

WEINTEK LABS., INC.

JS Object Dynamically Show Trend Value

Demo Project

Contents

- 1. Overview & Operation 1
- 2. Setting up the Screen 2
- 3. Addresses 7

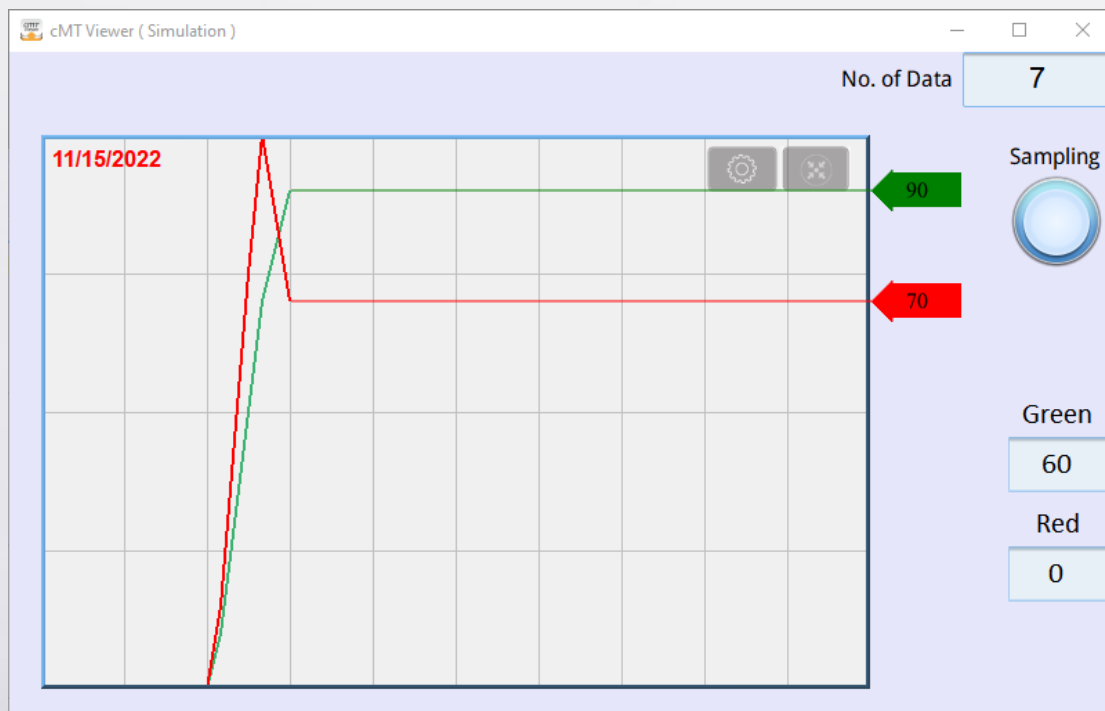
1. Overview & Operation

Overview

This demo project explains how to show current trend value by using JS object.

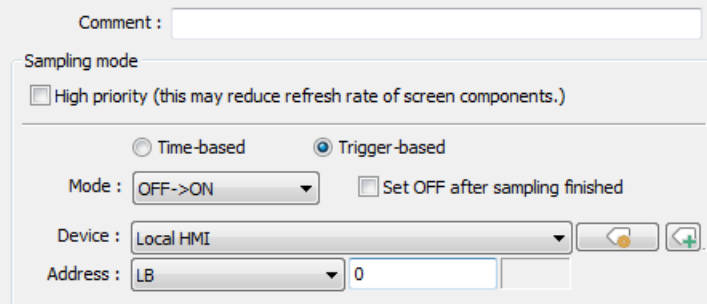
Operation

- Step 1.** Execute the project and download the project to HMI.
- Step 2.** Trigger [Sampling] to start sampling data. The current sampled data will be displayed on the right hand side.



2. Setting up the Screen

Step 1. Create a Data Sampling object, select Trigger-based mode, and set the control address to LB-0.



Comment :

Sampling mode

☐ High priority (this may reduce refresh rate of screen components.)

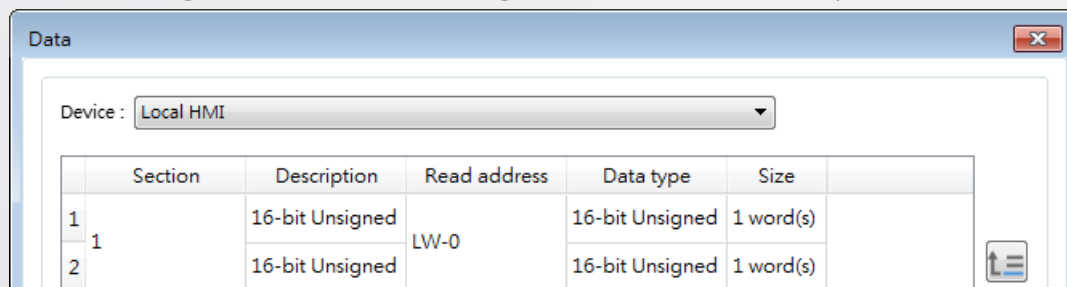
☐ Time-based ☒ Trigger-based

Mode : ☐ Set OFF after sampling finished

Device :

Address :

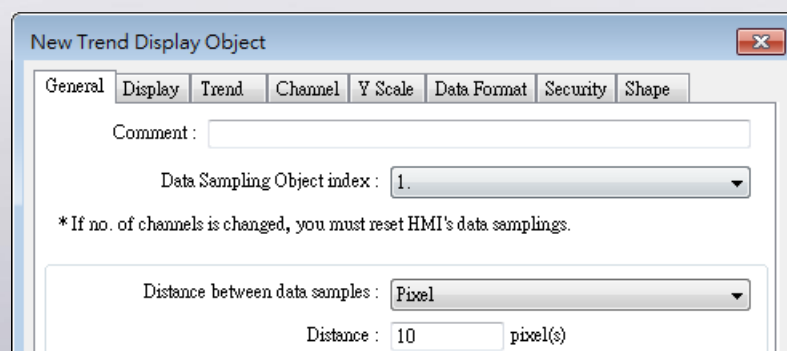
Step 2. Set data record. As shown below, data from two consecutive 16-bit unsigned addresses starting from LW-0 will be sampled.



Device :

	Section	Description	Read address	Data type	Size
1	1	16-bit Unsigned	LW-0	16-bit Unsigned	1 word(s)
2	2	16-bit Unsigned		16-bit Unsigned	1 word(s)

Step 3. Create a Trend Display object. To correctly locate the closest sampled point from which to draw the trend line, set distance between data samples to [Pixel].



General **Display** Trend Channel Y Scale Data Format Security Shape

Comment :

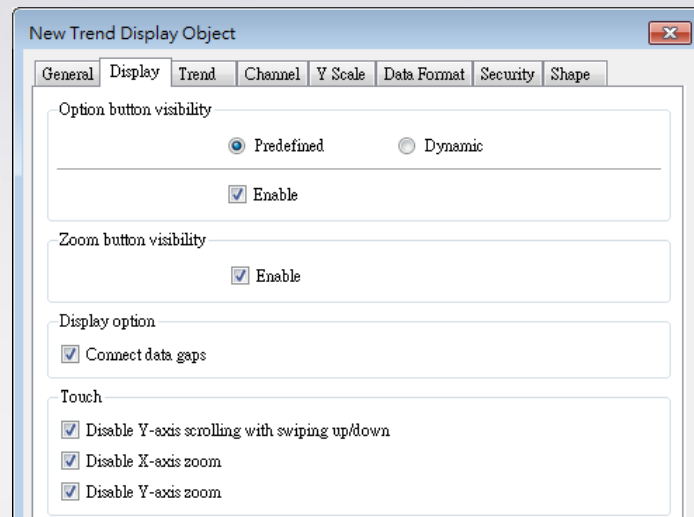
Data Sampling Object index :

* If no. of channels is changed, you must reset HMI's data samplings.

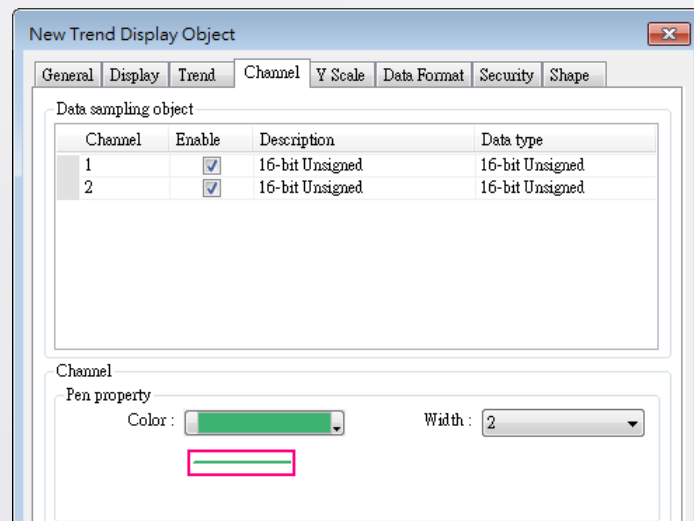
Distance between data samples :

Distance : pixel(s)

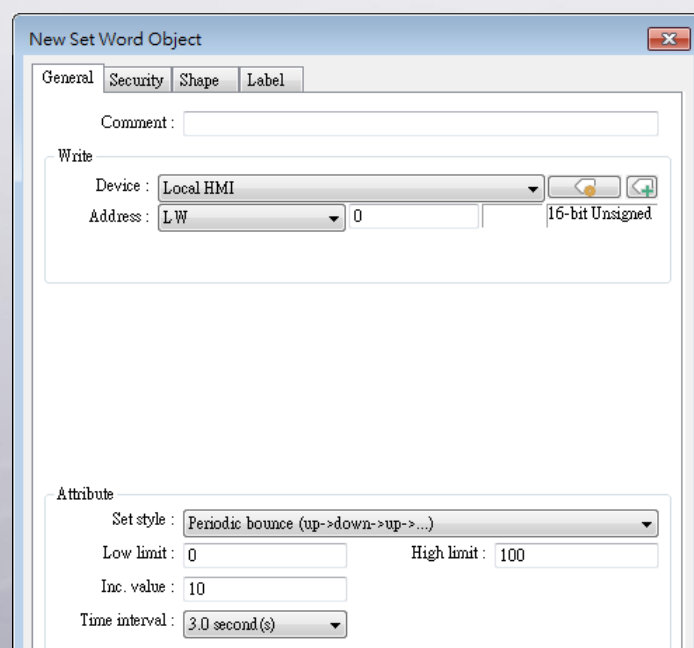
Step 4. To prevent the trend line from being drawn incorrectly due to the change of X/Y axis, please disable X/Y-axis zoom in the Display tab.



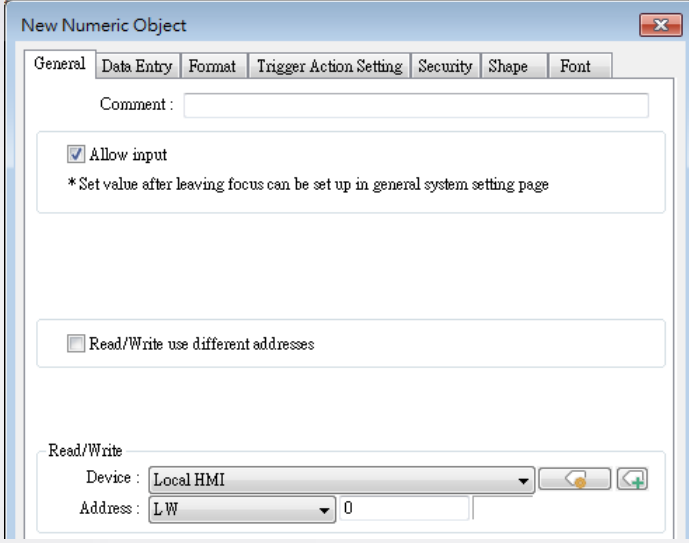
Step 5. In Channel tab enable the two channels.



Step 6. Create two Set Word objects to change the values automatically.



Step 7. Create two Numeric objects to display the sampled data in LW-0 and LW-1.



New Numeric Object

General Data Entry Format Trigger Action Setting Security Shape Font

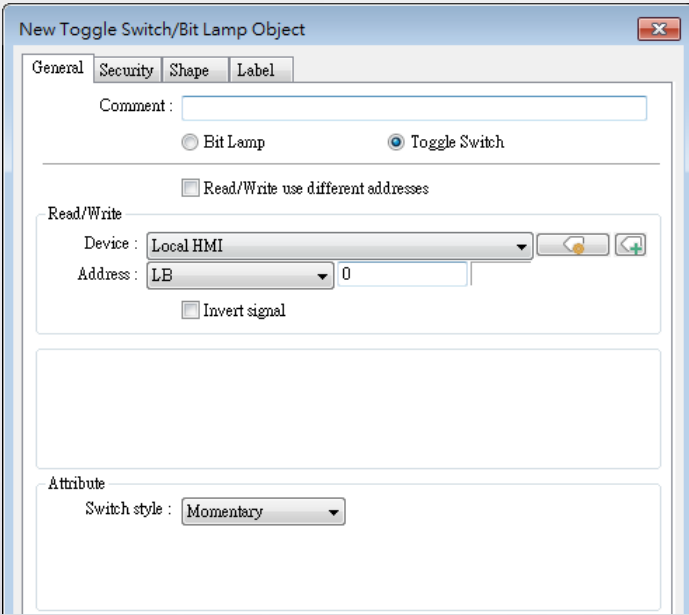
Comment :

☒ Allow input
*Set value after leaving focus can be set up in general system setting page

☐ Read/Write use different addresses

Read/Write
Device : Local HMI
Address : LW 0

Step 8. Create a Toggle Switch to trigger data sampling.



New Toggle Switch/Bit Lamp Object

General Security Shape Label

Comment :

☐ Bit Lamp ☒ Toggle Switch

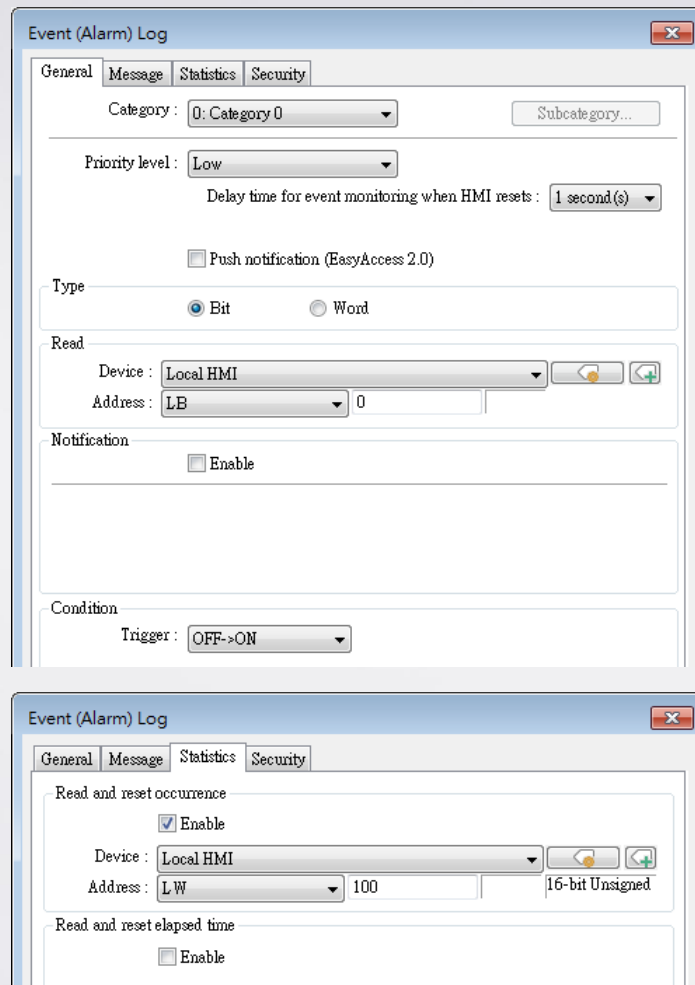
☐ Read/Write use different addresses

Read/Write
Device : Local HMI
Address : LB 0

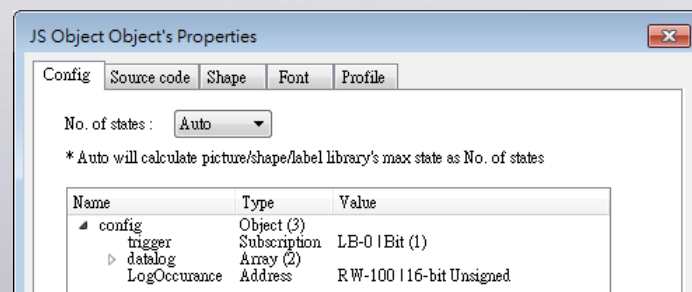
☐ Invert signal

Attribute
Switch style : Momentary

Step 9. Create an Event Log to record the occurrence count of data sampling so the sampled points can be correctly connected.



- Step 10.** Create a JS object and position it to cover the Trend Display object. The JS object draws the trend line when Data Sampling is triggered, therefore the items below should be subscribed.
- trigger: The trigger address of data sampling.
 - datalog: The sampled data.
 - LogOccurrence: The occurrence count of data sampling.



- Step 11.** Configure the JS commands. (Only selected commands are shown below, please see the project for details.)

Line 1: *'this'* is the JS object. Through *'this.config'*<object> to obtain the value (/values) added in [Config] tab.

Line 2~3: Add a Canvas to Widget.

Line 5~7: Configure drawing parameters.

Line 9~17: Call 'onResponse' function of *'this.config.trigger'* <Subscription> and register response callback to get notification when the state of LB-0 changes.

Line 19~80: The function that draws the line and the arrow shape when the occurrence count and the sampled data are obtained.

Line 82~88: The delay function used to ensure that all steps are carried out in order.

Line 90~106: The draw function that draws the shapes.

Line 108~118: The draw line function that draws the lines.

Line 120~126: The draw text function that draws the texts.

Line 128~131: The clear function.

```

1  var self = this;
2  var ctx = new Canvas();
3  this.widget.add(ctx);
4
5  var color;
6  ctx.fillStyle = "red";
7  ctx.strokeStyle = "red";
8
9  this.config.trigger.onResponse(async (err, data) => {
10
11      if (data.values[0]) {
12
13          clear();
14          myAsyncFunction();
15
16      }
17  });
18
19  async function myAsyncFunction() {
20
21      var datalog, ch1, ch2;
22      var trigger, triggerCount;
23      var x;
24
25      datalog = driver.getData(self.config.datalog[0], 2, (err, data) => {
26
27          if (err) {
28
29              console.log('Error:', err.message);
30
31          } else {
32
33              ch1 = data.values[0];
34              ch2 = data.values[1];
35
36          }
37
38      });
39
40      await delay(3);
41
42      trigger = driver.getData(self.config.LogOccurance, 1, (err, data) => {
43
44          if (err) {
45              console.log('Error:', err.message);
46          } else {
47              triggerCount = data.values;
48          }
49
50      });
51
52      await delay(3);

```

The above only shows selected commands, please see the project for details.

3. Addresses

The addresses of key objects used in this demonstration are listed below, please adjust as necessary.

Object	Address	Object ID	Description
Window 10			
Set Word	LW-0	SW_0	Automatically changes the data in LW-0.
Set Word	LW-1	SW_1	Automatically changes the data in LW-1.
Numeric	LW-0	NE_0	Shows the data in LW-0.
Numeric	LW-1	NE_1	Shows the data in LW-1.
Numeric	RW-100	NE_2	Shows the data in RW-100 (The occurrence count).
Toggle Switch	LB-0	TS_0	Triggers Data Sampling.
JS Object	LB-0, LW-0, LW-1, RW-100	CO_0	Subscribes to LB-0 state, reads data in LW-0 and LW-1, reads data in RW-100
Window 11			
Trend Display		TD_0	Draws trend line.
Background			
Data Sampling	LB-0, LW-0, LW-1,		LB-0 triggers data sampling to sample data in LW-0 and LW-1.
Event Log	LB-0, RW-100		Writes the occurrence count to RW-100 when LB-0 is triggered.