DOCUMENTATION



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Turn Documentation On and Off

Documentation is the text associated with the components and structure of a *Direct*SOFT6 program which is added for greater clarity. It may refer to the elements, wiring, rungs or stages. All documentation options are turned ON by default when the **Options** dialog is first opened.

The Options Dialog

*Direct*SOFT6 allows the programmer to turn ON/OFF the documentation in each available view. A quick way to open the Options dialog is to place the mouse cursor in the displayed view and right click the mouse. A pop-up window will appear with Options as one of the selections. Select Options and the dialog will appear like the one shown below. When the dialog opens, the Ladder tab is in view by default. The other views can be selected by clicking on the tab at the top of the dialog.

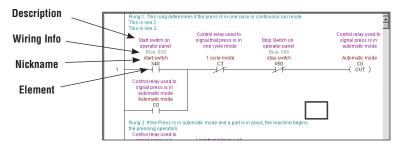
C	ptions		×
	Data View	.	adder Stage 🗗
	Number rungs C by Address G by Rung	Documentation C Elements K Nicknames K Wiring Info Descriptions Comments	Misc. Options
	OK	Cancel	

The Ladder tab is showing all of the documentation types checked. Leaving each selection checked turns ON that documentation type to be shown in the program. Unchecking the documentation type will turn it OFF in the program. Most of the Options dialog features have been discussed in Chapter 4. For turning the documentation ON/OFF, only the Ladder, Stage, XRef and Data View (under Doc tab) options need to be accessed.

Documentation Selections

Most documentation refers to individual elements, therefore, it is specific in nature. Listed below are four types of documentation

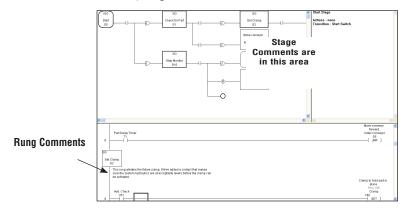
- Elements the references for the individual elements, i.e. X1, Y10, etc.
- **Nicknames** these are alpha-numeric names that are used for the various types of program elements. It is usually easier to remember the name *Start Switch* than it is to remember that X1 is the input for the switch.
- **Descriptions** detailed description of an element. This can also be used to add brief trouble-shooting steps, etc.
- Wiring this can be used to identify panel wiring for the project.



General Documentation

Comments are general descriptions that are best suited for descriptions of a program rung, or a section of the program.

- Rung Comments rung comments are assigned to an individual rung.
- **Stage Comments** if you are using the Stage instructions, you can also add comments that describe the contents of any stage.



Using the Documentation Editor

Nicknames, wiring information and descriptions for program elements are entered using the Documentation Editor. The editor can be accessed using **Tools > Documentation Editor** on the Menu bar, **Ctrl + D** or by pressing the Documentation button on the Tools toolbar.

🗊 Ladder Vie	Tadder View Documentation Editor								
Element	Nickname	Wiring Info	Description						
X40	Start Switch	Blue, 000	Start Switch on operator panel.						
X41	Part Present	Blue, 001	Limit that detects part in fixture						
X42	Clamp Locked	Blue, 002	Confirms that clamp has securely locked the part in place.						
X43	Clamp Unlocked	Blue, 003	Confirms that the clamp is unlocked.						
X44	Lower Limit	Blue, 004	Lower arbor limit. Part has been pressed.						
X45	Upper Limit	Blue, 005	Upper arbor limit.						
	Conveyor Confirm	Blue, 006	Confirms that conveyor actually traveled						
X46			forward.						
X47	One Cycle Switch	Blue, 007	Switch on operator panel selects one-cycle or automatic operation.						

Using the Scroll Buttons

There are scroll command buttons (arrowheads) located at the top of the editor. They are shown (both directions) as \triangleright , $\triangleright \triangleright$, $\triangleright R$, $\triangleright |$, etc. Each button has a unique function:

- ► Moves one element forward.
- ►► Moves one page forward.
- \mathbf{R} Moves to the beginning of the next data type (X, Y, C, etc.)
- ▶ Moves to the last document type.
- Moves one element back.
- Moves one page back.
- $\mathbf{R} \mathbf{\blacktriangleleft}$ Move to the beginning of the previous data type.

Copying Documentation Between Elements

If it becomes necessary to use the Documentation editor, all of the familiar Windows keyboard shortcuts (copy, cut, paste, etc.) can be used within the editor. For example, if there is a lengthy description for a point, and other points are similar, the information can be copied. The following example will demonstrate how this is accomplished.

- 1. Position the cursor in the cell to be copied.
- 2. Double click to highlight the information.
- 3. Press Ctrl + C to copy the information in the cell.
- 4. Move the cursor to the element cell where the information is to be copied to. (Use the **Find** button, **Ctrl** + **F** shortcut or scroll).
- 5. With the cursor in position to paste the information, press Ctrl + V.

🗊 Ladder Vie	Tadder View TDocumentation Editor						
Element	Nickname	Wiring Info	Description				
X40	Start Switch	Blue, 000	Start Switch on operator panel.				
X41	Part Present	Blue, 001	Limit that detects part in fixture				
X42	Clamp Locked	Blue, 002	Confirms that clamp has securely locked the part in place.				
X43	Clamp Unlocked	Blue, 003	Confirms that the clamp is unlocked.				
X44	Lower Limit	Blue, 004	Lower arbor limit. Part has been pressed.				
X45	Upper Limit	Blue, 005	Upper arbor limit.				
X46	Conveyor Confirm	Blue, 006	Confirms that conveyor actually traveled forward				
X40	One Cycle Switch	Blue, 007	Switch on operator panel selects one-cycle or automatic operation.				

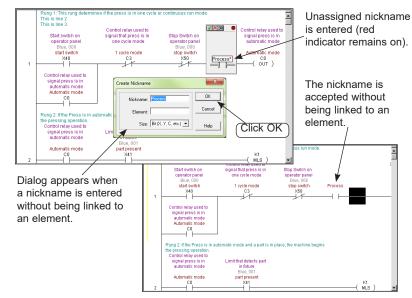


NOTE: When copying a nickname, the new nickname will have a "?" before and after the newly pasted entry. This occurs because each nickname must be unique.

Documenting and Assigning Nicknames

Create an Unassigned Nickname

Element nicknames are used more often than any other type of documentation. As a program is developed using nicknames, element references do not have to be entered when a contact, coil, etc. is entered. Wiring information and descriptions can also be entered without knowing the actual element reference.



Assign the Nickname to an Element



If unassigned nicknames have been created in the program, element references must be assigned before the program can be written to the PLC (the PLC does not recognize nicknames, only element references). The **Assign Nicknames** dialog is used to assign nicknames to element references. A quick way to open the dialog is to either press **F9** (hotkey) or the **Assign Nicknames** button (if the Tools toolbar is displayed). Another way is to use **Tools > Assign Nicknames** from the Menu bar. Also, if the **Element Browser** is open, nickname information can be assigned by clicking on the **Assign Nicknames** button in the Element Browser and the Assign Nicknames dialog will appear as shown on the facing page.



Tip: Nicknames can be compiled and saved to disk; and then assigned later, just before downloading to the PLC.

Element Detail	Valid Ranges		
Element	×0 · 377	GX0 - 3777	Exit
	Y0 · 377	GY0 - 3777	
1	C0 · 777	V0 · 7777	Read Deta
	S0 · 377	V40000 - 40417	
Nickname	T0 · 177	V40500 · 40517	Write Detai
Process	- CT0 - 177	V40600 · 40637	11110 0 010
1.100033	<	Þ	Help
Wiring Info	Nicknames		
	ScanTime	_TermStopMode	
	ScanToggle	UserError	
Description	SyntaxError	Warning	
Description	— SyntaxErrorAddr	WatchdogTimeout	
	SyntaxErrorCode	Process	
	TermRunMode	Start switch	
	4		

Open the Element Browser

Click here to open the Assign Nicknames dialog.

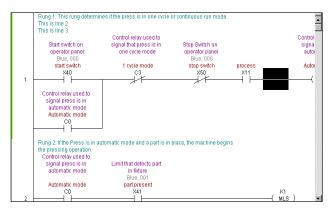
The **Assign Nickname** dialog will appear with the list of unassigned nicknames appearing in the **Source Nickname** column. Select the nickname in the list and enter the element reference for the nickname in the **Source Element** Column.

Assign Nicknames			×
Source Nickname Unassigned Nicknames Process	Source Element Element x11	Result Element X11	Exit Assign
	Nickname	Nickname Process	Delete
Wiring Info	C Wiring Info	Wiring Info	Help
Description	C Description	Description	

The reference will be duplicated in the **Result** column to help avoid accidental entries. Press **Assign** and the following dialog will appear as a confirmation of the element entry.

Attention!	X
Assign Proces	ss to X11?
ОК	Cancel

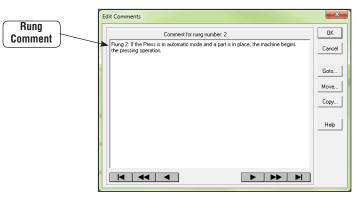
If the reference entered is correct, click **OK**. The Element Browser will be in view again so that wiring information and a description, if any, can be added. Pressing **Exit** will close the browser and the program will have the new element in the program as shown below.



Entering Rung Comments



Each rung in a *Direct*SOFT6 program can have associated comments. Unlike some programming packages from other vendors, the comments are not tied to the outputs. Instead, the comments remain with the rung where the comments are added regardless if other rungs are deleted before a commented rung. To edit a comment, the cursor must be on the rung to where it is to be added. Now, either press the keyboard shortcut **Ctrl + K**, **Tools > Comment Editor** on the Menu bar or press the **Comments** button on the Tools toolbar if it is displayed. The **Edit Comments** dialog, shown below, will appear.



Comments are Free-form

The appropriate comment can be added as necessary. The Ladder view is a full screen editor, therefore, backspacing the entire comment is not necessary to fix a spelling error. Instead, position the cursor over the word to be edited and double-click the left mouse button to highlight the word, then type in the corrected word.

Selecting Rungs for Comments

Once you have edited a rung comment you can use the **Page Up** and the **Page Down** keyboard buttons to scroll to another rung comment to edit. A specific rung can be found by using the **Goto** button on the editor dialog.

Using the Scroll Buttons

There are scroll command button (arrowheads) located at the bottom of the dialog. They are shown for both directions as \triangleright , $\triangleright \triangleright$, \triangleright , |, etc. Each button performs a different function:

- ► Moves to the next rung comment.
- ▶ − Moves ahead five rung comments.
- ▶ Moves to the comment for the last rung.
- Moves to the previous rung comment.
- Moves back five rung comments.
- Moves to the comment for the first rung.

Click on the **OK** button after entering the rung comments.

Use the Editing Keys

The keyboard shortcut keys can be used to copy, cut and paste comments between rungs.

- 1. Position the cursor at the beginning of the text to be copied or cut.
- 2. Press and hold the left mouse button and move the cursor to highlight the text, then release the button. The **Shift + Arrow** keys can also be used to highlight the text.
- 3. Use the **Ctrl + C** keys to copy the text or the **Ctrl + X** keys to cut the text.
- 4. Locate the rung where the information is to be pasted (Use Previous, Next or Goto).
- 5. Position the cursor where the text is to be pasted and click the left mouse button, then press **Ctrl** +**V** to paste the text.
- 6. The **Delete** key can also be used to delete text.

Move Rung Comments

Rung comments can easily be moved from one rung to another with *Direct*SOFT6. This feature is useful after one or more rungs have been inserted by a handheld programmer or by another computer which did not have the documentation files available. The Move comment feature can be used to match the comment(s) with the correct rung(s). Comments can be moved for a single rung or a group of rungs. To move comments, click on the **Move** button on the dialog. The window will appear within the dialog.

E	idit Comments	×
	idit Comments Comment for rung number: 2 Fung 2: If the Press is in automatic mode and a part is in place, the machine begins the pressing operation. Nove Comments Source Number 1 C All (Source-SEnd) Destination Units C Address DK Cancel	OK Cancel Goto Move Copy Help

Fill in the appropriate fields to specify the source and destination for moving a comment.

- **Source** This is the beginning of the group of comments to be moved. Enter the rung number (or address) of the rung with the comments to move.
- **Destination** Enter the rung number (or address) of the rung to move the comments to.
- Number to Move Chose All or enter the number of comments to move from the source to the destination.
- Units Select either Rung Number or Address.

Press OK to complete the move or Cancel to exit without performing the operation.

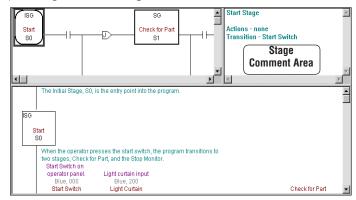


NOTE: You can overwrite existing rung comments with this feature. **Direct**SOFT6 always provides a confirmation prompt before it completes the move. The message reminds you that any overlapping comments will be changed. This message will appear even if there are no overlapping rungs. It is a reminder that existing rungs can be overwritten.

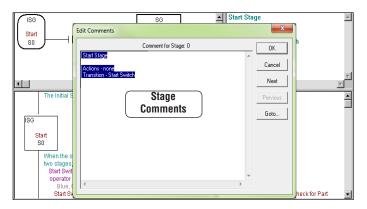
Entering Stage Comments

Use Stage View

If you are using Stage instructions, comments can be entered for each stage. The Stage View must be displayed in order to enter the comments. With a Ladder View open, the Stage View is opened by clicking on **View > Stage View** on the Menu bar.



In order to enter Stage comments, the cursor must be positioned in either of the upper quadrants of the Stage view. To open the comment editor, either click on the keyboard shortcut **Ctrl + K**, **Tools > Comment Editor** on the Menu bar or press the **Comments** button on the Tools toolbar if it is displayed. The Comment editor can also be opened by double-clicking the left mouse button with the cursor positioned in the stage comment area. Note that the comment editor is for Stage comments.



Comments are Free-form

A new comment can be edited immediately. The appropriate comment can be added as necessary.

Selecting Stages to Comment

Once you have edited a rung comment you can use the **Page Up** and the **Page Down** keyboard buttons to scroll through the Stages. A specific Stage can be found by using the **Goto** button on the editor dialog. After the comments have been entered, press the **OK** button to save the comments and close the editor.

Editing the Comments

The keyboard shortcut keys can be used to copy, cut and paste comments between stages.

- 1. Position the cursor at the beginning of the text to be copied or cut.
- 2. Press and hold the left mouse button and move the cursor to highlight the text, then release the button. The **Shift + Arrow** keys can also be used to highlight the text.
- 3. Use the Ctrl + C keys to copy the text or the Ctrl + X keys to cut the text.
- 4. Locate the stage where the information is to be pasted (Use Previous, Next or Goto).
- 5. Position the cursor where the text is to be pasted and click the left mouse button, then press **Ctrl** +**V** to paste the text.
- 6. The **Delete** key can also be used to delete text.



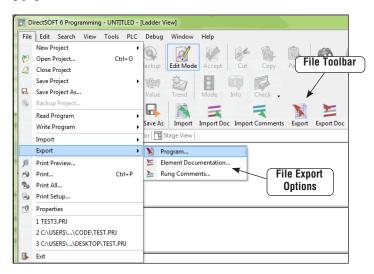
NOTE: All documentation edits are written to the documentation files when they are entered/edited.

Importing and Exporting

DirectSOFT6 can import and export ladder programs, element documentation (nicknames, wiring info and descriptions) and rung comments from a project. The Import/Export data is expected to be in CSV format (comma-separated variables) which is a popular import/export text format for applications like Microsoft Excel and AutoCAD. For example, Microsoft Excel can be used to generate an element documentation file to be imported directly into a **Direct**SOFT6 project. The existing element documentation can be exported to a CSV file that can be used in diagrams in an AutoCAD program.

Exporting Program Documentation

The project must be open in order to export program documentation. Three export options are available to choose from, Program, Element Documentation and Rung Comments. The following steps will show how to export a program. There are two ways to export a program, either select **File > Export > Program** from the Menu bar or select the **Export** button on the File toolbar if it is displayed. Either method used will open the **Export Program** dialog shown on the facing page.



In the Export Program dialog, select where the program is to be exported to, enter the program name and click the **Save** button.

Export Progra	am			×
Save in:	Desktop	•	⇐ 🛍 💣 📰▼	
Recent Places	Libraries System Fol Computer System Folder		re to save the d program.	
Computer Computer Network		Enter the program name		*
	File name: Save as type: Monic (* t	bd)	•	Save Cancel

The following dialog will appear so options can be selected and saved.

Click the **OK** button to save the program to a text file.

	⊂ Address Range ⊂ Rung Range ☞ Entire Program	From: To: 0 5 1 4
I	 ✓ Include Rung Commer ✓ Include Element Docu ✓ Include Stage Comme ✓ Include Rung/Address 	imentation nts
	Append Expand I-Boxes Element/Nicknames © Use Element Name © Use Nicknames	Parameter Delimiters

The text file can be opened with Notepad or equivalent word processor. The Notepad example below shows what can be exported. Note the Rung Comments and the Element Documentation.

🗍 rll text - Notepad	- • ×
File Edit Format View Help	
// Rung 1 // Address 0 #BEGIN COMMENT "rhfs is line 2." "rhfs is line 3." #ENO OR CO ANDN C3 ANDN C3 ANDN X50 OUT C0	∽ un mode."
<pre>// Rung 2 // Address 5 #BEGIN COMMENT "Rung 2: If the Press is in automatic mode and a part is in place, the mac "the pressing operation." STR co AND x41 MLS K1</pre>	hine begins
// Rung 3 // Address 8 #BEGIN COMMENT "Rung 3: controls the fixture clamp that clamps the part in place." #ENO STRN X42 OR Y40 ANDN C2 ANDN C2 OUT Y40	
<pre>#BEGIN FLEMENT_DOC "X11","process";"," "X40","start switch","Blue, 000","start switch on operator panel" "X41","part present","Blue, 001","Limit that detects part in fixture" </pre>	-

Export Element Documentation

Element information can be exported from a project to a .csv file. The following illustrations will show the steps to use to export the documentation. Press the Export Element Documentation button on the File toolbar or select **File > Export > Element Documentation** to export the documentation.

Export Docum	nentation						×
Save in:	E Desktop		-	+ 🗈 💣	•		
Recert Places Desktop Libraries Computer Wetwork	Com Syste	n Folder outer n Folder				· H	Content Format Element, Nichane, Wring Hol, Description (C Encose[1M] Format Tagl News [Indicated Have [Indicated] Value 1 you: Element Standad Format Usage Information
	File name: Save as type:	Comma Delimited (*.csv)		•	. –	Save Cancel	
temp			н	lelp			

There are three different formats to select from to export. Standard, C-more and KEPDirect Server formats. All formats generate a .csv file in spreadsheet form.

This is a standard format showing an Excel spreadsheet with the element reference in column A, the nickname in column B, wiring information in column C and description in column D.

	A1	•	<i>f</i> * X40							
	A	В	С	D	E	F	G	Н		J
1	X40	start switc	Blue, 000	Start swite	h on operat	tor panel				
2	X41	part presei	Blue, 001	Limit that	detects par	t in fixture				
3	X42	part locked	Blue, 002	Confirms t	hat the clar	np is locke	d			
4	X43		Blue, 003	Confirms t	hat the clar	np is unloci	ked			
5	X44	lower limit	Blue, 004	Lower arbo	or limit.					
6	X45	upper limit	Blue, 005	Upper arbo	or limt					
- 7	X46	index conv	Blue, 006	Confirms t	hat the com	veyor actua	illy moved f	orward		
8	X47	one cycle	Blue, 007	Switch on	operator pa	nel selects	one cycle	or automat	ic operation	
9	X50	stop switc	Blue, 008	Stop Swite	ch on opera	tor panel				
10	Y40	clamp	Red, 000	Clamp to h	old part in	place				
11	Y41	arbor dowr	Red, 001	Output for	downard m	ovement of	the arbor			
12	Y42	conveyor	Red, 002	Motor star	ter for conv	eyor motor				
13	CO	Automatic	mode	Control rel	ay used to	signal pres	s is in auto	is in automatic mode		
14	C1	press com	plete	Control rel	ay showing	that the pa	rt has beer	n pressed		
15	C2	release cla	mp	Control relay that controls the releasing of the fixture clamp						
16	C3	1 cycle ma	ode	Control rel	ay used to	signal that	press is in	one cycle r	node	
17	то	Conveyor of	delay	Delay time	r for convey	/or				
18	СТО	Part Count	er	Self resett	ing parts co	unter to co	unt numbe	r of parts m	ade	
19										
20										

The illustration below is the C-more format showing an Excel spreadsheet with the tagname (element) in column C, the data type in column D and element reference (Address) in column G.

B16	A toccolID 100 100 100 100 100 100 100 10	₽ B DeviceName DEV001 DEV001 DEV001 DEV001 DEV001 DEV001 DEV001		DataType Discrete Discrete Discrete Discrete Discrete Discrete Discrete	E DataCount 1 1 1 1 1 1	F Retentive FALSE FALSE FALSE FALSE FALSE	G Address C2 C0 C1 C3 Y10 Y11	
Prot	A toccolID 100 100 100 100 100 100 100 10	₽ B DeviceName DEV001 DEV001 DEV001 DEV001 DEV001 DEV001 DEV001	C TagName PUMP NO. 2 START PB PUMP NO. 1 START PB PUMP NO. 2 STOP PB PUMP NO. 2 STOP PB SOUTH STATION CONTROL CLOSED SOUTH STATION CONTROL CLOSED	DataType Discrete Discrete Discrete Discrete Discrete Discrete	DataCount 1 1 1 1 1 1 1 1	Retentive FALSE FALSE FALSE FALSE FALSE FALSE	Address C2 C0 C1 C3 Y10 Y11	
Prot	A 100 100 100 100 100 100 100 100	B DeviceName DEV001 DEV001 DEV001 DEV001 DEV001 DEV001 DEV001	TegName PUMP NO. 2 START PB PUMP NO. 1 START PB PUMP NO. 1 STOP PB PUMP NO. 2 STOP PB PUMP NO. 2 STOP PB SOUTH STATION CONTROL OPENED SOUTH STATION CONTROL CLODSED	DataType Discrete Discrete Discrete Discrete Discrete Discrete	DataCount 1 1 1 1 1 1 1 1	Retentive FALSE FALSE FALSE FALSE FALSE FALSE	Address C2 C0 C1 C3 Y10 Y11	
Prot	A 100 100 100 100 100 100 100 100	B DeviceName DEV001 DEV001 DEV001 DEV001 DEV001 DEV001 DEV001	TegName PUMP NO. 2 START PB PUMP NO. 1 START PB PUMP NO. 1 STOP PB PUMP NO. 2 STOP PB PUMP NO. 2 STOP PB SOUTH STATION CONTROL OPENED SOUTH STATION CONTROL CLODSED	DataType Discrete Discrete Discrete Discrete Discrete Discrete	DataCount 1 1 1 1 1 1 1 1	Retentive FALSE FALSE FALSE FALSE FALSE FALSE	Address C2 C0 C1 C3 Y10 Y11	A
Prot	A 100 100 100 100 100 100 100 100	B DeviceName DEV001 DEV001 DEV001 DEV001 DEV001 DEV001 DEV001	TegName PUMP NO. 2 START PB PUMP NO. 1 START PB PUMP NO. 1 STOP PB PUMP NO. 2 STOP PB PUMP NO. 2 STOP PB SOUTH STATION CONTROL OPENED SOUTH STATION CONTROL CLODSED	DataType Discrete Discrete Discrete Discrete Discrete Discrete	DataCount 1 1 1 1 1 1 1 1	Retentive FALSE FALSE FALSE FALSE FALSE FALSE	Address C2 C0 C1 C3 Y10 Y11	A
Prot	tocolID 100 100 100 100 100 100 100	DeviceName DEV001 DEV001 DEV001 DEV001 DEV001 DEV001 DEV001	PUMP NO. 2 START PB PUMP NO. 1 START PB PUMP NO. 1 STOP PB PUMP NO. 2 STOP PB SOUTH STATION CONTROL OPENED SOUTH STATION CONTROL CLODSED	DataType Discrete Discrete Discrete Discrete Discrete Discrete	DataCount 1 1 1 1 1 1 1 1	Retentive FALSE FALSE FALSE FALSE FALSE FALSE	Address C2 C0 C1 C3 Y10 Y11	A-
	100 100 100 100 100 100 100	DEV001 DEV001 DEV001 DEV001 DEV001 DEV001 DEV001	PUMP NO. 2 START PB PUMP NO. 1 START PB PUMP NO. 1 STOP PB PUMP NO. 2 STOP PB SOUTH STATION CONTROL OPENED SOUTH STATION CONTROL CLODSED	Discrete Discrete Discrete Discrete Discrete Discrete	1 1 1 1 1 1	FALSE FALSE FALSE FALSE FALSE	C0 C1 C3 Y10 Y11	
	100 100 100 100 100	DEV001 DEV001 DEV001 DEV001 DEV001	PUMP NO. 1 STOP PB PUMP NO. 2 STOP PB SOUTH STATION CONTROL OPENED SOUTH STATION CONTROL CLODSED	Discrete Discrete Discrete Discrete	1 1 1 1	FALSE FALSE FALSE FALSE	C0 C1 C3 Y10 Y11	
	100 100 100 100 100	DEV001 DEV001 DEV001 DEV001 DEV001	PUMP NO. 1 STOP PB PUMP NO. 2 STOP PB SOUTH STATION CONTROL OPENED SOUTH STATION CONTROL CLODSED	Discrete Discrete Discrete Discrete	1	FALSE FALSE FALSE FALSE	C1 C3 Y10 Y11	
	100 100 100	DEV001 DEV001 DEV001	SOUTH STATION CONTROL OPENED SOUTH STATION CONTROL CLODSED	Discrete Discrete		FALSE FALSE	Y10 Y11	Ξ
	100 100	DEV001 DEV001	SOUTH STATION CONTROL CLODSED	Discrete		FALSE	Y11	
	100	DEV001						
			NORTH STATION CONTROL OPENED	Diserete				
	100				1	FALSE	Y12	
		DEV001	NORTH STATION CONTROL CLODSED	Discrete	1	FALSE	Y13	
	100	DEV001	PUMP NO. 1 AUTO	Discrete	1	FALSE	C10	
		DEV001	PUMP NO. 2 AUTO	Discrete	1	FALSE	C11	
	100	DEV001	PUMP NO. 1 SPEED - RPM	Signed_int_16	1	FALSE	V2000	
1		DEV001	PUMP NO. 2 SPEED - RPM	Signed_int_16	1		V2001	
1	100	DEV001	FLOW RATE - GPM	BCD_int_16	1	FALSE	V2010	
i								
·			T					-
1								
								1.
- - н	TAG	/				' I]	١ſ
dv						NUM		

NOTE: If unassigned nicknames are exported, they will appear in the resultant text as the following types: UB - unassigned bit

UBY - unassigned byte (useful only for R memory in the DL305)

UW - unassigned word

UDW - unassigned double-word

UU - unassigned unknown (used for uninitialized types, should never be used)

Export Rung Comments

The program rung comments can be exported from a project to a text file and a printout can be obtained using Microsoft Notepad or equivalent word processor. The following dialog will appear when either pressing the **Export Comments** button on the File toolbar if it is displayed or by pressing **File > Export > Rung Comments**. Select where the file is to be saved, then name the text file and press the **Save** button.

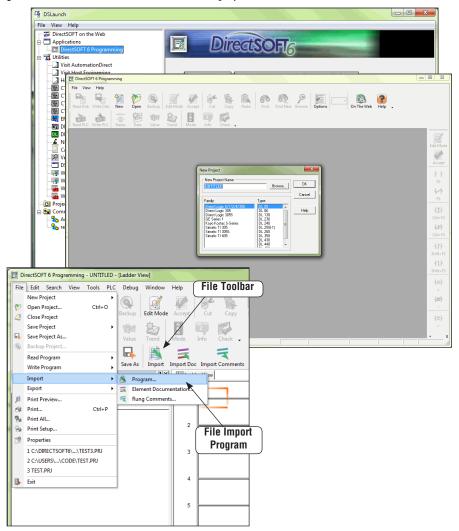
The illustration below is an example of an exported comment text file shown with Microsoft Notepad.

	The Connect Community	the second s				x
	Export Comments		And and a second second			_
	Comp	uter Local Disk (C:) DirectSOI	FT6 → Projects →	♦ Search Projects		م
	Organize 🔻 New fo	lder				0
	☆ Favorites	Name	Date modified	Туре	Size	
		3 Backup	4/3/2014 10:56 AM	File folder		
	Secent Places	Examples	4/3/2014 11:21 AM	File folder		
	Desktop					
	Creative Cloud Fi					
	📜 Libraries					
	Documents	-				
	Music					
	Pictures					
	Videos					
Rung comments - Notepad		76				
File Edit Format View Help						
#BEGIN COMMENT 1						
"Rung 1: This rung deter "This is line 2"	mines if the press	is in one cycle or con	tinuous run mode."			
"This is line 3."						
#END						•
#BEGIN COMMENT 2 "Rung 2: If the Press is	in automatic mode	and a part is in place	the machine begins"			•
"the pressing operation. #END			,			
				Save	Cancel	1
#BEGIN COMMENT 3 "Rung 3: controls the fi	xture clamp that cl	amps the part in place				
#END						
#BEGIN COMMENT 4 "Rung 4: When the lower	14-4	the second and the	simple shee she pass			
"has been pressed."	rimit has been read	ined, the control relay	signais unau une paru			
#END						
#BEGIN COMMENT 5 "Rung 5: If the part is	locked in place th	o proce arbor is activ	at od"			
#END	nockeu in place, ci	ie press arbor is acciv	aceu			
#BEGIN COMMENT 6						
"when the part has been "is released."	pressed and the arb	oor is at the upper lim	it, the fixture clamp '			
#END						
#BEGIN COMMENT 9						
"Rung 8: If the part has "unlocked, the conveyor	been pressed and t motor starter is ac	the limit confirms that tivated and the convey	or moves forward."			
#END						
#BEGIN COMMENT 10	n audzah da an and	when conversion has been	Indexed the one "			
"Rung 9: If the one cycl "cycle relay is activate	d" and	the conveyor has been	muexeu, une one			
#END						
				-		
1			۴.,	1		

Importing a Program

There may be a time when it is necessary to import a *Direct*SOFT6 program which has been previously edited and exported as a text file. This could be an entire program or just a few rungs with element nicknames and comments. Use the following illustrated steps to guide you through the import procedure.

Begin by opening the New Project dialog from the *Direct*SOFT6 Launch window (page 3-4). Cancel the New Project dialog, then either select **File > Import > Program** or press the **Import** button on the File toolbar if it is displayed.



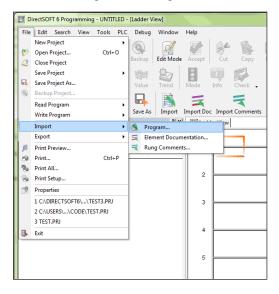
The **Import Program** dialog will appear so the program text to be imported can be selected. Select a previously exported *Direct*SOFT6 program to import. Choose the program text file and click **Open**.

	n: Desktop	▼ ← 前 前 →		
Recent Places	Libraries System Folder	Network System Folder		
Desktop	Computer System Folder	rll Text Document 40 bytes		
Libraries	Text Document 40 bytes			
Computer				
Network				
	File name: rll		-	Open
				Cancel
	Files of type: Monic (".txt)		•	

The complete imported program will appear as shown below. In this example, all elements, element descriptions, nicknames and rung comments appear in the program along with the cross reference.

DirectSOFT 6 Program	nming - UN	ITITLED -	[Ladder \	View]						• X
File Edit Search V	fiew Tool	ls PLC	Debug	Window	Help					
Read Disk Write Disk	1 New	Open 0	Backup	Edit Mode	Accept	Cut Copy	Paste	Find Find Next Brow	se Opt	ions
Read PLC Write PLC	—ii— —ii— Status	Data	V⊉5? Value	Trend	E Mode	Info Check -				
New Online Close	Save S	Save PLC	Save As			Import Comments) Export	Export Doc Export Comm	ents Pr	D eview
XRef View				# ×	E Ladd	er View			$\triangleleft \triangleright \times$	
Element		ing Ac	Idress	Instruction		Rung 1: This rung This is line 2 This is line 3.	determin	es if the press is in one cyc	e 🔺	Edit Mode
X40 start switch Blue, 000		1	0 (HE STR		Start switch on o panel		Control relay used to signal that press is i one cycle mode		Accept
Start switch on opera	ator					Blue, 000 start swite		1 cycle mode		4.6
X41 part present		2	6 [HE AND	1	×40		C3	-	F2
Blue, 001 Limit that detects pa in fixture	art					Control relay us signal press	is in			
III IIATOTE		9	36 1	IE AND		automatic m Automatic m				1.21
X42 part locked		3	8 [HE STRI		°		_		- I - Ctrl+F2
Blue, 002 Confirms that the cla is locked	mp					the pressing operation	ation.	tomatic mode and a part is	in	- ∤≵ -
		5		HE STR		Control relay use signal press is		Limit that detects part		
X44		9				automatic mo	de	in foture Blue, 001		-11-
lower limit		"	14	ae ANU		Automatic mo	de	part present		Shift+F2
Blue, 004 Lower arbor limit.					2			X41		-11-
•				+]	1			•	4 3
For Help, press F1						Offline		00000/02048 05		

Exported programs, element documentation and rung comments can be imported using the *Direct*SOFT6 programming window if it has been opened to edit another program. This is done by first saving and closing the current program. Next, either select **File > Import** > **Program** or press the **Import** button on the File toolbar. The program to be imported is selected and opened as shown in the previous example.



Importing Element Documentation

To import program documentation, a project must be open. This project can be the one currently open. The typical method for importing element documentation is to import a .csv file which has been previously exported. It is possible to generate element documentation using a spreadsheet such as Microsoft Excel, but it is important to follow the correct import format. The standard format is in spreadsheet form which should be setup in columns similar to the example below: element reference in column A, the nickname in column B, wiring information in column C and element descriptions in column D.

	<u>File E</u> dit	⊻iew Ins	ert F <u>o</u> rmal	Tools	<u>D</u> ata	<u>W</u> indov	v <u>H</u> elp	Adobe PDF		Type a c	juestion for he	elp 🔹	- 8
2		2 Arial		- 10	- 1	BI	υ 🔳		\$ %,	*.0 .00		- 👌 -	Α.
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			001		194		n <u>C</u> hanges.	End Review	··· 두				
12	12 🖏 🖕												
	A1		<i>f</i> ∗ X40										
	A	B	C	D		F	F	G	Н		J	K	
1	X40	start swite	Blue, 000	Start swi	tch a	n operat	or panel	-					
	X41		Blue, 001	Limit that				9					-
3	X42		Blue, 002										-
4	X43	part unloc	Blue, 003	Confirms	that	the clan	no is unlo	ocked					-
5	X44	lower limit	Blue, 004	Lower ar	oor li	mit.							
6	X45	upper limit	Blue, 005	Upper ar	oor li	mt							
7	X46	index com	Blue, 006	Confirms	that	the com	veyor act	ually moved	forward				
8	X47	one cycle	Blue, 007	Switch o	n ope	erator pa	nel selec	ts one cycle	or automat	ic operatior	1		
9	X50	stop switc	(Blue, 008	Stop Swi	tch c	in operat	tor panel						Т
10	Y40	clamp	Red, 000	Clamp to	hold	part in	place						
11	Y41	arbor dow	r Red, 001	Output fo	ir dov	vnard m	overnent	of the arbor					
12	Y42	conveyor	Red, 002	Motor sta	arter	for conve	eyor moto	or					
	CO	Automatic	mode					ess is in auto		9			
	C1	press com	nplete					part has bee					
	C2	release cl						releasing of t					
	C3	1 cycle m						at press is in	one cycle i	mode			
	то	Conveyor		Delay tin									
	CTD	Part Coun	ter	Self rese	tting	parts co	unter to	count numbe	r of parts m	ade			
19													
11	N N M	example /	1		_	_		1					

To import element documentation, select **File > Import > Element Documentation** or press the **Import Doc** button on the File toolbar. The window shown here will appear. Select the folder and the .csv file to be imported. Notice the **Import Method** box located on the right side of the window.



There are three import methods to select: **Merge (.PRJ priority)**, **Merge (.CSV priority)** and **Delete existing**. Selecting one of the three methods will determine the course of action which will be taken if the currently open project and the imported file have duplicate nicknames.

- If **.PRJ priority** is selected, the nicknames in the imported file will be added to the project file. If there are duplicates, the nickname in the project file will be kept.
- If **.CSV priority** is selected, the nicknames will be added to the project file. If there are duplicate nicknames, the import file will overwrite the ones in the project file.
- If **Delete existing** is selected, all of the element documentation of the open project will be deleted, then it will be rebuilt with the contents of the .csv file.
- Press the **Open** button to execute the import.

NOTE: If the following element types are imported, they will appear in the **Direct**SOFT6 documentation editor with "_____" under the element type column: UB - unassigned bit UBY - unassigned byte (useful only for R memory in the DL305) UW - unassigned word UDW - unassigned double-word UU - unassigned unknown (used for uninitialized types, should never be used)

Once the element documentation is imported, the Documentation editor will be updated with the imported information. This can be verified by opening the Documentation editor from Tools on the Menu bar, the Documentation Editor button on the Tools toolbar if it is displayed or use Ctrl + D. When the elements are created or if they are already used in the program, the element will be updated with the new information.

Importing Program Comments

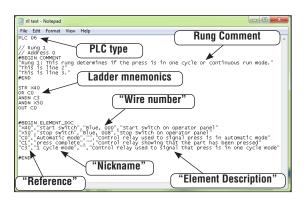
Exported program comments are imported like the element documentation as described on the previous two pages. To do this, select **File > Import > Rung Comments** on the Menu bar or press the **Import Comments** button on the File toolbar. The following window will appear. Select the folder and the .txt file to be imported.

Look in:	E Desktop		-	+ 🛍 💣 📰 •		
Recert Places	40 do	ext t Document bytes t Document bytes			•	Import Method C Merge (JRJ Priority C Merge (JXT Priority C Delete Existing
Network	File name: Files of type:	rll text	nt Text (*.bd)	•	Cancel	

Also select the **Import Method** to use. **Merge (.PRJ priority)** if the current project is to remain in place when the import is executed. If comment matching occurs, a message will appear asking which one to update, the imported file or the existing file. Selecting **Merge (.TXT priority)** will allow the imported comments to overwrite the existing ones. **Delete Existing** will delete the current comments and update with the imported comments.

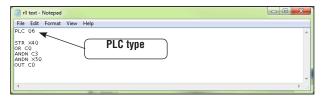
Insert Instructions

The Insert Instructions From File feature will allow the insertion of mnemonic text files as instructions within an open project. Mnemonic instructions can be inserted one time or several times within a program. To use this feature, there must be an existing text file, such as, a file written with MS Notepad. This file must be written in mnemonic text form like the example on left. Note that rung comments, element descriptions, element nicknames and wiring information can be edited within the text file to be inserted.

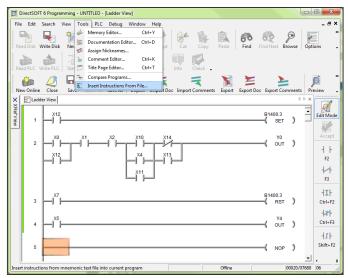


The text file needs to be edited in the same format as shown, with a PLC type at the beginning, #BEGIN, the documentation and #END. Quotation marks are placed around each line of rung comments. Of course, the ladder mnemonics are also edited with the text file. The element documentation must be in this form: "element reference", "element nickname", "wire number", "description". Quotation marks must be used with each entry followed by a comma. If an entry is to be left blank, the quotation marks *must not be omitted*.

The mnemonics text which is to be inserted can also be edited without comments like the example below. Note the PLC type is at the beginning of the text.



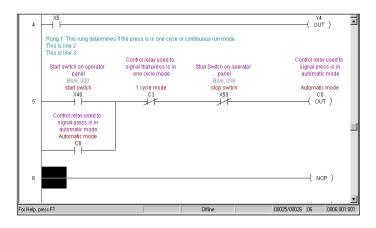
To insert the mnemonic text in a program being edited (Edit Mode), either use the **Tools > Insert Instructions From File** on the Menu bar or press the **Insert Instructions** button on the Tools menu if it is displayed.



The **Insert Instructions** dialog will appear. Select the folder where the text file is located, then select the text file to be inserted. Next, choose either **Insert at Beginning, End** or **Before Rung Number**. How the element documentation can be imported involving "collisions" with existing program documentation can also be chosen. Select **Merge (.PRJ Priority)** if the existing project documentation is to remain unchanged. Select **Merge (.TXT Priority)** if the new documentation is not to be changed, select **Ignore Element Documentation**. Press the **Open** button to execute the instruction.

Look in:	🧮 Desktop	•	- 👘 💣 📰	•	Insert At Geginning	Documentation Import Methol C Merge (.PBJ Priority)
Recent Places Desktop Libraries Computer Network	Example tet Tet Blocument 40 bytes Tet Document 40 bytes If tet Tet Document 40 bytes			A	C End Before Rung Number: I Restore	C Merge (TXT Priority) C Ignore Element Documentation Ignore Stage Comments
	File name: Example te Files of type: Monic (*.tx		•	Open Cancel		

The DirectSOFT6 Ladder view now displays the inserted instructions and documentation.



Restore

One option which the Insert Instructions function has that can be useful is the **Restore** feature. Each time the Insert Instructions is executed, a backup copy of the entire program is made before the insert occurs. If an error is made, i.e. wrong code, just press the **Restore** button and the program will be restored to its original state.

Look in:	🧮 Desktop		•	← 📾 🖻	* 🔳 🔻		nsert At Beginning	Documentation Import Methe C Merge (.PBJ Priority)
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c: \users\desktop\v	File name: Files of type: example text.txt	Example text Monic (*.txt)			•	Open Cancel		

Prevent Documentation Loss

The documentation which is created with *Direct*SOFT6 is stored on disk. Each time a project is opened with *Direct*SOFT6, there are multiple project files opened. Apply the same precautions to your project as you would with any other database package to avoid data loss.

Backing up the project files is the best insurance to prevent loss. Any time changes are made to a project, make a copy of the project before starting. If something goes wrong, the original will remain intact and unchanged. There are four different methods to preserve a project as a program is created and after the project has been completed. The four methods are: Save Project (to disk), Save Project As, Backup Project and Export Program.

Save Project

Save Project to Disk should be used to save your project often. Your entire project, i.e., program and all documentation will be saved to the drive that is being worked from, usually the C: drive. From the Menu bar, select **File > Save Project > to Disk** or press **Ctrl + S** (keyboard shortcut).

To save a project to a different folder than the one being worked from, select **File > Save Project As** from the Menu bar. The save as window will appear so the folder can be selected where the project is to be saved. Name the project, press the **Save** button and the entire project will be saved.

Organize New	folder				III 🕶 🧕
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Downloads		퉬 Backup	4/3/2014 10:56 AM	File folder	
🔛 Recent Places	E	Examples	4/3/2014 11:21 AM	File folder	
🧮 Desktop		RLL_Example.PRJ	12/19/2013 5:18 PM	PRJ File	1 KB
Oreative Cloud I	Fi	RLLPlus_Example.PRJ	12/19/2013 5:18 PM	PRJ File	2 KB
		Test.PRJ	4/3/2014 1:51 PM	PRJ File	1 KB
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Documents		Test3.PRJ	4/8/2014 10:26 AM	PRJ File	1 KB
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yi E		12			

Write Disk



NOTE: The Write to Disk button on the Offline toolbar only saves the ladder logic program.

Backup Project

The backup feature is another way to save your project. Selecting **File > Backup Project** on the Menu bar or pressing the **Backup** button on the Offline toolbar will open the following dialog asking if the project is to be saved. Press the **OK** button to save the project.



The following **Backup Project** dialog will appear, the project can be saved with the default date/time stamp or rename the folder. A different drive can also be selected to save the project.

🔀 Backup Project		×
🔾 🔾 😼 « DirectSOFT6 → Projects → Backup →	Test3 → \$14-04-11\$09-44-02 → 49 Se	arch \$14-04-11\$09-44-02
Organize 🔻 New folder	A	≣ ▾ 🔞
ravorites	Date nodified Type	Size
Downloads Recent Places Desktop Creative Cloud Fi Libraries	Date and Time Stamp	1
 Documents Music Pictures Videos 		
File name: <mark>Test3</mark> Save as type: Direct (".prj)		• •
💌 Hide Folders		Save Cancel

The last backup method is to use the export program feature as explained previously. This method will save a program to a text file. One advantage of the text file is that the program or comments can be edited without using *Direct*SOFT6.

Close all other applications that may be running to allow as much free RAM as possible. This not only lessens chances of memory conflicts, but also allows *Direct*SOFT6 to run much faster.

Consider printing a hard copy of the program at longer intervals. If your computer breaks down or you lose all of the data due to a disk crash, you will at least have a hard copy of the program.