

# Module 7

## Searching



Allen Bradley RSLogix 5000

Northwest State  
Community College

## **Module 7: Searching in RS Logix5000**

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## Searching Introduction

Searching allows a user to find where tags, instruction and description are used within a RSLogix 5000 Project

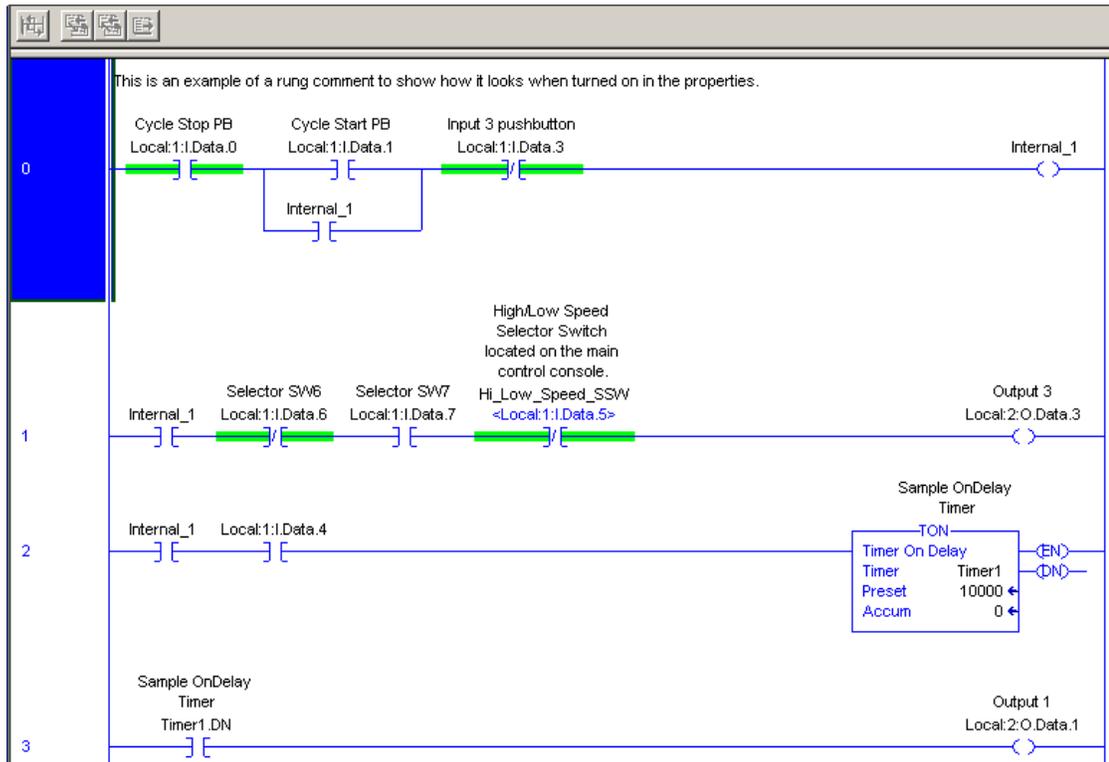


Figure 1-A

The 3 techniques that can be used to search a project are:

1. The Search -> Find functions from the menu bar.

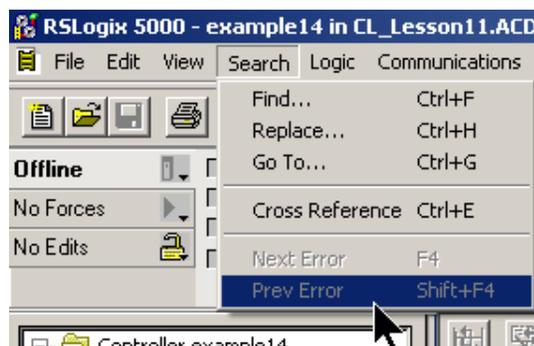


Figure 2-A Menu Bar Search

2. The generic (quick) search selection box and icons.



Figure 3-A Quick Search Box

3. Using either Find All or Go To Cross Reference For tags from right mouse clicking on a tag from the Ladder Logic window in RSLogix 5000

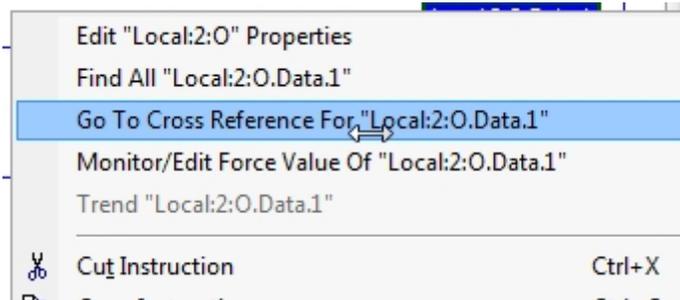


Figure 4-Ladder Logic Window  
Find All  
Go To Cross Reference For

### Use of hot-keys.

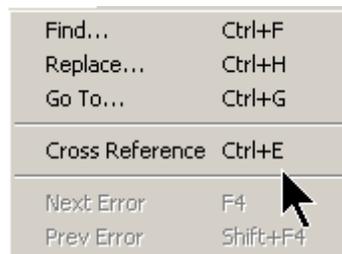


Figure 4-A Hot Keys

Some of the hot keys that can be used to navigate the ladder logic window are:

the END key on the keyboard takes the cursor to the last instruction on a rung.

Ctrl-END places focus on the END rung of the routine showing in the ladder window

the HOME on the keyboard places the cursor to the rung number of a rung

Ctrl-HOME places the cursor on rung 0 of the routine showing in the ladder window.

Ctrl-E – opens the cross-reference window

## Navigate To A Rung

The following illustration shows how to navigate to a rung, using the RSLogix5000 search commands.

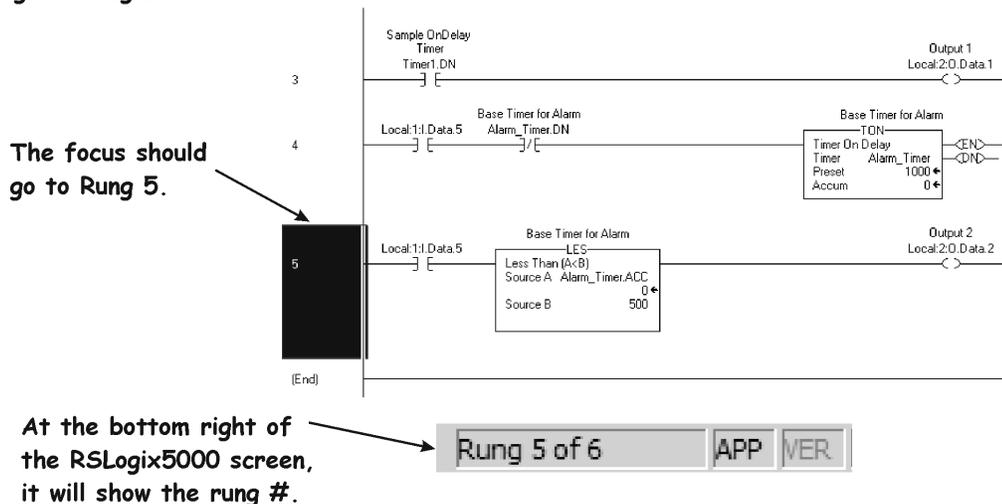
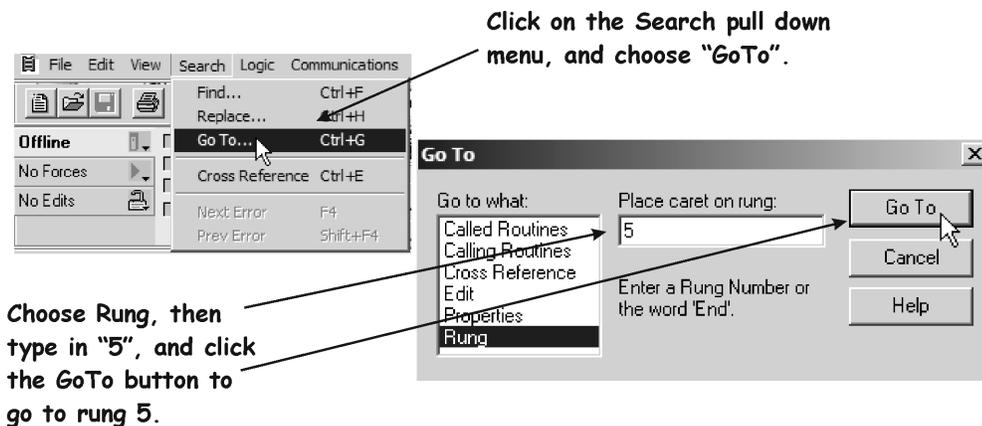


Figure 5-A Navigating to a rung in RSLogix5000.

Sometimes a user will need to search for a rung within a ladder routine. Either the user can go to that routine through the controller organizer,

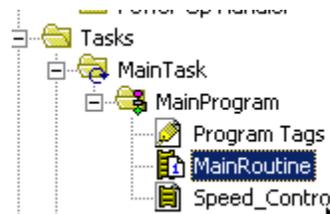
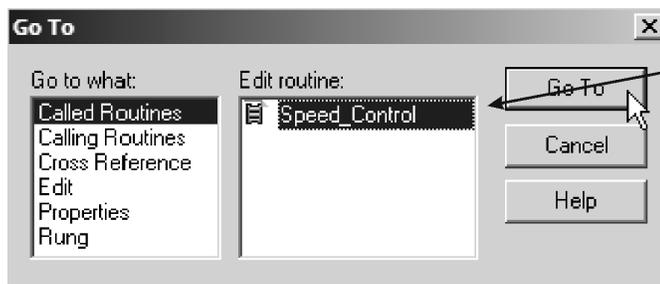


Figure 6-A

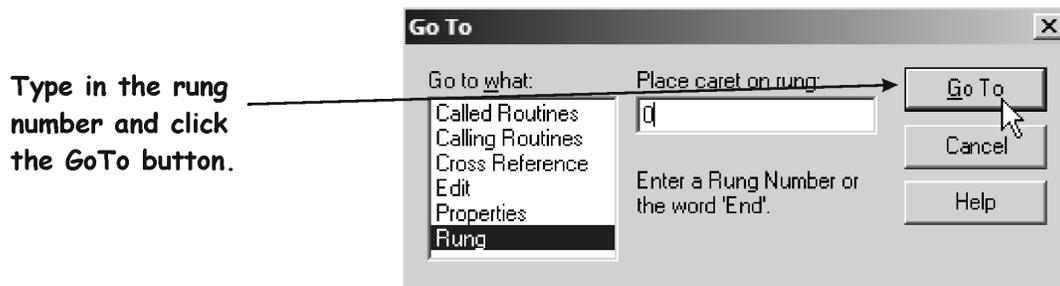
or use the Search > GoTo

The first step is from the menu bar select Search > Go To or use the Ctrl – G, then click on Called Routines.

Choose the routine and click the GoTo button. This will put the user into the routine, and they can then use the Go To > Rung to command to navigate to a particular rung. The following illustration will show this.



If in the main routine, do a "Ctrl-G" for goto, then choose called routines, select the routine, then click GoTo.



Type in the rung number and click the GoTo button.

Figure 7-A. Search for rung in a routine.

## Searching for Instructions/Tags

One way to search for a tag, is to use the generic search(quick search) box that is found on the RSLogix5000 standard toolbar screen.

Key in the tag you wish to search for. Then click on the "Find All" button. This will show every time the tag is used in the program.

```

Found: Rung 0, XIC, Operand 0: XIC(Internal_1)
Found: Rung 0, OTE, Operand 0: OTE(Internal_1)
Found: Rung 1, XIC, Operand 0: XIC(Internal_1)
Found: Rung 2, XIC, Operand 0: XIC(Internal_1)
Complete - 4 occurrence(s) found.
  
```

Figure 8-A. Generic (Quick) search for a tag.

In the above example, it shows that there is an OTE (coil) on rung 0. There are XIC instructions (N.O. contacts) on rungs 0, 1 & 2.

The user could also use the Find Next button, which would go though the program and find the next occurrence. Click the Find Next button again and it will take the user to the next occurrence.

The following illustration shows the search buttons by the generic search window.

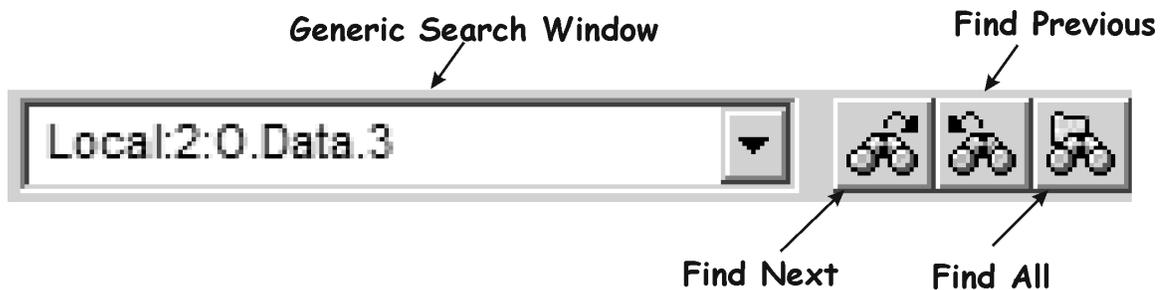


Figure 9-A. The Generic (Quick) Search Buttons.

Note: Generic (Quick) box can be used to search for tags, descriptions and instruction types.

## Search for Forces or Rungs in Edit Mode

From the menu bar choose Search > Find.

To Search for Forces - Choose All Forces in the Limit To: selection box.

To Search for rungs in edit mode – Choose Edit Zones in the Limit To: selection box.

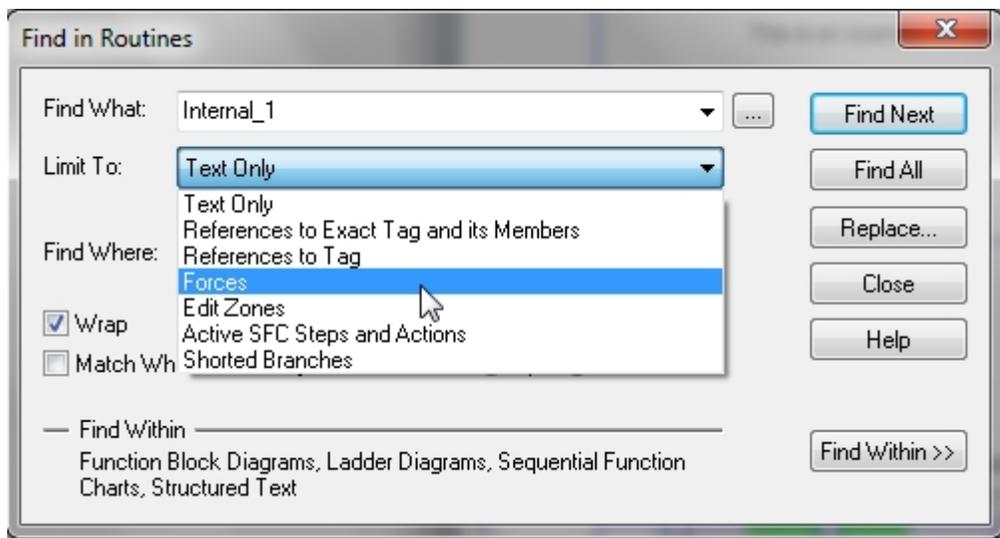


Figure 10-A

## Search Find

The user can also use the Search -> Find window, which will allow more options within the search. The user can determine whether to search the current routine or all routines in a program.

The user can choose the “Find Next” command which will go to each occurrence within the program.

Click on the Search menu and choose the "Find" option.

Type in the Tag that is to be searched for, then click the "Find All" button.

The results of the search is shown below. Notice 1 XIC was found on Rung 2.

```

Searching for "Local:1:I.Data.4"...
Searching through MainProgram - MainRoutine...
Found Rung 2, XIC, Operand 0: XIC(Local:1:I.Data.4)
Complete - 1 occurrence(s) found.

```

Figure 11-A. Search Find in RSLogix5000.

The Search Find command will also find an alias tag, besides the base I/O address.

The user can also modify the search parameters to better configure the search. Some of these parameters are shown in the following tables.

## Search Parameters

<b>Find Where</b>	Current Routine – Searches in the current program file only.
	All Routines – Searches in all of the ladder files in the project.
<b>Direction</b>	Sets the direction of the search (either UP or DOWN).
<b>Wrap</b>	If YES, it searches in the direction specified, then to the first or last rung, then wraps around and searches to the cursor position from where the search was started.
	If NO, it searches in the direction specified, then to the first or last rung, and stops.

The Find Within button can modify which options are being searched.

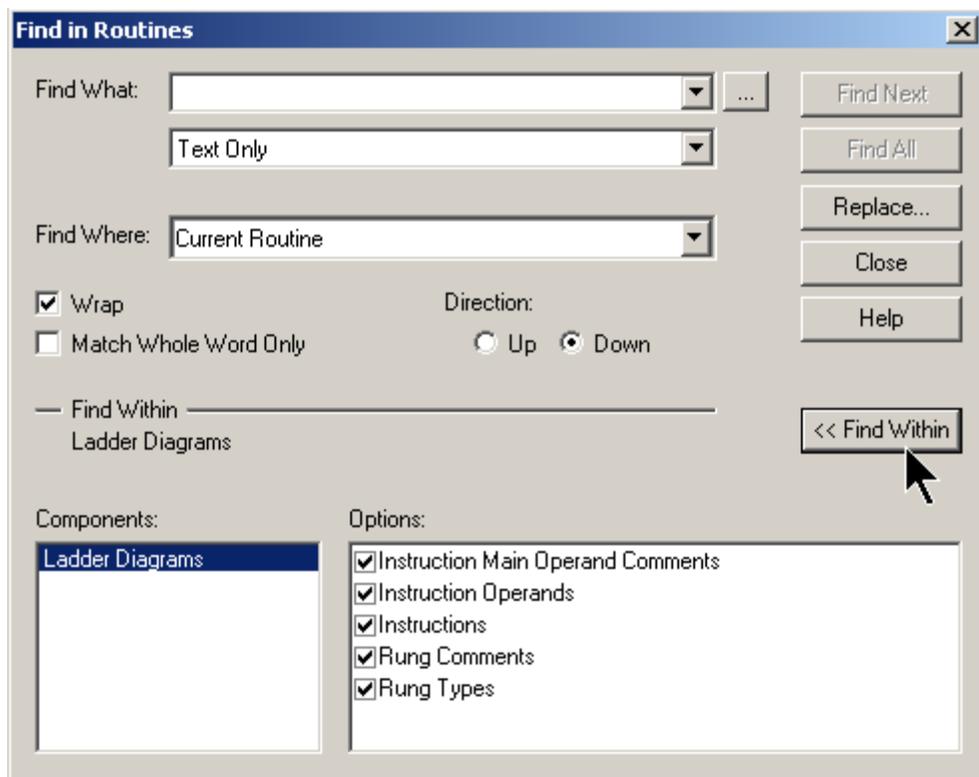


Figure 12-A Find Within button

## Search for a Tag From the Ladder Logic Screen:

On the Ladder Logic screen right mouse click on the tag for the search.

Choose Find All "xxxxxxxxxxxxxxxxxxxxxxx"

Note: tag name inside quotes.

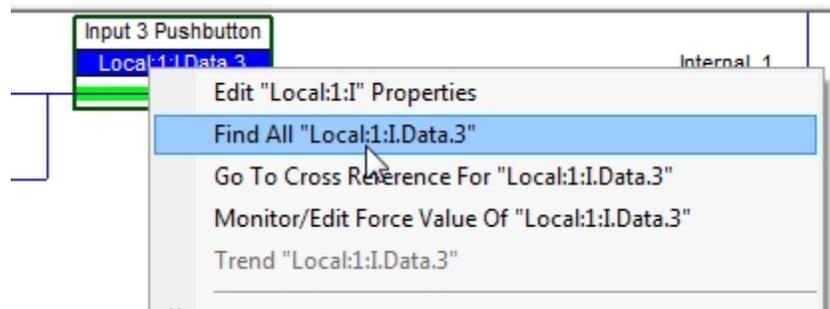


Figure 13-A Find All

Click the Find All selection

A Search Results box will show results of the search.

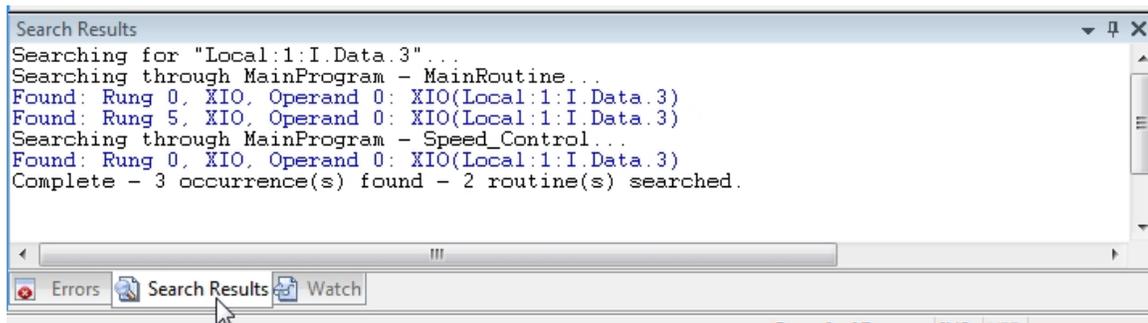


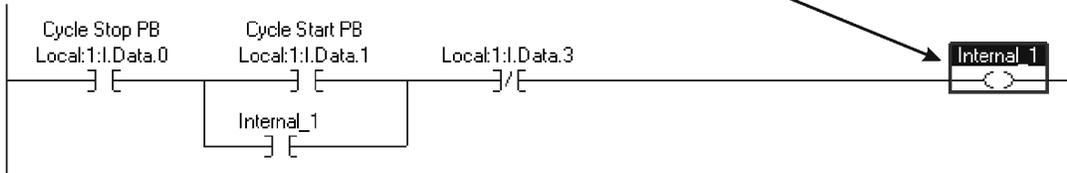
Figure 14-A Search Results Box

Click on any locations of the Search result (Found: Rung 0,) and the focus /cursor will go to that rung and tag location in the project.

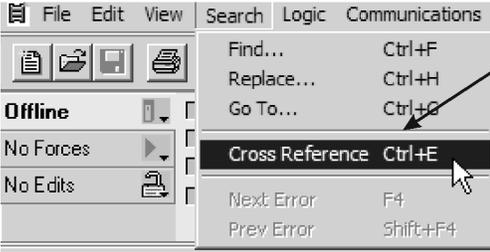
## Search Cross Reference

Cross reference is a valuable tool to use to determine where in the program, a tag is used. If a tag is used on a coil and ten normally open contacts (XIC) in a program, all of those will be listed in the Cross Reference. The first step is to show a simple cross reference, and to see how to interpret it. The following illustration will demonstrate this.

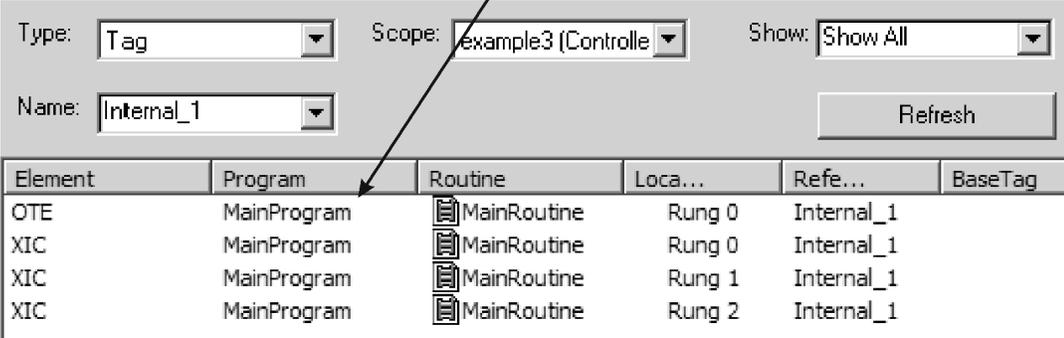
**Put the cursor on the instruction/tag that is to be cross referenced.**



**Click on the Search pull down menu and choose Cross Reference.**



**The cross reference shows each occurrence of "Internal\_1" in the program.**



Element	Program	Routine	Loca...	Refe...	BaseTag
OTE	MainProgram	MainRoutine	Rung 0	Internal_1	
XIC	MainProgram	MainRoutine	Rung 0	Internal_1	
XIC	MainProgram	MainRoutine	Rung 1	Internal_1	
XIC	MainProgram	MainRoutine	Rung 2	Internal_1	

Figure 15-A. Displaying the Cross Reference for a Tag.

The user can also do a right mouse click on a tag within the ladder display, and choose Cross Reference. This will get to the same place with fewer clicks.

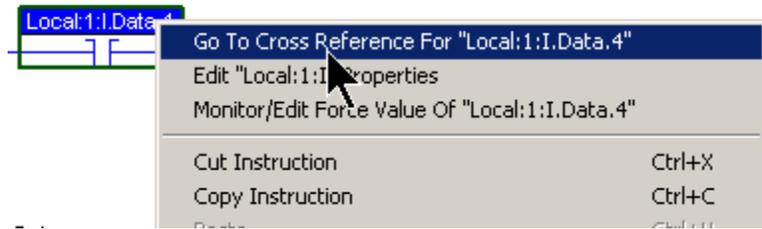


Figure 16-A Viewing Cross Reference

Instead of using the pull down menu, the user can highlight the instruction/tag, and press “Ctrl-E”, which is a short cut to bringing up the cross reference for a tag.

The user can also use the cross reference to navigate to the actual occurrence in a project. In the follow illustration, the user executes a cross reference, and then goes to one of the results on the cross reference.

After right mouse clicking on the occurrence, the user can choose Go to Location or double click on the selection, and the focus / cursor will go to that rung in the program.

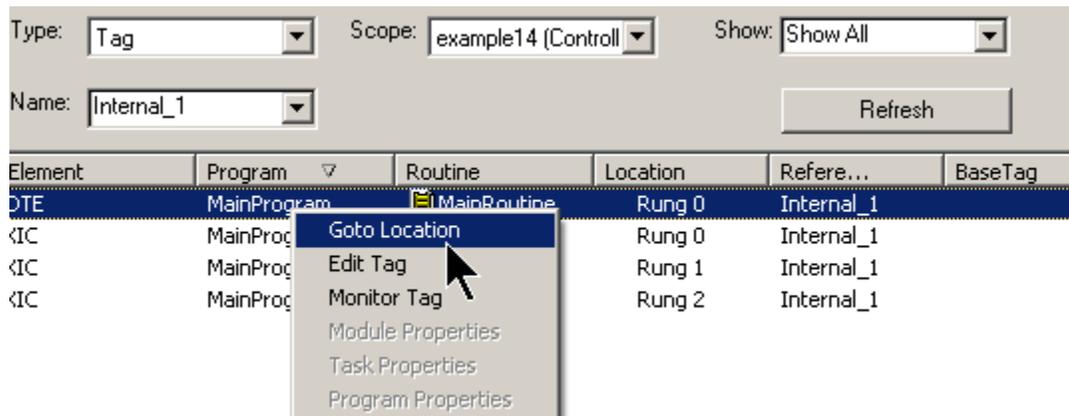


Figure 15-A Cross-Reference-Go To Location

The Cross Reference and Find All (lookup will also work within the Tag Monitor window.

Note: Find All does not appear in early versions of RSLogix 5000 in the Tag window

A reason why you may want to do this is if there is not good hardware prints and the user is trying to find an output, they may go to the Tag Monitor and look through the descriptions to find the correct output. From that point they can do a cross reference to find where the output instruction is located within the ladder program.

The user is monitoring the output in the Tag Monitor window.

When right clicking on the output, choose Goto Cross Reference.

When it brings up the cross reference information, choose the output instruction that turns on the output tag, then right click and choose "Goto Location".

The focus goes to the rung where the OTE addressed with the output tag.

P	Tag Name	Alias For	Base Tag	Type	Style	Description
	Alarm_Timer			TIMER		Base Timer for Alarm
	Counter_1			COUNTER		
	HI_Low_Speed_SSW	Local:1:1.Data.5	Local:1:1.Data.5	BOOL	Decimal	High/Low Speed ...
	Internal_1			BOOL	Binary	
	Internal_2			BOOL	Binary	
	Local:1.C			AB-1756_DI.C:0		
	Local:1.I			AB-1756_DI.I:0		
	Local:2.C			AB-1756_DO.C:0		
	Local:2.I			AB-1756_DI.I:0		
	Local:2.O			AB-1756_DO.O:0		
	Local:2.O.Data			DINT	Binary	
	Local:2.O.Data.0			BOOL	Decimal	
	Local:2.O.Data.1			BOOL	Decimal	Output 1
	Local:2.O.Data.2			BOOL	Decimal	Output 2
	Local:2.O.Data.3			BOOL	Decimal	Output 3
	Local:2.O.Data.4			BOOL	Decimal	
	Local:2.O.Data.5			BOOL	Decimal	

Monitor Tag - Local:2:0.Data.6  
 Edit Tag Properties Alt+Enter  
 Edit Data Type  
 Create Tag which aliases - Local:2:0.Data.6  
**Go to Cross Reference Ctrl+E**  
 Go to Axis Wizard  
 Go to Axis Properties  
 Go to Motion Group Wizard  
 Go to Motion Group Properties  
 Go to PID Properties  
 Go to Message Properties  
 Go to Cam/Cam Profile Editor  
 Go to Output Cam Editor  
 Go to Message Path Editor  
 Go To... Ctrl+G  
 Options...  
 Cut Ctrl+X  
 Copy Ctrl+C  
 Paste Ctrl+V  
 Delete Del

Type: Tag Scope: example3 (Controlle) Show  
 Name: Local:2:0.Data.3

Element Program Routine Loca...  
 OTE MainProgram MainProgram

Goto Location  
 Edit Tag  
 Monitor Tag  
 Module Properties  
 Task Properties  
 Program Properties  
 Routine Properties

High/Low Speed Selector Switch located on the main control console.  
 Selector SW6 Local:1:1.Data.6  
 Selector SW7 Local:1:1.Data.7  
 HI\_Low\_Speed\_SSW <Local:1:1.Data.5>  
 Output 3 Local:2:0.Data.3

Sample OnDelay Timer  
 TON  
 Timer On Delay Timer1  
 Preset 10000  
 Accum 0

Figure 16-A. Cross Reference within Tag Monitor.

## Search and Replace

The search function covered so far can be accomplished either with an off-line project or while on-line monitoring a project in a ControlLogix / CompactLogix processor.

Search and Replace must be done in the Offline mode.

The Search and Replace command actually searches in the ladder diagram for a tag , then replaces that tag with another tag. The tag description is not moved to the replaced item, thus the user must ensure descriptions are correct for the replaced tag.

There may be situations when the user would need to replace a tag name with another tag name. This could be situation if an output point went bad on a discrete output module, yet there were spare terminals on the module that were not used, and there were no replacement modules. The user would have to move the wire to the new terminal, then do a search for all of the existing tags, and replace them with the new tag name.

Navigate to the Search and Replace either by the Ctrl-H hotkey or by Search >Replace... from the menu bar of the RSLogix 5000 software.

In the following example, the user will replace all of the Local:1.I.Data.3 tags with Local:1.I.Data.2.

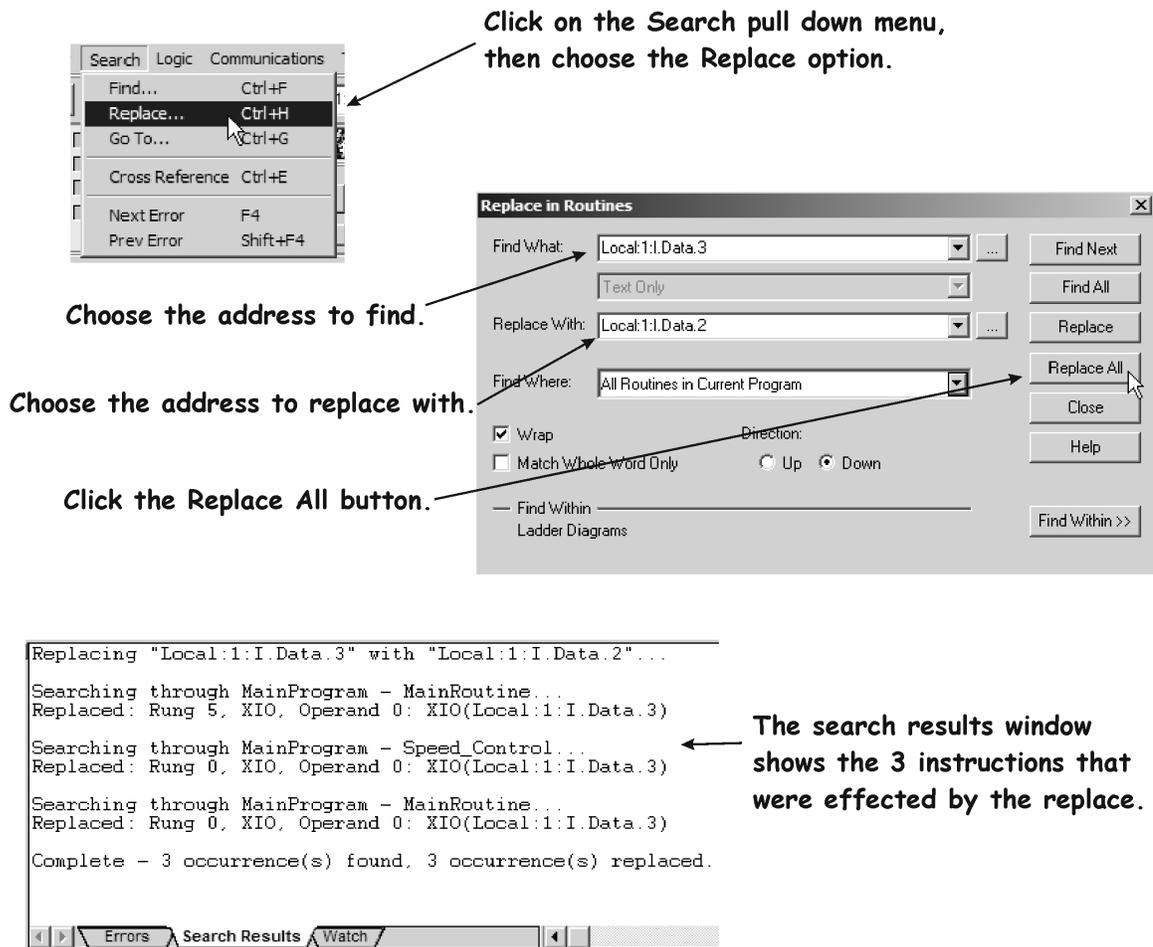


Figure 17-A. The Search Replace Process.

In the previous Search and Replace, there were two XIC instructions in the MainRoutine and one XIC in the Speed\_Control routine. Each of these instructions was replaced with the new tag - Local:1:I.Data.2. The user could have clicked on the Replace button, and only one replacement would have occurred. The user would have to click it again to have the next search / replacement to occur.

## Review Questions

1. **T F From the cross reference view, the user can navigate directly to the rung where the occurrence is.**
  
2. **The search command that is used to navigate to a rung in a ladder program is:**
  - a) Search -> Find
  - b) Search -> Find All
  - c) Search ->Cross Reference
  - d) Search ->Goto
  
3. **The shortcut command that will execute the Search Cross Reference command is:**
  - a) Ctrl - C
  - b) Ctrl - E
  - c) Ctrl - X
  - d) Ctrl - R
  
4. **T F The Search and Replace command is used to find a tag in the ladder logic and replace it with another tag.**

5. **The RSLogix5000 search parameter used to determine if the search will start back at the top of the program file to continue the search, after it reached the end of the program file is called:**
- a) Global
  - b) Loop
  - c) Continuous
  - d) Wrap
6. **T F When RSLogix5000 starts a search for an instruction or tag, it will start the search on rung 0 of the current program file, regardless of where the cursor is in the program.**
7. **T F A Search and Replace function can be ran while either Online or Offline.**
8. **T F RSLogix5000 will search and find an alias tag.**

- 9. If the cursor is on the output of rung 20 of a routine, how would you move to rung 0 of the same routine?**
- a) Shift F1
  - b) Shift - Home
  - c) Ctrl - Home
  - d) Ctrl - Esc
- 10. The search command that finds one occurrence of a tag at a time in the ladder program is:**
- a) Find - All
  - b) Find - Next
  - c) Cross Reference
  - d) Find - Tag

## Review Questions Answers

1. T
2. d
3. b
4. T
5. d
6. F
7. F
8. T
9. c
10. b

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