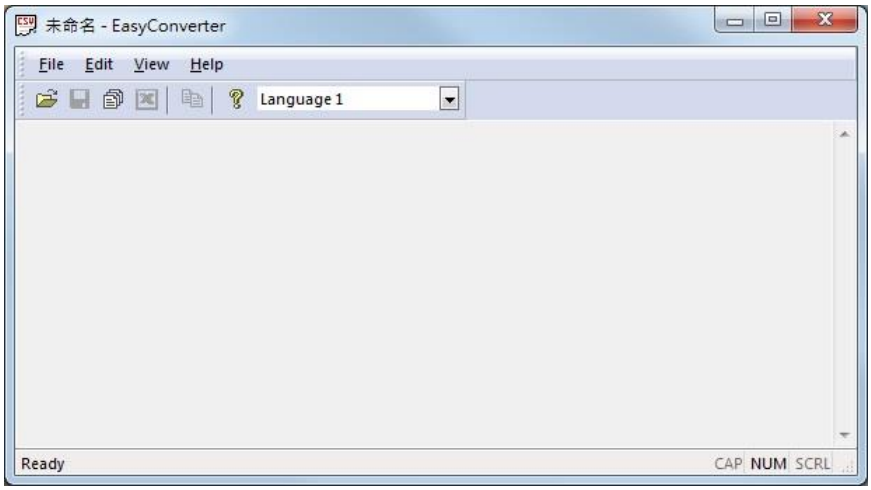
25. EasyConverter

This Chapter explains how to use EasyConverter.

25.1. Overview

EasyConverter can read the HMI's Data Log files, Event Log files, and Operation Log files and convert them to Excel or PDF format.

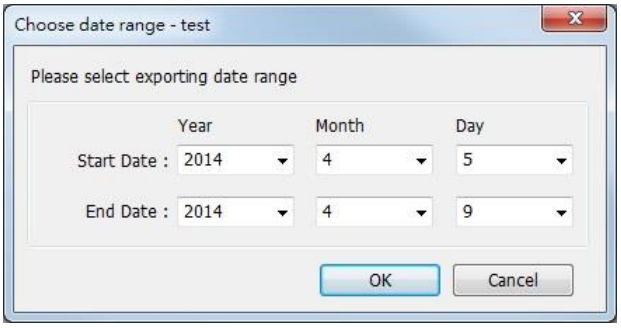
- From Utility Manager click [Data Conversion] » [EasyConverter].
- From EasyBuilder Pro menu select [Tool] » [Data/Event Log Converter].



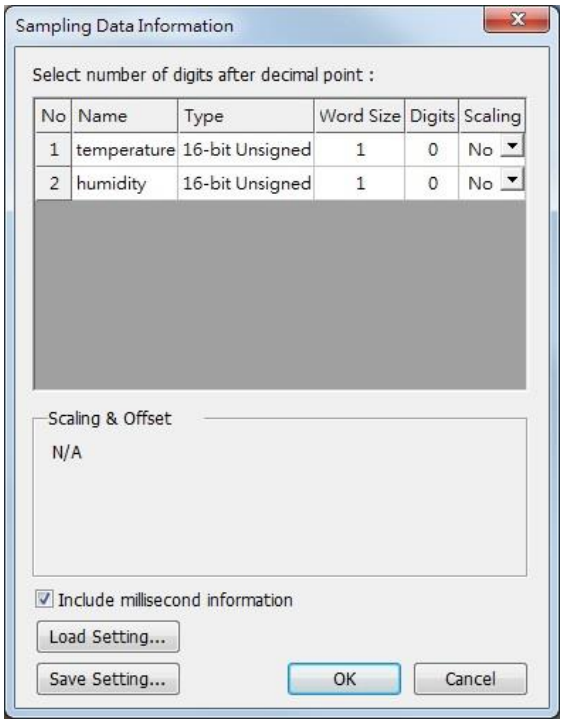
Click the icon to watch the demonstration film. Please confirm your internet connection before playing the film.

25.2. Converting Data Log File to Excel File

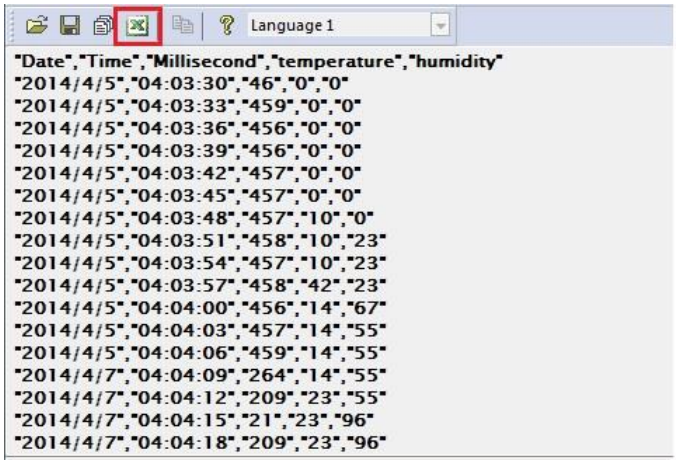
1. If the Data Log file format is .db, and the file includes data of more than one day, the data to be viewed can be specified by selecting a date range. (If the file format is .dtl, please skip this step.)



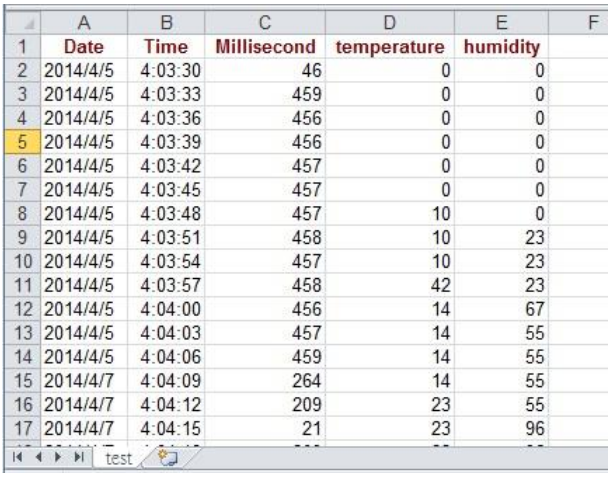
2. The following is the setting dialog box, please set based on actual needs.



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



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



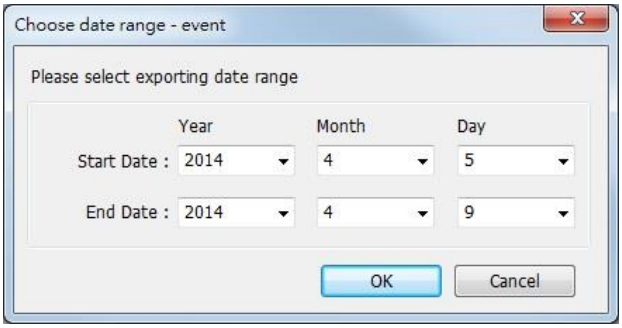
	A	B	C	D	E	F
1	Date	Time	Millisecond	temperature	humidity	
2	2014/4/5	4:03:30	46	0	0	
3	2014/4/5	4:03:33	459	0	0	
4	2014/4/5	4:03:36	456	0	0	
5	2014/4/5	4:03:39	456	0	0	
6	2014/4/5	4:03:42	457	0	0	
7	2014/4/5	4:03:45	457	0	0	
8	2014/4/5	4:03:48	457	10	0	
9	2014/4/5	4:03:51	458	10	23	
10	2014/4/5	4:03:54	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

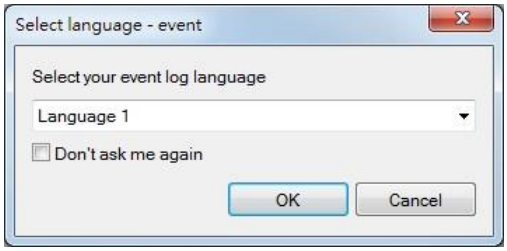
- If the file requires over six million cells in Excel format, only partial data will be shown in EasyConverter. (The complete data will still be exported to xls / xlsx file.)
- The file will be automatically separated into different sheets in the xls / xlsx file under these conditions:
  1. Exceeds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

25.3. Converting Event Log File to Excel File

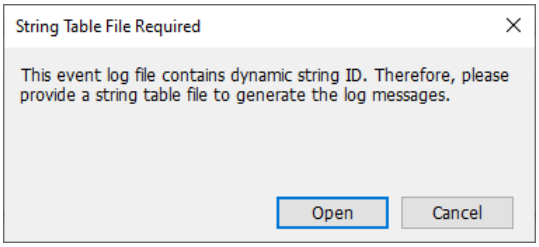
1. If the Event Log file format is .db, and the file includes data of more than one day, the data to be viewed can be specified by selecting a date range.
(If the file format is .evt, please skip this step.)



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.)

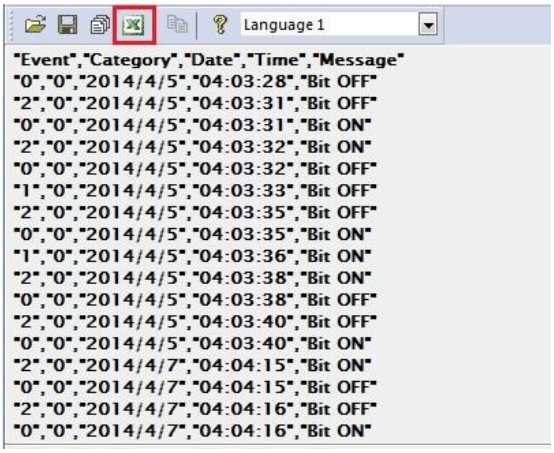


3. When the .db file of Event Log contains dynamic string ID, to correctly display the corresponding string of a triggered event, please manually select a .csv file path of string table.

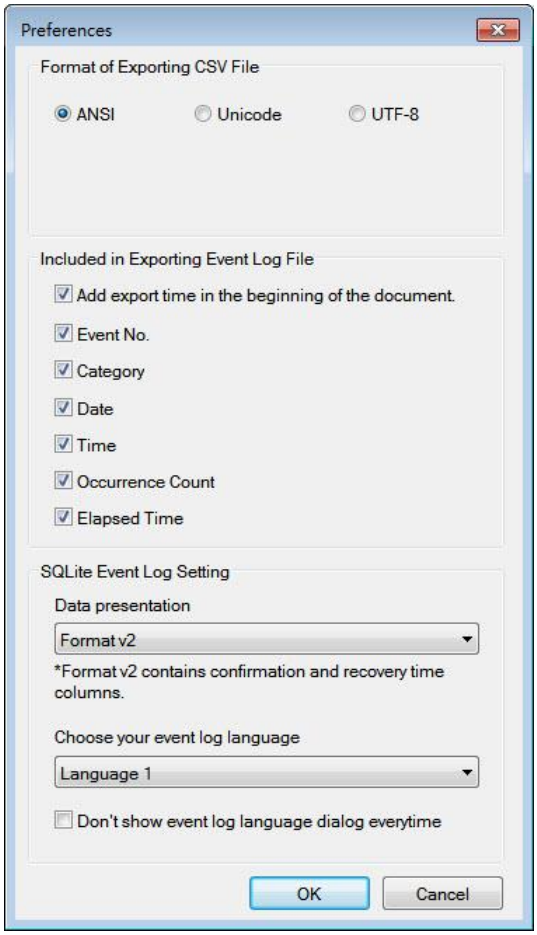


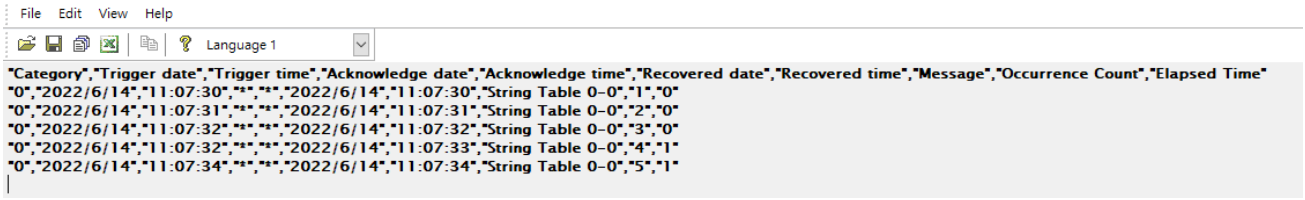
4. Click [OK], the Event Log layout is shown in the following figure. Click [Export to Excel].

The file will be converted to Excel format.



If the format of the opened Event Log file is DB, then in EasyConverter menu » Edit » Preferences » SQLite Event Log Setting, a data presentation format can be selected. When Format v2 is selected, the acknowledge time and recovered time of an event can be displayed in the same row.





5. 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	

event

	A	B	C	D	E	F	G	H	I	J	K
1	2022/06/14	14:44:26									
2											
3	Category	rigger dat	rigger tim	nowledge	nowledge	covered d	covered ti	Message	urrence C	dapsed Time	
4	0	2022/6/14	11:07:30	*	*	2022/6/14	11:07:30	String Tab	1	0	
5	0	2022/6/14	11:07:31	*	*	2022/6/14	11:07:31	String Tab	2	0	
6	0	2022/6/14	11:07:32	*	*	2022/6/14	11:07:32	String Tab	3	0	
7	0	2022/6/14	11:07:32	*	*	2022/6/14	11:07:33	String Tab	4	1	
8	0	2022/6/14	11:07:34	*	*	2022/6/14	11:07:34	String Tab	5	1	
9											

event

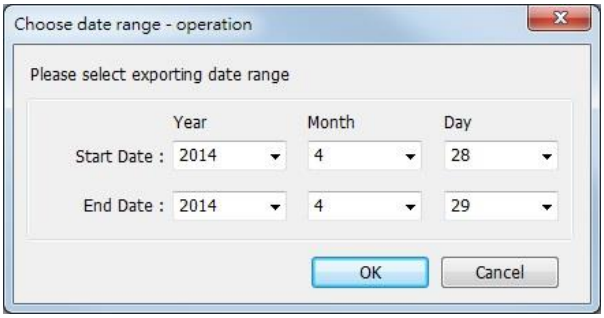
Note

- 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.
- When a string table is used, and its .csv file is placed in the same folder as event log's .db file with the same filename (e.g. event log: event.db, string table: event.csv), then the string table can be automatically loaded when loading the .db in EasyConverter; that is, no prompt window pops up asking for the file path of the string table.
- In EasyConverter, the maximum number of rows allowed in a file is 285 thousand rows; that is, the file cannot be opened in EasyConverter after exceeding this limit.

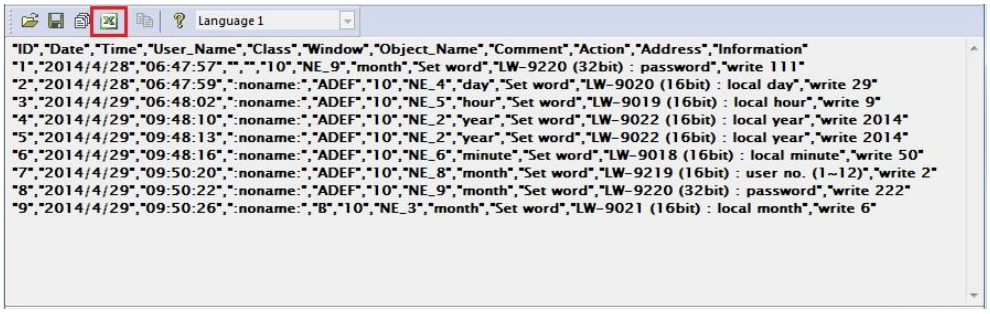
- To export the file in PDF format, click [File] » [Save as].

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.



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



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

	A	B	C	D	E	F	G	H	I	J	K	L
1	ID	Date	Time	User_Name	Class	Window	Object_Name	Comment	Action	Address	Information	
2	1	2014/4/28	6:47:57			10	NE_9	month	Set word	LW-9220 (32bit) : password	write 111	
3	2	2014/4/28	6:47:59	:noname:	ADEF	10	NE_4	day	Set word	LW-9020 (16bit) : local day	write 29	
4	3	2014/4/29	6:48:02	:noname:	ADEF	10	NE_5	hour	Set word	LW-9019 (16bit) : local hour	write 9	
5	4	2014/4/29	9:48:10	:noname:	ADEF	10	NE_2	year	Set word	LW-9022 (16bit) : local year	write 2014	
6	5	2014/4/29	9:48:13	:noname:	ADEF	10	NE_2	year	Set word	LW-9022 (16bit) : local year	write 2014	
7	6	2014/4/29	9:48:16	:noname:	ADEF	10	NE_6	minute	Set word	LW-9018 (16bit) : local minute	write 50	
8	7	2014/4/29	9:50:20	:noname:	ADEF	10	NE_8	month	Set word	LW-9219 (16bit) : user no. (1~12)	write 2	
9	8	2014/4/29	9:50:22	:noname:	ADEF	10	NE_9	month	Set word	LW-9220 (32bit) : password	write 222	
10	9	2014/4/29	9:50:26	:noname:	B	10	NE_3	month	Set word	LW-9021 (16bit) : local month	write 6	
11												
12												

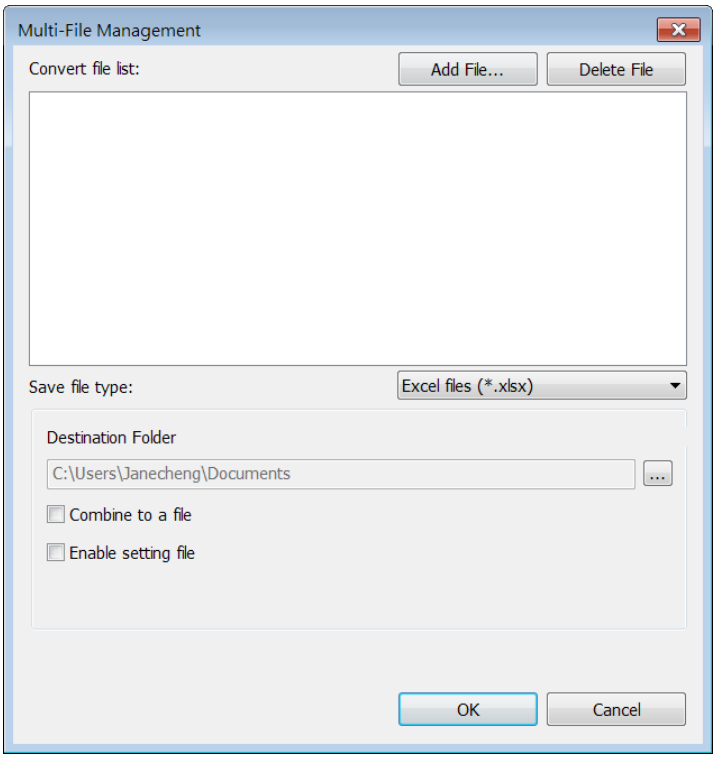
Note

- If the file requires over six million cells in Excel format, opening the file in EasyConverter 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.
- To export the file in PDF format, click [File] » [Save as].

25.5. Converting Multiple Files

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

2. Click [Add File…] to add the files to be converted, and then select the file type to save the files as, either [Excel files] or [PDF files]. If [Excel files] is selected without choosing the [Combine to a file] option, 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							

20140322 EL_20140322 operation test event

Note

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

25.6. Scaling Function

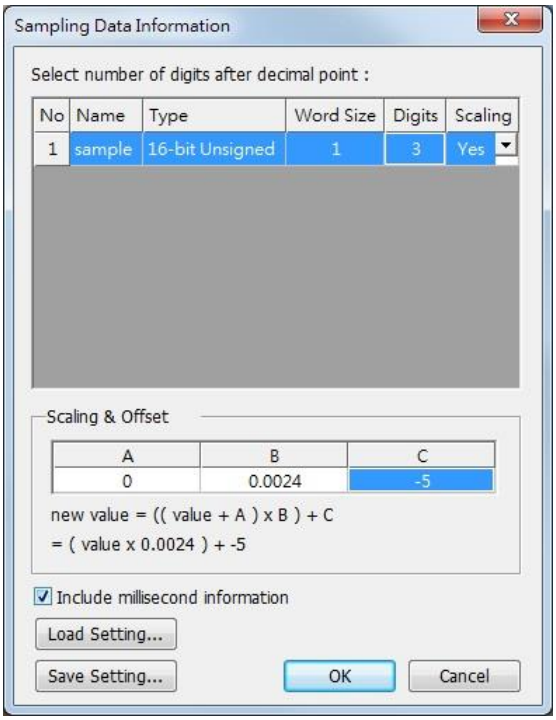
When opening a Data Log file, the scaling function can be set.

The equation of scaling new value = [(value + A) x B] + C, and users can set the values of A, B, and C.

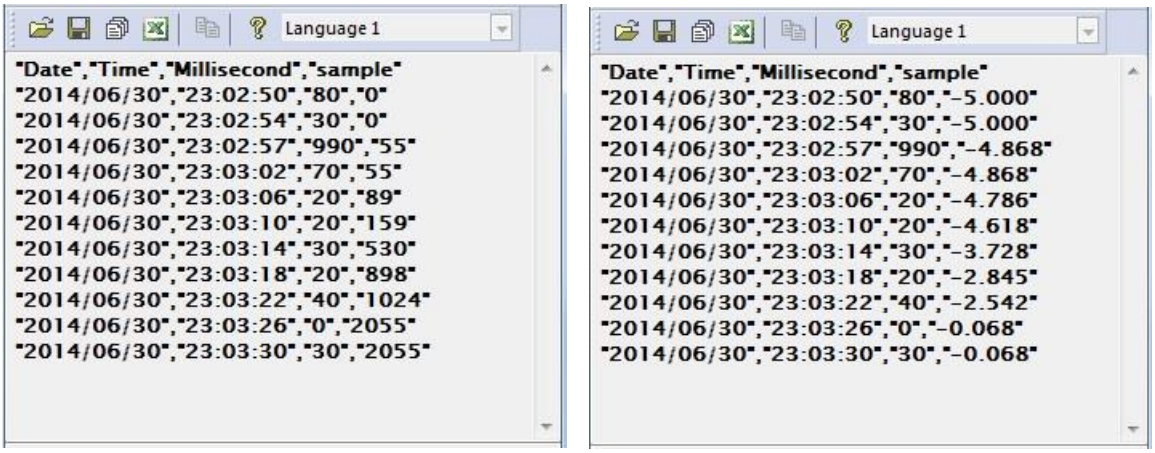
A -> lower limit of the value ; B -> [(scaled max) - (scaled min) / (upper limit) - (lower limit)] ; C -> scaled min.

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 = [(value + 0) x 0.0024] + (-5).



Before scaling: After scaling:



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. It can also back up historical data from the database to the PC. 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"]
[/d{0,1,2}] [/l{0,1,2}] [/h “Hostname”] [/n “Data Log Name”] [/g “Config File”] [/i “Time Interval”] [“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"
EasyConverter.exe /d1 /l0 /h "hostname" /g "D:\config.ini" /i "5~2" "D:\test\"
EasyConverter.exe /d1 /l1 /h "hostname" /n “log000” /g "D:\config.ini" "D:\test\"

Parameter	Description
/c{a,8,u}	(Optional) Only required when exporting a CSV file. /ca, ASCII (Default) /c8, UTF-8 /cu, Unicode
/t{0,1}	(Optional) Select whether to include milliseconds.

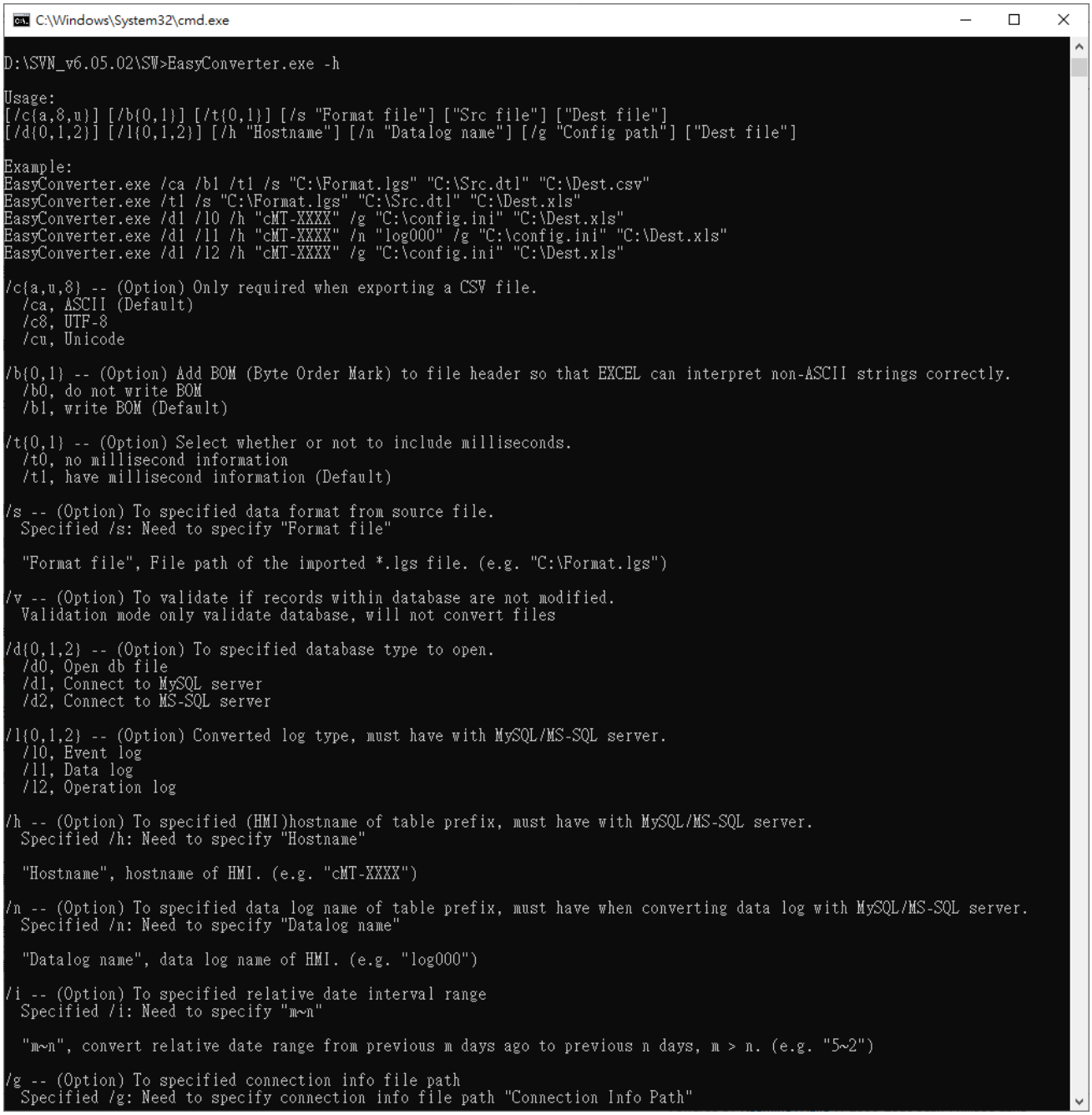
	/t0, no millisecond information /t1, have millisecond information (Default)
/s	(Optional) To specified data format from source file. Specified /s: Need to specify "Format file". "Format file", File path of the imported *.lgs file. (e.g. "C:\Format.lgs")
/d{0,1,2}	(Optional) To specified database type to open. /d0, Open db file /d1, Connect to MySQL server /d2, Connect to MS-SQL server
/l{0,1,2}	(Optional) Converted log type, must have with MySQL/MS-SQL server. /l0, Event log /l1, Data log /l2, Operation log
/h	(Optional) To specified (HMI) hostname of table prefix, must have with MySQL/MS-SQL server. Specified /h: Need to specify "Hostname" "Hostname", hostname of HMI. (e.g. "cMT-XXXX")
/n	(Optional) To specified data log name of table prefix, must have when converting data log with MySQL/MS-SQL server. Specified /n: Need to specify "Datalog name" "Datalog name", data log name of HMI. (e.g. "log000")
/g	(Optional) Specifies the directory of the config.ini file. This parameter is necessary when /d1 or /d2 is used. e.g. /g ”D:\config.ini”  The file can be downloaded by clicking this download icon.
/i	(Optional) To specified relative date interval range Specified /i: Need to specify "m~n" "m~n", convert relative date range from previous m days ago to previous n days, m > n. (e.g. "5~2") m: From m days ago at 0:00 to m days ago at 23:59. m~n: From m days ago at 0:00 to n days ago at 23:59. m~: From m days ago at 0:00 to the last record in the db. ~n: From the first record in the db to n days ago at 23:59. e.g. /i "m~n"

"Src file"	(Optional) The path of source file. (e.g. "C:\Src.dtl") Acceptable file types: .dtl, .evt, .db
"Dest file"	(Optional) The path of destination file. (e.g. "C:\Dest.xls") Determine the format of the file extension, for .xls, .xlsx, .csv, .pdf file.

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”



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"

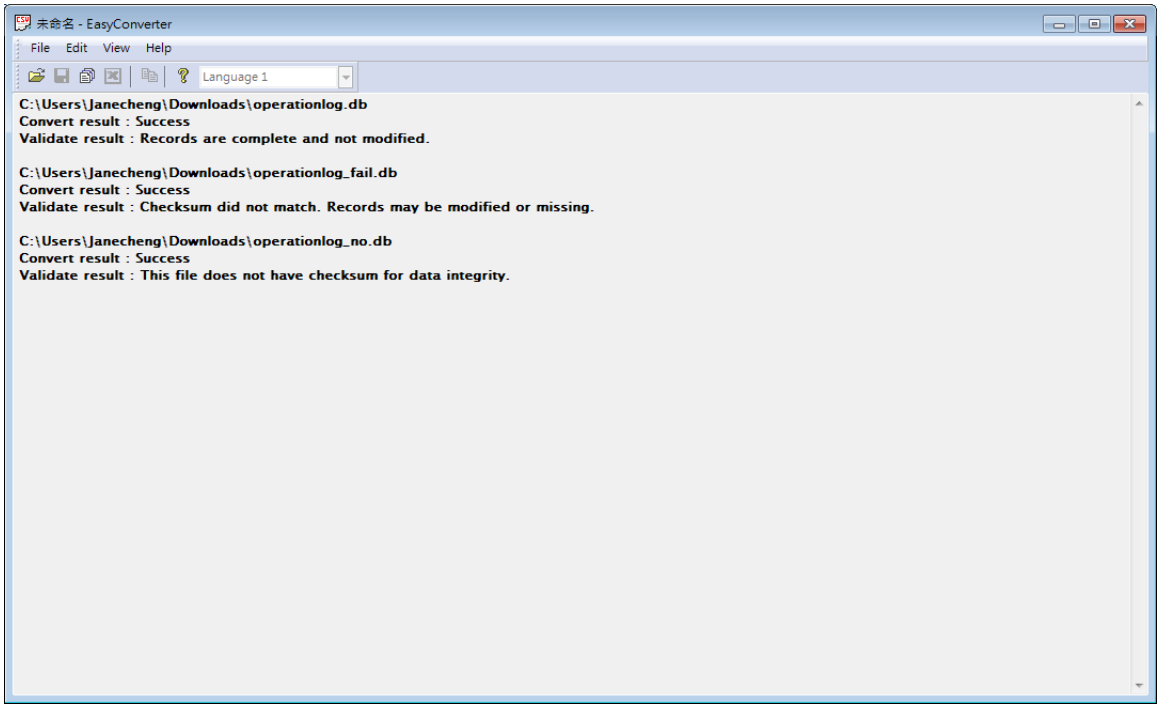
25.8. Examination of Historical Data Integrity

With EasyConverter, the data log / event log / operation log file obtained from backup feature can be checked for data integrity by verifying its checksum. When EasyConverter opens a file that might have been tampered with, an alert window below will pop 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, and no modifications have been made.

The checksum verification applies to multi-file conversion as well.



File integrity may also be checked in command line. Use parameter /v to enter verification mode, and no conversion will take place under this mode.

e.g.

EasyConverter.exe /v "C:\Src.db"