



User Documentation

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Pioneer Software Technologies, Inc.
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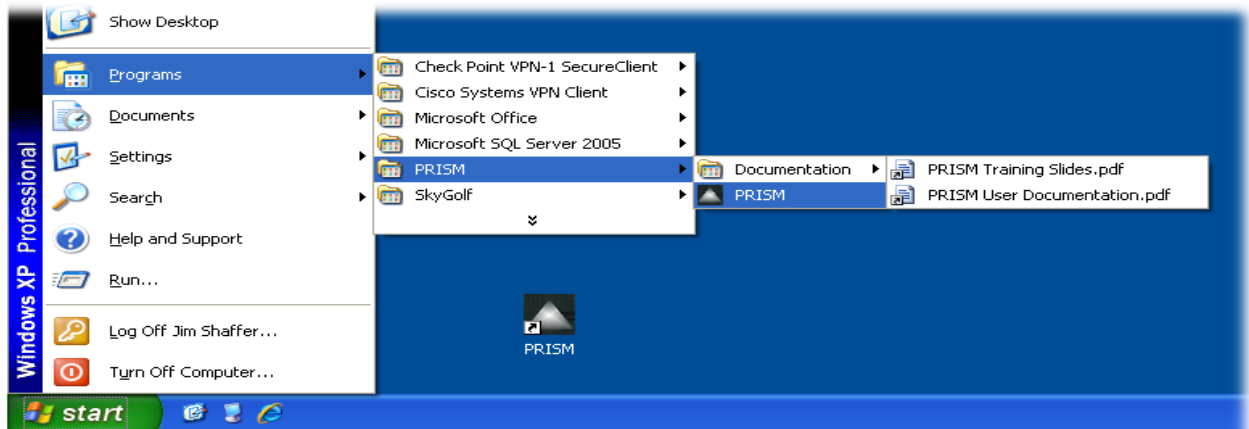
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PRISM

PRISM Startup

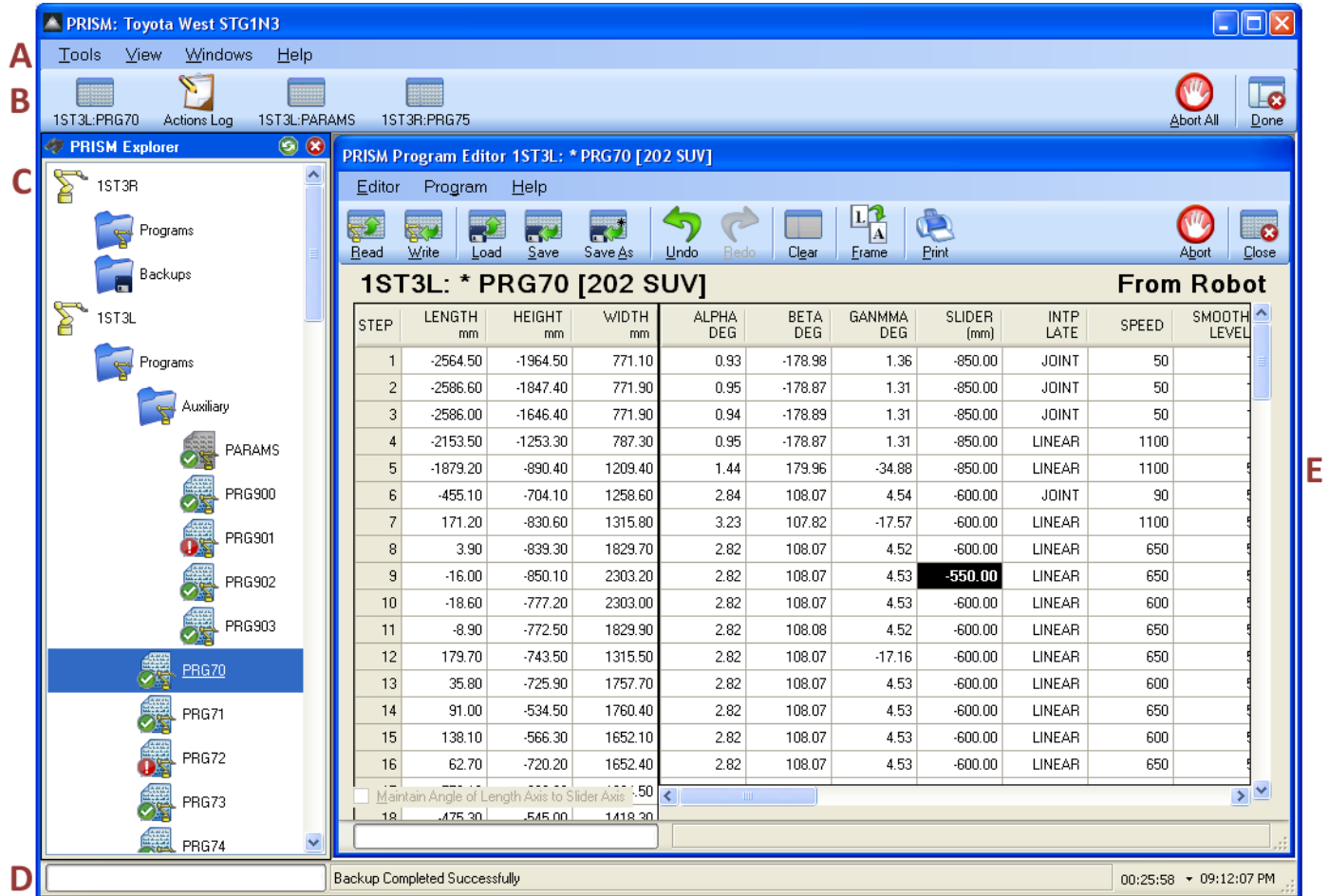
The PRISM software is started either by double clicking the PRISM desktop icon or by choosing the PRISM menu option from the PRISM menu under the Start Menu. Also available from the PRISM menu is the PRISM User Documentation and PRISM Training Slides.



As the PRISM software starts, it displays the PRISM splash screen indicating the version of PRISM that is currently installed on the computer.



PRISM Window



A PRISM Menu Bar

The menu bar holds the menu options for starting the various PRISM windows, controlling the layout of the PRISM software and accessing the PRISM help information.

B PRISM Activity Bar

The activity bar lists all currently open PRISM windows, allowing for easy navigation between windows.

C PRISM Explorer Pane

The explorer pane lists all robots, their available robot programs and backup files, allowing for easy interaction with the robots.

D PRISM Status Bar

The status bar displays the progress of any occurring communication, the current action being performed, and provides a timer for monitoring relative durations of time sensitive tasks.

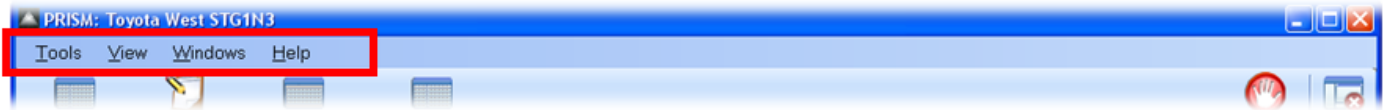
E PRISM Workspace

The workspace contains all open PRISM windows, as represented in the PRISM activity bar.

PRISM Overview

- All PRISM windows and dialogs can be resized by dragging the edge of the window bigger or smaller.
- Most things in the PRISM software provide a tooltip message if the mouse is hovered over it.
- Most actions are initiated from the PRISM Explorer Pane by right clicking an object to display its context menu, listing the things that can be done to that object.
- Most actions initiated from the PRISM Explorer Pane can be performed on multiple objects at the same time by selecting multiple objects before right clicking to display their common context menu. For safety reasons, all selected objects must be of the same type before a common context menu will be shown.
- Most actions can be initiated with a keyboard accelerator. The keyboard accelerator will be displayed on each menu option, or as part of the tooltip for each toolbar button.
- Most actions display a confirmation message before proceeding. The message provides several choices.
 - Yes To All
Answers Yes to the current confirmation, and automatically assumes Yes for all subsequent confirmations for the current object and all subsequent objects for the current action.
 - Yes
Continues the current action for the current object. Any subsequent confirmations will still be asked for the current object, and for all subsequent objects.
 - No
Stops the action for the current object. All confirmations will still be asked for all subsequent objects.
 - No To All
Answer No to the current confirmation, and automatically assumes No for all subsequent objects for the current action.
 - Cancel
Stops the action for the current object and for all subsequent objects.
- Any action that modifies data will be logged to the PRISM Actions Log. The action log can be viewed by selecting its menu option under the Tools menu of the PRISM Menu Bar.
- The PRISM Actions Log ensures that all modifications are tracked, including the original value that was changed, so that erroneous modifications can be identified and undone.
- Any action that modifies a robot, robot program, robot parameters or robot backup file will prompt for a PRISM User Account login before the action will be allowed to continue.
- The PRISM Security subsystem makes repeated requests for PRISM User Account login to ensure every modification is traceable.
- Any unexpected behavior anywhere within PRISM will cause an entry to be logged with the PRISM Event Log. The event log can be viewed by selecting its menu option under the Tools menu of the PRISM Menu Bar.
- The PRISM Event Log ensures that any unexpected behavior is automatically captured so that the underlying cause of the behavior can be investigated and resolved.
- Pressing an Abort button will safely and cleanly halt all current communication with all robots. Communication is halted once the robot completes the current command. Most robot commands complete quickly, allowing the abort to happen quickly. Some robot commands take many seconds to complete, requiring the PRISM software to wait until the command completes before honoring the abort.

PRISM Menu Bar



Tools Menu

Program Editor

Brings up an empty PRISM Program Editor window, allowing a robot program to be read from robot, or loaded from disk, for viewing and editing.

Parameters Editor

Brings up an empty PRISM Parameters Editor window, allowing a robot's parameters to be read from robot, or loaded from disk, for viewing and editing.

Actions Log

Brings up the PRISM Actions Log window, allowing for review of all logged user activity.

Event Log

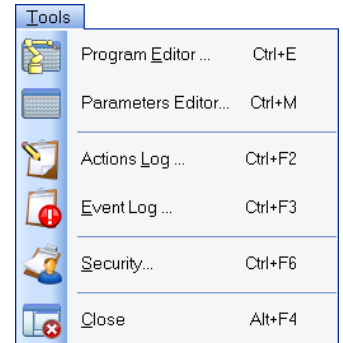
Brings up the PRISM Event Log dialog, allowing for review and analysis of any PRISM software or communication anomalies.

Security

Brings up the PRISM Security dialog, allowing the PRISM user account information to be viewed and modified.

Close

Shuts down PRISM after safely suspending all current activity and closing all open PRISM windows.



View Menu

PRISM Explorer

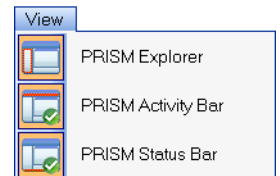
Toggles the display of the PRISM Explorer Pane, located to the left of the PRISM Workspace, thereby increasing or decreasing the space available to the PRISM Workspace.

PRISM Activity Bar

Toggles the display of the PRISM Activity Bar located above the PRISM Workspace and below the PRISM Menu Bar.

PRISM Status Bar

Toggles the display of the PRISM Status Bar located below the PRISM Workspace.



Window Menu

Fill

Resizes all PRISM windows in the PRISM Workspace to fill the workspace. Each window will continue to fill the workspace as the workspace size changes, or until the window is manually resized. Double clicking a window title bar will also cause the window to fill the workspace.

Cascade

Resizes and repositions all PRISM windows in the PRISM Workspace in a cascade.

Tile Vertical

Resizes and repositions all PRISM windows in the PRISM Workspace left to right without overlapping.

Tile Horizontal

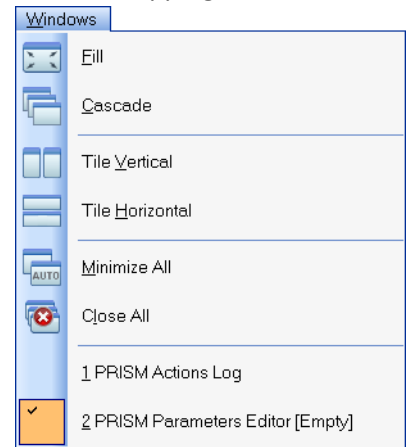
Resizes and repositions all PRISM windows in the PRISM Workspace top to bottom without overlapping.

Minimize All

Repositions all PRISM windows in the PRISM Workspace along the bottom of the workspace, showing only the window title bars.

Close All

Causes each PRISM window in the PRISM Workspace to close. Any window containing unsaved modifications will prompt to save changes before closing. Cancelling a prompt to save changes will cancel the close operation and leave that window open in the workspace.



Open Windows List

Each PRISM window currently open in the PRISM Workspace is listed, with the currently active window identified by a check mark next to its menu item. Selecting a window from the list will make that window currently active in the PRISM Workspace.

Help Menu

Contents

Displays the PRISM Help library's table of contents.

About

Displays the PRISM About dialog, which lists the software version, contact information and copyright notice.

Abort All

Causes PRISM to immediately and cleanly terminate all active communication. Communication with a robot, by its nature, may take several seconds to terminate while the robot completes any current transmission stream. During that time the PRISM Status Bar will continue to display current communication progress and activity.



PRISM Activity Bar



Activity Bar Icons

Workspace Windows

Each PRISM window in the PRISM Workspace is displayed as an icon on the activity bar, along with a short description of what the window contains. The currently active window is shown as a highlighted icon. Clicking on any icon will set focus to the corresponding window, bringing that window to the front of all other windows in the workspace.

Abort All

Causes PRISM to immediately and cleanly terminate all active communication. Communication with a robot, by its nature, may take several seconds to terminate while the robot completes any current transmission stream. During that time the PRISM Status Bar will continue to display current communication progress and activity.

Done

Causes each PRISM window in the PRISM Workspace to close. Any window containing unsaved modifications will prompt to save changes before closing. Cancelling a prompt to save changes will cancel the close operation and leave that window open in the workspace. Only if all windows close will the PRISM software shut down.

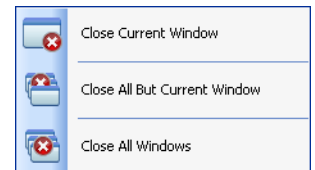
Right clicking on the PRISM Activity Bar displays the Activity Bar Context Menu

Activity Bar Context Menu

Invoked by right clicking the mouse on the Activity Bar.

Close Current Window

Causes the currently active window in the PRISM Workspace to close. If the window contains unsaved modifications it will prompt to save those changes before closing. Cancelling the prompt to save changes will cancel the close operation and leave that window open in the workspace.



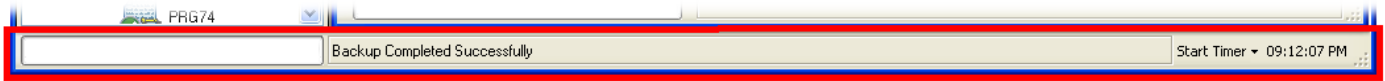
Close All But Current Window

Causes all windows except the currently active window in the PRISM Workspace to close. Any window containing unsaved modifications will prompt to save changes before closing. Cancelling a prompt to save changes will cancel the close operation and leave that window open in the workspace.

Close All Windows

Causes each window in the PRISM Workspace to close. Any window containing unsaved modifications will prompt to save changes before closing. Cancelling a prompt to save changes will cancel the close operation and leave that window open in the workspace.

PRISM Status Bar



Status Bar Fields

Progress Meter

Each time the PRISM Explorer Pane issues a command to a robot, the communication progress of that command is tracked by the progress meter. If the command is of a fixed duration, such as reading a robot program, the progress meter will gradually fill from left to right as the command executes. If the command is of a variable duration, such as requesting the list of know robot programs, the progress meter will display as a marquee, continuously scrolling from left to right, until the command completes.

The Progress Meter and Action Status fields track communication activity initiated by the PRISM Explorer Pane. Each PRISM window that communicates with robots will have its own progress meter and action status field.

Action Status

Each time the PRISM Explorer Pane issues a command to a robot, a description of the action is displayed as an action status. If a command is comprised of multiple commands, such as writing a robot program, each individual action will be displayed as it occurs.

Start Timer

Clicking the Start Timer button starts an elapsed timer. The elapsed timer will continue to run, showing the elapsed time on the timer button, until the button is clicked again. Clicking the button stops the timer, but does not reset the timestamp. Clicking the button again resumes the timer from where it was paused.

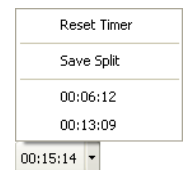
Clicking the small arrow to the immediate right of the Start Timer button displays the Start Timer menu.

Reset Timer

Select this option to cancel the elapsed timer and clear any saved splits.

Save Split

Select this option to record the current elapsed time without stopping the timer. Any number of elapsed timestamps can be saved.



Current Time

Because the Windows clock displayed in the Windows icon tray does not show the current second, the current computer timestamp, including the current second, is displayed on the status bar.

PRISM Explorer Pane

Explorer Pane Icons



Robot Icon

This is the topmost icon in the explorer pane. There is one robot icon for each robot. All robot programs, parameters and backup files for a robot are listed underneath its robot icon.



Robot Programs Folder Icon

There is one programs folder icon under each robot icon. All robot programs and parameters for a robot are listed underneath its robot programs folder icon, including those listed underneath the auxiliary folder icon.



Robot Auxiliary Folder Icon

There is one auxiliary folder icon under each robot programs folder icon. The auxiliary folder contains the robot parameters and all robot programs that have been demoted in importance.



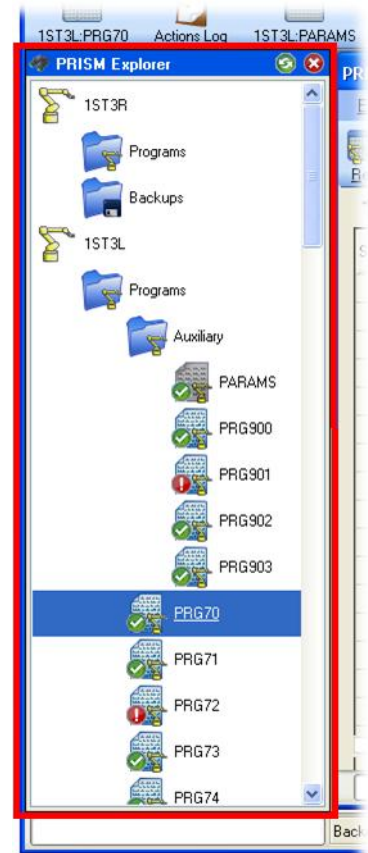
Robot Parameters Icon

There is one parameters icon under the auxiliary folder icon of each robot.



Robot Program Icon

There is one program icon for each robot program defined on the associated robot. Those programs that have been demoted in importance will be listed underneath the auxiliary folder. All other program will be listed underneath the programs folder icon.



Robot programs and parameters that have been backed up will be displayed with an icon that includes a green checkmark. Those with a red exclamation mark have not been backed up, or the backup is outdated.



Backup Folder Icon

There is one backup folder icon underneath each robot icon. All backed up robot programs and parameters are listed underneath this icon.



Backup Parameters Icon

There will be one backup parameters icon underneath the backup folder icon if the robot parameters for the associated robot have been backed up.



Backup Program Icon

There will be one backup program icon underneath the backup folder icon for each robot program backed up from the associated robot.

Hovering the mouse over any icon will display a tooltip of additional information for that icon.

Explorer Pane Operation

Startup

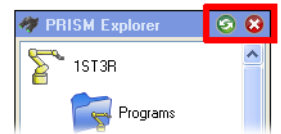
If communication cannot be established with one or more robots the PRISM Explorer Pane will display a message noting the failure. The specific reason for the failure will be logged to the PRISM Event Log.

Each time the PRISM software is started the PRISM Explorer Pane will initiate communication with all robots and request from each their current programs list. Progress of the request can be seen on the PRISM Status Bar as each robot responds with its programs list.

Each time the PRISM software is started the PRISM Explorer Pane immediately displays the list of robot program, parameters and backup files as they existed when PRISM was last shutdown. Because it can take many seconds for the robots to respond with their current programs list, immediately displaying the last known list of programs allows work to begin in PRISM before the current list has been fully received.

Toolbar

Pressing the green Refresh button will cause the PRISM Explorer Pane to clear all icons from the pane and retrieve for each robot its current programs, parameters and backup files.



Pressing the red Exit button will close the PRISM Explorer Pane.

The PRISM Explorer Panel can be shown or hidden by selecting the PRISM Explorer menu option under the View menu of the PRISM Menu Bar.

Navigation

- Select icons by clicking on them.
 - The currently selected icon is underlined.
 - Clicking a robot icon, or one of the folder icons will expand or collapse the icon.
 - Use the Shift and Ctrl keys to select multiple icons.
 - Holding the Shift key will select all icons between the current icon and the clicked icon.
 - Holding the Ctrl key will select the current icon without deselecting other icons.
 - Use the arrow keys to select the next or previous icon.
 - Use the Enter key to expand or collapse robot and folder icons.

Context menus will only be displayed if the PRISM Explorer Pane is not currently executing a command.

Execution

- Execute icon commands by using their context menus.
 - Each icon has a context menu of commands that it can perform.
 - Right click on an icon to show its context menu.
 - Press the spacebar to the selected icon's context menu.
 - If multiple icons of the same type are selected then the context for that type of icon will be shown.
 - If multiple icons of different types are selected then no context menu will be shown.
- All modifications must provide a valid PRISM User Account before proceeding.
- All activity is recorded in the PRISM Action Log.

Each time the PRISM Explorer Panel executes a command it displays an Action Panel to track the command.

Action Panel

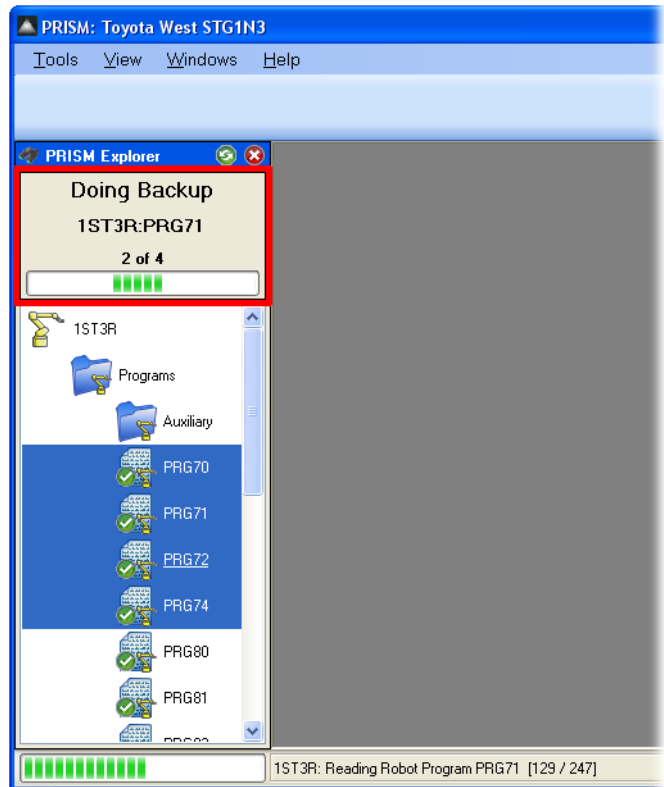
The action panel is displayed at the top of the PRISM Explorer Pane each time a command is executed.

The action panel displays the progress of the command being executed, which can be a lengthy operation involving multiple objects in the PRISM Explorer Pane.

The action panel displays the action being performed, the object on which the action is being performed, on how many more objects the action will be performed, and a marquee progress meter.

The marquee progress meter scrolls continuously while the action is being performed. The marquee does not indicate command progress, but only that command is still being executed. Command progress is tracked by the progress meter on the PRISM Status Bar at the bottom of the PRISM Window.

When the command is complete the action panel is automatically removed from the pane.



Explorer Pane Context Menu Commands

Right click on an Explorer Pane Icon to display the commands menu for that icon.



Robot Context Menu Commands

Edit Robot Parameters

Opens a **PRISM Parameters Editor** window for the robot.

Backup Robot Data

See description of the **Backup Robot Data Context Menu**.

Restore Robot Data

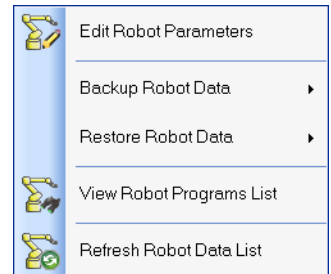
See description of the **Restore Robot Data Context Menu**.

View Robot Programs List

Displays a detailed list of all programs on the robot. The list can be copied to the clipboard as a tab delimited file, allowing the program list to be incorporated into other documents.

Refresh Robot Data List

Ensures the PRISM Explorer Pane is correctly displaying the robot and all its programs, parameters and backup files. Only the information already known about the robot is used in the refresh. The current list of programs is not read from the robot.



The context menu Refresh command is a soft refresh. To do a hard refresh use the Refresh button on the PRISM Explorer Pane toolbar.

Backup Robot Data Context Menu Commands

Backup Modified Robot Programs

Backs up to the default backup location all robot programs and parameters that are not currently backed up.

Backup Modified Robot Data

Backs up to the default backup location all robot parameters and programs that are not currently backed up.

Backup All Robot Data

Backs up to the default backup location all robot parameters and programs regardless of their current backup status.

Backup Modified Robot Programs To Location

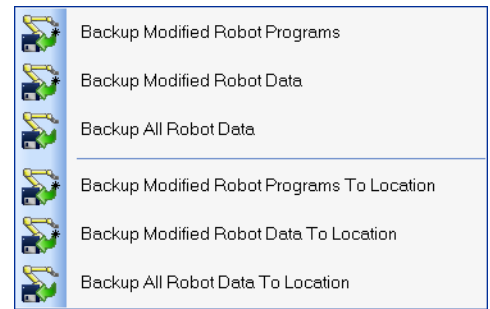
Backs up to a specified location all robot programs that are not currently backed up in that location.

Backup Modified Robot Data To Location

Backs up to a specified location all robot parameters and programs that are not currently backed up in that location.

Backup All Robot Data To Location

Backs up to a specified location all robot parameters and programs regardless of their current backup status in that location.



Restore Robot Data Context Menu Commands

Restore Newer Backup Programs

Restores from the default backup location all robot programs that are newer than what is on the robot.

Restore Newer Backup Data

Restores from the default backup location all robot parameters and programs that are newer than what is on the robot.

Restore All Backup Data

Restores from the default backup location all robot parameters and programs regardless of whether they are newer than what is currently on the robot.

Restore Newer Backup Programs From Location

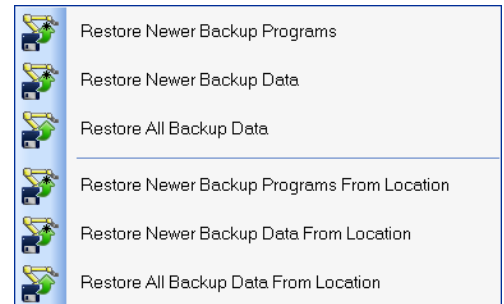
Restores from a specified location all robot programs that are newer than what is currently on the robot.

Restore Newer Backup Data From Location

Restores from a specified location all robot parameters and programs that are newer than what is currently on the robot.

Restore All Backup Data From Location

Restores from a specified location all robot parameters and programs regardless of whether they are newer than what is currently on the robot.



Robot Programs

The Robot Programs icon shares the same context menu as the Robot icon. **Refer to the Robot Context Menu Commands** for a description of each command.



Auxiliary Folder Icons

The Robot Programs icon shares the same context menu as the Robot icon. **Refer to the Robot Context Menu Commands** for a description of each command.



Robot Parameters Icon

Edit Robot Parameters

Opens a **PRISM Parameters Editor** window for the robot.

Backup Robot Parameters

Backs up the robot parameters to the default location.

Backup Robot Parameters To Location

Backs up the robot parameters to the specified location.

Restore Backup Parameters

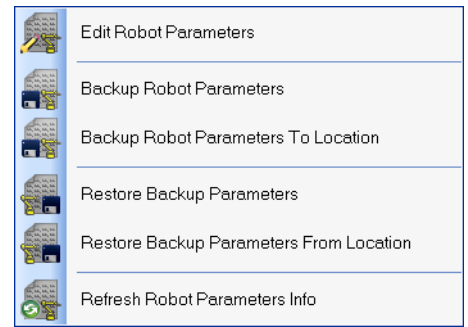
Restores backed up parameters to the robot from the default location.

Restore Backup Parameters From Location

Restores backed up parameters to the robot from the specified location.

Refresh Robot Parameters Info

Ensures the PRISM Explorer Pane is correctly displaying the robot parameters icon, specifically whether the robot parameters have been backed up. A green checkmark in the icon indicates the parameters are backed up. A red exclamation point in the icon indicates there is no backup or the backup is outdated.



The context menu Refresh command is a soft refresh. To do a hard refresh use the Refresh button on the PRISM Explorer Panel toolbar.



Robot Program Icon

Edit Robot Program

Opens a **PRISM Program Editor** window for the robot program.

Copy Robot Program

Allows the robot program to be duplicated on the same robot or different robot. The original robot program is unaffected by the copy command.

Mirror Robot Program

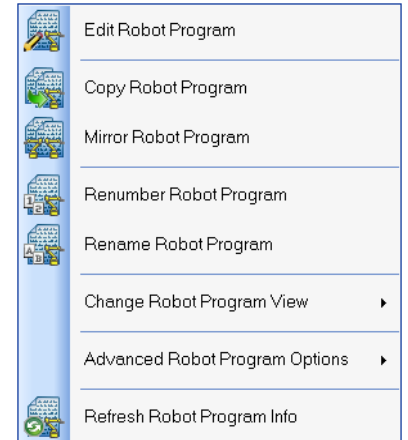
Allows the robot program to be duplicated on the same robot or different robot, and at the same time have the axis coordinates of the step commands transposed to create a program that is a mirror of the original program. The original robot program is unaffected by the mirror command.

Renumber Robot Program

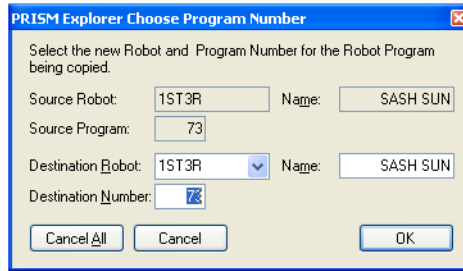
Allows the robot program to be renumbered. If the robot program is renumbered onto a different robot, then the program is copied to the new robot using the new program number and same program name, and the original program on the original robot is deleted.

Rename Robot Program

Allows the robot program to be renamed. If the robot program is renamed onto a different robot, then the program is copied to the new robot using the new name and the same program number, and the original program on the original robot is deleted.



For the Copy, Mirror, Renumber and Rename commands the PRISM Choose Program Number dialog is displayed to prompt for the new program number, new program name, and the destination robot.



Change Robot Program View

See description of the **Change Robot Program View Context Menu**.

Advanced Robot Program Options

See description of the **Advanced Robot Program Options Context Menu**.

Refresh Robot Program Info

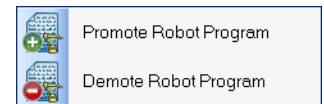
Ensures the PRISM Explorer Pane is correctly displaying the robot program icon, specifically whether the robot program has been backed up. A green checkmark in the icon indicates the program is backed up. A red exclamation point in the icon indicates there is no backup or the backup is outdated.

The context menu Refresh command is a soft refresh. To do a hard refresh use the Refresh button on the PRISM Explorer Panel toolbar.

Change Robot Program View Context Menu

Promote Robot Program

Makes the robot program icon a child of the Robot Programs icon.



Demote Robot Program

Makes the robot program icon a child of the Auxiliary Programs icon.

Promotion and demotion is a visual property only. It has no affect on program icons other than to make the robot programs folder less cluttered by moving rarely used icons into the auxiliary folder.

Advanced Robot Program Options Context Menu

Backup Robot Program

Backs up the robot program to the default location.

Backup Robot Program To Location

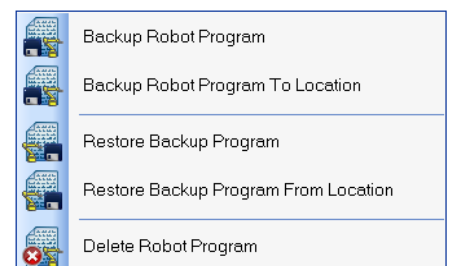
Backs up the robot program to the specified location.

Restore Backup Program

Restores the backup for the program to the robot from the default location.

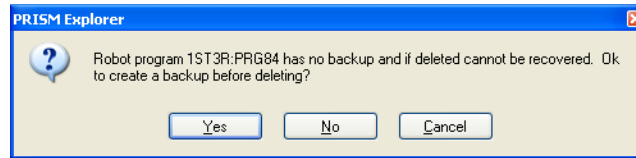
Restore Backup Program From Location

Restores the backup for the program to the robot from the specified location.



Delete Robot Program

Deletes the robot program file from the robot. If at the time of the delete there is no current backup of the robot program in the default backup location then PRISM will prompt to have a current backup created before proceeding with the delete.



Backup Folder Icon

Restore Newer Backup Programs

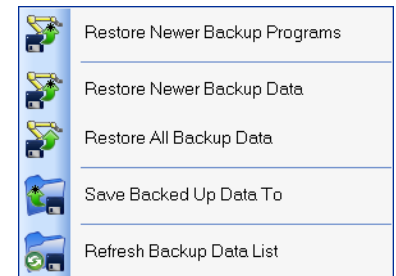
Restores from the default backup location all robot programs that are newer than what is currently on the robot.

Restore Newer Backup Data

Restores from the default backup location all robot parameters and programs that are newer than what is currently on the robot.

Restore All Backup Data

Restores from the default backup location all robot parameters and programs regardless of whether they are newer than what is currently on the robot.



To restore from a specific location, use the Robot Program Folder Context Menu.

Save Backed Up Data To

Saves all backed up data for the robot to the specified location.

Refresh Backup Data List

Ensures the PRISM Explorer Pane is correctly displaying backup data icons by reading the current list of backup data from the default backup location.



Backup Parameters Icon

Edit Backup Parameters

Opens a **PRISM Parameters Editor** window for the backup parameters file.

Restore Backup Parameters To Robot

Restores backed up parameters to the robot from the default location.



To restore from a specific location, use the Robot Parameters Context Menu.

Advanced Backup Parameters Options

See description of the **Advanced Backup Parameters Options Context Menu**.

Refresh Backup Parameters Info

Ensures the PRISM Explorer Pane is correctly displaying backup parameters icon by verifying the backup file is present in the default backup location.

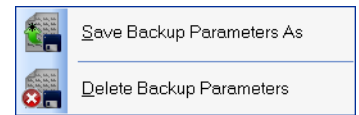
Advanced Backup Parameters Options Context Menu

Save Backup Parameters As

Saves the backed up parameters file to the specified location.

Delete Backup Parameters

Deletes the backed up parameters file from the default backup location.



Backup Program Icon

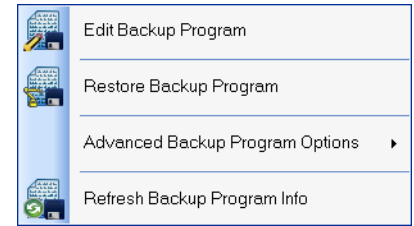


Edit Backup Program

Opens a **PRISM Program Editor** window for the backup program file.

Restore Backup Program

Restores the backed up program to the robot from the default location.



To restore from a specific location, use the Robot Program Context Menu.

Advanced Backup Program Options

See description of the **Advanced Backup Program Options Context Menu**.

Refresh Backup Program Info

Ensures the PRISM Explorer Pane is correctly displaying backup program icon by verifying the backup file is present in the default backup location.

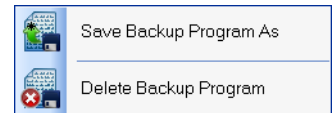
Advanced Backup Program Options Context Menu

Save Backup Program As

Saves the backed up program file to the specified location.

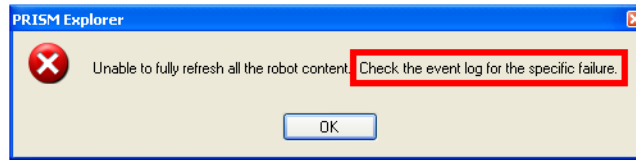
Delete Backup Program

Deletes the backed up program file from the default backup location.



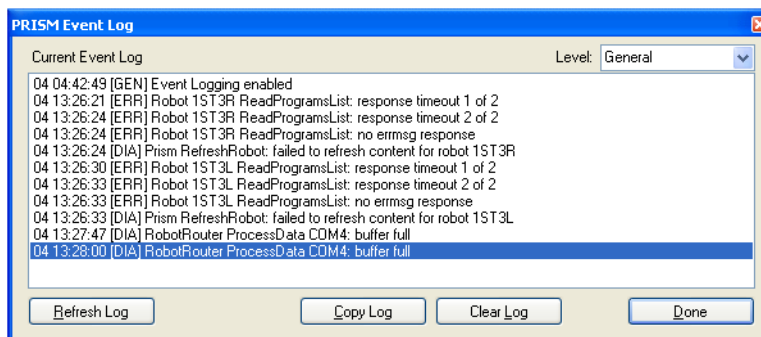
PRISM Event Log

The PRISM software uses the PRISM Event Log to capture any unexpected failures that may occur. Before attempting to recover from the error, the PRISM software will record the details of the failure as one or more event logs, and will then display a notification message that a failure has occurred with instructions to check the event log.



The PRISM Event Log is accessed under the Tools menu on the PRISM Menu Bar.

- Event logs are viewable only through the PRISM Event Log dialog.
- Event logs are listed by the date at which the event occurred.
- Event log entries consists of a timestamp, an event level and an event description.
 - The timestamp shows the time and the day on which the event occurred. The month and year must be inferred from the day.
 - The event level groups event logs by event severity.
 - The event description can be cryptic and is meant to provide PRISM technical support personnel with insights into the cause of the failure.
- Event level provides insight into the severity of the event and will be one of three levels.
 - [GEN] is a general event. General events are informational, and do not indicate a software failure.
 - [ERR] is an error event. Error events are failures due to a problem outside the control of the PRISM software. Typically, an error event is the result of failed communications with a robot, or a failure with the operating system. Error events can usually be resolved without modification to the PRISM software.
 - [DIA] is a diagnostic event. Diagnostic events are failures due to a problem that should have been within the control of the PRISM software. Sometimes, the cause of a diagnostic event can be traced back to an earlier error event. In that circumstance, resolving the error event will also resolve the diagnostic event. Resolving Diagnostic events not linked to an Error event may require modification to the PRISM software.
- Event logs are not persisted. The events list is lost when the PRISM software is shutdown.



- The current events list is automatically refreshed every two minutes while the dialog is open.
- The current events list is automatically sorted from oldest to newest.
- The current events list can be filtered by choosing the level of event to display.
 - Disabled

Stop the display of all event logs. If the PRISM software were to get into a failure condition that caused it to continuously and rapidly log the same events then disabling the event log would halt new events being added to the log.

- General
Displays all event logs, including informational logs that are not associated with a software failure.
- Diagnostics
Displays all event logs, except for General events. Diagnostics events are failures due to a problem that is within the control of the PRISM software. Diagnostic event logs should be captured and submitted to Pioneer Software for analysis and resolution.
- Error
Displays only error event logs. Error events are failures due to a problem that is not within the control of the PRISM software. Typically these types of failures are indicative of problems with communications, such as a network error or a timeout waiting for a response from a robot.

Refresh Log Button

Causes the PRISM Event Log to display the latest list of events.

Copy Log Button

Causes the PRISM Event Log to copy the entire list of events to the Windows clipboard. Once in the clipboard, the events list can be pasted into a document or email.

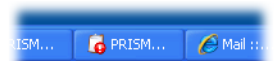
Clear Log Button

Causes the PRISM Event Log to clear the current events list.

Done Button

Closes the PRISM Event Log.

If the Event Log dialog is open, setting focus to another window will cause the dialog to drop into the background, perhaps hiding it from view. The dialog can be brought back into the foreground by choosing its menu option under the Tools menu, or by clicking its taskbar icon on the Windows desktop.



PRISM Actions Log

The PRISM software uses the PRISM Actions Log to capture all modifications made to the robots, robot programs, robot parameters, and robot backup files.

The PRISM Actions Log is accessed under the Tools menu on the PRISM Menu Bar.

The PRISM Actions Log window lives in the PRISM Workspace. When open, an Actions Log icon will appear in the PRISM Activity Bar. Only one PRISM Actions Log window can be open at a time. Attempting to open a second window will bring the first window to the foreground.

The screenshot shows the PRISM Actions Log window with the following components:

- A Actions Log Menu Bar:** Contains menu options for 'Actions Log', 'Filters', and 'Help'.
- B Actions Log Toolbar:** Includes icons for date range selection (1 Day, 7, 31, 1 Year, Custom), Refresh, Save, and Print.
- C Actions Log Display Range:** Shows the current date and time: 'Apr-04-2008 20:26'.
- D Actions Log List:** A table of action logs with columns for Date, User Name, Source, Object, and Action.

Date	User Name	Source	Object	Action
Apr-04-2008 02:49:59	Beta Tester	Explorer Panel	1ST3R:PRG73	Deleted from robot
Apr-04-2008 02:50:39	Beta Tester	Explorer Panel	1ST3R:PRG75	Deleted from robot
Apr-04-2008 13:27:37	Beta Tester	Explorer Panel	1ST3R:PRG70	Backed up from robot
Apr-04-2008 13:27:51	Beta Tester	Explorer Panel	1ST3R:PRG71	Backed up from robot
Apr-04-2008 13:28:04	Beta Tester	Explorer Panel	1ST3R:PRG74	Backed up from robot
Apr-04-2008 13:28:17	Beta Tester	Explorer Panel	1ST3R:PRG72	Backed up from robot
Apr-04-2008 13:38:31	Beta Tester	Explorer Panel	1ST3R:PRG070	Restored from backup
Apr-04-2008 19:19:28	Beta Tester	Program Editor	1ST3L:PRG72	Changed SLIDER (mm) for Step 9 from -600 to -500
Apr-04-2008 19:19:28	Beta Tester	Program Editor	1ST3L:PRG72	Changed SLIDER (mm) for Step 10 from -600 to -500
Apr-04-2008 19:19:29	Beta Tester	Program Editor	1ST3L:PRG72	Changed SPEED for Step 18 from 1100 to 1200
Apr-04-2008 19:19:29	Beta Tester	Program Editor	1ST3L:PRG72	Program saved to C:\PRISM Data\Robots\1ST3L\PRG072.rbt
Apr-04-2008 19:21:08	Beta Tester	Parameters Editor	1ST3L:PARAMS	Changed Y for Parameter Gun #1 from 0 to 200
Apr-04-2008 19:21:08	Beta Tester	Parameters Editor	1ST3L:PARAMS	Changed Y for Parameter Gun #2 from 0 to 400
Apr-04-2008 19:21:08	Beta Tester	Parameters Editor	1ST3L:PARAMS	Changed Y for Parameter Gun #3 from 0 to 600
Apr-04-2008 19:21:08	Beta Tester	Parameters Editor	1ST3L:PARAMS	Gun Parameters written to robot

A Actions Log Menu Bar

The menu bar has menu options for changing the date range of action logs being displayed, and for saving and printing the action logs.

B Actions Log Toolbar

The toolbar has the more common options for changing the date range of action logs being displayed, and for saving and printing the action logs.

C Actions Log Display Range

The display range indicates the start and end date of the action logs being displayed, as well as the timestamp of when the actions log list was last refreshed.

D Actions Log List

The actions log list is the list of all action logs that fall within the specified date range. By default the action logs are sorted by date, but can also be sorted by user name, source, object or action.

PRISM Actions Log Overview

- The Actions Log window initially displays all action log entries for the previous 24 hours.
 - Toolbar buttons make it easy to choose different display ranges.
 - The toolbar button clicked to set the display range remains clicked until a different display range is set.
 - The Actions Log Display Range label describes the current display range.
- The Actions Log list initially sorts all listed action log entries by date.
 - The list can be sorted by user name, source, object and action by clicking the list column headers.
 - The list can be reverse sorted by clicking the same column header a second time.
 - The list can be resized by increasing or decreasing the size of the column headers.
- The Actions Log list initially displays action log entries for all usernames within the current display range.
 - The list can be filtered to show action logs for a single username.
- Each Actions Log entry describes a single action that has modified data in some way.
 - The Date identifies when the action was performed.
 - The User Name identifies who performed the action.
 - The Source identifies from which PRISM window the action was performed.
 - The Object identifies what was the target of the action.
 - The Action identifies what was done to the target of the action.
- Each Actions Log entry contains enough information to allow the action to be undone.
 - Actions that delete objects can only be undone if a backup exists to be restored.
 - Actions that change object data include both the new value and original value in the action description.
- The Actions Log list cannot be modified.
 - Older action log entries can be archived into a separate database.
 - Older action log entries in the archive database can be purged.

PRISM Actions Log Menu Bar

Actions Log Menu

Save Logs

Prompts for a filename to which the currently displayed Actions Log list will be saved as a comma separated list of action log entries. The column header are also included in the saved file, making it suitable for import into a spreadsheet.

Print Logs

Sends the currently displayed Actions Log list to the specified printer, including the display range information.

Print Preview

Brings up a print preview dialog showing how the currently displayed Actions Log list will appear on paper.

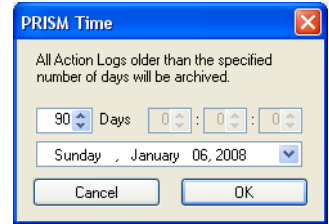
Print Setup

Brings up the printer setup dialog for setting printer orientation, margins and paper size.

Archive Logs



Prompts for a date. All action log entries older than the specified date will be moved from the PRISM Actions Log database to the PRISM Actions Log Archive database. Moving older action log entries to the archive database keeps the main database small and manageable. Archiving is the only way to remove action log entries from the PRISM Actions Log.



Purge Archive

Prompts for a date. All action log entries older than the specified date will be deleted from the PRISM Actions Log Archive database. Deleting old action log entries keeps the archive database manageable. Purging is the only way to remove action log entries from the PRISM Actions Log Archive database.

Close

Closes the PRISM Actions Log window.

Filters Menu

Show All Logs

Shows all action log entries in the PRISM Actions Log database. If the **Include Archives** menu option is checked then all action logs in the PRISM Actions Log Archive database will also be shown.

Show One Day

Shows all action log entries for the past 24 hours.

Show One Week

Shows all action log entries for the past 7 days.

Show One Month

Shows all action log entries from the past 30 days.

Show One Year

Shows all action log entries from the past 365 days.

Show Current Day

Shows all action log entries since 12:00 AM.

Show Current Week

Shows all action log entries since Sunday morning at 12:00 AM.

Show Current Month

Shows all action log entries since the first day of the month at 12:00 AM.

Show Current Year

Shows all action log entries since the first day of the year at 12:00 AM.

Show Custom

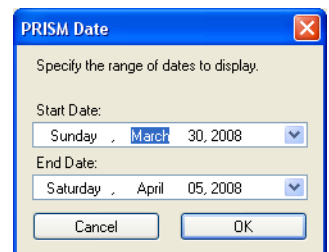
Prompts for a date range. All action log entries between the beginning of the specified start date and the end of the specified end date will be shown.

Include Archives

Selecting the Include Archives menu option toggles its state from unchecked to checked. Selecting it again toggles it back to unchecked. When checked, the PRISM Actions Log Archive database will be included when querying action log entries for display in the Actions Log list. When unchecked the Archive database will not included in the query.

Refresh

Redisplays the action log entries for the current display range.



Help Menu

Contents

Displays the PRISM Help library's table of contents.

About

Displays the PRISM Actions Log About dialog, which lists the software version, contact information and copyright notice.



The buttons on the Actions Log toolbar are a subset of the menu options available under the **Actions Log** and **Filters** menus. Both the menu option and the toolbar button behave the same.

PRISM Actions Log Toolbar

1 Day

Shows all action log entries for the past 24 hours.

1 Week

Shows all action log entries for the past 7 days.

1 Month

Shows all action log entries from the past 30 days.

1 Year

Shows all action log entries from the past 365 days.

Custom

Prompts for a date range. All action log entries between the beginning of the specified start date and the end of the specified end date will be shown.

Refresh

Redisplays the action log entries for the current display range.

Save

Prompts for a filename to which the currently displayed Actions Log list will be saved as a comma separated list of action log entries. The column header are also included in the saved file, making it suitable for import into a spreadsheet.

Print

Sends the currently displayed Actions Log list to the specified printer, including the display range information.

Username Filter

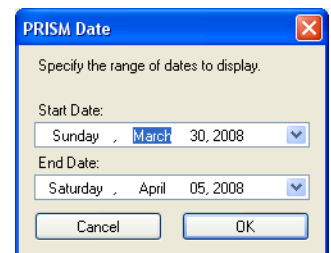
Choose a username to display only those action log entries for that user, or choose [All Users] to display action log entries regardless of the assigned user.

Include Archives

Selecting the Include Archives menu option toggles its state from unchecked to checked. Selecting it again toggles it back to unchecked. When checked, the PRISM Actions Log Archive database will included when querying action log entries for display in the Actions Log list. When unchecked the Archive database will not included in the query.

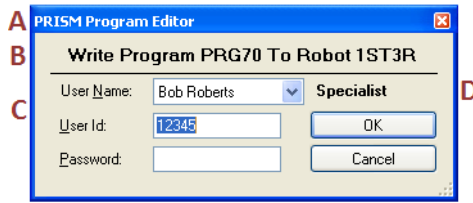
Done

Closes the PRISM Actions Log window.



PRISM Security

The PRISM software uses the PRISM Security subsystem to monitor activity within the software. Any action that modifies a robot, robot program, robot parameters, backed up data or PRISM software setting requires a valid PRISM User Account login before the modification is allowed to proceed. The PRISM Security Login dialog is used to input the valid login credentials.



A Requesting Window

The title bar of the PRISM Security Login dialog displays the title of the PRISM window requesting security clearance. The PRISM software is able to perform multiple tasks at the same time, making it possible that multiple login dialogs may appear if multiple PRISM windows request clearance at the same time. Knowing which window owns which login dialog ensures the correct login information is provided to each dialog.

B Action To Be Performed

Identifies the action about to be performed.

C User Login Information

A valid user id and password must be provided before the PRISM Security Login dialog will allow the indicated action to proceed. The User Id field will automatically be set to the same user id from the previous time the login dialog was displayed. To use the same User Id, press the Enter or Tab key to set focus to the Password field and enter a valid password. To specify a different user, enter the new user id or choose the desired user from the User Name dropdown list. Pressing the Enter key after providing the password will close the PRISM Security Login dialog if the User Id and Password are valid. Cancelling the PRISM Security Login dialog cancels the action.

D User Account Level

The account level of the currently specified user is displayed as a convenience. The PRISM Security subsystem recognizes three account levels: User, Specialist, Administrator.

All account levels are able to perform all the same actions within the PRISM software. The only difference between the account levels is what each is allowed to do within the PRISM User Accounts dialog.

User

This is the base level of security clearance. A User is able to view the list of security accounts, but cannot see password information. A User is not able to create new security accounts, nor delete any security account other than its own.

Specialist

A Specialist is able to view the list of security accounts, but cannot see password information. A Specialist is able to create new User and Specialist security accounts, and can delete their own account and any User account. A Specialist cannot create Administrator accounts, nor delete Administrator accounts or Specialist accounts other than its own.

Administrator

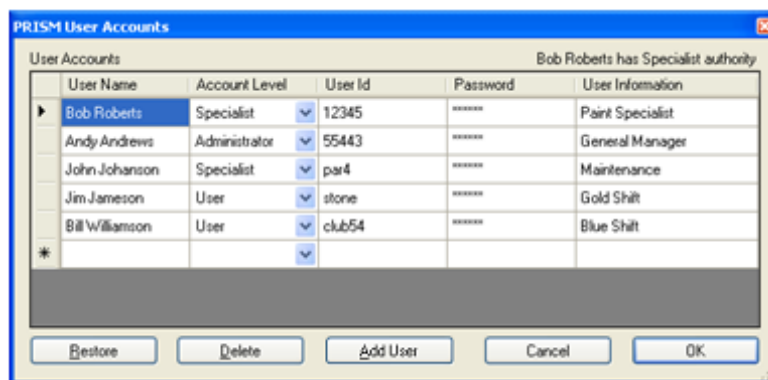
An Administrator is able to view the list of security accounts, including password information. An Administrator is able to create a new account of any level, and delete any account of any level.

PRISM User Accounts

The PRISM Security subsystem uses the PRISM User Accounts dialog to create and modify user accounts. A valid PRISM User Account login must be provided before the PRISM User Accounts dialog will display.

The PRISM Security User Accounts dialog is accessed under the Tools menu on the PRISM Menu Bar.

- Any user, regardless of account level can display the dialog.
- A valid login must be provided before the PRISM User Accounts dialog will display.
- The current user and account level is displayed in the upper right corner of the dialog.
- Modifications made to user accounts will be captured in the PRISM Actions Log.
- While the User Accounts dialog is open it is not possible to set focus to another PRISM window.
- Create a new user account by entering account information into the empty row in the User Accounts table.
 - If no empty row is visible then the current user lacks sufficient privilege to create new accounts.
 - All properties except the User Information must be specified to create a new account.



- The dialog allows or disallows actions based on the account level of the current user.

Action	User	Specialist	Administrator
View Passwords	No	No	Yes
Create New Accounts	No	Yes ¹	Yes
Modify Own Account	Yes	Yes	Yes
Modify Other Accounts	No	Yes ²	Yes
Delete Own Account	Yes	Yes	Yes
Delete Other Accounts	No	Yes ²	Yes

¹ Can only create accounts with the same or lower access level.

² Can only modify or delete accounts with a lower access level.

User Name

The User Name can be set to any text, and does not have to be unique. Typically the User Name will be set to the name of the person the user account represents.

Account Level

The Account Level must be one of the valid account levels. Attempts to set the account level to level greater than the current user will be rejected.

User Id

The User Id can be set to any text but must be unique. Attempts to set the User Id to text that matches an existing User Id will be rejected.

Password

The Password can be set to any text and does not have to be unique. The Password text will be masked if the current user does not have Administrator access level.

The User Id and Password are case sensitive, and must be entered into the PRISM Security Login dialog with the correct case to be recognized and accepted.

Restore Button

Discards any changes made to the user accounts, displaying the current user account information.

Delete Button

Removes the selected user account if the current user is the owner of the account, or is an Administrator.

Add User Button

Adds a new user account to the list of accounts if the current user is an Administrator. If the current user is not an Administrator then the Add User button is not available.

Cancel Button

Cancel any modifications made to the user accounts and closes the dialog.

OK Button

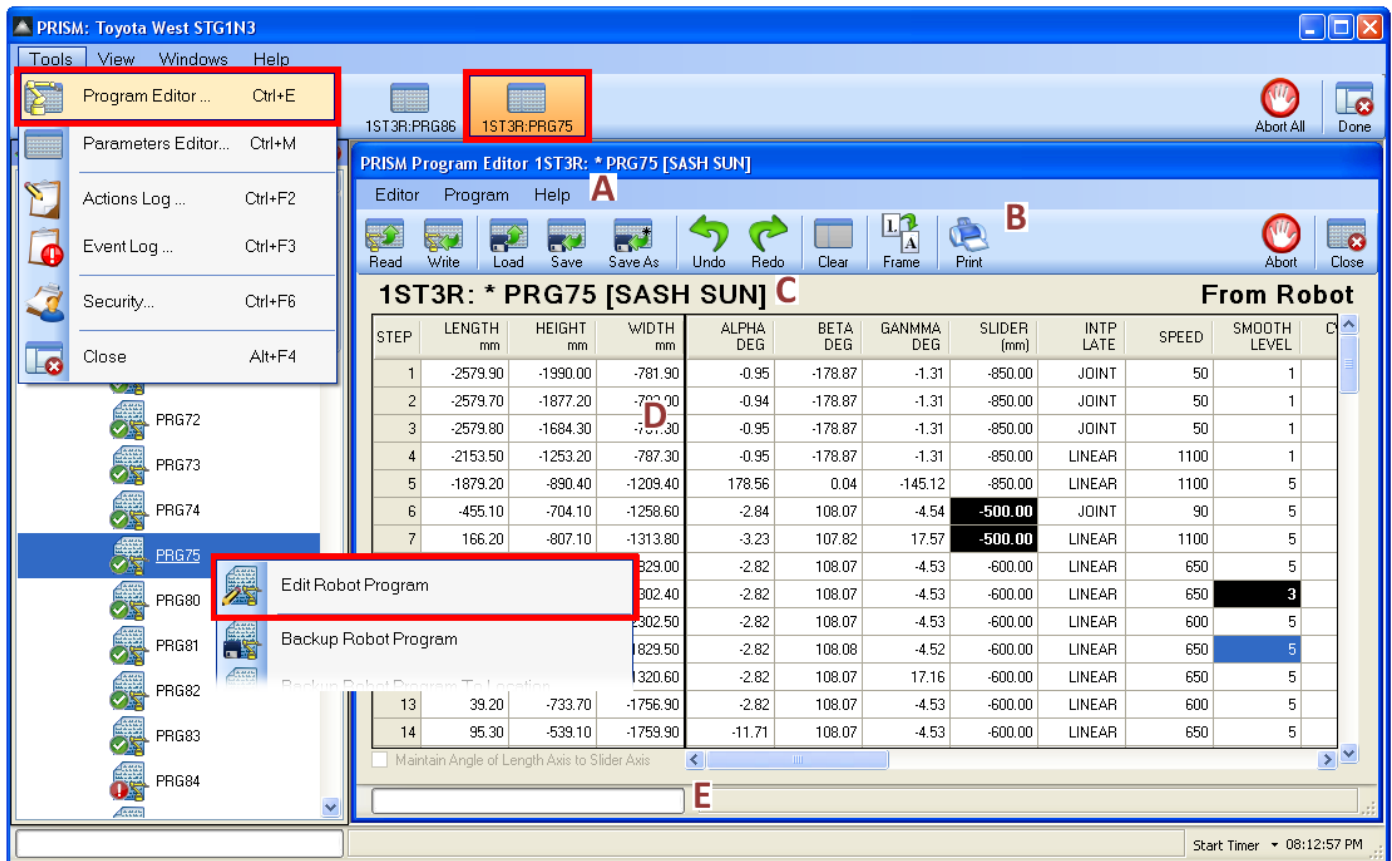
Records all modifications made to the user accounts before closing the dialog. If any account information is missing or is invalid, the dialog will prompt for it to be corrected before it records the changes.

PRISM Program Editor

The PRISM software uses the PRISM Program Editor to view and modify robot programs read from robot or loaded from file.

The PRISM Program Editor is accessed under the Tools menu on the PRISM Menu Bar, or from a Robot Program Context Menu on the PRISM Explorer Pane.

The PRISM Program Editor window lives in the PRISM Workspace. When open, a Program Editor icon will appear in the PRISM Activity Bar. Multiple PRISM Program Editor windows can be open at one time, although any given robot program can be in one PRISM Program Editor window at a time. Attempting to open a second window for the same robot program will bring the first window to the foreground.



A Program Editor Menu Bar

The menu bar has all available menu options for interacting with a robot program, as well as changing the characteristics and display properties of the Program Editor window.

B Program Editor Toolbar

The toolbar has the more common options for interacting with a robot program, as well as changing the characteristics and display properties of the Program Editor window.

C Program Editor Program Source

The program source indicates the program number and name of the program being edited, as well as the source location for the robot program, whether that be from a robot, from a file or from memory as in the case of a new program.

D Program Editor Grid

The editor grid lists each step of the robot program, including the paint properties associated with each step.

E Program Editor Status Bar

The status bar displays the progress of any occurring communication and the current action being performed.

PRISM Program Editor Overview

- The Program Editor can edit any robot program.
 - Programs can be read into the editor from a robot.
 - Programs can be loaded into the editor from a file.
- The Program Editor regulates what can be changed for robot programs read from robot.
 - Programs read from robot while in playback cannot be modified.
 - Programs read from a robot in auto mode cannot modify robot motion properties.
- The Program Editor can save robot programs to disk in different formats.
 - The Program file can be saved as a standard binary robot program file.
 - The Program file can be saved as a comma separated file, suitable for loading into a spreadsheet.
 - The Program file can be saved as a text file, suitable for display in a text editor.
- The Program Editor can change programs without having to shutdown the editor.
 - The Read toolbar button, or Read Program menu option, can read any program from any robot.
 - The Load toolbar button, or Load Program menu option, can load any program file from disk.
 - The Clear toolbar button, or Clear Program menu option, will clear the current program from the editor.
- The Program Editor can edit programs offline.
 - The Program Editor must be used to save the Program file to disk.
 - The Program file can be loaded into the Program Editor on any computer with PRISM installed.
 - The Program file contains all information necessary to edit the program on any PRISM computer.
- The Program Editor records all modifications made to the robot program.
 - All modifications are identified in the program grid as cells with inverted colors.
 - All modifications can be undone, even after the program has been written or saved.
 - All modifications are recorded in the PRISM Actions Log each time the program is written or saved.
 - Undone changes can be redone.
- The Program Editor displays the name and source of the robot program being edited.
 - The Program name include the program number, with the name in brackets.
 - The Program source indicates if the program was read from robot, loaded from disk, or is a new program.
 - The Program name will show an asterisk if the program has been modified without being written or saved.
 - The Program source will change to **Editor** if the robot program has been modified but not yet written to robot or saved to disk.

PRISM Program Editor Menu Bar

The buttons on the Program Editor toolbar are a subset of the menu options available under the **Editor** and **Program** menus. Both the menu option and the toolbar button behave the same.

Editor Menu

Abort Action

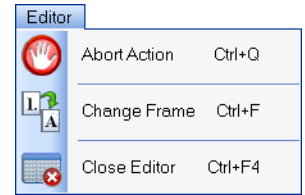
Causes the Program Editor to immediately and cleanly terminate all active communication. Communication with a robot, by its nature, may take several seconds to terminate while the robot completes any current transmission stream. During that time the Program Editor Status Bar will continue to display current communication progress and activity.

Change Frame

Toggles the first six or seven columns, depending on if the robot program is from a six or seven axis robot, between Linear and Axis coordinates. By default, the editor displays linear coordinates.

Close Editor

Closes the PRISM Program Editor window. Only if the robot program has been modified without being written or saved will a message prompt be displayed confirming the close.

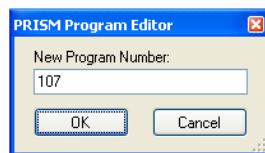


Program Menu

New Program

Causes the Program Editor to clear its current content and create a new robot program. The new program will have a single step. The coordinates of the first step will be invalid, requiring valid coordinates be entered before the program will be considered valid. Additional steps can be added using the Insert Program Step menu option.

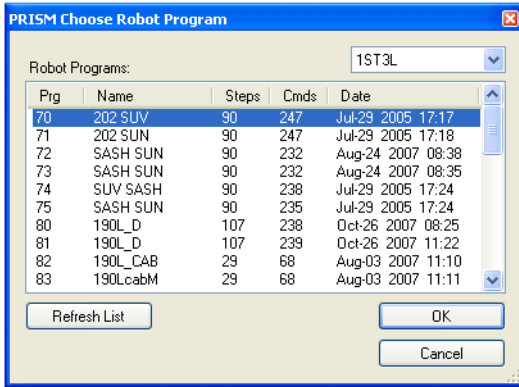
Every robot program must be assigned to a robot and must have a unique program number. Before the new program can be created, the Program Editor will prompt to select the target robot, and will then prompt for a unique program number.



Read Program

Causes the Program Editor to prompt for a different robot program to read from a robot. The PRISM Choose Robot Program dialog is displayed to prompt for which robot program to read.

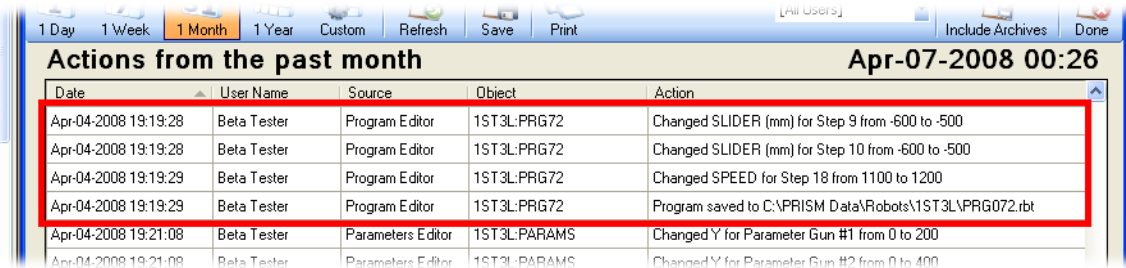
Within the Choose Robot Program dialog, choose from which robot to read the robot program, then select the target program from the list of program. The PRISM software caches the list of known robot programs. If the list of program is not accurate then the Refresh button will query from the robot its current programs list.



Write Program

Causes the Program Editor to write the current robot program to its target robot. If the target robot is unknown then the Program Editor will prompt to select the target robot. If the robot program was initially read from the robot, and the program has not been changed, then the Program Editor will prompt to confirm the write operation.

After writing the robot program to its target robot, the Program Editor will create action log entries in the PRISM Action Log for each modification made to the robot program. Each action log entry includes the name of the property that was changed, in which step it was changed, the original value of the property and the new value of the property.



Load Program

Causes the Program Editor to prompt for a different robot program to load from disk. The PRISM Load Robot Program dialog is displayed to prompt for which robot program to load. The dialog displays all robot programs currently saved to the default disk folder for the current robot.

Save Program

Causes the Program Editor to save the current robot program to disk. If the robot program is not associated with a robot then the Program Editor will prompt to select the associated robot. If the robot program was initially loaded from disk, and the program has not been changed, then the Program Editor will prompt to confirm the save operation. The Program Editor will save the robot program to the default disk folder for the associated robot. To save the robot program to a specific disk folder use the Save As Program menu option.

After saving the robot program to disk, the Program Editor will create action log entries in the PRISM Action Log for each modification made to the robot program, just as it does after writing a robot program to its robot.

Save As Program

Causes the Program Editor to save the current robot program to a specified location on disk. If the robot program is not associated with a robot then the Program Editor will prompt to select the associated robot. The PRISM Save Robot Program dialog is displayed to prompt for where to save the robot program. The default filename chosen for the robot program will include the PRISM Booth and PRISM Station names in the filename. This helps ensure that robot programs with the same program number that are saved to the same location will have different filenames.

After saving the robot program to its target disk file, the Program Editor will create action log entries in the PRISM Action Log for each modification made to the robot program, just as it does after writing a robot program to its robot.

The PRISM Save Robot Program dialog allows the robot program to be saved in different formats.

Print Program

Sends the currently displayed robot program to the specified printer, including the program source information.

Print Preview

Brings up a print preview dialog showing how the currently robot program will appear on paper.

Print Setup

Brings up the printer setup dialog for setting printer orientation, margins and paper size.

Undo Last Edit

Causes the Program Editor to undo the last change made to the program grid. The last change can be a property value change, and inserted step or a deleted step. An edit that is undone can be redone by choosing the Redo Last Edit menu option. If no changes have been made to the program grid, or the last change is undone, then the Undo Last Edit option will be disabled. There is no limit to the number of changes that can be undone, even after a modified robot program has been written to robot or saved to disk.

The Undo and Redo toolbar buttons will display a tooltip when the mouse is hovered over them that describes what property value would be undone or redone if the buttons were clicked.

Redo Last Edit

Causes the Program Editor to redo the last change undone to the program grid. An edit change that is redone can be undone again by choosing the Undo Last Edit menu option. If no changes have been undone, or the last undone change has been redone, then the Redo Last Edit option will be disabled. This is no limit to the number of undone changes that can be redone, even after a modified robot program has been written to robot or saved to disk.

Insert Program Step

Causes the Program Editor to insert a new program step into the program grid at the specified step number. The Program Editor prompts for the step number, and creates a new step at the specified step number that is a duplicate of the step that used to occupy that spot in the grid, and shifting all subsequent steps down one row in the program grid.

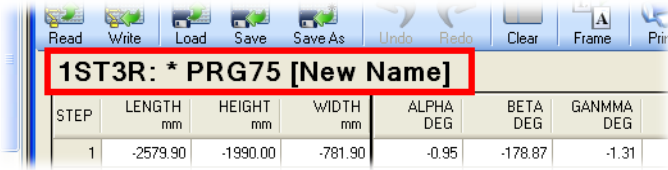
To insert a new step at the end of the program grid, specify a step number that is one greater than the last step number.

Delete Program Step

Causes the Program Editor to delete an existing program step from the program grid at the specified step number. The Program Editor prompts for the step number, and deletes the step at the specified step number shifting all subsequent steps up one row in the program grid.

Rename Program

Changes the name of the robot program, as displayed in the Program Editor Program Source text. The new program name will be written to the robot, or saved to disk, when the robot program itself is written or saved.



Clear Program

Causes the Program Editor to clear its current content, leaving the editor without a program but ready to read a program from robot or load a program from disk.

Help Menu

Contents

Displays the PRISM Help library's table of contents.



About

Displays the PRISM Program Editor About dialog, which lists the software version, contact information and copyright notice.

The buttons on the Program Editor toolbar are a subset of the menu options available under the **Editor** and **Program** menus. Both the menu option and the toolbar button behave the same.

PRISM Program Editor Toolbar

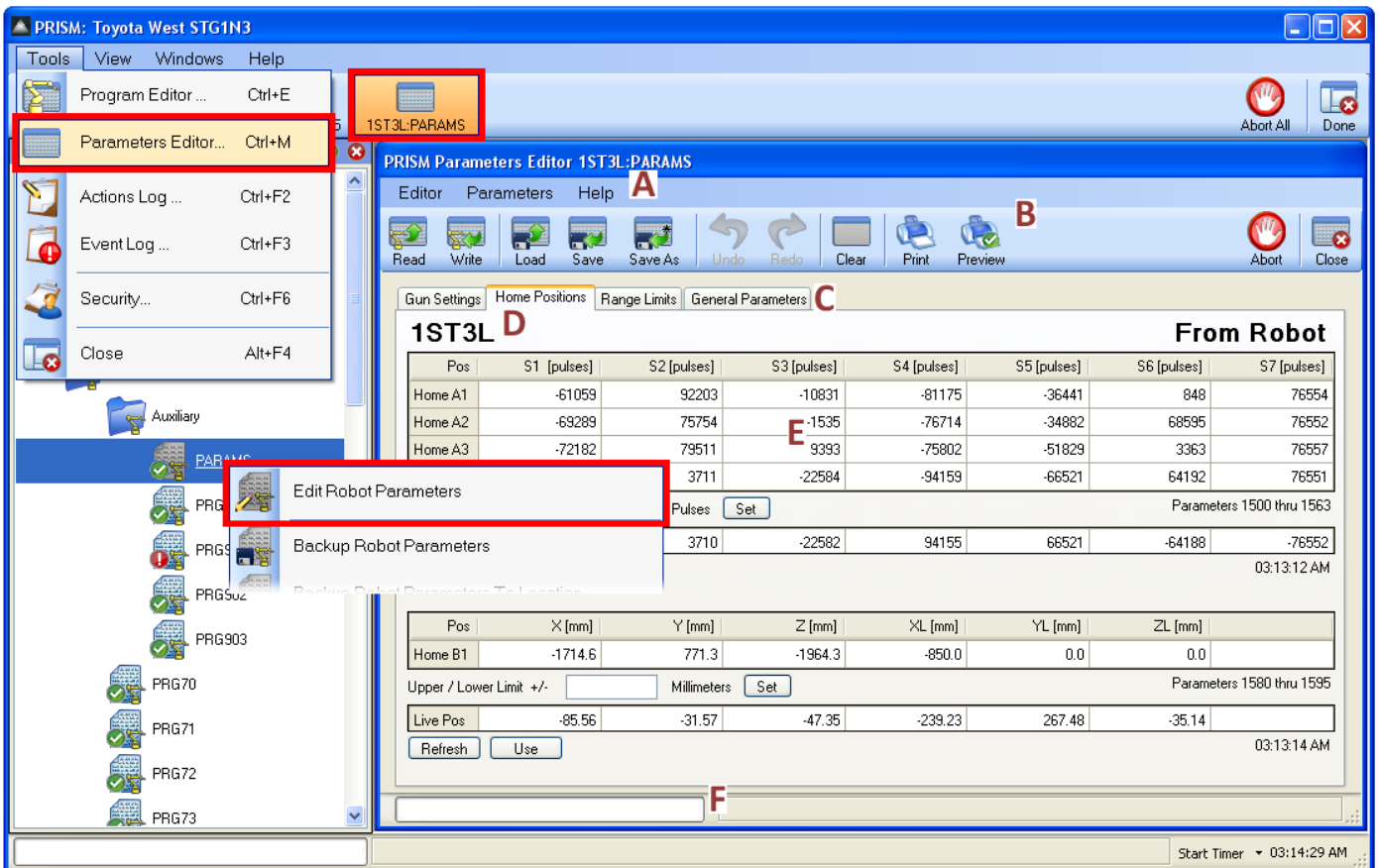
The previous section on the PRISM Program Editor Menu Bar describes the behavior of each toolbar button.

PRISM Parameters Editor

The PRISM software uses the PRISM Parameters Editor to view and modify robot parameters, whether read from robot or loaded from file.

The PRISM Parameters Editor is accessed under the Tools menu on the PRISM Menu Bar, or from a Robot Parameters Context Menu on the PRISM Explorer Pane.

The PRISM Parameters Editor window lives in the PRISM Workspace. When open, a Parameters Editor icon will appear in the PRISM Activity Bar. Multiple PRISM Program Editor windows can be open at one time, although a given robot's parameters can be in one PRISM Parameters Editor window at a time. Attempting to open a second window for the same robot parameters will bring the first window to the foreground.



A Parameters Editor Menu Bar

The menu bar has all available options menu for interacting with robot parameters, as well as changing the characteristics and display properties of the Parameters Editor window.

B Parameters Editor Toolbar

The toolbar has the more common options for interacting with robot parameters, as well as changing the characteristics and display properties of the Parameters Editor window.

C Parameters Editor Parameters Tabs

The parameters tabs hold different grids for viewing and modifying different sets of common parameters, plus a general tab on which any parameter can be viewed and modified.

D Parameters Editor Parameters Source

The parameters source indicates the name of the robot whose parameters are being edited, as well as the source location for the robot parameters, whether that be from a robot, from a file or from memory as in the case of new parameters.

E Parameters Editor Grids

The editor grids list the indicated robot parameters values. Each Parameters tab has a different editor grid that is appropriate to the parameter values it displays.

F Parameters Editor Status Bar

The status bar displays the progress of any occurring communication and the current action being performed.

PRISM Parameters Editor Overview

- The Parameters Editor provides tab pages for viewing and modifying specific types of parameters.
 - The Gun Settings page displays gun coordinates for each gun defined.
 - The Home Positions page displays home position coordinate for each home position defined.
 - The Range Limits page displays upper and lower range limits for robot motion.
 - The General page display groups of parameter values, including parameter descriptions and units.
- The Parameters Editor can edit robot parameters from any source.
 - Parameters can be read into the editor from a robot.
 - Parameters can be loaded into the editor from a file.
 - Parameters for a single page or for all pages can be read or loaded into the editor.
- The Parameters Editor can save robot parameters to disk in different formats.
 - The Parameters from a single page or from all pages can be saved.
 - The Parameters file can be saved as the standard binary parameters file.
 - The Parameters file can be saved as a comma separated file, suitable for loading into a spreadsheet.
 - The Parameters file can be saved as a text file, suitable for display in a text editor.
- The Parameters Editor can change the source of the parameters without having to shutdown the editor.
 - The Read toolbar button, or Read Parameters menu option, can read parameters from any robot.
 - The Load toolbar button, or Load Parameters menu option, can load a parameters file from disk.
 - The Clear toolbar button, or Clear Parameters menu option, will clear the parameters from the editor.
- The Parameters Editor can edit parameters offline.
 - The Parameters Editor must be used to save the Parameters file to disk.
 - The Parameters file can be loaded into the Parameters Editor on any computer with PRISM installed.
 - The Parameters file contains all information necessary to edit the parameters on any PRISM computer.
- The Parameters Editor records all modifications made to the robot parameters.
 - All modifications are identified in the parameters grids as cells with inverted colors.
 - All modifications can be undone, even after the parameters have been written or saved.
 - All modifications are record in the PRISM Actions Log each time the parameters are written or saved.
 - Undone changes can be redone.

- The Parameters Editor displays the name and source of the robot parameters being edited.
 - The Parameters on each page can be from a different source, but must be from the same robot.
 - The Parameters source indicates if the parameters were read from robot, loaded from disk, or are new.
 - The Parameters robot name will show an asterisk if any have been modified without being written or saved.
 - The Parameters grid on each page identifies the range of parameters being displayed.
- The Parameters Editor General page displays the description and units for the displayed parameters.
 - The Parameters description and units can be modified.
 - Changes to the description and units are recorded in the PRISM Action Log.

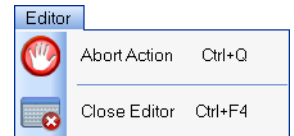
PRISM Parameters Editor Menu Bar

The buttons on the Parameters Editor toolbar are a subset of the menu options available under the **Editor** and **Program** menus. Note that the toolbar buttons affect only the current Parameters Editor page whereas the menu options affect all Parameters Editor pages.

Editor Menu

Abort Action

Causes the Parameters Editor to immediately and cleanly terminate all active communication. Communication with a robot, by its nature, may take several seconds to terminate while the robot completes the current transmission stream. During that time the Parameters Editor Status Bar will continue to display current communication progress and activity.



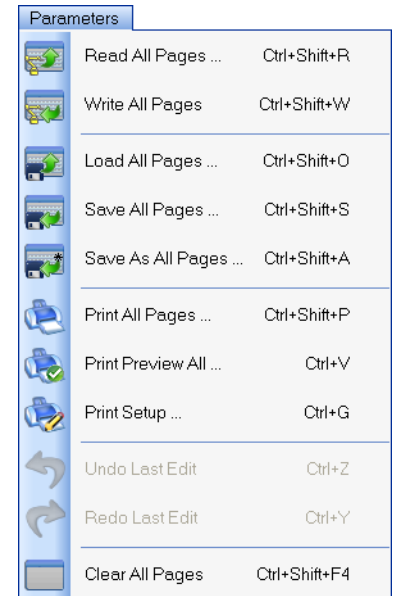
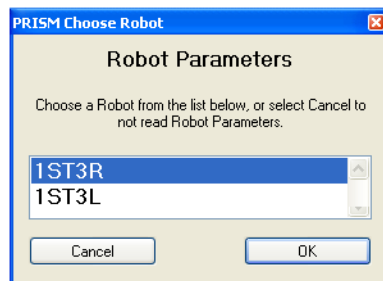
Close Editor

Closes the PRISM Parameters Editor window. Only if the robot parameters have been modified without being written or saved will a message prompt be displayed confirming the close.

Program Menu

Read All Pages

Causes the Parameters Editor to have each Parameters page read its parameters from the current robot. Each Parameters page is cleared of all content prior to reading. If no robot is associated with the editor then the PRISM Choose Robot Parameters dialog is displayed to prompt from which robot to read parameters.



Write All Pages

Cause the Parameters Editor to have each Parameters page write its parameters to the current robot. If the target robot is unknown then the Parameters Editor will prompt to select the target robot. The Parameters Editor will prompt to confirm the write operation regardless of whether the parameters have actually changed.

After writing the robot program to its target robot, the Parameters Editor will create action log entries in the PRISM Action Log for each modification made to the robot parameters. Each action log entry includes the name of the property that was changed, the original value of the property and the new value of the property.

Date	User Name	Source	Object	Action
Apr-07-2008 04:13:48	Beta Tester	Security	User Account	Changed Password for John Johanson
Apr-07-2008 04:14:18	John Johanson	Parameters Editor	1ST3L:PARAMS	Changed Y for Parameter Gun #1 from 0 to 110
Apr-07-2008 04:14:18	John Johanson	Parameters Editor	1ST3L:PARAMS	Changed Beta for Parameter Gun #3 from 0 to 120
Apr-07-2008 04:14:18	John Johanson	Parameters Editor	1ST3L:PARAMS	Gun Parameters written to robot
Apr-07-2008 04:14:21	John Johanson	Parameters Editor	1ST3L:PARAMS	Changed S3 for Parameter Home Position A3 from 9393 to 9650
Apr-07-2008 04:14:21	John Johanson	Parameters Editor	1ST3L:PARAMS	Home Parameters written to robot

Load All Pages

Causes the Parameters Editor to prompt for a robot parameters file to load from disk. The PRISM Load Robot Parameters dialog is displayed to prompt for which robot parameters to load. The dialog displays the robot parameters files saved to the default disk folder for the current robot.

The Load toolbar button always loads all parameters in the specified parameters file, regardless of the currently active Parameters page. All Parameter pages are cleared of all content prior to loading. If the specified parameters file does not contain all parameters then only those parameters that were present in the file are displayed.

Loading parameters from file always clears all Parameters page of their current content prior to loading.

Save All Pages

Causes the Parameters Editor to save the current robot parameters to disk. If the robot parameters are not associated with a robot then the Parameters Editor will prompt to select the associated robot. If the robot parameters were initially loaded from disk, and the parameters have not changed, then the Parameters Editor will prompt to confirm the save operation. The Parameters Editor will save the robot parameters to the default disk folder for the associated robot. To save the robot parameters to a specific folder use the Save As All Pages menu option.

After saving the robot parameters to disk, the Parameters Editor will create action log entries in the PRISM Action Log for each modification made to the robot parameters, just as it does after writing robot parameters to its robot.

Save As All Pages

Causes the Parameters Editor to save the current robot parameters to a specified location on disk. If the robot parameters are not associated with a robot then the Parameters Editor will prompt to select the associated robot. The PRISM Save Robot Parameters dialog is displayed to prompt for where to save the robot parameters. The default filename chosen for the robot parameters will include the PRISM Booth and PRISM Station names in the filename. This helps ensure that robot parameters saved to the same location will have different filenames.

After saving the robot parameters to the target disk file, the Parameters Editor will create action log entries in the PRISM Action Log for each modification made to the robot parameters, just as it does after writing robot parameters to its robot.

The PRISM Save Robot Parameters dialog allows robot parameters to be saved in different formats.

Print All Pages

Sends the currently displayed robot parameters on each Parameters page to the specified printer, including the parameters source information and parameters range information.

Print Preview All

Brings up a print preview dialog showing how the currently robot parameters on each Parameters page will appear on paper.

Print Setup

Brings up the printer setup dialog for setting printer orientation, margins and paper size.

Undo Last Edit

Causes the Parameters Editor to undo the last change made to the Parameters grid. An edit that is undone can be redone by choosing the Redo Last Edit menu option. If no changes have been made to the parameters grid, or the last change is undone, then the Undo Last Edit option will be disabled. There is no limit to the number of changes that can be undone, even after modified robot parameters have been written to robot or saved to disk.

The Undo and Redo toolbar buttons will display a tooltip when the mouse is hovered over them that describes what property value would be undone or redone if the buttons were clicked.

Redo Last Edit

Causes the Parameters Editor to redo the last change undone to the parameters grid. An edit change that is redone can be undone again by choosing the Undo Last Edit menu option. If no changes have been undone, or the last undone change has been redone, then the Redo Last Edit option will be disabled. There is no limit to the number of undone changes that can be redone, even after modified robot parameters have been written to robot or saved to disk.

Clear All Pages

Causes the Parameters Editor to clear the current content from each Parameters page, leaving the editor without parameters but ready to read parameters from robot or load parameters from disk.

Help Menu

Contents

Displays the PRISM Help library's table of contents.

About

Displays the PRISM Parameters Editor About dialog, which lists the software version, contact information and copyright notice.



The buttons on the Parameters Editor toolbar are a subset of the menu options available under the **Editor** and **Program** menus. Note that the toolbar buttons affect only the current Parameters Editor page whereas the menu options affect all Parameters Editor pages.

PRISM Parameters Editor Toolbar

The previous section on the PRISM Parameters Editor Menu Bar describes the behavior of each toolbar button with the caveat that the toolbar button affects only the currently active Parameters page.

Read

Causes the Parameters Editor to have only the current Parameters page read its parameters from the current robot. Only the current Parameters page is cleared of all content prior to reading. If no robot is associated with the editor then the PRISM Choose Robot Parameters dialog is displayed to prompt from which robot to read parameters. See the Read All Pages menu option description for more information.

Write

Cause the Parameters Editor to have the current Parameters page write its parameters to the current robot. If the target robot is unknown then the Parameters Editor will prompt to select the target robot. The Parameters Editor will prompt to confirm the write operation regardless of whether the parameters have actually changed.

After writing the robot program to its target robot, the Parameters Editor will create action log entries in the PRISM Action Log for each modification made to the robot parameters on the current Parameters page. Each action log entry includes the name of the property that was changed, the original value of the property and the new value of the property. See the Write All Pages menu option description for more information.

Load

Causes the Parameters Editor to prompt for a robot parameters file to load from disk. The PRISM Load Robot Parameters dialog is displayed to prompt for which robot parameters to load. The dialog displays the robot parameters files saved to the default disk folder for the current robot.

The Load toolbar button always loads all parameters in the specified parameters file, regardless of the currently active Parameters page. All Parameter pages are cleared of all content prior to loading. If the specified parameters file does not contain all parameters then only those parameters that were present in the file are displayed.

Loading parameters from file always clears all Parameters page of their current content prior to loading.

Save

Causes the Parameters Editor to save the current robot parameters to disk from only the current Parameters page. If the robot parameters are not associated with a robot then the Parameters Editor will prompt to select the associated robot. If the robot parameters were initially loaded from disk, and the parameters on the current Parameters page have not been changed, then the Parameters Editor will prompt to confirm the save operation. The Parameters Editor will save the robot parameters to the default disk folder for the associated robot. To save the robot parameters to a specific disk folder use the Save As menu option.

After saving the robot program to disk, the Parameters Editor will create action log entries in the PRISM Action Log for each modification made to the robot parameters, just as it does after writing robot parameters to its robot.

Save As All Pages

Causes the Parameters Editor to save the current robot parameters from only the current Parameters page to a specified location on disk only. If the robot parameters are not associated with a robot then the Parameters Editor will prompt to select the associated robot. The PRISM Save Robot Parameters dialog is displayed to prompt for where to save the robot parameters. The default filename chosen for the robot parameters will include the PRISM Booth and PRISM Station names in the filename. This helps ensure that robot parameters saved to the same location will have different filenames.

After saving the robot parameters to the target disk file, the Parameters Editor will create action log entries in the PRISM Action Log for each modification made to the robot parameters, just as it does after writing robot parameters to its robot.

The PRISM Save Robot Program dialog allows robot parameters to be saved in different formats.

Print

Sends the currently displayed robot parameters from only the current Parameters page to the specified printer, including the parameters source information and parameters range information.

Print Preview

Brings up a print preview dialog showing how the currently robot parameters from only the current Parameters page will appear on paper.

Undo

Causes the Parameters Editor to undo the last change made to the Parameters grid on the current Parameters page. An edit that is undone can be redone by choosing the Redo toolbar button. If no changes have been made to the current parameters grid, or the last change is undone, then the Undo button will be disabled. There is no limit to the number of changes that can be undone, even after modified robot parameters have been written to robot or saved to disk.

The Undo and Redo toolbar buttons will display a tooltip when the mouse is hovered over them that describes what property value would be undone or redone if the buttons were clicked.

Redo

Causes the Parameters Editor to redo the last change undone to the parameters grid on the current Parameters page. An edit change that is redone can be undone again by clicking the Undo toolbar button. If no changes have been undone, or the last undone change has been redone, then the Redo button will be disabled. There is no limit to the number of undone changes that can be redone, even after modified robot parameters have been written to robot or saved to disk.

Clear

Causes the Parameters Editor to clear the current content from only the current Parameters page, leaving the page without parameters but ready to read parameters from robot or load parameters from disk.

PRISM Parameters Gun Settings Page

The Gun Settings page displays the robot parameters that define the position and orientation for each of the possible paint guns. There are six coordinates values for each gun.

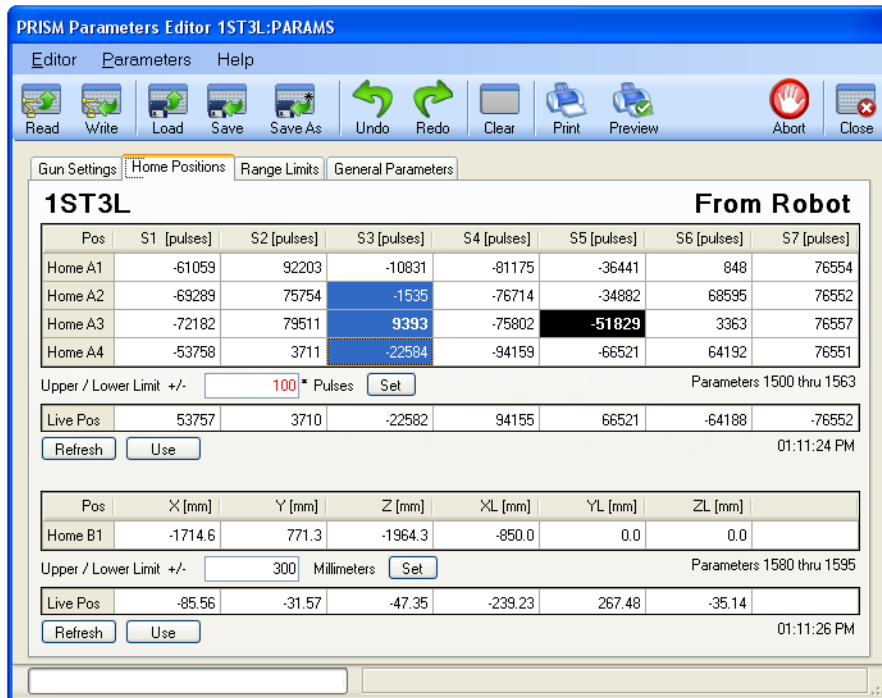
Gun	X [mm]	Y [mm]	Z [mm]	Alpha [deg]	Beta [deg]	Gamma [deg]
1	-355.0000	0.0000	625.0000	0.0000	-60.0000	0.0000
2	409.0000	0.0000	85.2300	180.0000	-90.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

The span of robot parameters that constitute the paint gun coordinates is shown below the parameters grid. Displaying that span of parameters on the General page will display the same values shown here.

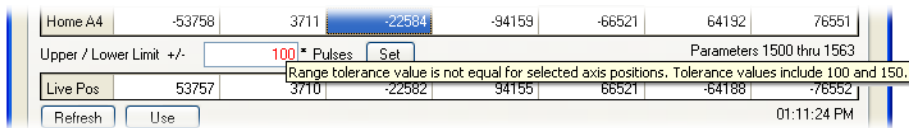
PRISM Parameters Home Positions Page

The Home Positions page displays the robot parameters that define the upper and lower position for each of the home position supported by the paint system. There is an upper and lower position value for each robot axis.

The Parameters Home Positions grids display only the average of the upper and lower range positions, but then display the offset to the upper and lower position value in the Pulse boxes below each grid.



- Selecting a cell in either of the Home Positions grids displays the upper and lower offset for that position value.
 - The actual upper position value is the selected position value plus the displayed offset value.
 - The actual lower position value is the selected position value minus the displayed offset value.
- Selecting multiple cells will display the common upper and lower offset for all selected position values.
 - If the offsets are different then the smallest offset is displayed in the Pulses box
 - If the offsets are different an asterisk is appended to the Pulses box and the offset is displayed in red.
 - If the offsets are different, hovering the mouse over the Pulses box will display the range of offsets.



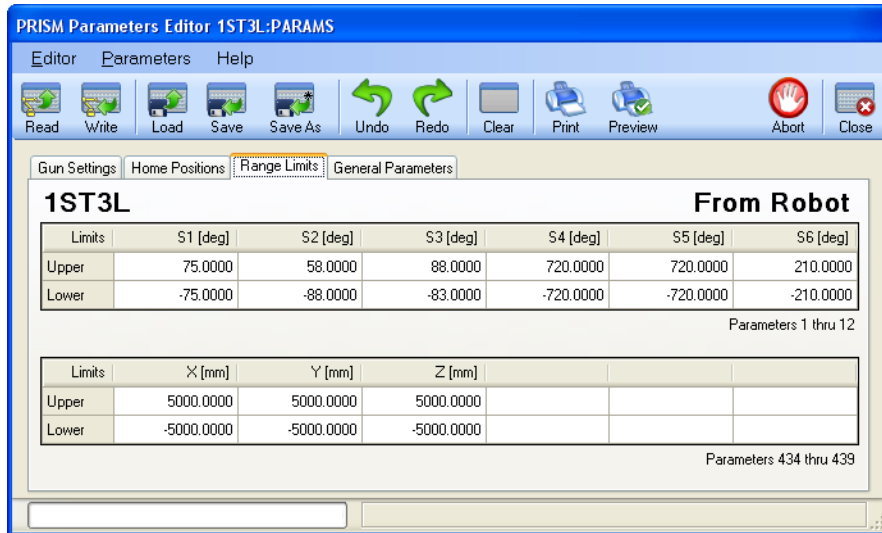
- Changing the offset value and clicking the Set button will update the offset value for all selected cells.
 - All cells whose offset value is now different will become inverted to indicate the change.
 - The value displayed in the selected cell will not change because only the offset changed, not the averaged value.
- Below each Home Position grid is a Live Position grid.
 - Click the Refresh button to have the Live Position grid display the current robot position.
 - Click the Use button to apply the current robot position as the new location of the selected home position.
 - The timestamp below the Live Position grid identifies when the robot position was last read from robot.

The span of robot parameters that constitute the upper and lower home position values is shown below each of the Parameters grids. Displaying that span of parameters on the General page will not display the same values shown

here. When viewing the home position parameters on the General page the individual upper and lower position value will be displayed for each axis of each home position. Averaging the upper and lower position values together will yield the same position values shown on the Home Positions page.

PRISM Parameters Range Limits Page

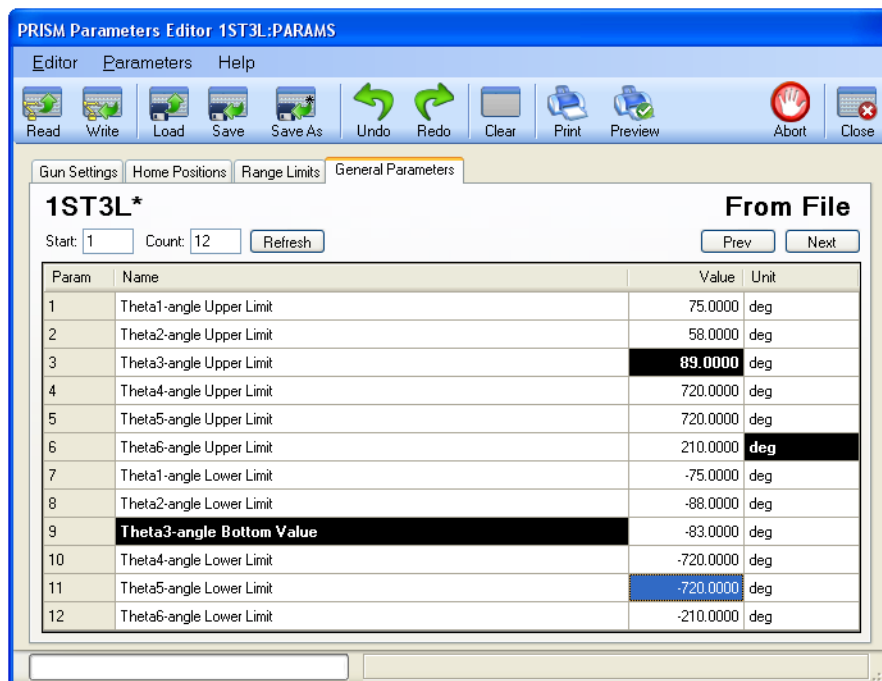
The Range Limits page displays the upper and lower range limits for robot motion. There is an upper and lower limit for each axis of the robot.



The span of robot parameters that constitute the range limits is shown below the parameters grid. Displaying that span of parameters on the General page will display the same values shown here.

PRISM Parameters General Page

The General page displays a span of parameters starting from a specified parameter index.



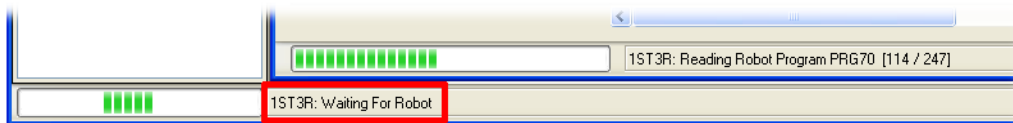
- When available, the General page will display a description and unit for each displayed parameter value.
 - The description and units can be modified and saved.
 - The descriptions and units are maintained in a PRISM Comments file.
 - Modifications to the description and units are captured in the PRISM Actions Log.

- The General page can display any span of parameters from 1 to the number of available parameters.
 - To change the displayed span of parameters, specify a new Start and click the Refresh button.
 - To change the number of parameters displayed, change the Count and click the Refresh button.
 - To see the previous or next span of parameters, click the Previous or Next button.

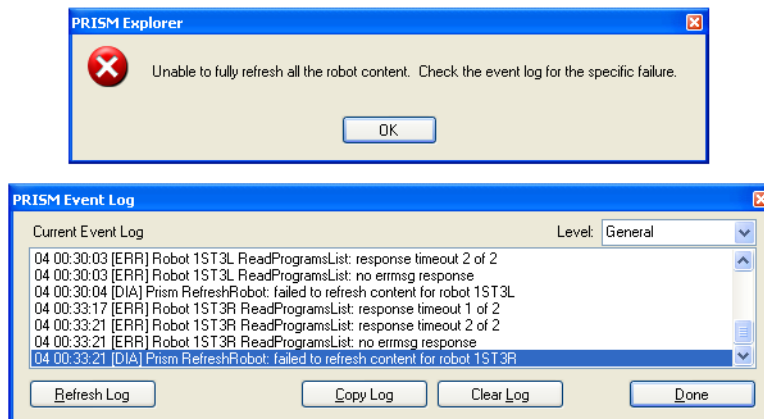
PRISM Robot Communications

General Behavior

- Anytime the PRISM software is communicating with a robot, the communication will be reflected in a status bar.
 - The status bar uses a progress bar to track the progress of the communication.
 - Some commands are open ended and use a marquee to indicate the communication is ongoing.
 - Some commands are fixed duration and use a standard progress meter to indicate command duration.
 - The status bar displays a description of what is being communicated.
 - Some commands are simple and consists of a single description.
 - Some commands are complex and will display a descriptions for each stage of the command.
 - The PRISM software has multiple status bars for tracking communication progress.
 - Each PRISM Program Editor window has its own status bar.
 - Each PRISM Parameters Editor window has its own status bar.
 - All other windows uses the PRISM Status Bar.
- The PRISM software allows one window at a time to communicate with a robot.
 - If two windows try to communicate with the same robot at the same time, the second window will block until the first window completes before resuming its communication.
 - The second window will note the blockage in its status bar.



- The PRISM software automatically traps and recovers from any failed robot communications.
 - A simple message will be displayed noting the failure.
 - The cause of the failure will always be logged to the PRISM Event Log.
 - The content of the PRISM Event Log can be captured and sent to Pioneer Software for analysis and understanding of the failure and the resolution.



The PRISM Event Log is accessible under the Tools menu on the main PRISM Menu Bar.

Aborting Communications

- Anytime the PRISM software is communicating with a robot, the communication can be aborted.
 - Click an Abort toolbar button to abort communication.
 - The Abort All toolbar button on the PRISM Activity Bar aborts all robot communications.
 - All other Abort toolbar buttons abort robot communication specific to that window.
 - Communication aborts once the current command completes.
 - Some commands are short, allowing communications to abort immediately.
 - Some commands are long, creating a delay before the abort completes.
 - The command description in the PRISM Status Bar will reflect that the current command is aborting.



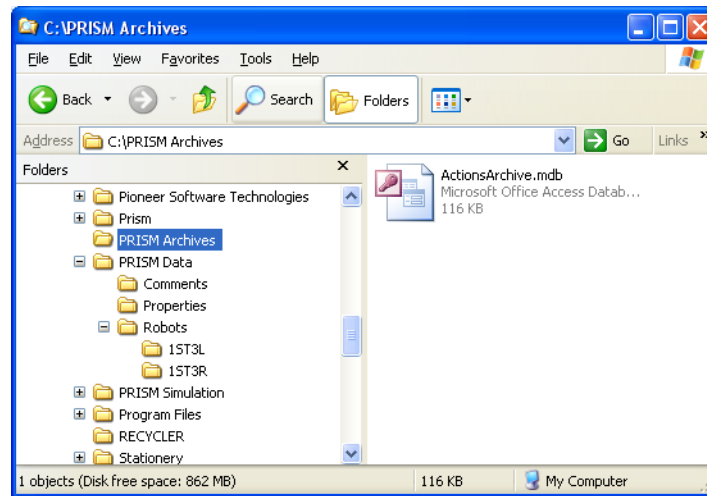
Writing Robot Programs

The PRISM software takes special precaution when writing robot programs to the robot to ensure the transfer is successful. To do the transfer the PRISM software first writes the robot program to a temporary program number, typically program number 999. This will be reflected in the PRISM Status Bar during the write operation. Once the transfer is complete, the PRISM software verifies the robot program at program number 999 is valid, and only then will it complete the write operation by renumbering the robot program to the target program number. If a robot program already exists with the target program number on the robot, only after the program has been successfully downloaded to program 999 does the PRISM software delete the original program. Once deleted, the temporary program is renumbered to the now available target program number.

If there is an error during the transfer of the robot program to the temporary program number, the PRISM software detects the error, stops the write operation, deletes the corrupt temporary program, logs the specific failure condition to the PRISM Event Log, and display an appropriate error message.

PRISM File Hierarchy

This description of the PRISM file hierarchy is provided as a reference. The PRISM software can be fully utilized without having any knowledge of the hierarchy .



- The PRISM software program files are installed into a folder that is chosen during installation.
 - The **"C:\Prism"** folder is the default location to install the PRISM software program files.
 - The PRISM software program files live entirely within the installation folder.
 - There are no data files of any kind stored within this folder.
 - There is no reason to make regular backups of the PRISM software program folder.

- There are two folders for PRISM data.
 - The **"C:\PRISM Data"** folder holds all PRISM data files, except archived data.
 - The **"C:\PRISM Archives"** folder holds all archived PRISM data files.

Regular backups of the PRISM data files folder, and semi-regular backups of the PRISM archives folder is strongly recommended.

File	Folder	Type	Purpose
ActionsLog.mdb	C:\PRISM Data	MSAccess	Actions log database.
Security.mdb	C:\PRISM Data	MSAccess	Security user accounts database.
Parameters.cmt	C:\PRISM Data\Comments	Text	Robot parameter value descriptions and units.
ParametersEditor.ppf	C:\PRISM Data\Properties	Text	Configuration settings for PRISM Parameters Editor window.
PrismExplorer.ppf	C:\PRISM Data\Properties	Text	Tracks promoted / demoted robot programs in PRISM Explorer Pane.
PrismInfo.ppf	C:\PRISM Data\Properties	Text	Company, booth and station names.
ProgramEditor.ppf	C:\PRISM Data\Properties	Text	Configuration settings for PRISM Program Editor window.
RobotPrgsList.ppf	C:\PRISM Data\Properties	Text	List of known robot programs the last time PRISM was shutdown.
RobotSetup.ppf	C:\PRISM Data\Properties	Text	Properties of each robot known to this PRISM software installation.

- The **"C:\PRISM Data\Robots"** folder
 - There will be a subfolder for each robot known to this PRISM software installation.
 - These folders are the default folder location for backing up and restoring robot programs and parameters.
 - These folders are also the default folder location of saving and loading robot programs and parameters.
 - No other files should be placed into these folders except backup robot program and parameter files.