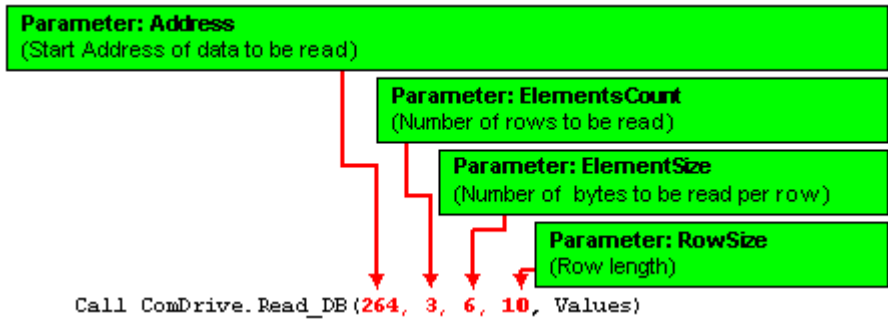## ComDrive.Read_DB function: Accessing Data in PLC Data Tables

Addressing within Data Tables is based on byte address. To enable the ComDrive.Read_DB function to read Data Table values, enter the data according to the format shown below.
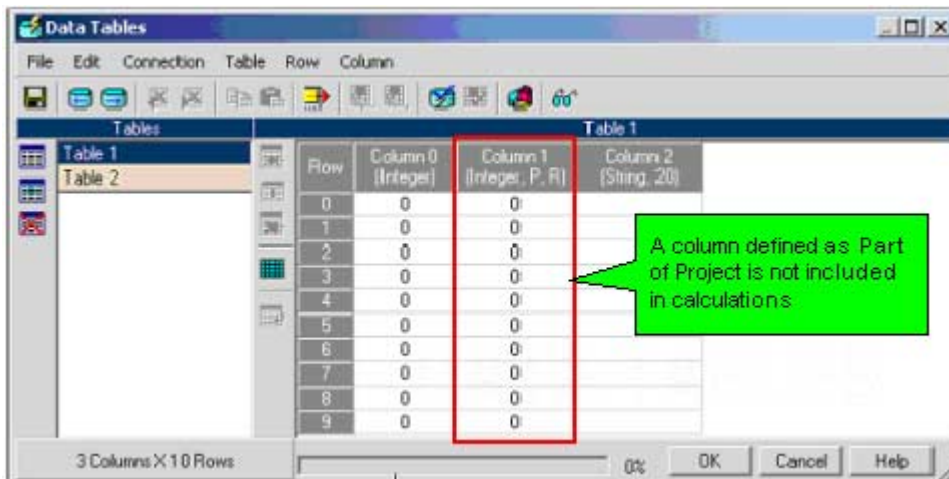
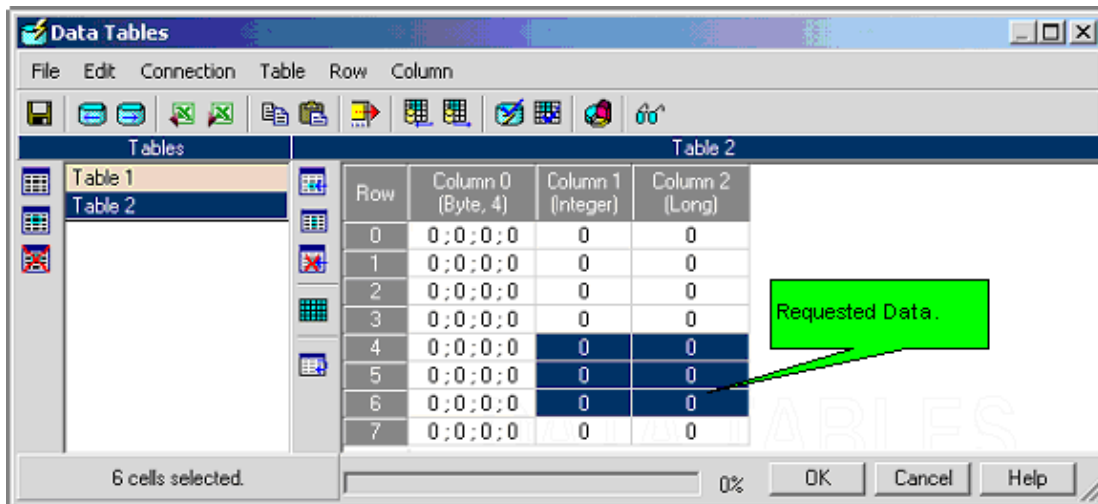

Calculating the Start Address of the data to be read

The table below shows the number of bytes each Data Table column type requires.

Column type	Bytes required
Boolean	1 byte per 8 Boolean elements
Byte	1 byte per element
Integer, unsigned integer	2 bytes per element
Long integer, DW	4 bytes per element
String	1 byte per character

Note ♦ Since "Part of project" fields do not occupy memory in the PLC's RAM, they are not taken into account when calculating cell addresses.

This example includes the 2 data tables shown below. Table 2 contains the requested data.

To access the requested cells in Table 2, you must calculate the following:

Start address of Table 2.	The start address of a table is the sum of the bytes of all preceding tables.
	Table 1 contains 3 columns of 2, 0*, and 20 bytes. Therefore, each row is 22 bytes long. Table 1 contains 220 bytes (x 10 rows). The address of the first cell in the second table is 220.
	* (As noted, Columns defined as Part of Project are not included)
Row length	Table 2 contains 3 columns of 4, 2, and 4 bytes. Therefore, the row is 10 bytes long.
Start address of Row 4 (in Table 2)	Table 2 contains 4 rows **preceding** the row containing the requested cells. Therefore, the start address of Row 4 is 40 [(10 * 4) = 40].
Cell Address (in Table 2)	The first cell of the requested data is in Column 1. Column 0 contains 4 bytes. Therefore, add 4 to the start row address [(40+4)=44].
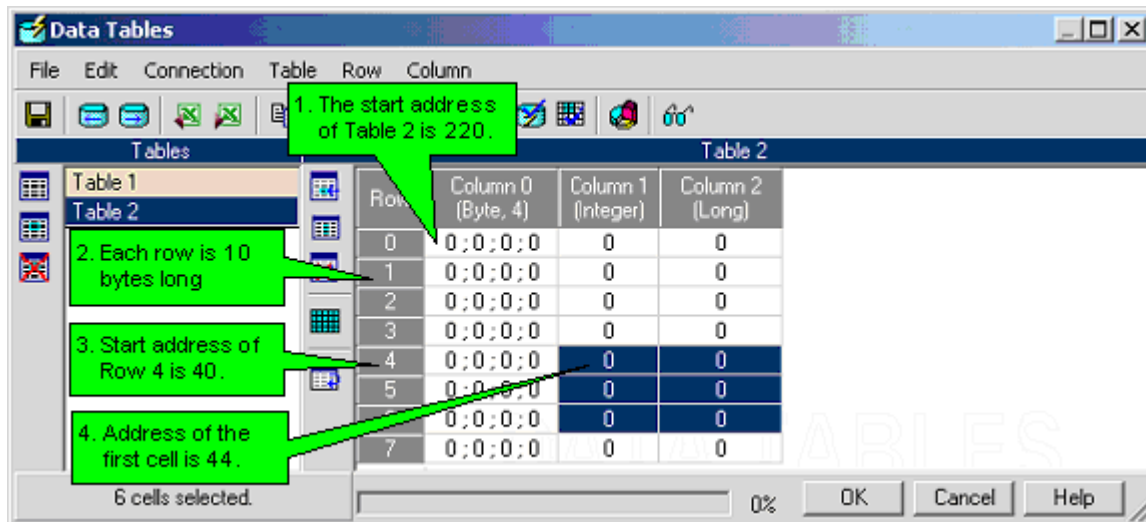
Reading the cells

To access the requested cells, enter the data as shown below. To extract and print Data Table values, include the rest of the code shown below.

Parameter: Address
264 = 220 + 44   (Start Address of Table 2 + Address of the first requested cell)

Parameter: ElementsCount
(Number of rows to be read)

Parameter: ElementSize
(Integer+ long= 6 bytes).

Parameter: RowSize
(4 bytes+integer+long).

```
Private Sub ReadCells()
Dim Values() As Byte
Dim Row As Long
Dim iTemp As Integer
Dim lTemp As Long
Dim Pointer As Long

    Call ComDrive.Read_DB(264, 3, 6, 10, Values)

    Pointer = 0
    Debug.Print "Row" & vbTab & "Column1" & vbTab & "Column2"

    For Row = 4 To 6
        Call CopyMemory(iTemp, Values(Pointer), 2)
        Pointer = Pointer + 2
        Call CopyMemory(lTemp, Values(Pointer), 4)
        Pointer = Pointer + 4

        Debug.Print Row & vbTab & iTemp & vbTab & lTemp
    Next Row
End Sub
```

Element Byte Address

Holding your cursor over a Data Table cell activates a Tooltip which shows the byte address of the first element within that cell.