GFSU-2012IA, GFSU-2012ID

Monitoring Equipment

Installation & Commissioning Manual

The GFSU series intelligent monitoring equipment (monitoring equipment for short) is available in two models: GFSU-2012IA and GFSU-2012ID. All the functions of the two models are the same, except that the GFSU-2012IA supports dual-AC inputs, while the GFSU-2012ID supports DC 48V input.

Except for the contents of power input port, all contents are applicable to the GFSU-2012IA and GFSU-2012ID.

1 Product Introduction

1.1 Port Layout

The monitoring equipment provides GND (GFSU-2012ID), IEC power port (GFSU-2012IA), DC power port (GFSU-2012ID), battery string voltage input port, AI port, relay output, DI port, water-logging port, serial port, console port, SD card slot, USB port and Ethernet port.

Dimensions: 434mm*44mm*260mm

Note

1. The large current devices like wireless modem and electric control lock are powered by the 12V and AGND of the general 12V terminal. CH1 ~ CH8 only supplies power to sensors (like temperature & humidity sensor), and the 12V of DI1 ~ DI4 only supplies power to smoke sensor. For specific wiring, please refer to the wiring diagram or construction drawings provided by the customer service.

2. The 12V of the wireless modem and electric control lock must be accessed in the DO firstly. For specific wiring, please refer to the wiring diagram or construction drawings provided by the customer service.

The appearance and ports position of the (GFSU-2012ID) monitoring equipment are shown in the Figure1-1.

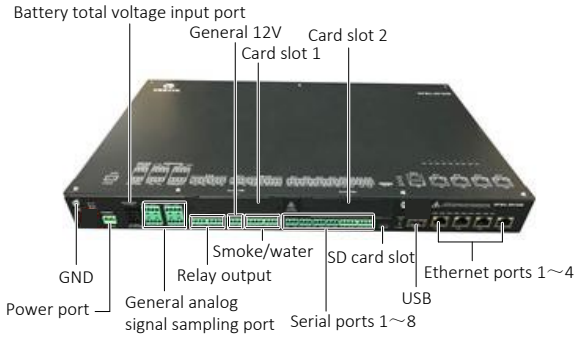

Figure 1-1 Appearance of GFSU-2012ID monitoring equipment

The appearance and ports position of the (GFSU-2012IA) monitoring equipment are shown in Figure 1-2.

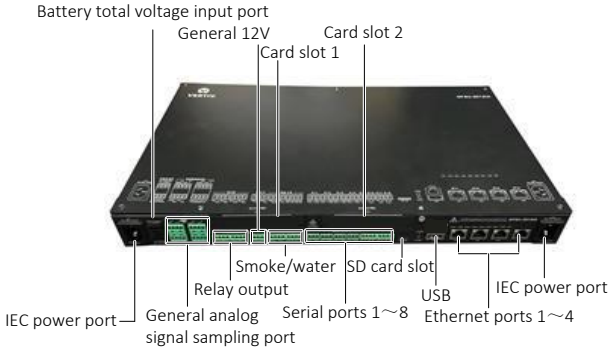

Figure 1-2 Appearance of GFSU-2012IA monitoring equipment

1.2 Port Description

The ports of the monitoring equipment are described in Table1-1.

Table 1-1 Ports description

Silkprint	Description
⏚	GND
POWER 36-60VDC	Power input port with a power ranging from 36VDC to 60VDC
200-250VDC	AC power input port with a power ranging from 200VAC to 250VAC (or high voltage DC input port with a power ranging from 165VDC to 400VDC)
V1+, V1M, V1-; V2+, V2M, V2-	Battery string voltage input ports. V1+, V2+: battery positive terminals; V1M, V2M: battery middle points; V1-, V2-: battery negative terminals
12V	Output terminal of 12VDC auxiliary power
AGND	Ground terminal of 12VDC/24VDC auxiliary power
12V1, 12V2	Output terminal of resetable 12VDC auxiliary power, normally closed, can be set to NC/NO through webpage
CH1 ~ CH8	AI1 ~ AI8, can connect with input channnel of voltage, DC current or digital signal
REL1 ~ REL4	Common output terminal of relay 1, relay 2, relay 3 and relay 4
NO1 ~ NO4	Normally open node of relay 1, relay 2, relay 3 and relay 4 output,
DI1 ~ DI4	DI port, input channel for voltage or digital signal
W1+, W1-, W2+, W2-	Waterlogging detection input, which can be modified through internal jumpers
COM1 ~ COM4	Serial ports 1 ~ 4 (RS232 or RS485, can be set through internal jumpers)
COM5 ~ COM8	Serial ports 5 ~ 8 (RS485)
Micro SD	Micro SD card slot, expanding the storage capacity up to 32G
USB	USB modem input
LAN1/2/3/4	10M/100M self-adaptive Ethernet port
Card slot 1	Expanded board: AMS-5508 (AI/DI: 8 routes), AMS-804 (serial ports: 4)
Card slot 2	Expanded board: AMS-5508 (AI/DI: 8 routes), AMS-804 (serial ports: 4), ESTONEV2C1 (E1 board), eStone II-PTN (Fast PTN), AMS-MD603G (Gigabit PTN)

1.3 Jumper Setting Definition

The jumper positions and silkscreen of the monitoring equipment are shown in Figure1-3.

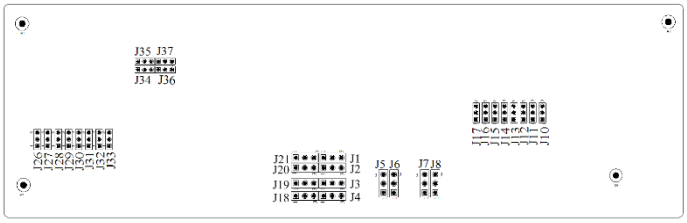

Figure 1-3 Jumpers position of the monitoring equipment

Setting description of jumpers J26 ~ J31

Jumpers J26 ~ J31 are used to set whether the CH1 ~ CH6 acquisition channels of the AI ports input voltage signal (0 ~ 10V) or current signal (4 ~ 20mA). See Table1-2 for jumper setting and Table 1-3 for jumper silkprint.

Table 1-2 Jumpers J26 ~ J31 setting description

Jumper	Corresponding channel	Pin 1 and pin 2 shorted	Pin 2 and pin 3 shorted	Default setting
J26 ~ J31	CH1 ~ CH6	Input current	Input voltage	See Table 1-3

Table 1-3 Jumpers J26 ~ J31 silkprint (default: 1, 2 shorted)

Jumper definition			
Channel	Jumper	1, 2 shorted	2, 3 shorted
General analog acquisition CH1 (Default: door sensor channel)	J26	4 ~ 20mA 1 2 3	0 ~ 10V 1 2 3 (default)
General analog acquisition CH2 (Default: infrared detector channel)	J27	4 ~ 20mA 1 2 3	0 ~ 10V 1 2 3 (default)
General analog acquisition CH3	J28	4 ~ 20mA 1 2 3 (default)	0 ~ 10V 1 2 3

Jumper definition			
Channel	Jumper	1, 2 shorted	2, 3 shorted
General analog acquisition CH4	J29	4 ~ 20mA  (default)	0 ~ 10V 
General analog acquisition CH5	J30	4 ~ 200A  (default)	0 ~ 10V 
General analog acquisition CH6	J31	4 ~ 20mA 	0 ~ 10V 

Setting description of jumpers J32 ~ J37

Jumpers J32 ~ J37 are used to set whether the CH7 ~ CH8 acquisition channels of the AI ports input voltage signal (0 ~ 10V) or current signal (4 ~ 20mA) or AC current signal (0 ~ 75mA). See Table1-4 for jumper setting and Table 1-5 for jumper silkprint.

Table 1-4 Jumpers J32 ~ J37 setting description

Jumper	Corresponding channel	Pin 1 and pin 2 shorted	Pin 1 and pin 2 shorted: J35, J37 Pin 2 and pin 3 shorted: J32, J33, J34, J36	Pin 2 and pin 3 shorted
J32 ~ J37	CH7, CH8	DC current	DC voltage	AC current
Note: The default setting is DC current				

Table 1-5 Jumpers J32 ~ J37 silkprint (default: 1, 2 shorted)

Jumper definition (default:1, 2 shorted)				
Channel	Jumper	4 ~ 20mA	0 ~ 10V	0 ~ 75mA AC
General analog acquisition CH7	J35, J34, J32	J35: 1, 2 shorted  J32, J34: 1, 2 shorted 	J35: 2, 3 shorted  J32, J34: 1, 2 shorted 	J35: 2, 3 shorted  J32, J34: 2, 3 shorted 
General analog acquisition CH8	J37, J36, J33	J37: 1, 2 shorted  J33, J36: 1, 2 shorted 	J37: 2, 3 shorted  J33, J36: 1, 2 shorted 	J37: 2, 3 shorted  J33, J36: 2, 3 shorted 

Setting description of jumpers J1 ~ J8

Jumpers J1 ~ J8 are used to set the RS485/RS232 communication mode of the COM1 ~ COM4 channels. Refer to Table 1-6 for detailed setting and Table 1-7 for the silkprint.

Table 1-6 Jumpers J22 ~ J25, Jumpers J1 ~ J8 setting description

Jumper	Channel	1-2 shorted	2-3 shorted	Default setting
J1, J2	COM1	RS485	RS232	RS232
J3, J4	COM2	RS485	RS232	RS232
J5, J6	COM3	RS485	RS232	RS485
J7, J8	COM4	RS485	RS232	RS485

Table 1-7 Jumpers J22 ~ J25, Jumpers J1 ~ J8 silkprint (default: 1, 2 shorted)

Jumper definition (Relays 1, 2 shorted)			
Item	Jumper	1, 2 shorted	2, 3 shorted
COM 1	J1, J2	RS485 	RS232 (default) 
COM 2	J3, J4	RS485 	RS232(default) 
COM 3	J5, J6	RS485 (default) 	RS232 
COM 4	J7, J8	RS485 (default) 	RS232 

Setting description of jumpers J18 ~ J21

Jumpers J18 ~ J21 are used to set the DI/water-logging input mode. See Table1-8 for jumper setting and Table 1-9 for jumper silkprint.

Table 1-8 Jumpers J18 ~ J21 setting description

Jumper	Channel	1-2 shorted	2-3 shorted	Default setting
J18	AGND/W1+	AGND	Water-logging	Water-logging
J19	DI3/W1-	DI3	Water-logging	Water-logging
J20	DI4/W2+	DI4	Water-logging	Water-logging
J21	12V/W2-	12V	Water-logging	Water-logging

Table 1-9 Jumpers J18 ~ J21 silkprint (default: 2, 3 shorted)

Jumper definition (default:2, 3 shorted)			
Item	Jumper	1, 2 shorted	2, 3 shorted
AGND/W1+	J18	AGND 	Water1+ 
DI3/W1-	J19	DI3 	Water1- 
DI4/W2+	J20	DI4 	Water2+ 
12V/W2-	J21	12V 	Water2- 

Setting description of jumpers J10 ~ J17

Jumpers J10 ~ J17 are used to set the card inserting mode of the expansion slot. See Table1-10 for jumper setting and Table 1-11 for jumper silkprint.

Table 1-10 Jumpers J10 ~ J17 setting description

Corresponding slot	1-2 shorted	2-3 shorted
SLOT1: OTHER SLOT2：ESTONEV2C1	NULL	J10, J11, J12, J13, J14, J15, J16, J17
SLOT1: OTHER SLOT2: AMS-MD603G	NULL	J10, J11, J12, J13, J14, J15, J16, J17
SLOT1: OTHER SLOT2: eStone II-PTN	J14	J10, J11, J12, J13, J15, J16, J17
SLOT1: OTHER SLOT2: OTHER	J10, J11, J12, J13, J14, J15, J16, J17	NULL

Table 1-11 Jumpers J10 ~ J17 silkprint (default: 1, 2 shorted)

Jumper definition (default:1, 2 shorted)			
Item	Jumper	1, 2 shorted 	2, 3 shorted 
SLOT1: OTHER SLOT2: ESTONEV2C1	J10, J11, J12, J13, J14, J15, J16, J17	NULL	J10, J11, J12, J13, J14, J15, J16, J17
SLOT1: OTHER SLOT2: AMS-MD603G	J10, J11, J12, J13, J14, J15, J16, J17	NULL	J10, J11, J12, J13, J14, J15, J16, J17
SLOT1: OTHER SLOT2: eStone II-PIN	J10, J11, J12, J13, J14, J15, J16, J17	J14	J10, J11, J12, J13, J15, J16, J17
SLOT1: OTHER OR NULL SLOT2: OTHER OR NULL	J10, J11, J12, J13, J14, J15, J16, J17	J10, J11, J12, J13, J14, J15, J16, J17	NULL

1.4 Indicator Introduction

The indicator description of the monitoring equipment is shown in Table 1-12.

Table 1-12 Indicator description

Silkprint	Description
Power indicator: POWER	The indicator is normally on after power on, and off after fully power off
Alarm indicator: ALARM	The indicator is normally on when there is an alarm, and off when there is no alarm
Serial port indicator: COM1-COM8	The indicator is blinking when receiving data and off upon no data receiving
Run indicator: RUN	The indicator is blinking upon running

Silkprint	Description
IP port indicator	10/100M LAN port indicator (left: yellow; right: green) Yellow indicator: normally on upon 100M, and off upon 10M or disconnection Green indicator: normally on when the Ethernet port communication is connected, normally off when then Ethernet port communication is disconnected and blinking when the Ethernet port has data receiving and sending

1.5 Introduction of Channel Configuration List

The physical channel and configuration channel number of the monitoring equipment are described in Table 1-13, and the silkscreen is shown in Table 1-14.

Table 1-13 Description of physical channel and configuration channel of the monitoring equipment

Physical channel	Configuration channel number	Physical channel	Configuration channel number	Physical channel	Configuration channel number	Physical channel	Configuration channel number
Battery 1 total voltage	8	DC voltage channel 7	22	Card slot 1		Card slot 2	
Battery 1 middle-point voltage	9	DC voltage channel 8	23	COM 1	46	COM 1	50
Battery 2 total voltage	10	AC current channel 7	69	COM 2	47	COM 2	51
Battery 2 middle-point voltage	11	AC current channel 8	70	COM 3	48	COM 3	52
DC current channel 1	0	Relay 1	24	COM 4	49	COM 4	53
DC current channel 2	1	Relay 2	25	DC current channel 1	100	DC current channel 1	130
DC current channel 3	2	Relay 3	26	DC current channel 2	101	DC current channel 2	131
DC current channel 4	3	Relay 4	27	DC current channel 3	102	DC current channel 3	132
DC current channel 5	4	12V1 voltage	79	DC current channel 4	103	DC current channel 4	133
DC current channel 6	5	12V2 voltage	80	DC current channel 5	104	DC current channel 5	134
DC current channel 7	6	DI1 signal	60	DC current channel 6	105	DC current channel 6	135
DC current channel 8	7	DI2 signal	61	DC current channel 7	106	DC current channel 7	136
DC voltage channel 1	16	DI3 signal	62	DC current channel 8	107	DC current channel 8	137
DC voltage channel 2	17	DI4 signal	59	DC voltage channel 1	110	DC voltage channel 1	140
DC voltage channel 3	18	Smoke 1	60	DC voltage channel 2	111	DC voltage channel 2	141
DC voltage channel 4	19	Smoke 2	61	DC voltage channel 3	112	DC voltage channel 3	142
DC voltage channel 5	20	Water 1	41	DC voltage channel 4	113	DC voltage channel 4	143
DC voltage channel 6	21	Water 2	42	DC voltage channel 5	114	DC voltage channel 5	144
				DC voltage channel 6	115	DC voltage channel 6	145
				DC voltage channel 7	116	DC voltage channel 7	146
				DC voltage channel 8	117	DC voltage channel 8	147

Table 1-14 Silkscreen of physical channel and configuration channel

Physical channel	Configuration channel number	Physical channel	Configuration channel number	Physical channel	Configuration channel number	Physical channel	Configuration channel number
V1+	8	CH7-DI	22	SLOT1		SLOT2	
V1M	9	CH8-DI	23	COM1	46	COM1	50
V2+	10	CH7-AC	69	COM2	47	COM2	51
V2M	11	CH8-AC	70	COM3	48	COM3	52
CH1-AI	0	REL1	24	COM4	49	COM4	53
CH2-AI	1	REL2	25	AI1	100	AI1	130
CH3-AI	2	REL3	26	AI2	101	AI2	131
CH4-AI	3	REL4	27	AI3	102	AI3	132
CH5-AI	4	12V1	79	AI4	103	AI4	133
CH6-AI	5	12V2	80	AI5	104	AI5	134
CH7-AI	6	DI1	60	AI6	105	AI6	135
CH8-AI	7	DI2	61	AI7	106	AI7	136
CH1-DI	16	DI3	62	AI8	107	AI8	137
CH2-DI	17	DI4	59	DI1	110	DI1	140
CH3-DI	18	smoke1	60	DI2	111	DI2	141
CH4-DI	19	smoke2	61	DI3	112	DI3	142
CH5-DI	20	water1	41	DI4	113	DI4	143
CH6-DI	21	water2	42	DI5	114	DI5	144
				DI6	115	DI6	145
				DI7	116	DI7	146
				DI8	117	DI8	147

1.6 Automatic Detection of Hardware Wiring

The hardware wiring auto-detection of the monitoring equipment is shown in Table 1-15.

Table 1-15 Description of hardware wiring auto-detection

Silkscreen	Description	
ALARM (Alarm indicator)	Signal input	Flashing 5s after accessed in, no access is not blinking
	Signal remove	Flashing 5s after removed, no remove is without blinking
	Signal change	The indicator will flash 5s if the current signal state changes, no change no flash

Take the monitoring equipment for example, the detection procedures are as follows:

1. Connect the cables according to the sensor manual and the monitoring equipment wiring diagram and confirm that all the terminals have been inserted into the corresponding channels of the monitoring equipment.

2. Turn on the power of the monitoring equipment, after the run indicator flashes, pull out the sensor terminal from the channel. At this time, the indicator flashes 5s, indicating that the signal has been correctly removed.

3. Insert the sensor terminal into the channel, the indicator flashes 5s, indicating that the signal has been successfully connected, and the sensor wiring is correct.

4. According to step 2 and step 3, check whether the other sensor wiring is correct.

1.7 Upgrading USB Flash Drive

The software program of the monitoring equipment can be upgraded through a USB flash drive.

The upgrade steps are as follows:

1. Insert the USB flash drive with the latest program into the USB port when the monitoring equipment is not powered.

2. Turn on the power of the monitoring equipment and wait for the USB flash drive to upgrade automatically.

3. When the run indicator of the monitoring equipment is blinking, pull out the USB flash drive and the upgrade is complete.

2 Hardware Installation

Note

1. It is prohibited to perform the hardware operation with power-on.
2. The monitoring equipment must be installed on non-flammable environment.
3. The working temperature & humidity range is -10 ~ +60ºC, < 90%RH (30ºC).
4. The altitude is not less than 3000m (70kPa).
5. Over-voltage grade: II; pollution degree: 2

2.1 Installing

The monitoring equipment can be installed in a cabinet, on the wall or on a workbench.

Cabinet installation

The monitoring equipment can be installed in a standard 19”cabinet.

The installation procedures are as follows:

1. Ensure that the cabinet is fixed and no barrier is in or around the cabinet, and the monitoring equipment is ready for installation.

2. Fasten the brackets (accessories) to both sides of the monitoring equipment with the provided M3 screws, as shown in Figure 2-1.

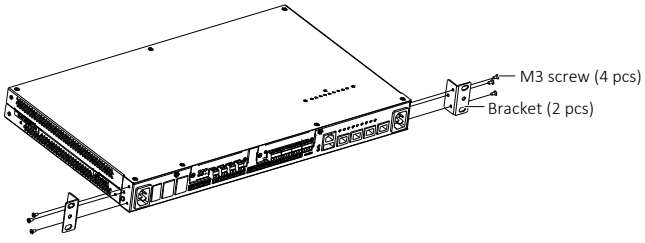

Figure 2-1 Fixing brackets

3. Put the monitoring equipment onto the guide rails in the cabinet and push it into the cabinet completely, as shown in Figure 2-2.

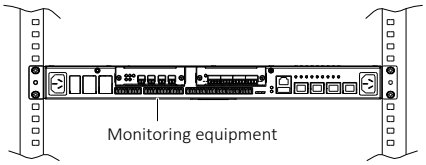

Figure 2-2 Fixing monitoring equipment

4. Use the provided M3 screws to fasten the monitoring equipment to the cabinet through the brackets on both sides.

Wall-mount installation

Note

The monitoring equipment must be installed on concrete or non-flammable surface during wall-mount installation.

The installation procedures are as follows:

1. Fasten the two brackets (accessories) onto the monitoring equipment with the provided M3 screws, as shown in Figure 2-3.

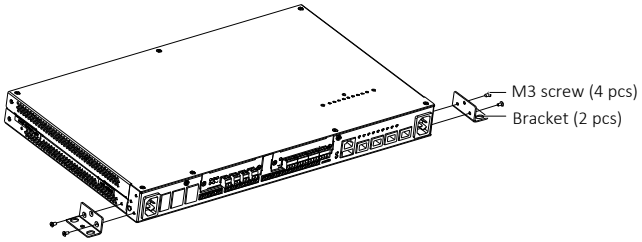

Figure 2-3 Installing brackets

2. Use an impact drill (Φ6.0mm) to drill two holes on the wall (maximum error of hole spacing: 1.3mm) according to the dimensions shown in Figure 2-4 (unit: mm).

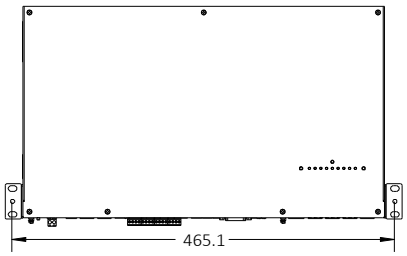

Figure 2-4 Dimensions of installation hole

3. Insert two plastic expansion pipes into the holes, align the monitoring equipment to the holes and screw down two self-tapping screws into the plastic expansion pipes to fasten the monitoring equipment on the wall.

Workbench installation

If the preceding two installation modes are not feasible, you can directly put the monitoring equipment on a clean workbench, ensuring the following:

1. Ensure that the workbench is stationary and grounded properly.
2. Maintain a 100mm clearance around the monitoring equipment for heat dissipation.
3. Do not put any object on the monitoring equipment.

2.2 Connecting Cables

Note

To ensure the normative wiring, you should put the cable into the cable slot or bind the cable on the frame with cable ties after connection.

1. Connect power cable, communication cables and signal cables according to *1.2 Port Description* and the site needs.

2. You should set the jumpers during connection. See *1.3 Jumper Setting Description* for jumper setting modes.

3. The waterlogging sensor should be connected to the waterlogging channel (DI3, DI4, which are selected through jumpers W1+, W1-, W2+, W2-), as shown in Figure 2-5.

Figure 2-5 Connecting waterlogging sensor

4. Connect the smoke sensor to channels DI1, DI2.

3 Debugging GFSU With Unit Web

3.1 Port Connection

1. Select any Ethernet port of the monitoring equipment (or through equipment like exchanger) and directly connect to the computer Ethernet port.

2. Set the computer IP and GFSU IP to the same network segment. The default GFSU IP is 192.168.100.100, the subnet mask is 255.255.255.0, and the gateway is 192.168.100.1.

3. Connect the corresponding device like infrared, smoke, temperature & humidity sensor to the ports need to be debugged.

4. Connect the power cable and power on the monitoring equipment, waiting for the RUN indicator flashing.

3.2 Start Debugging

Input the GFSU IP address (http://192.168.100.100/ by default) in IE browser (IE 8.0 above), and the login interface (see Figure 3-1) will appear. User Name: admin, Password: unitweb.

Figure 3-1 Login interface

3.3 Real-time Monitoring

You can view current signals and alarms by clicking the equipment in the real-time monitoring equipment list, and send control command. Take site environment for example, the different sensors data are displayed in 'Signal' column, as shown in Figure 3-2.

Figure 3-2 Real-time monitoring signal interface

Check the alarm information in the 'Event' column, as shown in Figure 3-3.

Figure 3-3 Real-time event interface

Check the DO status in the 'Control' column, and clicking operation may directly control the DO, as shown in Figure 3-4.

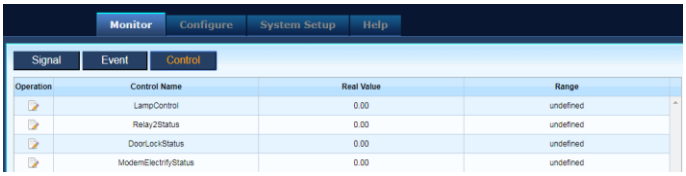

Figure 3-4 Real-time control interface

3.4 Configuration

Configuration of IO channel

Set the properties (voltage, current, digital, suspended) according to actual sensor type when setting the AI channel parameters. Range conversion is required during setting the channel parameters. See the following contents for how to set the parameters of range conversion.

The acquired voltage or current is converted into a value with actual physical dimensions. You should input four parameters: X0, Y0, X1, and Y1. (X0, Y0) and (X1, Y1) are two points on the conversion line. X0 and X1 are measured in V or A. X0 and X1 cannot be equal, neither can Y0 and Y1.

The range conversion is not necessary for the total battery string voltage channel due to no dimension transformation and the parameters can be set to X0 = 0, Y0 = 0, X1 = 1, and Y1 = 1. But for the AI channels, you should set the parameters of the range conversion according to the parameters of the used sensors. For example, when a temperature sensor outputs 0.004A at 0ºC, and 0.020A at 100ºC, the range conversion is shown in Figure 3-5.

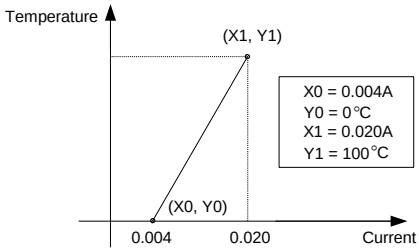

Figure 3-5 Range conversion

So, the parameters of the range conversion can be set: X0 = 0.004, Y0 = 0, X1 = 0.020, Y1 = 100.

Set the AI channel property, range conversion parameter in 'IO channel configuration', as shown in Figure 3-6.

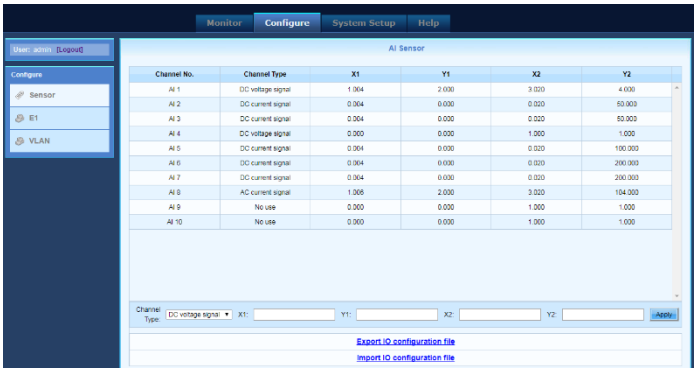

Figure 3-6 AI channel configuration interface

Set the AI channel property (current channel or voltage channel, depends on transmitter) and range conversion parameter in 'Configuration' tab.

E1 configuration

Set the 'port number', 'format' and 'to clock' in the 'E1' interface, as shown in Figure 3-8.

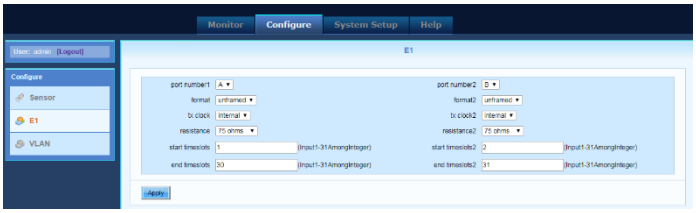

Figure 3-8 E1 configuration interface

VLAN configuration

Set the ID of the VLAN and select the table printing LAN port in the 'VLAN' column, as shown in Figure 3-9.

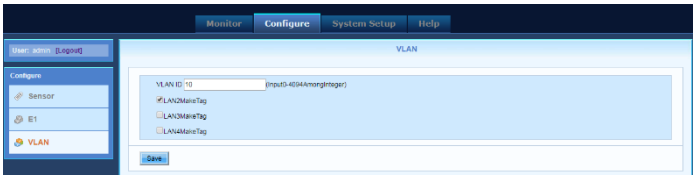

Figure 3-9 VLAN configuration interface

3.5 System Setting

Set the GFSU IP, time and so on in the system setting interface, as shown in Figure 3-10.

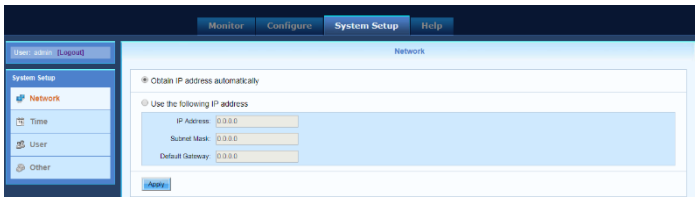

Figure 3-10 System setting interface

Vertiv Tech Co., Ltd.

Address: Block B2, Nanshan I Park, No.1001 Xueyuan Road, Nanshan District, Shenzhen, 518055, P.R.China

Homepage: www.vertiv.com

E-mail: overseas.support@vertiv.com

Version: V1.1

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BOM: 31014076

GFSU-2012ID Wiring Diagram

Line1
Line2
Line3
Line4

Note:

1. Channels DI1, DI2 are used for accessing smoke sensor only.
2. Channels W1+, W1-, W2+, W2- are used for accessing water-logging sensor only.
3. The 12V2 supplies power to the electric control lock, and the pulse of electric control lock is accessed in REL34.
4. The 12V1 supplies power to the wireless modem.
5. Refer to the bar code label for GFSU version.

48V Power input
MCB
Door sensor
Infrared
ETM-HT02Y T&H sensor
Air conditioner button
Power system 2
Power system 1
Intelligent air conditioner 1
Intelligent air conditioner 2
Access control system
ID card
Battery string 1+
Mid-point of battery string 1
Battery string 1-
ALARM +12V
TEMPER GND
RH T GND 12V+
RS232
RS232
RS485
RS485
RS485
GFSU-2012ID
BAT VOLTAGE1 V1+ V1M V1-
CH1 12V AGND CH2
CH5 12V AGND CH6
V2+ V2M V2- BAT VOLTAGE2
AGND CH4 CH3 12V
AGND CH8 CH7 12V
POWER
+ - 36-60VDC
Relay
REL1 REL2 REL3 REL4
NO1 NO2 NO3 NO4
General 12V
Smoke only
Water
AGND AGND AGND DI2
12V 12V DI1 12V
AGND DI1 DI2 12V
W1+ W1- W2+ W2-
RX/D+ TX/D- GND1 COM1
RX/D+ TX/D- GND2 COM2
RX/D+ TX/D- GND3 COM3
RX/D+ TX/D- GND4 COM4
D+ D- COM5
D+ D- COM6
D+ D- COM7
D+ D- COM8
Micro SD
POWER
ALARM
USB
COM1 COM2 COM3 COM4 COM4 COM5 COM7 COM8 RUN
LAN1
LAN2
LAN3
LAN4
Wireless modem RS485
Wireless modem
Wire modem 12V input
IP camera
Battery string 2+
Mid-point of battery string 2
Battery string 2-
Battery string 2
RH T 12V+
ETM-HT02Z T&H sensor
Grounding bar
Lighting
REL1
NO1
Middle relay
To pulse control port of electric control lock
D1 D2 K1 K2
JTY-GD-CA2001L Smoke
JTY-GD-S832 Smoke
Water1
Water2
To 12V power input of electric control lock
3G/4G antenna
GPS/BD antenna