M1 multiple-use PDF temperature data logger

Product overview:

This data logger is mainly used to detect the temperature of food, pharmaceuticals, chemicals and other products during transportation or storage. The main features of this product: multiple use, automatically generated PDF report, high water proof level, battery exchangeable.

Specification：80mm（Length）x 25mm（Width） x 12mm（Depth）

Technical parameters：

Temperature range：-30℃～+70℃

Accuracy：±0.5℃（-20~+40℃），±1℃(other range)

Resolution ：0.1℃

Record capacity：32000（MAX）;

Battery lifetime：25℃，if record interval 15minutes, lifetime at least 6 months.

Waterproof level：IP67；

Report type: Encrypted PDF file.

Data connection port：USB

Sensor type：Internal（External optional）

Power supply：Internal CR2032 battery

Operation system：WIN XP/7/8

Initial use：

1、 Install tempbase.exe software，insert M1 logger to computer by USB port, finish USB drive installation according to the prompt.

2、 Open tempbase data management software，after connection logger with computer, the data information will be automatically uploaded. Then user could click "LoggerSetting" button to enter parameter configuration interface and configure the parameters according to specific

application.

3、 After finish configuration, click "Save" button to save the parameter setting, then it will prompt an interface of Parameter Configuration Success", click OK and exit from the interface.

Device operation instruction：

1. Configuration operation：Open tempbase.exe software，after connection logger with computer, the data information will be automatically uploaded. Then user could click "LoggerSetting" button to enter parameter configuration interface and configure the parameters according to specific application. After finish configuration, click "Save" button to save the parameter setting, then it will prompt an interface of Parameter Configuration Success", click OK and exit from the interface.

2. Logger start operation：

M1 supports three start modes(manual start, start right now, timing start), the specific start mode is determined by the parameter setting.

Manual start：press left key for 4s to start the logger.

Start right now：Immediately start just after the logger disconnected with computer.

Timing start：Logger starts when reaches to set start time.(Note：The set start time needs to be at least one minute delay than current time).

3. Pause operation：

Double click left key to enter to pause status. Under pause status, the device only records time instead of temperature recording. Double click left key again to cancel pause operation and recover to normal temperature recording.

4. Mark operation：

Double click right key, to finish mark operation. After finish marking operation, if quickly finish pause and pause cancel action, then the current marking could be canceled.

Note：

1）For one recording trip, the device could support Max. 10 times data marking.

2）Under status of pause or sensor disconnected status (when external sensor is configured), mark operation is disabled.

5. Stop operation:

M1 supports two stop modes（stop when reaches to Max.record capacity、 manual stop），and the specific stop mode is determined by parameter setting.

Stop when reaches to Max.record capacity：When record capacity reaches to Max. Record capacity, logger will stop automatically.

Manual stop：the device only stops when it is manually stopped except that the battery is consumed out. If the record data reaches to its Max. Capacity, then the data will be overwritten.

Note During the status of data overwriting, MARK operation will not be zero cleared That is, no matter how many times overwriting it has, Max. MRARK times is still be 10 times and every marking data will be saved without clearing.

6. Viewing operation：

During logger recording or stopping status, insert the logger to computer, then the data could be viewed by software or PDF report generated in the U disk.

PDF reports are different if there is alarm setting：

➢ If no alarm setting, there is no alarm information column and in data table, no alarm color marking, and at the left upper corner, it displays PDF in the black rectangle.

➢ If the alarm is set as upper/lower alarm, it has alarm information column, and it has three lines information: upper alarm information, standard zone information, lower alarm information. In data table, for upper alarm recording data, it displays in red, and for lower alarm data, displays in blue. And in the left upper corner, if alarm occurs, the background of rectangle is in red and display ALARM inside. If no alarm occurs, the background of rectangle is in green and display OK inside.

➢ If the alarm is set as multiple zone alarm, in PDF alarm information column, it could have max. Six lines: upper 3, upper 2,upper 1, standard zone; lower 1, lower 2.In data table, for upper alarm recording data, it displays in red, and for lower alarm data, displays in blue. And in the left upper corner, if alarm occurs, the background of rectangle is in red and display ALARM inside. If no alarm occurs, the background of rectangle is in green and display OK inside.

Note：

1）、Under all alarm modes，if data table zone, for Marking data, it displays in green; if the record points are invalid data(USB connection(USB), pause data(PAUSE), sensor failure or sensor is not connected (NC)), then the recording marking is in gray. And in PDF curve zone, for the case of USB data connection (USB), data pause（PAUSE), sensor failure (NC), all of their lines will be drawn as bold gray dotted lines.

2）、if connect logger to computer during recording, there is no recording data during connection period.

3）、During the period of logger connection with computer, whether there is PDF report generated in U disk depends on initial parameter configuration.

7、Multiple start：

The logger supports the function of continuous starting after last logger stopping without the need to reconfigure the parameters.

Key function description：

Left key：Start(restart) logger、menu switch、pause；

Right key：MARK, manual stop.

Battery management

1、Battery level indication

Battery level indication	Battery capacity
	40%～100%
	20%～40%
	5%～10%
（flash）	<5%

Note：When the battery capacity is lower or equal to 10%, please replace the battery at the soonest. If the battery capacity is lower than 5%, the device will stop recording.

2、Battery replacement

1）、Replace steps
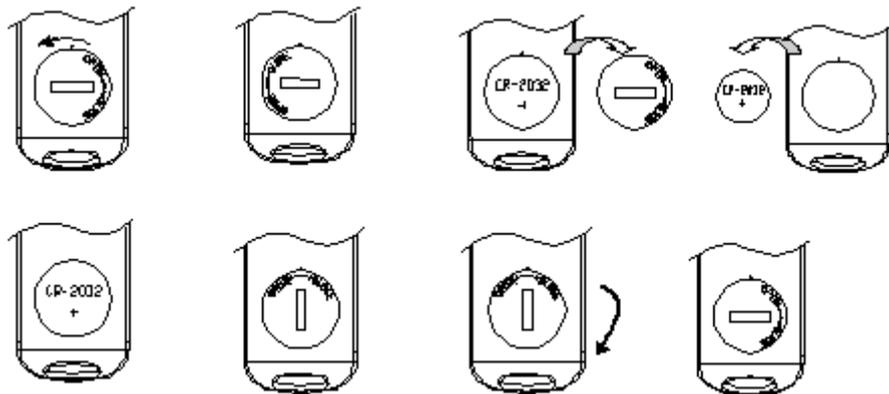
2）NOTE：

It is suggested to check battery before restart the logger to ensure that for battery remaining could finish the recording task. The battery could be replaced before you configure the parameter. After replacement of battery, user needs to configure the parameter again.

Note：When the logger is connected to computer under the status of recording or pause status, it is prohibited to plug off USB without battery power supply.

LCD display notice：

1、Alarm LCD display

When LCD display time is configured as 15s, click left key, LCD displays. If over temperature incident occurs, it firstly displays alarm interface for about 1s, then skip to main interface automatically.
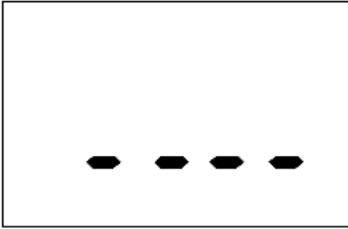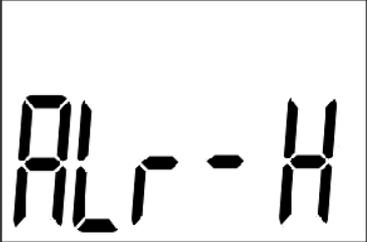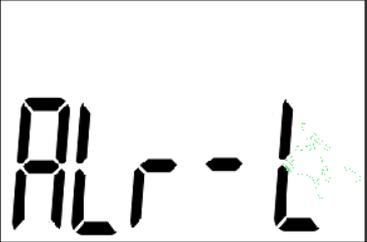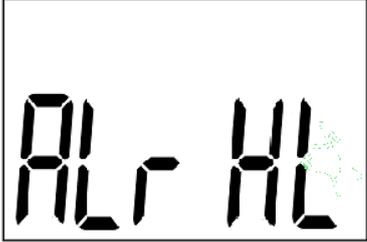
When display time is configured as "forever", If over temperature incident occurs, it displays alarm interface all the time. Press left key to skip to main interface.

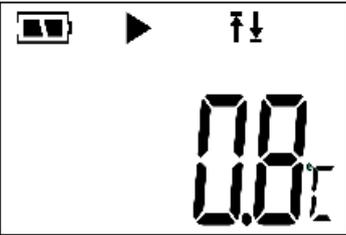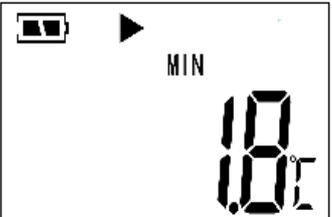When display time is configured as "0", there is no LCD display.
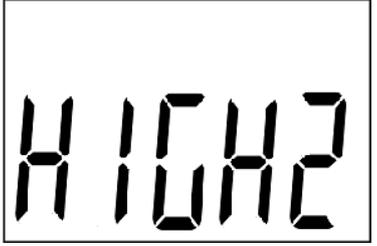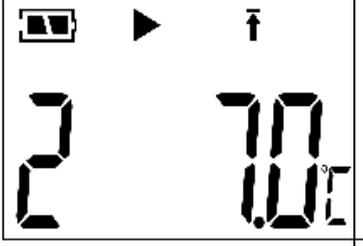
Appendix 1：Working status description：

Device status	LCD display	Device status	LCD display
1、 **Start logger**	St Art	2、Start delay	(battery) ▶ "▶" is flashing
3、Recording status	rEC During recording status, in the middle of the first line, static display "▶".	4、Pause	PAUSE in the middle of the first line, blinking display"■".
5、 **MARK success**	✓ SEt 8	6、MARK failure	× SEt 10
7、Device stop	StOP in the middle of the first line, static display"■".	8、 **USB connection**	(battery) (computer) USb
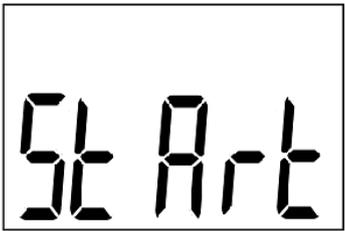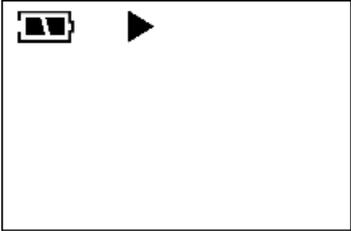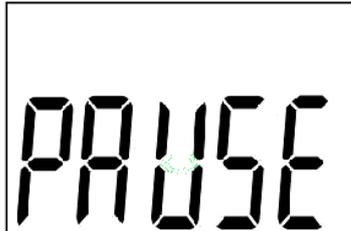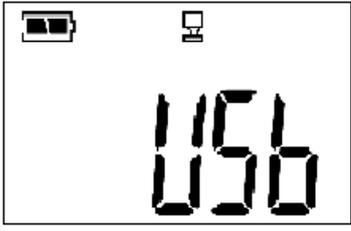
APPENDIX **2**：**other LCD display**

1、 **erase data status**	- - - -		
2、 **PDF generation status**	PdF PDF file is under generation, PDF is in flash status.	3 、 Alarm interface	Only exceed upper limit： ALr - H Only exceed lower limit ALr - L Both upper and lower limit occurs： ALr HL

Appendix 3：LCD page display

PAGE	Display	Page	display
PAGE 1: Battery level, current working status(record, stop,etc) upper/lower limit status, current temperature.	 "↑"：upper limit alarm occurs； "↓"：lower limit alarm occurs；	Page 2: Battery level, current working status, recording points	
PAGE 3：battery level, current working status, MAX. temperature.		**PAGE 4: battery level, current working status, Min. temperature.**	
Page 5：upper limit 1	 	**Page 6: Setting temperature of upper limit 1**	
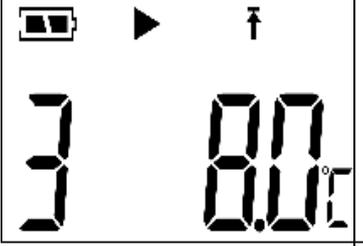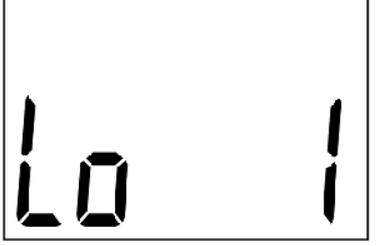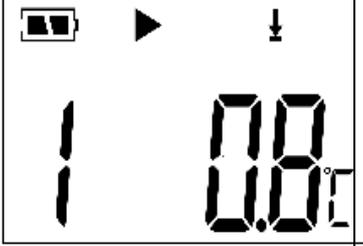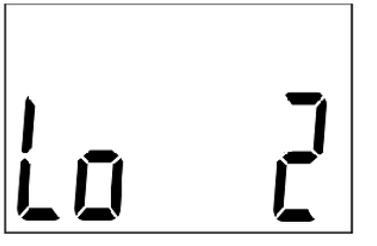
Page 7: upper limit 2	HIGH2	**Page 8: Setting temperature of upper limit 2**	2 7.0℃
Page 9: upper limit 3	HIGH3	**Page 10: Setting temperature of upper limit 3**	3 8.0℃ 否则，不显示此页。
Page 11: lower limit 1	Lo 1	**Page 12: Setting temperature of lower limit 1**	1 0.8℃
Page 13: lower limit 2	Lo 2	**Page 14: Setting temperature of lower limit 2**	2 - 1.2℃