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10. Symbols

There are two methods to display an Operand in RSLogix 500,

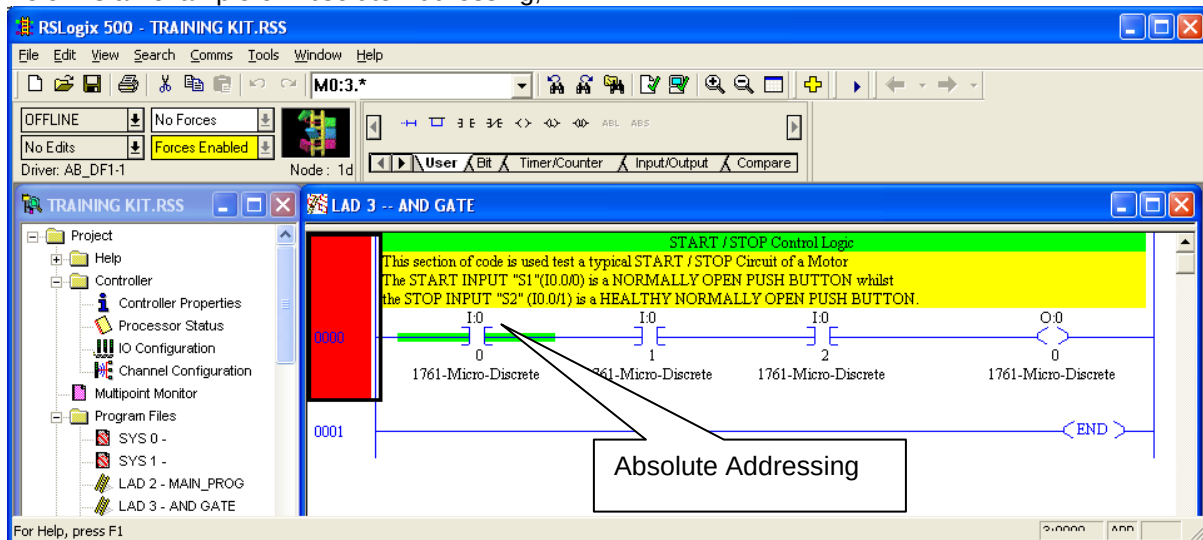
- Absolute Addressing
- Symbolic Addressing.

10.1 Absolute Addressing

Using **Absolute Addressing** one specifies the address directly e.g. Input I 0.0\0.

Note: Using **Absolute Addressing** one does not require an “Address/Symbols File” but the program is harder to interpret and also to fault find.

Below is an example of Absolute Addressing,



EXAMPLE OF ABSOLUTE ADDRESSING

10.2 Symbolic Addressing

There are two main types of Symbols,

- Global Symbols
- Local Symbols (Not used in RSLogix 500)

10.2.1 Global Symbols

Global Symbols can be assigned to Inputs, Outputs, Memory Bits, Timers and Counters which are stored in the “Address/Symbols File” and are assigned in the “Address/Symbols Editor”. Global Symbols can also be assigned to instructions such as Timers and Counters which are stored in the “Address/Symbols File” and are assigned in the “Address/Symbols Editor”.

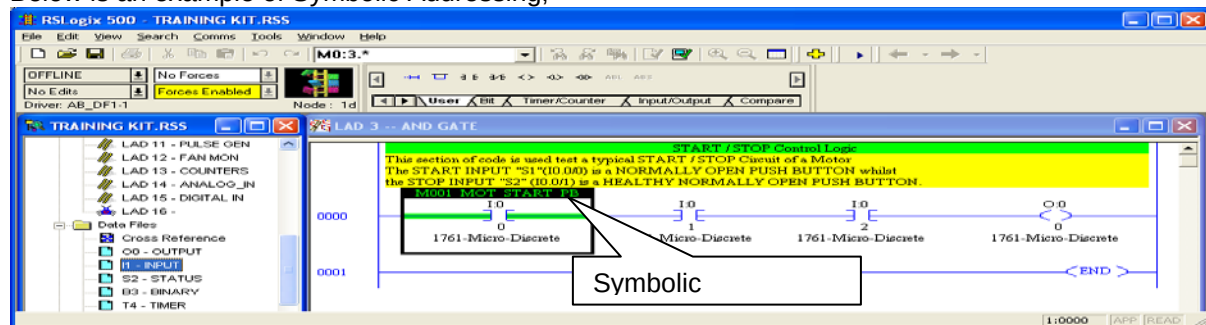
Note: Symbols in the Symbol Table must be unique i.e. each symbol or address must be used only once in the Symbol List. If a symbol or address appears more than once an error message will be displayed.

Note: The symbols assigned to a particular input, output, etc in the “Address/Symbols File” is common to a single “DATA BASE” which can be used with the following RSLogix tool,

- Address/Symbol Editor.

Using “**Symbolic Addressing**” one assigns a Symbol to the particular Input, Bit, Output etc e.g. “**M001 Mot Start PB**” is the Symbol assigned to I 0.0/0.

Below is an example of Symbolic Addressing,



EXAMPLE OF SYMBOLIC ADDRESSING

10.3 Open the Address/Symbol Editor

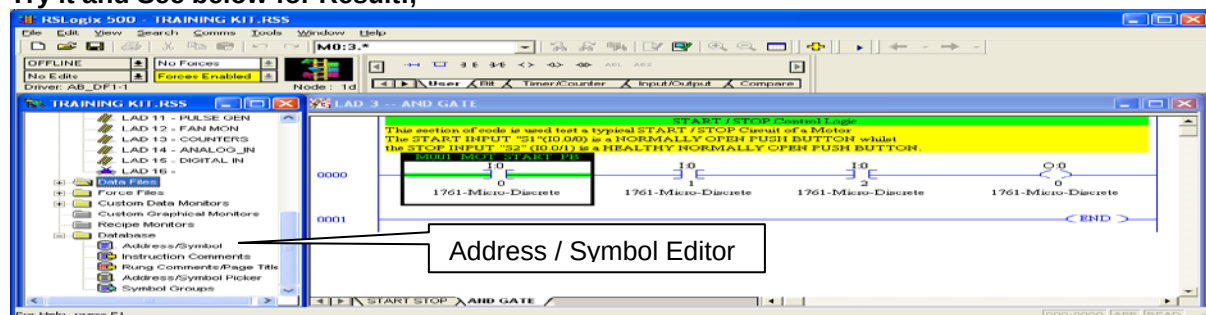
There are three ways to edit **Symbols**,

- From the RSLogix Project select the “**Database Folder**”, within that Folder is a file called “**Address/Symbols**”. Double – click this file to open the “**Address/Symbol Editor**”.
- In the LAD Editor when inserting a new so-far unused Address a dialog appears, where a Symbol and Description can be inserted.
- When one opens a **Data File** such as “**I1-Input**” one can select the address and edit the symbol and description.

10.3.1 Exercise Open Address/Symbol Editor.

From the RSLogix Project select the “**Database Folder**”, within that Folder is a file called “**Address/Symbols**”. Double – click this file to open the “**Address/Symbol Editor**”.

Try it and See below for Result:,



START THE RSLOGIX ADDRESS/SYMBOL EDITOR.

The “**Address/Symbol Editor**” appears in the following window.

Address/Symbol Editor					
163 DB Entries					
Search Field : Address					
Search For :					
Address	Symbol	Scope	Sym Group	Description	Dev
B3:0/0		Global			
B3:0/1		Global			
B3:0/3		Global			
C5:10		Global		UP COUNTER	
C5:11		Global		DOWN COUNTER	
I:0/0	M001_MOT_START_PB	Global			
I:0/1		Global			

ADDRESS/SYMBOLS EDITOR.

Note: Each Symbol occupies one line of the Address/Symbol Editor Table.

10.4 Edit the Symbol Table Options.

There are many functions available to the user to help and assist in viewing the **Symbols** in the "Address/Symbols Table". The following are a list of functions available,

- To "Sort" Address/Symbol File,
- To "Search" Address/Symbol File.

10.4.1 Address/Symbol File "Sort" Option

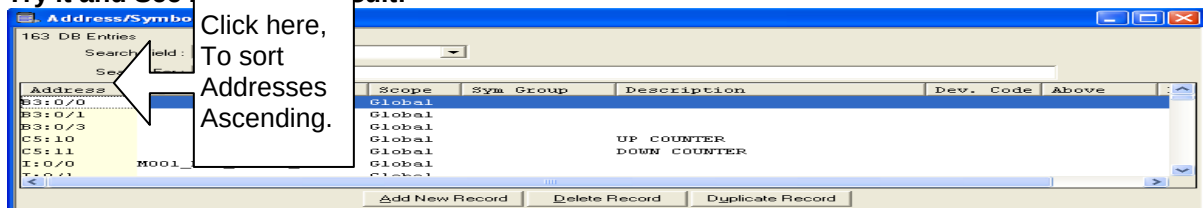
Using the "Sort" option one can select the following options;

- Symbol Ascending, Address Ascending, Scope Ascending, Sym Group Ascending, Comment Ascending, Dev. Code Ascending, Above Ascending, Below Ascending,

10.4.1.1 Exercise sort Address/Symbol Table using "Address Ascending"

From Address/Symbol Table click on the Address Tab to sort the Address Ascending.

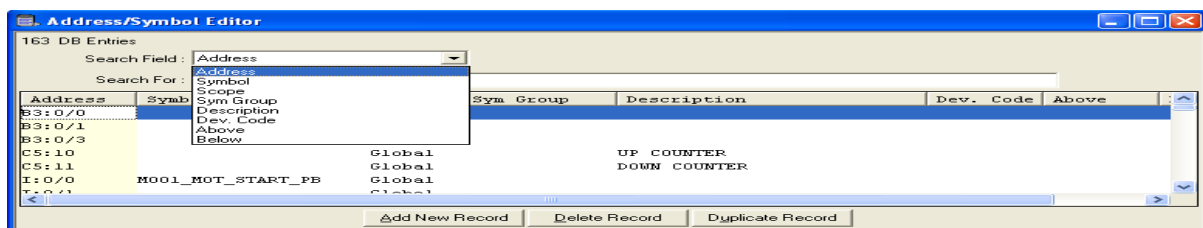
Try it and See below for Result:



ADDRESS/SYMBOL TABLE "SORT" OPTION "ADDRESS ASCENDING"

10.4.2 Address/Symbol Table "Search" Option

Using the Combo Box in the "Address/Symbol Table" one can enter search criteria to search for a specific Address/Symbol.

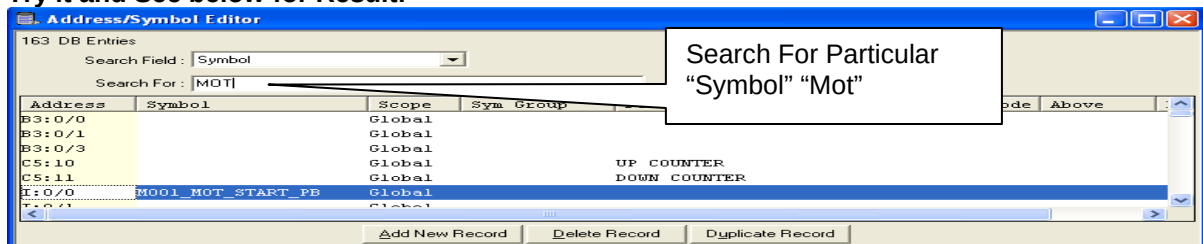


Address/Symbol Table "Search Field" Option.

10.4.2.1 Exercise Address/Symbol Table "Search" Option using criteria "Symbol"

From Address/Symbol Table Combo Box select "Symbol". In the "Text Box" below type "MOT" and select enter. By using the Enter key repeatedly the next Address/Symbol line that matches the search criteria is highlighted.

Try it and See below for Result:



ADDRESS/SYMBOL TABLE "SEARCH" OPTION USING TYPE "SYMBOL"

10.4.3 Export / Import Symbol Table.

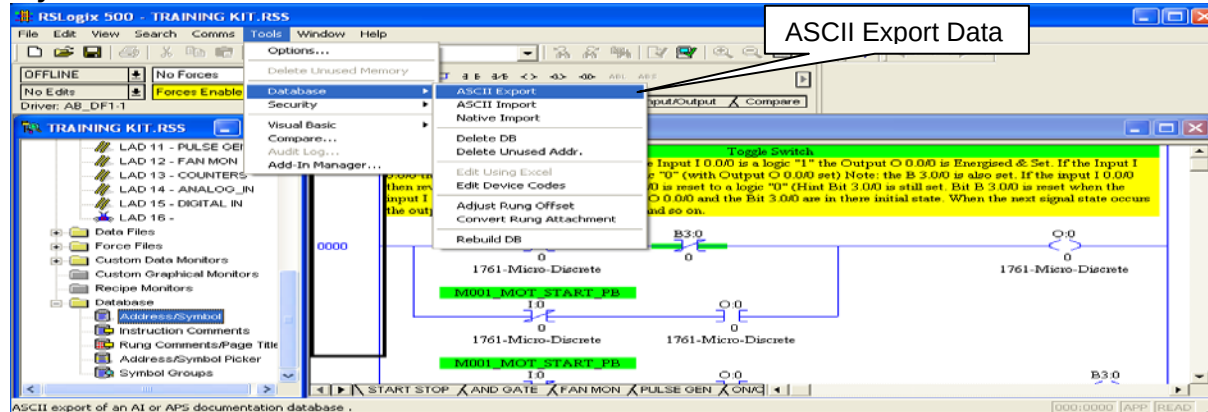
The menu option “Export / Import” enables one to store the “Symbol Table” in different format that of,

- ASCII – Notepad or Word
- CSV – Excel

10.4.3.1 Exercise Export Symbol Table Using “CSV” Format

From Symbol Table Menu Command **Tools>Database> ASCII Export**, the dialog box appears,

Try it and See below for Result:



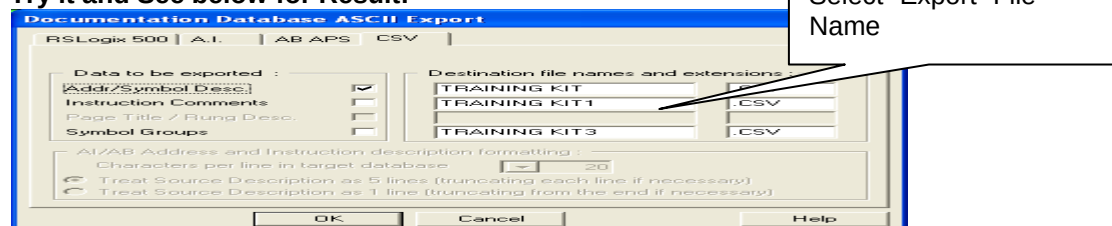
SELECT “ASCII EXPORT” FROM SYMBOL TABLE EDITOR

Note: Select the menu command **Tools>Database> ASCII Export**. The "Export" dialog box is displayed. Select “**CSV TAB**”. Select the types of Symbols which you want to save (Export). Enter a file name under which you want to save the symbol table. Confirm with "OK."

Note: The Export Database utility writes address and description information to a file in an ASCII delimited format. ASCII delimited means that the fields for each record are enclosed in quote marks and separated by commas. You can edit the ASCII file with a text editor, or load the file into another database, such as dBASE III or Excel.

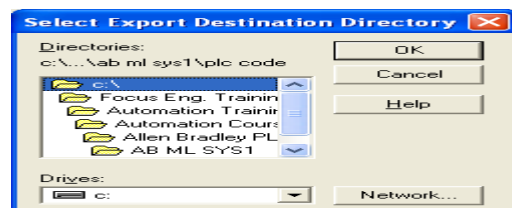
RSLogix 500 - Copyright Rockwell Software 2000, 2001, 2002

Try it and See below for Result:



ENTER FILE NAME WHICH YOU WANT TO “EXPORT” SYMBOL TABLE.

Confirm the selection by selecting the “OK” Button in the “**Export**” Dialogue Box. A Dialog will appear in which the directory is selected where the file is to be stored.

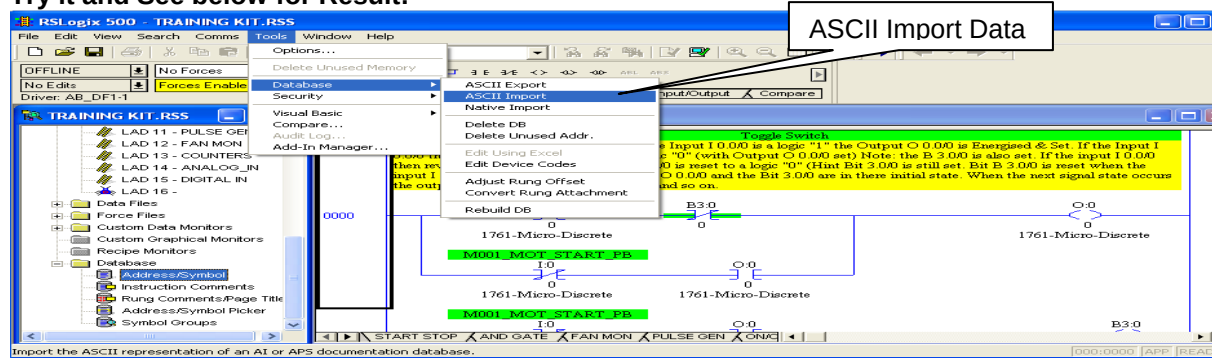


SELECT DIRECTORY FOR SAVING THE EXPORTED FILE.

10.4.3.2 Exercise Import Symbol Table Using "CSV" Format

From Symbol Table Menu Command **Tools>Database> ASCII Import**, the dialog box appears,

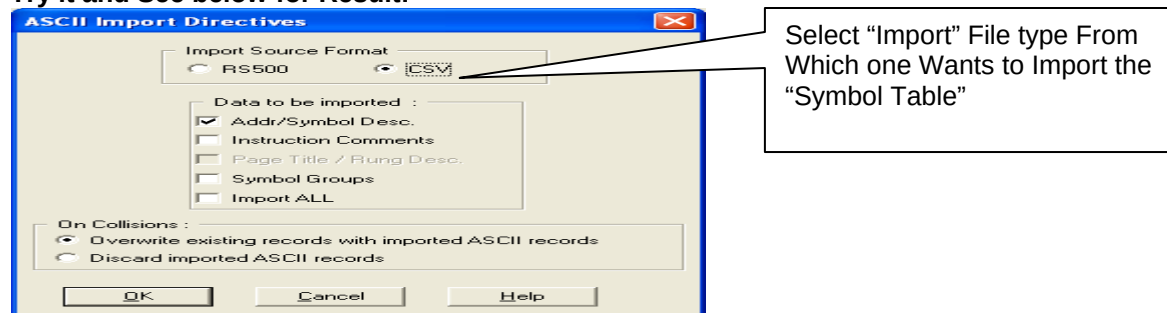
Try it and See below for Result:



SELECT "ASCII IMPORT" FROM SYMBOL TABLE EDITOR

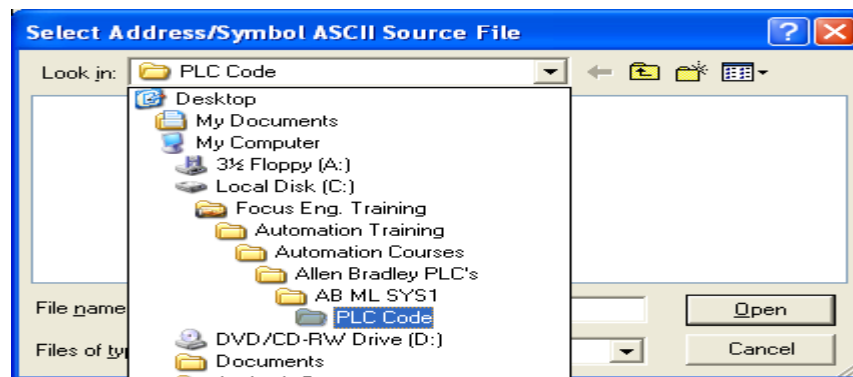
Note: Open the symbol table into which you want to import the data. Select the menu command **Tools>Database> ASCII Import**. The dialog box "Import" is displayed. Select the type CSV. Confirm selection with "OK". Select the file and directory and confirm with "**Open.**" as follows,

Try it and See below for Result:



SELECT FILE TYPE FROM WHICH ONE WANTS TO "IMPORT" THE SYMBOL TABLE.

By confirming the selection by using the "**OK**" Button in the "Import" Dialogue Box another Dialog Windows appears to select the directory where the import file is be stored.



SELECT FILE, DIRECTORY FROM WHICH ONE WANTS TO "IMPORT" THE SYMBOL TABLE.

10.5 Check What You Learnt in This Chapter

I Know:

- ⇒ What “**Absolute**” and “**Symbolic**” Addressing is.
- ⇒ How Open the Symbol Table.
- ⇒ How to Customise the Symbol Table using the “**Filter**” option.
- ⇒ How to Customise the Symbol Table using the “**Sort**” option..
- ⇒ How to “**Export**” the Symbol Table.
- ⇒ How to “**Import**” the Symbol Table.

10.6 I Can:

- ⇒ Understand what an “**Absolute**” or “**Symbolic**” symbol is.
- ⇒ Open and understand the Symbol Table Editor.
- ⇒ Customise the Symbol Table using the “**Filter**” option.
- ⇒ How to Customise the Symbol Table using the “**Sort**” option.
- ⇒ Export the Symbol Table.
- ⇒ Import the Symbol Table