## 7. Event Log

This chapter explains how to set and use Event Log.

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#### 7.1. Overview

The following are the basic steps to use Event Log:

- **1**. Define event content and trigger condition.
- 2. Trigger event according to the condition.
- 3. Save the event log to the specified device.
- 4. View the process of event by using the relevant objects.

This chapter will explain how to set and use Event Log.

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

#### 7.2. Event Log Management

Firstly, define the event content then use Alarm Bar  $\stackrel{\text{def}}{=}$ , Alarm Display  $\stackrel{\text{def}}{=}$ , Event Display  $\stackrel{\text{def}}{=}$ 

return to normal. The upper limit for the number of event logs is 10000.



#### 7.2.1. eMT, iE, XE, mTV, iP Series

Cat	egory : All	[1]	•						2
Vo.	Category	Text	Mode	Condition	Read address	Notification address	Buzzer	e-Mail	Sa
L.	0	Event 0	WORD	< 0.00	Local HMI : LW-0	Disable	Disable	Disable	En
•									•
Hist	I Enable bac ory files	-		occurs					Þ
Hist	ory files	4I memory	ı		JSB disk	Jay(s)			•
Hist	ory files 2 Save to HM 2 Preservatio	4I memory	/ Day	Save to U	JSB disk ation : 7 c	łay(s) Trigger date : DD/M	Μ/ΥΥ	-	ŀ

Description
Classifies events by dividing them into 0 ~ 255 categories.
Select one category to add or view event log. In the bracket
"[]", it shows the number of events are in this category.
Saves event log files to the specified location. Once an event
occurs, the HMI immediately saves the history file. When
executing On-line or Off-line Simulation on PC, the files will
be saved in the HMI_memory / SD_card / USB folder under
the installation directory.
Preservation limit
This setting determines the maximum number of Event Log
files to be preserved in HMI memory. This does not include
the file generated today. That is, if [Days of preservation] is
set to 2; the two latest files excluding the file generated today
will be kept. The files that are not within the range will be
deleted automatically for saving the storage space.



Print	In [System Parameter Settings] » [Model], select a printer and
	set the printing format.
Сору	Copy the selected item.
Paste	Overwrites the selected item with the new items. A message
	window will pop up to confirm this operation.
Paste	
(Add Mode)	Appends as a new entry.

#### 7.2.2. cMT, cMT X Series

tegory :	All [1]							
					Edit category name m	apping		2
Category	Text	Mode	Condition	Read address	Notification address	Buzzer	e-Mail	New
	Event 0	WORD	< 0.00	Local HMI : LW-0	Disable	Disable	Disable	Insert
								Delete
								Settings
								Сору
								Paste
								Paste+
								Export
								Import
								<b>*</b>
			and the second se	In the second	a second the second frances of the second			

Setting	Description
Category	Classifies events by dividing them into 0 ~ 255 categories.
	Select one category to add or view event log. The number of
	events in this category is shown in the bracket "[]".
	Edit category name mapping Opens a category name table
	which allows editing corresponding category names.
	Subcategories can also be added in this table in addition to
	the exiting categories. The maximum allowable number of
	entries in each subcategory is 256 (0~255) entries.





Category	<b>—</b>
Category Subcategory 1 Subcategory 2	
Category Name	
0 Subcategory 0	
New Delete	
* Font from [Language & Font] settings	
	OK Cancel

Сору	Copies the selected item.
Paste	Overwrites the selected items with the clipboard contents.
	A message window will pop up to confirm this operation.
Paste +	Appends the clipboard contents to the end of the list.

vent History/Control						
History						
🔽 Enable						
Save to						
OHMI memory (100	00 limited)	🔘 HMI memory (u	ntil space	full)		
OUSB disk 1		OUSB disk 2				
Status :	LW-0 + 1		Error	:LW-0+2		
Sync to database						
🔽 Enable	Database :	1. 192.168.1.0				•
Status :	LW-0+3		Error	:LW-0+4		
History source for display	y O Database					
✓ Preservation limit ✓ Limit write frequen	cy to HMI flash drive	Days of preservation :	7	day(s)		
🔽 Auto sync. periodic	ally		30	min(s)		
Control						
🗷 Enable	🗷 Enable status out	put				
Device : []						
Address : []		• 0		16-bit Unsigned		
	4	[clear], 2 [sync.], 3 [sync. [clear and restore log inde 1 [update messages accordi	xl			
					Exit	Help



Setting	Description
History	Saves the Event Log data to HMI memory (10000 limited or
	until space full), SD card, USB disk, or database (by
	synchronizing Event Log file to database server).
	The rules of saving the data are:
	When [HMI memory (10000 limited)] is selected, and
	the number of events reaches 10000, the system will
	delete the earliest 1000 events on HMI and keep on
	saving the data to HMI memory
	When [HMI memory (until space full)] is selected, the
	system will keep on saving data to HMI memory, in this
	case, the data may not be synchronized to database
	server. When the cMT / cMT X HMI memory storage is
	full, the system will delete the earliest 1000 records and
	keep on saving data to HMI memory.
	When USB disk or SD card is selected, and the number of
	events reaches 10000, the system will automatically save
	the data to the external device and delete the earliest
	1000 events on HMI.
	To synchronize the data to database server, select a
	database that has been configured before.
	If the external device already contains some events, the
	new data is appended without overwriting the original
	data each time in synchronization.
	When the external device is removed from HMI, or HMI
	is disconnected from database server, if the connection
	is recovered before the number of events exceeds 9000,
	the events occur during disconnection will be saved to
	HMI. If the number of events exceeds 9000 during
	disconnection, the earlier data will be deleted, and
	cannot be synchronized by recovering connection.
History	Event Log displays the history data read from the designated
source for	Event Log displays the history data read from the designated
display	source.
Preservation	This setting determines the maximum number of Event Log
limit	files to be preserved in HMI memory. This does not include
	the file generated today. That is, if [Days of preservation] is
	set to 2; the two latest files excluding the file generated today



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	will be kept. The files that are not within the range will be					
	deleted automatically. The system checks the time of the file					
	and deletes earlier files only during synchronization.					
Limit write	When enabled, the system will store operation logs on the					
frequency	HMI at intervals of 10 seconds. To prevent the loss of					
to HMI flash	operation log data between two storage actions caused by					
drive	power-off, EasyBuilder Pro provides the system register					
unite	LB-9034. By sending an ON signal to this register, the system					
• •	will initiate a data storage process.					
Auto sync.	Data will be automatically synchronized to the designated					
periodically	external device in the specified time interval, regardless of					
	the rules explained above.					
	Unit: Minute(s)					
	Range: 1~1440					
Control	If select [Enable] check boxes under both [Control address]					
address	and [History files], entering a specific value in the control					
	address sends the corresponding command.					
	Value Command					
	1 Clear the event log on HMI					
	2 Synchronize event log to the external device					
	3 Synchronize event log to the external device and then clear the event log on HMI					
	4 Use the history data stored in USB disk / SD card / database after changing HMI					
	6 Free unused storage space reserved for event logs (*.db). This command can be used when historical dat is saved to HMI memory (until space full).					
	11 Update event log message contents by reading a new String Table					
	If none of these values is entered, the system will synchroniz					
	data in the same rules as [History] setting.					
Status	When LW-n is used as the control address, the four					
Error	consecutive addresses following LW-n (LW-n+1~LW-n+4) wil					
	show status and error, please see the prompt in the settings					
	dialog box.					



PLC : Local HMI			-	Settings	
Address : LW	▼ 0			16-bit Unsigned	
Control com	mand : 1 [clear], 2 [sync.]	, 3 [sync	and clear]		
istory files					
🗹 Enable	🗹 Enable status addr	ess			
Sync. to SD card	Sync. to USB disk				
Status : LW-0 +	1	Error : LW-0 + 2		W-0 + 2	
🗹 Auto sync. periodically		10	min(s)		
Preservation limit	Days of preservation :	3	day(s)		
Sync to database					
Enable	Display history from	n databas	e		

Value	Status address: LW-n+1 and LW-n+3
0	Disconnected from external device or database
1	Connecting with external device or database
2	Connected with external device or database
3	Storing records into the archive. When this is done, the
	value returns to 2.
Value	Error address: LW-n+2 and LW-n+4
0	None
1	Unknown error
2	Failed to connect with external device or database
3	Access denied
4	Wrong database name
5	Inconsistent data format
6	Failed to open table
7	Failed to create table
8	Failed to write table
9	Failed to open database
10	Database is corrupted

## Note

- Before removing SD card / USB disk, or disconnecting from database server, please synchronize event log data by using control address.
- When monitoring multiple HMIs by using cMT Viewer, the Start Button on the current HMI screen may flash to indicate that an error has occurred on another HMI that is also being monitored, reminding the user to switch HMI and check the event.

#### 7.2.3. Excel Editing

Click on the Excel icon in Event Log setting dialog box to open the Excel template for a reference of editing. This template is under the installation directory, the file name is EventLogExample.xls. This template includes the ready-made dropdown lists and validation mechanism.



	A	В	С	D	Е	F	G	Н	Ι	J	K
1	Category	Priority level	Address type	PLC name	Device type	System tag	User-defined tag	Address	Index	Data Format	Enable
2	0	Middle	Word	Local HMI	LW	False	False	100	null	32-bit Signed	True
3	1	Low	Bit	Local HMI	LB-9009	True	False	9009	idx 5	16-bit BCD	_ lse
4										16-bit BCD 32-bit BCD	
5										16-hit Unsigned	
6										16-bit Singed 32-bit Unsigned 32-bit Signed	
7										32-bit Float	

## Note

- [System tag] and [User-defined tag] cannot be set to true simultaneously, otherwise, the system will view the User-defined tag to be a System tag, and [User-defined tag] to be false. If setting [Device type] to [User-defined tag], please set [System tag] to false.
- When setting [User-defined tag] to true, if the system compares the [Device type] with the user-defined tag in the system, and no suitable tag is found, the system will set the [User-defined tag] in event log to false
- [Color] format is R:G:B, each should be an integer form 0 to 255.
- Before importing Label Library / Sound Library, please make sure the library names exist in the system.

#### 7.2.4. Quick View of Errors

When compiling the project, the errors in Event Log will be displayed in the Compile window. To open Event Log and view the errors, double click on the item in the Compile window.

Compile			×
Project name :	C:\EMTP1.emtp		
EXOB file name :	C:\EMTP1.exob		
EXOB password :	Settings (used in decompiler)	Decompilation is prohibited	
Select the languages	used on the HMI Startup language after redownloading the project :	Language 1	
☑ Language 1	Language 2		
error(s) :			
1. Event (Alarm) Log 1 2. Event (Alarm) Log 1 3. Event (Alarm) Log 2 4. Event (Alarm) Log 2	(Category 1) : PLC name undefined (Rockwell DF1) (Category 1) : incorrect device type 2 (Category 1) : PLC name undefined (Rockwell DF1) 2 (Category 1) : incorrect device type		
6. Event (Alarm) Log 3 7. Event (Alarm) Log 4	8 (Category 1) : PLC name undefined (Rockwell DF1) 8 (Category 1) : incorrect device type ( Category 1) : PLC name undefined (Rockwell DF1) 4 (Category 1) : incorrect device type		
Double click error mess	ages to modify the attributes of relative objects !		
Compile	Font Management VBuild font files		Close



#### 7.3. Creating a New Event Log

#### **General Tab**

Click [New] in the [Event (Alarm) Log] dialog box.

eneral	Message	e Statistics				
	Categor	y : 0: Category	r 0	•		Subcategory
Pri	ority leve	el : Low		•		
		Delay tim	e for event m	onitoring w	hen HMI rese	ets : 1 second (s) 👻
		🔽 Save to h	istory			
		🔽 Push not	ification (Easy	Access 2.0)		
Туре				-		
		🔘 Bit	🔘 Wo	:d		
Read	2.0	(				
		Local HMI		0		▼ Set Unsigned
	ddress :	ΓW	•	0		10-bit offstghea
Notifica	tion	🔽 Enable	C Set	ON	Set OFF	
				202		
33	N. 1		æt ON when e	vent recove	ered)	
	ddress :	Local HMI		0	1	
		ГРВ	•	<i>.</i>		
Conditi		· · · ·				
	Enable	if value is : <	•			
		V	Dynamic con	lition value		
Condi	tion valu		Read/Condition	on use diffe	rent addresse:	8
		c Local HMI				
	ddress :			0		16-bit Unsigned
		μn	•]	50.		Le constant en ser

Setting	Description
Category	Select event category, the range is from 0 to 255.
Subcategory	Add this Event Log into the subcategories in the category
	name mapping table.
	Subcategory
	Subcategory 1 © Enable 0: Subcategory 0 Subcategory 2 © Enable 0: Subcategory 0
	OK Cancel
Priority	Events in Alarm Bar / Alarm Display are ordered by priority



level	level first and then by time.
Save to history	In Event Log main settings, if [Save to HMI memory] check box under [History files] group box is selected, selecting [Save to history] here determines whether each separate event should be saved as historical file.
Push notification (EasyAccess 2.0)	When an event occurs, EasyAccess 2.0 push notifications can be sent to iOS <sup>®</sup> /Android <sup>®</sup> devices.
Delay time for event monitoring when HMI resets	This feature is used to set the delay time of Event Log after HMI reboot, in order to avoid false alarm that occurs upon HMI reboot due to uninitialized values. This feature is often used with [Dynamic condition value]. The delay time only occurs once upon HMI reboot.
Read address	The system reads data from this address to check if the event matches the trigger condition.
Notification	<ul> <li>When enabled, the system will set the specified address ON or OFF when the event is triggered.</li> <li>Follow</li> <li>The notification bit will reset to its original state once the alarm condition returns to normal. For example, when the alarm is triggered, the state of the notification bit turns ON.</li> <li>When the alarm condition returns to normal, and [Follow] check box is selected, the state of the notification bit turns OFF.</li> </ul>
Condition	<ul> <li>When [Bit] is selected, Event Log will detect the state of a Bit address.</li> <li>When [Word] is selected, Event Log will detect the value of a Word address to check if it is greater than, less than, or equals to a specified value. See Example 1 and Example 2.</li> <li>Dynamic condition value</li> <li>Allows online change of the comparison value for trigger</li> </ul>

Allows online change of the comparison value for trigger condition when the condition is a Word address type. If [Read/Condition use different addresses] is not selected, the source of condition value will be the next consecutive address from [Read address].

#### **Read/Condition use different addresses** Allows selecting the Word address type to be the source of

condition value.



#### Example 1

Condition
Enable if value is : 💻 🔻 30
Dynamic condition value
In tolerance : 1 Out tolerance : 2

The setting above indicates:

When [Read address] value is greater than or equals to 29 (= 30 - 1)

Or less than or equals to 31 (= 30 + 1), the event will be triggered. The trigger condition:

 $29 \leq [Read address] value \leq 31$ 

After the event is triggered, when [Read address] value is greater than 32 (= 30 + 2) or less than 28 (= 30 - 2) the system will return to normal condition:

[Read address] value < 28 or [Read address] value > 32

#### Example 2

Enable if valu	ue is : <> 🔹 30
	Dynamic condition value

The setting above indicates:

When [Read address] value is less than 29 (= 30 - 1)

or greater than 31 (= 30 + 1), the event will be triggered. The trigger condition:

[Read address] value < 29 or [Read address] value > 31

After the event is triggered, when [Read address] value is greater than or equals to 28 (= 30 - 2)

or less than or equals to 32 (= 30 + 2) the system will return to normal condition:

 $28 \leq [\text{Read address}] \text{ value } \leq 32$ 



#### Message Tab

meral Messa	ge Statistics			
ſext				
Con	tent :			^
🗌 Use label	library		Label Library	*
🔽 Use string			String Table	
	Selected -	Sectio		_
String ID —		Secto	on : [ID:000]	•
📝 Dynamic		🔽 Rec	cord string ID	
Device :	Local HMI		•	9
Address :	LW	• 0	16-bit Unsi	gned
* Font from	Arial [Arial] [ [Language & I	Font] settings	Language & For	nt
* Font from Acknowledge	ı [Language & H	Font] settings //Alarm Display object		1t
* Font from Acknowledge Acknow	ı [Language & I value for Even	Font] settings //Alarm Display object		• it
* Font from Acknowledge Acknow Sound	ı [Language & I value for Even	Font] settings //Alarm Display object		ıt
* Font from Acknowledge Acknow Sound	ı [Language & I value for Even	Font] settings /Alarm Display object 11		ıt
* Font from Acknowledge Acknow Sound	ı [Language & I value for Even	Font] settings #Alarm Display object 11 Sound Library		ıt
* Font from .cknowledge Acknow ound	ı [Language & I value for Even	Font] settings /Alarm Display object 11		ıt
* Font from Acknowledge Acknow Sound	ı [Language & I value for Even	Font] settings #Alarm Display object 11 Sound Library		at
* Font from Acknowledge Acknow Sound	ı [Language & I value for Even	Font] settings #Alarm Display object 11 Sound Library		ut
* Font from Acknowledge Acknow Sound Enable	ı [Language & I value for Even	Font] settings #Alarm Display object 11 Sound Library Play		at
* Font from Acknowledge Acknow Sound Enable	WATCH1 ~ WA	Font] settings #Alarm Display object 11 Sound Library Play Play		at
* Font from Acknowledge Acknow Sound Enable	WATCH1 ~ WA	Font] settings #Alarm Display object 11 Sound Library Play Play		at

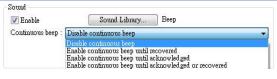
Setting	Description
Content	The text content displayed in [Alarm Bar], [Alarm Display],
	and [Event Display] objects. Use the formats in the
	following two examples of WATCH addresses to use
	register data in content. The content in Label Tag Library
	and String Table can be used in the Event Log message.
String ID	[Event Display] and [Alarm Display] objects display
	messages according to the String ID in the designated
	register.
	Record String ID
	With this option selected, when an event occurs, the
	string's ID number will be recorded. Message of the event
	triggered before can be retained.
Font / Color / Background	The font / color / background color can be set respectively



#### color for each event. The font and color settings determine how [Alarm Bar] shows the text, while The font, color, and background color settings determine how [Alarm Display] and [Event Display] show the text. These settings are not available in the [Event Display] under History mode. Write value for When an event in the [Event Display] or [Alarm Display] Event/Alarm object is acknowledged, the acknowledge value is written **Display object** to the specified [Acknowledge] address. This feature can be used with an Indirect Window object's read address so that when the acknowledge value is written, a window pops up as a prompt about how to handle the alarm. As illustrated below, when an event is selected and the acknowledge value is set to 11, window 11 will pop up, displaying the alarm handling prompt.

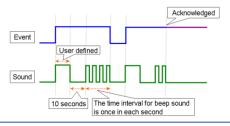


Click the icon to download the demo project. Please confirm your internet connection before downloading the demo project.



If enabled, the selected sound will be played when an event is triggered. Continuous beep can also be enabled, which only stops when the event is acknowledged or recovered.

For continuous beep, a delay time can be set between triggering the alarm and the start of beeping.





Sound

	Click the icon to download the demo project. Please confirm your internet connection before downloading the demo project.
Address of WATCH 1 ~ 8	Users can set how the value is displayed in the designated watch address when an event occurs. Up to 8 watch addresses can be used simultaneously. Click [Syntax] to see how to use the syntax to embed device data in the
	content of an event log displayed in the watch address. Click the icon to download the demo project. Please confirm your internet connection before downloading the demo project.

#### e-Mail Tab

Please enable this function in [System Parameter Settings] » [e-Mail] first.

eneral Message e-M	lail Occurrence		
Enable Conditi	on	Recipients	
	hen event triggered		
▶ 📝 Send wl	hen event cleared	Group A	
Recipients			
	As recipients of trigg	gered mail settings	
То	Group A		
Cc			
Bcc			
Subject			
	Use event content a	as subject	
Subject :	Tank level low. level=	%(WATCH1)d.0	*
	4	ŀ	Ŧ
Message			
Opening :			*
			-
	*	+	
	Use label library		
Ending :			*
			-
	<b>∢</b>	+	
	Use label library		
	Labe	Library	
	ОК	Cancel	Help

Setting	Description
Recipients	Select the [To], [Cc], and [Bcc] recipients.
Subject Enter the subject of the e-mail.	
Message	Enter the [Opening] and [Ending] content of an e-mail.

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# AttachIf the [Contains a screenshot of window] check box is<br/>selected, the screenshot of the selected window will be<br/>attached.

### Note

The priority level of an event determines its importance in e-mail delivery.

Event Priority Level	Email Importance
Emergency	High
High / Normal	Normal
Low	Low

#### **Statistics Tab**

neral Mess	age Statistics		
)ccurrence r	ead and reset addre	88	
	📝 Enable		
PLC :	Local HMI		▼ Settings
Address :	LW	• 0	16-bit Unsigned
Iapsed time	L W read and reset addr Enable Local HMI		↓ 16-bit Unsigned

Setting	Description	
Occurrence	If enabled, the number of occurrence of the event after	
read and reset	HMI startup will be written to the designated word address. The word address can be read / written.	
address		
Elapsed time	If enabled, from an event occurs to its recovery, the	
read and reset	elapsed time (in seconds) will be written to the	
address	designated word address. The word address can be read / written.	

Click the icon to download the demo project. Please confirm your internet

connection before downloading the demo project.

#### **Security Tab**

With security settings enabled, an address and a condition can be set so that an event is recorded only when the state of the specified address meets the preset condition.



SettingDescriptionUse register status/valueWith this option enabled, an event will be recorded only when the state of the specified address meets the preset condition		Event (Alarm) Log  General Message Statistics Security  Enable/Disable  Use register status/value  Device : Local HMI Address : LE 101 Enable if bit is : ON	
status/value when the state of the specified address meets the preset	Setting	Description	
condition.	•	•	



- When an event is triggered with the security settings enabled, the event can be acknowledged on Event Display or Alarm Display even when the security settings are disabled after the event is triggered.
- With security settings enabled, the event's address will not communicate with the device if the preset condition is not met.

