

25. EasyConverter

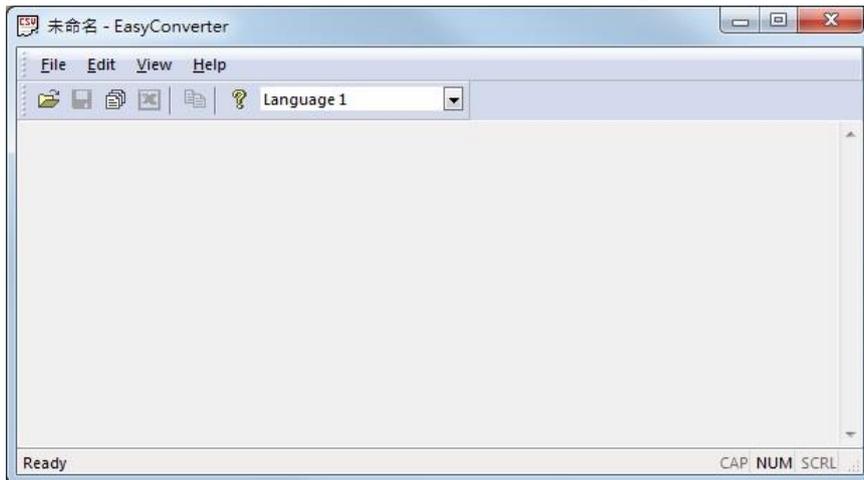
This Chapter explains how to use EasyConverter.

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25.1. Overview

EasyConverter reads the Data Log file, Event Log file, and Operation Log file in HMI and convert the files to Excel format.

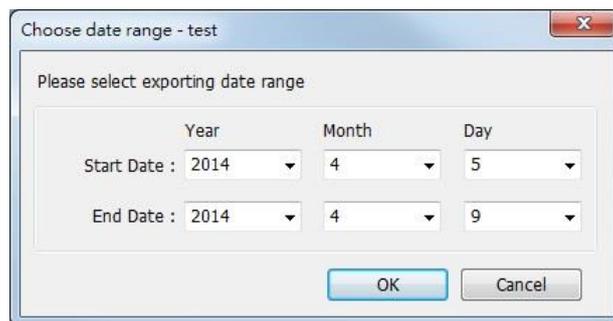
- From Utility ManagerEX click [Data Conversion] » [EasyConverter].
- From EasyBuilder Pro menu select [Tool] » [Data/Event Log Converter].



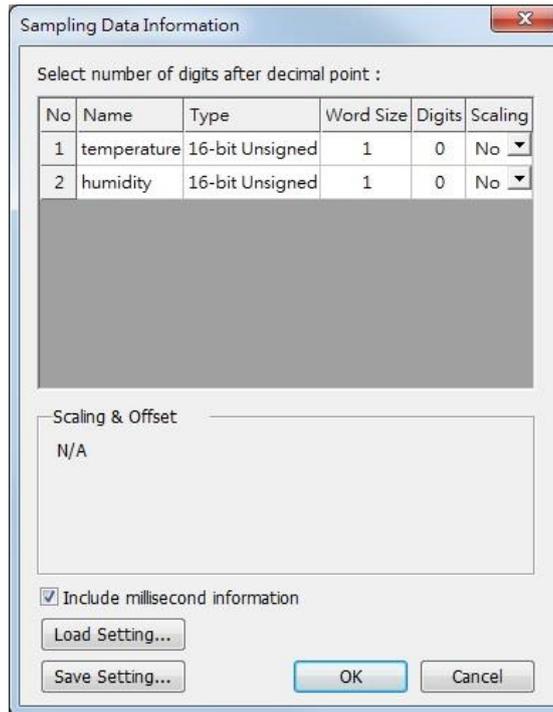
 Click the icon to watch the demonstration film. Please confirm your internet connection before playing the film.

25.2. Converting Data Log File to Excel File

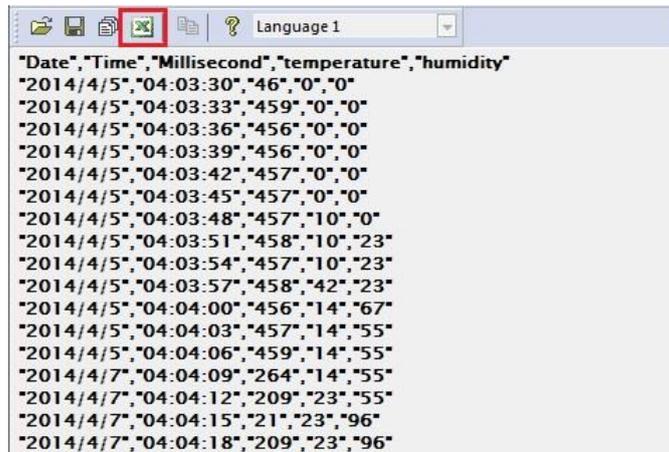
1. If the Data Log file format is .db, and the file includes data of more than one day, the data to be viewed can be specified by selecting a date range. (If the file format is .dtl, please skip this step.)



2. The following is the setting dialog box, please set based on actual needs.



- Click [OK], the Data Log layout is shown in the following figure. Click [Export to Excel]. The file will be converted to Excel format.



- The Excel layout is shown in the following figure.

	A	B	C	D	E	F
1	Date	Time	Millisecond	temperature	humidity	
2	2014/4/5	4:03:30	46	0	0	
3	2014/4/5	4:03:33	459	0	0	
4	2014/4/5	4:03:36	456	0	0	
5	2014/4/5	4:03:39	456	0	0	
6	2014/4/5	4:03:42	457	0	0	
7	2014/4/5	4:03:45	457	0	0	
8	2014/4/5	4:03:48	457	10	0	
9	2014/4/5	4:03:51	458	10	23	
10	2014/4/5	4:03:54	457	10	23	
11	2014/4/5	4:03:57	458	42	23	
12	2014/4/5	4:04:00	456	14	67	
13	2014/4/5	4:04:03	457	14	55	
14	2014/4/5	4:04:06	459	14	55	
15	2014/4/7	4:04:09	264	14	55	
16	2014/4/7	4:04:12	209	23	55	
17	2014/4/7	4:04:15	21	23	96	

 **Note**

- If the file requires over six million cells in Excel format, only partial data will be shown in EasyConverter. (The complete data will still be exported to xls / xlsx file.)
- The file will be automatically separated into different sheets in the xls / xlsx file under these conditions:
 1. Exceeds 60 thousand rows in a single sheet.
 2. Exceeds 1.5 million cells in a single sheet.

25.3. Converting Event Log File to Excel File

1. If the Event Log file format is .db, and the file includes data of more than one day, the data to be viewed can be specified by selecting a date range.
(If the file format is .evt, please skip this step.)



The dialog box titled "Choose date range - event" contains the text "Please select exporting date range". It features two rows of date selection. The "Start Date" row has dropdowns for Year (2014), Month (4), and Day (5). The "End Date" row has dropdowns for Year (2014), Month (4), and Day (9). At the bottom are "OK" and "Cancel" buttons.

2. If the .db file of Event Log contains multiple languages, the language to be viewed can be specified. (If the file format is .evt, please skip this step.)



The dialog box titled "Select language - event" contains the text "Select your event log language". It has a dropdown menu currently showing "Language 1". Below the dropdown is a checkbox labeled "Don't ask me again". At the bottom are "OK" and "Cancel" buttons.

3. Click [OK], the Event Log layout is shown in the following figure. Click [Export to Excel]. The file will be converted to Excel format.

```

"Event","Category","Date","Time","Message"
"0","0","2014/4/5","04:03:28","Bit OFF"
"2","0","2014/4/5","04:03:31","Bit OFF"
"0","0","2014/4/5","04:03:31","Bit ON"
"2","0","2014/4/5","04:03:32","Bit ON"
"0","0","2014/4/5","04:03:32","Bit OFF"
"1","0","2014/4/5","04:03:33","Bit OFF"
"2","0","2014/4/5","04:03:35","Bit OFF"
"0","0","2014/4/5","04:03:35","Bit ON"
"1","0","2014/4/5","04:03:36","Bit ON"
"2","0","2014/4/5","04:03:38","Bit ON"
"0","0","2014/4/5","04:03:38","Bit OFF"
"2","0","2014/4/5","04:03:40","Bit OFF"
"0","0","2014/4/5","04:03:40","Bit ON"
"2","0","2014/4/7","04:04:15","Bit ON"
"0","0","2014/4/7","04:04:15","Bit OFF"
"2","0","2014/4/7","04:04:16","Bit OFF"
"0","0","2014/4/7","04:04:16","Bit ON"
    
```

4. The Excel layout is shown in the following figure.

	A	B	C	D	E	F
1	Event	Category	Date	Time	Message	
2	0	0	2014/4/5	4:03:28	Bit OFF	
3	2	0	2014/4/5	4:03:31	Bit OFF	
4	0	0	2014/4/5	4:03:31	Bit ON	
5	2	0	2014/4/5	4:03:32	Bit ON	
6	0	0	2014/4/5	4:03:32	Bit OFF	
7	1	0	2014/4/5	4:03:33	Bit OFF	
8	2	0	2014/4/5	4:03:35	Bit OFF	
9	0	0	2014/4/5	4:03:35	Bit ON	
10	1	0	2014/4/5	4:03:36	Bit ON	
11	2	0	2014/4/5	4:03:38	Bit ON	
12	0	0	2014/4/5	4:03:38	Bit OFF	
13	2	0	2014/4/5	4:03:40	Bit OFF	
14	0	0	2014/4/5	4:03:40	Bit ON	
15	2	0	2014/4/7	4:04:15	Bit ON	

 **Note**

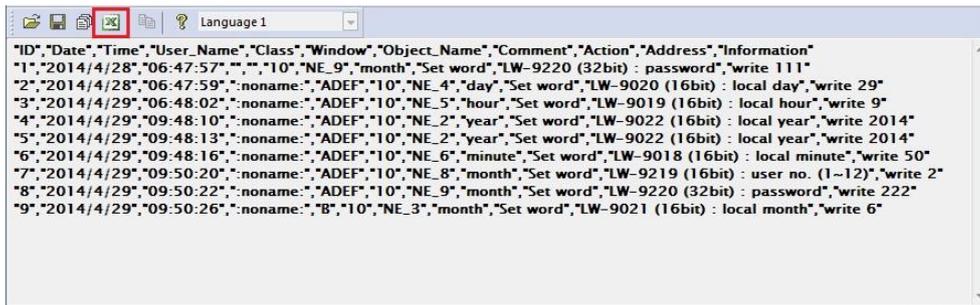
- The "Event" column can be found. 0-> Event triggered; 1-> Event acknowledged; 2-> Event returns to normal.
- If the file requires over six million cells in Excel format, opening the file in EasyCoverter only partially shows the data. (The complete data will be exported to xls / xlsx file.)
- The file will be automatically separated into different sheets in the xls / xlsx file under these conditions:
 1. Exceeds 60 thousand rows in a single sheet.
 2. Exceeds 1.5 million cells in a single sheet.

25.4. Converting Operation Log File to Excel File

1. If the Operation Log file includes data of more than one day, the data to be viewed can be specified by selecting a date range.



- Click [OK], the Operation Log layout is shown in the following figure. Click [Export to Excel]. The file will be converted to Excel format.



- The Excel layout is shown in the following figure.

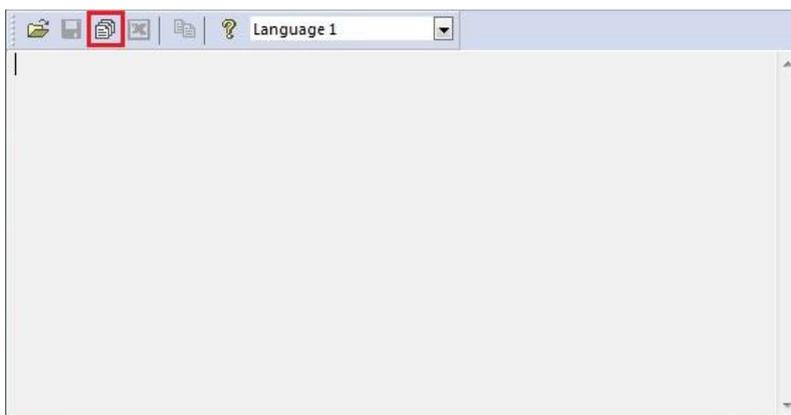
ID	Date	Time	User Name	Class	Window	Object Name	Comment	Action	Address	Information
1	2014/4/28	06:47:57		ADEF	10 NE_9	month		Set word	LW-9220 (32bit) : password	write 111
2	2014/4/28	06:47:59	noname:	ADEF	10 NE_4	day		Set word	LW-9020 (16bit) : local day	write 29
3	2014/4/29	06:48:02	noname:	ADEF	10 NE_5	hour		Set word	LW-9019 (16bit) : local hour	write 9
4	2014/4/29	09:48:10	noname:	ADEF	10 NE_2	year		Set word	LW-9022 (16bit) : local year	write 2014
5	2014/4/29	09:48:13	noname:	ADEF	10 NE_2	year		Set word	LW-9022 (16bit) : local year	write 2014
6	2014/4/29	09:48:16	noname:	ADEF	10 NE_6	minute		Set word	LW-9018 (16bit) : local minute	write 50
7	2014/4/29	09:50:20	noname:	ADEF	10 NE_8	month		Set word	LW-9219 (16bit) : user no. (1~12)	write 2
8	2014/4/29	9:50:22	noname:	ADEF	10 NE_9	month		Set word	LW-9220 (32bit) : password	write 222
9	2014/4/29	9:50:26	noname:	B	10 NE_3	month		Set word	LW-9021 (16bit) : local month	write 6

Note

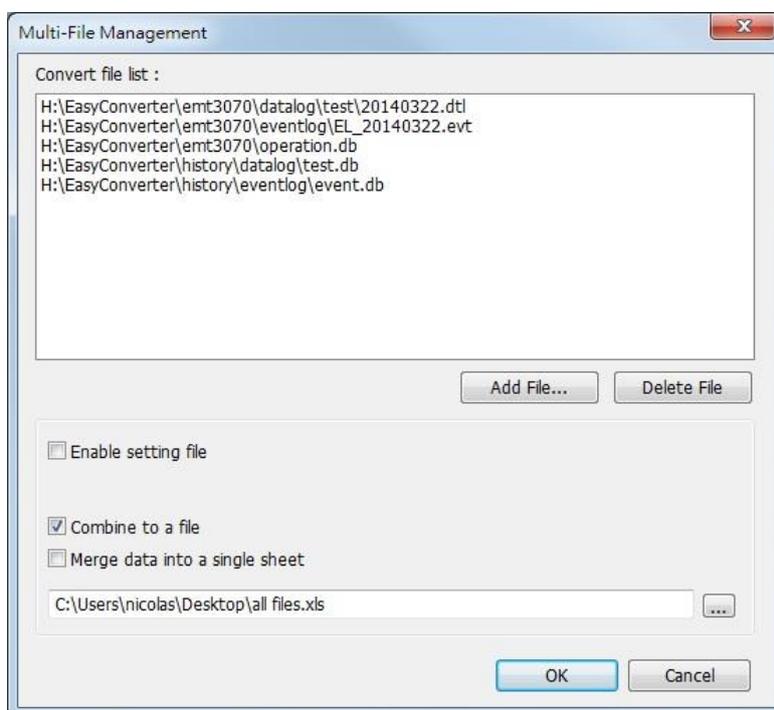
- If the file requires over six million cells in Excel format, opening the file in EasyCoverter only partially shows the data. (The complete data will be exported to xls / xlsx file.)
- The file will be automatically separated into different sheets in the xls / xlsx file under these conditions:
 - Exceeds 60 thousand rows in a single sheet.
 - Exceeds 1.5 million cells in a single sheet.

25.5. Converting Multiple Files

- Click [Multi-File] to open the following dialog box.



2. Click [Add File...] to add the files to be converted. If click [OK] without selecting [Combine to a file], the files will be exported to separate Excel files.



3. If [Combine to a file] is selected, the files will be separated into different sheets of one Excel file as shown in the following figure.

	A	B	C	D	E	F	G
1	Date	Time	Millisecond	temperature	humidity		
2	2014/3/22	6:36:52	260	2	1		
3	2014/3/22	6:36:55	250	6	3		
4	2014/3/22	6:36:58	250	10	6		
5	2014/3/22	6:37:01	300	13	8		
6	2014/3/22	6:37:04	280	17	10		
7	2014/3/22	6:37:07	250	21	13		
8							
9							
10							
11							
12							
13							
14							
15							

 **Note**

- The files cannot be combined when the total size of the files exceeds 32MB.

25.6. Scaling Function

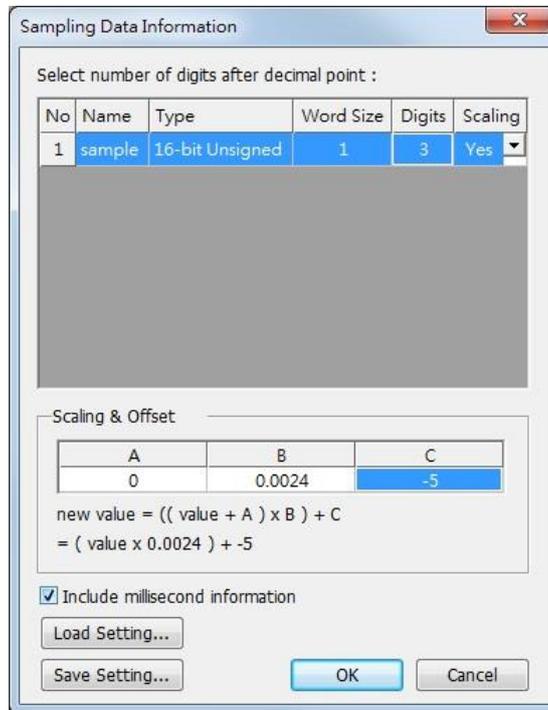
When opening a Data Log file, the scaling function can be set.

The equation of scaling new value = $[(\text{value} + A) \times B] + C$, and users can set the values of A, B, and C.

A -> lower limit of the value ; B -> $[(\text{scaled max}) - (\text{scaled min}) / (\text{upper limit}) - (\text{lower limit})]$; C -> scaled min.

For example, here is a voltage data with a format of 16-bit unsigned (range: 0 ~ 4096).

To convert the data to volt, range form -5V to +5V, the new value = $[(\text{value} + 0) \times 0.0024] + (-5)$.



Sampling Data Information

Select number of digits after decimal point :

No	Name	Type	Word Size	Digits	Scaling
1	sample	16-bit Unsigned	1	3	Yes

Scaling & Offset

A	B	C
0	0.0024	-5

new value = $((\text{value} + A) \times B) + C$
= $(\text{value} \times 0.0024) + -5$

Include millisecond information

Load Setting... Save Setting... OK Cancel

Before scaling:

```

"Date","Time","Millisecond","sample"
"2014/06/30","23:02:50","80","0"
"2014/06/30","23:02:54","30","0"
"2014/06/30","23:02:57","990","55"
"2014/06/30","23:03:02","70","55"
"2014/06/30","23:03:06","20","89"
"2014/06/30","23:03:10","20","159"
"2014/06/30","23:03:14","30","530"
"2014/06/30","23:03:18","20","898"
"2014/06/30","23:03:22","40","1024"
"2014/06/30","23:03:26","0","2055"
"2014/06/30","23:03:30","30","2055"

```

After scaling:

```

"Date","Time","Millisecond","sample"
"2014/06/30","23:02:50","80","-5.000"
"2014/06/30","23:02:54","30","-5.000"
"2014/06/30","23:02:57","990","-4.868"
"2014/06/30","23:03:02","70","-4.868"
"2014/06/30","23:03:06","20","-4.786"
"2014/06/30","23:03:10","20","-4.618"
"2014/06/30","23:03:14","30","-3.728"
"2014/06/30","23:03:18","20","-2.845"
"2014/06/30","23:03:22","40","-2.542"
"2014/06/30","23:03:26","0","-0.068"
"2014/06/30","23:03:30","30","-0.068"

```

The settings described above can be saved as a settings file in *.lgs format, and then loaded next time if needed.

25.7. Batch File

EasyConverter command line can execute batch file (.bat), and convert .dtl or .evt files into .xls or .csv files for export. In the batch file, the user can define the format of the exported file (ex: ASCII, Unicode, or UTF-8), and decide whether or not to include millisecond information or load settings file.

The following explains how to create batch file (.bat) and provides some relevant notes.

Parameters:

```
[/c{a,8,u}] [/t{0,1}] [/s "Format file"] ["Src file"] ["Dest file"]
```

Example:

```
EasyConverter.exe /ca /t1 /s "C:\Format.lgs" "C:\Src.dtl" "C:\Dest.csv"
```

```
EasyConverter.exe /t1 /s "C:\Format.lgs" "C:\Src.dtl" "C:\Dest.xls"
```

Parameter	Description
/c{a,8,u}	Optional, specifies encoding method, only required when exporting a .csv file. /ca : ASCII (Default) /c8 : UTF-8 /cu : Unicode
/t{0,1}	Optional, specifies whether or not to include millisecond information.

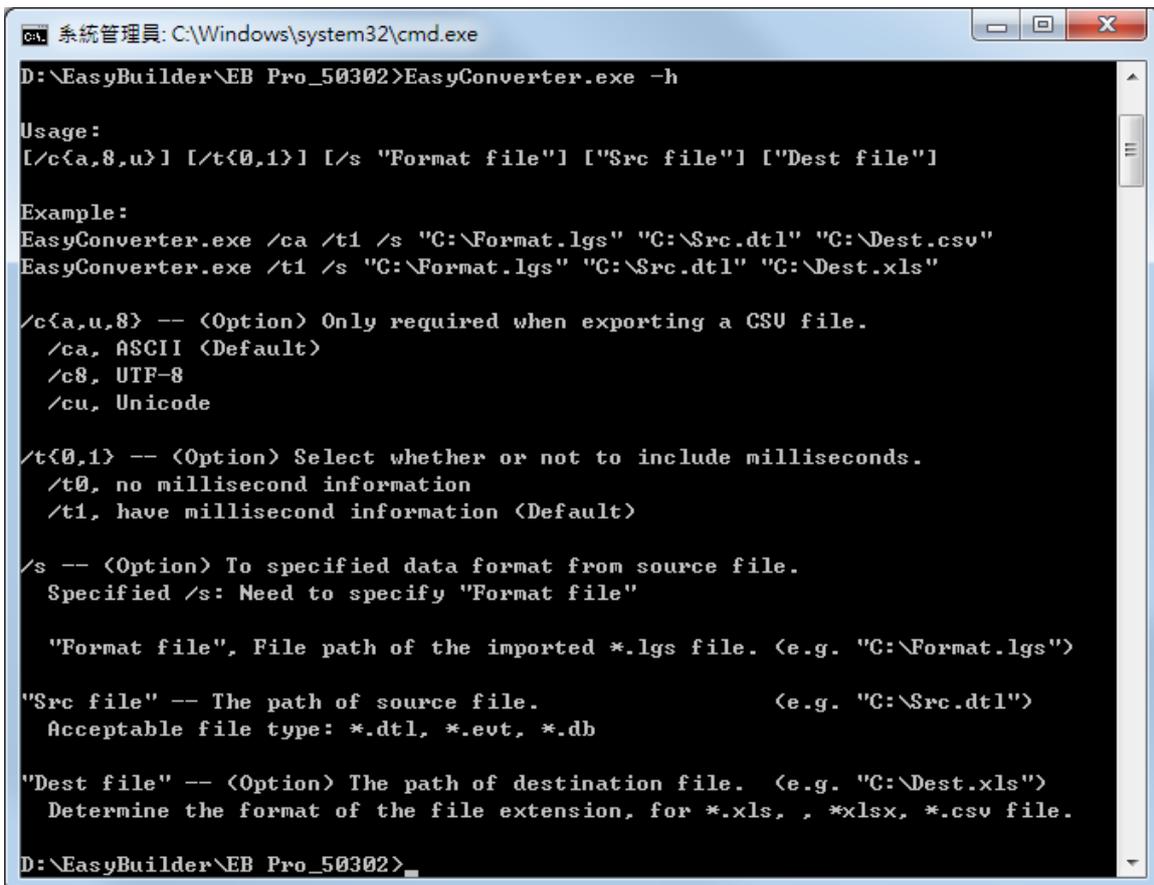
	/t0 : Excludes millisecond information.
	/t1 : Includes millisecond information. (Default)
/s	Optional, specifies whether or not to import settings file. To import settings file, specify the path of .lgs file following /s. For example: /s "C:\Format.lgs"
"Src file"	Specifies the source file path, and the file format should be: .dtl, .evt, or .db
"Dest file"	Specifies the destination file path, and the file format can be: .xls or .csv. See Note.

Note

- If the file name and path of "Dest file" is not specified in command line, the system will export the file to the same path as "Src file".

You can also find the commands above by entering the file path of EasyConverter.exe in Windows cmd.exe as shown in the following window.

Example: Enter "D:\EasyBuilder\EB Pro>EasyConverter.exe -h"



```

ct 系統管理員: C:\Windows\system32\cmd.exe
D:\EasyBuilder\EB Pro_50302>EasyConverter.exe -h

Usage:
[/c{a,8,u}] [/t{0,1}] [/s "Format file"] ["Src file"] ["Dest file"]

Example:
EasyConverter.exe /ca /t1 /s "C:\Format.lgs" "C:\Src.dtl" "C:\Dest.csv"
EasyConverter.exe /t1 /s "C:\Format.lgs" "C:\Src.dtl" "C:\Dest.xls"

/c{a,u,8} -- <Option> Only required when exporting a CSU file.
  /ca, ASCII <Default>
  /c8, UTF-8
  /cu, Unicode

/t{0,1} -- <Option> Select whether or not to include milliseconds.
  /t0, no millisecond information
  /t1, have millisecond information <Default>

/s -- <Option> To specified data format from source file.
  Specified /s: Need to specify "Format file"

  "Format file", File path of the imported *.lgs file. (e.g. "C:\Format.lgs")

"Src file" -- The path of source file. (e.g. "C:\Src.dtl")
  Acceptable file type: *.dtl, *.evt, *.db

"Dest file" -- <Option> The path of destination file. (e.g. "C:\Dest.xls")
  Determine the format of the file extension, for *.xls, , *xlsx, *.csv file.

D:\EasyBuilder\EB Pro_50302>

```

Example

To convert the file 20150919 stored in "D:\EasyBuilder\EB Pro\HMI_memory" from .dtl to .xls, and then save the file to the desktop, you can use the following command lines.

Scene 1: If the .bat file is placed in the same directory as EasyConverter, then the command line is:

```
EasyConverter.exe "D:\EasyBuilder\EB Pro\HMI_memory\20150919.dtl"  
"C:\Users\Desktop\20150919.xls"
```

Scene 2: If the .bat file is placed in a different directory from EasyConverter, the directory to store EasyConverter.exe. must be specified, and the command line will be:

```
"D:\EasyBuilder\EB Pro\EasyConverter.exe" "D:\EasyBuilder\EB  
Pro\HMI_memory\20150919.dtl" "C:\Users\Desktop\20150919.xls"
```

25.8. Examination of Historical Data Integrity

With EasyConverter, operation log file obtained from backup feature can be checked for data integrity of by verifying its checksum. When EasyConverter opens a file whose records may have been modified, an alert window such as the one below pops up.



In EasyConverter's status bar, the checksum verification results are illustrated with the following icons:

-  The file does not contain checksum for examining data integrity.
-  Checksum did not match. Records may have been modified or missing.
-  All records are complete, no modifications have been made.