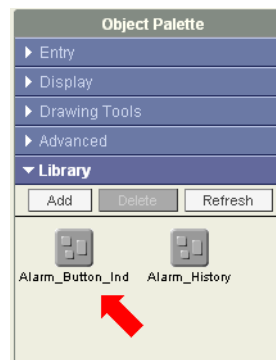


2. Go to the Library, drag and drop the button indicator where you want to place it.

3. Click the Tags tab.

4. Make sure you are on the External tab.

5. Add the 'Alarms_occured' Boolean tag and link it to the B151:101/0 bit in the MicroLogix controller.



6. Add the 'Show_alarms' Boolean tag and link it to the B151:100/0 bit
7. Click the Screens tab.
8. Click the alarm-button indicator to select it.
9. Choose Properties and click Connections.
10. Make the 'Show_alarms' tag a Write tag.
11. Make the 'Alarms_occured' tag an Indicator tag.

TIP

Rockwell Automation recommends adding alarm indicators to each working screen. To do so, repeat steps 8...11 on each screen. This provides you with information about alarms regardless of which screen is currently being used.

Set Up Alarms

To set up the alarms to work within your application, follow these steps.

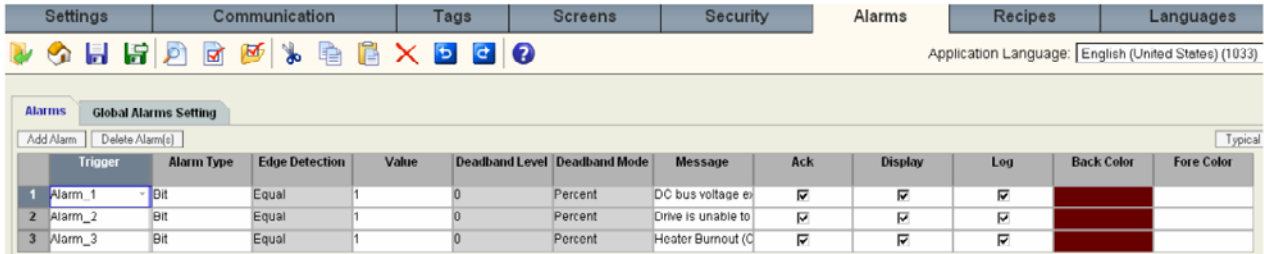
1. Prepare an Excel spreadsheet, like the one shown here, to describe the alarms.



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Alarm_1	Bit	Equal	1	0	Percent	DC bus voltage exceeded maximum value.	TRUE	TRUE	TRUE	#680000	#FFFFFF	
2	Alarm_2	Bit	Equal	1	0	Percent	Drive is unable to accelerate the motor.	TRUE	TRUE	TRUE	#680000	#FFFFFF	
3	Alarm_3	Bit	Equal	1	0	Percent	Heater Burnout (CT2)	TRUE	TRUE	TRUE	#680000	#FFFFFF	
4													

- Column A = alarm trigger tag
The alarm trigger tag name should match exactly the names entered on the Tag tab and linked to the B150 file.
 - Column B = alarm type
 - Column C = edge detection, not relevant in this type of application
 - Column D = value when alarm appears
 - Column E = deadband level, not relevant in this type of application
 - Column F = deadband mode, not relevant in this type of application
 - Column G = message text of the alarm
 - Column H = Ack bit (each alarm requires acknowledgement)
 - Column I = Display bit (the alarm is displayed when the condition for the alarm occurs)
 - Column J = Log bit (each alarm is saved in the log file)
 - Column K = background color (default value is #680000 for brown)
 - Column L = foreground color (default value is #FFFFFF for white)
2. Select all the populated cells in your spreadsheet and copy them to the clipboard by pressing Ctrl+c.

3. Go to your PanelView Component application and click the Alarms tab.
4. Press Ctrl+v to paste the spreadsheet values into the alarm list.

Your configured alarm list should look similar to the one shown here.



5. Click Validate Application .
6. Click Save Application .

Testing Alarm Functionality

Once you have imported the Alarm History screen to your application, and you have applied steps to prepare your application to work with alarms, you are ready to test the alarm functionality. If an alarm occurs, the relevant bit is set on the controller side. Since the PanelView Component application is linked to the application in the controller, the alarm is immediately visible on your PanelView Component screen. Depending upon which alarm handling approach you have chosen, the alarm indication appears as a system banner (Standard approach) or as a blinking Show Alarms button. To see the alarm message when using the Maintained approach, you must press the Show Alarms button.



Standard approach



Maintained approach

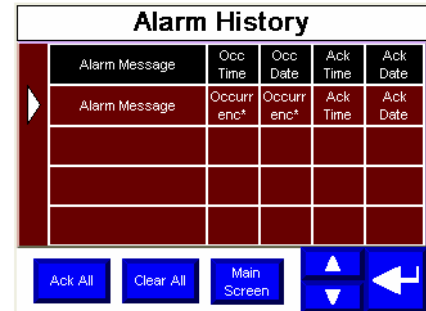
TIP

You should remove the Clear button, which is visible on the system alarm banner by default. You can also change the font size and appearance of the alarm banner.

You can acknowledge an alarm by pressing the Ack button. Pressing the Ack button does not clear the alarm condition. The system banner disappears and the alarm acknowledgement is noted on the Alarm History screen as well as in the Alarm Log file. You can also close the system alarm banner without acknowledging the alarms by pressing Close. The alarms will still be visible on the Alarm History screen.

Use the up and down arrows on the Alarm History screen to navigate through the alarms. You can acknowledge all of the unacknowledged errors by pressing Ack All. You can also clear the contents of the Alarm History screen by pressing Clear All.

The information on the Alarm History screen, including the alarm message, occurrence and acknowledgement times and dates, is also available in the Alarm Log file. Access the Alarm Log file from the File Transfer menu by choosing Alarm Log.



Alarm History				
Alarm Message	Occ Time	Occ Date	Ack Time	Ack Date
Alarm Message	Occurr enc*	Occurr enc*	Ack Time	Ack Date

Ack All Clear All Main Screen

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect Support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

Installation Assistance

If you experience a problem with a hardware module within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your module up and running.

United States	1.440.646.3434 Monday – Friday, 8 a.m. – 5 p.m. EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

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