

## Demo Project for Trend and Data Display

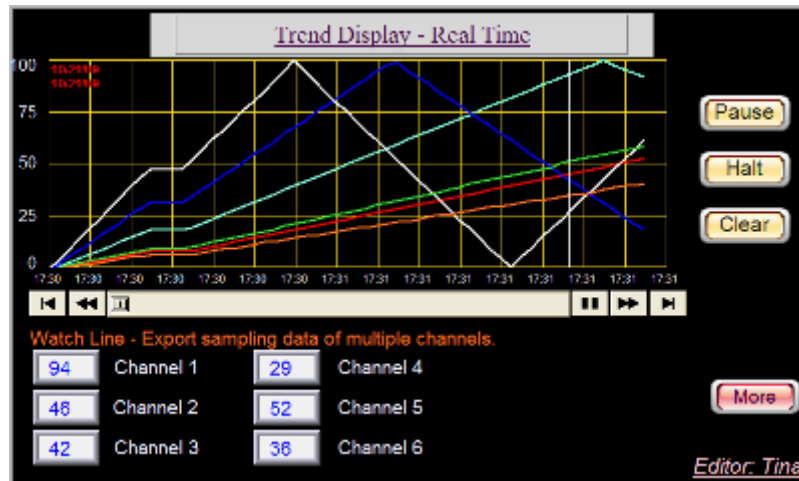
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## 1. Overview and Operation

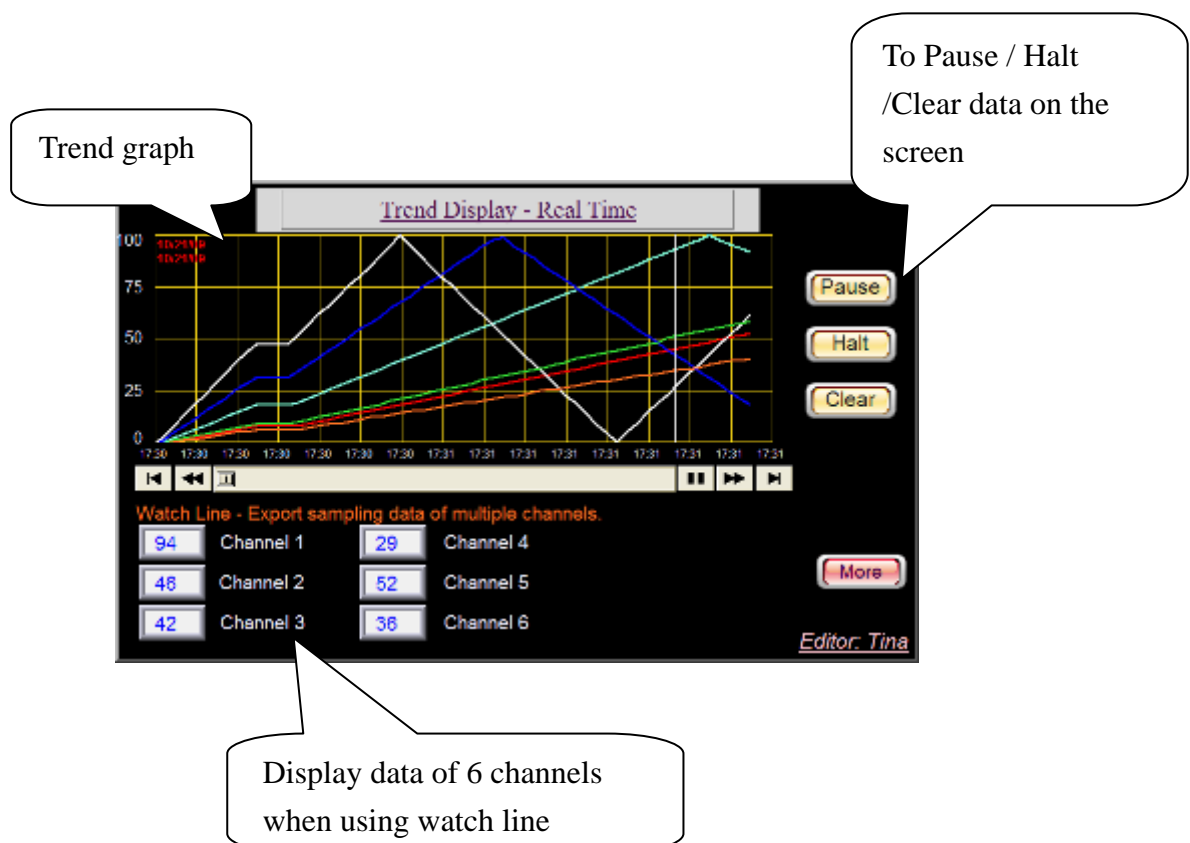
[Overview]

This demo project displays how to use Trend Display graph to show data log in Real-time mode or History mode. A History Data object can also be used to display data log in table chart.

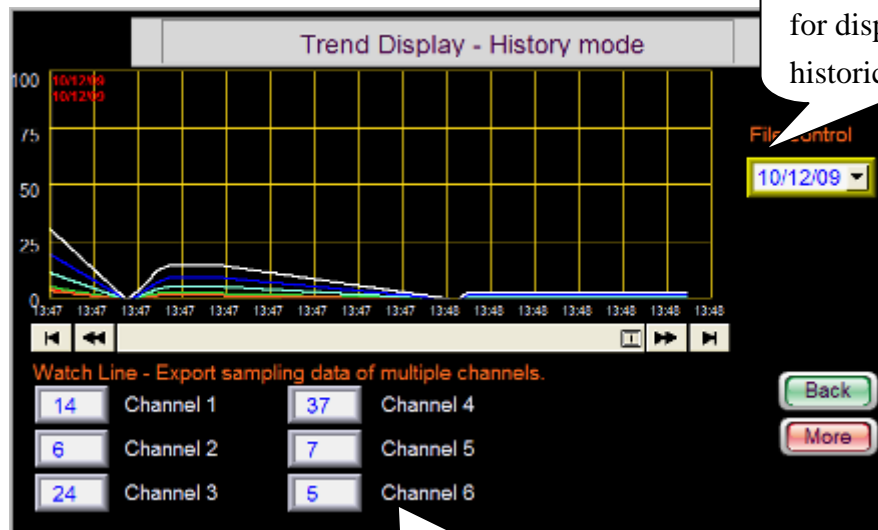


[Operation]

- Trend Display – Real Time



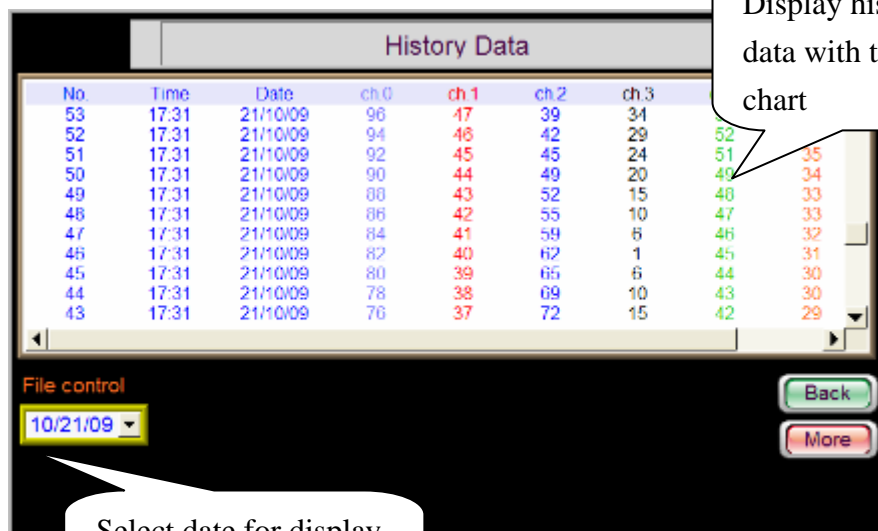
- Trend Display – History mode



Select the date for display of historical data

Display data of 6 channels when using watch line

- History Data



History Data

No.	Time	Date	ch.0	ch.1	ch.2	ch.3
53	17:31	21/10/09	96	47	39	34
52	17:31	21/10/09	94	46	42	29
51	17:31	21/10/09	92	45	45	24
50	17:31	21/10/09	90	44	49	20
49	17:31	21/10/09	88	43	52	15
48	17:31	21/10/09	86	42	55	10
47	17:31	21/10/09	84	41	59	6
46	17:31	21/10/09	82	40	62	1
45	17:31	21/10/09	80	39	65	6
44	17:31	21/10/09	78	38	69	10
43	17:31	21/10/09	76	37	72	15

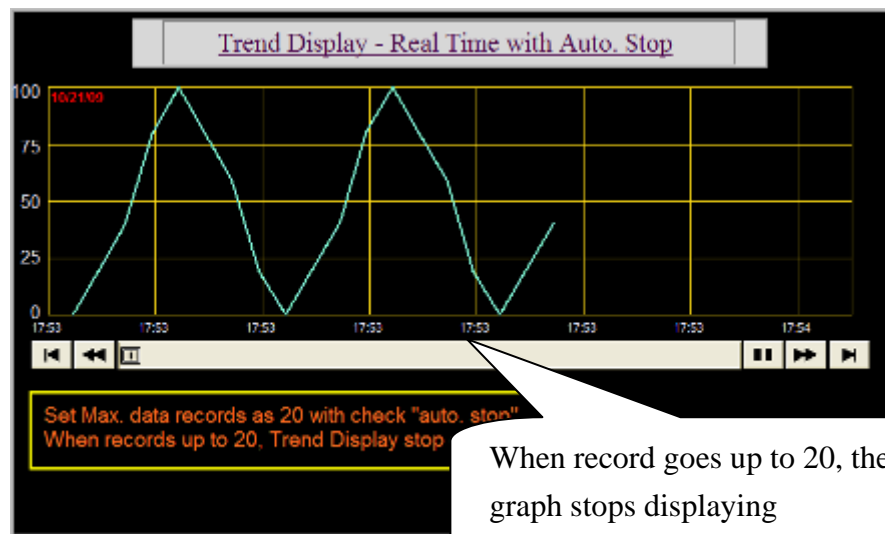
File control: 10/21/09

Back, More

Display history data with table chart

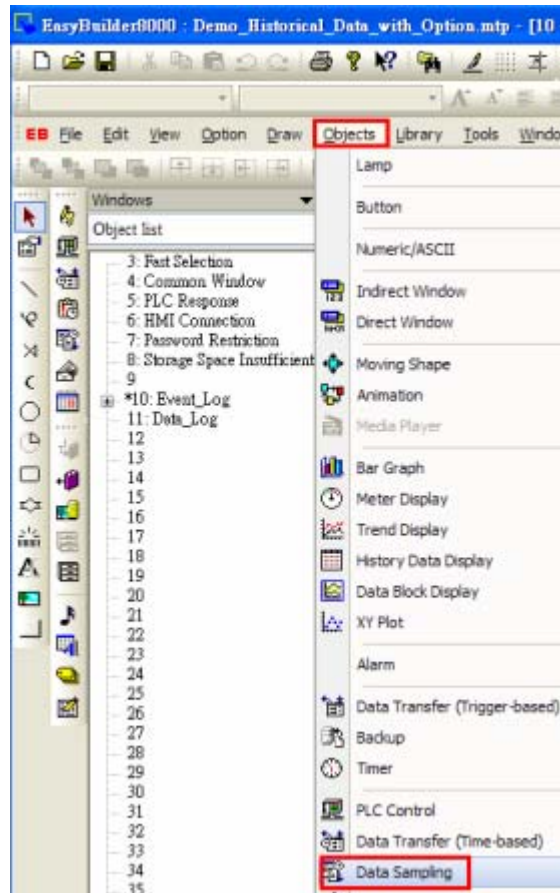
Select date for display of historical files

- Trend display – auto stop

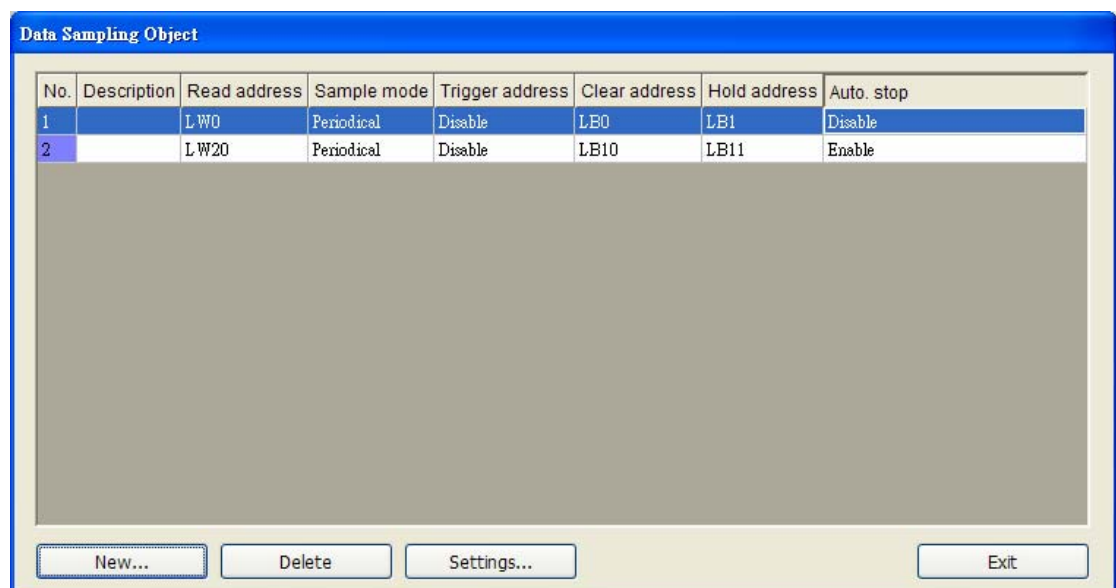


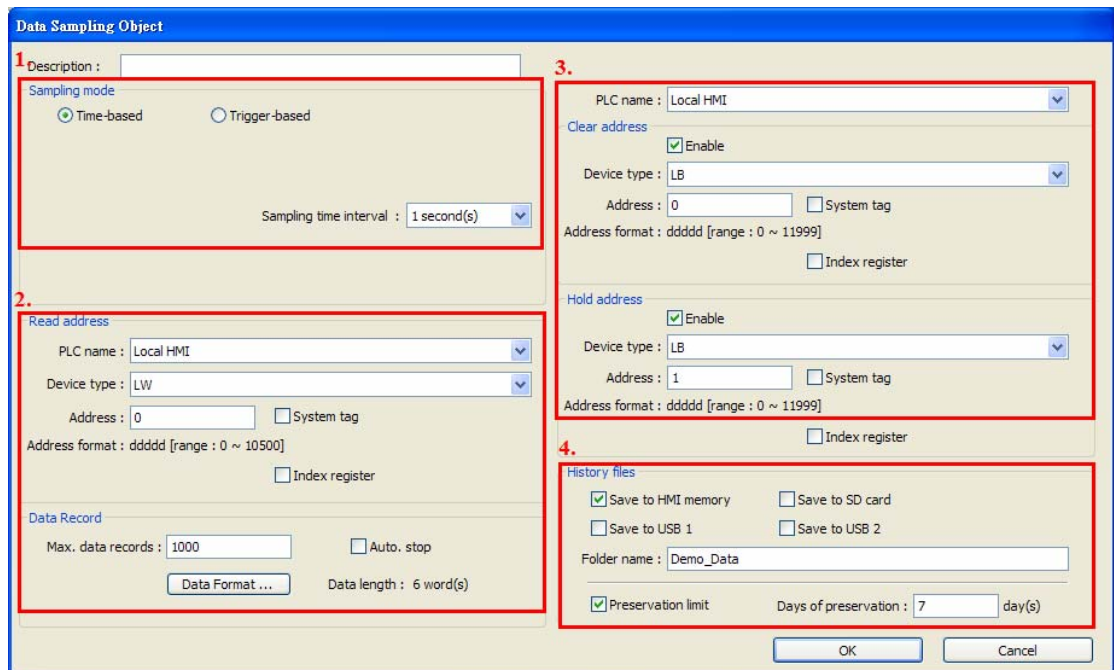
## 2. Setting up the screen

2-1. In the Objects area, click “Data Sampling” icon.



The Data sampling dialogue box appears as below.





**Data Sampling Object**

1. Description :

Sampling mode  
☒ Time-based ☐ Trigger-based  
 Sampling time interval : 1 second(s)

2. Read address  
 PLC name : Local HMI  
 Device type : LW  
 Address : 0 ☐ System tag  
 Address format : dddd [range : 0 ~ 10500]  
☐ Index register

Data Record  
 Max. data records : 1000 ☐ Auto. stop  
 Data length : 6 word(s)

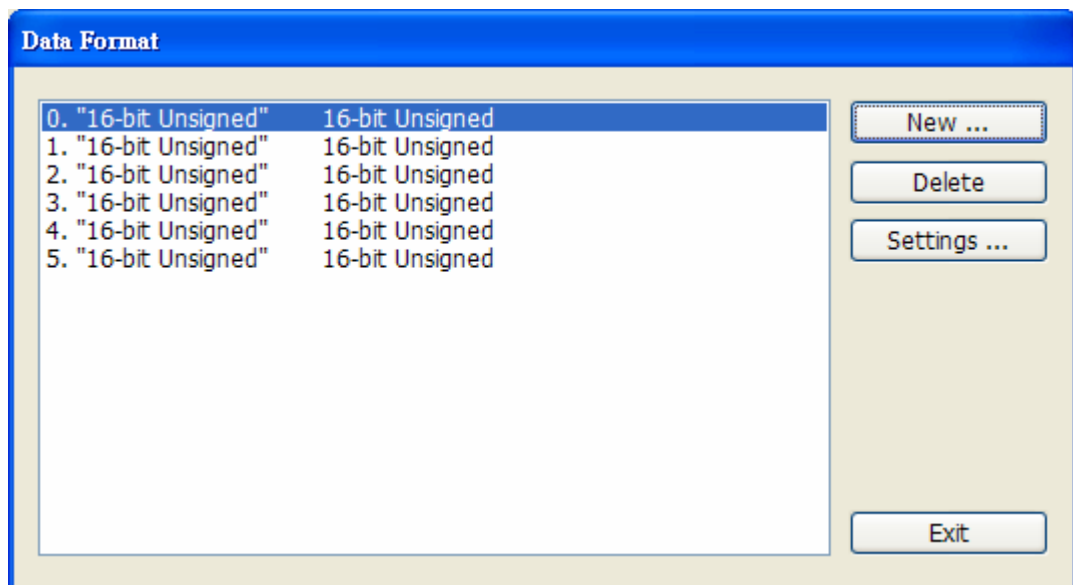
3. PLC name : Local HMI  
 Clear address  
☒ Enable  
 Device type : LB  
 Address : 0 ☐ System tag  
 Address format : dddd [range : 0 ~ 11999]  
☐ Index register

Hold address  
☒ Enable  
 Device type : LB  
 Address : 1 ☐ System tag  
 Address format : dddd [range : 0 ~ 11999]  
☐ Index register

4. History files  
☒ Save to HMI memory ☐ Save to SD card  
☐ Save to USB 1 ☐ Save to USB 2  
 Folder name : Demo\_Data  
☒ Preservation limit Days of preservation : 7 day(s)

Step 1. Set the [Time based] and select 1 second in [Sampling time interval]

Step 2. Use LW0 in [Read address] and click [Data Format] to create 6 words as illustration below.



**Data Format**

0. "16-bit Unsigned"	16-bit Unsigned
1. "16-bit Unsigned"	16-bit Unsigned
2. "16-bit Unsigned"	16-bit Unsigned
3. "16-bit Unsigned"	16-bit Unsigned
4. "16-bit Unsigned"	16-bit Unsigned
5. "16-bit Unsigned"	16-bit Unsigned

Step 3. Use LB0 in [Clear address] and LB1 in [Hold address]

Step 4. Select [Save to HMI memory], set folder name [Demo\_Data] and

set 7 days for preservation.

For Trend display – auto. stop, set as illustrated below.

**Data Sampling Object**

Description :

Sampling mode  
☒ Time-based ☐ Trigger-based

Sampling time interval : 1 second(s)

PLC name : Local HMI

Clear address  
☒ Enable  
Device type : LB  
Address : 10 ☐ System tag  
Address format : ddddd [range : 0 ~ 11999]  
☐ Index register

Hold address  
☒ Enable  
Device type : LB  
Address : 11 ☐ System tag  
Address format : ddddd [range : 0 ~ 11999]  
☐ Index register

History files  
☒ Save to HMI memory ☐ Save to SD card  
☐ Save to USB 1 ☐ Save to USB 2  
Folder name : Demo\_AutoStop

**Data Record**  
Max. data records : 20 ☒ Auto. stop  
Data Format ... Data length : 1 word(s)

Days of preservation : 7 day(s)

OK Cancel



**Data Record**

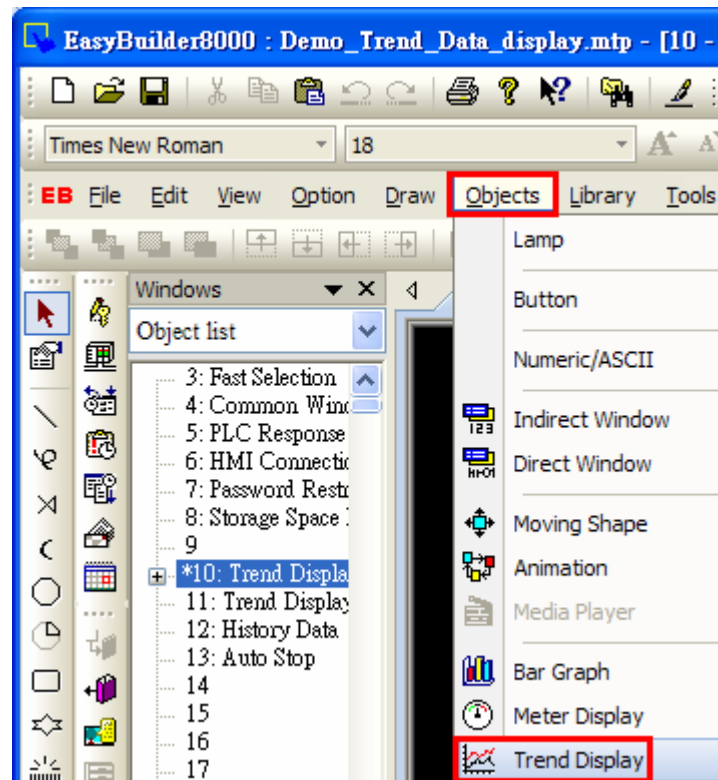
Max. data records : 20 ☒ Auto. stop

Data Format ... Data length : 1 word(s)

Set 20 in [Max. data records], the data will stop sampling when reaching 20 points.



2-2. Create a Trend display – real time in the Objects area in window 10.



The Trend Display dialogue box appears as below.

- In General of Trend Display settings

**Trend Display Object's Properties**

General Trend Shape Profile

1. Description :

Data Sampling Object index : 0

Trend type : Real-time No. of channels : 6

Note : if no. of channels is changed, you must reset HMI's data logs !!

2. X axis time range : ☐ Pixel ☒ Time

Distance : 60 second(s)

3. PLC name : Local HMI

Hold control

☒ Enable

Device type : LB

Address : 2 ☐ System tag

Address format : ddddd [range : 0 ~ 11999]

☐ Index register

4. Watch line

☒ Enable

Device type : LW

Address : 6 ☐ System tag

Address format : ddddd [range : 0 ~ 10500]

☐ Index register

OK Cancel Help

Step 1. Select [Real-time] in [Trend type] and 6 channels in [No. of channels]

Step 2. Click [Time] and set 60 seconds in [Distance]

Step 3. LB2 in [Hold control]

Step 4. LW6 in [Watch line]

- Select [Trend] tab and settings as below



**Trend Display Object's Properties**

General Trend Shape Profile

Frame :  Background :

☒ Show scroll controls

**1. Grid**

☒ Enable Color :

Horiz. :  division(s) Verti. interval :  second(s)

**Time scale**

☒ Enable

Format :  Font :

Color :  Size :

**2. Channel**

Channel :

**Pen property**

Color :  Width :

**Limits**

☐ Dynamic limits

Zero :  Span :

**3. Time/Date**

☐ Time ☒ HH:MM:SS ☐ HH:MM Color :

☒ Date ☒ MM/DD/YY ☐ DD/MM/YY ☐ DD.MM.YY ☐ YY/MM/DD

OK Cancel Help

Step 1. Enable Grid and Time scale

Step 2. Set the Pen property and Limits for each channel, users are able to select channel no. to set the content.

Step 3. Select Date or Time display in the graph.

2-3. Create a Trend display – History type in the Objects area in window 11.

- In General of Trend Display settings

**Trend Display Object's Properties**

General Trend Shape Profile

Description :

1. Data Sampling Object index : 0.   
Trend type : History  No. of channels : 6

Note : if no. of channels is changed, you must reset HMI's data logs !!

X axis time range : ☐ Pixel ☒ Time  
Distance : 60  second(s)

2. PLC name : Local HMI

History control

Device type : LW   
Address : 12  ☐ System tag  
Address format : ddddd [range : 0 ~ 10500] ☐ Index register

3. Watch line

☒ Enable  
Device type : LW   
Address : 13  ☐ System tag  
Address format : ddddd [range : 0 ~ 10500] ☐ Index register

OK Cancel Help

Step 1. Select History in [Trend type]

Step 2. Set LW12 in History control.

Step 3. Set LW13 in Watch line.

- Select [Trend] tab and settings as below

**Trend Display Object's Properties**

General Trend Shape Profile

Frame : [Frame] Background : [Background]

☒ Show scroll controls

**1. Grid**

☒ Enable Color : [Color]

Horiz. : 4 division(s) Verti. interval : 4 second(s)

**Time scale**

☒ Enable

Format : HH:MM Font : Albany

Color : [Color] Size : 8

**2. Channel**

Channel : 0

**Pen property**

Color : [Color] Width : 2

**Limits**

☐ Dynamic limits

Zero : 1 Span : 100

**3. Time/Date**

☐ Time ☒ HH:MM:SS ☐ HH:MM Color : [Color]

☒ Date ☒ MM/DD/YY ☐ DD/MM/YY ☐ DD.MM.YY ☐ YY/MM/DD

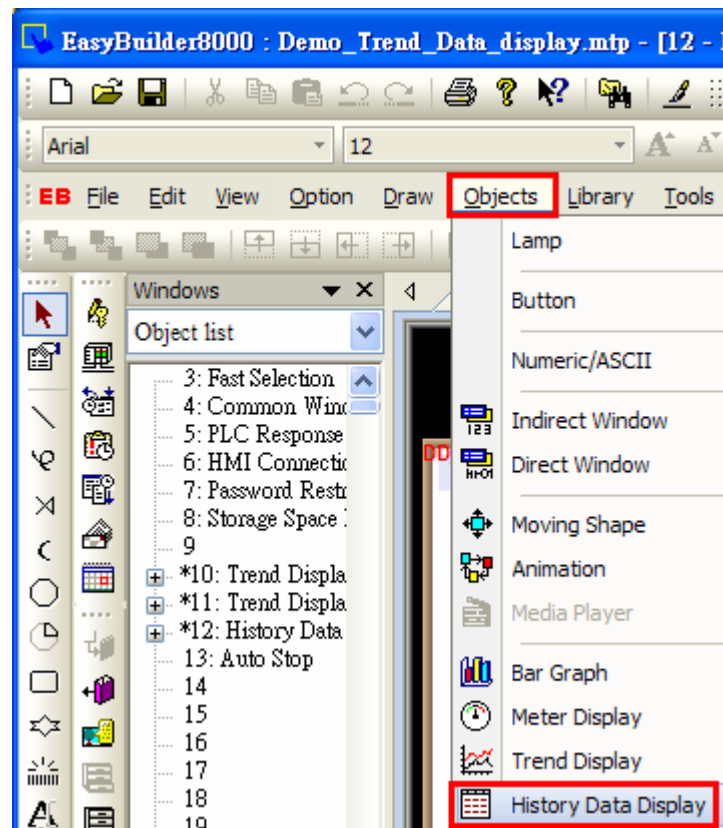
OK Cancel Help

Step 1. Enable Grid and Time scale

Step 2. Set the Pen property and Limits for each channel, users are able to select channel no. to set the content.

Step 3. Select Date or Time display in the graph.

- 2-4. Create a History Data Display object– History type in the Objects area in window 12.



- In General of History Data Display settings

**History Data Display Object's Properties**

General | Data Format | Title | Shape | Profile

1. Data Sampling Object index : 0

**Grid**  
☐ Enable  
Column interval : 40

**Profile color**  
☒ Transparent

**Text**  
Font : Arial | Size : 12

2. **Time**  
☒ Time | HH:MM | Color : [Blue]

**Date**  
☒ Date | DD/MM/YY | Color : [Blue]

☒ Sequence no. | Color : [Blue]

☐ Time ascending | ☒ Time descending

3. **History control**  
PLC name : Local HMI  
Device type : LW  
Address : 19 | ☐ System tag  
Address format : ddddd [range : 0 ~ 10500]  
☐ Index register

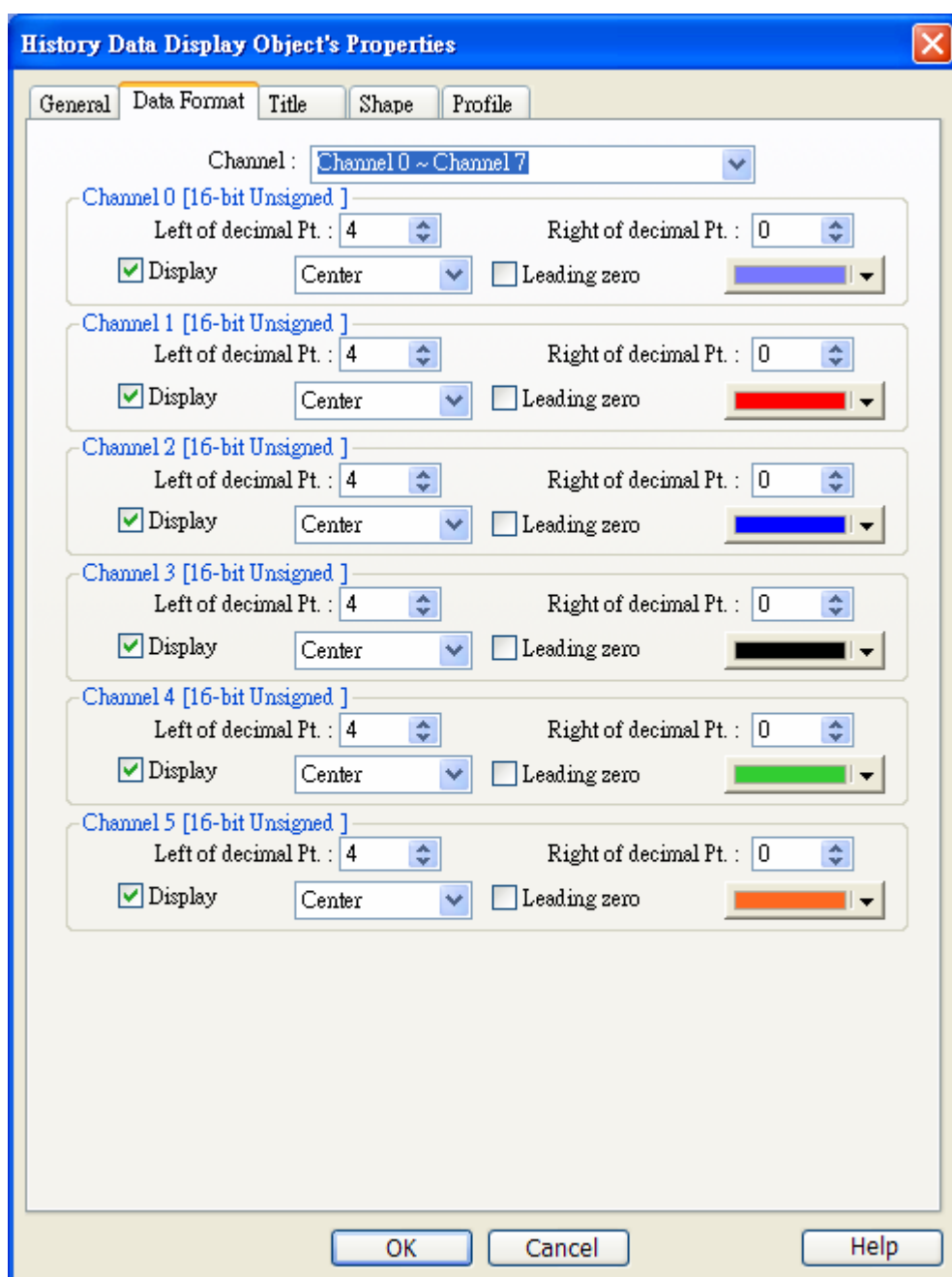
OK Cancel Help

Step 1. Set 40 in [column interval] and Transparent in [Profile color], the text is using Arial font and 12 font size.

Step 2. Select [Time] and [Date] of data sampling and format.  
Select [Time descending] to put the latest data on top.

Step 3. Use LW19 in [History control]

- Select [Data Format] tab and settings as below



Enable channel 0 ~ channel 5 and select the data format for each channel.

Use an option list to select dates of historical data, setting page illustration is shown below.



The image shows the 'Option List Object's Properties' dialog box with the 'Option list' tab selected. The dialog has several sections and fields:

- Description:** A text input field.
- Attribute 1:** A section containing:
  - Mode:** A dropdown menu set to 'Drop-down List'.
  - Background:** A color selection dropdown.
  - Selection:** A dropdown menu.
- Control address:** A section containing:
  - PLC name:** A dropdown menu set to 'Local HMI'.
  - Device type:** A dropdown menu set to 'LW'.
  - Address:** A text input field set to '19'.
  - System tag:** An unchecked checkbox.
  - Address format:** A text label 'dddddd [range : 0 ~ 10500]'.
  - Index register:** An unchecked checkbox.
  - 16-bit Unsigned:** A dropdown menu.
- Source (dates of historical data):** A section containing:
  - Enable:** A checked checkbox.
  - Type:** A dropdown menu set to 'Data sampling'.
  - Date:** A dropdown menu set to 'MM/DD/YY'.
  - Data Sampling object:** A dropdown menu set to '0'.

At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

Step 1. Select [Drop-down List] and color of Background and selection in [Attribute]

Step 2. Use LW19 in [Control address]

Step 3. Select Data sampling 0 in [Source]

2-5. Create a History Data Display object– History type in the Objects area in Window 13.

- In General of Trend Display settings

**Trend Display Object's Properties**

General Trend Shape Profile

1. Description :

Data Sampling Object index : 1.

Trend type : Real-time  No. of channels : 1

Note : if no. of channels is changed, you must reset HMI's data logs !!

2. X axis time range : ☐ Pixel ☒ Time

Distance : 30  second(s)

3. PLC name : Local HMI

Hold control ☒ Enable

Device type : LB

Address : 12  ☐ System tag

Address format : ddddd [range : 0 ~ 11999]

☐ Index register

4. Watch line ☒ Enable

Device type : LW

Address : 21  ☐ System tag

Address format : ddddd [range : 0 ~ 10500]

☐ Index register

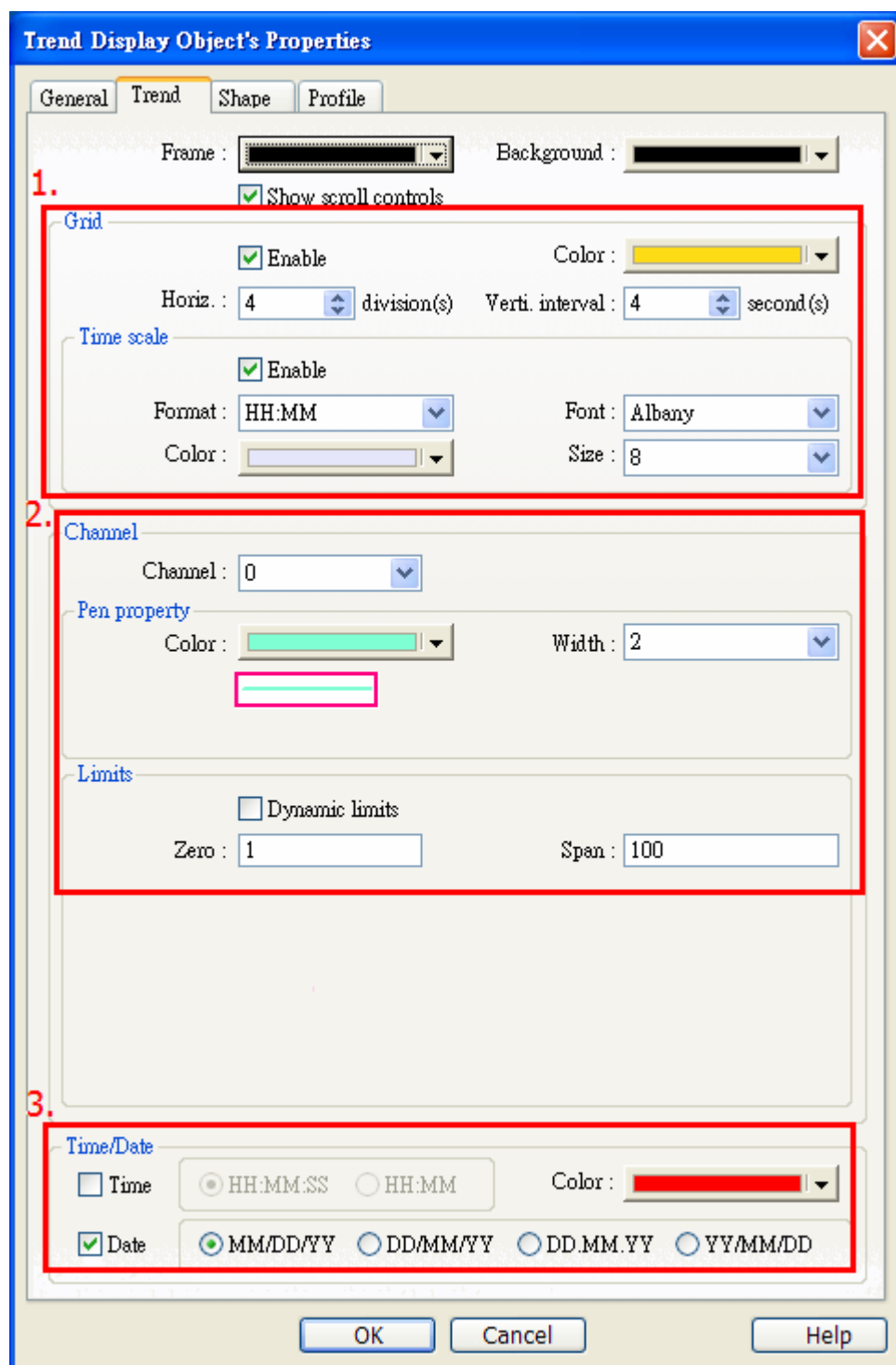
OK Cancel Help

Step 1. Click Real-time in [Trend type], select 1 for [Data Sampling Object index] and 1 in [No. of channels]

Step 2. 30 seconds in [Distance] and Time in [X axis time range]

Step 3. Set 12 in Hold control.

Step 4. Set LW21 in Watch line.



Step 1. Enable Grid and Time scale

Step 2. Set the Pen property and Limits for each channel, users are able to select channel no. to set the content.

Step 3. Select Date or Time display in the graph.

### 3. Addresses

The addresses used in this demo project are listed below. Please change these addresses according to your system.

Addresses		Object's ID	Detail
Data sampling 0 for window 10,11,12			
Word	LW0 ~ LW5		Data sampling read addresses
Bit	LB0		Clear address
	LB1		Hold address
Data sampling 1 for window 13			
Word	LW20		Data sampling read addresses
Bit	LB10		Clear address
	LB11		Hold address
Window 10			
Word	LW0~LW5	SW_0~SW_5	Data sampling
	LW6~LW11	NE_0~NE_5	Point of watch line for channel 0~channel 5
Bit	LB0	TS_0	Clear data
	LB1	TS_1	Halt data sampling
	LB2	TW_2	Pause data
Window 11			
Word	LW6~LW11	NE_0~NE_5	Point of watch line for channel 0~channel 5
Option List	LW12	OL_0	For selecting historical dates
Window 12			
Option List	LW19	OL_0	For selecting historical dates
Window 13			
Word	LW20	SW_0	Data sampling