

# **An Excel Macro that fill spreadsheet with range of DMs read from PLC**

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## **Objective :**

In the standard ExcelLink program, when you read a single variable at a time from the PLC, you can configure it to write to the same location or to fill a range of spreadsheet cells. However, when you configure to read a range of DM in a single read command then the retrieved DMs data from the PLC will always be written to the same range of (row x column) cells that you defined in the "Action" command.

In data logging application it is desirable to log a range of data memory with the date and time stamp to the Excel spreadsheet one row at a time, and the next set of data will be log to a new row while preserving the data of the old row.

This however cannot be achieved with standard ExcelLink. An Excel Macro is hence written to achieve this objective.

## **Implementation Method:**

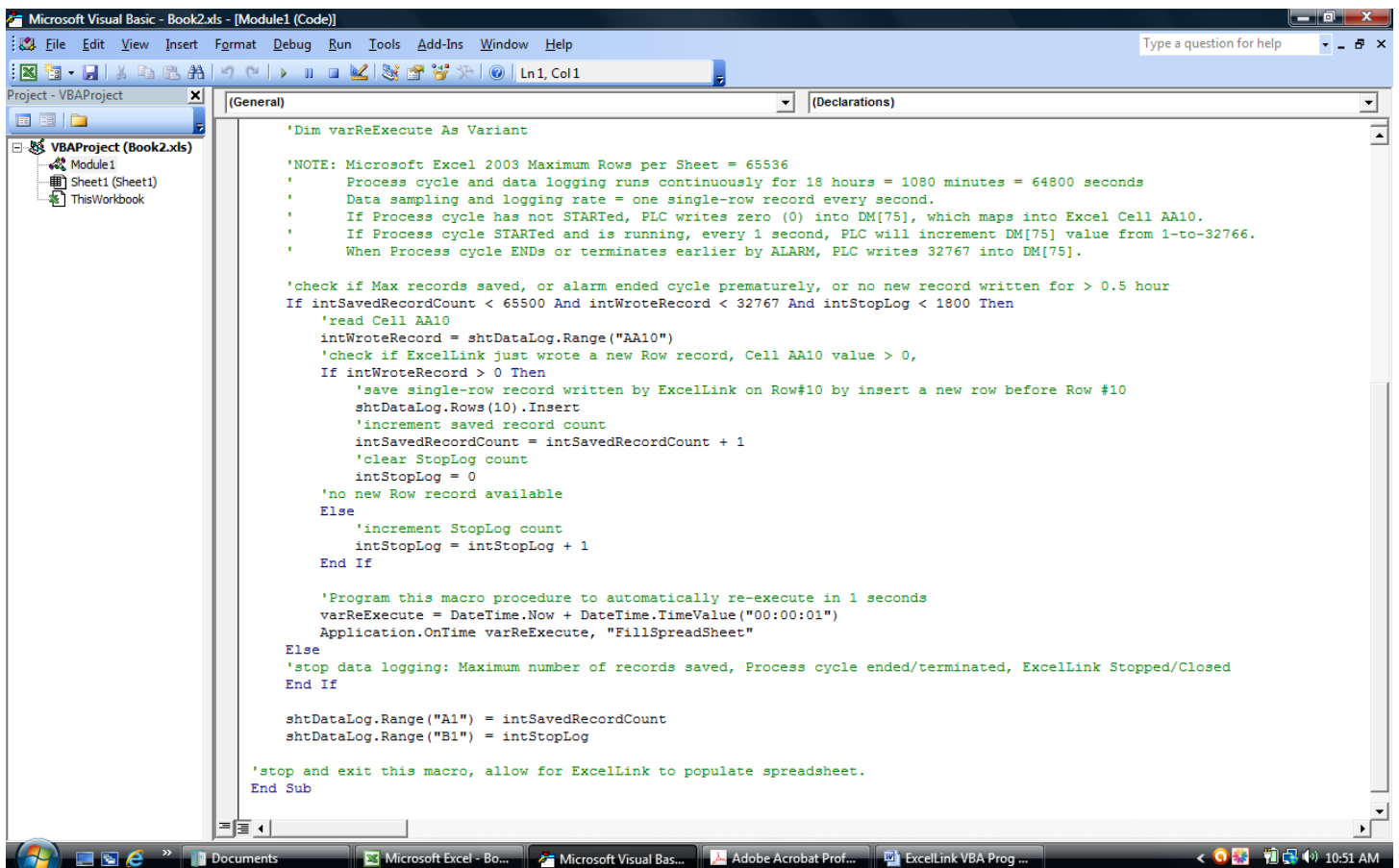
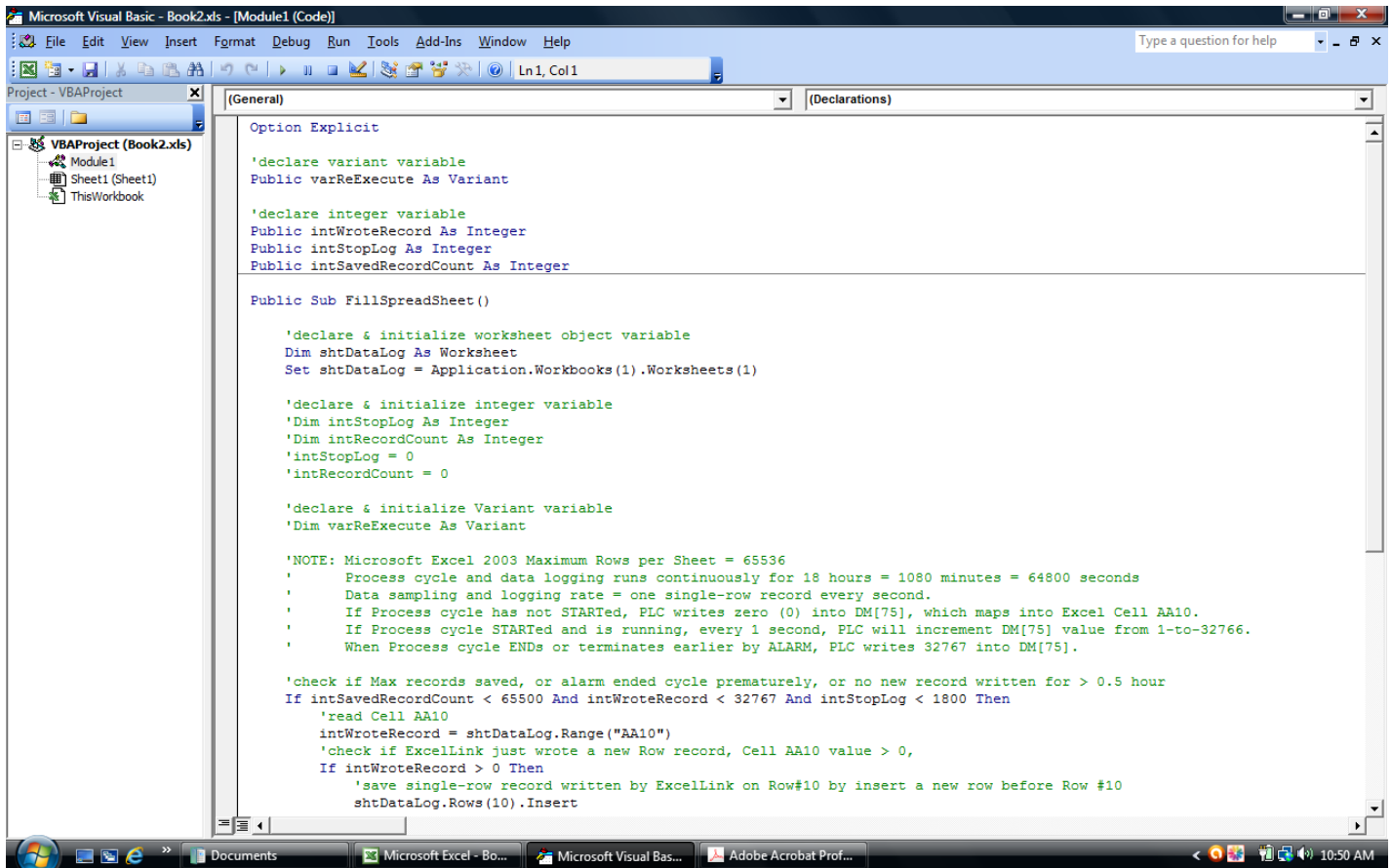
A simple VBA Excel Macro Procedure is written to do the following:

- 1) First checks if a new ExcelLink single-row record is available in Row #10.
- 2) If a new record is available Cell (AA10 value > 0) at Row #10, Macro Procedure inserts a new blank row before Row #10.
- 3) Newly inserted blank row becomes new Row #10, which is ready to receive the next ExcelLink new record.
- 4) Original Row #10, filled with data, becomes Row #11.
- 5) If new record is not yet available Cell (AA10 value = 0) at Row #10, no row is inserted.
- 6) After inserting new blank Row #10 or if no new record is available, macro procedure programs itself to automatically re-execute in 10 seconds and then Macro Procedure stops and exits, allowing Excel to resume normal ExcelLink data logging.
- 7) Then seconds later Macro Procedure automatically re-starts and cycle repeats.

## **Author's Note:**

- 1) Please share this sample VBA program code with other Triangle Research customers and include it as part of ExcelLink kit package.
- 2) Please be reminded that ExcelLink writes and overwrites the data record of a range of DM always to the same set of Cells. It does not fill spreadsheet/
- 3) My attached sample VBA program code or similar code is needed to save ExcelLink data record and populate spread sheet.
- 4) Please be reminded that Microsoft Excel is a single task (not multitask) application; therefore, Excel macro programs executing simultaneously with ExcelLink, stop Excel from refreshing spreadsheet with new ExcelLink data records.
- 5) Consequently, Excel VBA macros need to momentarily execute and then close themselves to allow Excel to refresh spreadsheet with new ExcelLink data records.
- 6) Since Microsoft Excel is a single task application, selecting and clicking on any Excel menu icons while ExcelLink is running, also stops Excel from refreshing spreadsheet with new ExcelLink data records.

Screenshot of the Macro programs and the result of execution are attached for reference. For more details please open the attached Excel file "Book2.xls" and press Alt-F11 to open the VBA code editor.



Microsoft Excel - Book2

File Edit View Insert Format Tools Data Window Help Adobe PDF

Type a question for help

AH2 DM33

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1																											
2		DM1	DM2	DM3	DM4	DM5	DM6	DM7	DM8	DM9	DM10	DM11	DM12	DM13	DM14	DM15	DM16	DM17	DM18	DM19	DM20	DM21	DM22	DM23	DM24	DM25	DM26
3	DateTime	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
4	Thu Jul 28 10:43:47 PDT 2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5																											
6																											
7																											
8																											
9	DateTime	DM50	DM51	DM52	DM53	DM54	DM55	DM56	DM57	DM58	DM59	DM60	DM61	DM62	DM63	DM64	DM65	DM66	DM67	DM68	DM69	DM70	DM71	DM72	DM73	DM74	DM75
10	Thu Jul 28 10:44:03 PDT 2011	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
11	Thu Jul 28 10:36:08 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Thu Jul 28 10:36:07 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Thu Jul 28 10:36:06 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Thu Jul 28 10:36:05 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Thu Jul 28 10:36:04 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Thu Jul 28 10:36:04 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Thu Jul 28 10:36:03 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Thu Jul 28 10:36:02 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Thu Jul 28 10:36:00 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Thu Jul 28 10:35:59 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Thu Jul 28 10:35:58 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Thu Jul 28 10:35:57 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Thu Jul 28 10:35:57 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Thu Jul 28 10:35:55 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Thu Jul 28 10:35:55 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Thu Jul 28 10:35:53 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Thu Jul 28 10:35:53 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Thu Jul 28 10:35:51 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Thu Jul 28 10:35:50 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Thu Jul 28 10:35:49 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Thu Jul 28 10:35:48 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Thu Jul 28 10:35:47 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Thu Jul 28 10:35:46 PDT 2011	10	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ready Sum=38

Documents Microsoft Excel - Bo... Adobe Acrobat Prof...

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TRI-ExcelLink Version 2.0

Internet PLC - ExcelLink

S1: Localhost Demo S9: Click to Setup RUN

S2: LSITest S10: Click to Setup Pause

S3: Click to Setup S11: Click to Setup STOP

S4: Click to Setup S12: Click to Setup F1-Help

S5: Click to Setup S13: Click to Setup Exit

S6: Click to Setup S14: Click to Setup

S7: Click to Setup S15: Click to Setup

S8: Click to Setup S16: Click to Setup

S1-S16 are TLServer "Sites" with unique URL

Excel Filename: Book2.xls

Sheet name: Sheet1

Save Now Auto Save Every(s) 60 Clear Msg

Configuration of Network Site: S2

Site Name: LSITest ☒ Active?

URL: 169.254.85.90:9080

E.g. 127.0.0.1:9080

Username:

Password:

Double-click A1..A100 buttons To Edit Action

A1 ID=01 ReadDM DM[1]-[49] 0.0s

A2 ID=01 ReadDM DM[50]-[75] 0.1s

A3

A4

A5

A6

A7

A8

A9

A10

A11

A12

OK Cancel

Site S2: PLC-to-Excel Link Action A1

☒ Active? PLC's ID 01 Period (x 0.1s) 0

Action Read A Range of DMs OK

Variable DM[n] Cancel

Var. Index 1 Var. Counts 49 Delete

Enter ID in Hex number 00-FF

Excel Linkage Cell Locations

Start Col. B No. of Col. 49

Start Row 4 No. of Row 1

☒ Fill Row, Then Down ☒ Time Stamp

☐ Fill Column, Then Right ☐ Roll Over when filled

Page 3 Sec 1 3/3 At 6.9" Ln 3 Col 1 REC TRK EXT OVR English (U.S.)

Documents Microsoft Excel - Bo... ExcelLink VBA Prog... TRI-ExcelLink Versio... Configuration of Ne...

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