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Started by plat933x, 22 Sep 2017

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plat933x

Newbie



MrPLC Member

● 0

9 posts

Gender: Male

Poland

Posted 22 Sep 2017



Hi,

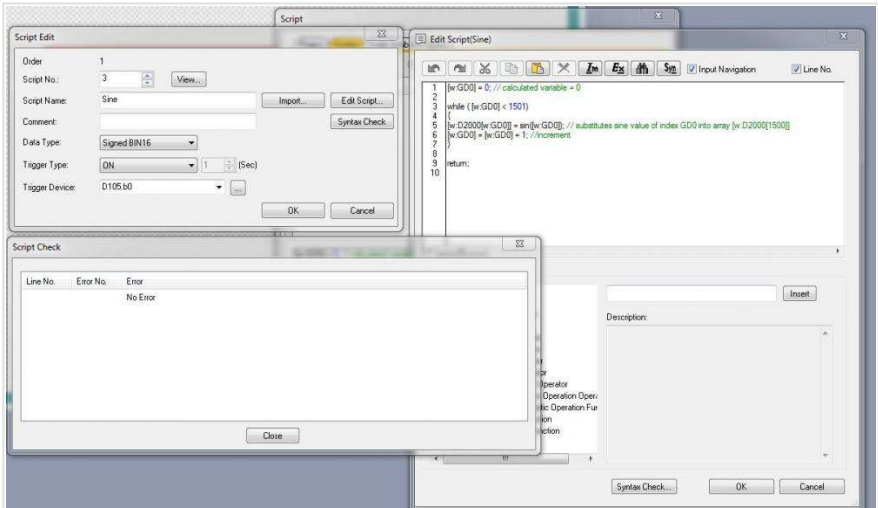
I encountered a specific problem during work with GXWorks2 & GTDesigner3. In my part of group project I need to receive from proper script, array of values of sine wave. I need to get 1500 values of sine wave and fill registers in GXWorks and have no idea why my script does not run. I'm using simple while loop with no errors statement from Syntax Check. My script should calculate sine values from index 0 to 1500, and substitute it to registers D2000 - D3499. Look in attachments for better understanding my trouble.

I'm looking forward to hearing from you as soon as possible.

Greetings,

Jan

P.S. I'm new in Mitsubishi Equipment programming so if it's some kind of beginner's problem - please be merciful for me.



The Buffer Memory window shows the following table:

Device	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0	
D2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2023	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2026	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2027	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2028	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2029	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2031	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D2032	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

kaare_t
 Propeller Head
 ●●●●●



MrPLC Member

Posted 22 Sep 2017

I'm not sure which GOT you are on, but I did some testing setting up a simulator of GOT27.

After some testing and failing, finally success:

The problem is that the GOT (at least in simulator mode on my computer - didn't have a GOT here to play with), is not very happy about PLC variables directly inside the 'while' statement. Therefore, I

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modified your script a little, and used internal variables in the GOT only (GD). See the attached screenshot. Also: IMPORTANT NOTE: I went with GD20 as the index variable, GD0 to GD6 may be automatically assigned in the GOT if clock data is activated for GT21... I changed GD0 in my script to GD20 (you should also do this just to avoid any possible problems in the future).

Also: Make a note of the flt (FLOAT) I've used. Since calculating sin values will result in small numbers less than 1, you'll need to use REAL in the PLC, and they are 32-bit variables. You cannot calculate sin values into regular words, hence the script I've attached will be using from D2000 - D4999 in the PLC.

Let us know if you have questions.

```

1 // Since the 'while' instruction is not happy about PLC variables directly inside of it,
2 // I have solved this by using internal devices in the GOT only (from GD5000 - GD7999),
3 // then I BMOV all the internal variables to the PLC variables in the end.
4
5 [w:GD20] = 0; //Reset variable to 0
6
7 while ([w:GD20] < 3000) //while (1500*2 devices)
8 {
9   flt:GD5000[w:GD20] = sin([w:GD20]); //Performs sin on GD0, and stores it as a float/real variable
10  [w:GD20] = [w:GD20] + 2; //Adds 2 to handle the middle occupied 16-bit variable
11 }
12
13 bmov([w:GD5000],[w:D2000],3000); //bmoves all the values at the end into the PLC

```

1 person likes this

plat933x

Newbie



MrPLC Member

0

9 posts

Gender: Male

Poland

Posted 24 Sep 2017



First of all, big thanks for you @kaare_t for quick and right answer. I've based my new-edited script on your advices and it worked, but I have another stranger issue regarding to script's results. I used exactly your script and got weird results which you can see in attachements in this post. I plotted 50 points starting from D2000 to show more clear what is the problem.

Att.1. Why the obtained chart is so irregular with many peaks?It looks more similar to sawtooth wave. I must get more smooth sine wave chart. Is it some kind of problem with sampling frequency?

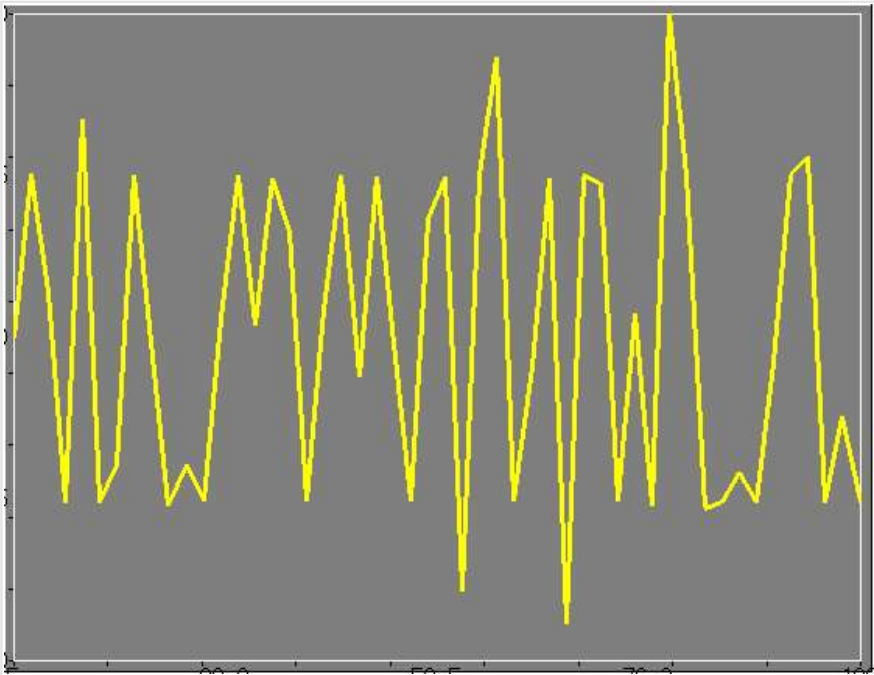
Att.2. Values in registers are in range of -32768 to 32767, i guess it's from Signed Word range, but is it possible to get, on chart, values e.g. in range 0-100? Should i make some conversion in GXWorks with received in D2000-D3499 values?

Att.3. On another screen i made script with exponential function instead of sine. You can see that all I got is something near rising

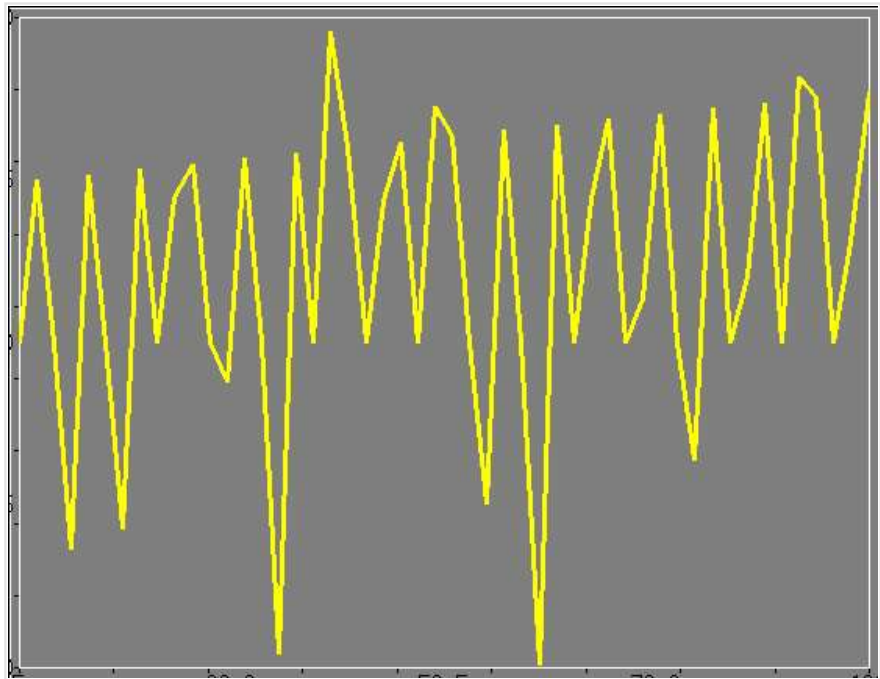
sawtooth function. What is the simplest way to get exp function with GOT's script?

I'm working with GOT1000 GT15-S and Mitsubishi FX3GE-24MT.

Greetings,
J.



Device	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0	
D2490	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	1	-55
D2491	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	16254
D2492	0	0	0	1	1	0	1	1	0	1	1	1	0	0	1	1	7027
D2493	1	0	1	1	1	1	1	0	1	0	1	0	1	0	1	1	-16725
D2494	1	1	0	0	1	0	1	1	0	0	0	1	1	1	1	1	-13537
D2495	1	0	1	1	1	1	1	1	0	0	1	1	0	1	1	1	-16585
D2496	1	0	0	0	0	1	1	0	0	0	0	1	0	0	1	1	-31213
D2497	0	0	1	1	1	1	1	1	0	1	1	0	1	1	1	0	16238
D2498	1	0	1	0	0	1	1	1	0	1	0	1	0	0	1	1	-22701
D2499	1	0	1	1	1	1	0	1	0	1	1	0	1	0	1	1	-17045
D2500	0	1	0	0	0	0	1	1	1	1	1	1	0	0	1	0	17394
D2501	1	0	1	1	1	1	1	1	0	1	1	0	0	0	1	0	-16542
D2502	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	1	3121
D2503	0	0	1	1	1	1	1	1	0	1	0	0	1	0	1	1	16203
D2504	0	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	5285
D2505	0	0	1	1	1	1	1	0	0	1	1	0	0	1	0	1	15973
D2506	1	0	1	1	0	1	1	0	1	0	0	1	0	1	0	1	-18795
D2507	1	0	1	1	1	1	1	1	0	1	1	1	1	0	1	0	-16518
D2508	0	1	1	0	0	1	0	1	1	0	0	1	1	0	0	1	26009
D2509	0	0	1	1	1	1	1	1	0	0	0	1	0	1	1	1	16151
D2510	0	1	1	0	1	0	0	1	1	1	0	0	0	0	1	1	27075
D2511	0	0	1	1	1	1	1	0	1	1	1	1	1	0	0	1	16121

**kaare_t**

Propeller Head



MrPLC Member

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Posted 25 Sep 2017



The reason you're seeing "strange" values in GX Developer is because, according to the script I provided, use float (REAL) numbers and they are distributed over 2 words (32 bit in total). In other words, in the GOT you will also need to use float (REAL) numbers in your plot. It looks to me like you've used words in your plot, and you should be using floats (REAL).

wlederer

Sparky



MrPLC Member

+ 1

84 posts

Posted 27 Sep 2017



Thank You kaare_t . Can You advice, please, how to create a csv file with HMI tag's values on an USB stick inserted into GOT2000?

Is anywhere examples available?

kaare_t
Propeller Head



MrPLC Member
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Posted 4 Oct 2017



No problem. I'm really not sure how to do this, it should be possible but I've never tried it before... Did you solve it?

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