Gentec Systems Corporation

CENTRAL ALARM

USER'S MANUAL
FIELD INSTALLATION GUIDE
TECHNICAL INFORMATION

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GENERAL INFORMATION

WARRANTY

- Gentec warrants that the product manufactured by the company and delivered hereunder will be free of defects in material and workmanship for a period of twelve months from the date of receiving the product by the purchaser.
- The purchaser shall promptly report in writing any failure to conform to this warranty to the company within said period. The company will, at its options, repair the defective item or provide a replacement free of charge upon receiving the returned item, provided that it has not been mishandled in its storage, installation, maintenance, and operation after being received by the purchaser. The purchaser shall ship the defective product back to the company only after receiving a written authorization of the company.
- The equipment should not be repaired or altered without prior written or verbal approval of the company or its authorized distributors. Failure to comply will void all warranty on the product.
- The effects of corrosion, erosion and normal wear and tear are specifically excluded from this warranty.
- THE COMPANY MAKES NO OTHER, EXPRESSED OR IMPLIED, WARRANTY OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSEARE HEREBY DISCLAIMED.

SAFETY

General safety precautions:

1. Only trained personnel certified by Gentec shall be permitted to adjust or repair the equipment.
2. Read all instructions carefully before operating the equipment.
3. Do not connect the equipment to an electrical supply of incorrect voltage and/or frequency.
4. Switch off the main power supply before opening the case front panel to do wiring inside the equipment unless otherwise instructed.
5. Do not short any signal wires at both ends of the transmitting cable.
6. Do not use the equipment outside the specified ambient temperature and humidity ranges. Do not operate the equipment when it is considered defective. Otherwise, it may not reliably deliver its expected functions.
7. The equipment is not intended to be and must not be used in potentially explosive atmospheres. Do not install the equipment at or close to locations where there is any actual or foreseeable risk of hazardous levels of flammable gases or vapors.

Table of Contents

FEATURES:

Gentec Central Alarm fully displays, controls, and sets your on-site alarm on a highly visible 9.7"/15.6" TFT LCD screen. It is capable of handling up to 30 onsite Gentec alarms including area alarm, combo alarm, and master alarm.

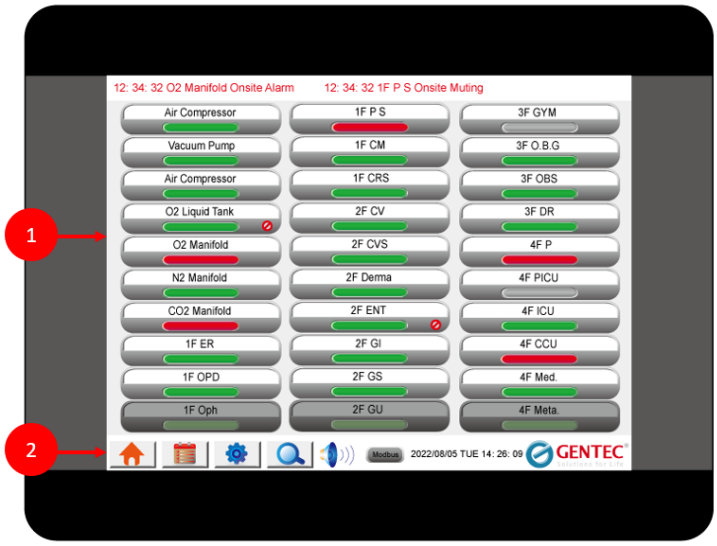
- On-site customization without the use of a laptop, tablet, or mobile device. Settings such as brightness, communication parameters, alarm conditions, and on-site alarm labeling can be adjusted. Users can set the name of each on-site alarm in the central alarm on the fly, and can modify the alarm parameters and connection parameters of each on-site alarm through the network connection, without using additional devices.
- All parameter settings are password protected
- With alarm state test function, and can test buzzer sound.
- The central alarm can display the on-site alarm status including on-site alarm, on-site mute, and communication error.
- Each type of alarm can be individually set to cancel the alarm sound, but the indication and event table continue to display and record.
- It has an event table, which is used to view the historical records of alarm events with time stamps, and the display records can be up to 10,000.
- Event Log to view history of time stamped alarm events The main page has a message bar, which displays the current on-site alarm status and time stamp.
- The event table and message bar display alarm messages are displayed according to the name of the on-site alarm by the user.
- The offline function can be set to ensure that the alarm is suspended during the on-site alarm repair, room decoration, or network rebuild to cause abnormal communication. The on-site alarm in the offline state stops the display and indication of various alarm states in the central alarm.
- With backlight energy saving function to prolong the life time of the screen. When the alarm sound is activated or a new alarm occurs in the on-site alarm, the backlight energy saving is cancelled and the screen display is automatically activated.
- When the mute function is activated, there is no warning sound during the mute time. After the mute time is exceeded, the warning sound is restarted.
- During muting time, when a new alarm occurs in the on-site alarm, the alarm sound will be activated immediately and the mute will be canceled. The mute function cannot be activated when there are no alarm status from all on-site alarm.
- When the mute function is activated, all alarm status indications are automatically updated.
- When the communication is abnormal, the indication of the on-site alarm displayed in the central alarm stays in the state before the abnormality, and displays the communication error indication, so that the user can understand the last on-site alarm state before the communication abnormality.
- It can be integrated with the SCADS to provide on-site alarm data.

1.1 ELECTRICAL AND PHYSICAL SPECIFICATIONS

Type	CA097 10~30 on-site alarms connection	CA156 Up to 90 on-site alarms connection
MECHANICAL		
Front Panel	Plastic	Front bezel: Plastic, Rear Enclosure: Aluminum
Case Body	Metal Alloy	
Nominal Physical Dimensions	Overall Size： 241.5mm x 330mm x 121mm (Height x Width x Depth) Beneath the Wall： 225.5mm x 310mm x 98 mm (Height x Width x Depth)	Overall Size： 318.5mm x 474mm x 126mm (Height x Width x Depth) Beneath the Wall：300.5mm x 455mm x 98 mm (Height x Width x Depth)
Wall Mounting Opening	225.5mm x 310mm (Height x Width)	300.5mm x 455mm (Height x Width)
ENVIRONMENT		
Ambient Temperature	0℃ ~ 50℃	
Ambient Humidity	10% ~85% RH, non-condensing	
Cooling	Fan-less Cooling System	
ELECTRICAL		
Power Requirements	Input：100~240 VAC, 50~60Hz, 115V, 2A/230V, 1.5A	
Processor	Quad-core RISC	Quad-core RISC
Monitor	LCD Size：9.7” TFT, LED Backlit Resolution：1024x768 Pixels Color Depth：262k Brightness: 350 cd/m2 Touch Screen：4-wire resistive Durability： >30000 hours	LCD Size：15.6” TFT, LED Backlit Resolution：1920x1080 Pixels Color Depth：16.2M Brightness: 300 cd/m2 Touch Screen：capacitive type Durability： >30000 hours
Buttons	Resistive touch buttons	Capacitive touch buttons
Buzzer	Adjustable Volume	
CERTIFICATION	**CE, UL**	
COMMUNICATION		
Modbus RTU	2400~115200 baud rate, (8,N,1)	
Modbus TCP	10/100/1000M Automatic Selection	
Server	Yes, Modbus	

2.FUNCTION AND APPEARANCE

2.1 FRONT PANEL



1. Main Screen
2. Touch Buttons

2.2 FUNCTION OF FRONT PANEL

Main screen is divided into two sections: upper section is for display and lower section is for touch buttons.

(1) Homepage: Shows on-site alarm conditions and remote display/control/setting.

(2) Event log: keeps a time stamped record and cause of all alarm activity.

(4) Parameter Setting: Upon entering password, user can set up on-site name, communication parameters alarm condition as well as other setups.

(5) Test: press the button to test if buzzer works. If it does, the siren will sound in three times.

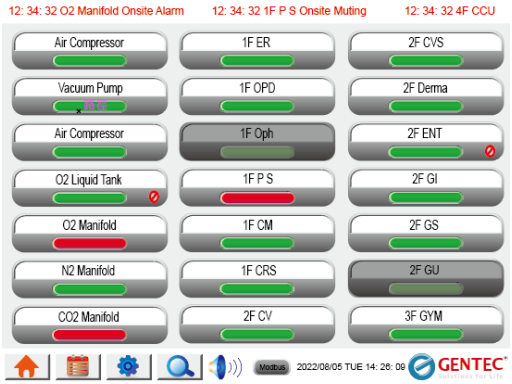
(6) Muting: Shows condition of buzzer (Mute/Unmute). Press the button to silence the buzzer when siren arises.

3. FUNCTION DESPCRIPTIOON

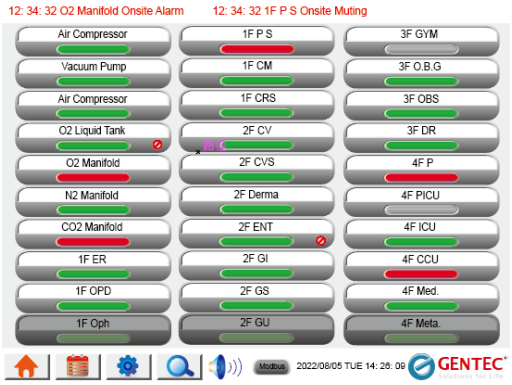
3.1 MAIN SCREEN

Display of homepage depends on the number of on-site alarms monitored. Central Alarm provides 10, 21, 30, and more monitoring on-site alarms as follows:

Display for 10 on-site alarms (CA097)



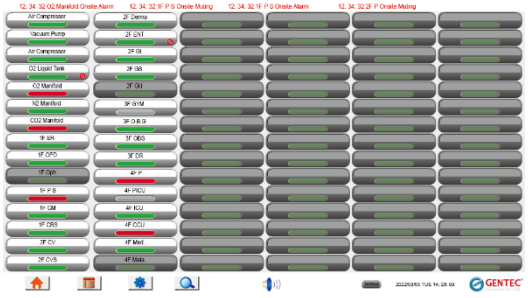
Display for 21 on-site alarms (CA097)



Display for 30 on-site alarms (CA097)

Display for 40 on-site alarms (CA156)

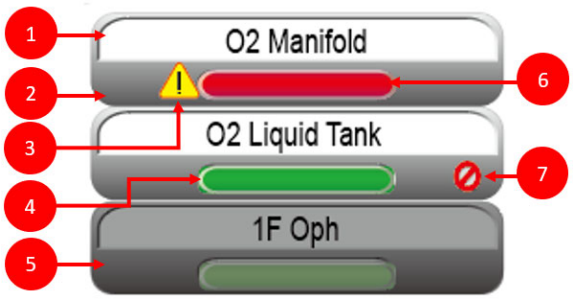
Display for 60 on-site alarms (CA156)



Display for 90 on-site alarms (CA156)

All on-site monitoring display s as follows:

Elements on-site alarm status are explained as below:



Default display of on-site alarm status

(1) **Label of on-site alarm:** Displays the label of on-site alarm. Press the label to go to remote screen display and control page.

(2) **On-site alarm index:** Reference number of on-site alarm

(3) **Warning status:** When the on-site alarm is within warning condition, the warning indication is displayed .

(3) **Normal status:** Provides easy visual identification of normal condition with green color.

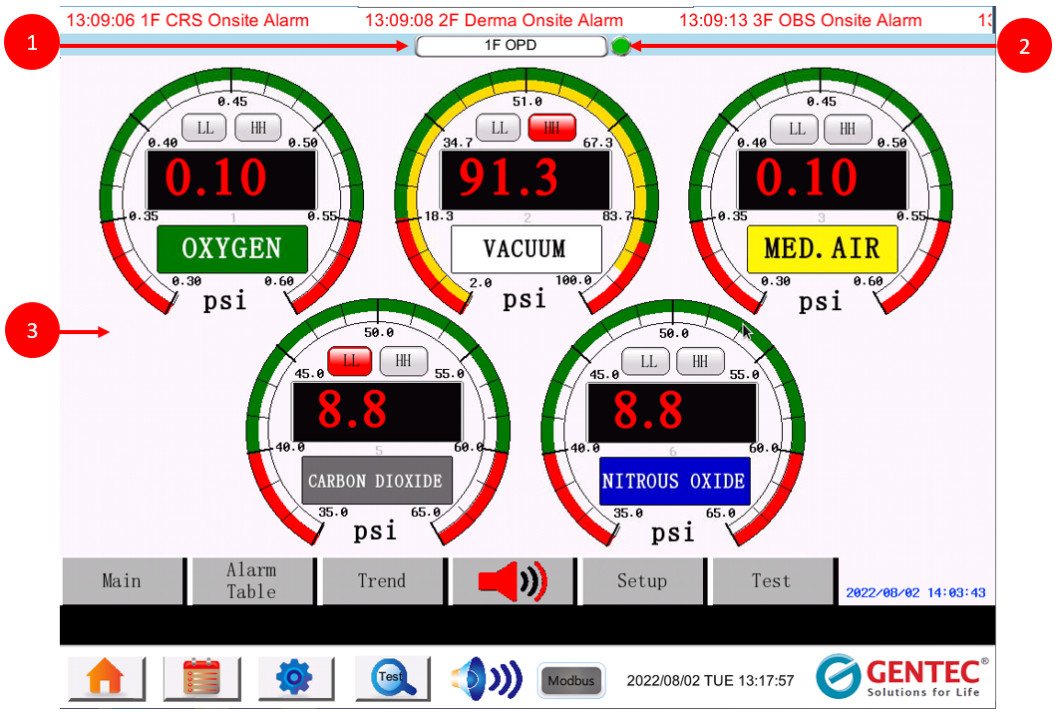
(4) **Off line Identification:** Indication of off line status is covered by black color. In off line status, all alarm is disabled and all data are cleaned to 0.

(5) **Alarm status**: Provides easy visual identification of alarm condition with red color.

a. Indication is red color: When the on-site alarm is within alarm condition, the indication becomes a red color as a visual alarm indicator.
b. Indication is red color and blinking: When the on-site alarm is within alarm condition and the buzzer of the on-site alarm is set to mute, the indication becomes a red color and blinking as a visual alarm with muting indicator.

(6) **Communication error indication:** Central alarm can not retrieve data from on-site alarm. This indication is based on setting of "Retry to Retrieve Data" in "System" setup.

3.2 REMOTE SCREEN DISPLAY AND CONTROL



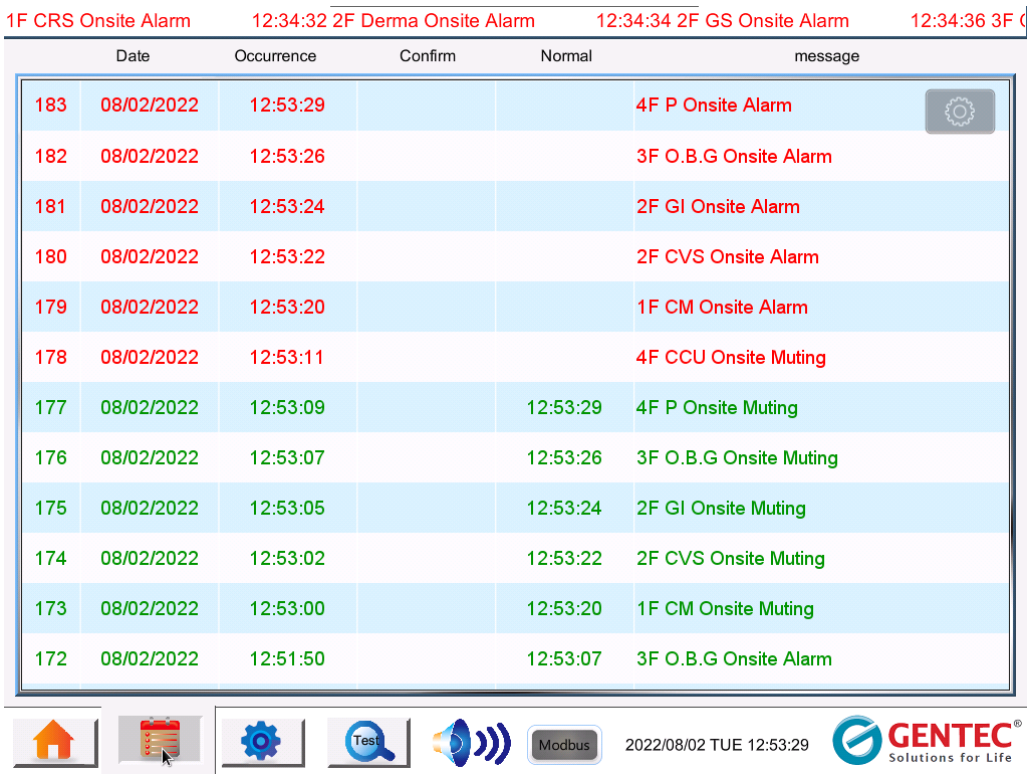
Press home page of on-site alarm Label to enter remote screen connection.

(1) On the top of remote screen shows label of on-site alarm.

(2) An indication of connection status. Red identification implies screen connection error. Green identification means screen connection successfully.

(3) The display of screen is identical with the screen of on-site alarm.
Any control and setting of on-site alarm can perform through remote screen.

3.3 EVENT LOGS



Press “  ” button to enter event history. The page maintains a rolling list of the 10000 most recent alarm events. The date, duration, and time of the event will be logged as well as the alarm trigger condition. Three types of events will be list in the event log, including onsite alarm, onsite muting, and communication error.

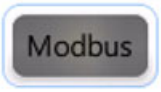
Press “  ” button on event log page for event filter operation.

3.4 Message Bar

All the alarm status of on-site alarm will be shown in this message bar one by one. The message bar will be empty when there is no alarm status for any on-site alarm.

4. FUNCTION OF BUTTONS AND INDICATION

Functions of buttons and indication are described below:

	**Homepage** Press the button to go back to the main page.
	**Event Log** Press the button to switch to the event log page.
	**Setup** A password prompt will display after pushing the "setup" button. Enter the correct password to access the system settings.
	**Test** Press the button to test if buzzer works. The siren shall sound in three times and all on-site alarm status will be triggered to alarm and go back to recovery status in event log page.
	**Muting** Press the button to silence buzzer (the default setting is to silence the alarm for 30 minutes). If all on-site alarms are in normal status, muting function is not operational. When the central alarm receives new alarm status from on-sit alarm during muting status, the siren arises. 
	**Communication indication** The communication indication between central alarm and on-site alarms. It should blink when the communication condition is normal.
2022/08/02 TUE 12:45:30	**Date and time** Indication of date and time

In the following sections, we will describe the contents and operation of each setting page.

5. SETUP

Pressing the “ ” button brings up a password prompt. Enter the correct password to access the system settings.

Enter the password and press “Enter” button (the default account is “USER” and password is 111111). After entering the correct password, the window will disappear and jump to the setup page.

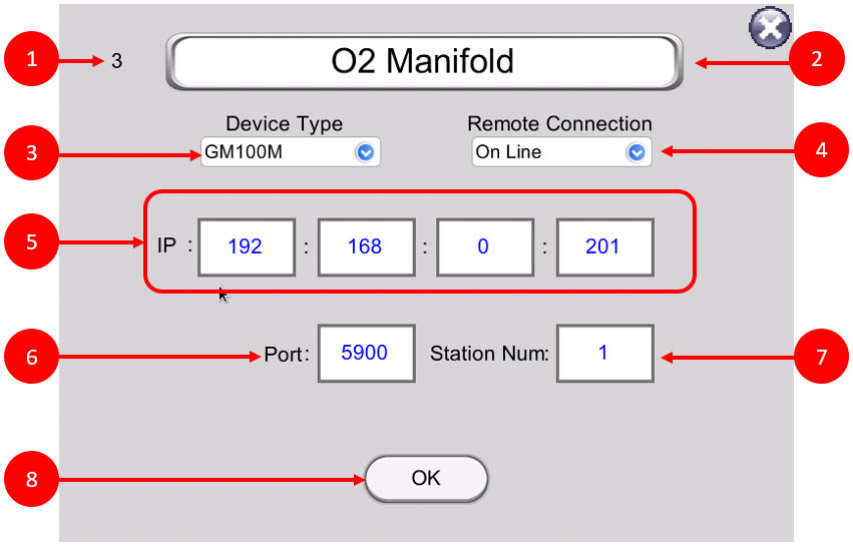
5.1 SETUP PAGE

(1) **Label of on-site alarm:** Press label to enter on-site alarm parameter setting. There is no label display for the first setting.

(2) **On-site alarm index:** Reference number according to the index of on-site alarm of home page.

(3) **More settings and data view:** Press these buttons to enter more setting and view more information.

5.2 PARAMETER SETTING FOR ON-SITE ALARM



Press on the fields to modify and an onscreen keyboard will allow access to modify values. Press “OK” to save changes made. The modifiable parameters and information are as follows:

(1). On-site alarm index:
Reference number according home page. This is an indication.

(2). Labeling:
Input text to indicate the location of on-site alarm. The maximum input characters are 20.

(3). Device type:
No need to change selection here.

(4). Remote connection:
To set on line or off line for on-site alarm. In off line setting, the central alarm will not collect any data of this specific on-site alarm and this specific on-site alarm on the home page will covered with black color.

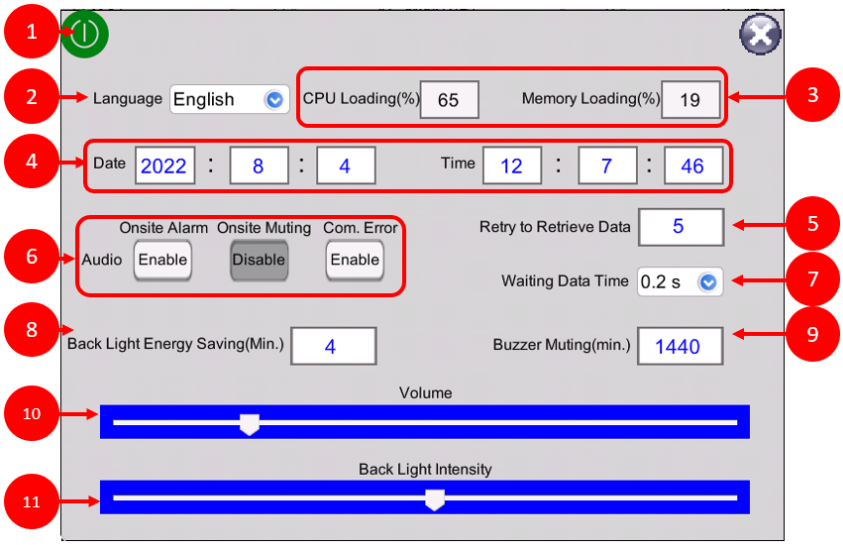
(5). IP Address:
Input the IP address of on-site alarm

(6). Port:
Input the port of on-site alarm

(7). Station Num.:
Input the station number of on-site alarm

(8). OK:
OK button to save all parameters

5.3 PARAMETER SETTING FOR SYSTEM



Pressing "SYSTEM" button brings up a general system setting. Press on the fields to modify and an onscreen keyboard will allow access to modify values. Enter values desired to change parameters:

(1). Reboot:
Reboot Central Alarm. Any change of parameter is automatically update in 2 minutes. Do not reboot device immediately when you change any parameter.

(2). Language:
Select language in all system information, labeling, and message.

(3). System performance:
These are indications of system performance including CPU loading and memory loading.

(4). Date and time:
Date and time display is based on embedded RTC which is automatic updates from NTP if network connection is WAN. There will be time difference if NTP is not available for a long power on time.

(5). Audio:
Three setup buttons for siren to arise. Press button to disable audio when alarm condition achieved. The event log and message bar as well as main page alarm status indications are not affected by these setting.

(6). Try to retrieve data:
Communication between the central alarm and on-site alarm may fail. Try to retrieve data setup is to count times of fail to retrieve data from on-site alarm. If communication reaches setup number, the communication error actives.

(7). Waiting data Time:
Times to wait when the central alarm tries to retrieve data from on-site alarm.

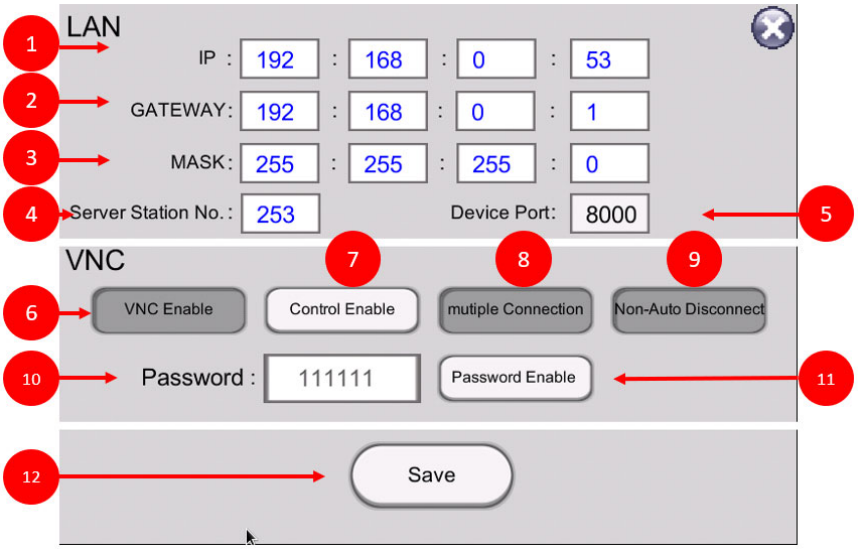
(8). Back light energy saving:
To extent screen life time, back light will be turn off according this setting. When new alarm status of on-site alarm achieved or buzzer muting time is ended, back light will be turn on again.

(9). Buzzer muting time:
When new alarm status of on-site alarm achieved, the siren arises and muting time count is reset.

(10). Volume:
Volume of buzzer.

(11). Back light intensity:
Set up the brightness of screen.

5.4 PARAMETER SETUP FOR LAN & VNC



Press on a field for the onscreen keyboard, enter numbers and click “SAVE” to save changes. The setup parameters are as follows:

(1) **IP:**
This IP is the LAN address of central alarm. It should be the same LAN area of on-site alarm.

(2) **Gateway:**
Gateway of LAN

(3) **Mask:**
Mask of LAN

(4) **Server Station No.:**
Station number of central alarm for SCADA or BMS connection.

(5) **Device port:**
Indication of central alarm port number.

VNC setup are parameters for remote monitoring and control of central alarm.

(6) **VNC enable:**
Enable or disable VNC function.

(7) **Control enable:**
Enable or disable VNC remote control function.

(8) **Multiple connection:**
Available for multi or single user connection.

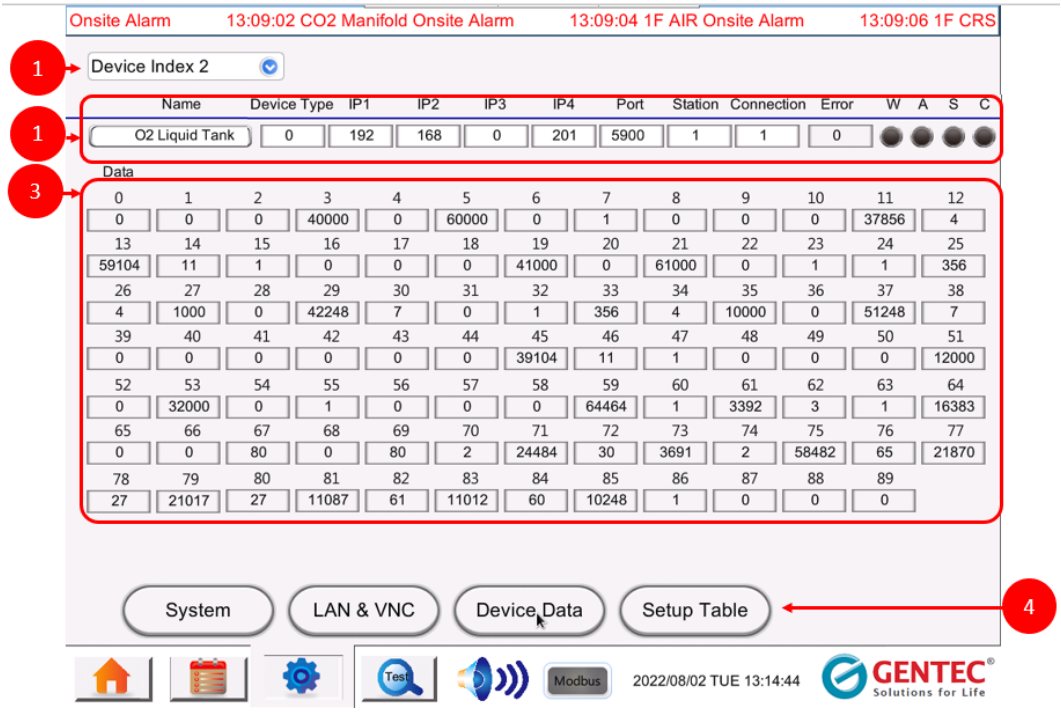
(9) **Non-Auto disconnect:**
Available for auto or non-auto disconnect.

(10) **Password:**
VNC password of central alarm.

(11) **Password enable:**
Enable or disable VNC password connection requirement.

(12) **Save:**
Make sure to press “save” button after parameters setup.

5.5 INDICATIONS OF DEVICE DATA



Device data page is a convenience indication for user to check retrieved data condition for on-site alarm.

(1) **Device index:**
Select device index to display data according to select. The number of index is identical with the home page reference number of each on-site alarm.

(2) **On-site alarm parameters:**
Parameters of on-site alarm setting is displayed. User can check the correction of parameters setting.

- Device type: 0 means GENTEC GM100M alarm series.
- IP/port/station: the IP address parameters of on-site alarm
- Connection: on line/off line of on-site alarm. 1 means on line.
- Error: count of communication error
- A: on-site alarm is in alarm status
- S: on-site alarm is in muting status
- C: on-site alarm is in communication error status
- W: on-site alarm is in warning status

(3) **Data:**
The central alarm retrieves data from on-site alarm and assigns to register. For more details, please refer register map of central alarm.

(4) **Setup Table:**
Go back setup page

6. SYSTEM STRUCTURE

The central alarm, on-site alarms, and the SCADA are communicated with each other through the network connection. The connected network must be in the same local area network.

7. FIELD INSTALLATION

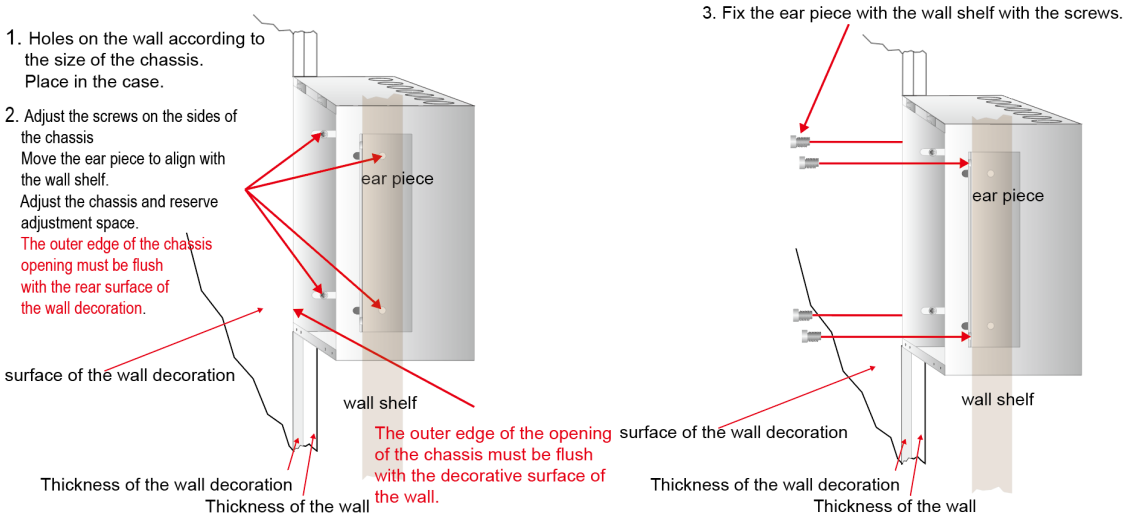
NOTICE: Normally, the display module will be dispatched along with the other components
CAUTION: Field installation is not allowed without certified technician supervised.

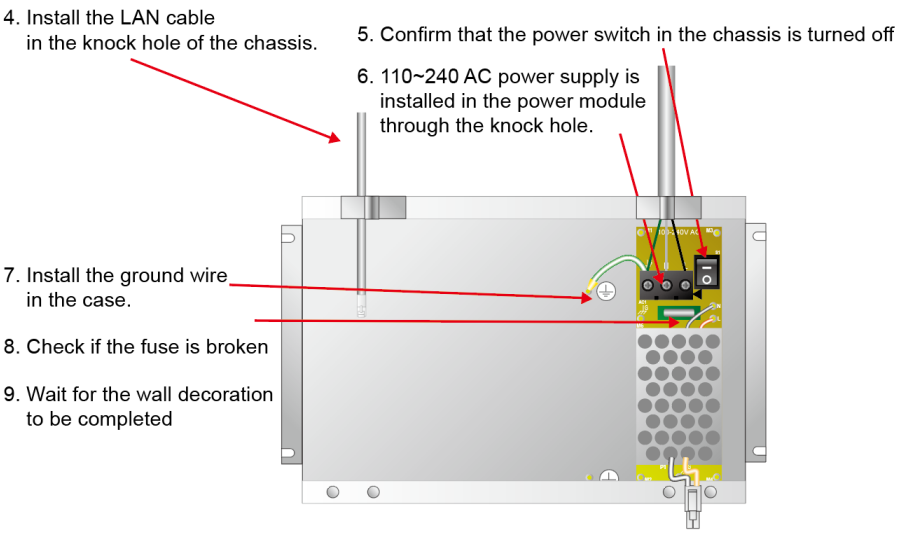
The module assembly consists of two sections:

(1) Front Panel:
The data-access PCB and display panel are mounted onto the front panel.
(2) Metal Case
Power supply, fuse and power switch are mounted inside the metal case.

7.1 CASE INSTALLATION

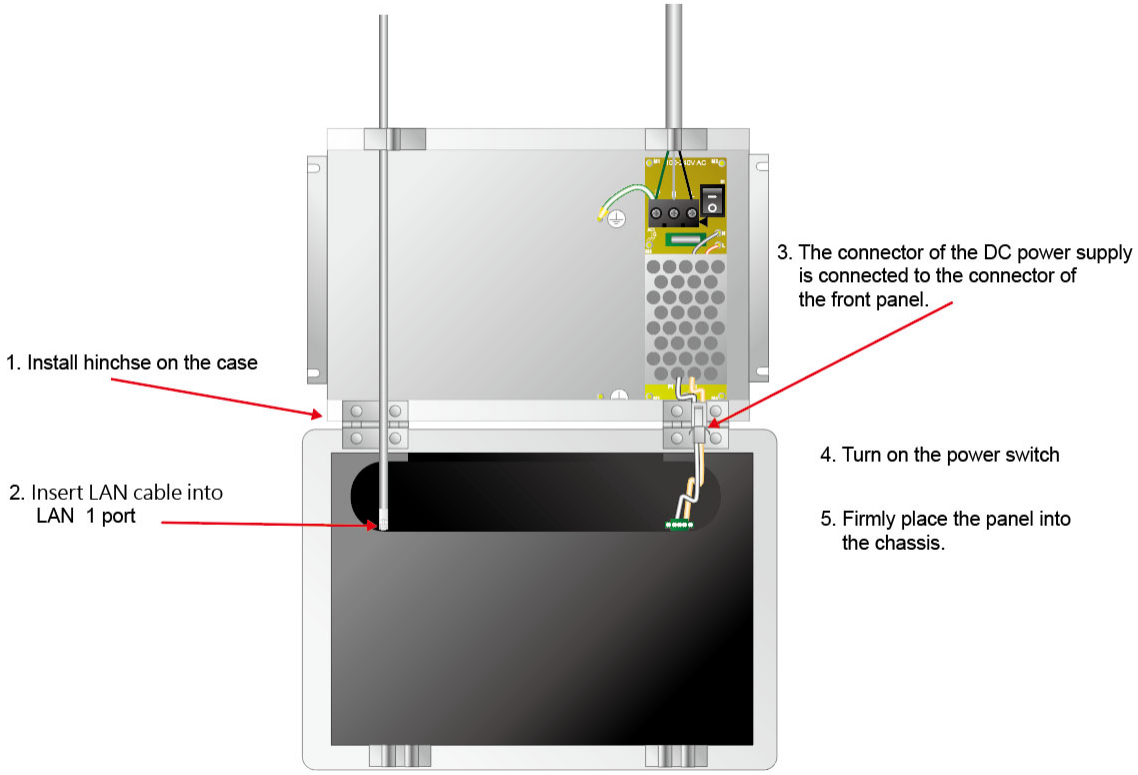
Please install in order of numbers.





7.2 FONT PANEL INSTALLATION

Please install in order of numbers.



8. MAINTEINANCE AND TROUBLESHOOTING

Environmental uncertainty may degrade efficiency of the alarm system; therefore, a routine maintenance check (about every six to twelve months) of your PLC and control system is good practice, and should include the following items:

NO.	ITEM	CHECK	CONDITION	SOLUTION
1	Power Supply	If AC voltage is exceeding nominal value	The specification for AC power supply should be between 100~240 VAC.	Use AC volt meter check if AC power supply is within the range
2	Voltage Input / Output	If input or output voltage is exceeding nominal value.	The specification for input or output voltage should be within nominal value.	Use AC volt meter check if AC power supply is within the range.
3	Environment	Temperature	0 to 50°C	Use thermometer to measure temperature.
		Humidity	10%~85~ RH, non-condensing	Use hygrometer to measure humidity and adjust humidity to be within specifications if possible.
		Direct Sunlight Exposure	Direct sunlight exposure is not allowed	Keep alarm away from sunlight exposure.
		If there are any particles, salts or metallic shavings accumulations in exterior.	Any particles, salts or metallic shavings accumulation is not allowed.	Clean up exterior case if needed.
		If there are any splash of liquid, oil, stain or chemical.	Splash of liquid, oil, stain or chemical is not allowed.	Clean up exterior case if needed
		Check for telecom interference.	Telecom interference is not allowed	Keep alarm away from telecom interference.
		If there is any shaking movement?	Avoid shaking movement to alarm.	Use foam as shock absorber if necessary.
4	Wiring	If wiring is correct and tightened.	Insufficient tightening is not allowed.	Reconnect the loose wire and make sure it is tightened.
		Inspect mechanics and screws for wiring.	Insufficient tightening is not allowed.	Make sure the loose screw is tightened.
		Inspect wiring condition.	No cable damage is allowed.	Replace damaged cables for new ones.
5	Buzzer Testing	Press the button to test alarm.	If Buzzer does not arise	Send alarm back for maintenance.
6	Touch Screen Testing	Press buttons on screen	Alarm system will switch to its pages respectively when buttons are pressed.	Send alarm back for maintenance.

9. Q&A

1. How to make sure communication quality between central alarm and on-site alarm?

There are two ways to check communication.

First, check “Modbus” indication next to buzzer on the screen. In normal condition, it should blink all the time. Yellow light on or dark light imply no communication activity. If the blinking is too slow, it means poor of communication quality.

Second, go to “Device Data” page and check the “Error” indication if the number is non-zero all the time, it means poor of communication quality.

To improve communication quality, it can be made by extend bandwidth of network capability or use isolated area network between central alarm and on-site alarm.

Contact your retailer

If you fail to operate the system, please contact your retailer or Gentec Systems Corporation.

GENTEC®
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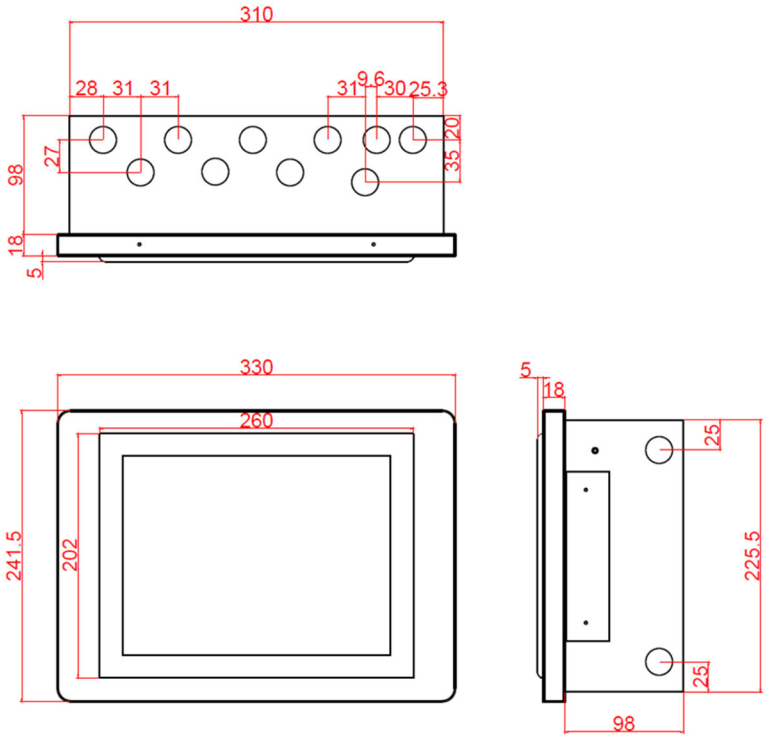
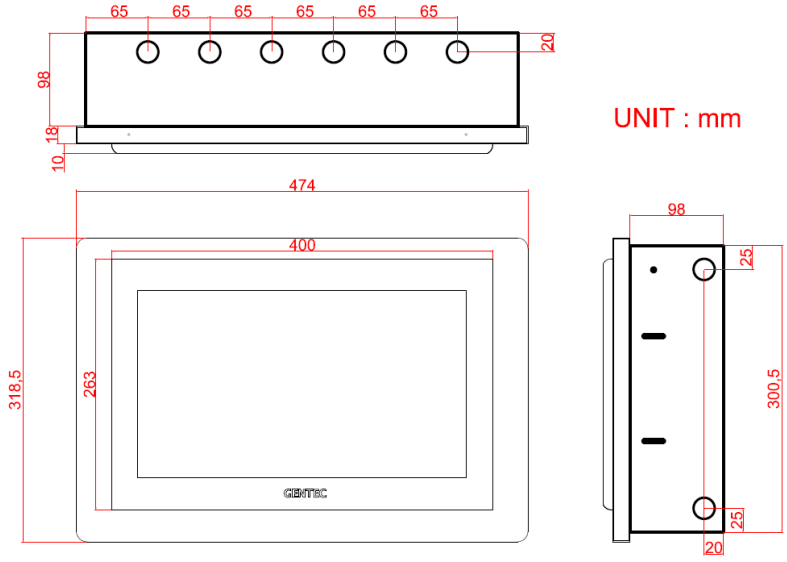
Tel: 886-2-8667-3290
Fax: 886-2-8667-3289
E-mail: gentec.tec@msa.hinet.net

APP. 1 DIMENSIONS AND WALL OPENING



UNIT : mm

CA097



UNIT : mm

CA156

APP. 2 RULES OF REGISTER MAP OF CENTRAL ALARM

Each on-site alarm occupies the same numbers of register in the central alarm. In order to read on-site alarm data from central alarm, The SCADA or BMS should identify all staring address for each on-site alarm. Each on-site alarm takes 90 registers place in the central alarm. Calculation of each on-site alarm register map is as following:
Offset= 90 * reference number
Where

Reference number: on-site alarm reference number indication on home page screen
Offset: starting register for each on-site alarm

APP. 2.1 GENERAL REGISTER MAP

Only for GM100M connection

Input Register Number	Data Type	Name of Parameter	Function description
Offset+0	UINT16	AI_CH1_Channel InUse	Channel in use of analog input channel 1 (0: Disable 1: Enable)
Offset+1	INT32	AI_CH1_PhysicalValue	Physical value of analog input channel 1: This value is multiplied by 1000. For example, the physical value is 12.345 when received data is 12345.
Offset+3	INT32	AI_CH1_LLimit	Alarm of low limit value of analog input channel 1: This value is multiplied by 1000. For example, the low limit value is 12.345 when received data is 12345.
Offset+5	INT32	AI_CH1_ULimit	Alarm of high limit value of analog input channel 1: This value is multiplied by 1000. For example, the high limit value is 12.345 when received data is 12345.
Offset+7	UINT16	AI_CH1_Status	Status of analog input channel 1 bit 2------ Sensor Error 0:Normal, 1:Error 3------ Silence 0:Disable, 1:Enable 6------ Low Alarm 0:No alarm, 1:Alarm 7------ High Alarm 0:No alarm, 1:Alarm
Offset+8	UINT16	AI_CH2_Channel InUse	Channel in use of analog input channel 2 (0: Disable 1: Enable)
Offset+9	INT32	AI_CH2_PhysicalValue	Physical value of analog input channel 2: This value is multiplied by 1000. For example, the physical value is 12.345 when received data is 12345.
Offset+11	INT32	AI_CH2_LLimit	Alarm of low limit value of analog input channel 2: This value is multiplied by 1000. For example, the low limit value is 12.345 when received data is 12345.
Offset+13	INT32	AI_CH2_ULimit	Alarm of high limit value of analog input channel 2: This value is multiplied by 1000. For example, the high limit value is 12.345 when received data is 12345.
Offset+15	UINT16	AI_CH2_Status	Status of analog input channel 2 bit 2------ Sensor Error 0:Normal, 1:Error 3------ Silence 0:Disable, 1:Enable 6------ Low Alarm 0:No alarm, 1:Alarm 7------ High Alarm 0:No alarm, 1:Alarm
Offset+16	UINT16	AI_CH3_Channel InUse	Channel in use of analog input channel 3 (0: Disable 1: Enable)
Offset+17	INT32	AI_CH3_PhysicalValue	Physical value of analog input channel 3: This value is multiplied by 1000. For example, the physical value is 12.345 when received data is 12345.
Offset+19	INT32	AI_CH3_LLimit	Alarm of low limit value of analog input channel 3: This value is multiplied by 1000. For example, the low limit value is 12.345 when received data is 12345.

Offset+21	INT32	AI_CH3_ULimit	Alarm of high limit value of analog input channel 3: This value is multiplied by 1000. For example, the high limit value is 12.345 when received data is 12345.
Offset+23	UINT16	AI_CH3_Status	Status of analog input channel 3 bit 2------ Sensor Error 0:Normal, 1:Error 3------ Silence 0:Disable, 1:Enable 6------ Low Alarm 0:No alarm, 1:Alarm 7------ High Alarm 0:No alarm, 1:Alarm
Offset+24	UINT16	AI_CH4_Channel InUse	Channel in use of analog input channel 4 (0: Disable 1: Enable)
Offset+25	INT32	AI_CH4_PhysicalValue	Physical value of analog input channel 4: This value is multiplied by 1000. For example, the physical value is 12.345 when received data is 12345.
Offset+27	INT32	AI_CH4_LLimit	Alarm of low limit value of analog input channel 4: This value is multiplied by 1000. For example, the low limit value is 12.345 when received data is 12345.
Offset+29	INT32	AI_CH4_ULimit	Alarm of high limit value of analog input channel 4: This value is multiplied by 1000. For example, the high limit value is 12.345 when received data is 12345.
Offset+31	UINT16	AI_CH4_Status	Status of analog input channel 4 bit 2------ Sensor Error 0:Normal, 1:Error 3------ Silence 0:Disable, 1:Enable 6------ Low Alarm 0:No alarm, 1:Alarm 7------ High Alarm 0:No alarm, 1:Alarm
Offset+32	UINT16	AI_CH5_Channel InUse	Channel in use of analog input channel 5 (0: Disable 1: Enable)
Offset+33	INT32	AI_CH5_PhysicalValue	Physical value of analog input channel 5: This value is multiplied by 1000. For example, the physical value is 12.345 when received data is 12345.
Offset+35	INT32	AI_CH5_LLimit	Alarm of low limit value of analog input channel 5: This value is multiplied by 1000. For example, the low limit value is 12.345 when received data is 12345.
Offset+37	INT32	AI_CH5_ULimit	Alarm of high limit value of analog input channel 5: This value is multiplied by 1000. For example, the high limit value is 12.345 when received data is 12345.
Offset+39	UINT16	AI_CH5_Status	Status of analog input channel 5 bit 2------ Sensor Error 0:Normal, 1:Error 3------ Silence 0:Disable, 1:Enable 6------ Low Alarm 0:No alarm, 1:Alarm 7------ High Alarm 0:No alarm, 1:Alarm
Offset+40	UINT16	AI_CH6_Channel InUse	Channel in use of analog input channel 6 (0: Disable 1: Enable)
Offset+41	INT32	AI_CH6_PhysicalValue	Physical value of analog input channel 6: This value is multiplied by 1000. For example, the physical value is 12.345 when received data is 12345.
Offset+43	INT32	AI_CH6_LLimit	Alarm of low limit value of analog input channel 6: This value is multiplied by 1000. For example, the low limit value is 12.345 when received data is 12345.
Offset+45	INT32	AI_CH6_ULimit	Alarm of high limit value of analog input channel 6: This value is multiplied by 1000. For example, the high limit value is 12.345 when received data is 12345.
Offset+47	UINT16	AI_CH6_Status	Status of analog input channel 6 bit 2------ Sensor Error 0:Normal, 1:Error 3------ Silence 0:Disable, 1:Enable 6------ Low Alarm 0:No alarm, 1:Alarm 7------ High Alarm 0:No alarm, 1:Alarm
Offset+48	UINT16	AI_CH7_Channel InUse	Channel in use of analog input channel 7 (0: Disable 1: Enable)
Offset+49	INT32	AI_CH7_PhysicalValue	Physical value of analog input channel 7: This value is multiplied by 1000. For example, the physical value is 12.345 when received data is 12345.
Offset+51	INT32	AI_CH7_LLimit	Alarm of low limit value of analog input channel 7: This value is multiplied by 1000. For example, the low limit value is 12.345 when received data is 12345.
Offset+53	INT32	AI_CH7_ULimit	Alarm of high limit value of analog input channel 7: This value is multiplied by 1000. For example, the high limit value is 12.345 when received data is 12345.
Offset+55	UINT16	AI_CH7_Status	Status of analog input channel 7 bit 2------ Sensor Error 0:Normal, 1:Error

			3------ Silence 0:Disable, 1:Enable 6------ Low Alarm 0:No alarm, 1:Alarm 7------ High Alarm 0:No alarm, 1:Alarm
Offset+56	UINT16	AI_CH8_Channel InUse	Channel in use of analog input channel 8 (0: Disable 1: Enable)
Offset+57	INT32	AI_CH8_PhysicalValue	Physical value of analog input channel 8: This value is multiplied by 1000. For example, the physical value is 12.345 when received data is 12345.
Offset+59	INT32	AI_CH8_LLimit	Alarm of low limit value of analog input channel 8: This value is multiplied by 1000. For example, the low limit value is 12.345 when received data is 12345.
Offset+61	INT32	AI_CH8_ULimit	Alarm of high limit value of analog input channel 8: This value is multiplied by 1000. For example, the high limit value is 12.345 when received data is 12345.
Offset+63	UINT16	AI_CH8_Status	Status of analog input channel 8 bit 2------ Sensor Error 0:Normal, 1:Error 3------ Silence 0:Disable, 1:Enable 6------ Low Alarm 0:No alarm, 1:Alarm 7------ High Alarm 0:No alarm, 1:Alarm
Offset+64	UINT16	DI_Data	Status (0 or 1) of digital input: Bit 0: Digital input channel 1 6: Digital input channel 7 1: Digital input channel 2 7: Digital input channel 8 2: Digital input channel 3 8: Digital input channel 9 3: Digital input channel 4 9: Digital input channel 10 4: Digital input channel 5 10: Digital input channel 11 5: Digital input channel 6 11: Digital input channel 12
Offset+65	UINT16	DI_Alarm	Alarm status of digital input: Bit 0 0: DI CH1 no alarm, 1: DI CH1 alarm 1 0: DI CH2 no alarm, 1: DI CH2 alarm ……
Offset+66	UINT16	DO_Status	Status of digital output。 Bit 0---Relay1 0:open 1:short 1---Relay2 0:open 1:short 2---Relay3 0:open 1:short 3---Relay4 0:open 1:short 4---Relay5 0:open 1:short 5---Relay6 0:open 1:short 6---Relay7 0:open 1:short
Offset+67	UINT16	DA_CH1_uA	Analog output channel 1: The unit of parameter is μA
Offset+69	UINT16	DA_CH2_uA	Analog output channel 2: The unit of parameter is μA
Offset+71	UINT32	AD_Ch1Accumulation	Analog input channel 1 accumulation value This value is multiplied by 1000. For example, the value is 12.345 when received data is 12345.
Offset+73	UINT32	AD_Ch2Accumulation	(Please refer AD_Ch1Accumulation)
Offset+75	UINT32	AD_Ch3Accumulation	(Please refer AD_Ch1Accumulation)
Offset+77	UINT32	AD_Ch4Accumulation	(Please refer AD_Ch1Accumulation)
Offset+79	UINT32	AD_Ch5Accumulation	(Please refer AD_Ch1Accumulation)
Offset+81	UINT32	AD_Ch6Accumulation	(Please refer AD_Ch1Accumulation)
Offset+83	UINT32	AD_Ch7Accumulation	(Please refer AD_Ch1Accumulation之說明)
Offset+85	UINT32	AD_Ch8Accumulation	(Please refer AD_Ch1Accumulation)
Offset+87	UINT16	Alarm status	0: no alarm, 1: alarm
Offset+88	UINT16	Alarm muting	0: no muting, 1: muting
Offset+89	UINT16	status	Bit 0: alarm status 0: normal, 1: alarm Bit 1: muting status 0: normal, 1: muting Bit 2: communication 0: normal, 1: error Bit 3: warning status 0: normal, 1: warning

APP. 2.2 CENTRAL ALARM REGISTER MAP

The central alarm has its own data at fixed address 8101. The summary data is arranged according to the number of the index of the on-site alarm, and the arrangement is as follows:

Input Register Number	Data Type	Name of Parameter	Function description
8101	UINT16	on-site alarm No. 0, 1	on-site alarm status uses 1Byte
8102	UINT16	on-site alarm No. 3, 2	on-site alarm status uses 1Byte
…	…	…	…
8146	UINT16	on-site alarm No. 89, 90	on-site alarm status uses 1Byte
X	X	X	X
8190	UINT16	Central alarm status	Bit 0: alarm status 0: normal, 1: alarm Bit 1: muting status 0: normal, 1: muting Bit 2: communication 0: normal, 1: error Bit 3: warning status 0: normal, 1: warning

Each WORD data arrangement is as follows:

WORD											
BYTE(on-site alarm N + 1)						BYTE(on-site alarm N)					
Bit15	Bit12-14	Bit11	Bit10	Bit9	Bit8	Bit8	Bit4-7	Bit3	Bit2	Bit1	Bit0
Off line	Reserve	Warning	Comm. Error	Muting	Alarm	Off line	Reserve	Warning	Comm. Error	Muting	Alarm