4 Support Center Display Panel

The Support Center Display Panel contans the Display Tabs primarily designed for use by the Maintenance and support staff. The display tabs are more technical in nature and enable the trained user to troubleshoot problems with the hardware and electrical devices in the system.

4.1 Input and Output Display Tabs

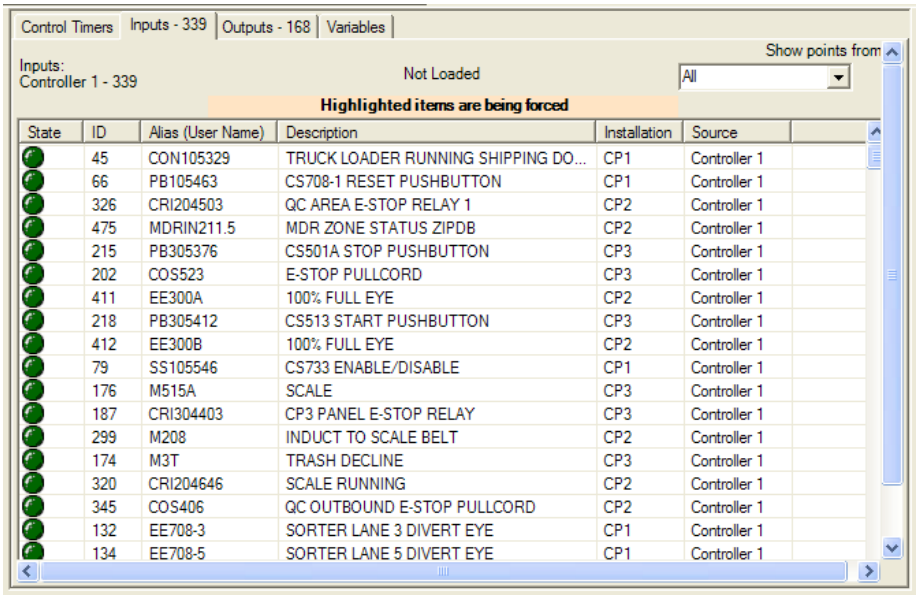
InControlWare systems interact with a large number of sensor and actuator devices (I/O devices). Sensors such as photo eyes, push buttons, proximity switches, etc. are inputs to the controller (inputs). Actuators are devices like solenoids, indicator lamps, motor contactors, etc. are outputs from the controller (outputs). Being able to monitor the status of these devices is important for troubleshooting the system. There will always be two tabs in the User Interface; one for inputs and one for outputs. These tabs are identical in every regard except for the type of devices displayed in the list view. All functional capabilities are the same.

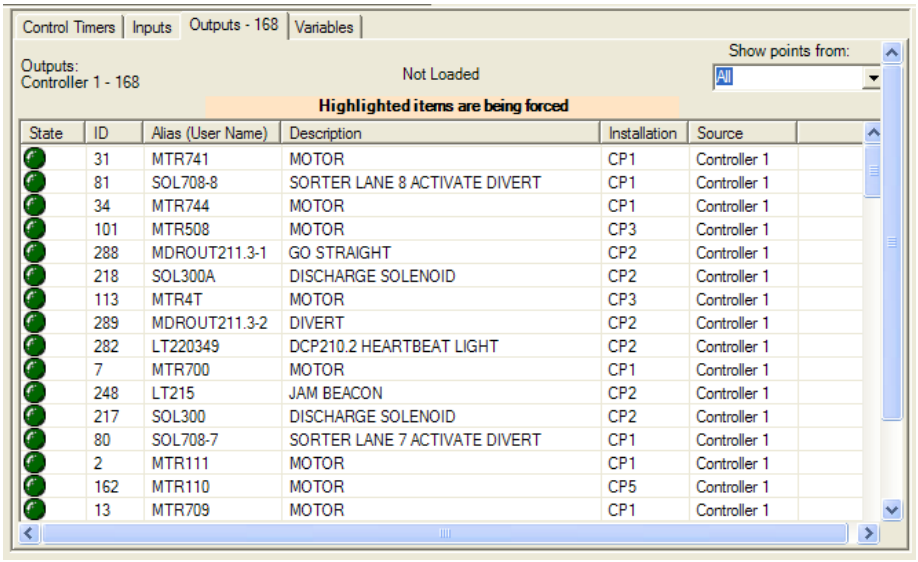
4.1.1 Display Features

The tab is loaded at start-up from the Project Database and will contain one entry in the list view for each input or output in the system. The tab title is a configurable option. The tab titles, typically “Inputs” and “Outputs” will also show a count of the total number of devices of that type in the system. In the example screens, there are 339 inputs and 168 outputs in the system. Additional count information is presented at the top left where the counts for each controller will be shown. In this example, all inputs and outputs are connected to a single controller.

Each row in the display contains information about a single I/O device. The fields on the display may not be edited here, but this information is all maintained in the Project Database and may be edited using the Database maintenance tools. The following columns are shown:

State – shows a color coded icon that indicates the status. Dark green indicates the point is off, light green indicates it is on, red indicates a fault condition, yellow shows a transition (off to on or on to off), and the blue question mark icon means the drive cannot be found on the network. This state changes dynamically based on the update rate selected through the Application Settings dialog.





Input and Output Display Tabs

ID – is the internal controller ID for this I/O device. I/O devices are numbered, starting at 0, within each controller. This means the same ID could appear multiple times, but they will be in different controllers.

Alias (User Name) – each device in the system has a unique device ID. This name, created following the standard naming conventions, is used throughout the documentation and display tabs. An alias, or alternate device name, can be created by an authorized user that will be used in the display tabs. The alias

does not need to be unique, but it should not create confusion with the choice of names. If an alias has not been defined, the system created device ID will be shown.

Description – a brief description of the I/O device.

Installation – is the Control Panel that provides power to the I/O device.

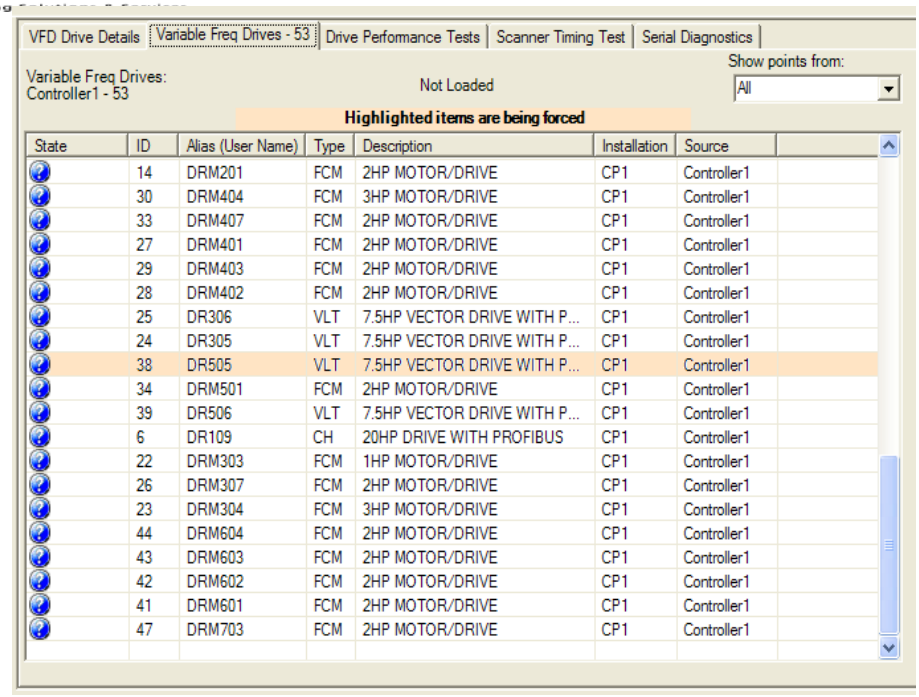
Source – is the name of the controller where the I/O device is controlled. This name can be defined uniquely for any project, but is typically “Controller 1”, “Controller 2”, etc.

Clicking on the column heading will sort the list view based on the data in that column. The sort will alternate between ascending and descending sequence each time a column heading is clicked. The ID column will be sorted numerically while all other columns are text sorts. Columns can be resized by grabbing the divider between the columns in the heading.

A combo box (drop-down) is provided that will show a list of controllers and an “All” selection. This is used to filter the list when there are multiple controllers in a system. Selecting a controller name from the drop down list will cause the list view to be re-displayed with only the input or output devices from the selected controller. Selecting “All” from the combo box restores the list view to showing the input or output devices for all controllers.

Selecting a row, by clicking on the row, causes the gray display field at the top of the tab to be updated. The row selected will be highlighted in system highlight color. The display field will show the internal Device ID (which may be different than the alias), the device Address, the Wire data, and the Terminal data for the selected I/O device.

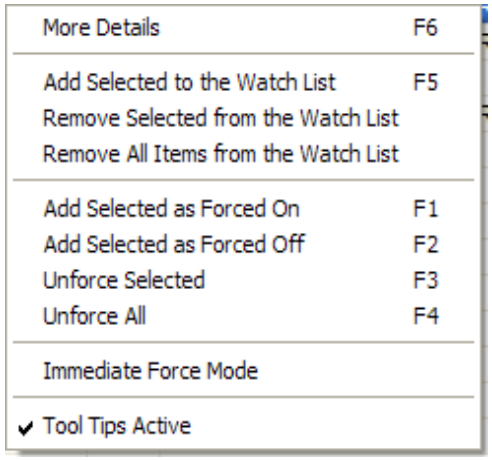
When a drive is forced on or off, the background for the row is changed to a light orange to indicate its forced state. This will happen no matter who has initiated the force. InControlWare supports the ability for multiple users to be simultaneously using the system. This means that a maintenance person working in the shipping area might be forcing on an output to run a motor in that area while another technician is forcing on an input in an IntelliMerge. Both of these devices will show the force state in both Users Interfaces.



Forced Items are Highlighted

4.1.2 Context Menu

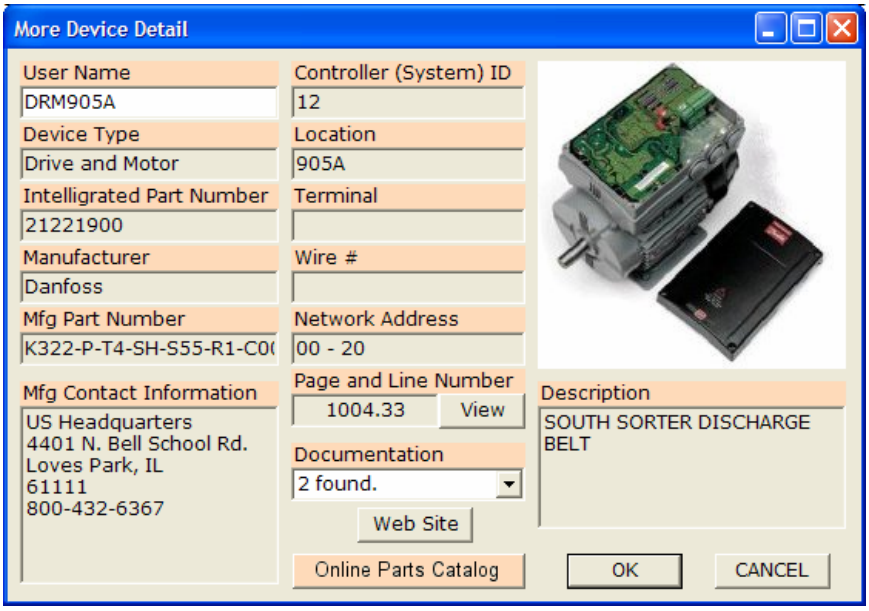
A context menu is available for this tab by right clicking anywhere on the tab. This menu includes a number of shortcuts that can be used instead of displaying the menu once the user is familiar with the shortcuts.



Right-Click Menu

The menu (**F6**) will display the More Device Detail dialog box for the selected device. This provides more details, as the name implies, and it provides links to related documentation and web resources. The web resources, the vendor web site and Online

Parts Catalog, are only available if the system is web enabled. The other links, to the schematic and the documentation for the device selected, are always accessible.



More Device Detail Dialog Box

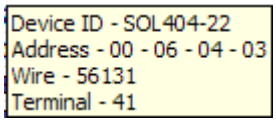
The menu also offers the ability to add and remove items from the Watch List Display Tab. One or more items in the list view can be selected using standard selection conventions (click, shift-click, ctrl-click). Selecting the “Add Selected to the Watch List” menu item (**F5**) will add all of the selected items to the Watch List. The Watch List Tab will begin to display status information for the selected items. This is useful when you want to monitor a number of different devices in the system all at one time. Quite often, it is difficult to get this unique set of devices all on the screen at the same time. Selecting the “Remove Selected from the Watch List” will remove the selected items from the Watch List, if they were on the list. Using this function with items that are not on the Watch List will have no effect. Another menu item will remove all of the input or output items from the Watch.

The “Unforce Selected” menu item (**F3**) is used to remove forces for specific devices in the list view. If the item selected is not forced, the menu selection will be ignored. An “Unforce All” menu item (**F4**) will removed all forces active for drives without individual selections being required.

An authorized user can also enable or disable Immediate Force Mode. Forcing is by design a two step process – add the item to the Force List and then enable the force in the Force List. Immediate Force Mode speeds up the force process because it eliminates the need to enable the force in the Force List. When Immediate Force Mode

is active, the force is enabled automatically when the force is added to the Force List. Care should be taken when enabling this mode and it should only be authorized for selected individuals that understand the implications of this mode.

A Tool Tips display, if tool tips are enabled, will show the Device ID, Address, the Wire data the Terminal data. This display changes depending on the mouse position, where the gray display field only changes when a new row is selected. Tools tips will also be used whenever there is additional information about a piece of data that might be helpful.



Tool Tip Display

Tool Tips can be enabled and disabled by selecting the Tools Tips Active menu item in the context menu. If this menu item is checked, selecting it will turn Off the Tool Tip displays. If the item is unchecked, the displays will be turned On.

Both the Tool Tip and Immediate Force Mode selections are global. All tabs that use Tool Tips are turned On or Off based on the selection in this tab. Immediate Force Mode is enabled or disabled for all tabs that add items to the Force List.

4.1.3 Reporting

There are no reports for this tab.

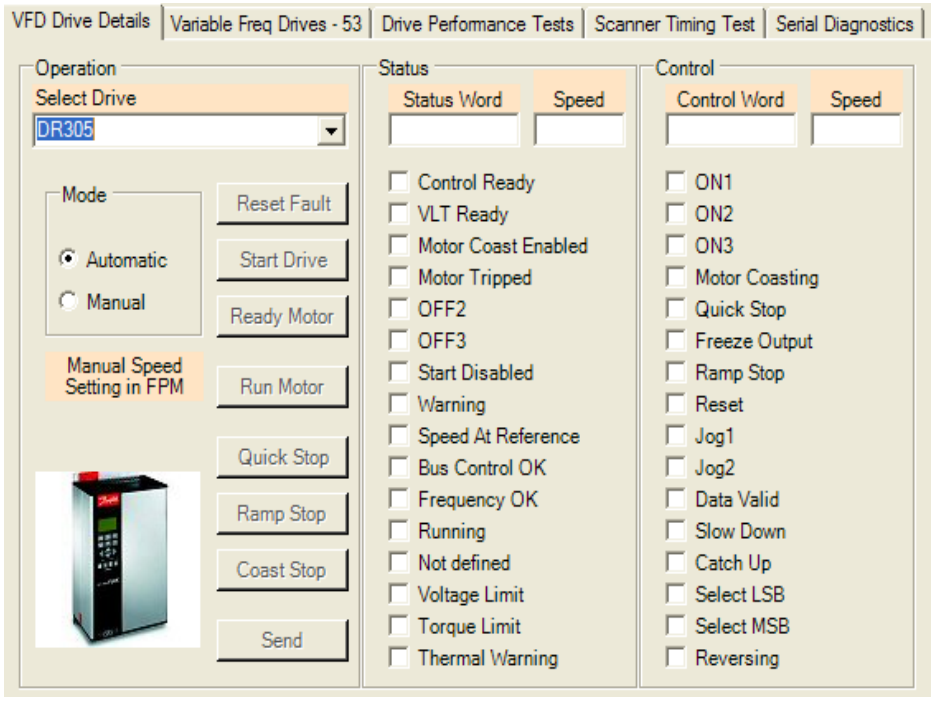
4.1.4 Logging and Historical Data Capture

There is no logging done for this tab.

4.2 VFD Drive Details Display Tabs

This tab will provide maintenance and engineering personnel a tool to view details for and directly control an individual Profidrive device (drive). Profidrive is a defined data format and event sequence for controlling VFDs and servo drives that are directly connected to a Profibus network. The interpretation of the data may be slightly different from vendor to vendor, but Profidrive devices are fundamentally replaceable without changes to control logic.

This panel will allow an authorized user to change speed settings, start a drive, reset a drive fault, and run the drive. An experienced user can also set individual bits combination in the control word.



Drive Detail Display Tab

4.2.1 Display Features

The Drive Detail Display Tab is organized into three areas. The Operation area is for selection of the drive, setting the operating mode, and selecting the function to be performed. The two other areas ate the command and status data for the selected drive.

A combo box in the Operation area will be filled with all of the available Profidrive drives in the system. For a better understanding of Profidrive, please refer to the Profibus section of the Manual.

These drives can be multiple types and from multiple manufacturers. A small image of the drive will be shown in the lower left of the Operation area once a drive is selected. The radio buttons in the Mode box allow selection of Manual or Automatic mode. Automatic mode will leave control of the drive up to the controller software. Manual mode switches control to this tab.

In Automatic Mode, the Status and Control areas will show the status of the selected drive. The Status Word text box will show the decimal or hexadecimal value of the status word. The meaning of that value is displayed in the check boxes below the status word. With a Profidrive device, the meaning of many of the bits in the status word is common between vendors. The vendor specific interpretation is shown next to the check box. This label can change if the drive vendor or drive type changes. The speed text box will show the decimal, hexadecimal or FPM speed of the drive. The values in the Status area are read from the drive. The Control area will show the values being sent to the drive by the controller.

In Manual Mode, the Status area still reflects the values read back from the drive. The Control area is under control of this tab. This area still shows commands being sent to the drive, but the command is being created as a result of action on this tab.

In Manual Mode, the buttons in the Operation area change color and become active. The buttons permit the following functions with a Profidrive device:

Reset Fault – will reset a fault condition on the drive. To have any effect, the drive must be truly faulted and it must be a fault that does not require a power cycle of the drive.

Start Drive – will start the drive. This is the first step in the sequence for operating a drive. Once the Start has been completed, the motor can be made ready using the Ready Motor button.

Ready Motor – is the second step in the start-up sequence. This will take the Profidrive device and make it ready to accept speed commands.

Run Motor – will create the speed command to run the drive at the requested speed. The Requested speed (in FPM) is set in the numeric up/down box. This will allow speeds to be incremented or decremented with a click of the up or down arrows. The requested speed can also be typed. Press the Run Motor button after each speed change.

Quick Stop – will issue a Quick Stop command to the drive. The VFD will perform a Ramped stop action based on the fast stop ramp settings for the drive.

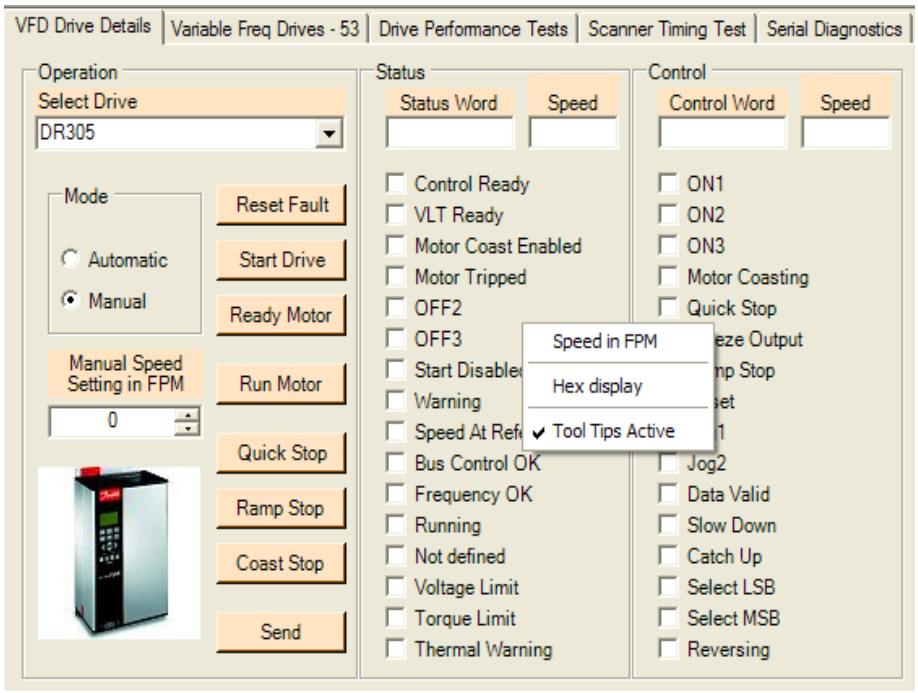
Ramp Stop – will issue a ramp stop command to the drive. The drive will perform a ramp stop according to the ramp setting in the drive.

Coast Stop – will cause the drive to perform a coast stop. The coast stop means that the drive will stop any form of control on the motor and allow it to coast to a stop.

4.2.2 Context menu (Right-Click Menu)

A context menu is available for the Drive Detail Display Tab the user to view values in hexadecimal. This will show status and control words in hexadecimal format. Speed will also be shown in hex when this is selected. Selecting the Speed in FPM option will show the speed (control and status) in Feet per Minute rather than as a hex or decimal value. Tool tips can also be turned on and off with this menu.

Placing the mouse over check boxes and buttons will cause additional information to be displayed. If there is no additional information, the tool tip will not appear.



Right-Click Menu

4.2.3 Reporting

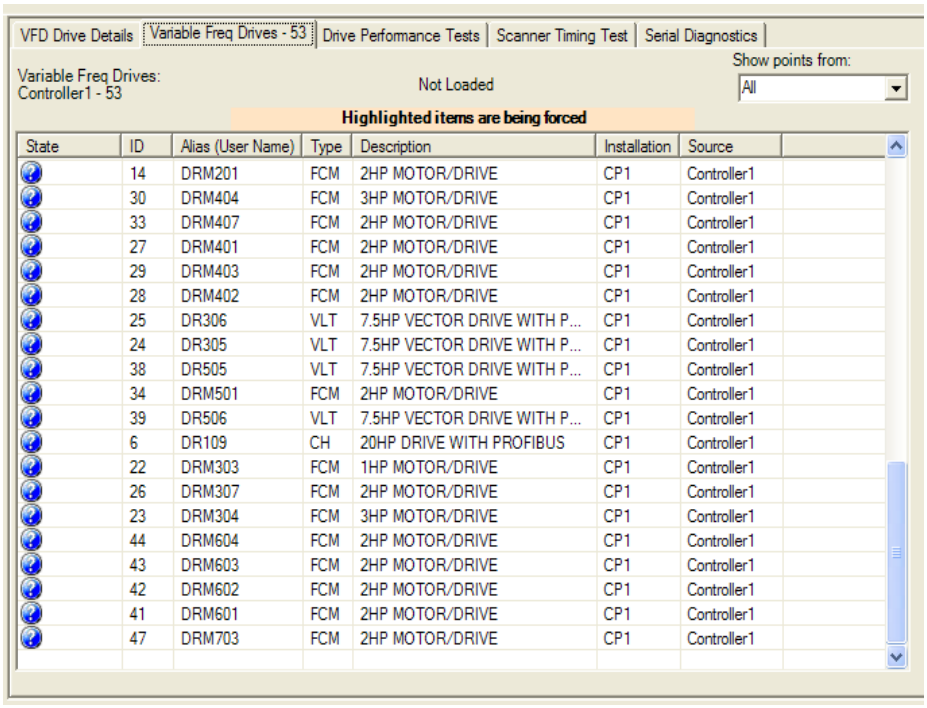
There are no reports associated with this display tab.

4.2.4 Logging and Historical Data Capture

There is no data recording for this tab.

4.3 Drive Display Tab

InControlWare systems typically contain a number of variable frequency drives (VFD). This tab will allow user to monitor information about all of the Profidrive drives in the system. This is useful to service and maintenance staff who can see operating speeds for the various drives and navigate quickly more detailed information about any drive in the system.



State	ID	Alias (User Name)	Type	Description	Installation	Source
	14	DRM201	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	30	DRM404	FCM	3HP MOTOR/DRIVE	CP1	Controller1
	33	DRM407	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	27	DRM401	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	29	DRM403	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	28	DRM402	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	25	DR306	VLT	7.5HP VECTOR DRIVE WITH P...	CP1	Controller1
	24	DR305	VLT	7.5HP VECTOR DRIVE WITH P...	CP1	Controller1
	38	DR505	VLT	7.5HP VECTOR DRIVE WITH P...	CP1	Controller1
	34	DRM501	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	39	DR506	VLT	7.5HP VECTOR DRIVE WITH P...	CP1	Controller1
	6	DR109	CH	20HP DRIVE WITH PROFIBUS	CP1	Controller1
	22	DRM303	FCM	1HP MOTOR/DRIVE	CP1	Controller1
	26	DRM307	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	23	DRM304	FCM	3HP MOTOR/DRIVE	CP1	Controller1
	44	DRM604	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	43	DRM603	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	42	DRM602	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	41	DRM601	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	47	DRM703	FCM	2HP MOTOR/DRIVE	CP1	Controller1

Drives Display Tab

4.3.1 Display Features

The tab is loaded at start-up and will contain one entry in the list view for each drive in the system. The tab title, typically “Variable Frequency Drive” will also show a count of the total number of VFDs in the system. In the example, there are 53 drives in the system. Additional count information is presented at the top left where the counts for each controller will be shown. In this example, all 53 drives are connected to a single controller.

Each row in the display contains information about a single drive. The fields on the display may not be edited here, but this information is all maintained in the Project Database and may be edited using the Database maintenance tools. The following columns are shown:

State – shows a color coded icon that indicates the status. Dark green indicates the drive is operational, light green indicates it is running, red indicates a fault condition, and the blue question mark icon means the drive cannot be found on the network. This column will also display the speed, in feet per minute, for an operating drive. This state changes dynamically based on the update rate selected through the Application Settings dialog.

ID – is the internal controller ID for this drive. Drives are numbered, starting at 0, within each controller. This means the same ID could appear multiple times, but they will be in different controllers.

Alias (User Name) – each device in the system has a unique device ID. This name, created following the standard naming conventions, is used throughout the documentation and display tabs. An alias, or alternate device name, can be created by an authorized user that will be used in the display tabs. The alias does not need to be unique, but it should not create confusion with the choice of names. If an alias has not been defined, the system created device ID will be shown.

Type – shows the drive type for that Profidrive device. This defines a set of key operating information for the drive.

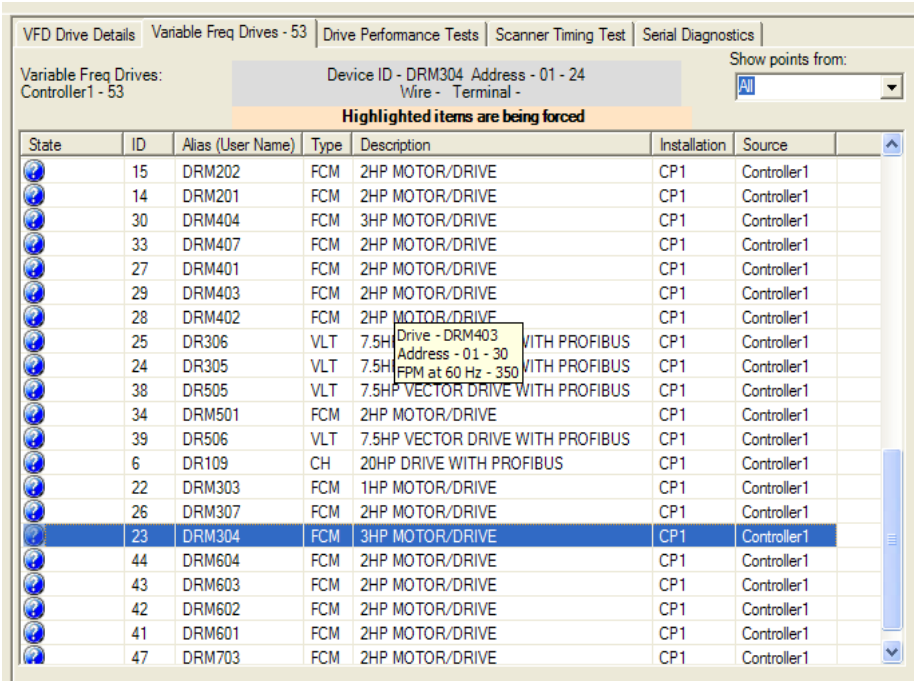
Description – a brief description of the device.

Installation – is the Control Panel that provides power to the drive.

Source – is the name of the controller where the drive is controlled. This name can be defined uniquely for any project, but is typically “Controller 1”, “Controller 2”, etc.

Clicking on the column heading will sort the list view based on the data in that column. The sort will alternate between ascending and descending sequence each time a column heading is clicked. The ID column will be sorted numerically while all other columns are text sorts. Columns can be resized by grabbing the divider between the columns in the heading.

A combo box (drop-down) is provided that will show a list of controllers and an “All” selection. This is used to filter the list when there are multiple controllers in a system. Selecting a controller name from the drop down list will cause the list view to be re-displayed with only drives from the selected controller. Selecting “All” from the combo box restores the list view to showing drives for all of the controllers.



State	ID	Alias (User Name)	Type	Description	Installation	Source
	15	DRM202	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	14	DRM201	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	30	DRM404	FCM	3HP MOTOR/DRIVE	CP1	Controller1
	33	DRM407	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	27	DRM401	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	29	DRM403	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	28	DRM402	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	25	DR306	VLT	7.5HP VECTOR DRIVE WITH PROFIBUS	CP1	Controller1
	24	DR305	VLT	7.5HP VECTOR DRIVE WITH PROFIBUS	CP1	Controller1
	38	DR505	VLT	7.5HP VECTOR DRIVE WITH PROFIBUS	CP1	Controller1
	34	DRM501	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	39	DR506	VLT	7.5HP VECTOR DRIVE WITH PROFIBUS	CP1	Controller1
	6	DR109	CH	20HP DRIVE WITH PROFIBUS	CP1	Controller1
	22	DRM303	FCM	1HP MOTOR/DRIVE	CP1	Controller1
	26	DRM307	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	23	DRM304	FCM	3HP MOTOR/DRIVE	CP1	Controller1
	44	DRM604	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	43	DRM603	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	42	DRM602	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	41	DRM601	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	47	DRM703	FCM	2HP MOTOR/DRIVE	CP1	Controller1

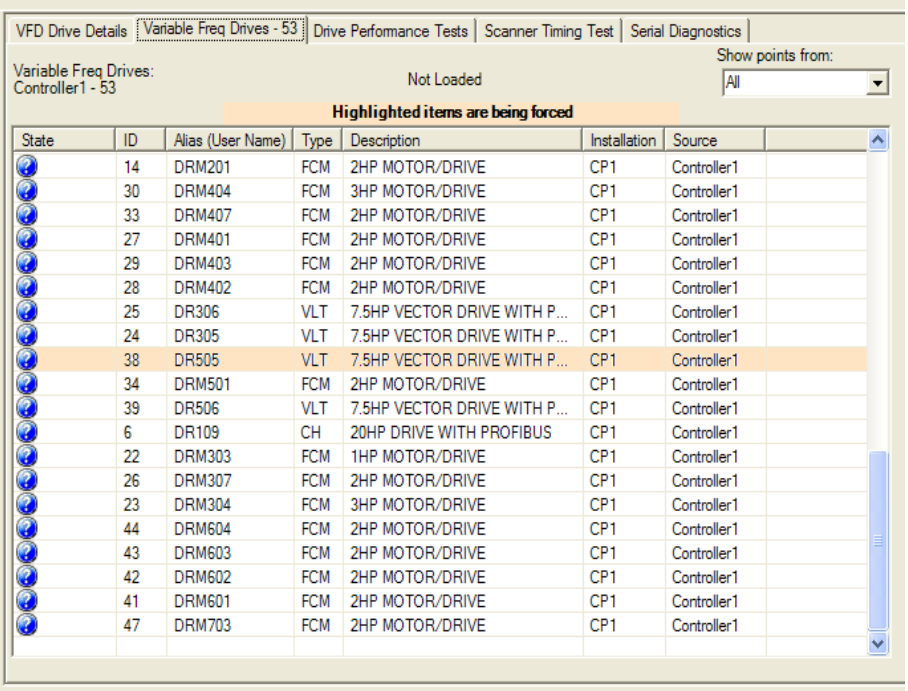
Tool Tips Display

Selecting a row, by clicking on the row, causes the gray display field at the top of the tab to be updated. The row selected will be highlighted in system highlight color. The display field will show the internal Device ID (which may be different than the alias), the device Address, the Wire data, and the Terminal data for the selected drive.

A Tool Tips display, if tool tips are enabled, will show the Device ID, Address, and Speed in FPM at 60 Hz for the drive. This display changes depending on the mouse position, where the gray display field only changes when a new row is selected. Tools tips will also be used whenever there is additional information about a piece of data that might be helpful.

When a drive is forced on or off, the background for the row is changed to a light orange to indicate its forced state. This will happen no matter who has initiated the force.

InControlWare supports the ability for multiple users to be simultaneously using the system. This means that a maintenance person working in the shipping area might be forcing on a drive there while another technician is forcing on a VFD in an IntelliMerge. Both of these drives will show the force state in both Users Interfaces.

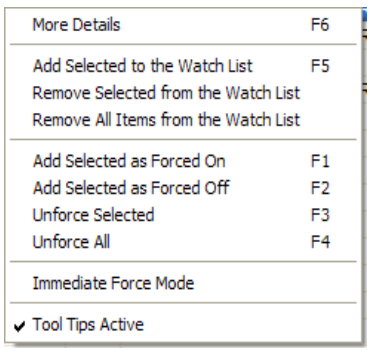


State	ID	Alias (User Name)	Type	Description	Installation	Source
	14	DRM201	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	30	DRM404	FCM	3HP MOTOR/DRIVE	CP1	Controller1
	33	DRM407	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	27	DRM401	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	29	DRM403	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	28	DRM402	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	25	DR306	VLT	7.5HP VECTOR DRIVE WITH P...	CP1	Controller1
	24	DR305	VLT	7.5HP VECTOR DRIVE WITH P...	CP1	Controller1
	38	DR505	VLT	7.5HP VECTOR DRIVE WITH P...	CP1	Controller1
	34	DRM501	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	39	DR506	VLT	7.5HP VECTOR DRIVE WITH P...	CP1	Controller1
	6	DR109	CH	20HP DRIVE WITH PROFIBUS	CP1	Controller1
	22	DRM303	FCM	1HP MOTOR/DRIVE	CP1	Controller1
	26	DRM307	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	23	DRM304	FCM	3HP MOTOR/DRIVE	CP1	Controller1
	44	DRM604	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	43	DRM603	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	42	DRM602	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	41	DRM601	FCM	2HP MOTOR/DRIVE	CP1	Controller1
	47	DRM703	FCM	2HP MOTOR/DRIVE	CP1	Controller1

Forced Display

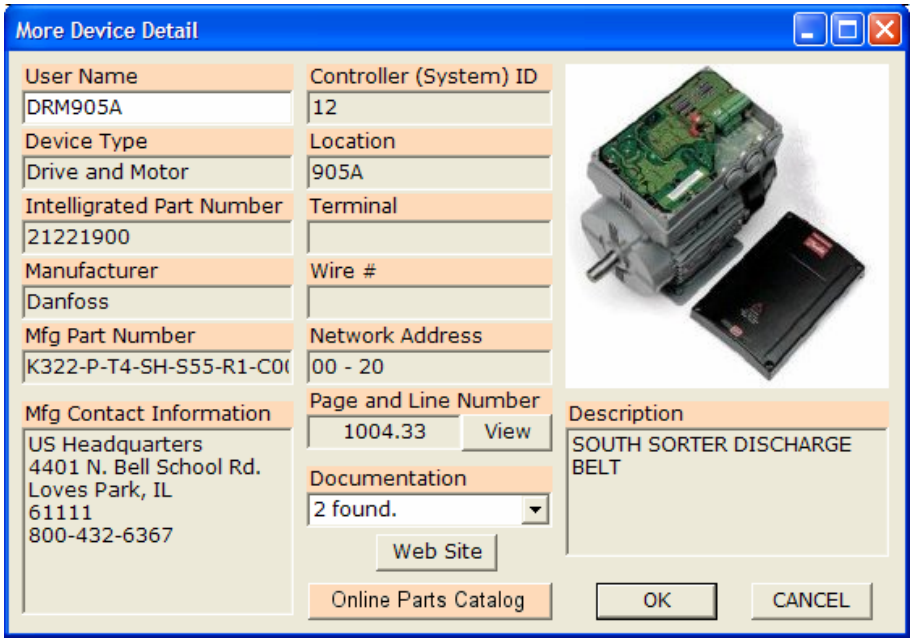
4.3.2 Context Menu (Right-Click Menu)

A context menu is available for this tab by right clicking anywhere on the tab. This menu includes a number of shortcuts that can be used instead of displaying the menu once the user is familiar with the shortcuts.



Context Menu

The menu (**F6**) will display the More Device Detail dialog box for the selected device. This provides more details, as the name implies, and it provides links to related documentation and web resources. The web resources, the vendor web site and Online Parts Catalog, are only available if the system is web enabled. The other links, to the schematic and the documentation for the device selected, are always accessible.



More Device Detail Dialog Box

The menu also offers the ability to add and remove items from the Watch List Display Tab. One or more items in the list view can be selected using standard selection conventions (click, shift-click, ctrl-click). Selecting the “Add Selected to the Watch List” menu item (**F5**) will add all of the selected items to the Watch List. The Watch List Tab will begin to display status information for the selected items. This is useful when you want to monitor a number of different devices in the system all at one time. Quite often, it is difficult to get this unique set of devices all on the screen at the same time. Selecting the “Remove Selected from the Watch List” will remove the selected items from the Watch List, if they were on the list. Using this function with items that are not on the Watch List will have no effect. Another menu item, will remove all of the drive items from the Watch.

Forcing of drive is performed from this tab as well. One or more drives can be selected at the same time. After these are selected, the menu selections “Add Selection as Forced On” (**F1**) and “Add Selection as Forced Off” (**F2**) can be used to force these drives to the requested state. When forcing a drive to an On or Off state, a dialog box will be displayed for each drive selected. The force request is acknowledged using this

dialog box. Forcing to an Off state only requires selecting the **OK** button. If the drive is force to an On state, a speed can be entered. This is the speed for the drive will be operating when the force is enabled. Entry of the speed will add the drive to the Force List.

Force Dialog box

The “Unforce Selected” menu item (**F3**) is used to remove forces for specific devices in the list view. If the item selected is not forced, the menu selection will be ignored. An “Unforce All” menu item (**F4**) will removed all forces active for drives without individual selections being required.

An authorized user can also enable or disable Immediate Force Mode. Forcing is by design a two step process – add the item to the Force List and then enable the force in the Force List. Immediate Force Mode speeds up the force process because it eliminates the need to enable the force in the Force List. When Immediate Force Mode is active, the force is enabled automatically when the force is added to the Force List. Care should be taken when enabling this mode and it should only be authorized for selected individuals that understand the implications of this mode.

Tool Tips can be enabled and disable by selecting the Tools Tips Active menu item in the context menu. If this menu item is checked, selecting it will turn Off the Tool Tip displays. If the item is unchecked, the displays will be turned On.

Both the Tool Tip and Immediate Force Mode selections are global. All tabs that use Tool Tips are turn On or Off based on the selection in this tab. Immediate Force Mode is enabled or disabled for all tabs that add items to the Force List.

4.3.3 Reporting

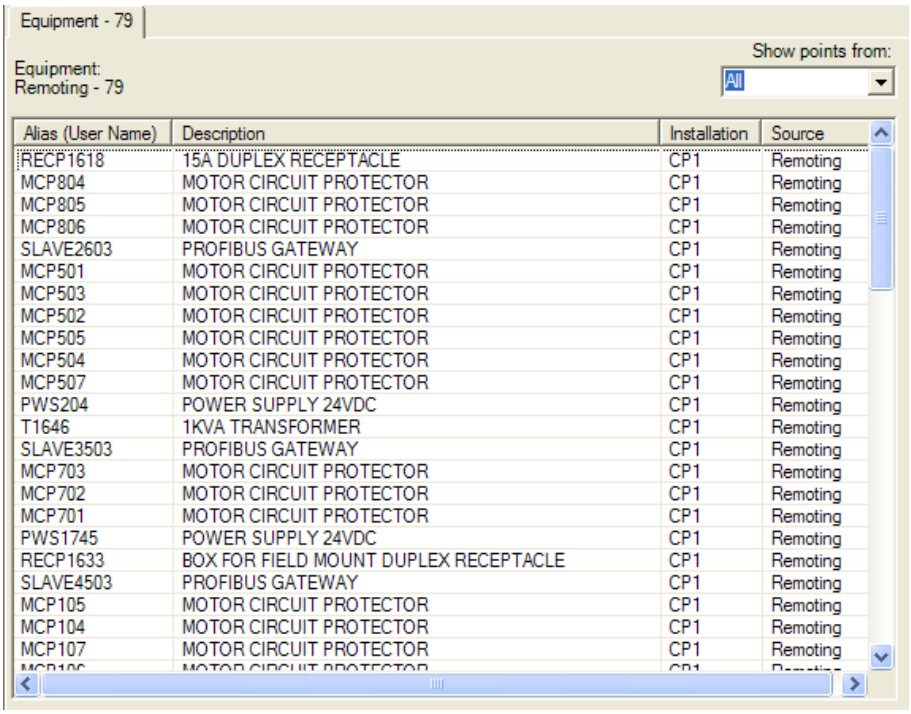
There is no reporting specific to this display tab.

4.3.4 Logging and Historical Data Capture

There is no data recording for this display tab.

4.4 Equipment Display Tabs

InControlWare systems include many electrical items that are not actively controlled by the system. This even includes some items that are part of the Profibus network like Repeaters. An InControlWare Project database includes links between devices and documentation about the device even if it is not actively controlled. This equipment, including transformers, motor circuit protectors, power supplies, and other electrical devices are shown in a list view on the Equipment tab.



Alias (User Name)	Description	Installation	Source
RECP1618	15A DUPLEX RECEPTACLE	CP1	Remoting
MCP804	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP805	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP806	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
SLAVE2603	PROFIBUS GATEWAY	CP1	Remoting
MCP501	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP503	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP502	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP505	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP504	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP507	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
PWS204	POWER SUPPLY 24VDC	CP1	Remoting
T1646	1KVA TRANSFORMER	CP1	Remoting
SLAVE3503	PROFIBUS GATEWAY	CP1	Remoting
MCP703	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP702	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP701	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
PWS1745	POWER SUPPLY 24VDC	CP1	Remoting
RECP1633	BOX FOR FIELD MOUNT DUPLEX RECEPTACLE	CP1	Remoting
SLAVE4503	PROFIBUS GATEWAY	CP1	Remoting
MCP105	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP104	MOTOR CIRCUIT PROTECTOR	CP1	Remoting
MCP107	MOTOR CIRCUIT PROTECTOR	CP1	Remoting

Equipment Display Tab

4.4.1 Display Features

The tab is loaded at start-up and will contain one entry in the list view for each piece of equipment included in the system system. The tab title, typically “Equipment” will also show a count of the total number of equipment items in the system. In the example, there are 79 equipment items in the system. Additional count information is presented at the top left where the counts for each controller will be shown. In this example, all 79 equipment items are related to a single controller.

Each row in the display contains information about a single equipment item. The fields on the display may not be edited here, but this information is all maintained in the Project Database and may be edited using the Database maintenance tools. The following columns are shown:

Alias (User Name) – each equipment item in the system has a unique device ID. This name, created following the standard naming conventions, is used throughout the documentation and display tabs. An alias, or alternate device name, can be created by an authorized user that will be used in the display tabs. The alias does not need to be unique, but it should not create confusion with the choice of names. If an alias has not been defined, the system created device ID will be shown.

Description – a brief description of the device. This description is the same as the text on the schematic.

Installation – is the Control Panel that provides power to the drive.

Source – is the name of the controller where the equipment item is related. This name can be defined uniquely for any project, but is typically “Controller 1”, “Controller 2”, etc.

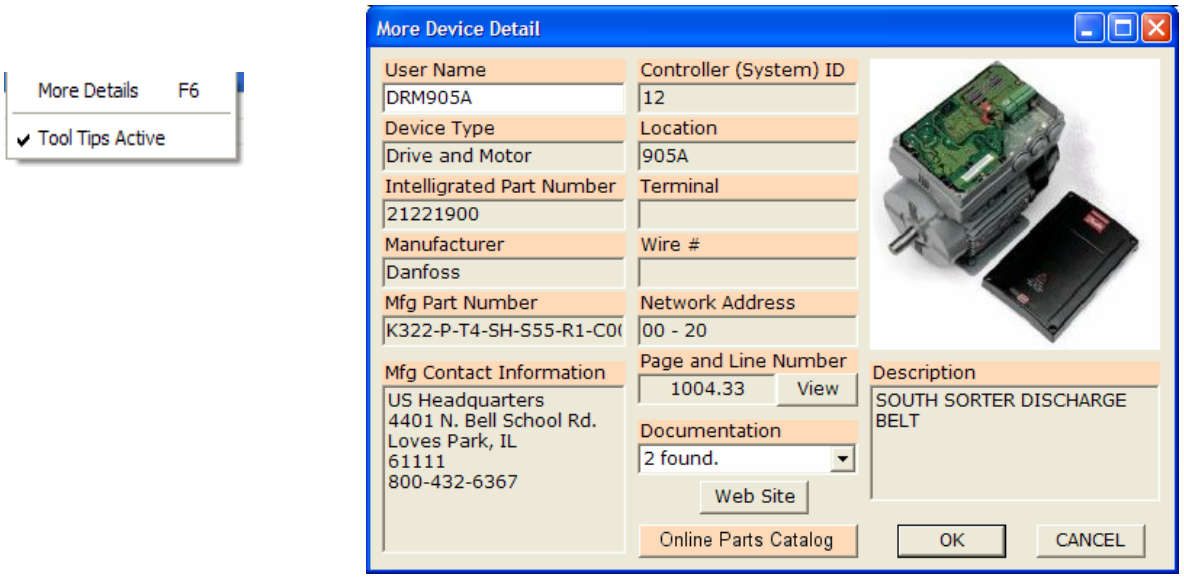
Clicking on the column heading will sort the list view based on the data in that column. The sort will alternate between ascending and descending sequence each time a column heading is clicked. Columns can be resized by grabbing the divider between the columns in the heading.

A combo box (drop-down) is provided that will show a list of controllers and an “All” selection. This is used to filter the list when there are multiple controllers in a system. Selecting a controller name from the drop down list will cause the list view to be re-displayed with only equipment item from the selected controller. Selecting “All” from the combo box restores the list view to showing drives for all of the controllers.

A Tool Tips display, if tool tips are enabled, will show the Device ID, Address, and Speed in FPM at 60 Hz for the drive. This display changes depending on the mouse position, where the gray display field only changes when a new row is selected. Tools tips will also be used whenever there is additional information about a piece of data that might be helpful.

4.4.2 Context Menu (Right-Click Menu)

A context menu is available for this tab by right clicking anywhere on the tab. This menu includes a number of shortcuts that can be used instead of displaying the menu once the user is familiar with the shortcuts.



Context Menu and More Device Detail Dialog Box

The menu (**F6**) will display the More Device Detail dialog box for the selected device. This provides more details, as the name implies, and it provides links to related documentation and web resources. The web resources, the vendor web site and Online Parts Catalog, are only available if the system is web enabled. The other links, to the schematic and the documentation for the device selected, are always accessible.

Tool Tips can be enabled and disable by selecting the Tools Tips Active menu item in the context menu. If this menu item is checked, selecting it will turn Off the Tool Tip displays. If the item is unchecked, the displays will be turned On.

All tabs that use Tool Tips are turned On or Off based on the selection in this tab.

4.4.3 Reporting

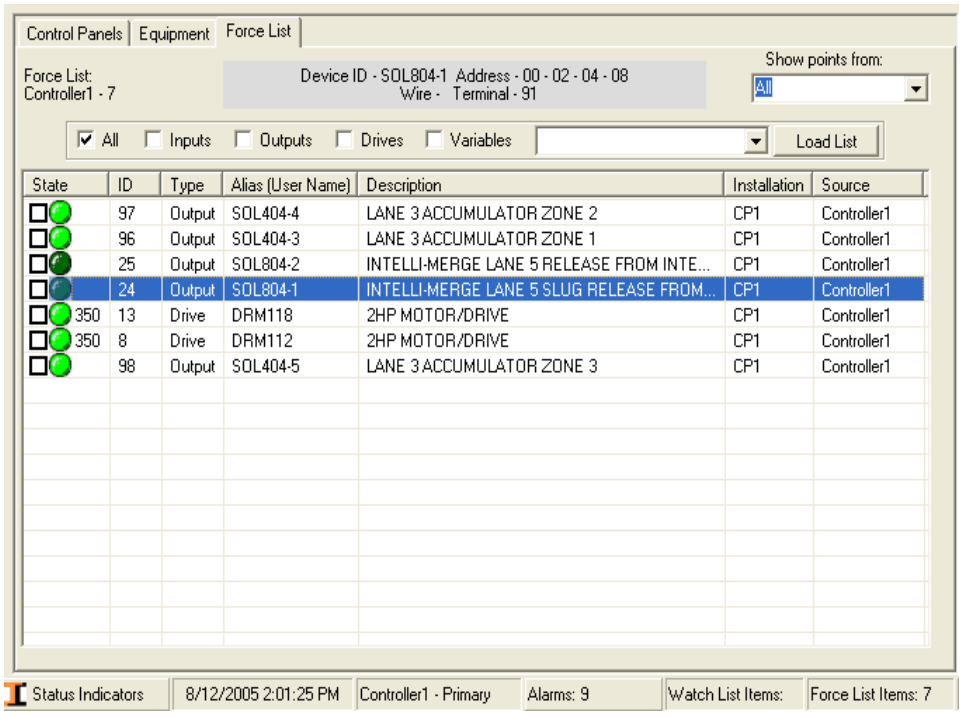
There is no reporting specific to this display tab.

4.4.4 Logging and Historical Data Capture

There is no data recording for this display tab.

4.5 Force List Display Tabs

The Force List tab provides a powerful set of features for maintenance staff use. The InControlWare system allows inputs, outputs and drives connected to the I/O network to be forced On or Off. The tab shows all items selected to be forced, allows them to be enabled or disabled, allows list of forces to be saved or loaded, and provides filtering and sorting of the list.



Force List Display Tab

4.4.1 Display Features

The list view window shows a list of devices that have been selected for forcing and their force state. Items get on this list from the Input, Output or Drive tabs using a context menu function or by being loaded from a saved force list. A count of the number of devices in the force list is displayed in the status bar.

The columns on the list view contain the following information:

State – displays the desired state for the force. This can be On (displayed with a bright green indicator) or Off (displayed with a dark green indicator). If the device is a drive, the column will also show the forced speed selected. The check box must be checked for the force to be enabled. This means that the force can be enabled and disabled by checking and un-checking an item. When the box is checked, that device will be forced to the selected state.

If Immediate Force mode is selected in the option tabs, the force will be enabled when it is added to the tab.

Note: **Caution should be exercised when using this mode.**

ID – the controller ID for the device selected. This is reference information.

Alias – is the user assigned name for the device. The system assigned value is always retained.

Description – a brief description of the I/O device.

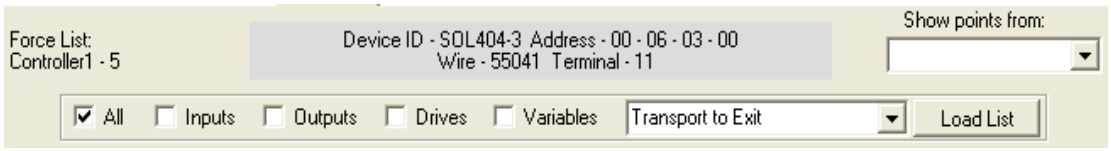
Installation – is the Control Panel that provides power to the I/O device.

Source – is the name of the controller where the I/O device is controlled. This name can be defined uniquely for any project, but is typically “Controller 1”, “Controller 2”, etc.

Clicking on the column heading will sort the list view based on the data in that column. The sort will alternate between ascending and descending sequence each time a column heading is clicked. The ID column will be sorted numerically while all other

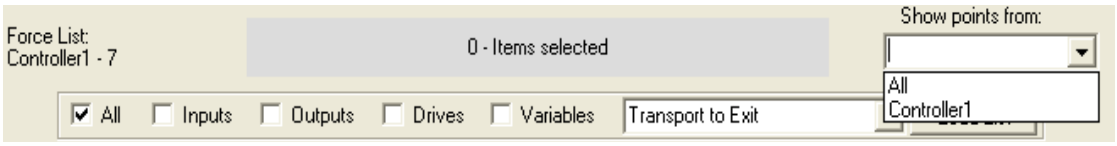
columns are text sorts. Columns can be resized by grabbing the divider between the columns in the heading.

A gray area in the center shows details for the selected item in the list. This same information is displayed in the tool tip display. This shows the device ID (System assigned not the alias), the network address, a wire number and a terminal identification.



Details Displayed and Highlighted in Gray

The top of the tab display provides some useful information and tools. The summary area to the right shows a count of the number of items in the current list from each controller (source) in the system. A drop down box on the opposite side lists the controllers in the system. This can be used to filter the list to show only devices from the selected controller.

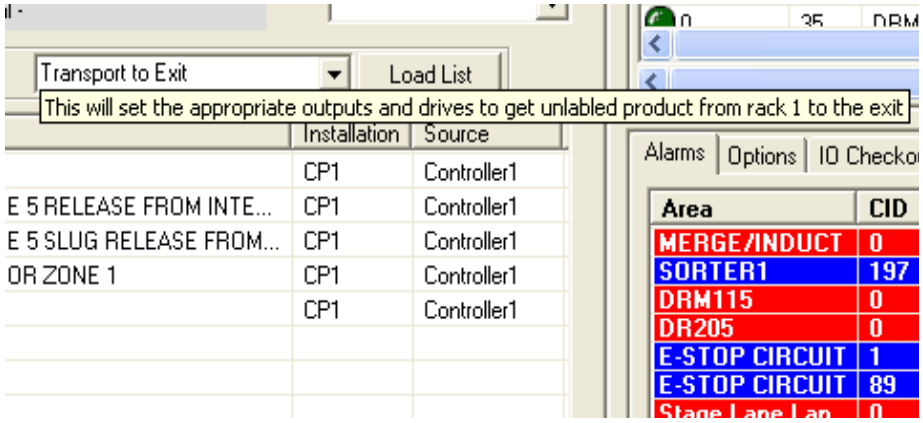


Drop Down Box

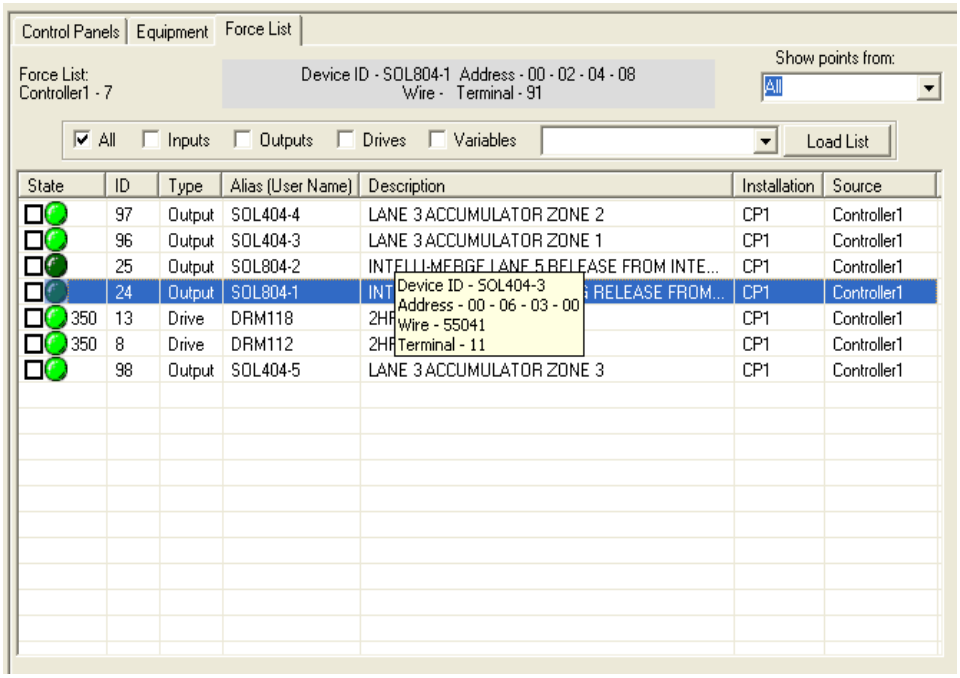
A series of checkboxes provide another filtering tool. Clicking one or more of the boxes will cause the list to show only those devices matching the selected device type.

Another drop down list is used to select and load Force lists. When pausing the mouse over this drop down, the tool tip will display the description that was stored with the force list. The names in the drop down are previously stored lists of devices and the associated force state for each device. Using this drop down and the load button, force list items will be loaded to the current list. An “Add Force List to Existing” context menu item allows the list being loaded to be added to what is already on the list. If this option

is not selected, the existing items are disabled and removed from the list and the new list is loaded.



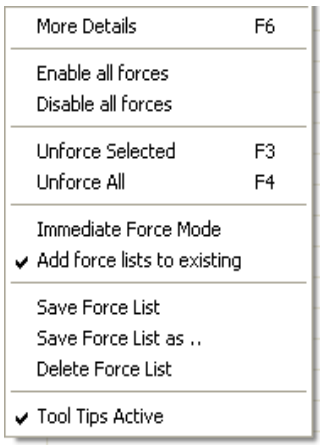
Drop Down Box for Loading Force Lists



Tool Tip Display

4.4.2 Context Menu (Right Click Menu)

Right clicking in the Force List tab brings up the following context menu.



Right-Click Menu

More Details – brings up the More Device Details Dialog Box.

Enable all Forces – will enable all forces in the list. The device will become checked. Any that are already enabled will remain enabled.

Disable all Forces – will disable all forced devices in the list. The device will become unchecked. The devices are not removed from the list, but the controller will stop forcing the state.

Unforce Selected – will remove the selected device(s) from the list. This will disable the force if it is enabled and remove the device from the force list.

Unforce All – will disable the force for each device on the force list and remove it from the list.

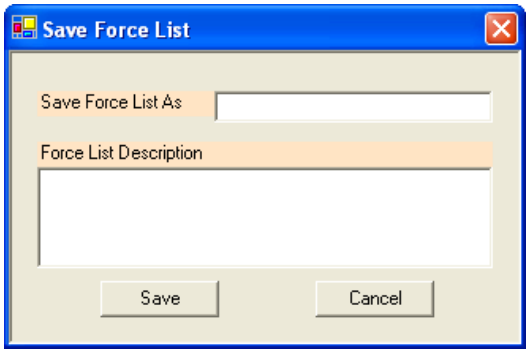
Immediate Force Mode – enables and disable immediate force mode. Immediate force mode automatically enables a force as soon as it is added to the force list. No additional action is required to enable the force for a device.

Add Force List to Existing – will cause lists being loaded to be added to what is already in the list. This is the default mode. Disabling this feature means that

when a list is added, the current list is Unforced and the new list is added to the list. This option state is saved and reloaded.

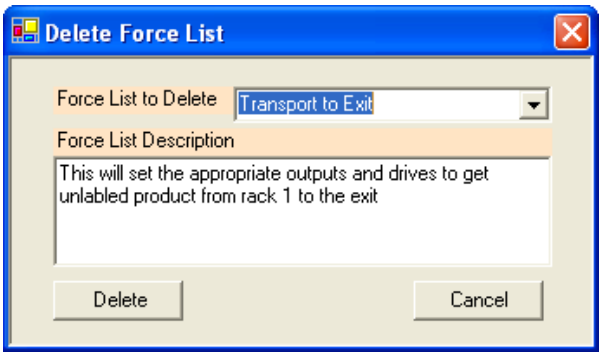
Save Force List – will save the current list of forces as a named list. Selecting this menu item will display a dialog box that allows entry of a name and description for the list. All items currently on the list and the force states will be saved.

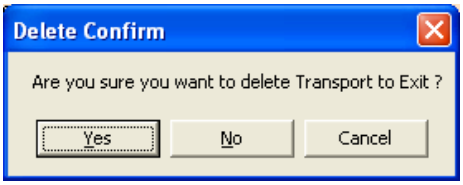
Save Force List as – saves the current list under a new name, but if a list was loaded previously, that name and the description are loaded into the field on the dialog box to simplify entry of the new data.



Save Force List Dialog Box

Delete Force – shows a dialog box with the list of saved force lists in a drop down list. Selecting from this list shows the description and allows the list to be deleted. A confirmation message box is displayed. The cancel button in the dialog box will allow the user to exit without changes.





Delete Force List Dialog Box and Confirmation Dialog

Tool Tips Active – shows the current state of the Tool Tip display feature. Selecting this menu item will toggle the state for all display tabs. This option state is saved and reloaded.

4.4.3 Reporting

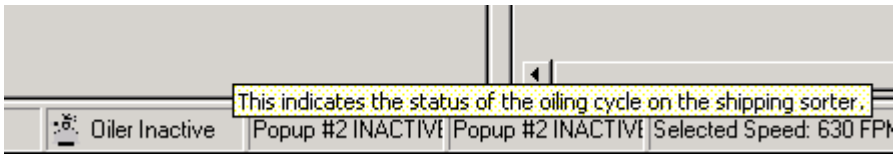
There is no reporting specific to this tab.

4.4.4 Logging and Historical Data Capture

There is no data recording for this display tab.

4.6 Oil Snap-In

The Oiler Snap-In is designed to show the status of the sorter oiler, which can be either on or off. This component appears in the status bar at the bottom of the Command Center or Support Center Windows and includes an icon for ease of viewing. For systems with multiple sorters, there can be multiple Oiler snap-ins visible; one for each physical machine.



Oiler SnapIn

4.6.1 Display Features

Oiler Active – Shown when the Oiler is running. This includes a yellow 'pump' icon and the text 'Oiler Active'.

Oiler Active and Status Unknown Displays

Oiler Inactive – Shown when the Oiler is not running. This is the likely condition. Included in this state are a gray 'pump' icon and the text 'Oiler Inactive'.

Unknown – This rare state is shown when the status of the Oiler cannot be retrieved. It is typically only seen when Command Center or Support Center has just started to come online or when the connection has been lost. The icon displayed in this case is the yellow 'pump' icon, overlaid with a blue question mark. The text 'Oiler Status Unknown' is displayed.

4.6.2 Context Menu

A tool tip is available on this item, simply describing the function of this item, as there is little additional information available. The description reads, "This indicates the status of the oiling cycle on the shipping sorter."

4.6.3 Reporting Functions

There is no reporting specific to the oiler.

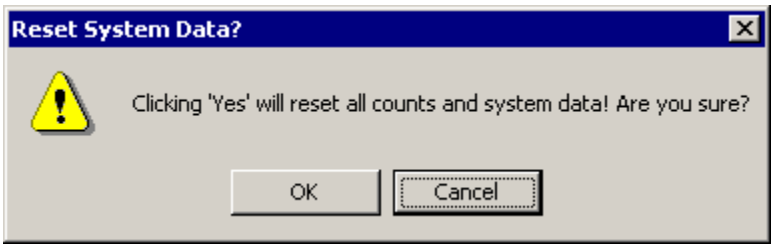
4.6.4 Logging and Historical Data Capture

There is no logging done for this snap-in.

4.7 Reset System Data Snap In

For most systems, the daily count information accumulated by the controller is reset automatically based on some triggering event. The same function can be done using a menu item in the System Menu.

The Reset System Data menu item clears all counts and statistics in the controller. Selecting this menu item displays the following message box requesting confirmation. If **OK** is selected, the counts will be cleared. Selecting **Cancel** exits with no impact on the controller data.



Reset System Data Dialog Box

Note: **This can only be performed by an authorized user and you should be careful to limit who those users are. This will clear all counts in the system and should only be done by someone who is trained and authorized.**

Logging and Data Capture

The Reset System Data event is captured in the event log.

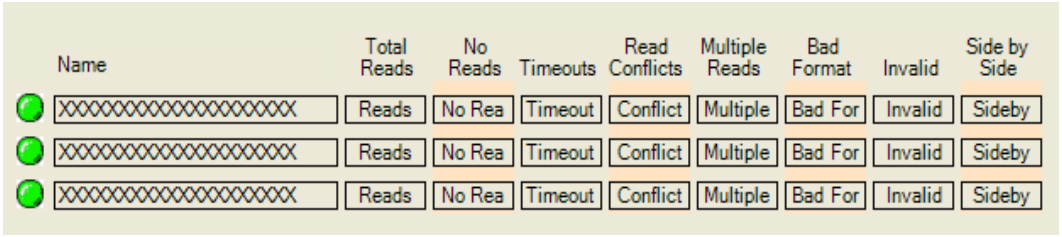
4.8 Scanner Display Tabs

The Scanner Display Tab is designed to display useful information and provide operational control capabilities for the bar code scanner systems in your facility. The panel, available in either Support Center or the InControlware HMI, provides visibility into the performance and current operating status of each scanner included in the system. An authorized user can also change certain operating parameters for a scanner system from this Display Tab.

This Display Tab can appear in any quadrant and can be configured to display any Tab title that you would prefer. This is a configuration option that will be set during installation.

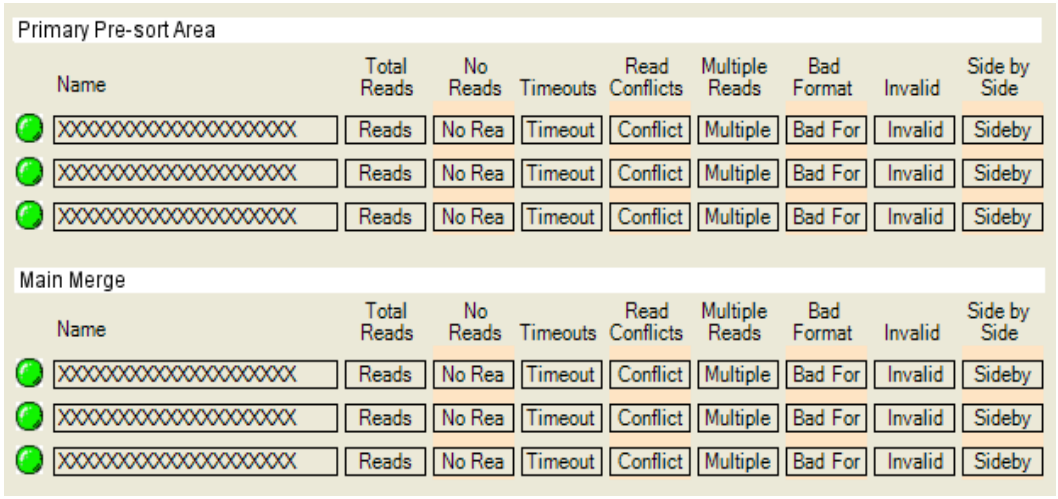
4.8.1 Display Features

The display shows a single line of data for each scanner. The user defined name, the operating status, and current counts are presented for each scanner system. (Scanners with multiple scan heads are only displayed with a single line of information. Data from these scanner systems are sent as a single message.) Count data can be displayed as either counts or as percentages using the right click menu. Moving the mouse pointer over any scanner will show a tool tip display with additional information on that scanner system.



Scanner Display Tab

Scanners can also be grouped. If a group name is assigned to a scanner, then the scanner will be organized by groups for display with a group name title bar ahead of each group of scanners. The order of display is based on the order in the configuration file.

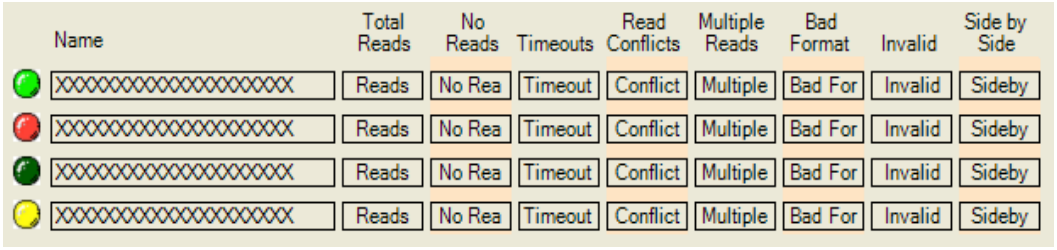


Multiple Scanner Display

4.8.2 bStatus Information

The status indicator indicates whether the scanner is disabled, faulted, or reading within a pre-defined performance range. A dark green indicator means that the scanner is disabled. A red indicator means that the scanner has faulted.

Indications of successful read percentage rate for Good or Marginal are also presented. These ranges are set in the configuration file for the scanner along with the name and other configuration data. The light green status indicates that the scanner is reading in the Good range. A yellow indicator would mean that the scanner is operating at a Marginal rate outside the good range. For instance, if the scanner is configured for 98% or above as Good, a 97% read rate would show as yellow where 98% or above would be light green.



Status Indicators

A Marginal indication can be for a variety of reasons. There may be a hardware problem such a head alignment or dirty optics. This could also be a result of an unusually high number of bad or damaged labels.

4.8.3 Read Counts

The following count information is available for each scanner:

Total Reads - The total number of cartons that have passed the induct eye. This number cannot account for all cartons since under some circumstances multiple cartons may pass through the scan zone side-by-side. Side-by-side cartons will be only increment the count of 1 no matter how many came through together.

No Reads - A count of the "No reads" reported by the scanner. If the bar code cannot be read, the scanner will report a "No Read". Typically the no read is sent from the scanner as a series of questions marks (???). This will occur when a label is damaged, is not printed within tolerance, missing, or not within the view of the scanner.

Timeouts - A count of the number of cartons that could not be associated with a bar code because information arrived too late. The bar code must be received from the scanner system before the carton reaches product eye that is associated with the scanner. On a sorter this product eye is the induct eye, in a merge it is typically the eye at the end of the brake meter belt used to control flow, etc.

Read Conflict - If a scanner system detects and reads multiple bar codes in the scan window (the area where a bar code is read), it will be reported as a read conflict. This will occur if there are two labels on a carton or tote, if there are two of the same type and length bar code in a single label, or if there are two cartons in the window at the same time. Typically the read conflict is reported by the scanner as a series of pound signs (###).

Multiple Reads – These occur when multiple bar code label messages are received for a single carton. This will happen if there are timing problems with the transmit point.

Invalid Message - Means that unexpected type of data was received in the body of the message. These invalid characters mean that the carton data is being rejected. For instance letters or special characters in an all numeric label. This is specific to the label definition for a system.

Bad Format - A count of messages received from the scanner system that were not in the correct format. This will usually mean that a 20 character bar code arrived with only 18 characters or some similar message structure problem. Commonly, data was lost during transmission would account for this and it occurs very rarely.

Side-by-side - A count of side-by-side cartons detected and is only available in systems that include a side-by-side detection system.

4.8.4 Tool Tip Display

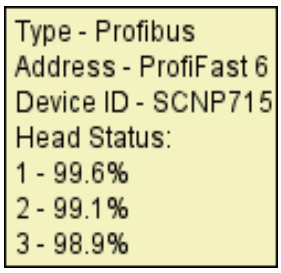
This display provides a quick reference for the scanner when a mouse is positioned over a single scanner for a few seconds. This display will show the following:

Communications - Serial, Ethernet, Profibus

Address - Serial port, Ethernet IP Address, or the Profibus network and node

Device ID - The system assigned device name

Head Status - some systems may be optionally equipped with advanced diagnostics that show the status or current read rate for a single head in a multi-head laser. For these systems, the read rate for the head or its operating state will be shown. Camera based systems or non-omni systems are not equipped with this feature.

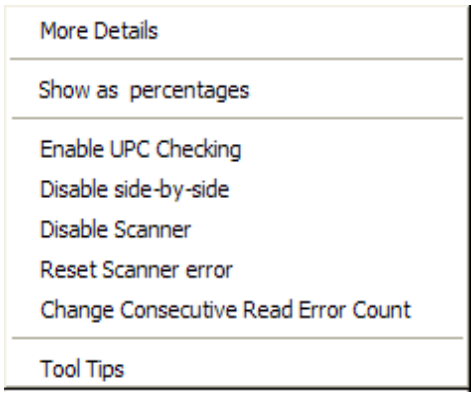


Tool Tip Display

4.8.5 Context Menu

Authorized users can right click on a scanner and get a menu for setting operating parameters and selecting options for the selected scanner. This menu will also allow a user to get more detailed information on the selected scanner, Enable or Disable the scanner, Enable or Disable Side-by-side detection, or set the Consecutive No Read count limit.

More Details will show the More dialog box containing details on the scanner and providing links to the documentation and electrical schematics for this device.



Right-Click Menu

Selecting “Show as percentages” will change the display to show the counts as a percent of total reads rather than as counts. This may be a more useful display for troubleshooting than the raw count value.

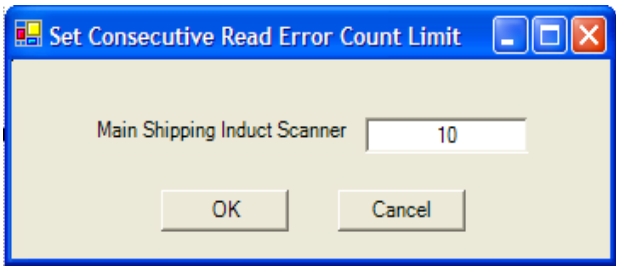
The user can also enable or disable some scanner system options if they are included in the system. These are optional hardware features or special software in the scanner that are not included in most systems.

If side-by-side detection is included, it can be enabled or disabled here. This does not turn the detection system on or off, but this indicates to the controller to ignore side-by-side detection indications from the scanner. When enabled, side-by-side cartons are diverted to the trouble lane or sent to recirculation as configured for the system.

Enabling and disabling UPC checking tells the controller to use or ignore product UPC code data found on the cartons and available in the carton database. If this feature is included, the scanner system will be transmitting UPC or SCC data found on a carton along with the carton label data. This will be matched with UPC or SCC data sent with carton information from the host. Items failing the test, a true mismatch, will be sent to the trouble lane for handling. Cartons that do not have UPC/SCC data are not considered mismatches.

There may be times when you choose to disable a scanner entirely. This can be done by selection the “Disable Scanner” menu item. This will cause the system to ignore data coming from the selected scanner. In cases where the induct system with the scanner is just being used for transportation, such as to move product in off hours or to test a sorter.

You can also adjust the sensitivity of the system to consecutive read errors by a scanner. By default, 10 consecutive no reads will cause the scanner to fault. This will then require the operator to reset the fault using the “Reset scanner error” menu item. You can change this number up or down. Setting the value to 0 is the same as disabling the scanner, setting the value to 65535 or higher is the same as disabling the scanner. All other values will be used as the limit to fault the scanner.



Consecutive Read Error Dialog Box

Selecting this menu item will cause a dialog box to be displayed that will allow entry of a value. Clicking cancel will allow the user to exit without changing the value.

The Tool Tips menu item is global to the system. Selecting this will turn on or off tool tip displays for the entire application.

4.8.6 Reporting Functions

The Scanner Display Tab will also enable a report. This report is selected from the report menu and is only available to authorized users. The report can either be printed or saved in PDF format.

This report will present a summary of the scanner data since the last time the system data was reset. The order of presentation is based on the order in the configuration file. If groups are used, the report will be organized by group and by scanners within the group. The information presented includes all statistics as both counts and percentages.

Scanner statistics can also be included in the Daily Operation Report if this option is selected. The information on the Daily Operation Report is more summarized but is grouped and ordered the same as the full report. Each scanner will only display the Total Read Count and Successful Read Rate.

Scanner statistics can also be output as a CSV format file. This is an option that will add a menu item to the context menu to save the current statistics to a file. The path for this operation can be selected by the user.

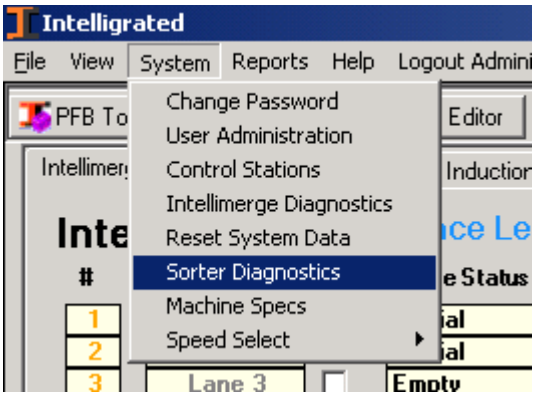
4.8.7 Logging and Historical Data Capture

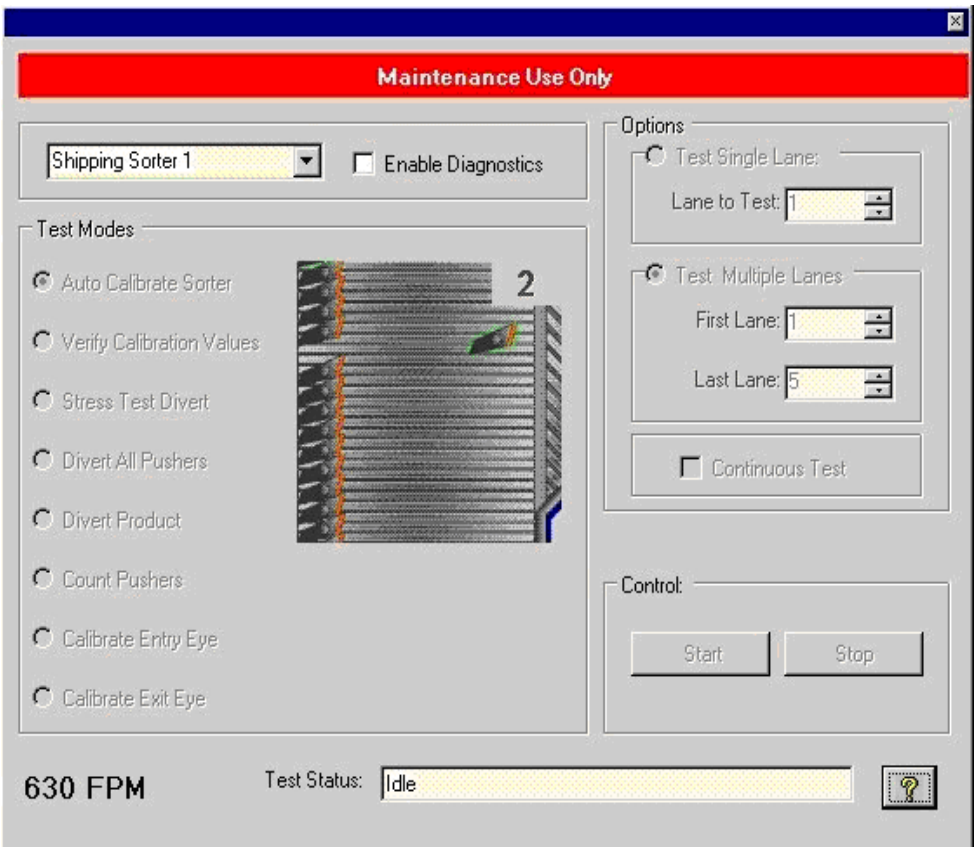
Systems that have been installed with the optional Statistical History System, will also log this information into the History Database. Information is captured every five (5) minutes while the system is operational and presented later using Historical Reporting module. For more information on this product, see Section 99.9.

The system is also optionally equipped with logging capabilities for troubleshooting purposes. These logs, when available, capture each scan with a time stamp and store it in a .CSV format data file. This path is defined in the configuration file during installation.

4.9 Sorter Diagnostics

From the Command Center, the IntelliSort Diagnostics will be located under **System | Sorter Diagnostics**.





Sorter Diagnostics SnapIn

4.9.1 Display Features

Before enabling the sorter diagnostics the sorter should be turned on and running at the reference speed.

When the **Enable Diagnostics** box is checked, the sorter is placed in the diagnostic mode and an alarm will be posted indicating this mode:

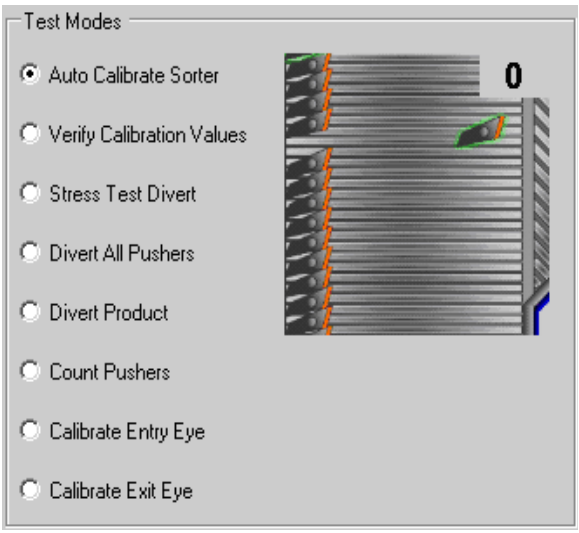
Sorter Diagnostic Mode Alarm Display

While in diagnostics mode, product inducted onto the sorter will not be diverted using the carton's barcode information. All product inducted will be sent to recirc unless one of the diagnostic test modes diverts the carton.

There are several different test modes that can be selected from the Test Modes group (located in the upper-left corner of the IntelliSort Diagnostics snap in. Additionally, a group of Options is included in the upper-right corner. These options are only enabled for certain test modes. The Control group, located directly under the Options group, is used to start and stop the various test modes. The current status of the selected test mode is posted directly under the Control group.

As mentioned above, there are several different test modes that may be selected from the Test Modes group. As different test modes are selected, the picture in the Test Modes group will change to correspond with the selected mode. The test modes are described on the following pages.

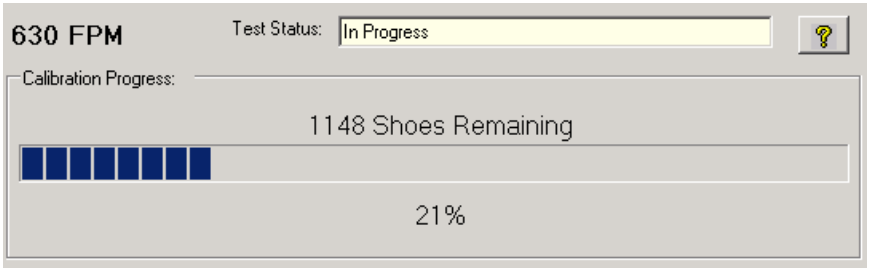
4.9.2 Auto Calibrate Sorter



Auto Calibrate Display

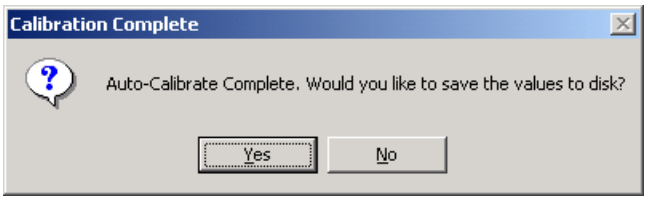
With the sorter running and sorter diagnostics enabled, the sorter may be auto calibrated by completing the following steps.

1. Select **Auto Calibrate Sorter** from the Test Modes group.
2. Press the **Start** button located in the Control Group area of the display. The sorter will then divert a single shoe at the first divert and begin measuring calibration values. The Test Status and Calibration Progress will indicate when the calibration will be complete.



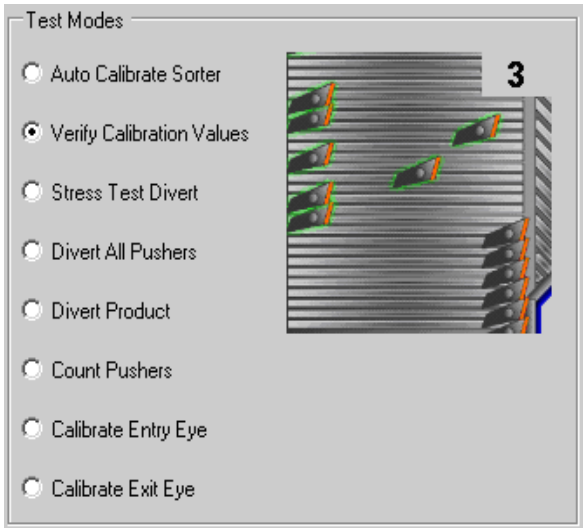
Test Status and Calibration Progress Dialog Box

3. When the calibration is complete, a message box will ask the values should be saved to disk. Selecting Yes will ensure that the most up-to-date values will be reloaded when the controls software is stopped and restarted.



Auto Calibrate Save Values Dialog Box

4.9.3 Verify Calibration Values



Verify Calibration Values Display

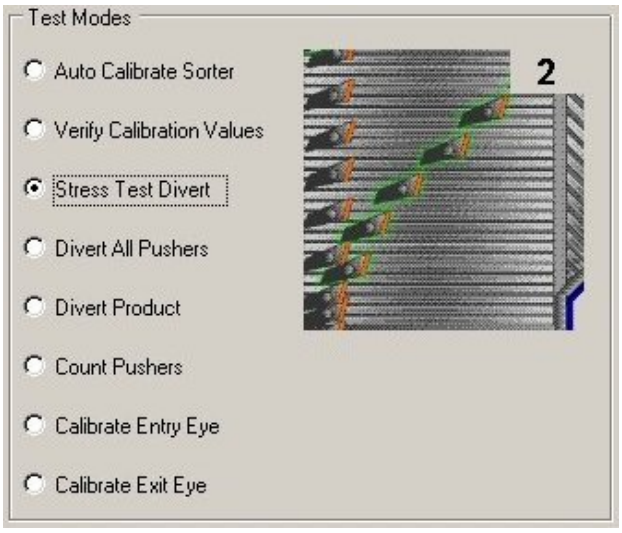
The sorter's calibration values may be verified by the following steps.

1. Select **Verify Calibration Values** from the Test Modes Group.
2. From the Options Group, select **Test Single Lane** and enter the lane number to verify the calibration of a single lane.

Select **Test Multiple Lanes** to verify a range of calibration values. Then, enter the first and last lanes to test.

3. Press the **Start** button located in the Control group. The sorter will then create groups of seven shoes. The 3rd and 5th shoe will then be "picked out" by the each diverter being verified. If the sorter fails to divert the 3rd and 5th shoe of any group of seven, the sorter either needs to be recalibrated or there is a mechanical or electrical problem with the divert in question.

4.9.4 Stress Test Divert



Stress Test Divert Display

Stress test divert option will divert every other shoe to user selected lane. This test should not be conducted over extended periods as the continued action may cause the switch to overheat. Follow these instructions to enable the stress test divert mode.

1. Select Stress Test Divert from the Test Modes Group.

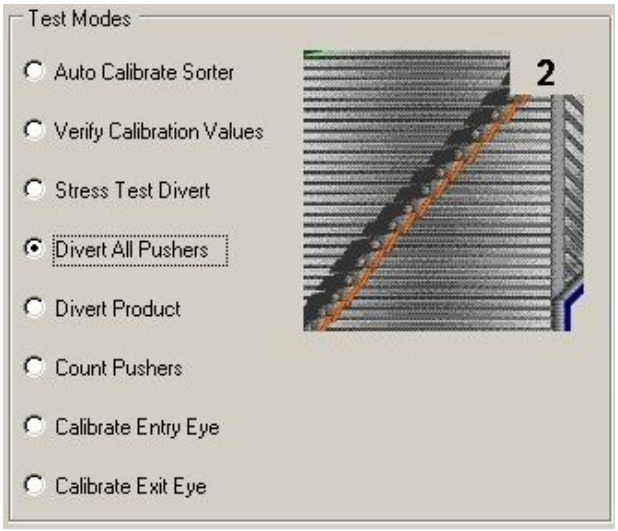
2. From the Options Group, select Test Single Lane and enter the lane number to test. This option does not support multiple lanes.

3. Press the Start button located in the Control Group. The sorter will begin to divert every other shoe at the selected divert.

4. Press the Stop button located in the Control Group to stop the test.

Note: The stress test program has an automatic shutoff to prevent overheating of the switch.

4.9.5 Divert All Pushers



Divert All Pushers Display

Divert all pushers option will force all shoes to user selected lane. The shoes will continue to divert until the operation is cancelled. To enable the Divert All pushers mode:

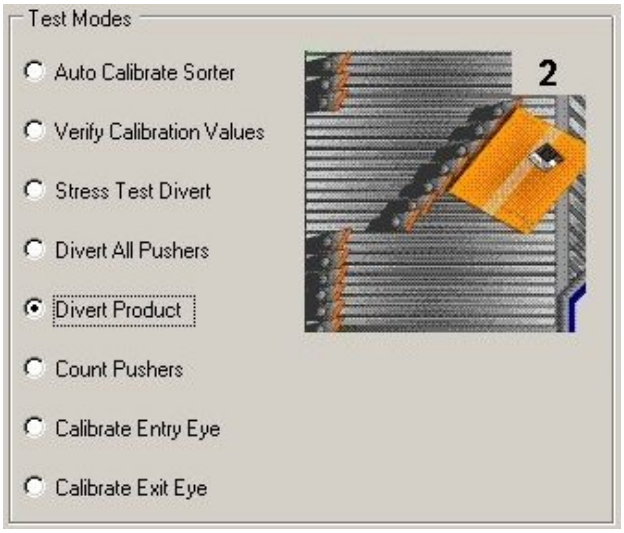
1. Select **Divert All Pushers** from the Test Modes group.

2. From the Options group, select **Test Single Lane** and enter the lane number to test. This operation does not support multiple lanes.

3. Press the Start button located in the Control group. The sorter will then begin to divert all shoes at the selected divert.

4. Press the Stop button located in the Control group to stop the test.

4.9.6 Divert Product



Divert Product Display

The divert product mode allows the user to select lane(s) to divert product down. The box destinations are assigned at the sorter's induct eye based on the selections within the Options group with no regard to barcode information on the cartons. Use the following instructions to enable the divert product mode.

1. Select **Divert Product** from the Test Modes group.

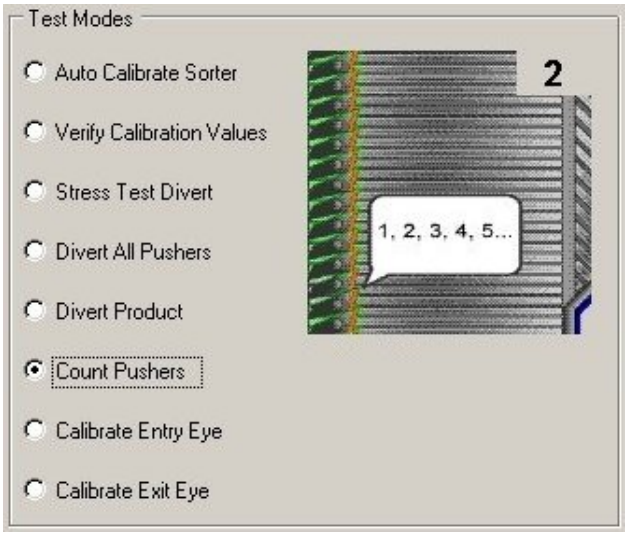
2. From the Options group, select **Test Single Lane** and enter the lane number to test.

   Select **Test Multiple Lanes** to divert product to a range of lanes. Then, enter the first and last lanes to test.

3. Press the Start button located in the Control group. The sorter will then begin to divert product down the selected diverts.

4. Press the Stop button located in the Control group to stop the test.

4.9.7 Count Pushers



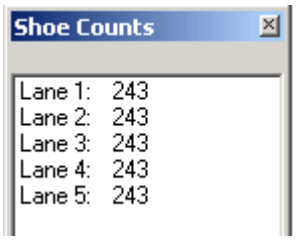
Count Pushers Display

The count pushers mode will count number of shoe pass each divert. To enable the count pushers mode:

1. Select **Count Pushers** from the Test Modes group.

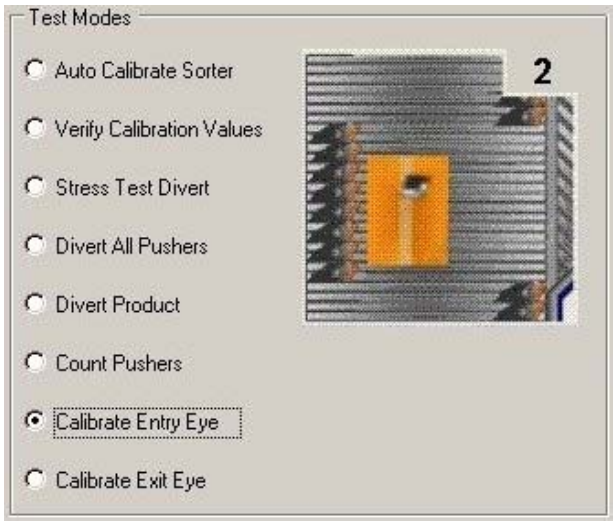
2. Press the **Start** button located in the Control group. The sorter will then begin to count pushers at each divert.

3. Press **Stop** button located in the Control group to stop the test. A window will pop-up displaying the shoe count at each lane. Based on the position of the shoes when the test was started the counts may vary by one or two across the lanes; however, larger variances require corrective action.



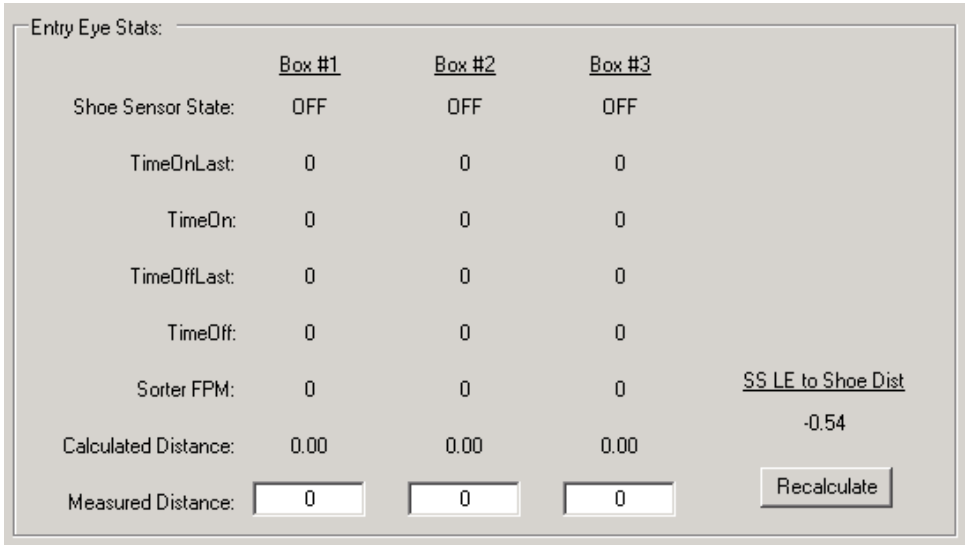
Shoe Counts Display

4.9.8 Calibrate Entry Eye



Calibrate Entry Eye Display

When the calibrate entry eye mode is selected, the Entry Eye Stats group will be displayed at the bottom of the IntelliSort Diagnostics Snap-In.



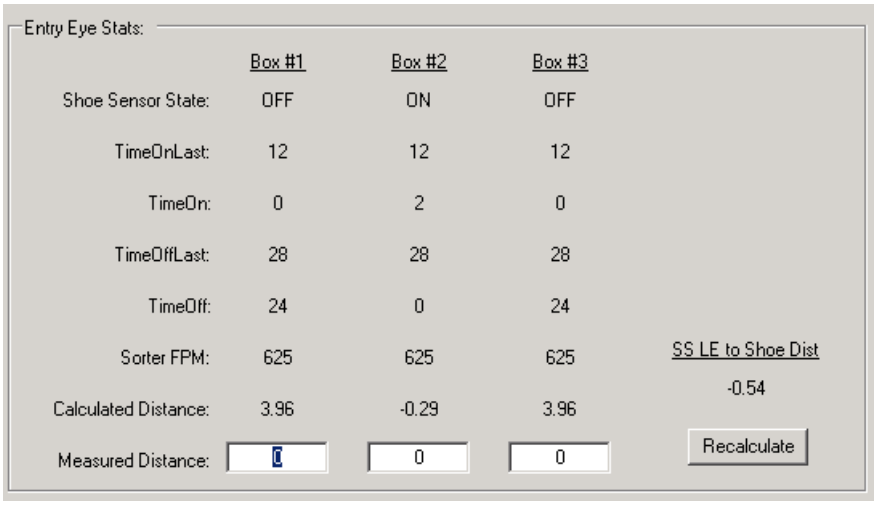
Entry Eye Stats Display

The Entry Eye Stats record and display the status of the shoe sensor at the instant that the test boxes were detected by the Sorter Induct Eye. Based on these statistics and the current calibrated value (SS LE to Shoe Dist), the distance from the front of the box to the front of the leading shoe is calculated and displayed for each box. After initial commissioning of a sorter, this calibration routine should not need to be completed unless the position of the sorter induct eye is changed. To enable and run the calibrate entry eye mode:

1. Select **Calibrate Entry Eye** from the Test Modes group.

2. Press the **Start** button located in the Control group. The sorter will begin diverting all shoes at the first divert.

3. Induct three cartons onto the sorter with sufficient space between the cartons (~48 inches). As the cartons enter the sorter and reach the first divert, the shoes surrounding the boxes will not divert, creating a “window” around the inducted boxes. Once all three boxes have passed the first divert, the sorter will automatically shutdown, and the Entry Eye Stats group will contain the information for the three boxes.

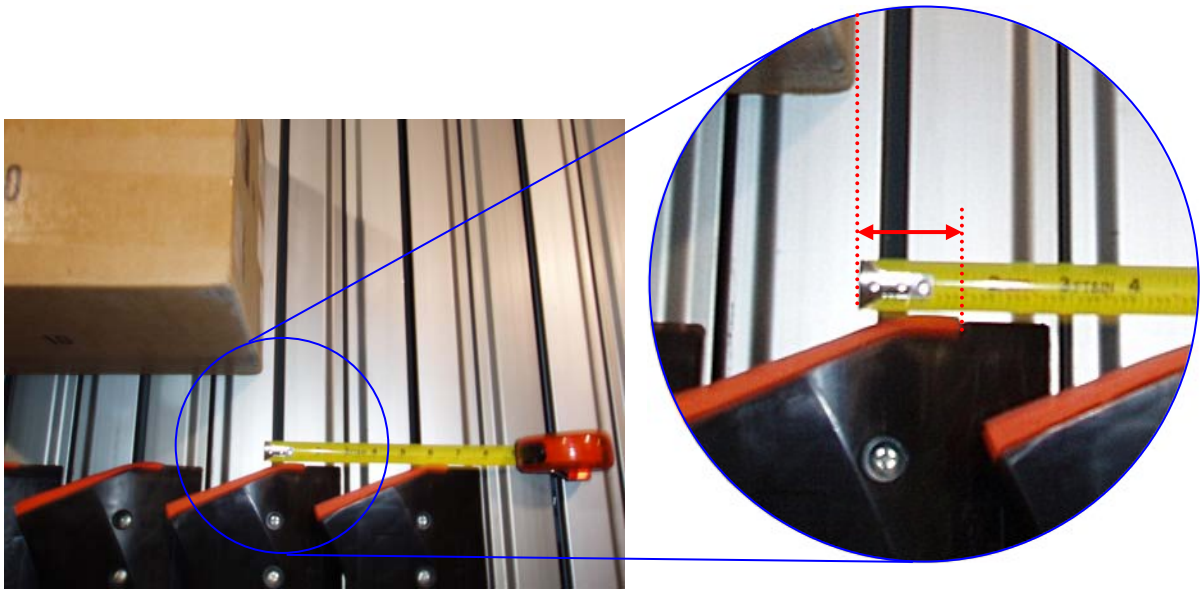


Entry Eye Stats Display

4. After the sorter has stopped, press **Stop** button located in the Control group to stop the test.

5. Note the Calculated Distance for each box. Measure the actual distance as shown below.

Note: The leading shoe is ignored, and the distance is measured to the 2nd shoe.

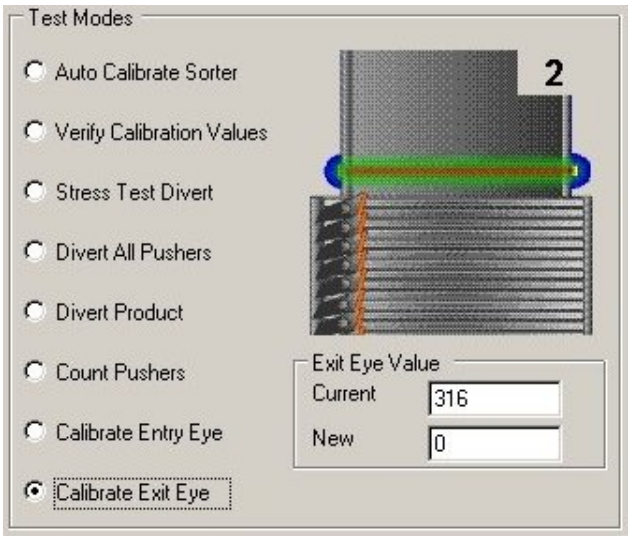


Measuring the Actual Distance

6. If the measured distance is significantly different than the calculated distance (more than 0.5 inch) then enter the measured distances into the textboxes and press the Recalculate button. This will result in a new calibration value (SS LE to Shoe Dist). Repeat the above steps to verify the new calibration value.

Note: Make sure that all three measured values have been entered before recalculating the calibration value. Failure to do so will result in an invalid calibration value.

4.9.9 Calibrate Exit Eye



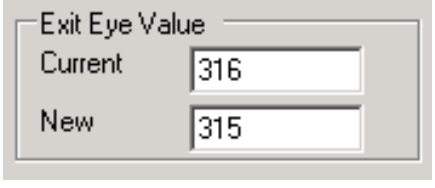
Entry Eye Stats Display

When the calibrate exit eye mode is selected, the Exit Eye Value group will be displayed under the picture in the Test Modes group. After initial commissioning of a sorter, this calibration routine should not need to be completed unless the position of the sorter exit eye is changed. To enable and run the calibrate exit eye mode:

1. Select **Calibrate Exit Eye** from the Test Modes group.

2. Press the **Start** button located in the Control group.

3. Induct a single carton onto the sorter. As the carton exits the sorter the new calibration value will be displayed.

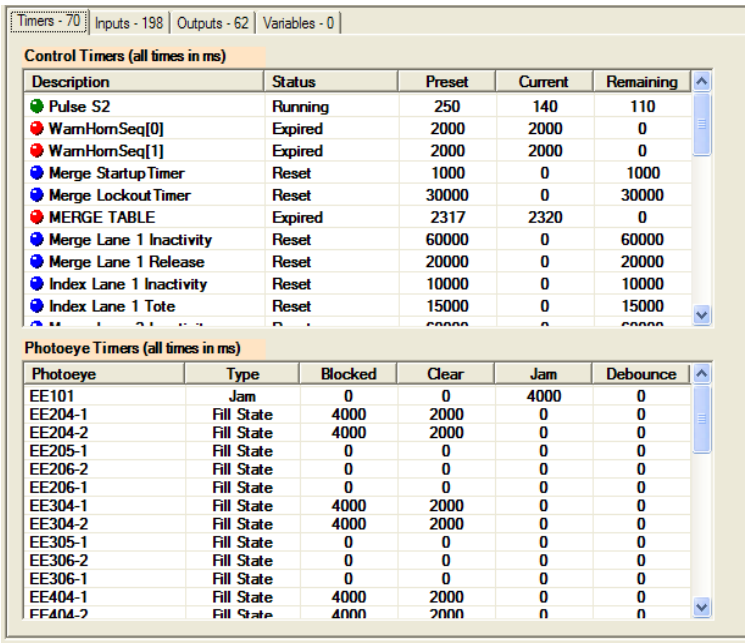


Entry Eye Stats Display

4.10 Timer Display Tab

Control systems use timers extensively. InControlWare systems provide access to these timer values through the Timer tab. Timer values are either related to a Control timer or to a photo eye. Each type of timer has different characteristic that can be managed by an authorized user. Changes made to the time values get saved and are reloaded whenever the Controller is started.

4.10.1 Display Features



Timer Display Tabs

The tab is loaded at start-up and fills two list views. The top list view shows all of the Control (System) timers assigned by the Controller. The lower list view shows all of the Photo eye timers. Control timers are used to time horns, measure activity, etc. These timers have a preset value and expire, turn on, when the preset is reached. Photo eye timers each have four time values. These monitor the blocked, clear, jam, or de-bounce times for an eye. The controller can check any of the timers to determine if the time has elapsed. These lists are dynamic and will grow or shrink if times are added or removed from the system. All times are shown and entered in milliseconds (ms).

The Control Timer list view shows:

Status – Indicates if the timer is running, expired, or reset. Running timer will show the current value in the column labeled “Current” and the time until it expires in the “Remaining” column.

Preset – The time value in milliseconds that needs to elapse before the timer expires.

Current – The current accumulated time for the timer.

Remaining – The time until the timer expires

The Photo Eye Timer list view shows:

Type – This is the type of photo eye timer. Since the photo eye is being used for a specific purpose, its type will show as either a Jam Timer or a Fill State timer.

Blocked – is the time in milliseconds that must elapse before the photo eye is considered blocked.

Clear – This is the time in milliseconds that must elapse before the photo eye is considered clear.

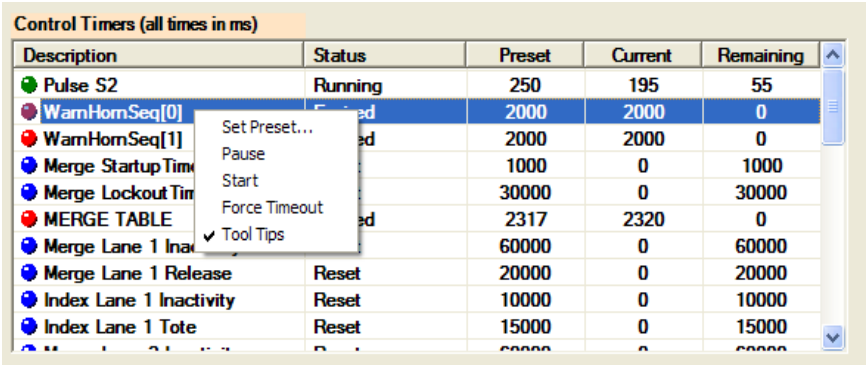
Jam – The time in milliseconds that must elapse before the photo eye is considered Jammed.

De-bounce – The time in milliseconds that the eye must be blocked before the state is recognized.

Clicking on the column heading will sort the list view based on the data in that column. The sort will alternate between ascending and descending sequence each time a column heading is clicked. Columns can be resized by grabbing the divider between the columns in the heading.

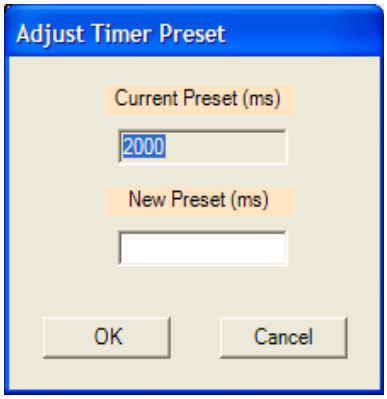
4.10.2 Context Menus

Each timer type has a unique set of actions that can be performed by an authorized user. For the Control Timers, the Preset value can be changed and the timer can be operated (Start, Pause, Force a Timeout). Care should be taken when performing any of these actions. These are provided for use only after proper training has been received and a reasonable understanding of the system operation



Control Timers Right Click Menu (Context Menu)

Selecting the Set Preset menu item will cause a Dialog box to be displayed showing the current value and allowing entry of a new value. After entry of a new value, clicking the OK button will save the value. Selecting Cancel will exit without changing the value. The other menu items are used for test purposes and the action is taken immediately. Pausing a timer will mean that no further time is accumulated. Starting a timer will cause it to run even if the normal enable condition is not present. The Force Timeout menu item will cause the selected timer to expire, triggering any action that would normally be associated with this condition.



Adjust Timer Preset Value

Photo eye timers have their own set of time values that can be adjusted. For photo eye timers, the user can adjust any of the four time values. These times are all shown in milliseconds. Right clicking will present a context menu with four timer value choices. The dialog box that is displayed is the same for all choices except for the title. The current value is shown and entry of a new value is permitted. Pressing the OK button will save the value. Clicking Cancel will close the form without changing the value.

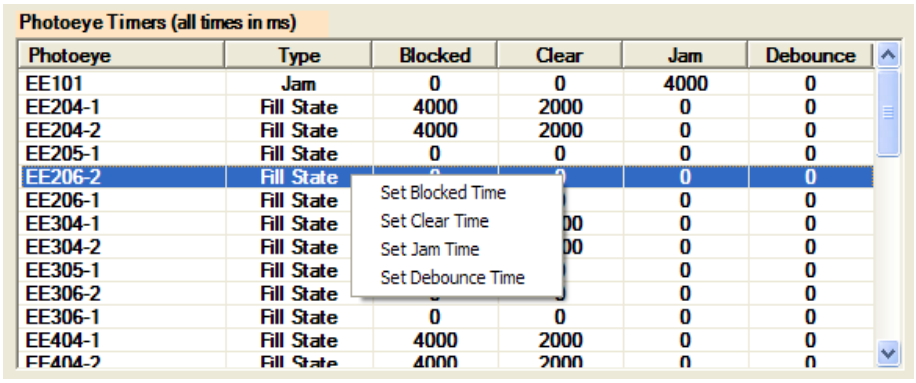
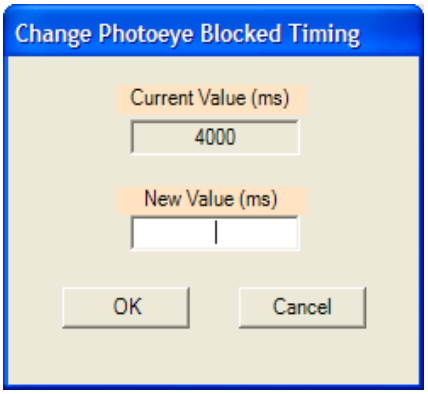


Photo Eye Right Click Menu (Context Menu)

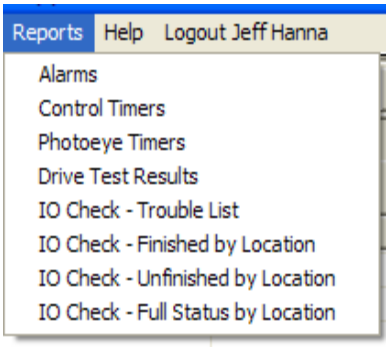


Change Photo Eye Timer Value

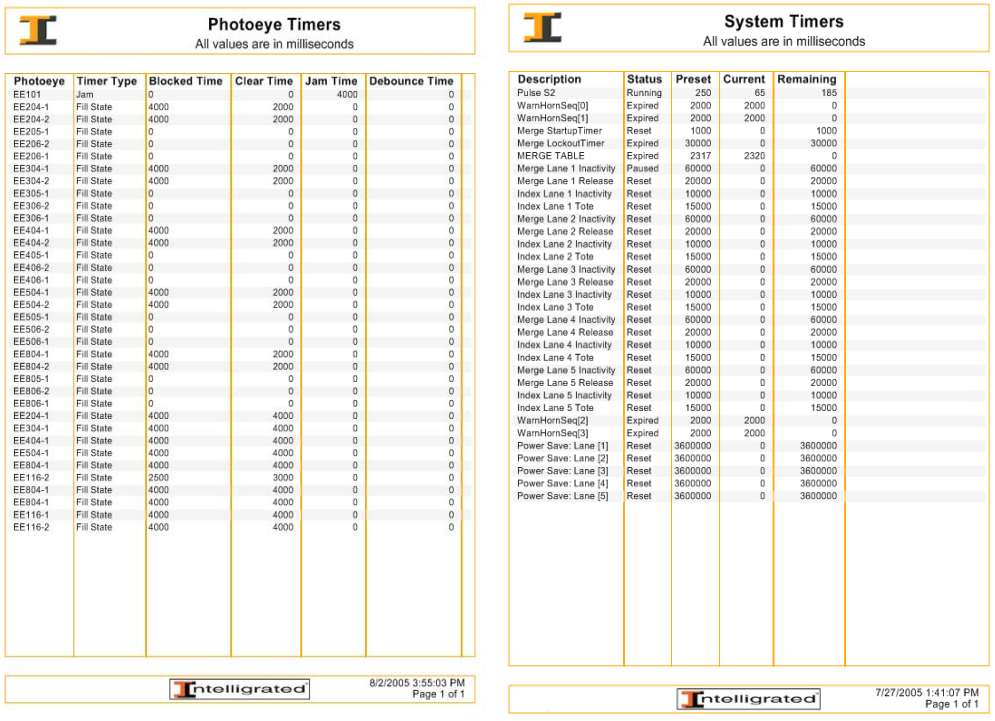
The tab also supports exporting the timer data to a CSV format file. All CSV file exports get stored in the same place on the system. This location is defined in the configuration file and does not get changed. The file contains the same information found in the list views.

4.10.3 Reporting Functions

There are two reports for this tab. The System Timer Report will show all of the preset values for Control Timers. The Photo Eye Timers shows all of the values for each of the Photo Eye timers.



Timer Display Tabs



Photoeye Timers
All values are in milliseconds

Photoeye	Timer Type	Blocked Time	Clear Time	Jam Time	Debounce Time
EE101	Jam	0	0	4000	0
EE204-1	Fill State	4000	2000	0	0
EE204-2	Fill State	4000	2000	0	0
EE205-1	Fill State	0	0	0	0
EE206-2	Fill State	0	0	0	0
EE206-1	Fill State	0	0	0	0
EE304-1	Fill State	4000	2000	0	0
EE304-2	Fill State	4000	2000	0	0
EE305-1	Fill State	0	0	0	0
EE306-2	Fill State	0	0	0	0
EE306-1	Fill State	0	0	0	0
EE404-1	Fill State	4000	2000	0	0
EE404-2	Fill State	4000	2000	0	0
EE405-1	Fill State	0	0	0	0
EE406-2	Fill State	0	0	0	0
EE406-1	Fill State	0	0	0	0
EE504-1	Fill State	4000	2000	0	0
EE504-2	Fill State	4000	2000	0	0
EE505-1	Fill State	0	0	0	0
EE506-2	Fill State	0	0	0	0
EE506-1	Fill State	0	0	0	0
EE804-1	Fill State	4000	2000	0	0
EE804-2	Fill State	4000	2000	0	0
EE805-1	Fill State	0	0	0	0
EE806-2	Fill State	0	0	0	0
EE806-1	Fill State	0	0	0	0
EE204-1	Fill State	4000	4000	0	0
EE304-1	Fill State	4000	4000	0	0
EE404-1	Fill State	4000	4000	0	0
EE504-1	Fill State	4000	4000	0	0
EE804-1	Fill State	4000	4000	0	0
EE116-2	Fill State	2500	3000	0	0
EE804-1	Fill State	4000	4000	0	0
EE804-1	Fill State	4000	4000	0	0
EE116-1	Fill State	4000	4000	0	0
EE116-2	Fill State	4000	4000	0	0

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System Timers
All values are in milliseconds

Description	Status	Preset	Current	Remaining
Pulse S2	Running	250	65	185
WarnHornSeq[0]	Expired	2000	2000	0
WarnHornSeq[1]	Expired	2000	2000	0
Merge StartupTimer	Reset	1000	0	1000
Merge LockoutTimer	Expired	30000	0	30000
MERGE TABLE	Expired	2317	2320	0
Merge Lane 1 Inactivity	Paused	60000	0	60000
Merge Lane 1 Release	Reset	20000	0	20000
Index Lane 1 Inactivity	Reset	10000	0	10000
Index Lane 1 Tote	Reset	15000	0	15000
Merge Lane 2 Inactivity	Reset	60000	0	60000
Merge Lane 2 Release	Reset	20000	0	20000
Index Lane 2 Inactivity	Reset	10000	0	10000
Index Lane 2 Tote	Reset	15000	0	15000
Merge Lane 3 Inactivity	Reset	60000	0	60000
Merge Lane 3 Release	Reset	20000	0	20000
Index Lane 3 Inactivity	Reset	10000	0	10000
Index Lane 3 Tote	Reset	15000	0	15000
Merge Lane 4 Inactivity	Reset	60000	0	60000
Merge Lane 4 Release	Reset	20000	0	20000
Index Lane 4 Inactivity	Reset	10000	0	10000
Index Lane 4 Tote	Reset	15000	0	15000
Merge Lane 5 Inactivity	Reset	60000	0	60000
Merge Lane 5 Release	Reset	20000	0	20000
Index Lane 5 Inactivity	Reset	10000	0	10000
Index Lane 5 Tote	Reset	15000	0	15000
WarnHornSeq[2]	Expired	2000	2000	0
WarnHornSeq[3]	Expired	2000	2000	0
Power Save: Lane [1]	Reset	3600000	0	3600000
Power Save: Lane [2]	Reset	3600000	0	3600000
Power Save: Lane [3]	Reset	3600000	0	3600000
Power Save: Lane [4]	Reset	3600000	0	3600000
Power Save: Lane [5]	Reset	3600000	0	3600000

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Sample Reports

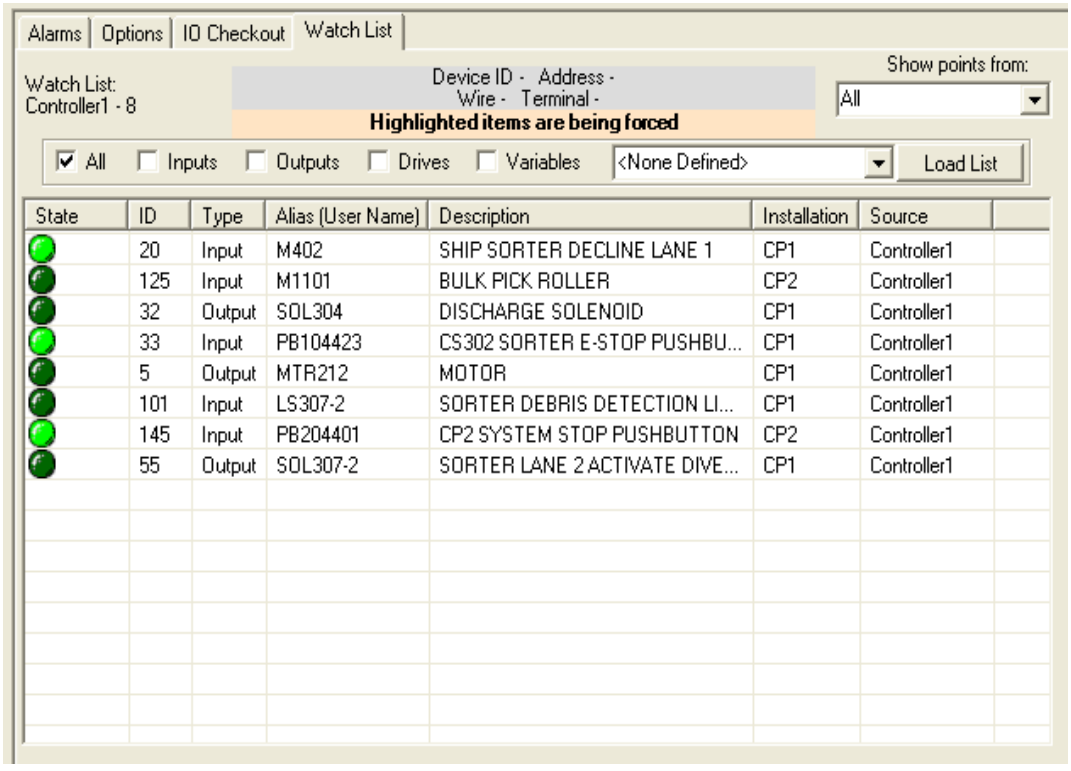
4.10.4 Logging and Historical Data Capture

There is no logging done for this tab.

4.11 Watch List Display Tab

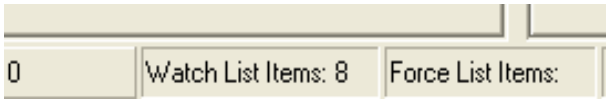
The Watch List Tab that shows a user selected subset of the I/O and drive devices in the system. Unlike the Input, Output, and Drive Tabs that show complete lists of only a single type of device, users can show limited lists of points showing the current operating state. Right clicking any item will display the More Device Detail window. Clicking a column will sort the list. Lists can be saved and loaded. The list can be filtered by Controller and device type.

4.11.1 Display Features



Watch List Display Tabs

The Watch List tab is a powerful tool for monitoring the state of I/O in the system. The list view window shows a list of devices that have been selected and their current state. Items appear on this list using a context menu function on the Input, Output or Drive tabs or by being loaded from a saved Watch list. A count of the number of devices in the Watch list is displayed in the status bar.



Status Bar Display

The columns on the list view contain the following information:

State – Displays the current state for the Watch item. This can be On (displayed with a bright green indicator), Off (displayed with a dark green indicator), Faulted (a red indicator), or Unknown (a blue indicator with a question mark). If the device is a drive, the column will also show the current operating speed.

ID – The controller ID for the device selected. This is reference information.

Type – This displays the type of item being watched. This can be an input, output, drive, or variable.

Alias – The user assigned name for the device. The system assigned value is always retained.

Description – This is a brief description of the I/O device.

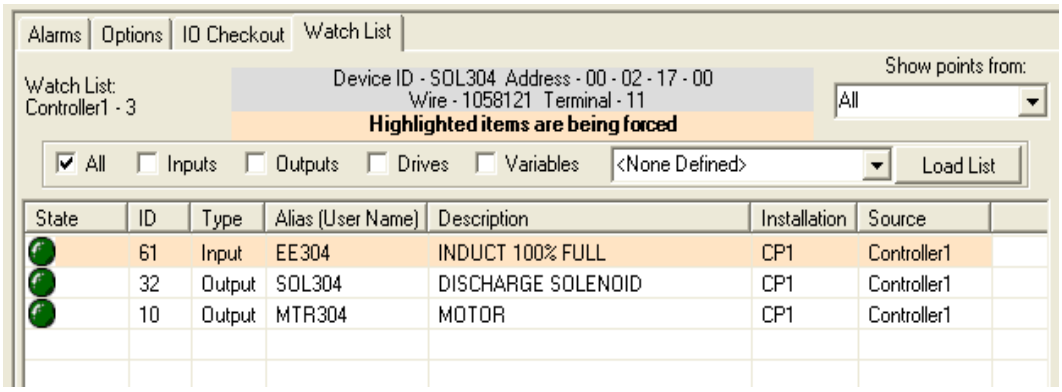
Installation – This is the Control Panel that provides power to the I/O device.

Source – The name of the controller where the I/O device is controlled. This name can be defined uniquely for any project, but is typically “Controller 1”, “Controller 2”, etc.

Clicking on the column heading will sort the list view based on the data in that column. The sort will alternate between ascending and descending sequence each time a column heading is clicked. The ID column will be sorted numerically while all other columns are text sorts. Columns can be resized by grabbing the divider between the columns in the heading.

A gray area in the center shows details for the selected item in the list. This same information is displayed in the tool tip display. This shows the device ID (System assigned not the alias), the network address, a wire number and a terminal identification.

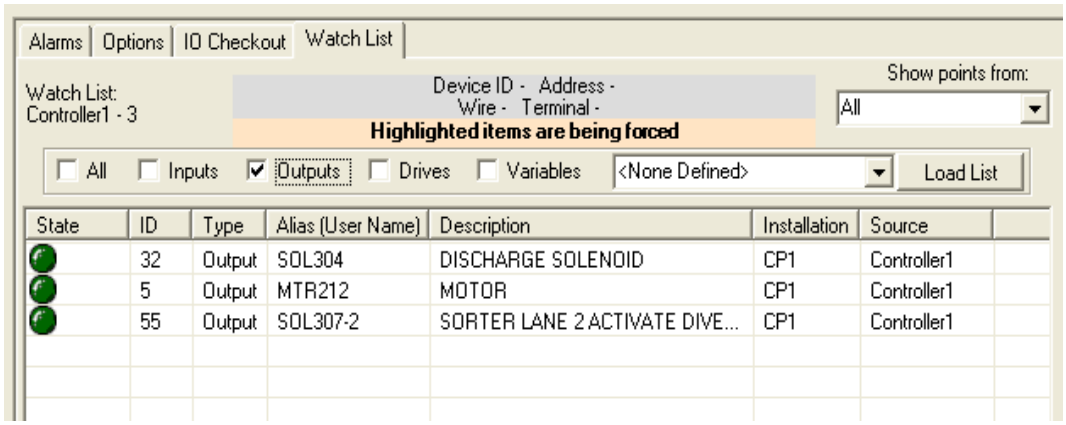
An item that is highlighted in light orange is being forced. The state indicated is the forced state and not the actual state of the device.



Highlighted Forced Item

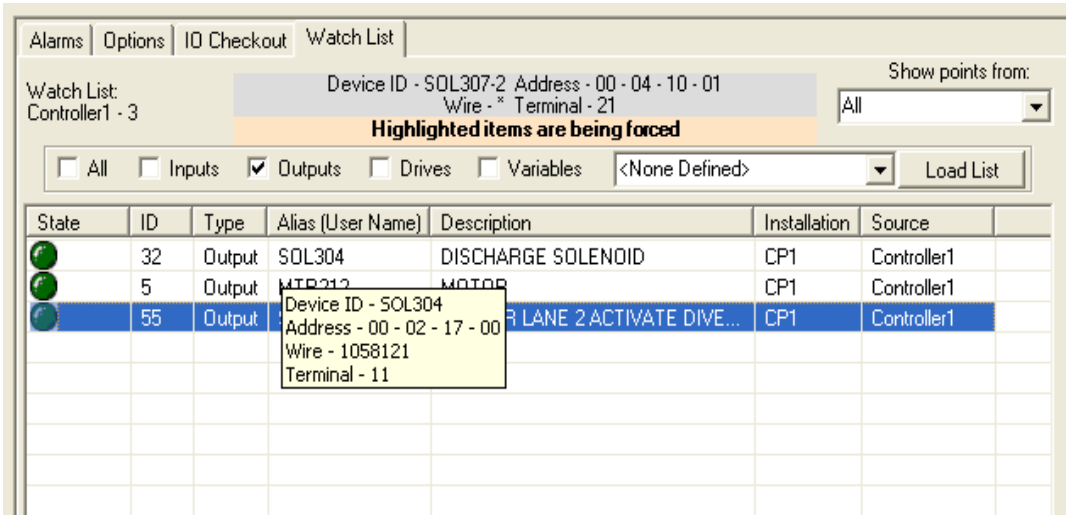
The top of the tab display provides some useful information and tools. The summary area to the right shows a count of the number of items in the current list from each controller (source) in the system. A drop down box on the opposite side lists the controllers in the system. This can be used to filter the list to show only devices from the selected controller.

A series of checkboxes provide another filtering tool. Clicking one or more of the boxes will cause the list to show only those devices matching the selected device type. Any combination of check boxes can be selected. Unchecking all of the boxes displays a blank list.



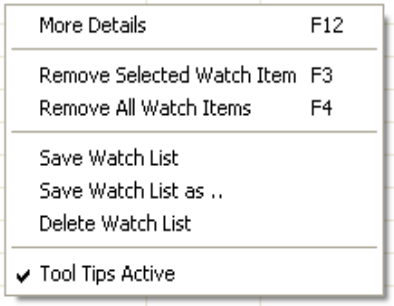
Input and Output Display Tabs

Another drop down list is used to select and load Watch lists. Pausing the mouse over this drop down will display the description that was stored with the Watch list. The names in the drop down are previously stored lists. Using this drop down and the **Load List** button, Watch list items will be loaded to the current list. If this list is all that you want to display, remove any existing watch items using the Remove All context menu and then load the desired list.



Tool Tip Information of Selected Device

4.11.2 Context Menus



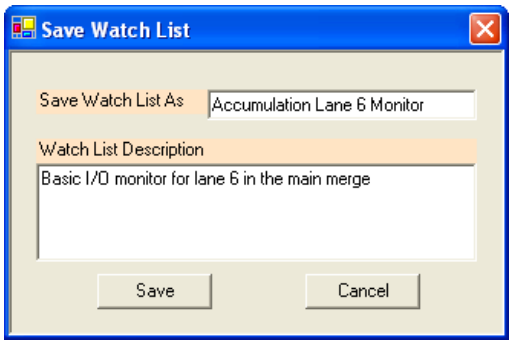
Right clicking in the Watch List tab brings up a context menu.

More Details – brings up the More Device Details Dialog Box.

Removed Selected Watch Items – removed the items from the Watch List that are currently selected.

Remove All Watch Items – removes all items from the Watch List

Save Watch List – will save the current list of Watch item as a named list. Selecting this menu item will display a dialog box that allows entry of a name and description for the list. All items currently on the list will be saved.

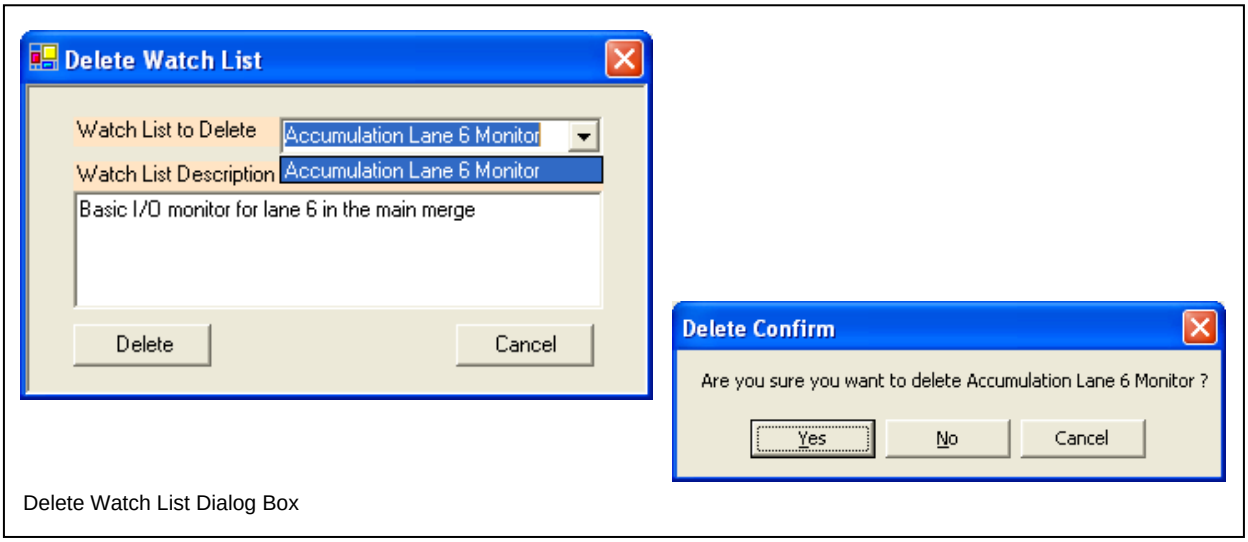


Input and Output Display Tabs

Save Watch List as – saves the current list under a new name, but if a list was loaded previously, that name and the description are loaded into the field on the dialog box to simplify entry of the new data.

Delete Watch List – shows a dialog box with the list of saved Watch lists in a drop down list. Selecting an item from this list shows the description and allows the list to be deleted. A confirmation message box is displayed. The cancel button in the dialog box will allow the user to exit without changes.

Tool Tips Active – shows the current state of the Tool Tip display feature. Selecting this menu item will toggle the state for all display tabs. This option state is saved and reloaded.



Delete Watch List Dialog Box

4.11.3 Reporting

There are no reports for this tab.

4.11.4 Logging and Historical Data Capture

There is no logging done for this tab.