

GV-AS Controller

Installation Guide



Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.



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GeoVision, Inc.
9F, No. 246, Sec. 1, Neihu Rd.,
Neihu District, Taipei, Taiwan
Tel: +886-2-8797-8377
Fax: +886-2-8797-8335
<http://www.geovision.com.tw>

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Welcome

This user manual includes three types of GV-AS Controllers and a quick start guide to GV-ASManager:

- **GV-AS100:** One door controller and standalone system with LCD display and keypad. See page 1.
- **GV-AS110:** One door controller and standalone system with keypad. See page 23.
- **GV-AS120:** One door controller and standalone system. See page 41.
- **GV-AS400:** Four-door controller. See page 55.
- **GV-ASManager:** Access control software that controls up to 255 GV-AS Controllers. See page 156.

Optional Devices

Optional devices can expand the capabilities and versatilities of your GV-AS Controllers. Consult your sales representative for more information.

GV-ASKeypad	GV-ASKeypad with LCD display is a hot-swapping device, giving you convenience to configure GV-AS400.
GV-Battery	The battery is an uninterruptible power supply (UPS) device, designed to continuously supply GV-AS Controllers' power during power failure.
GV-Reader	The reader has both Wiegand and RS-485 outputs that can be connected to any standard access control panel. 125kHz and 13.56MHz GV-Readers are available.
GV-GF Fingerprint Reader	The reader supports three operation modes: Fingerprint Only, Fingerprint + Card and Card Only. In Fingerprint Only mode, the fingerprints are enrolled through GV-ASManager software. In Fingerprint + Card mode, the fingerprint templates are stored on the user card. In Card Only mode, the users only need to swipe the card to be granted access. Readers with optical and capacitance sensors are available.
GV-ASBox	Only works with GV-AS100, GV-AS110 and GV-AS120. The device can add Network function, 1 Wiegand interface, 8 additional inputs and outputs to GV-AS100, GV-AS110 and GV-AS120.

GV-ASNet	Only works with GV-AS100, GV-AS110 and GV-AS120. This device can add Network function to GV-AS100, GV-AS110 and GV-AS120.
GV-IO Box	Only works with GV-AS400. Includes the options of 4, 8 and 16 ports. Can expand GV-AS400's capability to up to 64 inputs and 64 outputs.
Cabinet	With the cabinet, GV-AS Controllers can be mounted directly to a wall or recessed into the wall. Two types of cabinet dimensions are available: 383.5 (W) x 443.5 (H) x 112.2 (D) mm (15.1 x 17.5 x 4.4 in) and 300 (W) x 420 (H) x 86 (D) mm (11.8 x 16.5 x 3.4 in).
Push Button Switch	The push button switch can be integrated with access control system, allowing door exit by momentarily activating or deactivating the electric locking device. Both American standard and European standard push buttons are available.
Electric Lock	Three types of electric locks are available: electromagnetic lock, electric bolt and electric strike.
GV-AS ID Card & GV-AS ID Tag	GV-AS ID Cards and GV-AS ID Tags are ideal for business and residential environment, where access control is important for security reasons. 125kHz and 13.56MHz cards and tags are available.

Types of Door Access Control

GV-AS Controllers can be configured to support the following types of door access control. By default, GV-AS 100 / GV-AS110 / GV-AS120 Controllers are set to **one-way control** and GV-AS400 Controllers are set to **two-way control**.

- **One-way control:** A door is equipped with one card reader for entry. For example, a user may swipe a card to open the door of office and push a button to leave from the same door.
- **Two-way control:** A door is equipped with two card readers. The outer reader is defined as entry reader and the inner reader is defined as exit reader. For example, a user may swipe a card to gain access to a laboratory, and swipe a card to exit from the same door.
- **Mixed control:** A mix of One-Way and Two-Way Control applications. Some doors are equipped with one card reader for entry and some doors are equipped with two card readers for entry and exit. For example, a building includes both office and laboratory applications.
- **One-way traffic:** Two doors are applied for entry and exit separately. For example, in a parking lot, a user may swipe a card at the entrance and swipe a card again at the exit.

Installation Considerations

1. There are distance limitations for Wiegand and RS-485 communications. Please note:

- **Wiegand interface:** 30 meters (98.43 feet)
- **RS-485 interface:** 600 meters (1968.50 feet)
- **Recommended cable:** standard 485 cable (a twisted pair of 24 AWG wires)

2. GV-ASManager software is used to manage GV-AS100/GV-AS110/GV-AS120/GV-AS400 Controllers. There is a limit for the number of controllers connected to GV-ASManager based on communication modes.

- **Through the network,** up to 255 GV-AS100/GV-AS110/GV-AS120/GV-AS400 Controllers can connect to GV-ASManager.
- **Through RS-485 connection,** up to 16 GV-AS100/GV-AS110/GV-AS120 Controllers can connect to the same COM port on a computer running GV-ASManager.

1. GV-AS100 Controller

1.1 Introduction

Working as a standalone solution, GV-AS100 is a card reader with a LCD display and also a single door controller. It is possible to add one more card reader to GV-AS100 for entry and exit applications. GV-AS100 has the capability to store up to one thousand cards. When GV-AS100 is being used as a standalone unit, the programming is either done on the keypad or from the software GV-ASManager through the RS-485 connection.

GV-AS100 is suitable not only for any normal door control but also for parking gate and elevator control.

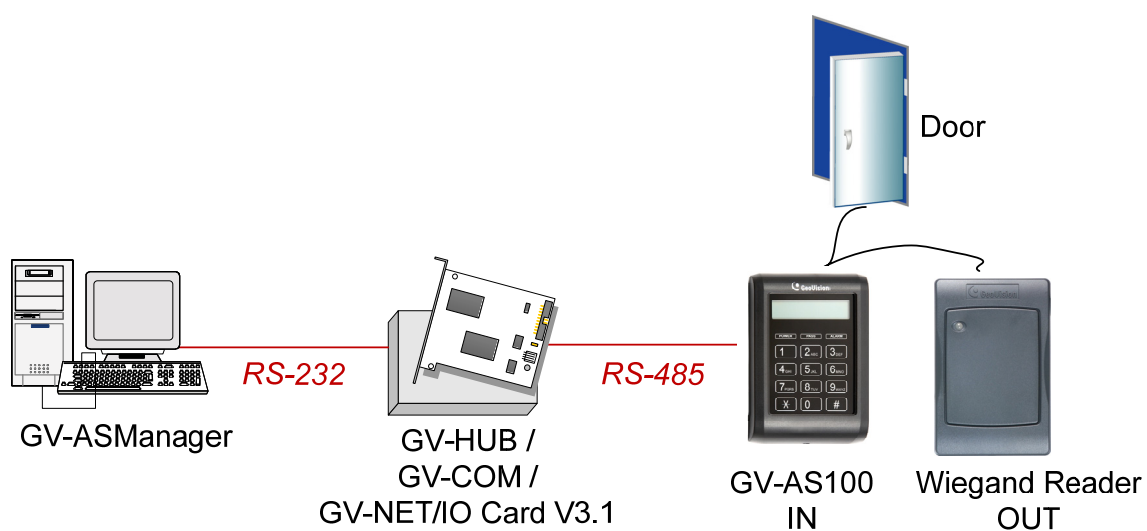


Figure 1-1

GV-AS100 can make network connection to GV-ASManager using the optional GV-ASBox or GV-ASNet. With GV-ASBox, two-door control is also possible as illustrated below.

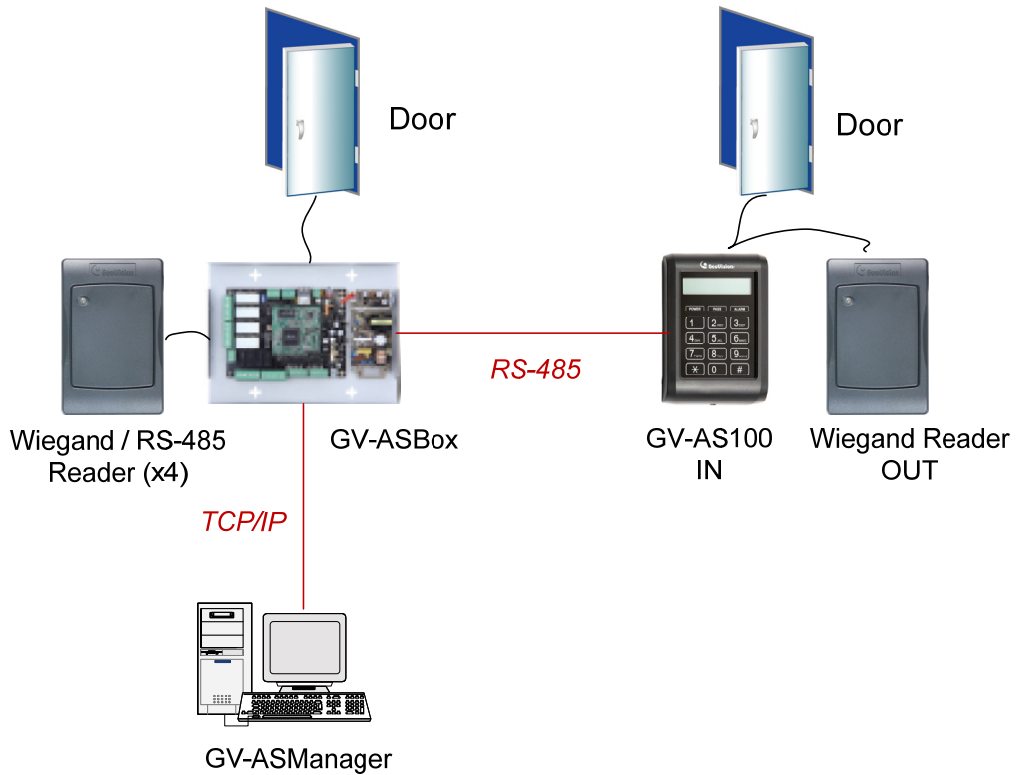


Figure 1-2 Through GV-ASBox

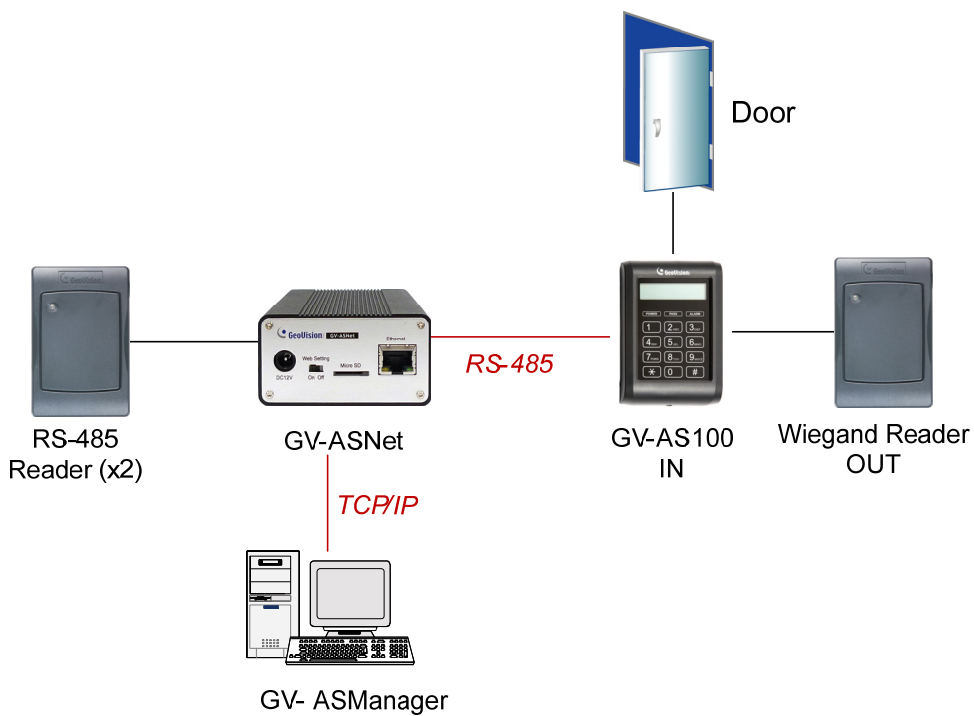


Figure 1-3 Through GV-ASNet

1.1.1 Main Features

- 1,000 / 40,000 cards (standalone / networked or RS-485 mode)
- Easy programming from keypad
- Anti-Passback (APB) support
- Built-in 3 digital inputs and 2 relay outputs
- 1 Wiegand output (26 ~ 64 bits) for extra reader programming
- 1 door expandable to 2 doors with optional GV-ASBox
- Built-in tampering alarm

1.1.2 Packing List

- GV-AS100
- Power Adaptor 12V DC
- Power Cable
- Master Card
- GV-ASManager Software CD

1.1.3 GV-AS100 Board Layout

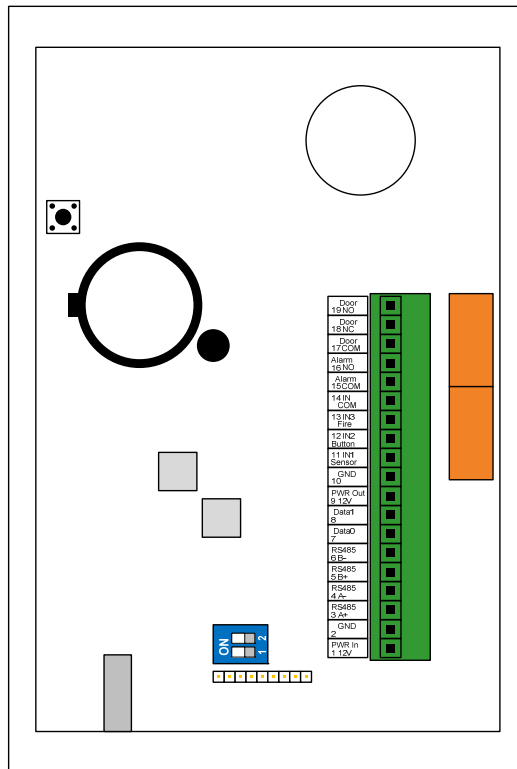


Figure 1-4

1.2 Installation

Please open GV-AS100 cabinet and wire the necessary connections to the terminal block as illustrated below.

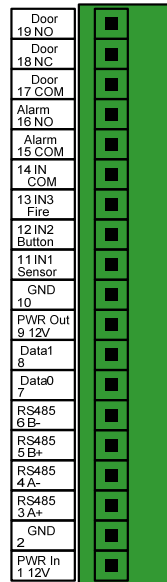


Figure 1-5

Pin	Function	Pin	Function	Pin	Function
1	12V Power	9	12V Power Supply	17	Door COM
2	GND	10	GND	18	Door NC
3	RS-485 A+ for ASBox / ASNet or PC connection	11	Sensor IN1	19	Door NO
4	RS-485 A-for ASBox / ASNet or PC connection	12	Button IN2		
5	RS-485 B+ for GV-Reader connection	13	Fire IN3		
6	RS-485 B- for GV-Reader connection	14	IN COM		
7	Wiegand Data 0	15	Alarm COM		
8	Wiegand Data 1	16	Alarm NO		

1.2.1 Connecting a Wiegand Reader

GV-AS100 provides one Wiegand input for connection of the Wiegand reader ranging from 26 to 64 bits. Through the GV-AS100 keypad, you can set the Wiegand reader as the entry or exit reader. To define the reader, see the **AS100 Function** option in *1.3.4 Setting Parameters*.

The table below shows the pin assignments of the Wiegand input on GV-AS100. Please consult the documentation of your Wiegand reader for wiring.

Pin	Function
7	Wiegand Data 0
8	Wiegand Data 1
9	12V Power Supply
10	GND

1.2.2 Connecting Input Devices

GV-AS100 supports 3 types of inputs:

1. Sensor inputs, e.g. door status sensor
2. Button inputs, e.g. door opener
3. Fire Sensor inputs, e.g. fire detector

All inputs are **dry contact** and can be configured as normally open (NO) or normally closed (NC) through the GV-AS100 keypad. The default value is **NO**. To change the input status, see the **Set Contact Type** option in *1.3.4 Setting Parameters*.

The table below shows the pin assignments of input connectors on GV-AS100.

Pin	Function
11	Sensor IN1
12	Button IN2
13	Fire Sensor IN3
14	IN COM

1.2.3 Connecting Output Devices

GV-AS100 supports 2 types of outputs:

1. Alarm outputs, e.g. siren or bell
2. Door outputs, e.g. electronic lock

The table below shows the pin assignments of output connectors on GV-AS100.

Pin	Function
15	Alarm COM
16	Alarm NO
17	Door COM
18	Door NC
19	Door NO

Check if your output device meets the following absolute maximum ratings before connecting it to the Door outputs.

Breakdown Voltage	240V AC, 30V DC
Continuous Load Current	5A (NO), 3A (NC)
<p>Note: Absolute Maximum Ratings are those values beyond which damage to GV-AS100 circuit board may occur. Continuous operation of GV-AS100 at the absolute rating level may affect GV-AS100 reliability.</p>	

To connect an output device:

The example below illustrates the connection of a locking device to GV-AS100. Connect the (+) point on the locking device to the Door COM on GV-AS100, connect the two (-) points of the locking device and the external power supply together, and connect the (+) point on the external power supply to the Door NO or Door NC on GV-AS100 based on the state of the locking device.

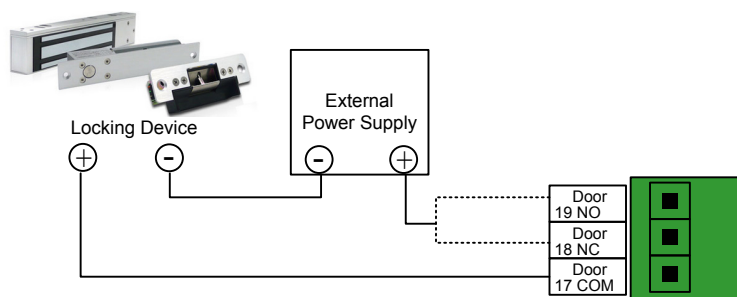


Figure 1-6

1.2.4 Connecting the PC

The computer running GV-ASManager software can be used to monitor the access information and alarm messages from GV-AS100. The communication link between the computer and GV-AS100 can be either through RS-485 or network. For network connection, an optional GV-ASBox or GV-ASNet is required.

IMPORTANT: To enable connecting to PC, **Switch 1** must be turned on. See [1.2.4.C Switches](#).

1.2.4.A RS-485 Connection

The figure below illustrates the RS-485 connection to the computer. For this connection, a RS-485 to RS-232 converter between GV-AS100 and the computer is required. You can use GV accessories, such as GV-Hub, GV-COM and GV-NET/IO Card, as the RS-485/RS-232 converter.

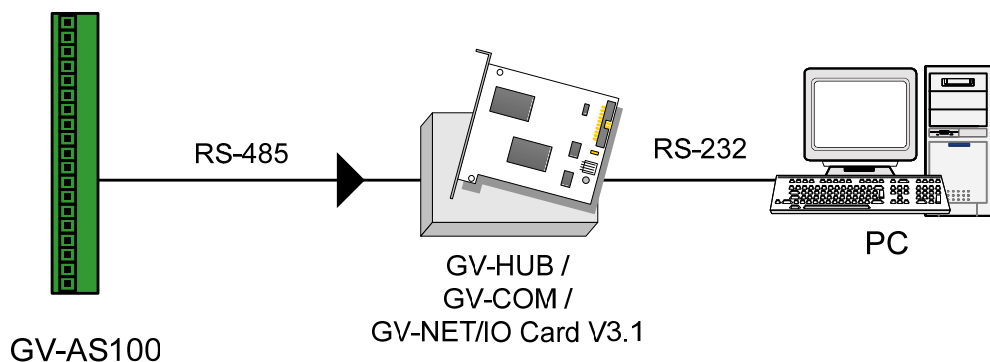


Figure 1-7

The table shows the pin assignments of related RS-485 connectors on GV-AS100.

Pin	Function
3	RS-485 A+
4	RS-485 A-

Note: When connecting multiple GV-AS100 through RS-485 connection, you can use the keypad on GV-AS100 to program every unit's ID. See [1.3.4 Setting Parameters](#).

1.2.4.B Network Connection

The figure below illustrates the network connection to the computer. For this connection, the optional product GV-ASBox or GV-ASNet is required.

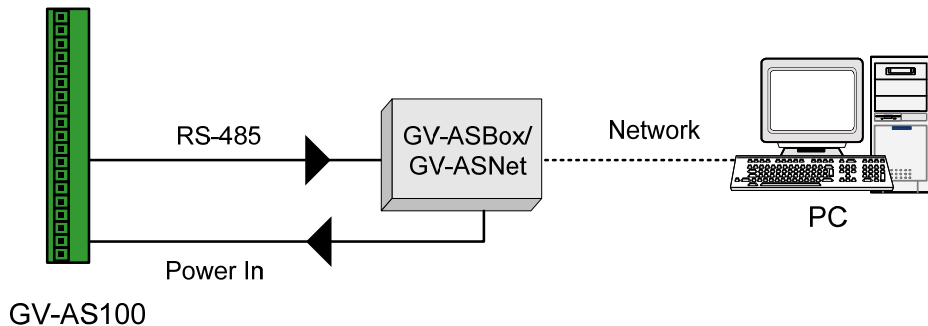


Figure 1-8

Connect two power wires and two RS-485 wires from GV-ASBox/GV-ASNet to GV-AS100. The table below shows the pin assignments of related connectors on GV-AS100.

Pin	Function	Pin	Function
1	Power In 12V	3	RS-485 A+
2	GND	4	RS-485 A-

Also see 4.1.4.A Connecting GV-AS100/GV-AS110/GV-AS120.

1.2.4.C Switches

Switch 1: When Switch 1 is ON, GV-AS100 can connect to GV-ASManager, GV-ASBox or GV-ASNet. When Switch 1 is OFF, the connection is unavailable. By default Switch 1 is set to **ON**.

Switch 2: When the RS-485 connection between GV-AS100 and computer is longer than 600 meters (1968.50 feet), the RS-485 signal may become weak. In this case, turn Switch 2 ON to have a 120-Ohm resistor.

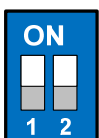


Figure 1-9

1.2.5 Connecting the Power

The supplied AC adaptor can be connected to any power source supplying from 100 to 240V. Using the supplied power cord and adaptor, connect GV-AS100 to the power.

Note: Power should only be applied to the unit when all connections are completed and tested.

1.2.6 Fitting the Battery

GV-AS100 includes a 3V lithium battery, providing power to GV-AS100 settings and real-time clock circuitry. When the power in the battery becomes low, the message “Low Battery” will appear on GV-AS100 LCD. In this case, please replace the battery. All settings on GV-AS100 will disappear about 10 hours after the battery stops working, and GV-AS100 will be restored to default settings.

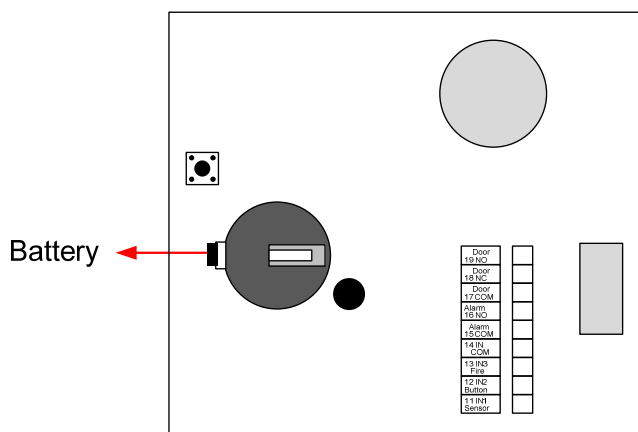


Figure 1-10

Note:

1. Make sure the plastic insulation film under the battery is removed.
 2. It is recommended to replace the battery annually.
-

1.3 Programming Mode

After powering on GV-AS100, you must create a Master Card first. It is required to present the Master Card and enter its PIN code every time before programming GV-AS100.

Note: The card complying with ISO 14443A standard for smart card technology can be formatted as a Master Card. Only one Master Card can be created.

To create a Master Card:

1. Power on the unit. The LCD displays **Enter Master Card**.
2. Present a card to be the Master Card. The LCD displays **Master PIN Code: 1234**.
3. Keep the default PIN code as 1234, and press **#**. The LCD displays **Succeed**.

Alternatively, you can press any four digits on the keypad to change the default value.

The double confirmation of the new PIN code is required. After this, the LCD should display the message of success.

After the Master Card is created, GV-AS100 will run a self test and display the message "Master Memory Test". After it is finished, you can see the message of GV-AS100 online or offline followed by a date and time. Then you can start programming GV-AS100.

The table below shows the codes to start various programming and display system information.

Code	Function
* 227 (* CAR)	Accesses the Card Manager function.
* 276 (* ARM)	Accesses Security Mode.
* 347 (* DIS)	Displays system information.
* 738 (* SET)	Accesses parameter settings.
* 737 (* RES)	Restores GV-AS100 to factory defaults.
* 837 (* TES)	Tests numeral keys to see if they can be displayed properly.

Before programming GV-AS100, you also need to know the following keys.

Key	Function
*	Used to cancel the selection, or go back to the previous page.
#	Used to save the data that was modified or programmed in the system and quit.
0	Used to go to the next page.

1.3.1 Quick Reference of Programming Table

Card Manger				
	Add New Card	1) N, 2) A, 3) B, 4) S		
	Del Card Data			
	Reset Card's APB			
Display System				
	Door's Auth Mode			
	Door's Event			
	ASBox Comm. State			
	Memory's State			
	ID & IP Address			
	Display Version			
Set Parameter				
	Set Local Time			
	Set AS100 ID			
	Set Auth. Mode			
		Auth. Schedule		
		Fixed Card Mode		
		Fixed Card + PIN		
		Fixed Card Common		
		Local Unlock Mode		
		Local Lock Mode		
	AS100 Function			
		GV-ASBox		
		Control Type	Door Entry Type	Anti-Passback
			Door Exit Type	Anti-Passback
			Parking Entry Type	Anti-Passback
			Parking Exit Type	Anti-Passback
			Elevator Control	
	Master PIN Change			
	Local Rest Time			
	Set Held Open Time			
	Set Alarm Event			
		Held Open Alarm		
		Force Open Alarm		
		Fire Alarm		
		Tamper Alarm		
		Access Denied		
	Set Fire Action			
		Unlock Door/Gate		
		Lock Door/Gate		
		Unchanged		
	Set Contact Type			
		Door/Car Sensor		
		Door/Gate Button		
		Fire Sensor		

1.3.2 Accessing the Card Manager

The Card Manager option is used to add cards, delete cards and reset the card's APB function.

Note:

1. GV-ASManager cannot manage the cards enrolled on GV-AS100, since the card data will not be transmitted to GV-ASManager.
 2. The cards added through GV-ASManager cannot be deleted on GV-AS100.
-

1.3.2.A Adding a Card

Up to 1,000 cards can be enrolled on GV-AS100 directly without needing additional software. When working with GV-ASManager software, GV-AS100 can support up to 40,000 cards.

1. Press the code ***227** (*CAR).
2. Present the Master Card and enter its PIN code. The LCD displays **Add New Card**.
3. Press **#**. The LCD displays **Enter New Card**.
4. To add a card, you can either press the card number or present the card to the unit. The LCD displays the card number and these options: **1)N 2)A 3)B 4)S**.
N stands for a normal card; **A** stands for a two-person A card; **B** stands for a two-person B card; **S** stands for a security card.
5. Select a card type, and enter and confirm a PIN code for the new card.
The LCD displays **Store New Card, 1. Yes? 2. No?**
6. Press **1** to save and exit.

1.3.2.B Deleting a Card

1. Press the code ***227** (*CAR).
2. Present the Master Card and enter its PIN code. The LCD displays **Add New Card**.
3. Press **0**. The LCD displays **Del Card Data**.
4. Press **#**. The LCD displays **Enter Del Card**.
5. You can either press the card number or present the card to the unit.
The LCD displays: **Delete, 1. Yes? 2. No?**
6. Press **1** to save and exit.

1.3.2.C Resetting the APB Function

You can reset the anti-passback (APB) function of a card to allow a user to re-access the entry or exit reader.

1. Press the code ***227** (*CAR).
2. Present the Master Card and enter its PIN code. The LCD displays **Add New Card**.
3. Press **0** several times. The LCD displays **Reset Card's APB**.
4. Press **#**. The LCD displays **Enter Card**.
5. You can either press the card number or present the card to the unit.
The LCD displays: **Reset, 1. Yes? 2. No?**.
6. Press **1** to save and exit.

1.3.3 Accessing the Security Mode

The security mode is used to arm GV-AS100. In the arm mode, no cards can be granted access and no one can program the unit. Only the security card that is associated with a PIN code can be used to disarm the unit.

1.3.3.A Enabling the Security Mode

Before you can access the security mode, you need to create a security card first.

1. To create a security card, follow the steps 1 to 4 in *1.3.2.A Adding a Card*, select **4)S** as card type and create a PIN code for the security card.
2. To access security mode, press the code ***276** (*ARM).
The LCD displays **Start Arm? Enter PIN Code**.
3. Press the PIN code of the security card.
The LCD displays **Start Arm? Enter Security Card**.
4. Present the security card. The security mode is enabled.

1.3.3.B Disabling the Security Mode

To disable the security mode, press any key, enter the PIN code of the security card and present the security card.

1.3.4 Setting Parameters

You can define the parameters of some features on GV-AS100.

IMPORTANT: Once connecting to GV-AS100, GV-ASManager will load its parameters to GV-AS100. That means some of parameters you set up here may be overwritten by GV-ASManager later.

1. Press the code ***738** (***SET**).
2. Present the Master Card and enter its PIN code. The LCD displays **Set Local Time**.
3. Press **0** to change the options. Press **#** to select the option for further programming.

Option	Function
Set Local Time	Sets the time, time zone and enables daylight saving.
Set AS100 ID	Sets the ID of GV-A100 from 1 to 255.
Set Auth. Mode	<p>Sets an authentication mode for the door/gate.</p> <ul style="list-style-type: none"> ■ Auth. Schedule: Follows the authentication schedule set on GV-ASManager. ■ Fixed Card Mode: Grants access after the card is presented. Ignores the authentication schedule of GV-ASManager. ■ Fixed Card + PIN: Grants access after the user presents the card and then enters the card's PIN code. Ignores the authentication schedule of GV-ASManager. ■ Fixed Card/Common: Grants access after the user presents the card or enters the door's password. Enter the door's password after the LCD displays Common Password. Ignores the authentication schedule of GV-ASManager. ■ Local Unlock Mode: Remains open. The held-open state cannot be cleared through GV-ASManager. ■ Local Lock Mode: Remains locked. The locked state cannot be cleared through GV-ASManager.

AS100 Function	<ul style="list-style-type: none"> ■ GV-ASBox: Enables or disables the connection to GV-ASBox / GV-ASNet. ■ Control Type: <ul style="list-style-type: none"> ⊙ Door Entry Type: Sets GV-AS100 as entry reader of a door. The Wiegand reader connected will be set as exit reader. ⊙ Door Exit Type: Sets GV-AS100 as exit reader of a door. The Wiegand reader connected will be set as entry reader. ⊙ Parking Entry Type: Sets GV-AS100 as entry reader of a parking gate. ⊙ Parking Exit Type: Sets GV-AS100 as exit reader of a parking gate. ⊙ Elevator Type: GV-AS100 reader is installed in the elevator for access control. ■ Anti-Passback: Enables or disables the Anti-Passback function.
Master PIN Change	Changes the PIN code of the Master Card.
Local Rest Time	Sets the time (1 to 255 sec.) that a door/gate remains open after which the door will automatically be locked.
Set Held Open Time	Sets the time (5 to 9999 sec.) that a door/gate can be held open before an alarm is generated.
Set Alarm Event	Enables or disables the alarm settings.
Set Fire Action	Locks or unlocks the door/gate, or remains the current state when a fire condition occurs.
Set Contact Type	Sets the inputs to be normally open (NO) or normally closed (NC).

Note: The **Parking Entry Type** and **Parking Exit Type** only work when the sensor input of Car Detection is activated. When the card is present but the sensor inputs are not activated, the message “No Car In Zone” will appear in the GV-AS100’s LCD.

1.3.5 Displaying System Information

To display system information, press the code *347 (*DIS).

Option	Function
Door's Auth. Mode	Displays the authentication mode of the door.
Door's Event	Displays what kind of event happened at the door.
ASBox Comm. State	<p>Displays the connection status with GV-ASBox/GV-ASNet.</p> <ul style="list-style-type: none"> ■ User Disable: The connection to GV-ASBox/GV-ASNet is not enabled. ■ Comm. Fail: The connection to GV-ASBox/GV-ASNet failed. ■ Comm. Normal: The connection to GV-ASBox/GV-ASNet succeeded.
Memory's State	<p>Displays the memory usage of GV-AS100.</p> <ul style="list-style-type: none"> ■ Capacity: Displays the total number of events that can be recorded on GV-AS100. The maximum number is 65536. GV-AS100 will overwrite the oldest events when the limit is reached. When GV-AS100 is connected to GV-ASManager, the event data will be uploaded to the server and the buffer of GV-AS100 will be cleared. ■ Stored: Displays the number of events that has been recorded.
ID & IP Address	Displays the ID and IP address of GV-AS100.
Display Version	Displays the firmware version of GV-AS100.

1.3.6 Restoring Factory Defaults

The restore function is used to clear all configured options and cards from GV-AS100 memory and bring back the unit to factory defaults.

IMPORTANT: Restoring default settings will delete all cards enrolled on GV-AS100.

1. Press the code ***737** (*RES).
2. Present the Master Card and enter PIN Code.
The LCD displays **Default Setting 1. Yes? 2. No?**.
3. Press **1**. The LCD displays **Default Setting Memory Test...**
4. When the unit returns to factory defaults, the LCD displays **Enter Master Card**.

1.4 Web-Based Configurations

Through GV-ASBox or GV-ASNet, GV-AS100 can communicate with GV-ASManager over the network. Using GV-ASBox or GV-ASNet, you can also access the Web interface of GV-AS100.

Refer to *Chapter 5 Optional Devices* to see how to connect a GV-ASBox or GV-ASNet and how to access the Web interface of GV-AS100.

1.5 GV-AS100 Specifications

CPU	8-bit RISC microprocessor	
Number of User Cards	1,000 / 40,000 cards (standalone / networked or RS-485 mode)	
Event Buffer	65,536 events and log data	
Power	100 ~ 240V AC, 50 ~ 60Hz	
Wiegand Interface	1 Wiegand interface, 26 ~ 64 bit format	
	12V DC Power Supply, 200mA	
Communication Protocol	RS-485	
Digital I/O	Input	3 inputs, dry contact, NO / NC
	Output	2 outputs
Operating Temperature	0 ~ 65°C / 32 ~ 149°F	
Operating Humidity	10% ~ 90% RH (non-condensing)	
Dimensions of GV-AS100 Board (W X H X D)	96 x 137 x 27 mm / 13.78 x 5.39 x 1.06 in	
Weight	250 g / 0.55 lb	
Certification	IP54, CE, FCC, RoHS	

2. GV-AS110 Controller

2.1 Introduction

Working as a standalone solution, GV-AS110 is a card reader and also a single door controller. It is possible to add one more card reader to GV-AS110 for entry and exit applications. GV-AS110 has the capability to store up to one thousand cards. When GV-AS110 is being used as a standalone unit, the programming is either done on the keypad or from the software GV-ASManager through the RS-485 connection.

GV-AS110 is suitable not only for any normal door control but also for parking gate and elevator control. GV-AS110 is an economic solution for access control.

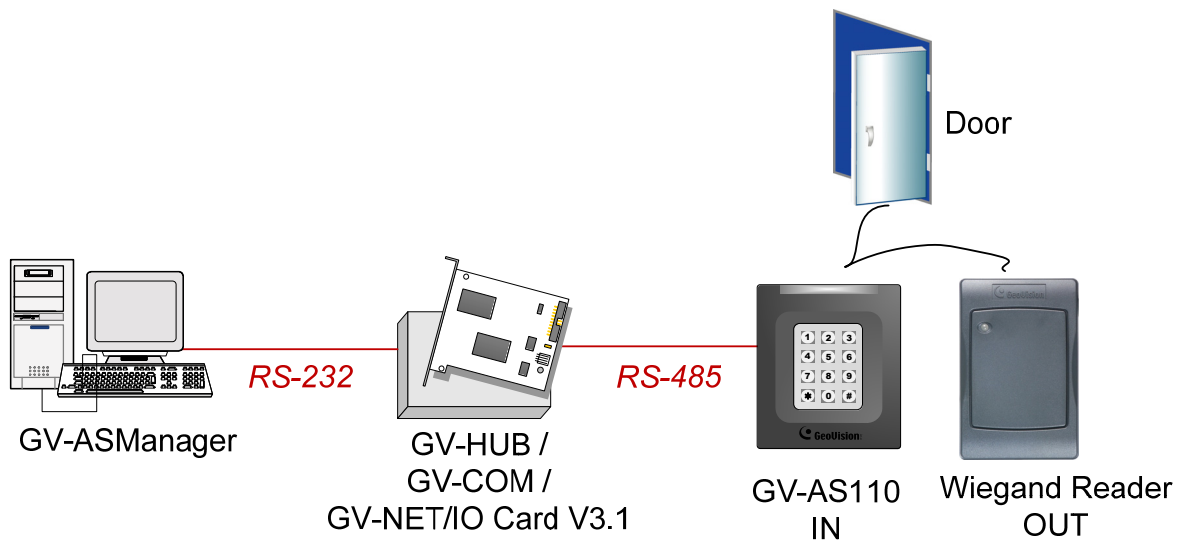


Figure 2-1

GV-AS110 can make network connection to GV-ASManager using the optional GV-ASBox or GV-ASNet. With GV-ASBox, two-door control is also possible as illustrated below.

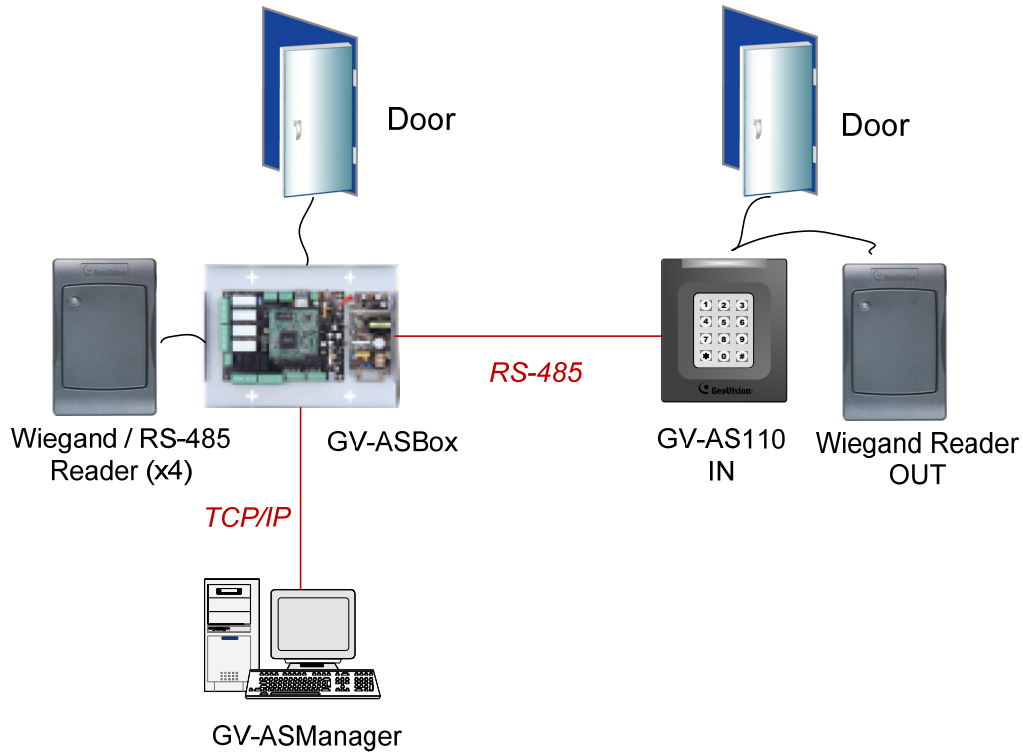


Figure 2-2 Through GV-ASBox

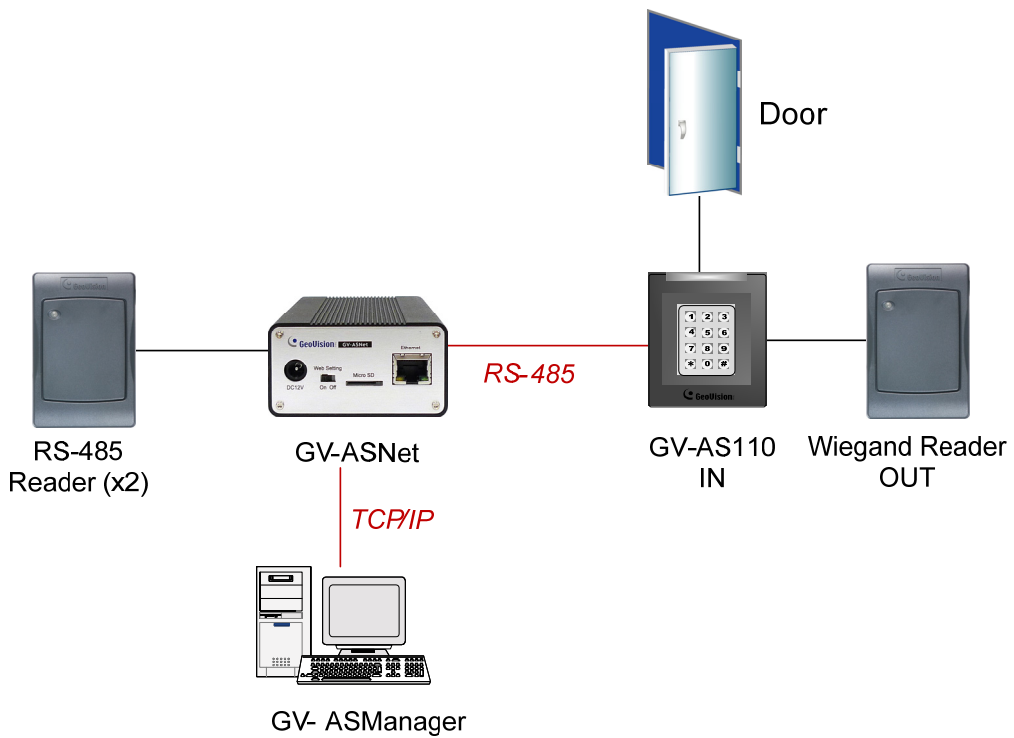


Figure 2-3 Through GV-ASNet

2.1.1 Main Features

- 1,000 / 40,000 cards (standalone / networked or RS-485 mode)
- Easy programming from keypad
- Anti-Passback (APB) support
- Built-in 3 digital inputs and 2 relay outputs
- 1 Wiegand output (26 ~ 64 bits) for extra reader programming
- 1 door expandable to 2 doors with optional GV-ASBox
- Built-in tampering alarm

2.1.2 Packing List

- GV-AS110
- Power Adaptor 12V DC
- Power Cable
- Enroll Card
- Delete Card
- GV-ASManager Software CD

2.2 Installation

The wire assignment of the GV-AS110 cable data are illustrated below.

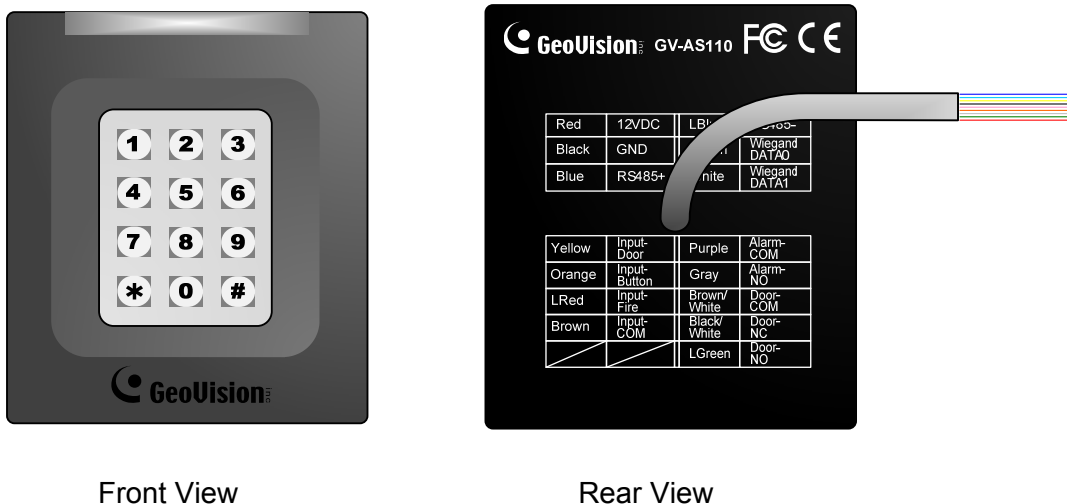


Figure 2-4

Wire color	Definition
Red	12V
Black	GND
Green	Wiegand Data 0
White	Wiegand Date 1
Blue	RS485+
Light Blue	RS485-
Yellow	Door Sensor IN1
Orange	Button IN2
LRed	Fire Sensor IN3
Brown	IN COM (GND)
Purple	Alarm COM
Gray	Alarm NO
Brown White	Door COM
Black White	Door NC
Light Green	Door NO

2.2.1 Connecting a Wiegand Reader

GV-AS110 provides one Wiegand input for connection to the Wiegand reader ranging from 26 to 64 bits. Through the GV-AS110 keypad, you can set the Wiegand reader as the entry or exit reader. To define the reader, see the **Door/Gate Function** option in 2.3.2 *Programming the GV-AS110*.

The table below shows the wire assignments of the Wiegand input on GV-AS110. Please consult the documentation of your Wiegand reader for wiring. You will need to set up a separate power source to power the Wiegand reader.

Wire color	Definition
Green	Wiegand Data 0
White	Wiegand Data 1

2.2.2 Connecting Input Devices

GV-AS110 supports 3 types of inputs:

1. Sensor inputs, e.g. door status sensor
2. Button inputs, e.g. door opener
3. Fire Sensor inputs, e.g. fire detector

All inputs are **dry contact** and can be configured as normally open (NO) or normally closed (NC) through the GV-AS110 keypad. The default value is **NO**. To change the input status, see the **Select Input Contact Type** option in 2.3.2 *Programming the GV-AS110*.

The table below shows the wire assignments of input connectors on GV-AS110.

Wire color	Definition
Yellow	Door Sensor IN1
Orange	Button IN2
LRed	Fire Sensor IN3
Brown	IN COM (GND)

2.2.3 Connecting Output Devices

GV-AS110 supports 2 types of outputs:

1. Alarm outputs, e.g. siren or bell
2. Door outputs, e.g. electronic lock

The table below shows the wire assignments of output connectors on GV-AS110.

Wire color	Definition
Purple	Alarm COM
Gray	Alarm NO
Brown & White	Door COM
Black & White	Door NC
Light green	Door NO

Check if your output device meets the following absolute maximum ratings before connecting it to the Door outputs.

Breakdown Voltage	250V AC, 220V DC
Continuous Load Current	1A (30V DC), 0.3A (125V AC)
<p>Note: Absolute Maximum Ratings are those values beyond which damage to GV-AS110 circuit board may occur. Continuous operation of GV-AS110 at the absolute rating level may affect GV-AS110's reliability.</p>	

To connect an output device:

The example below illustrates the connection of a locking device to GV-AS110. Connect the (+) point on the locking device to the Door COM wire on GV-AS110, connect the two (-) points of the locking device and the external power supply together, and connect the (+) point on the external power supply to the Door NO or Door NC wire on GV-AS110 based on the state of the locking device.

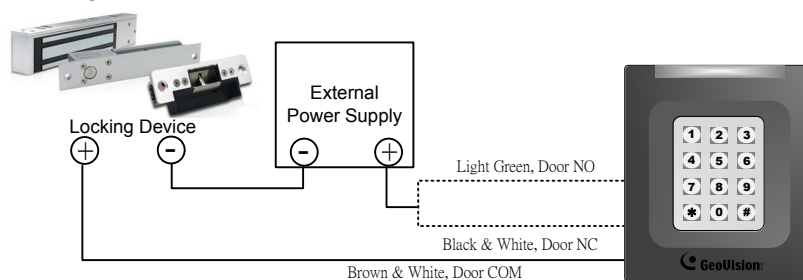


Figure 2-5

2.2.4 Connecting to the PC

The computer running GV-ASManager software can be used to monitor the access information and alarm messages from GV-AS110. The communication link between the computer and GV-AS110 can be either through RS-485 or network. For RS-485 connection, a RS-485 to RS-232 converter is required. For network connection, an optional GV-ASBox or GV-ASNet is required.

2.2.4.A RS-485 Connection

The figure below illustrates the RS-485 connection to the computer. For this connection, a RS-485 to RS-232 converter between GV-AS110 and the computer is required. You can use GV accessories, such as GV-Hub, GV-COM and GV-NET/IO Card, as the RS-485/RS-232 converter.

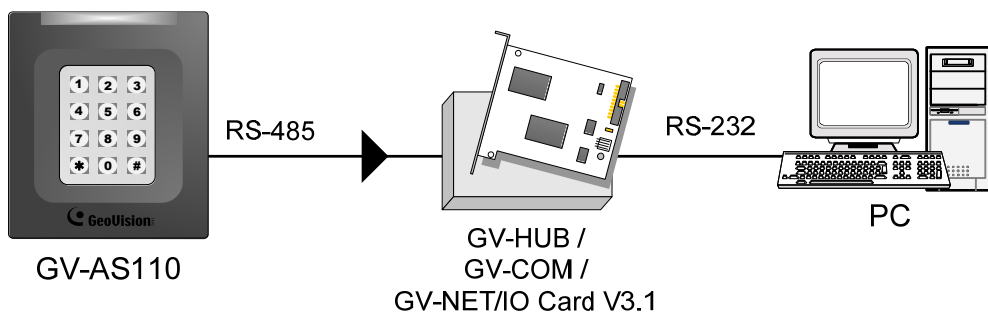


Figure 2-6

The table shows the wire assignments of RS-485 connection on GV-AS110.

Wire color	Definition
Blue	RS485 A+
Light Blue	RS485 A-

Note: When connecting multiple GV-AS110 through RS-485 connection, you can use the keypad on GV-AS110 to program every unit's ID. See 2.3.2 *Programming the GV-AS110*.

2.2.4.B Network Connection

The figure below illustrates the network connection to the computer. For this connection, a GV-ASBox or GV-ASNet is required.

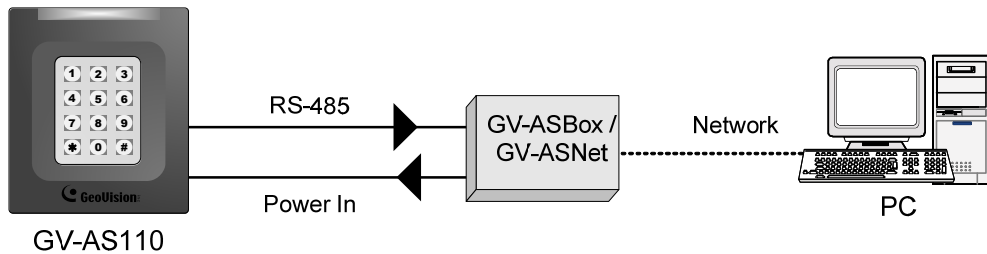


Figure 2-7

Connect two power wires and two RS-485 wires from GV-AS110 to GV-ASBox/GV-ASNet. The table below shows the wire assignments of RS-485 connection on GV-AS110.

Wire color	Definition
Red	12V
Black	GND
Blue	RS485 A+
Light Blue	RS485 A-

See 4.1.5.A *Connecting GV-AS100/GV-AS110/GV-AS120* or 4.2.4A *Connecting GV-AS100/GV-AS110/GV-AS120* to see how to connect to GV-ASBox or GV-ASNet.

2.2.5 Connecting the Power

The supplied AC adaptor can be connected to any power source supplying from 100 to 240V. Connect 12V and GND wires to the supplied power adapter and then connect the power adapter to a power source. The table below shows the pin assignments of the power connectors on GV-AS110.

Wire color	Definition
Red	12V
Black	GND

Note: Power should only be applied to the unit when all connections are completed and tested.

2.3 Programming Mode

After powering on GV-AS110, you must create two cards first, an Enroll Card and a Delete Card. The Enroll Card is used for adding new cards and the Delete Card is used for deleting cards. Either card will allow you to program the various configurations on GV-AS110.

Note: The card complying with ISO 14443A standard for smart card technology can be formatted as an Enroll Card or Delete Card.

To create the Enroll Card and the Delete Card:

1. Power on the unit. The LED flashes blue.
2. Present a card to be the Enroll Card.
3. Present a card to be the Delete Card.
4. The GV-AS110 will automatically load default, and the LED will flash blue and yellow.
After 1 to 2 minutes, the LED should be a constant blue light to indicate READY.

2.3.1 Adding and Deleting Cards

Using the two cards, you can add new cards to GV-AS110 and delete existing cards on GV-AS110.

Note:

1. GV-ASManager cannot manage the cards enrolled on GV-AS110, since the card data will not be transmitted to GV-ASManager.
 2. The cards added through GV-ASManager cannot be deleted on GV-AS110.
-

2.3.1.A Adding a Card

Up to 1,000 cards can be enrolled on GV-AS110 directly without needing additional software. When working with GV-ASManager software, GV-AS110 can support up to 40,000 cards.

1. Present the Enroll Card.
2. Enter a 4-digit PIN code for the new card, reenter the same 4-digit PIN code and then enter the command code for a desired type of card listed below. The LED will blink green and red for about 10 seconds. You must finish entering the PIN code twice and the card command code within the 10 seconds.

Code	Types of Cards	Description
0	Normal Card	The door unlocks after a card is presented. Normal Cards will not be granted access when Two Person Entrance/Exit or Security Mode is enabled.
1	Two-person A Card	In the Two Person Entrance/Exit mode, the door unlocks only when two-person B card is also presented together.
2	Two-person B Card	In the Two Person Entrance/Exit mode, the door unlocks only when two-person A card is also presented together.
3	Security Card	The Security Card is used for launching the Security Mode, in which no cards can be granted access and no one can program the unit. Only the Security Card will be able to disable the Security Mode.

3. Present the card you want to add to the GV-AS110.
4. The GV-AS110 will produce a long beep if the card has been added successfully and three short beeps if the adding procedure has failed.

If you do not want to customize a password, you can simply present the Enroll Card and then present the card you would like to add. The default password will be 1234 and the card will automatically be set to a Normal Card.

2.3.1.B Deleting a Card

1. Present the Delete Card.
2. Present the card you want to delete.
3. The GV-AS110 will produce a long beep if the card has been deleted successfully and three short beeps if the deleting procedure has failed.

2.3.2 Programming the GV-AS110

The command codes used to program various functions on GV-AS110 are listed below. All command codes will start with an asterisk * to clear all previous commands and end with a number sign # to send the command. After typing the command code, present the Enroll Card or the Delete Card.

IMPORTANT: Once connecting to GV-AS110, GV-ASManager will load its parameters to GV-AS110. That means some of settings you program here may be overwritten by GV-ASManager later.

Function	Command Code	Description
Set Password	*779_ _ _ _ _ # 4-8 digits	You can set a password to open the door using this password. The Authentication Mode must be set to Fixed Card/Common mode. Refer to the Set Authentication Mode function below. For example, to set the door's password as 12345, press *77912345# on the keypad.
Lock Reset Time	*578_ _ _ # 1-255 seconds	Sets a time that the door/gate will remain open after which the door will automatically be locked. For example, to set the lock reset time to be 120 seconds, press *578120#
Held Open Time	*468_ _ _ _ # 5-9999 seconds	Sets the time that a door/gate can be held open before an alarm is generated. If the number of seconds is less than 4 digits, add zeros in front of the number to make it 4 digits. For example, to set the held open time to be 180 seconds, enter *4680180#
Set Fire Action	*732_# Unchanged→0 Unlock Door→1 Lock Door→2	This function locks or unlocks the door/gate, or maintains the current status when a fire emergency occurs. For example, to unlock door during a fire emergency, press *7321#
Local Anti-Passback	*527_# 0→Disable 1→Enable	Local Anti-passback prevents card sharing by not allowing a card to go through an entry twice before first exiting. For example, to enable Local Anti-passback, press *5271#

<p>Set Alarm Event</p>	<p>*723_ _ _ _# Held Open → 0 Forced Open → 1 Tamper → 2 Fire Alarm → 3 Access Denied → 4 Alarm Time → 1-10 sec</p>	<p>For the first blank digit, enter a number from options 0 to 4. For the second blank digit, type 1 to enable the option and 0 to disable the option. For the third and fourth blank digits, type the number of seconds the alarm will sound.</p> <p>For example, to enable the fire alarm for 3 seconds, press *7233103#</p>
<p>Door/Gate Function</p>	<p>*343_# Door Entry Type→0 Parking Entry Type→1 Door Exit Type→2 Parking Exit Type→3 Elevator Type→4</p>	<ul style="list-style-type: none"> ■ Door Entry Type: Sets GV-AS110 as entry reader of a door. The Wiegand reader connected will be set as exit reader. ■ Parking Entry Type: Sets GV-AS110 as entry reader of a parking gate. ■ Door Exit Type: Sets GV-AS110 as exit reader of a door. The Wiegand reader connected will be set as entry reader. ■ Parking Exit Type: Sets GV-AS110 as exit reader of a parking gate. ■ Elevator Type: GV-AS110 reader is installed in the elevator for access control. <p>For example, to set the GV-AS110 as an exit reader of a door, press *3432#</p>
<p>Set Authentication Mode</p>	<p>*526_# Schedule Mode→0 Fixed Card Mode→1 Local Lock Mode→2 Local Unlock Mode→3 Fixed Card + PIN→4 Fixed Card/Common→5</p>	<ul style="list-style-type: none"> ■ Schedule Mode: Follows the authentication schedule set on GV-ASManager. ■ Fixed Card Mode: Grants access after the card is presented. Ignores the authentication schedule of GV-ASManager. ■ Local Lock Mode: Remains locked. The locked state cannot be cleared through GV-ASManager. ■ Local Unlock Mode: Remains open. The held-open state cannot be cleared through GV-ASManager. ■ Fixed Card + PIN: Grants access after the user presents the card and then enters the card's PIN code. Ignores the authentication schedule of GV-ASManager. ■ Fixed Card/Common: Grants access after card is presented or after the door's password is entered. Ignores the authentication schedule of GV-ASManager.

		For example, to enable the Fixed Card + PIN mode, press *5264# .
Open door with card number and PIN code	* _ _ _ _ _ _ _ _ (_ _ _ _) # Enter the 8-digit card number and enter its 4-digit PIN code.	To open the door without presenting a card, enter the 8-digit card number on the back of the individual card and its 4-digit PIN code.
Set ID	*743 _ _ _ # Enter an ID number between 0 and 255.	Set an ID number for GV-AS110 to a number between 0 and 255. For example, to set the ID number to be 3, press *743003#
Security Mode	*276 _ _ _ _ # 4 digits PIN code of the security card.	In the Security Mode, no cards can be granted access and no one can program the unit. Only the Security Card can disable the Security Mode. To enable the Security Mode, press *276 , enter the PIN code of the Security Card and press # . Present the Security Card. To disable the Security Mode, simply press the PIN code of the Security Card and present the Security Card.
Two Person Entrance	*873 _ # Disable → 0 Enable → 1	When Two Person Entrance mode is enabled, both Two Person A Card and Two Person B Card must be presented to unlock the entrance. To enable Two Person Entrance, press *8731#
Two Person Exit	*879 _ # Disable → 0 Enable → 1	When Two Person Exit mode is enabled, both Two Person A Card and Two Person B Card must be presented to unlock the exit. To enable Two Person Exit, press *8791#
Select Input Contact Type	*426 _ _ _ # NO → 1 NC → 0	Specify the input contact type of the door sensor in the first blank digit, button in the second blank digit and fire sensor in the third blank digit. The default value is normally opened (NO). For example, to set the input contact type for door sensor to be normally open (NO), button to be normally closed (NC), and fire sensor to be normally open (NO), press *426101# .
Load Default	*362#	To restore GV-AS110 to factory default, press *362# . All configured settings will be cleared and all cards will be deleted from GV-AS110.

Note: The **Parking Entry Type** and **Parking Exit Type** only work when the sensor input of Car Detection is activated.

2.4 Web-Based Configurations

Through GV-ASBox or GV-ASNet, GV-AS110 can communicate with GV-ASManager over the network. Using GV-ASBox or GV-ASNet, you can also access the Web interface of GV-AS110.

Refer to *Chapter 5 Optional Devices* to see how to connect a GV-ASBox or GV-ASNet and how to access the Web interface of GV-AS110.

2.5 LED Status and Beeper

Normally, the LED on GV-AS110 is blue during standby mode and the LED flashes green when a card is granted access or when the operation was successful. A red LED indicates access denied or the operation was unsuccessful. The LED status and beeper under different conditions are listed below.

Condition	LED	Beeper
Card + PINCode Mode	Flashes blue	Silent
Card Mode	Constant blue	Silent
Release Mode	Flashes green	Silent
Force Unlock Mode	Flashes green	Silent
Fire Unlock Mode	Flashes green	Silent
Force Lock Mode	Flashes red	Silent
Fire Lock Mode	Flashes red	Silent
Security Mode enabled	Yellow	One long beep
Security Mode disabled	Returns to the LED status of the previous mode	One long beep
Tamper /Forced Open Alarm	Flashes green and red	Constant beep until alarm cancelled
Fire Alarm	Red	Constant beep until alarm cancelled
Held Open Alarm	Unchanged	Constant beep until alarm cancelled
Access Denied Alarm	Flashes red momentarily	Short beep for the number of seconds specified
Access Denied	Flashes red momentarily	Two short beeps
Access Granted	Flashes green momentarily	One short beep
Enroll Card	Flashes green momentarily	Two long beeps
Delete Card	Flashes red momentarily	Two long beeps
Enrolled/Deleted card successfully	Displays green LED momentarily	One long beep
Enroll/Delete card failed	Displays red LED momentarily	Three short beeps

Firmware update	Flashes red, green and blue	Silent
Firmware update failed	Flashes purple	Constant beep
Factory default	Flashes blue	Silent

2.6 GV-AS110 Specifications

CPU	32-bit RISC microprocessor	
Number of User Cards	1,000 / 40,000 cards (standalone / networked or RS-485 mode)	
Event Buffer	65,536 events and log data	
Power	100 ~ 240V AC, 50 ~ 60Hz	
Wiegand Interface	1 Wiegand interface, 26 ~ 64 bit format	
	12V DC Power Supply, 200mA	
Communication Protocol	RS-485	
Digital I/O	Input	3 inputs, dry contact, NO / NC
	Output	2 outputs
Operating Temperature	-20 ~ 60°C / -4 ~ 140°F	
Operating Humidity	10% ~ 90% RH (non-condensing)	
Dimensions (W X H X D)	95 x 108 x 23mm / 3.74 x 4.25 x 0.91 in	
Weight	200 g / 0.44 lb	
Certification	IP54, CE, FCC, RoHS	

3. GV-AS120 Controller

3.1 Introduction

Working as a standalone solution, GV-AS120 is a card reader and also a single door controller. It is possible to add one more card reader to GV-AS120 for entry and exit applications. GV-AS120 has the capability to store up to one thousand cards. When GV-AS120 is being used as a standalone unit, the programming is done from the software GV-ASManager through the RS-485 connection.

GV-AS120 is suitable not only for any normal door control but also for parking gate and elevator control. GV-AS120 is an economic solution for access control.

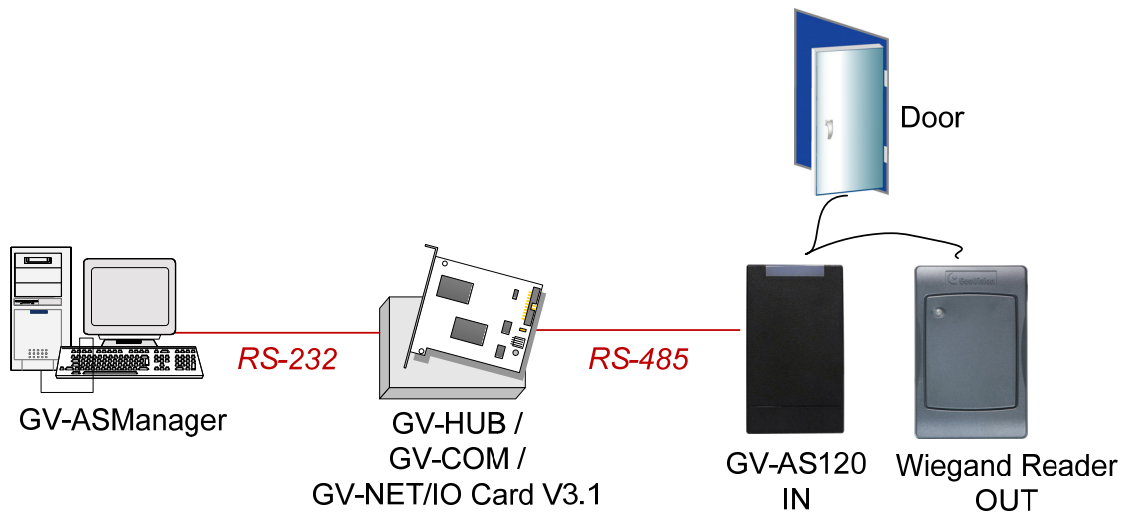


Figure 3-1

GV-AS120 can make network connection to GV-ASManager using the optional GV-ASBox or GV-ASNet. With GV-ASBox, two-door control is also possible as illustrated below.

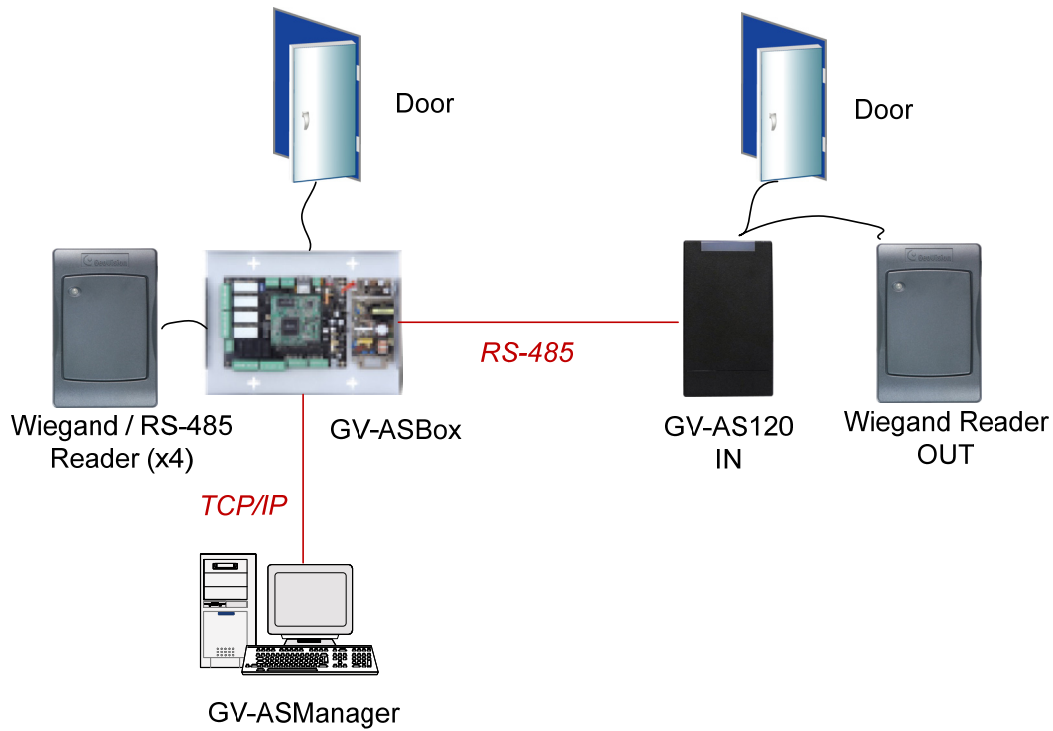


Figure 3-2 Through GV-ASBox

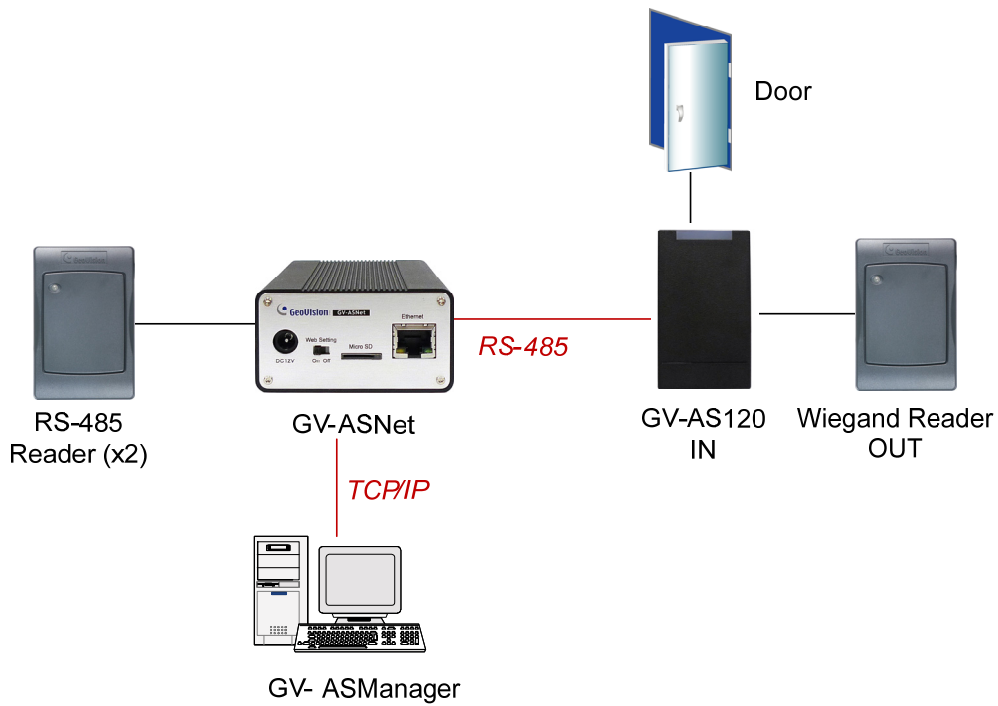


Figure 3-3 Through GV-ASNet

3.1.1 Main Features

- 1,000 / 40,000 cards (standalone / networked or RS-485 mode)
- Built-in 2 digital inputs and 1 relay output
- 1 Wiegand output (26 ~ 64 bits) for extra reader programming
- 1 door expandable to 2 doors with optional GV-ASBox
- Built-in tampering alarm

3.1.2 Packing List

- GV-AS120
- Power Adaptor 12V DC
- Power Cable
- Screw x 3
- Screw Anchor x 2
- Security Torx
- Enroll Card
- Delete Card
- GV-ASManager Software CD

3.2 Installation

The wire assignment of the GV-AS120 cable data are illustrated below.

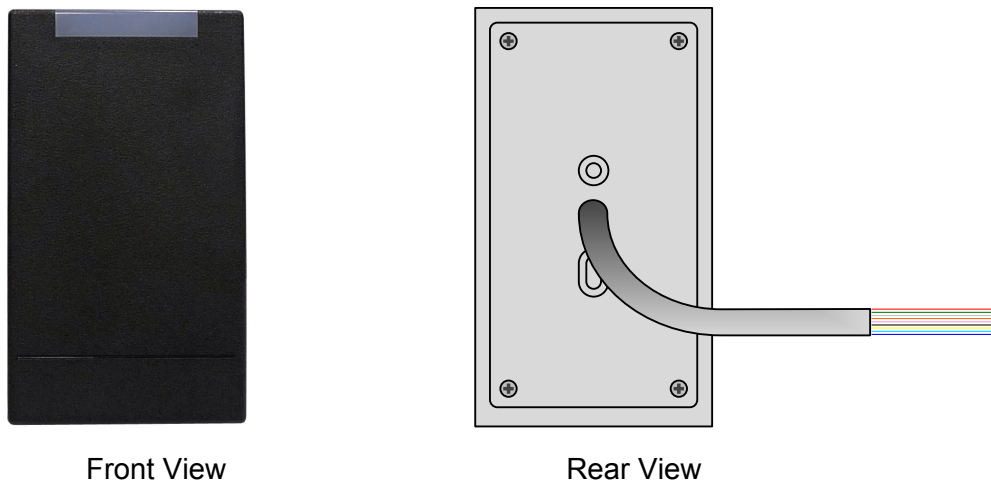


Figure 3-4

Wire color	Definition
Red	12V
Black	GND
Green	Wiegand Data 0
White	Wiegand Date 1
Blue	RS485+
Light Blue	RS485-
Brown	IN COM (GND)
Yellow	Door Sensor IN1
LRed	Button IN2
Purple	Door COM
Orange	Door NC
Gray	Door NO

3.2.1 Connecting a Wiegand Reader

GV-AS120 provides one Wiegand input for connection to the Wiegand reader ranging from 26 to 64 bits. Through the Web interface of GV-AS120, you can set the Wiegand reader as the entry or exit reader. To define the reader, see *5.1.5.E.a Function Setting* when connecting through GV-ASBox or see *5.2.5.E.a Function Setting* when connecting through GV-ASNet.

The table below shows the wire assignments of the Wiegand input on GV-AS120. Please consult the documentation of your Wiegand reader for wiring. You will need to set up a separate power source to power the Wiegand reader.

Wire color	Definition
Green	Wiegand Data 0
White	Wiegand Date 1

3.2.2 Connecting Input Devices

GV-AS120 supports 2 types of inputs:

1. Sensor inputs, e.g. door status
2. Button inputs, e.g. door opener

All inputs are **dry contact** and can be configured as normally open (NO) or normally closed (NC) through the GV-AS120 Web interface. The default value is **NO**. To change the input status, see *5.1.5.E.f In/Out Function* when connecting through GV-ASBox or see *5.2.5.E.f In/Out Function* when connecting through GV-ASNet.

The table below shows the wire assignments of input connectors on GV-AS120.

Wire color	Definition
Yellow	Door Sensor IN1
LRed	Button IN2
Brown	IN COM (GND)

3.2.3 Connecting Output Devices

GV-AS120 supports 1 type of output: Door outputs, e.g. electronic lock

The table below shows the wire assignments of output connectors on GV-AS120.

Wire color	Definition
Purple	Door COM
Orange	Door NC
Gray	Door NO

Check if your output device meets the following absolute maximum ratings before connecting it to the Door outputs.

Breakdown Voltage	250V AC, 220V DC
Continuous Load Current	1A (30V DC), 0.3A (125V AC)
<p>Note: Absolute Maximum Ratings are those values beyond which damage to GV-AS120 circuit board may occur. Continuous operation of GV-AS120 at the absolute rating level may affect GV-AS120's reliability.</p>	

To connect an output device:

The example below illustrates the connection of a locking device to GV-AS120. Connect the (+) point on the locking device to the Door COM wire on GV-AS120, connect the two (-) points of the locking device and the external power supply together, and connect the (+) point on the external power supply to the Door NO or Door NC wire on GV-AS120 based on the state of the locking device.

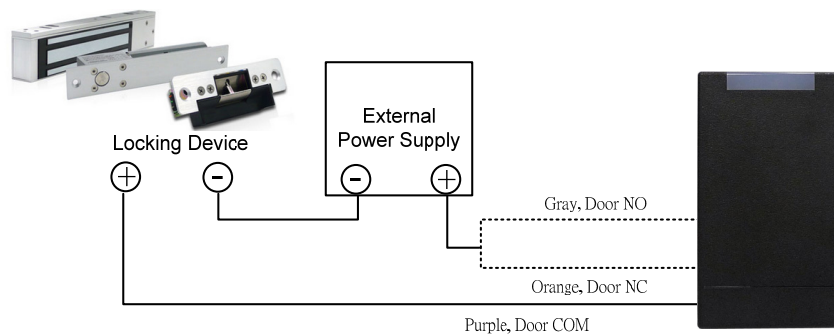


Figure 3-5

3.2.4 Connecting to the PC

The computer running GV-ASManager software can be used to monitor the access information and alarm messages from GV-AS120. The communication link between the computer and GV-AS120 can be either through RS-485 or network. For RS-485 connection, a RS-485 to RS-232 converter is required, such as a GV-Hub, GV-COM or GV-NET/ IO Card V3.1. For network connection, an optional GV-ASBox or GV-ASNet is required.

3.2.4.A RS-485 Connection

The figure below illustrates the RS-485 connection to the computer. For this connection, a RS-485 to RS-232 converter between GV-AS120 and the computer is required. You can use GV accessories, such as GV-Hub, GV-COM and GV-NET/IO Card, as the RS-485/RS-232 converter.

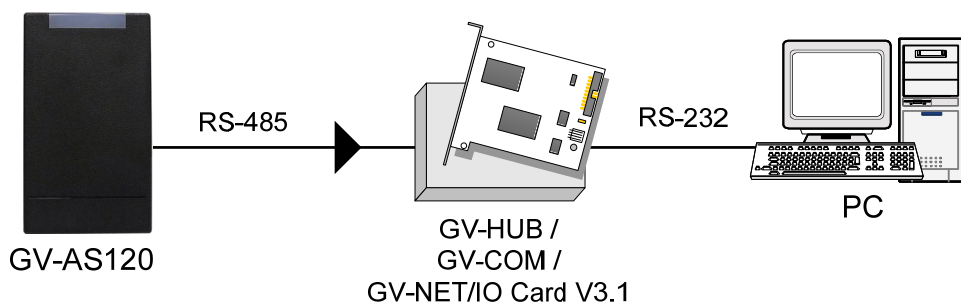


Figure 3-6

The table shows the wire assignments of RS-485 connection on GV-AS120.

Wire color	Definition
Blue	RS485 A+
Light Blue	RS485 A-

To define ID number, control type and authentication mode

Using the **GV-AS120 Setting AP** in the GV-ASManager folder, you can define the ID number of multiple GV-AS120 connected through RS-485 interface, as well as set the control type and authentication mode.

1. Go to **C:\Access Control\ASManager** and double-click **GV-AS120 SetupAP V100.exe**. This dialog box appears.

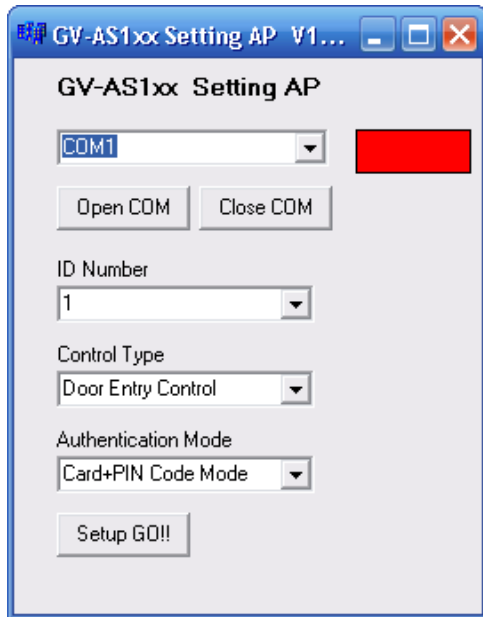
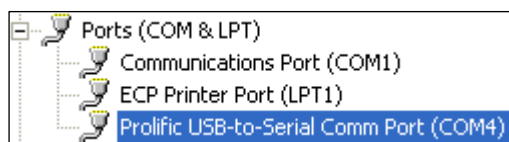


Figure 3-7

2. Select the COM port that is connected to GV-AS120 and click **Open COM**. The red square next to the COM port box should change to blue to indicate the COM port is correct.

Note: To verify the COM port that is connected to GV-AS120, go to Windows Device Manager. In the Ports (COM & LPT) field, you should see the entry for **Prolific USB-to-Serial Comm Port**. The COM port shown in parenthesis indicates the COM number currently in use.



3. Select an ID number for the GV-AS120.
4. Use the drop-down list to define the **Control Type** and **Authentication Mode**. Refer to *Door / Gate Function* and *Set Authentication Mode* in 2.3.2 *Programming the GV-AS110* for more details on each type of Control Type and Authentication Mode.
5. Click **Setup GO**. The settings are sent to GV-AS120.

3.2.4.B Network Connection

The figure below illustrates the network connection to the computer. For this connection, a GV-ASBox or GV-ASNet is required.

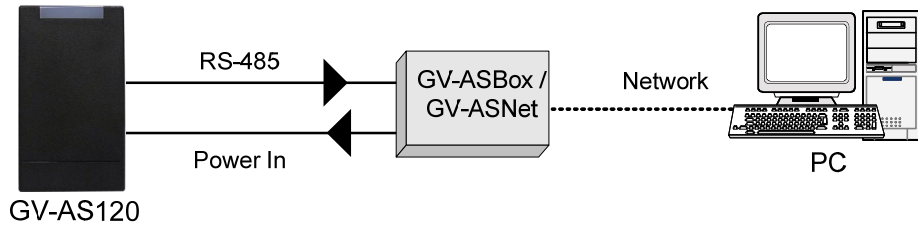


Figure 3-8

Connect two power wires and two RS-485 wires from GV-AS120 to GV-ASBox/GV-ASNet. The table below shows the wire assignments of RS-485 connection on GV-AS120.

Wire color	Definition
Red	12V
Black	GND
Blue	RS485 A+
Light Blue	RS485 A-

See 5.1.5.A *Connecting GV-AS100/GV-AS110/GV-AS120* or 5.2.4A *Connecting GV-AS100/GV-AS110/GV-AS120* to see how to connect to GV-ASBox or GV-ASNet.

3.2.5 Connecting the Power

The supplied AC adaptor can be connected to any power source supplying from 100 to 240V. Connect 12V and GND wires to the supplied power adapter and then connect the power adapter to a power source. The table below shows the pin assignments of the power connectors on GV-AS120.

Wire color	Definition
Red	12V
Black	GND

Note: Power should only be applied to the unit when all connections are completed and tested.

3.3 Programming Mode

After powering on GV-AS120, you must create two cards first, an Enroll Card and a Delete Card. The Enroll Card is used for adding new cards and the Delete Card is used for deleting cards. Either card will allow you to program the various configurations on GV-AS120.

Note: The card complying with ISO 14443A standard for smart card technology can be formatted as an Enroll Card or Delete Card.

To create the Enroll Card and the Delete Card:

1. Power on the unit. The LED flashes blue.
2. Present a card to be the Enroll Card.
3. Present a card to be the Delete Card.
4. The GV-AS120 will automatically load default, and the LED will flash blue and yellow.
After 1 to 2 minutes, the LED should be a constant blue light to indicate READY.

3.3.1 Adding and Deleting Cards

Using the two cards, you can add new cards to GV-AS120 and delete existing cards on GV-AS120.

Note:

1. GV-ASManager cannot manage the cards enrolled on GV-AS120, since the card data will not be transmitted to GV-ASManager.
 2. The cards added through GV-ASManager cannot be deleted on GV-AS120.
-

3.3.1.A Adding a Card

Up to 1,000 cards can be enrolled on GV-AS120 directly without needing additional software. When working with GV-ASManager software, GV-AS120 can support up to 40,000 cards.

1. Present the Enroll Card.
2. Present the card you want to add to the GV-AS120.
3. The GV-AS120 will produce a long beep if the card has been added successfully and three short beeps if the adding procedure has failed.

The default password will be 1234 and the card will automatically be set to a Normal Card. You can change the password and set the card to different card types such as Patrol Card or Two-person A/B Card using GV-ASManager. Refer to *6.4.3 Adding Cards* for more details.

Note: GV-AS120 does not support cards set up as Security Cards.

3.3.1.B Deleting a Card

1. Present the Delete Card.
2. Present the card you want to delete.
3. The GV-AS120 will produce a long beep if the card has been deleted successfully and three short beeps if the deleting procedure has failed.

3.4 Web-Based Configurations

Through GV-ASBox or GV-ASNet, GV-AS120 can communicate with GV-ASManager over the network. Using GV-ASBox or GV-ASNet, you can also access the Web interface of GV-AS120.

Refer to *Chapter 5 Optional Devices* to see how to connect a GV-ASBox or GV-ASNet and how to access the Web interface of GV-AS120.

3.5 LED Status and Beeper

Normally, the LED on GV-AS120 is blue during standby mode and the LED flashes green when a card is granted access or when the operation was successful. A red LED indicates access denied or the operation was unsuccessful. The LED status and beeper under different conditions are listed below.

Condition	LED	Beeper
Card Mode	Constant blue	Silent
Release Mode	Flashes green	Silent
Force Unlock Mode	Flashes green	Silent
Force Lock Mode	Flashes red	Silent
Tamper / Forced Open Alarm	Flashes green and red	Constant beep until alarm cancelled
Held Open Alarm	Unchanged	Constant beep until alarm cancelled
Access Denied Alarm	Flashes red momentarily	Short beep for the number of seconds specified
Access Denied	Flashes red momentarily	Two short beeps
Access Granted	Flashes green momentarily	One short beep
Enroll Card	Flashes green momentarily	Two long beeps
Delete Card	Flashes red momentarily	Two long beeps
Enrolled/Deleted card successfully	Displays green LED momentarily	One long beep
Enroll/Delete card failed	Displays red LED momentarily	Three short beeps
Firmware update	Flashes red, green and blue	Silent
Firmware update failed	Flashes purple	Constant beep
Factory default	Flashes blue	Silent

3.6 GV-AS120 Specifications

CPU	32-bit RISC microprocessor	
Number of User Cards	1,000 / 40,000 cards (standalone / networked or RS-485 mode)	
Event Buffer	65,536 events and log data	
Power	100 ~ 240V AC, 50 ~ 60Hz	
Wiegand Interface	1 Wiegand interface, 26 ~ 64 bit format	
	12V DC Power Supply, 200mA	
Communication Protocol	RS-485	
Digital I/O	Input	2 inputs, dry contact, NO / NC
	Output	1 output
Operating Temperature	-20 ~ 60°C / -4 ~ 140°F	
Operating Humidity	10% ~ 90% RH (non-condensing)	
Dimensions (W X H X D)	65.8 x 115.6 x 20.5 mm / 2.6 x 4.6 x 0.8 in	
Weight	138 g / 0.3 lb	
Certification	IP66, CE, FCC, RoHS	

4. GV-AS400 Controller

4.1 Introduction

4.1.1 Main Features

- 4 doors
- Support 8 Wiegand card readers of 26 to 64 bits
- Support 8 units of GV-Readers and GV-GF Fingerprint Readers
- Built-in 16 digital inputs and 16 relay outputs
- I/O capability expandable to 64 digital inputs and 64 relay outputs with GV-IO Box connected
- Suitable for door, parking and elevator access control
- Built-in tampering alarm

4.1.2 Packing List

- GV-AS400
- GV-AS Power Board
- Power Adaptor 24V DC
- GV-ASManager Software CD

4.1.3 GV-AS400 Board Layout

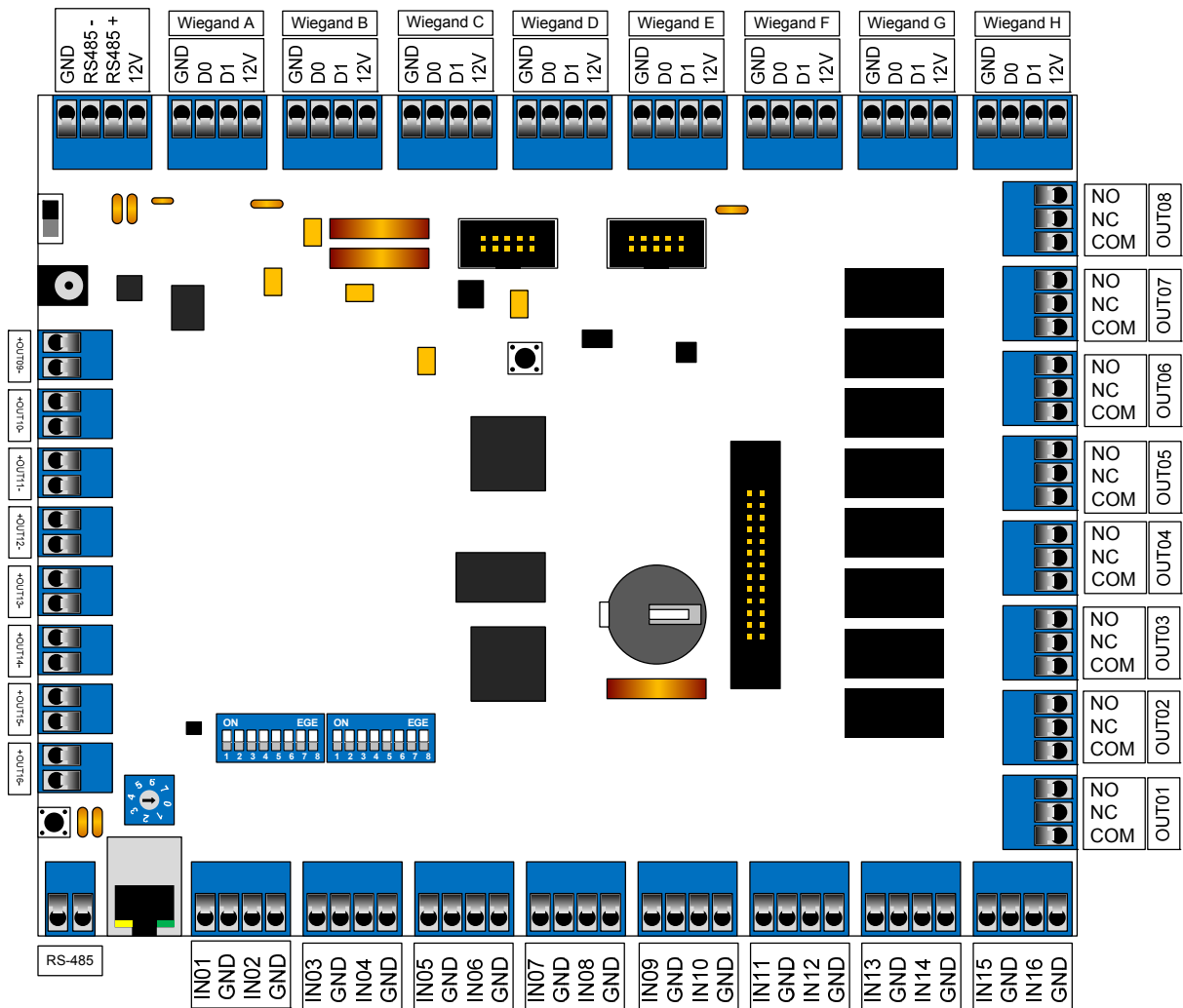
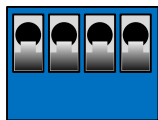


Figure 4-1

4.2 Installation

When you wire any devices to GV-AS400 circuit board, please note:

- Carefully remove the blue terminal block and note the block's terminal markings on the circuit board. After wiring the necessary connections to the terminal block, reinsert it onto the circuit board.



4.2.1 Connecting Card Readers

GV-AS400 supports two types of card reader interfaces: **Wiegand** and **RS-485**. The Wiegand interface is compatible with any Wiegand card readers of 26 to 64 bits. The RS-485 interface is only compatible with **GV-Readers** and **GV-GF1901/1902** reader. The card readers of the two interfaces can be used together to work with GV-AS400.

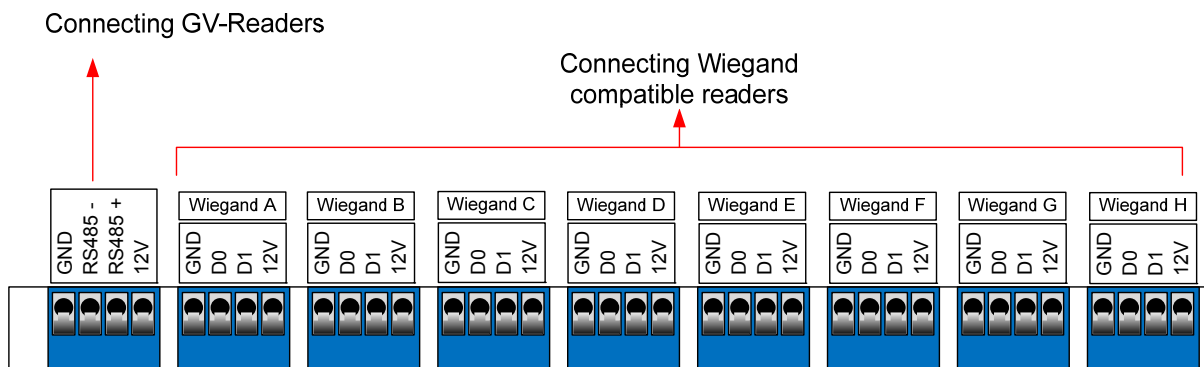


Figure 4-2

4.2.1.A Wiegand Readers

GV-AS400 provides 8 Wiegand inputs (Wiegand A to Wiegand H) for connection of Wiegand readers ranging from 26 to 64 bits. The table below shows the pin assignments of Wiegand inputs on GV-AS400. Please consult the documentation of your Wiegand reader for wiring.

Pin	Function
GND	GND of the Power Supply
D0	Wiegand Data 0
D1	Wiegand Data 1
12V	12V Power Supply

If your Wiegand reader is equipped with LED or beeper that can be controlled externally, you can connect the control wires to **outputs 9 ~ 16** on GV-AS400. For the connection, see *4.2.3.B Outputs 9 ~ 16*.

4.2.1.B RS-485 Readers

For long-distance connection and non-Wiegand card readers, you can choose the RS-485 connection. Up to **8 units of GV-Readers** and **GV-GF1901/1902** readers can be connected together with a single RS-485 cable to the RS-485 interface on GV-AS400.

When multiple readers are connected together, an extra power supply to each unit is required. Use **12V** power output and **GND** on the Wiegand connectors to power on each unit.

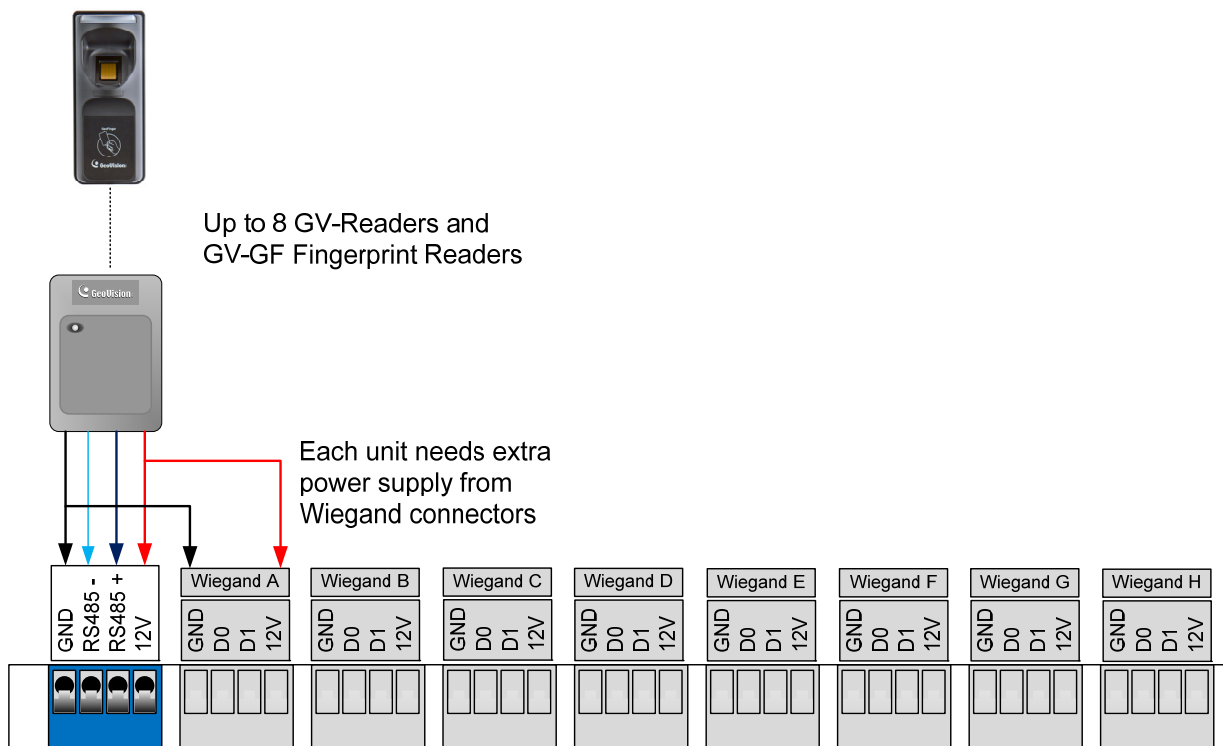


Figure 4-3

To connect GV-Readers:

Refer to the following pin assignment for GV-Reader wiring.

Electric Wires on GV-Reader	RS-485 on GV-AS400
Red	12V
Blue	RS-485 +
Light Blue	RS-485 -
Black	GND

4.2.2 Connecting Input Devices

GV-AS400 provides up to 16 inputs. All inputs are **dry contact** that can be configured as normally open (NO) or normally closed (NC).

Each input has an LED indicator that turns ON to provide a visual indication that the input device is activated.

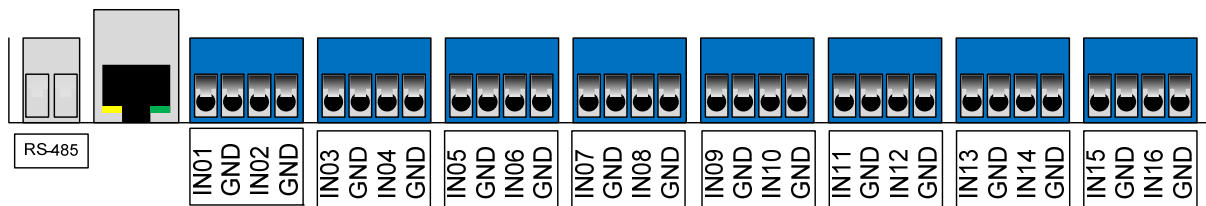


Figure 4-4

Use the switch, as shown below, to change the input state for NO or NC. When the switch is pushed up, the state is NC. When the switch is pushed down, the state is NO. **SW2** is used for inputs 1 to 8 and **SW3** is for inputs 9 to 16.

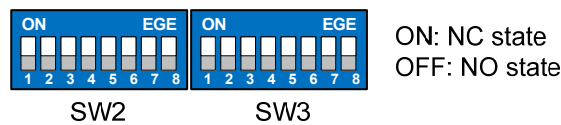


Figure 4-5

Besides having the on-board capability of monitoring 16 inputs, GV-AS400 can be expanded to 64 inputs if 4 units of GV-IO Boxes (16 Ports) are connected. For details, see 4.2.6 *Connecting External I/O Box*.

Note: GV-AS400 does not support the input devices of wet contact.

4.2.3 Connecting Output Devices

GV-AS400 provides up to 16 outputs. They are divided into two groups, outputs 1 ~ 8 and outputs 9 ~ 16, located at opposite sides of GV-AS400. The two groups of outputs have different absolute maximum ratings. If the current of the output device exceeds 130mA, you will need to connect the device and an external power supply to outputs 1-8. If the current of the output device is under 130mA, you can use outputs 9-16, which only accept the 12V DC internal power supply from GV-AS400 circuit board. In a real application, you may connect door locks to outputs 1-8, and connect LED and Beeper wires of the card reader, powered by GV-AS400, to outputs 9-16.

Each output has an LED indicator that turns ON to provide a visual indication that the output device is activated.

Besides having the on-board capability of monitoring 16 outputs, GV-AS400 can be expanded to 64 outputs if 4 units of GV-IO Boxes (16 Ports) are connected. For details, see *4.2.6 Connecting External I/O Box*.

4.2.3.A Outputs 1 ~ 8

Check if your output device meets the following absolute maximum ratings before connecting it to any of outputs 1 ~ 8.

Breakdown Voltage	277V AC, 30V DC
Continuous Load Current	5A (NO), 3A (NC)
<p>Note: Absolute Maximum Ratings are those values beyond which damage to GV-AS400 circuit board may occur. Continuous operation of GV-AS400 at the absolute rating level may affect GV-AS400 reliability.</p>	

To connect an output device:

Connect the (+) point on the output device to COM on GV-AS400, connect the two (-) points of the output device and the external power supply together, and connect the (+) point on the external power supply to the NO or NC of GV-AS400 based on the state of the output device.

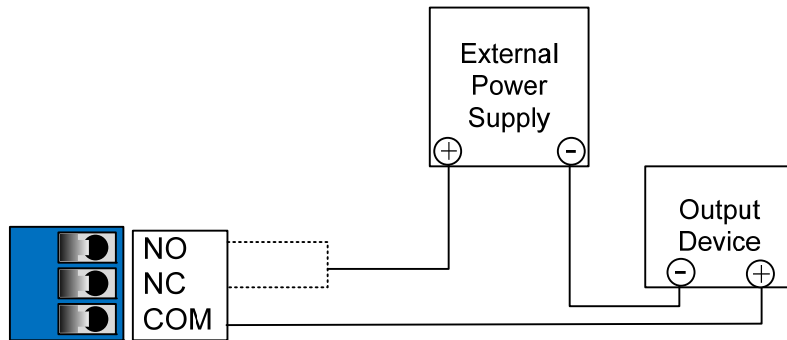


Figure 4-6

4.2.3.B Outputs 9 ~ 16

Outputs 9 ~ 16 only accept the power from GV-AS400 circuit board. Check if your output device meets the following absolute maximum ratings before connecting it to any of outputs 9 ~ 16.

Breakdown Voltage	350V DC / AC
Continuous Load Current	130mA
Power Dissipation	500mW
<p>Note: Absolute Maximum Ratings are those values beyond which damage to GV-AS400 circuit board may occur. Continuous operation of GV-AS400 at the absolute rating level may affect GV-AS400 reliability.</p>	

WARNING: Do not connect any external power supply to outputs 9 ~ 16; otherwise damage to GV-AS400 circuit board may occur.

If your card readers are equipped with LED or beeper that can be controlled externally, connect the control wires to outputs 9 ~ 16. The following figure and table shows how to connect the beeper wire of GV-Reader to GV-AS400.

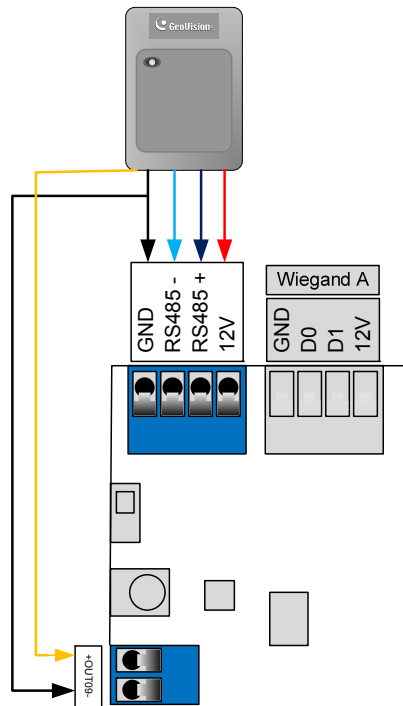


Figure 4-7

Electric Wires on GV-Reader	Output on GV-AS400
Yellow (Beeper)	Output +
Black (GND)	Output -

The **SW1** on GV-Reader must be turned OFF so that the beeper can be controlled by GV-AS400.

4.2.4 Connecting the PC

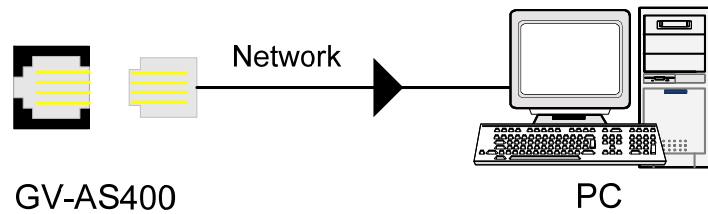


Figure 4-8

The connected computer is used to program GV-AS400. Also, the computer running GV-ASManager software can be used to monitor the access information and alarm messages from GV-AS400. If the computer is offline, GV-AS400 stores this information on the database for later transmission.

4.2.5 Connecting the Power

The supplied AC adaptor can be connected to any power source supplying from 100 to 250V. Using the supplied power cord and adaptor, connect GV-AS400 to the power. The power LED on GV-AS400 should glow.

Note: Power should only be applied to the unit when all connections are completed and tested.

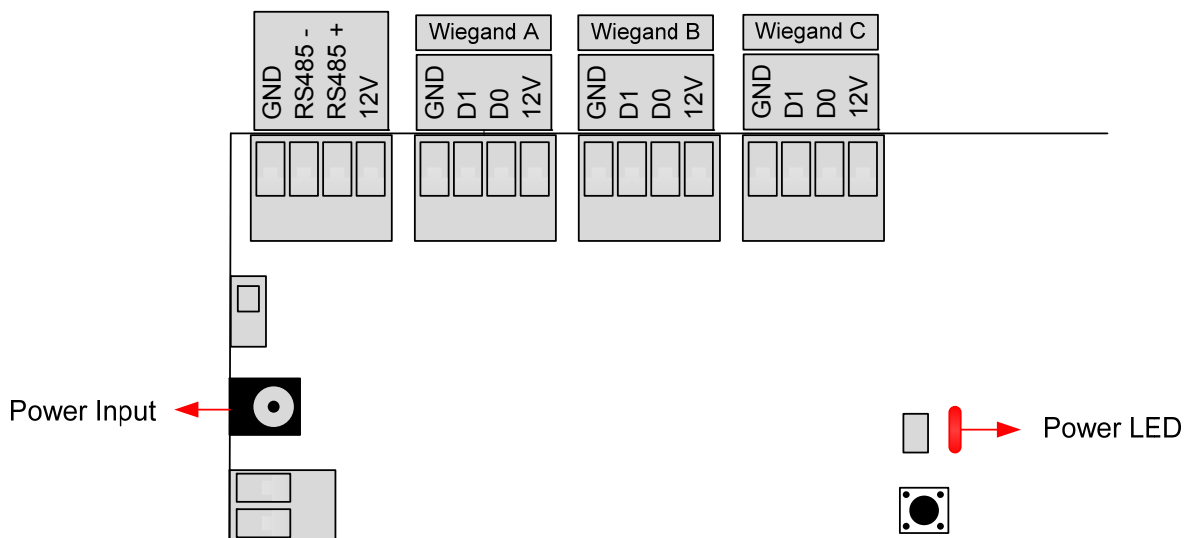


Figure 4-9

4.2.6 Connecting the External I/O Box

To enhance the controller's I/O capability, up to 4 units of GV-IO Boxes can be optionally connected to GV-AS400. The choices of the GV-IO Boxes include:

- **GV-IO Box 4 Ports:** 4 ports of inputs and outputs respectively
- **GV-IO Box 8 Ports:** 8 ports of inputs and outputs respectively
- **GV-IO Box 16 Ports:** 16 ports of inputs and outputs respectively

Connect GV-IO Box to the RS-485 connectors as illustrated below. Multiple GV-IO Boxes of different port types can be connected on a single RS-485 cable to work with GV-AS400.

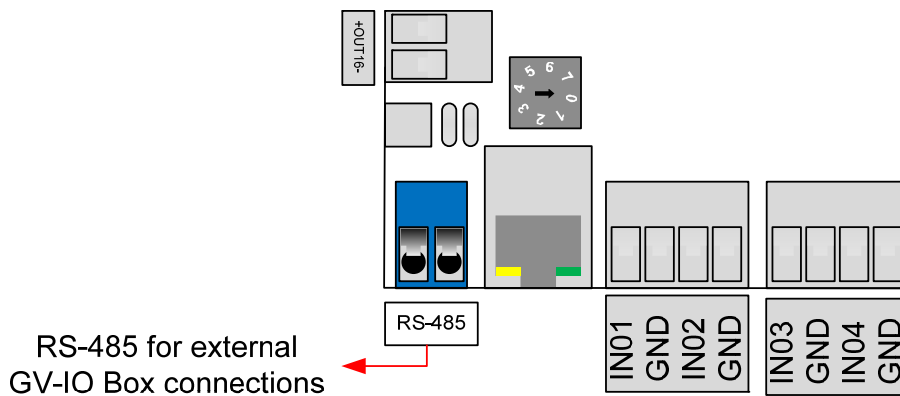
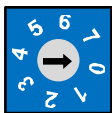


Figure 4-10

The RS-485 cable has the limit in communication distance. As the distance becomes greater, the communication signal may become weak. In this case, decrease the resistance value by using the switch as shown below.



Switch No.	Resistance Value	Switch No.	Resistance Value
0	∞	4	30 Ω
1	120 Ω	5	24 Ω
2	60 Ω	6	20 Ω
3	40 Ω	7	17.14 Ω

4.2.7 Fitting the Battery

GV-AS400 includes a 3V lithium battery, providing power to GV-AS400 settings and real-time clock circuitry. When the power in the battery becomes low, the message “Low Battery” will appear on GV-ASKeypad. In this case, please replace the battery. All settings on GV-AS400 will disappear about 10 hours after the battery stops working, and GV-AS400 will be restored to default settings.

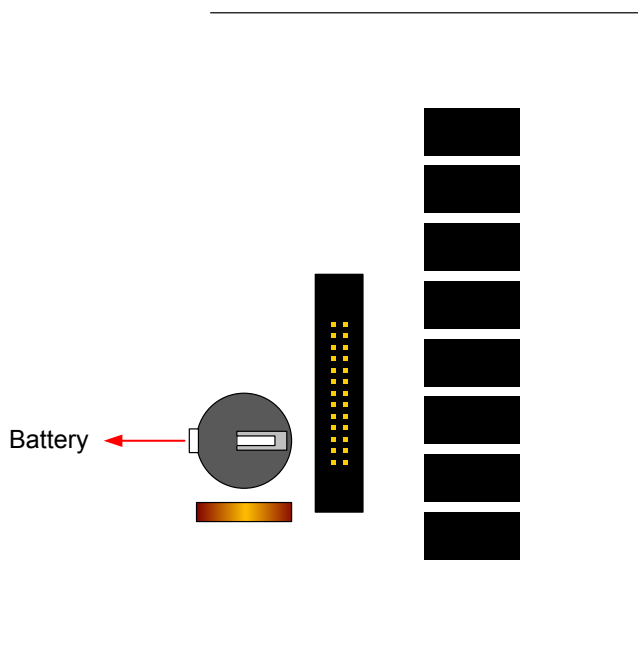


Figure 4-11

Note:

1. Make sure the plastic insulation film under the battery is removed.
 2. It is recommended to replace the battery annually.
-

4.3 Other Settings

4.3.1 Network Configuration Switch

When the **Network Configuration** switch is set to the left position, you can modify **Advanced Settings** of GV-AS400 through its Web interfaces. When the switch is set to the right position, Advanced Settings are not accessible. For details on Advanced Settings, see *4.4 Web-Based Configurations*.

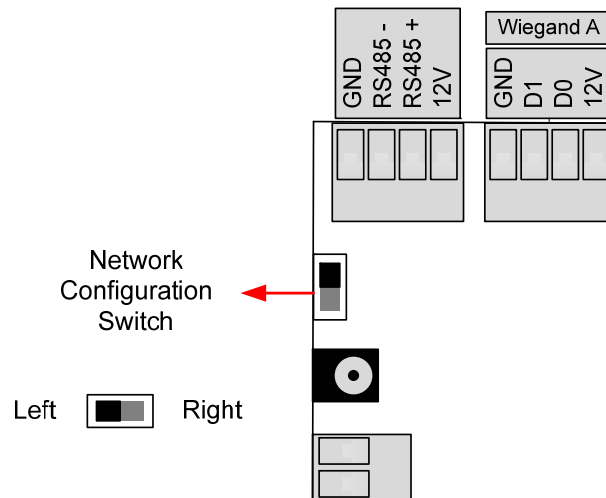


Figure 4-12

4.3.2 Resetting the GV-AS400

1. To reset GV-AS400, press the **Reset** button in the upper center of GV-AS400 circuit board for three seconds.
2. To reset the Ethernet module of GV-AS400, press the **EM Reset** button located on the Ethernet module for three seconds.

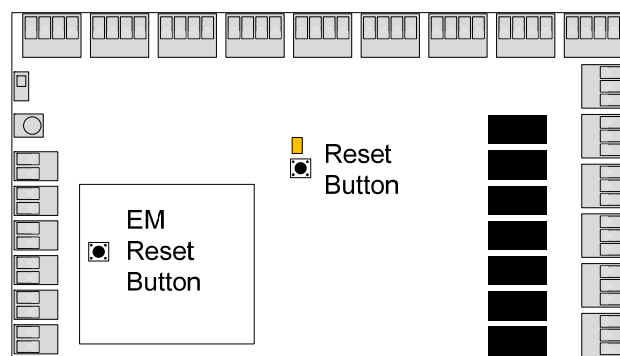


Figure 4-13

4.3.3 Restoring Factory Defaults

You can choose to restore only **Basic Settings** or **All Settings** to factory default values. For the contents of Basic Setting, see *4.4 Web-Based Configurations*.

To restore Basic Settings to factory defaults:

Press the **Default** button, between the output 16 and RS-485 connectors, for 3 seconds. After this it may take up to 3 minutes to restore Basic Settings of GV-AS400 to default factory values.

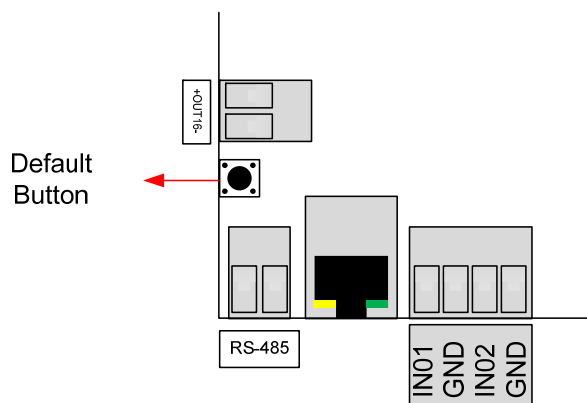


Figure 4-14

To restore All Settings to factory defaults:

1. Remove the jumper cap from **JP6** to **JP7**.
2. Press the **Reset** button in the upper center of GV-AS400 circuit board. All input LEDs should light on.
3. Remove the jumper cap from **JP7** back to **JP6**.

After above steps, it may take up to 3 minutes to restore all settings to factory default values. If GV-ASKeypad is connected, the message “Memory Test on Keypad” will appear indicating the default loading is in progress.

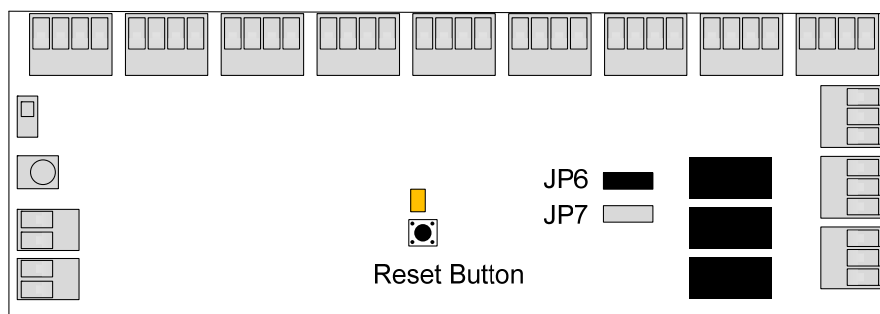


Figure 4-15

4.3.4 Upgrading Firmware

To upgrade the firmware of GV-AS400, you need to either prepare a Jumper or use GV-ASKeypad.

1. Prepare a **Jumper** and plug it into **JP7**, or plug GV-ASKeypad to GV-AS400.

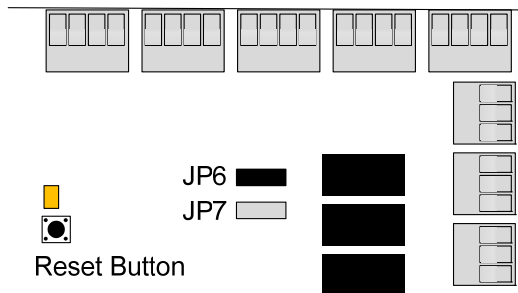


Figure 4-16

2. On the Web interface of GV-AS400 Controller, click **Firmware Update** from the left menu. This dialog box appears.

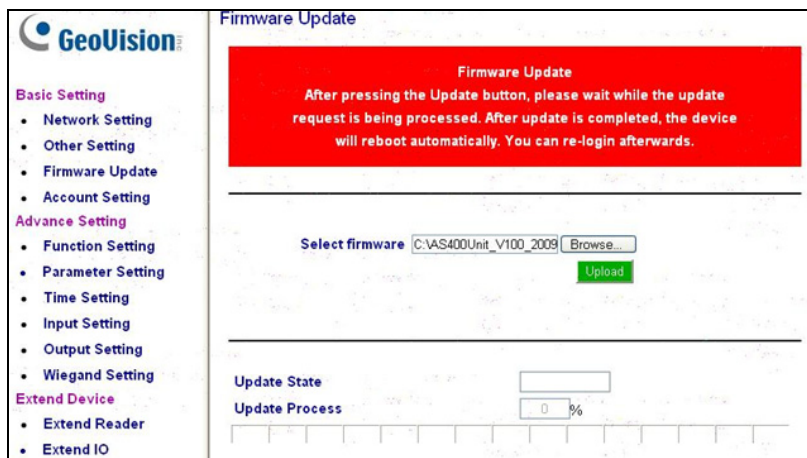


Figure 4-17

3. Click the **Browse** button to open the firmware file (*.bin).
4. Click the **Upload** button. This upgrade procedure may take 60 seconds to complete.

5. When the Upgrade is complete, the following dialog box appears.



Figure 4-18

6. Click **OK**. The GV-AS400 Controller will restart automatically.

Note: It is required to restart GV-AS400 Controller after firmware upgrade. Without restarting, the firmware upgrade is not complete.

4.4 Web-Based Configurations

You can easily configure GV-AS400 through its Web interface. Three categories of settings are involved in the Web based configurations: **Basic Setting**, **Advanced Setting** and **Extended Device**. They are described later in this section.

4.4.1 Installing on the Network

GV-AS400 must be assigned an IP address to make it accessible on the network.

1. Connect the network cable to the **Ethernet** port on GV-AS400.
2. Use a computer on the same LAN with GV-AS400 to assign an IP address.
 - The default address of GV-AS400 is <https://192.168.0.100>
 - The default Username and Password for login are **admin**

Note the computer used to set the IP address must be at the same network or subnet sequence assigned to GV-AS400.

3. GV-AS400 is able to support two network environments: Fixed IP and DHCP. Based on your network, see 5.1.5 *Installing GV-AS100/GV-AS110/GV-AS120 on a Network* for setup.

4.4.2 Basic Setting

The Basic Setting consists of four types of settings:

Category	Setting	Description
Basic Setting	Network Setting	There are different methods to install GV-AS400 on the network. See 5.1.5.A <i>Installing GV-AS100/GV-AS110/GV-AS120 on a Network</i> .
	Other Setting	See 5.1.5.B <i>System Setup</i> .
	Firmware Upgrade	See 5.1.5.C <i>Upgrading Firmware</i> .
	Account Setting	See 5.1.5.D <i>Changing Login ID and Password</i> .

4.4.3 Advanced Settings

You can execute and edit door/Wiegand operations and settings, turn on Alarms, set the device time and edit the input/output functions.

The changes in some of the Advanced Settings page will effect the options available on other pages. Below is a diagram drawing the relationships between each Advanced Settings page.

The Relationship Diagram between each Advanced Setting Page

Advance Setting

- **Function Setting**
- **Parameter Setting**
- **Time Setting**
- **Input Setting**
- **Output Setting**
- **Wiegand Setting**

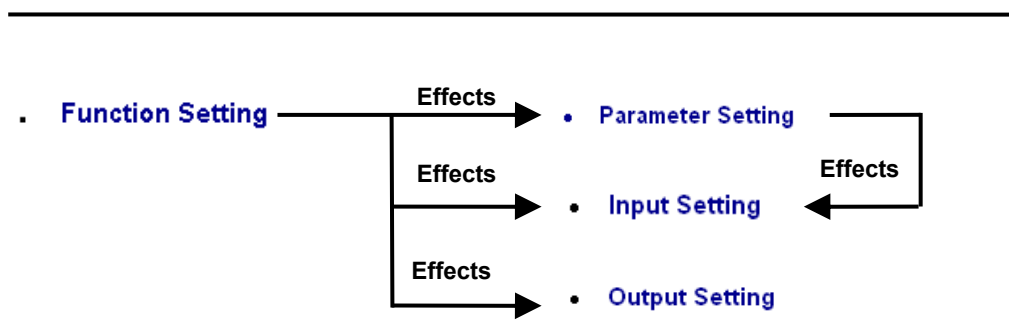


Figure 4-19

4.4.3.A Function Setting

In the left menu, click **Function Setting**. This **AS400 Function Configuration** page appears.



Figure 4-20

[ID]

Enter the ID number for GV-AS400. This ID is used by GV-ASManager to differentiate among multiple units of GV-AS400. ID number can only be between 1 and 255.

[Door/Gate #]

Select the function type and authentication mode for the use of Door/Gate A, B, C and D.

- **Function:** Select the function for the reader connected to Door/Gate A.
 - ⊙ **Door Control:** The reader is installed in a general door for access control.
 - ⊙ **Parking Control:** The reader is installed in a parking place for access control.
 - ⊙ **Elevator Control:** The reader is installed in an elevator for access control.

- **Authentication Mode:** Select the authentication mode for the Door/Gate A, B, C and D.
 - ⊙ **Local Unlock Mode:** Remains open. The held-open state cannot be cleared through GV-ASManager.
 - ⊙ **Local Lock Mode:** Remains locked. The locked state cannot be cleared through GV-ASManager.
 - ⊙ **Fixed Card Mode:** Grants access after the card is presented and ignores the authentication schedule of GV-ASManager.
 - ⊙ **Fixed Card + PIN Mode:** Grants access after the user presents the card and enters the card's PIN code, and ignores the authentication schedule of GV-ASManager.
 - ⊙ **Fixed Card/Common mode:** Grants access after the user presents the card or enters the door's password, and ignores the authentication schedule of GV-ASManager.
 - ⊙ **Authentication Schedule Mode:** Follows the authentication schedule set on GV-ASManager.

[Anti-Passback]

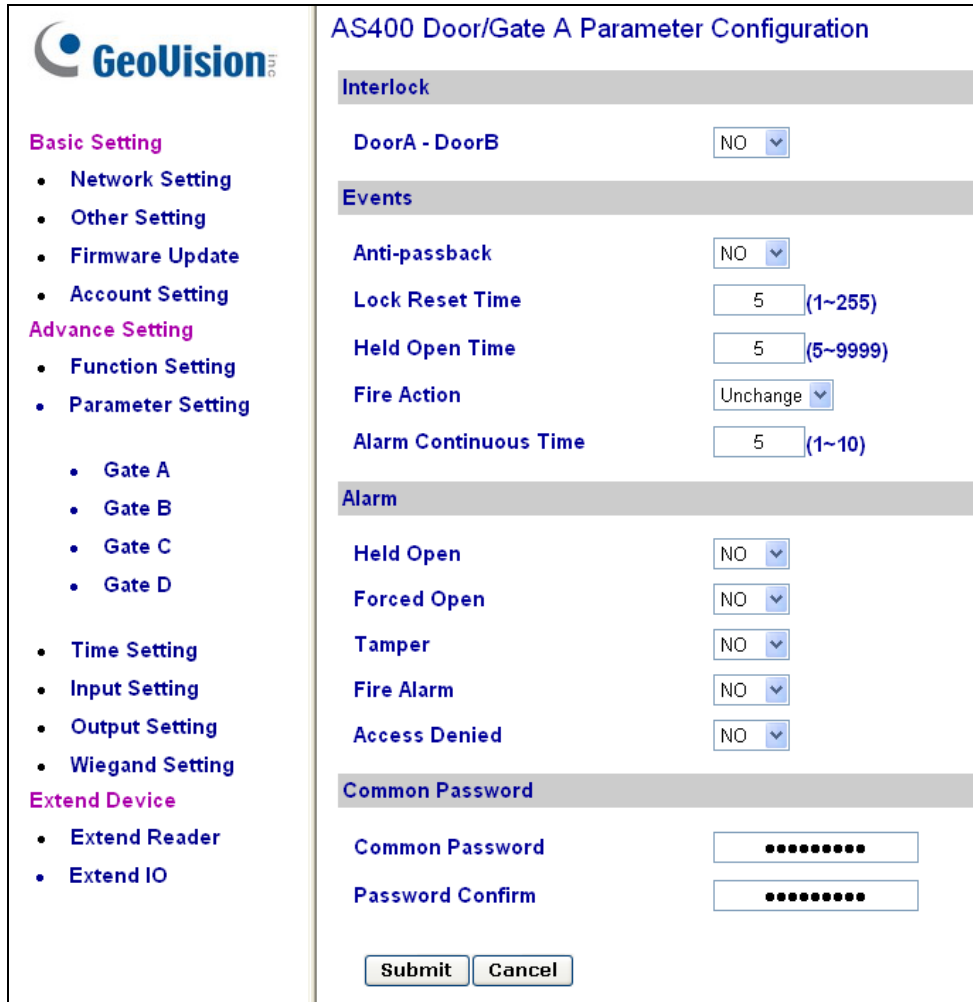
This option lets you set the Anti-Passback function across multiple door controllers. The Anti-Passback means that a card used on an entry door cannot access the same entry door again unless it has been used on a corresponding exit door. For details on setup, see *Chapter 6 Anti-Passback on GV-ASManager User's Manual*.

- **Enable/Disable:** Enables or disables the Anti-Passback function.
- **Info IP:** Enter the IP address of the next corresponding GV-AS400.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

4.4.3.B Parameter Setting

In the left menu, click **Parameter Setting**. This **AS400 Parameter Configuration** page appears. The contents of Parameter Setting change based on your settings for **Door/Gate #** in the **Function Setting** page (Figure 4-20).



AS400 Door/Gate A Parameter Configuration	
Interlock	
DoorA - DoorB	NO
Events	
Anti-passback	NO
Lock Reset Time	5 (1~255)
Held Open Time	5 (5~9999)
Fire Action	Unchange
Alarm Continuous Time	5 (1~10)
Alarm	
Held Open	NO
Forced Open	NO
Tamper	NO
Fire Alarm	NO
Access Denied	NO
Common Password	
Common Password	••••••••
Password Confirm	••••••••
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>	

Figure 4-21

IMPORTANT: Once connecting to GV-AS400, GV-ASManager will load its parameters to GV-AS400. That means some of the Parameter Settings you have configured here may be rewritten by GV-ASManager later.

[Interlock] When the option is enabled, the two mentioned doors will be interlocked, allowing only one door to be opened at a time.

[Events]

Set the parameters for the events.

- When **Door Control** is selected in the **Function Setting** page (Figure 4-20), these options become available:

Option	Description
Anti-Passback	Enables or disables the Anti-Passback function.
Lock Reset Time	Sets the time (1 to 255 sec.) that a door remains open after which the door will automatically be locked.
Held Open Time	Sets the time (5 to 9999 sec.) that a door can be held open before an alarm is generated.
Fire Action	Locks or unlocks the door when a fire condition occurs. Otherwise, remains the door's current state by selecting <i>Unchanged</i> .
Alarm Continuous Time	Sets the time (1 to 10 sec.) that the alarm will continuously go off before it ends.

- When **Parking Control** is selected in the **Function Setting** page (Figure 4-20), these options become available:

Option	Description
Anti-Passback	See the same option above.
Relay On Time	Sets the time (1 to 255 sec.) that a gate remains open after which the gate will automatically be closed.
Held Open Time	See the same option above.
Fire Action	
Alarm Continuous Time	

- When **Elevator Control** is selected in the **Function Setting** page (Figure 4-20), these options become available:

Option	Description
Relay on Time	See the same option above.
Fire Action	
Alarm Continuous Time	See the same option above.

[Alarm]

Select **Yes** or **No** to enable or disable the alarm function. If you have defined the alarm conditions in the **Input Setting** page (Figure 4-24), remember to activate the corresponding alarms here; otherwise, even though the alarm conditions are met, the expected alarm will not be triggered. The default settings for all the alarms are set to **NO**.

- When **Door Control** is selected in the **Function Setting** page (Figure 4-20), these options become available:

Option	Description
Held Open	This alarm activates whenever the door is held open over the set period of time.
Forced Open	This alarm activates whenever the door is opened by force.
Fire Alarm	This alarm activates whenever fire is detected.
Access Denied	This alarm activates whenever entry is denied due to using the wrong card or entering the wrong password.
Tamper	This alarm activates whenever vandalism occurs, e.g. the opening of controller's cabinet.

- When **Parking Control** is selected in the **Function Setting** page (Figure 4-20), these options become available:

Option	Description
Held Open	See the same option above.
Tamper	
Fire Alarm	
Access Denied	

- When **Elevator Control** is selected in the **Function Setting** page (Figure 4-20), these options become available:

Option	Description
Tamper	See the same option above.
Fire Alarm	
Access Denied	

[Common Password]

When **Fixed Card/Common Mode** is selected as **Authentication Mode** in the **Function Setting** page (Figure 4-20), you can gain access by using a card or entering this Common Password (door's password).

Common Password	
Common Password	<input type="password"/>
Password Confirm	<input type="password"/>

Figure 4-22

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

4.4.3.C Time Setting

In the left menu, click **Time Setting**. This **Time Configuration** page appears.

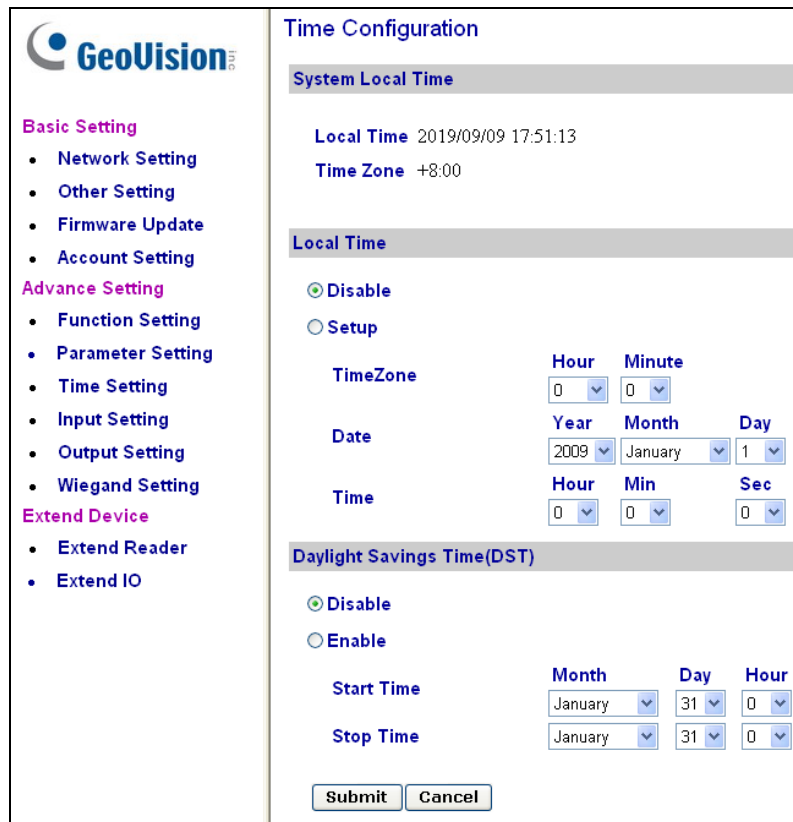


Figure 4-23

[System Local Time]

- **Local Time:** Displays the current date and time of GV-AS400.
- **Time Zone:** Displays the current time zone of GV-AS400.

[Local Time]

- **Disable:** Disable the manual configuration of time and date.
- **Setup:** Enable the manual configuration of **Time Zone**, **Date** and **Time** for GV-AS400.

[Daylight Savings Time (DST)]

- **Disable:** Disable the manual configuration of DST.
- **Time Zone:** Enable the manual configuration of DST by setting the **Start Time** and **Stop Time** for the DST period.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

4.4.3.D Input Function

In the left menu, click **Input Function**. This **AS400 Input Configuration** page appears.

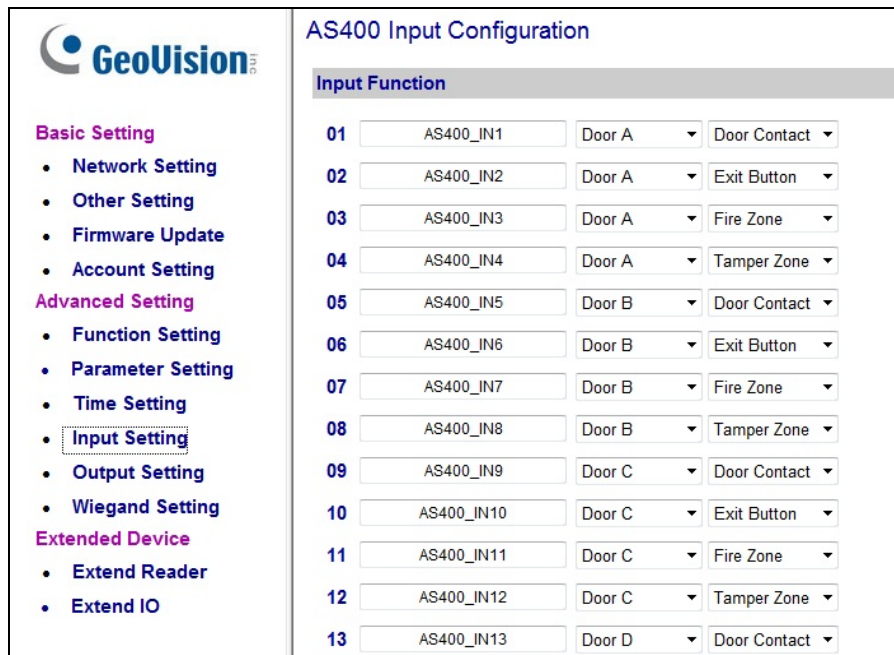


Figure 4-24

Here you can name and define each sensor input that is connected to GV-AS400. Select the most fitting **Input Type** (No. 1, Figure 4-25) and **Input Function** (No. 2, Figure 4-25) to describe the sensor input. Through the sensor input, an alarm event can be detected and the event may also trigger the alarm.

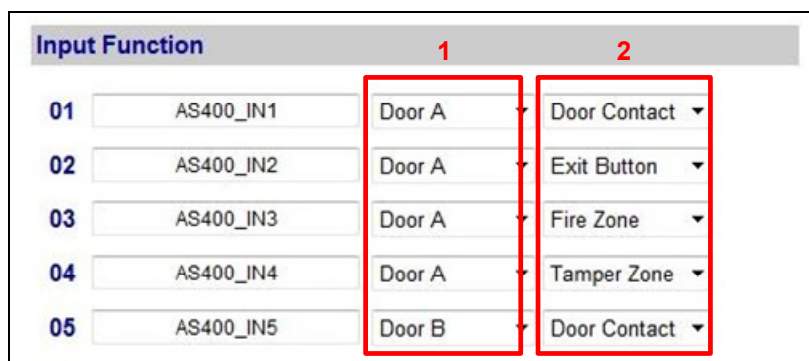


Figure 4-25

- Input Type:** Configure the input type. Input Type defines the type of sensor that is connected to the input of GV-AS400. Options available for the input type change based on your settings of **Door/Gate #** in the **Function Setting** page (Figure 4-20).
- Input Function:** Configure the input function. Options available for the input function change based on the settings of **Input Type** above.

Input Type	Input Function	Description
Normal Input	Enable Latch Disable Latch	The Normal Input is used for a normal detection mode in which the input is set to trigger an output. Instead of constant output alarm in N/O and N/C, the Enable Latch option provides a momentary alarm when triggered.
Door #	Fire Zone Tamper Zone Exit Button Door Contact	Depending on the type of sensor and the location where it is installed, select the best Input Function name to fit the sensor description. When the sensor is activated, an alarm event may occur and it can also trigger alarms. For the type of alarm, see [Alarm], <i>3.4.3.B Parameter Setting</i> . For example, when the Door Contact sensor detects unauthorized access, a “Force Open” type of event occurs and the event may trigger the “Force Open” alarm.
Gate #	Fire Zone Tamper Zone Exit Button Car Detection	See the “Door #” Input Type above. For example, when the Car Detection sensor detects any car driving by, a “Park Entry” or “Park Exit” type of event occurs and the parking gate will respond the event accordingly.
Relay #	Fire Zone Tamper Zone	See the “Door #” Input Type above. For example, the Tamper Zone sensor is installed on GV-AS400. So whenever there is any attempt to open the GV-AS400’s cabinet, the “Tamper” type of event occurs and the event may trigger the “Tamper” alarm.

Note:

1. For alarm outputs, the corresponding alarms must be enabled (YES) in the **Parameter Setting** page (Figure 4-21). If alarms are set to be disabled (NO), then the alarm function here will not work when triggered.
 2. After upgrading GV-AS400 from previous firmware versions to version 1.03, you must first load default to be able to name the sensor inputs.
-

4.4.3.E Output Function

In the left menu, click **Output Function**. This **AS400 Output Configuration** page appears.

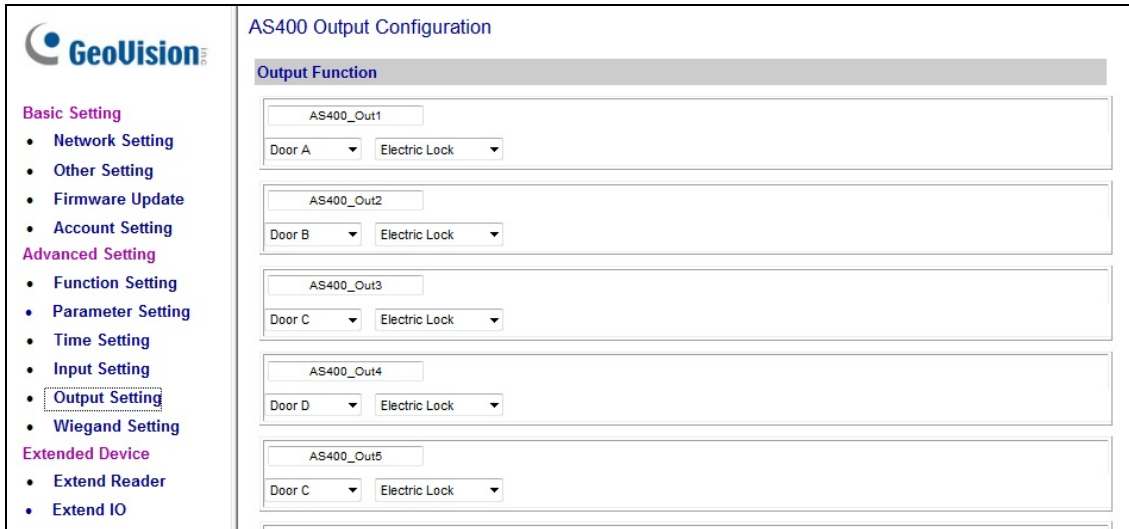


Figure 4-26

Here you can name and define each output device that is connected to GV-AS400, such as locking devices and Exit Button. Select from the drop-down list to configure the **Output Type** (No. 1, Figure 4-27). Depending on the chosen **Output Type**, either **Output Function** (No. 2, Figure 4-27) or **Output Conditions** (No. 3, Figure 4-27) will become available.

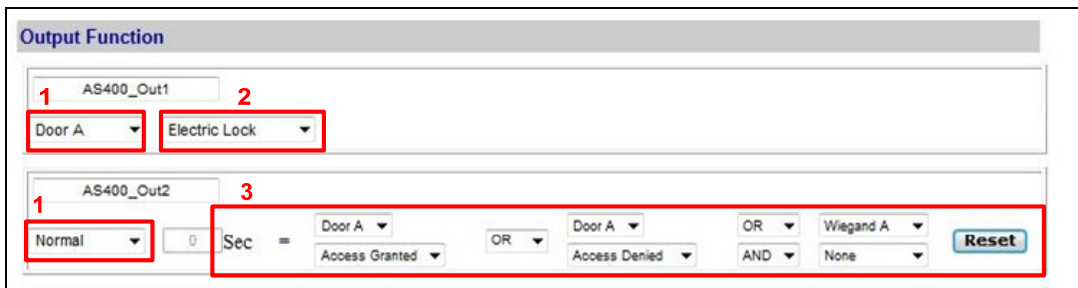


Figure 4-27

Note: After upgrading GV-AS400 from previous firmware versions to version 1.03, you must first load default to be able to name the sensor outputs.

4.4.3.E.a Output Function Settings

When **Output Type** (No. 1, Figure 4-27) is set to be **Door #**, **Gate #** or **Relay #**, the options similar to the figure below become available.

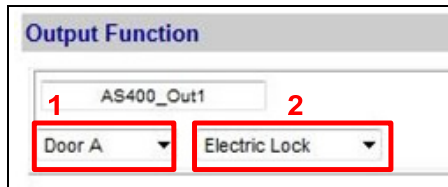


Figure 4-28

Below is the explanation based on the numbers marked on the above figure.

1. **Output Type:** Configure the output type. Options available for the output type change based on your settings of **Door /Gate #** in the **Function Setting** page (Figure 4-20).
2. **Output Function:** Configure the output function. Options available for the output function change based on your setting of **Output Type** above.

- When **Door #** is selected as **Output Type**, these **Output Functions** become available:

Output #	Output Type	Output Function	Description
Output 01 ~ 08	Door #	Electric Lock	Output is triggered when the card is presented to open the locking device.
		Event Alarm	Output is triggered when the defined alarm events occur.
		Security Card	Output is triggered when the security card is presented.
		Entry Card	Output is triggered when the card is presented to enter the door.
		Exit Card	Output is triggered when the card is presented to exit the door.
		Door Open Alarm	Output is triggered when the door is open.
Output 09 ~ 16	Door #	Beeper	These Output Functions are only available for Output 9~ 16 because these outputs on GV-AS400 cannot accept external power supply.
		Green LED	
		Red LED	

- When **Gate #** is selected as **Output Type**, these **Output Functions** become available:

Output #	Output Type	Output Function	Description
Output 01 ~ 08	Gate #	Electric Lock	See the same function above.
		Event Alarm	
		Security Card	
		Entry Card	Output is triggered when the card is presented to enter the parking gate.
		Exit Card	Output is triggered when the card is presented to exit the parking gate.
		Gate Open Alarm	Output is triggered when the parking gate is open.
Output 09 ~ 16	Gate #	Beeper	See the same function above.
		Green LED	
		Red LED	

- When **Relay** is selected as **Output Type**, these **Output Functions** become available:

Output #	Output Type	Output Function	Description
Output 01 ~ 08	Relay #	Electric Lock	See the same function above.
		Event Alarm	
		Security Card	
		Entry Card	Output is triggered when the card is presented to enter the elevator.
		Exit Card	Output is triggered when the card is presented to exit the elevator.
Output 09 ~ 16	Relay #	Beeper	See the same function above.
		Green LED	
		Red LED	

4.4.3.E.b Output Condition Settings

When **Output Type** (No. 1, Figure 4-27) is set to be **Normal**, **Toggle** or **Pulse**, the options similar to the figure below become available.

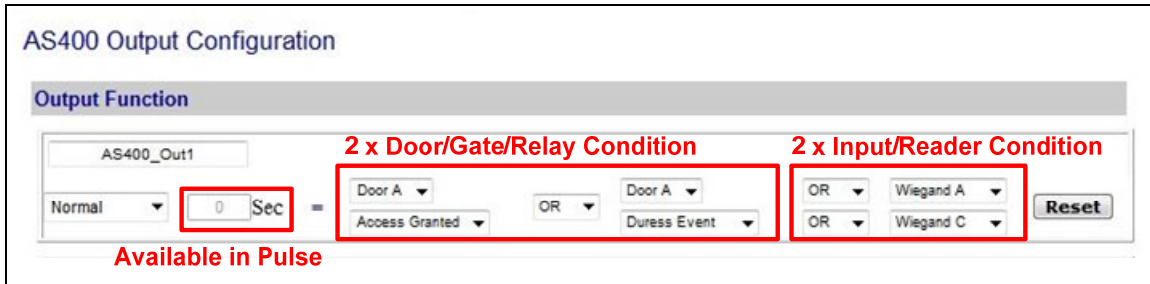


Figure 4-29

There can be a maximum of 4 conditions that can be set up to trigger an output. 2 conditions are Door/Gate/Relay conditions and 2 conditions are Input/Reader conditions. Each condition is related to each other through **AND/OR**. **AND** means that all conditions with **AND** must be triggered before the output is triggered. **OR** means that only 1 of the condition with **OR** is needed to be triggered before the output is triggered. It is also valid to have certain conditions as **AND** and certain conditions as **OR**.

For **Pulse** output type, the output is triggered for the amount of time set in the **Sec** field (seconds).

In the Output Condition settings, these **Output Type** and **Output Condition** become available:

Output Type	Output Condition			
	Door #	Gate #	Relay #	Input/Reader
Normal Toggle Pulse	Access Granted	Access Granted	Access Granted	Select None to disable the condition, or select between Input 1 and Input 8, Wiegand A and Wiegand H, or Reader 00 to Reader 03 to trigger the output.
	Access Denied	Access Denied	Access Denied	
	Fire Alarm	Fire Alarm	Fire Alarm	
	Tamper	Tamper	Tamper	
	Duress Event	Duress Event	Duress Event	
	Held Open	Held Open	/	
	Forced Open	Forced Open		
	Exit Button	Exit Button		
Door Contact	Car Detection			

Click **Reset** button to return the **Normal**, **Toggle** or **Pulse** triggered state to be normal.

Note: The **Reset** button is more commonly used for the **Toggle** output because once triggered, the output will go on forever. A **Reset** button is needed to turn it off.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

4.4.3.F Wiegand Function

In the left menu, click **Wiegand Setting**. This **AS400 Wiegand Configuration** page appears. Use the drop-down list to select the location where the Wiegand reader is installed.

AS400 Wiegand Configuration	
Wiegand Function	
Wiegand A	Door/Gate A Entry
Wiegand B	Door/Gate A Exit
Wiegand C	Door/Gate B Entry
Wiegand D	Door/Gate B Exit
Wiegand E	Door/Gate C Entry
Wiegand F	Door/Gate C Exit
Wiegand G	Door/Gate D Entry
Wiegand H	Door/Gate D Exit

Submit Cancel

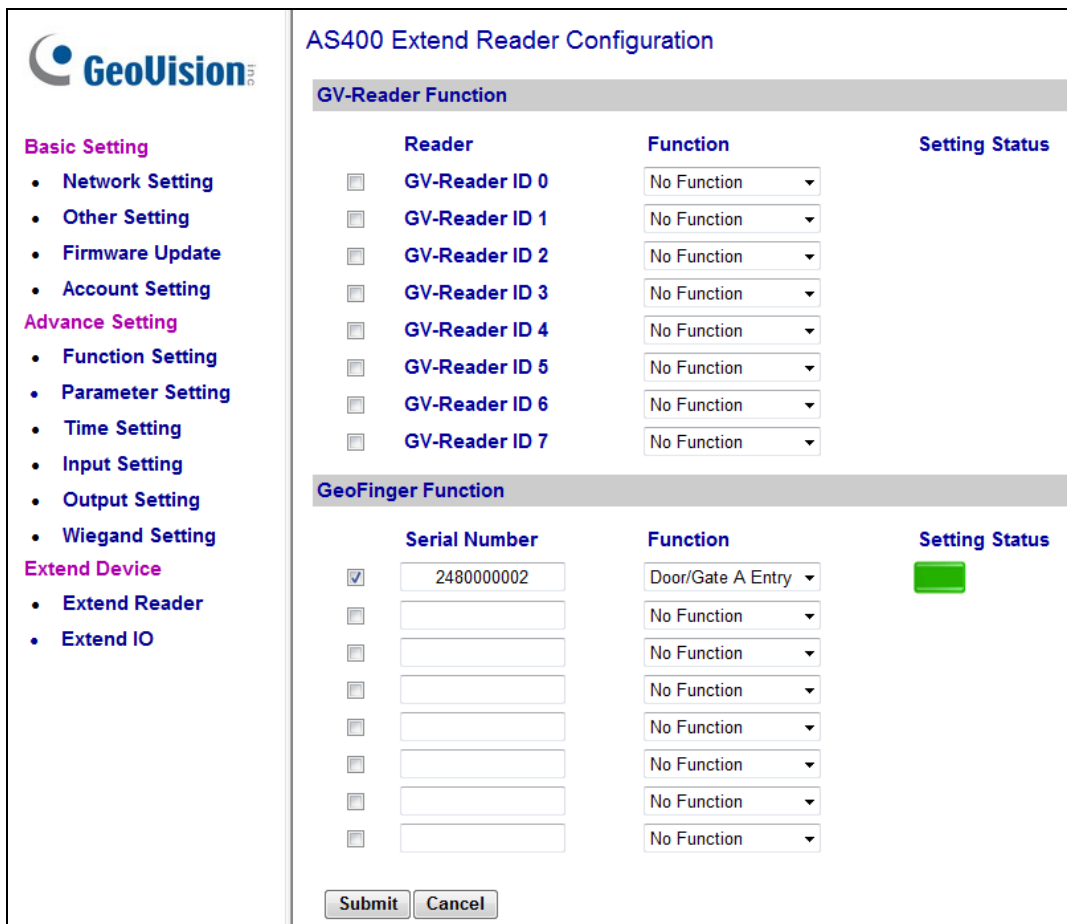
Figure 4-30

4.4.4 Extended Device

You can define GV-Reader, GV-GF Fingerprint Reader and GV-I/O Box connected to GV-AS400.

4.4.4.A Extended Reader

In the left menu, click **Extended Reader**. This **AS400 Extended Reader Configuration** page appears.



AS400 Extend Reader Configuration			
GV-Reader Function			
Reader	Function	Setting Status	
<input type="checkbox"/> GV-Reader ID 0	No Function		
<input type="checkbox"/> GV-Reader ID 1	No Function		
<input type="checkbox"/> GV-Reader ID 2	No Function		
<input type="checkbox"/> GV-Reader ID 3	No Function		
<input type="checkbox"/> GV-Reader ID 4	No Function		
<input type="checkbox"/> GV-Reader ID 5	No Function		
<input type="checkbox"/> GV-Reader ID 6	No Function		
<input type="checkbox"/> GV-Reader ID 7	No Function		
GeoFinger Function			
Serial Number	Function	Setting Status	
<input checked="" type="checkbox"/> 2480000002	Door/Gate A Entry	ON	
<input type="checkbox"/>	No Function		
<input type="checkbox"/>	No Function		
<input type="checkbox"/>	No Function		
<input type="checkbox"/>	No Function		
<input type="checkbox"/>	No Function		
<input type="checkbox"/>	No Function		
<input type="checkbox"/>	No Function		
<input type="checkbox"/>	No Function		
<input type="button" value="Submit"/> <input type="button" value="Cancel"/>			

Figure 4-31

[GV-Reader Function] Define each GV-Reader connected to GV-AS400. If you are using a GV-RK1352 Reader, type the **serial number** found on the back of the reader. Leave the field blank if you are using other types of readers. Next, use the drop-down list to select the function that the GV-Reader is used for.

[GeoFinger Function] Define each GV-GF Fingerprint Reader connected to GV-AS400. Type **Serial Number** found on GV-GF Fingerprint Reader, and select the function that the GV-GF Fingerprint Reader is used for. Click **Submit** to detect GV-GF Fingerprint Reader. If any GV-GF Fingerprint Reader is detected, a green mark will appear in the **Setting Status** field.

4.4.4.B Extended I/O

In the left menu, click **Extended I/O**. This **AS400 Extended I/O Configuration** page appears. The page defines the inputs and outputs on the GV-I/O Box which is connected to GV-AS400. The options in this page are the same as those mentioned in Input Setting and Output Setting pages.

AS400 Extend IO 2 Configuration

Input Function

Input	Mode	Latch Enable
01	NO	<input type="checkbox"/>
02	NO	<input type="checkbox"/>
03	NO	<input type="checkbox"/>
04	NO	<input type="checkbox"/>

Output Function

Output	Mode	=	Trigger 1	AND	Trigger 2	AND	Trigger 3	AND	Trigger 4	Reset
01	1)Normal N/O 0 Sec	=	None	AND	None	AND	None	AND	None	Reset
02	1)Normal N/O 0 Sec	=	None	AND	None	AND	None	AND	None	Reset
03	1)Normal N/O 0 Sec	=	None	AND	None	AND	None	AND	None	Reset
04	1)Normal N/O 0 Sec	=	None	AND	None	AND	None	AND	None	Reset

Figure 4-32

4.5 Optional GV-ASKeypad

GV-ASKeypad is an optional device for an administrator to control and manage GV-AS400. An administrator can carry GV-ASKeypad around to access GV-AS400 installed at different locations.

Features:

- 2 Lines x 16 English Characters
- 4 x 4 Keys

4.5.1 Installation

1. Flip both clips of the 26-pin connector on GV-AS400.
2. Using the supplied 26-pin ribbon cable, connect GV-ASKeypad to GV-AS400.

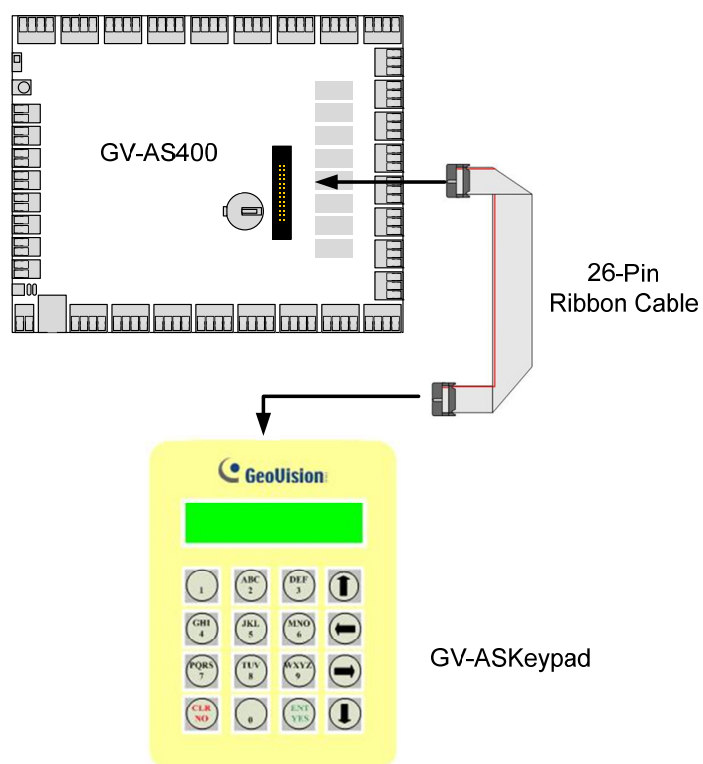



Figure 4-33

Note: GV-ASKeypad is a hot-swapping product. You can plug or unplug the 26-pin ribbon cable while GV-AS400 is operating.

4.5.2 Operation



GV-ASKeypad allows you to configure basic settings and view system information. Press the following codes on the keypad to start operating.

Code	Function
* 738	Sets parameters.
* 347	Displays system information
* 737	Restores the Advanced Settings of GV-AS400 to factory defaults.
Note: Press  to display the symbol *	

4.5.2.A Setting Parameters

Through GV-ASKeypad, you can program GV-AS400.

IMPORTANT: Once connecting to GV-AS400, GV-ASManager will load its parameters to GV-AS400. That means some of configurations you have configured may be overwritten by GV-ASManager later.

1. Press the code * **738**.
2. Press the default PIN code **1234**.
3. To set parameters:
 - Use the Up and Down arrow buttons to select options, or change doors for settings.
 - Press  to start setting, or apply settings.
 - Press  to return to the home page.

Option	Function
Set Local Time	Sets the time and specify the time zone of GV-AS400.
Set AS400 ID	Sets the ID of GV-AS400 from 1 to 255.
Set Auth. Mode	Sets an authentication mode for each door. For types of authentication modes, see <i>4.4 Web-Based Configurations</i> . Press the Right and Left arrow buttons to change modes.

AS400 Function	Sets the function for each door. For types of functions, see 3.4 <i>Web-Based Configurations</i> . Press the Right and Left arrow buttons to change functions.
Master PIN Change	Changes the PIN code of GV-AS400.
Lock Reset Time	Sets the time (1 to 255 sec.) that a door can remain open, after which the door will automatically be locked.
Set Held Open Time	Sets the time (5 to 9999 sec.) that a door can be held open before an alarm is generated.
Set Alarm Event	Enables or disables the alarm settings for each door. For types of alarm events, see 4.4 <i>Web-Based Configurations</i> . Press the Right and Left arrow buttons to select one event type.
Set Fire Action	Locks or unlocks the door/gate when a fire condition occurs.
Set Wiegand Function	Sets the door/gate to be exit or entry. For the same function, see 4.4 <i>Web-Based Configurations</i> .

4.5.2.B Displaying System Information

To display system information, press the code ***347**. To change options or view the status of each door, use the Up and Down arrow buttons.

Option	Function
Door's Auth. Mode	Displays the authentication mode of each door.
Door's Event	Displays what kind of event happened at each door.
Memory's State	Displays the memory usage of GV-AS400. <ul style="list-style-type: none"> ■ Capacity: Displays the total number of events that can be recorded on GV-AS400. The maximum number is 65536. GV-AS400 will overwrite the oldest events when the limit is reached. When GV-AS400 is connected to GV-ASManager, the event data will be uploaded to the server and the buffer of GV-AS400 will be cleared. ■ Stored: Displays the number of events that has been recorded.
ID & IP Address	Displays the ID and IP address of GV-AS400.
Display Version	Displays the firmware version of GV-AS400.

4.6 GV-AS Power Board

GV-AS Power Board is designed for GV-AS400 to provide additional power supply for output devices, such as locking devices and lights. Because GV-AS400 circuit board only supplies 12V power, combining with GV-AS Power Board, GV-AS 400 can directly drive output devices of 24V AC/DC and 10V to 13V DC.

Additionally, GV-AS Power Board supports the battery backup to ensure the normal operations of vital output devices during power failure.

4.6.1 Main Features

- 2 power outputs of 24V AC/DC
- 6 power outputs of 10V to 13V DC
- Support for battery backup
- Support for AC and DC power inputs

4.6.2 Connecting Output Devices

GV-AS Power Board provides two types of power outputs: **24V AC/DC**, **10V to 13V DC**. The figure below illustrates the locations of these power outputs.

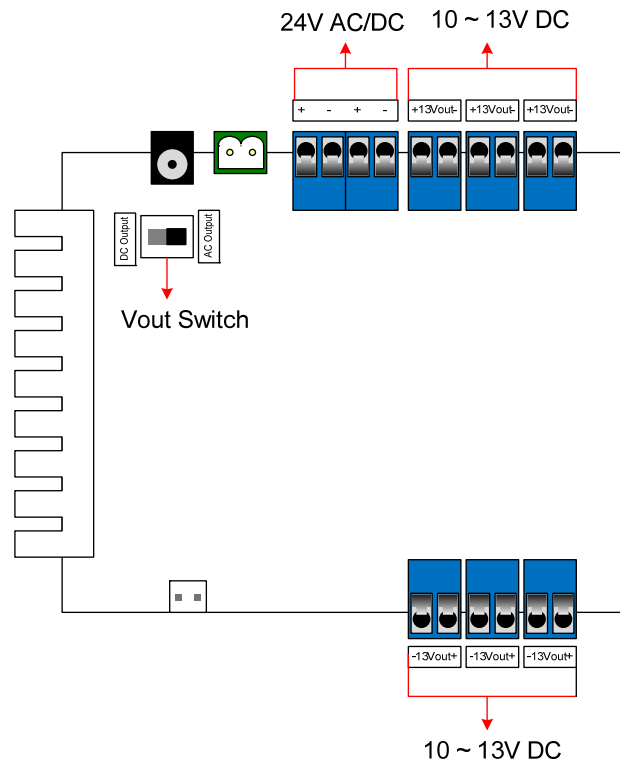


Figure 4-34

- **24V AC/DC:** GV-AS Power Board provides two power outputs of 24V AC/DC. The power current AC or DC is based on the input power source and **Vout Switch** you turned on. If the input power source is AC but the Vout Switch is switched to **DC Output**, the two power outputs of 24V DC will be enlarged to 30V DC.
- **10V to 13V DC:** GV-AS Power Board provides six power outputs of 10V to 13V DC in order to power on the output devices of low current.

Before connecting any output devices, note the following electrical specifications.

Voltage Output	Maximum Current	Absolute Combined Maximum	Absolute Combined Wattage
2 Power Outputs (24V AC/DC)	1.85A (each)	1.85A (24V AC Power In) 2A (24V DC Power In)	63W
6 Power Outputs (10 to 13V DC)	1.85A (each)	2A (24V AC Power In)	
		4A (24V DC Power In)	

To connect an output device:

Connect the (+) point on the output device to COM on GV-AS400, connect the two (-) points of the output device and GV-AS Power Board together, and connect the (+) power output on GV-AS Power Board to the NO or NC on GV-AS400 based on the state of the output device.

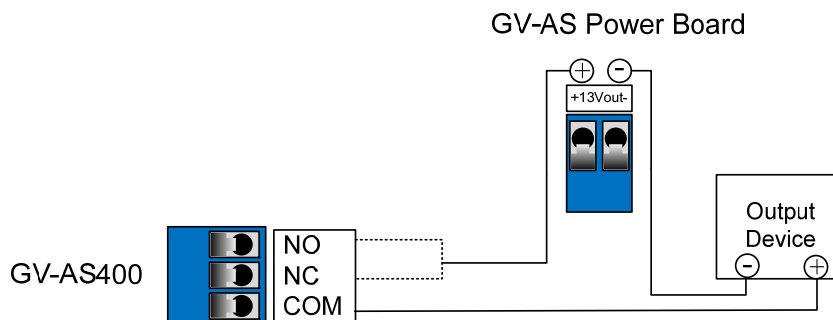


Figure 4-35

4.6.3 Connecting the Power

GV-AS Power Board accepts the power input of either 24V AC or 24V DC. After wiring the power source to the proper connectors on GV-AS Power Board, turn the **Vout Switch** to the power current that is connected.

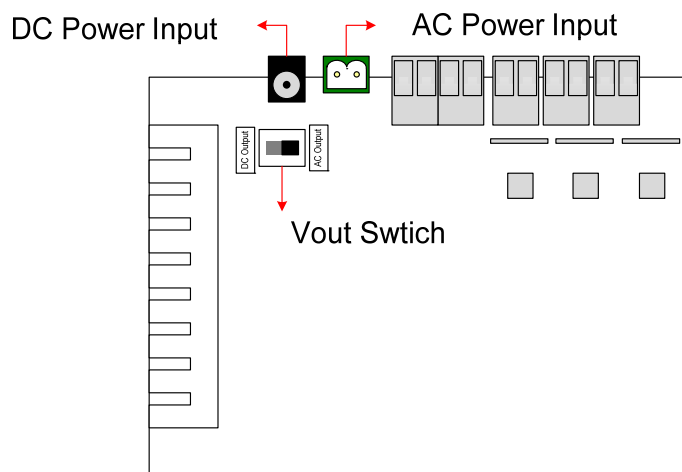


Figure 4-36

Note:

1. If the power input is 24V AC and the Vout Switch is set to **DC Output**, the voltage of GV-AS Power Board supplies will be enlarged to 30V DC.
2. Power should only be applied to the unit when all connections are completed and tested.

4.6.4 Connecting Backup Battery

GV-AS Power Board supports any battery of 12V 5Ah to provide battery backup when the mains supply fails. When the battery is connected, the Power and Charging LEDs will light. When the mains supply is removed and the battery voltage level is above 10.2V, the Discharging LED will light and the battery will support normal operation.

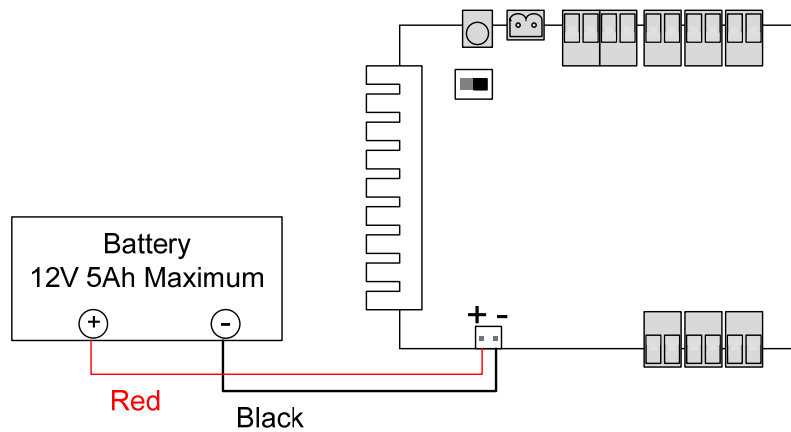


Figure 4-37

Note: An internal battery verification will cut the battery power if the battery voltage level falls below 10.2V.

4.7 GV-AS400 Specifications

CPU	8-bit RISC microprocessor
Number of User Cards	40,000 cards
Event Buffer	65,536 events and log data
Power	100~250V AC, 50~60Hz
RS-485 Interface	1 RS-485 interface only for GV-Readers and GV-GF Fingerprint Readers (max. 8 readers)
Wiegand Interface	8 Wiegand interfaces, 26 ~ 64 bit format
	12V DC power supply, 200mA
Communication	TCP/IP
Input	16 inputs, dry contact, NO / NC
Output	8 relay outputs
	8 photo relay outputs
Operating Temperature	0 ~ 65°C / 32 ~ 149°F
Operating Humidity	10% ~ 90% RH (non-condensing)
Dimensions of GV-AS400 Board (W X H X D)	210 x 170 x 30 mm / 8.27 x 6.69 x 1.18 in
Weight	400 g / 14.11 lb
Certification	CE, FCC, RoHS

5. Optional Devices

5.1 Optional GV-ASBox

The optional GV-ASBox is the I/O and network expansion module for GV-AS100, GV-AS110 and GV-AS120. With the GV-ASBox, additional network connectivity, 8 inputs, 8 outputs and 1 Wiegand reader can be added to GV-AS100, GV-AS110 or GV-AS120.

5.1.1 Main Features

- Add TCP/IP networking capability to GV-AS100/GV-AS110/GV-AS120
- Extend GV-AS100/GV-AS110/GV-AS120 from 1-door to 2-door controller
- Support 1 Wiegand reader of 26 to 64 bits
- Support 8 digital inputs and 8 relay outputs
- 4 special outputs for lighting control and energy saving
- Access GV-AS100/GV-AS110/GV-AS120's features through Web-based interfaces
- Route digital I/O controls from GV-AS100/GV-AS110/GV-AS120 to avoid tamper and enhance security level
- Support 4 units of GV-Readers and GV-GF Fingerprint Readers

5.1.2 Packing List

- GV-ASBox
- Power Adaptor 12V DC
- Battery power cable

5.1.3 GV-ASBox Board Layout

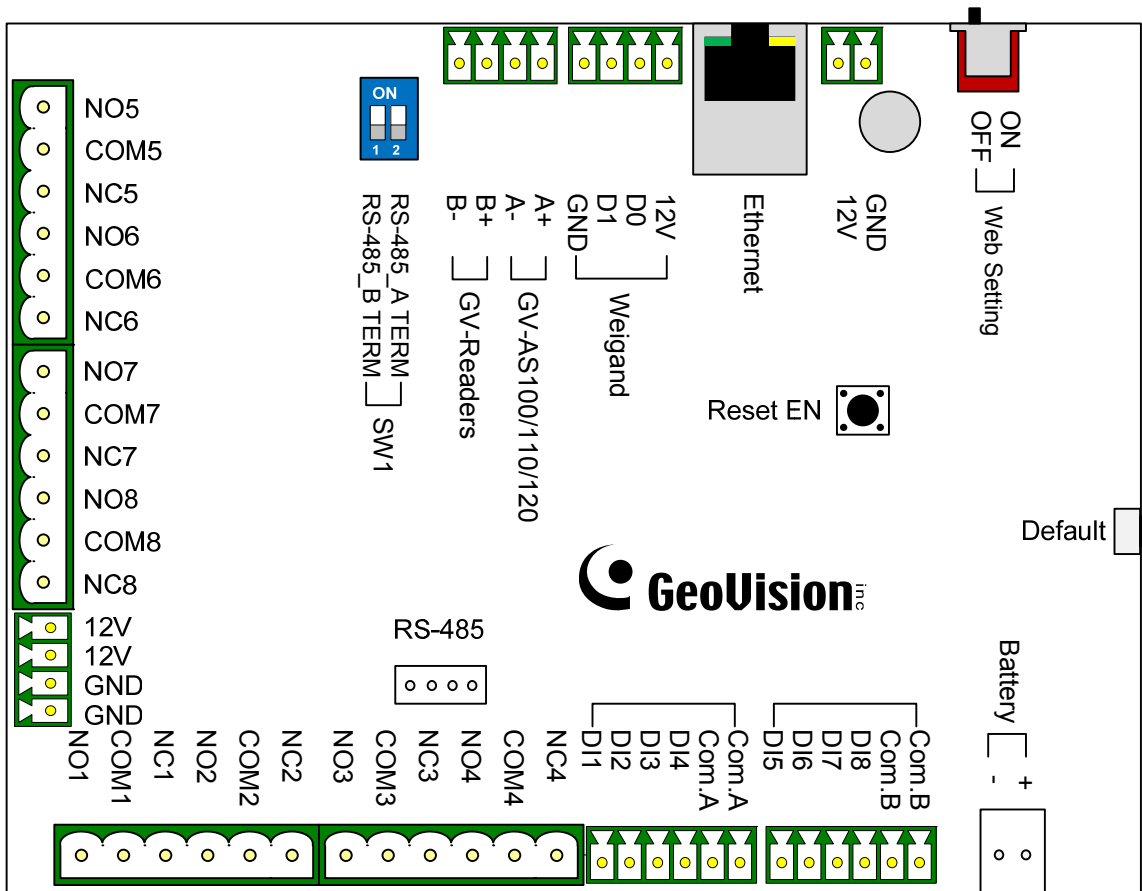


Figure 5-1

5.1.4 Installation

This section describes how to connect other devices to GV-ASBox.

5.1.4.A Connecting GV-AS100/GV-AS110/GV-AS120

The table and figure below show the pin assignments of related connectors on GV-ASBox for connection to GV-AS100, GV-AS110 and GV-AS120.

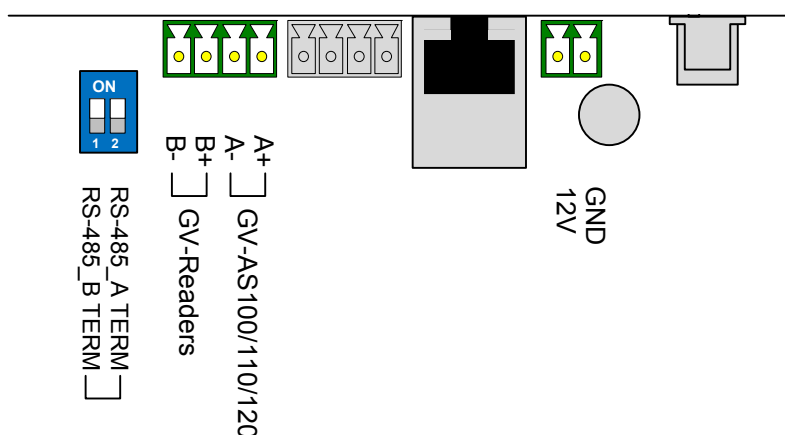


Figure 5-2

Pin	Function	Pin	Function	Pin	Function
12V	12V Power Supply to GV-AS100/110/120	A+	GV-AS100/110/120 Connection	B+	GV-Readers Connection
GND	GND for Power Supply to GV-AS100/110/120	A-	GV-AS100/110/120 Connection	B-	GV-Readers Connection

For connection to GV-AS100/110/120, two switches (**RS-485_A Term** and **RS-485_B Term**) must be turned ON.

5.1.4.B Connecting a Wiegand Reader

GV-ASBox provides one Wiegand input for connection of the Wiegand-compatible reader ranging from 26 to 64 bits. The connected Wiegand reader can either work with GV-AS100 /GV-AS110/GV-AS120 to carry out entry and exit applications on a single door, or be installed on another door for the two-door application.

The table below shows the pin assignments of the Wiegand input on GV-ASBox. Please consult the documentation of your Wiegand reader for wiring.

Pin	Function
GND	GND for the Power Supply
D0	Wiegand Data 0
D1	Wiegand Data 1
12V	12V Power Supply

To define the reader, you need to use the GV-AS100/GV-AS110/GV-AS120 Web interface. See *5.1.5.E.b Parameter Setting*.

5.1.4.C Connecting GV-Readers and GV-GF Fingerprint Readers

You can connect up to **4 units of GV-Readers and GV-GF1901/1902** readers to GV-ASBox. Multiple GV-Readers and GV-GF Fingerprint Readers can be connected with a single RS-485 cable to separate RS-485 interfaces on GV-ASBox.

Since Wiegand communication distance is shorter than RS-485's, you can choose GV-Reader and GV-GF Fingerprint Reader supporting RS-485 communication to add another door control and meet the need of long-distance installation.

Use the RS-485 B+ B- to connect to GV-Readers and use the RS-485 interface to connect GV-GF Fingerprint Readers. Refer to the figure below to see where the RS-485 interfaces are located. When multiple readers are connected together, an extra power supply to each unit is required. Use the auxiliary power output of **12V** and **GND** on GV-ASBox to power on each unit.

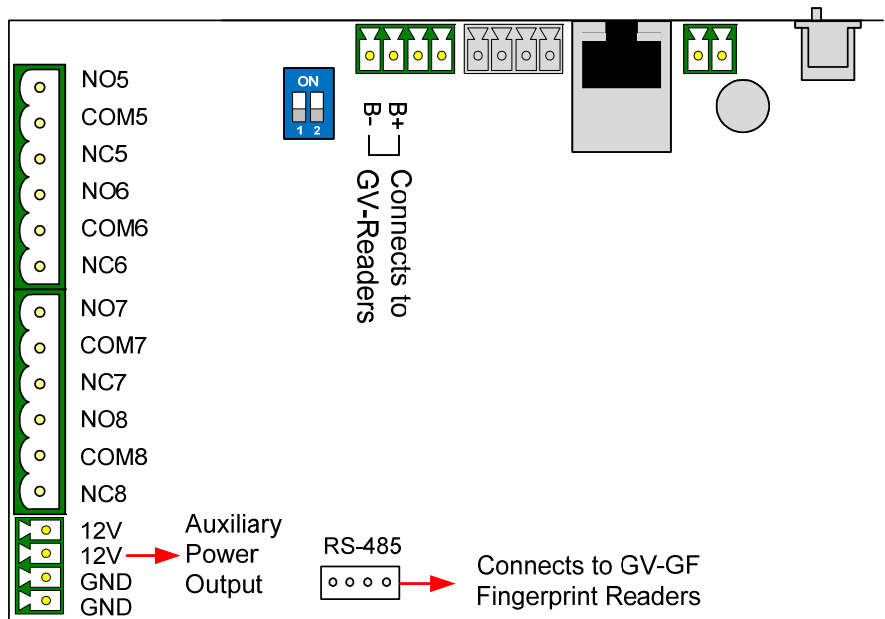


Figure 5-3

To define each GV-Reader and GV-GF Fingerprint Reader, you need to use the GV-AS100/GV-AS110/GV-AS120 Web interface. See 5.1.5.E.g *Extended Reader Setting*.

Note: The RS-485 connector on GV-ASBox is only designed for the connection of GV-Readers and GV-GF Fingerprint Readers.

5.1.4.D Connecting Input Devices

GV-ASBox provides 8 inputs (DI1 to DI8). All inputs are **dry contact** and can be configured as normally open (NO) or normally closed (NC) through the Web interface. The default value is **NO**.

The figure below shows the pin assignments of input connectors on GV-ASBox. The 8 inputs are divided into two terminals. Terminal A consists of DI1 to DI4, and terminal B includes DI5 to DI8. Every terminal has two COM (Common) points; connect the Common wire to any of the two COM points on the related terminal.

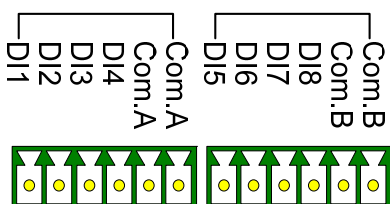


Figure 5-4

5.1.4.E Connecting Output Devices

GV-ASBox provides 8 outputs and 2 auxiliary power outputs of 12V DC. The outputs are divided into two groups, **outputs 1 ~ 4** and **outputs 5 ~ 8**. Before connecting, make sure if your output device meets any of the two different absolute maximum ratings listed below.

Additionally, you can **wire the light switch to the outputs 5 ~ 8** for lighting control. When the access is granted, the light is turned on; when the exit is granted, the light is turned off. See *To combine door access with relay activation* below.

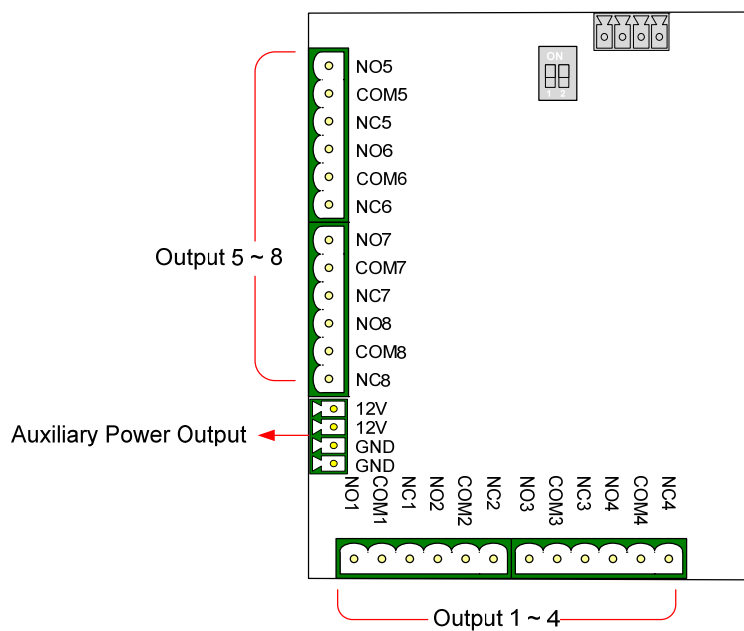


Figure 5-5

Outputs 1-4: Absolute Maximum Ratings

Breakdown Voltage	277V AC, 30V DC
Continuous Load Current	5A (NO), 3A (NC)
Note: Absolute Maximum Ratings are those values beyond which damage to GV-ASBox circuit board may occur. Continuous operation of GV-ASBox at the absolute rating level may affect GV-ASBox reliability.	

Outputs 5-8: Absolute Maximum Ratings

Breakdown Voltage	240V AC, 30V DC
Continuous Load Current	16A (NO), 8A (NC)
Note: Absolute Maximum Ratings are those values beyond which damage to GV-ASBox circuit board may occur. Continuous operation of GV-ASBox at the absolute rating level may affect GV-ASBox reliability.	

To connect an output device:

GV-ASBox provides two auxiliary power outputs of 12V DC at a maximum current of 1A. If your output device requires higher current, you must have the power supplied from an external power supply. Connect the (+) point on the output device to COM on GV-ASBox, connect the (-) points on the output device and the external power supply together, and connect the (+) point on the external power supply to the NO or NC of GV-ASBox based on the state of the output device.

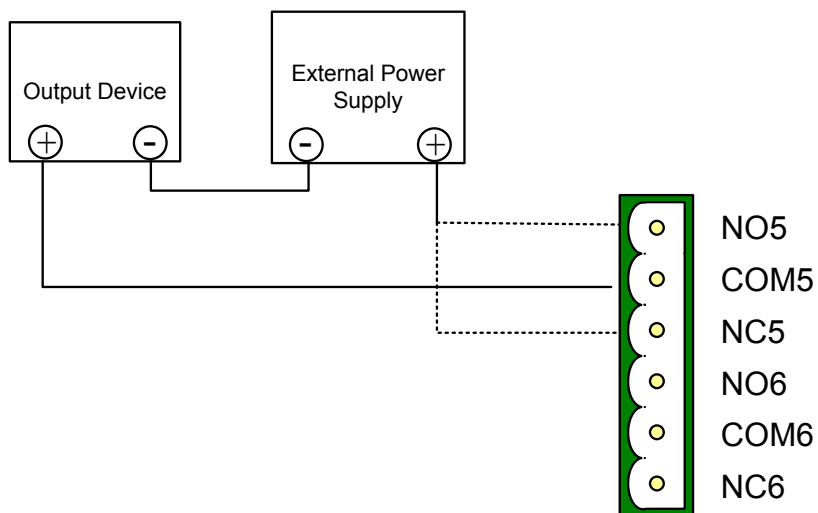


Figure 5-6

To combine door access with relay activation:

You can combine door access with relay activation for light control, machine control, etc., so that these will only be active when access is granted. For example, the light is turned on when a user is granted access to a room; the light is turned off when the user exits from the room. For this function, wire the relay switch to **output 5 ~ 8**.

5.1.4.F Other Settings

The figure below shows the location of the **Web Setting Switch**, **Reset Button** and **Default Button**.

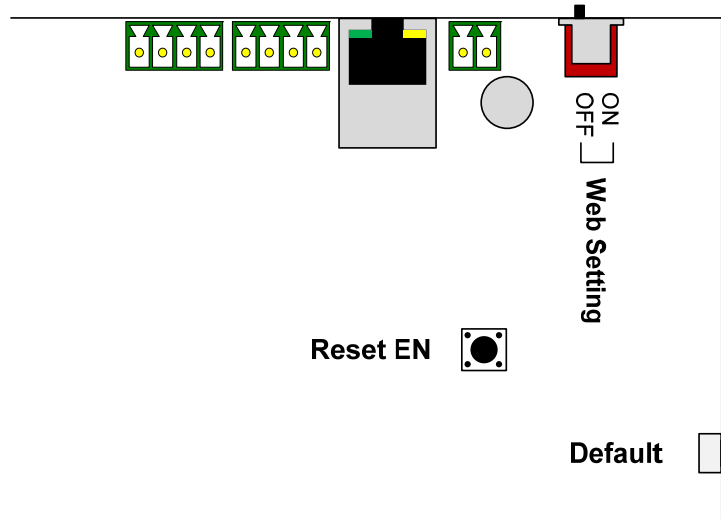


Figure 5-7

5.1.4.F.a Web Setting Switch

When the **Web Setting** switch is set to ON, you can modify **Advanced Settings** of GV-AS100, GV-AS110 and GV-AS120 through the Web interface. When the switch is set to OFF, Advanced Settings are not accessible. For details on Advanced Settings, see [5.1.5.E Advanced Settings](#).

5.1.4.F.b Resetting the GV-ASBox

To reset GV-ASBox, press the **Reset EN** button on GV-ASBox for 3 seconds.

5.1.4.F.c Restoring Factory Defaults

To restore factory default values, press the **Default** button on GV-ASBox for 3 seconds. After this it may take up to 3 minutes to restore GV-ASBox to default values.

5.1.5 Web-Based Configurations of GV-AS100/GV-AS110/GV-AS120

Through GV-ASBox, GV-AS100, GV-AS110 or GV-AS120 can communicate with GV-ASManager over the network. Also through GV-ASBox, you can access the GV-AS100/GV-AS110/GV-AS120's Web interface.

Designed for use on the network, GV-ASBox must be assigned an IP address to make it accessible. Follow these steps to network GV-ASBox:

1. Connect the network cable to the **Ethernet** port on GV-ASBox.
2. Use a computer on the same LAN with GV-ASBox to assign the IP address.
 - The default address of GV-ASBox is <https://192.168.0.100>
 - The default Username and Password for login are **admin**

Note the computer used to set the IP address must be at the same network or subnet sequence assigned to GV-ASBox.

3. GV-ASBox is able to support two network environments: Fixed IP and DHCP. See *5.1.5.A Installing GV-AS100/GV-AS110/GV-AS120 on a Network* for further setup.
4. To configure the Advanced Setting on the Web configuration interface, set the **Web Setting** switch on GV-ASBox to be ON.

5.1.5.A Installing GV-AS100/GV-AS110/GV-AS120 on a Network

Based on your network environment, choose Fixed IP for a static IP address or DHCP for a dynamic IP address such as those assigned by an ISP or other DHCP server.

5.1.5.A.a Fixed IP Connection

If your network environment supports a static IP address, the wiring is illustrated as below:

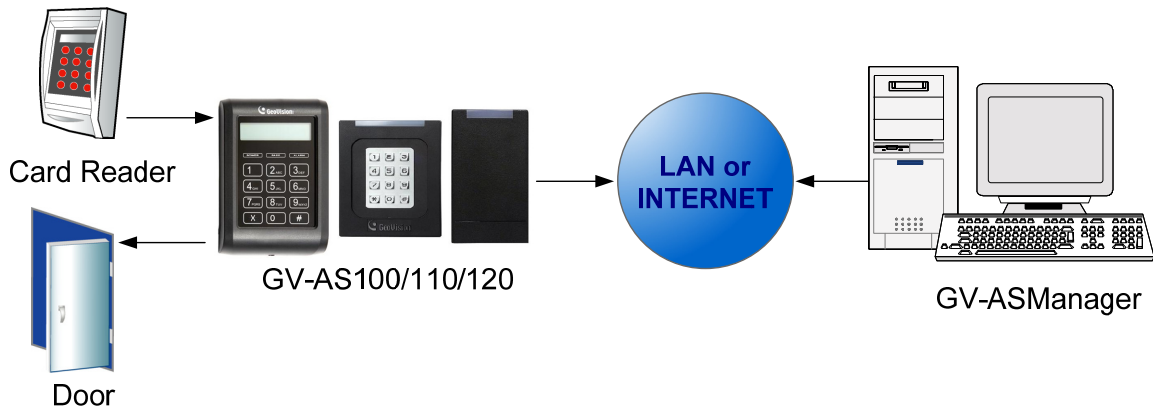


Figure 5-8

To assign GV-AS100/GV-AS110/GV-AS120 to a fixed IP:

1. Open an Internet browser, and type the default IP address <https://192.168.0.100>. This dialog box appears.



Figure 5-9

- Click default value **admin** for both User name and Password, and click **OK**. This page appears.

The screenshot displays the 'Network Configuration' interface. On the left is a navigation menu with sections: 'Basic Setting' (Network Setting, Other Setting, Firmware Update, Account Setting), 'Advance Setting' (Function Setting, Parameter Setting, Status Monitor, Card Information, Time Setting, In/Out Function), and 'Extend Device' (Extend Reader). The main content area is titled 'Network Configuration' and includes:

- Machine Name:** Controller 10
- DHCP Client:**
 - Enable
 - Disable (highlighted with a red box)
 - IP Address:** 192 | 168 | 2 | 119
 - Subnet Mask:** 255 | 255 | 252 | 0
 - Default Gateway:** 192 | 168 | 0 | 1
 - Domain Name Server:** 0 | 0 | 0 | 0
- Domain Name Service:**
 - Disable
 - Send to LocalDDNS
 - Server IP:** 192 | 168 | 0 | 10
 - Device Name:** user

Figure 5-10

- In the **DHCP Client** section, click **Disable**. Type the static IP address information, including IP Address, Subnet Mask, Default Gateway and Domain Name Server.
- Click **Submit**. When the setting is complete, the Status field will indicate *Register Success*. Then GV-AS100/GV-AS110/GV-AS120 can be accessed with this fixed IP address.

Note: If you like to use the domain name instead of IP address, you may use Domain Name Service as well. For details on domain name service, see [5.1.5.A.b DHCP Connection](#).

5.1.5.A.b DHCP Connection

If your network environment is using the dynamic IP address from a DHCP server, please use one of the following DDNS servers to map a dynamic IP address to a static domain name or device name:

- For LAN connection, GV LocalDDNS Server is provided.
- For Internet connection, two DDNS servers are supported: GeoVision DDNS Server and Dynamic Network Services Inc. (DynDNS).

Connection over LAN

The GV-developed “LocalDDNS Server” can map a device name to the varying IP address of your GV-AS100/GV-AS110/GV-AS120, by which the GV-ASManager can access GV-AS100/GV-AS110/GV-AS120 by using the device name.

The Local DDNS Server can be installed in either GV-ASManager or a separate computer. The wiring of the LocalDDNS application is illustrated as below.

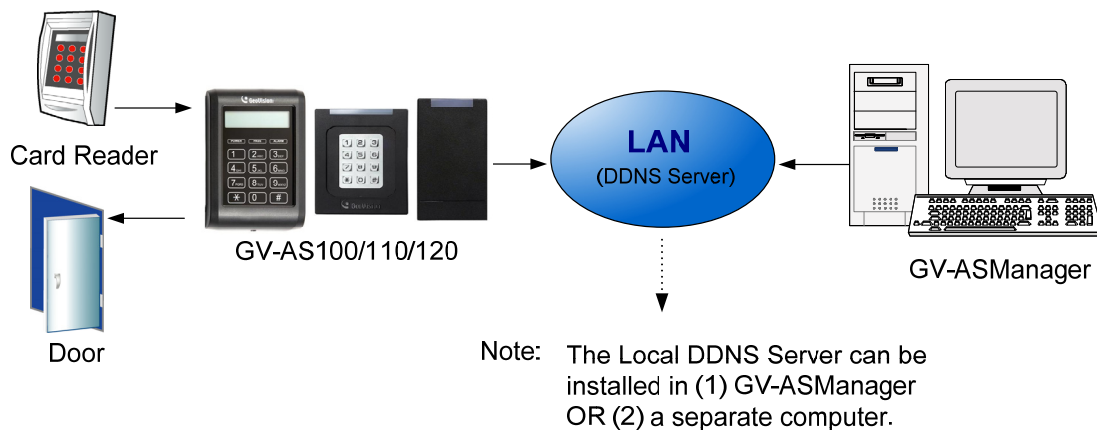


Figure 5-11

Installing LocalDDNS Server

To install the LocalDDNS Server in a computer, insert the Software CD. It will run automatically and a window appears. Select **Install GeoVision V2.3 Access Control System**, click **GeoVision Dynamic DNS Service** and follow the on-screen instructions.

After Installation, the program will be minimized to the system tray.



Configuring GV-AS100/GV-AS110/GV-AS120 on LAN

After running the LocalDDNS Server, configure GV-AS100/GV-AS110/GV-AS120 on LAN:

1. Open an Internet browser, and type the default IP address <https://192.168.0.100>. The login dialog box (Figure 5-9) appears.
2. In the User Name and Password fields, type default value **admin** and **admin** respectively. Click **OK**. The Network Configuration page (Figure 5-12) appears.
3. Click **Enable**, and select **Send to Local DDNS**.
4. In the Server IP fields, type the IP address of the LocalDDNS Server.
5. In the Device Name field, keep the default setting or change it to match that of the GV-ASManager.

GeoVision Network Configuration

Machine Name
Machine Name: Controller 10

DHCP Client
 Enable
 Disable

IP Address: 192 . 168 . 2 . 119
 Subnet Mask: 255 . 255 . 252 . 0
 Default Gateway: 192 . 168 . 0 . 1
 Domain Name Server: 0 . 0 . 0 . 0

Domain Name Service
 Disable
 Send to LocalDDNS
 Server IP: 192 . 168 . 0 . 10
 Device Name: user
 Send to DDNS
 Host Name: user.dipmap.com

Figure 5-12

6. Click **Submit** to send the information to the LocalDDNS Server. When the setting is complete, the Status field will indicate: *Register Success*. Then GV-AS100/GV-AS110/GV-AS120 can be accessed with the device name.

Note:

1. The default value of Device Name is **user**. If more than one GV-AS Controller is connected to the GV-ASManager, assign each controller a different device name.
2. To access the **Device Name** on GV-ASManager, open the Controller Setup dialog box, and select **LocalDDNS** in the Network drop-down list.

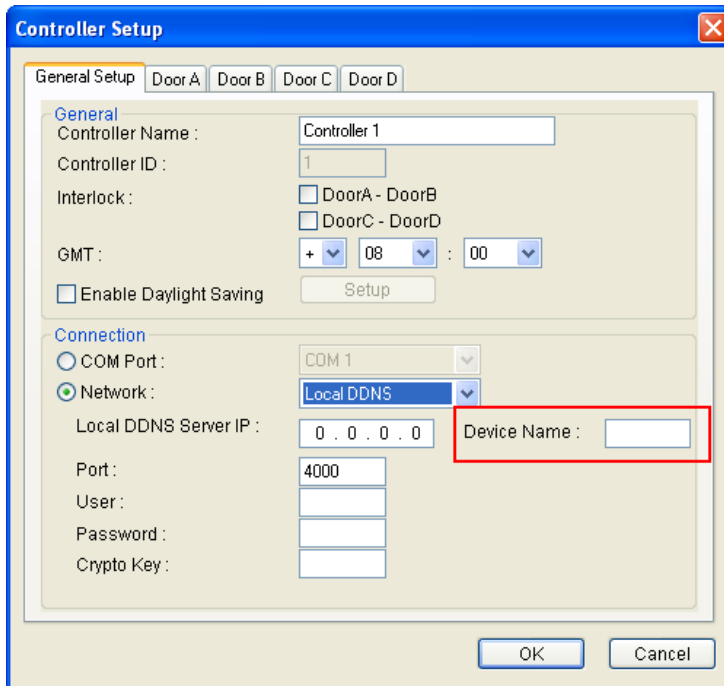


Figure 5-13

Connection over Internet

DDNS (Dynamic Domain Name System) provides another way of accessing GV-AS100/GV-AS110/GV-AS120 when using a dynamic IP. DDNS assigns a domain name to GV-AS100/GV-AS110/GV-AS120, so the GV-ASManager can always access the GV-AS Controller by using the domain name.

To enable the DDNS function, you should first apply for a domain name from the website of the DDNS service provider. There are 2 providers listed in GV-AS100/GV-AS110/GV-AS120: GeoVision DDNS Server and DynDNS.org. To register at the GeoVision DDNS Server, see the following instructions. For details on DynDNS, please consult them at www.dyndns.org.

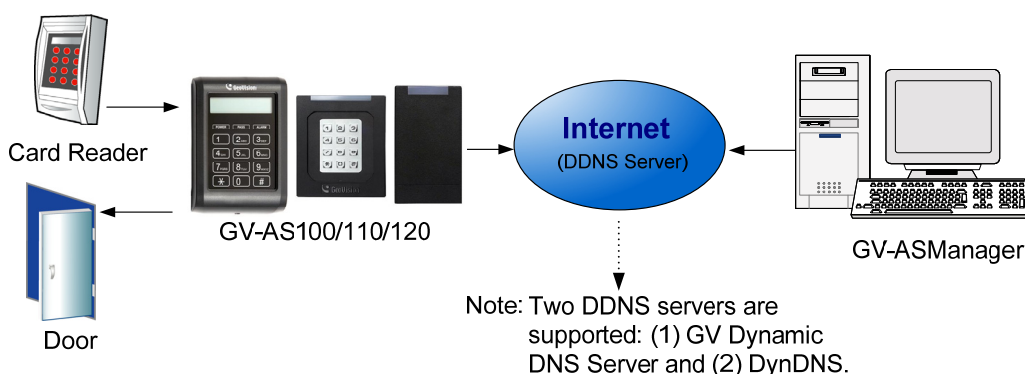


Figure 5-14

Registering a DDNS Domain Name

To obtain a domain name from the GeoVision DDNS Server:

1. Click the **GeoVision DDNS** button on the Network Configuration page (Figure 5-12). Or open an Internet browser, and type the Web address <http://ns.dipmap.com/register.aspx>. This page appears.

DynamicDNS01

Register


<p>Username: <input type="text" value="Somerset01"/></p> <p>Password: <input type="password" value="*****"/></p> <p>Re-type Password: <input type="password" value="*****"/></p>	<p>Username</p> <p>Username is 16-character maximum; username may not start with spaces or minus signs ("-"). Username will be your hostname.</p> <p>Password</p> <p>The password is case-sensitive.</p>
<p>Enter the characters as they are shown in the box below. i8UCY</p> 	<p>Word Verification</p> <p>This step helps us prevent automated registrations.</p>

Figure 5-15

2. In the Username field, type a name. Username can be up to 16 characters with the choices of “a ~ z”, “0 ~9”, and “-”. Note that space or “-” cannot be used as the first character.
3. In the Password field, type a password. Passwords are case-sensitive and must be at least 6 characters. Type the password again in the Re-type Password field for confirmation.
4. In the Word Verification section, type the characters or numbers shown in the box. For example, type *i8UCY* in the required field. Word Verification is not case-sensitive.
5. Click the **Send** button. When the registration is complete, this page will appear. The **Hostname** is the domain name, consisting of the registered username and “dipmap.com”, e.g. somerset01.dipmap.com.

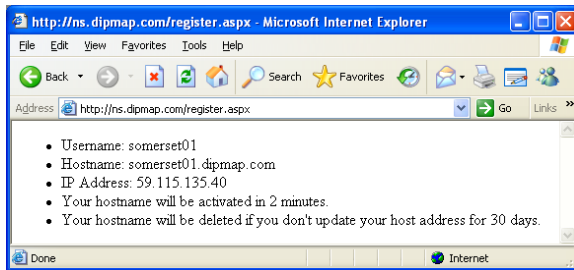


Figure 5-16

Note: The registered username will be invalid when it is not used for one month.

Configuring GV-AS100/GV-AS110/GV-AS120 on Internet

After acquiring a domain name from the DDNS Server, you need to configure the registered domain name on GV-AS100/GV-AS110/GV-AS120 Controller so that GV-ASManager can access GV-AS Controller by the domain name on Internet.

1. Open an Internet browser, and type the default IP address <https://192.168.0.100>. The login dialog box (Figure 5-9) appears.
2. In the User Name and Password fields, type default value **admin** and **admin** respectively. Click **OK**. The Network Configuration page (Figure 5-17) appears.
3. Click **Enable**, and select **Send to DDNS**.
4. Type **Host Name**, **User Name** and **Password** that are registered on the DDNS Server. If you select **GeoVision DDNS**, the system will automatically bring up the Host Name.

The screenshot shows the 'Network Configuration' page. On the left is a navigation menu with sections: Basic Setting (Network Setting, Other Setting, Firmware Update, Account Setting), Advance Setting (Function Setting, Parameter Setting, Status Monitor, Card Information, Time Setting, In/Out Function), and Extend Device (Extend Reader). The main content area is titled 'Network Configuration' and includes:

- Machine Name:** Controller 10
- DHCP Client:** Enable (highlighted with a red box), Disable
- IP Address:** 192, 168, 2, 119
- Subnet Mask:** 255, 255, 252, 0
- Default Gateway:** 192, 168, 0, 1
- Domain Name Server:** 0, 0, 0, 0
- Domain Name Service:** Disable, Send to LocalDDNS, Send to DDNS (highlighted with a red box)
 - Server IP: 192, 168, 0, 10
 - Device Name: user
 - Send to DDNS: GeoVision DDNS (dropdown), GeoVision DDNS (button)
 - Host Name: user.dipmap.com
 - User Name: [empty field]
 - Password: [empty field]

Figure 5-17

5. Click **Submit**. When the setting is complete, the Status field will indicate: *Register Success*. Then GV-AS Controller can be accessed with the domain name.

5.1.5.B System Setup

In the left menu, click **Other Setting**. This page appears.

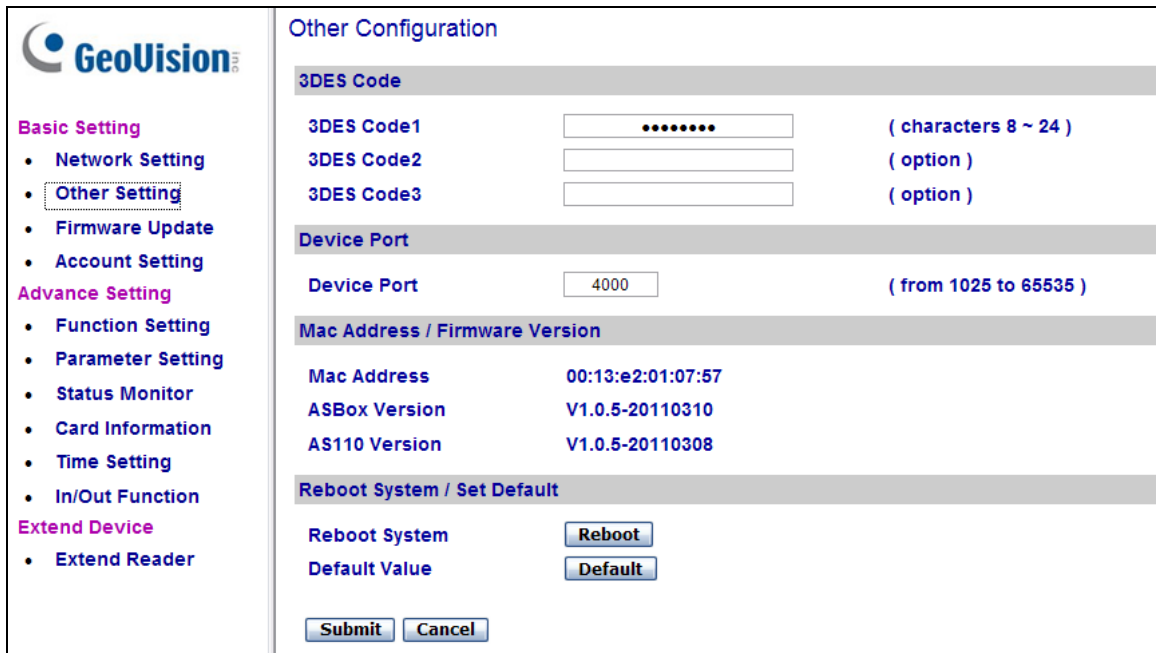


Figure 5-18

- **3DES Code 1-3:** Stands for Triple DES (Data Encryption Standard). Type up to three different keys for data encryption. The default 3DES Code1 is **12345678**.
- **Device Port:** Keeps the default value **4000**. Or modify it to match that of GV-ASManager.
- **Mac Address:** Indicates the MAC address of the network medium.
- **Firmware Version:** Indicates the current firmware version of GV-AS100/GV-AS110/GV-AS120.
- **Reboot System:** Performs a warm boot of GV-AS100/GV-AS110/GV-AS120. This operation will keep the current configuration.
- **Default Value:** Resets all configuration parameters to their factory settings. This may take 5 seconds to complete.

5.1.5.C Updating Firmware

To update the firmware of GV-AS100/GV-AS110/GV-AS120:

1. In the left menu, click **Firmware Update**. This page appears.

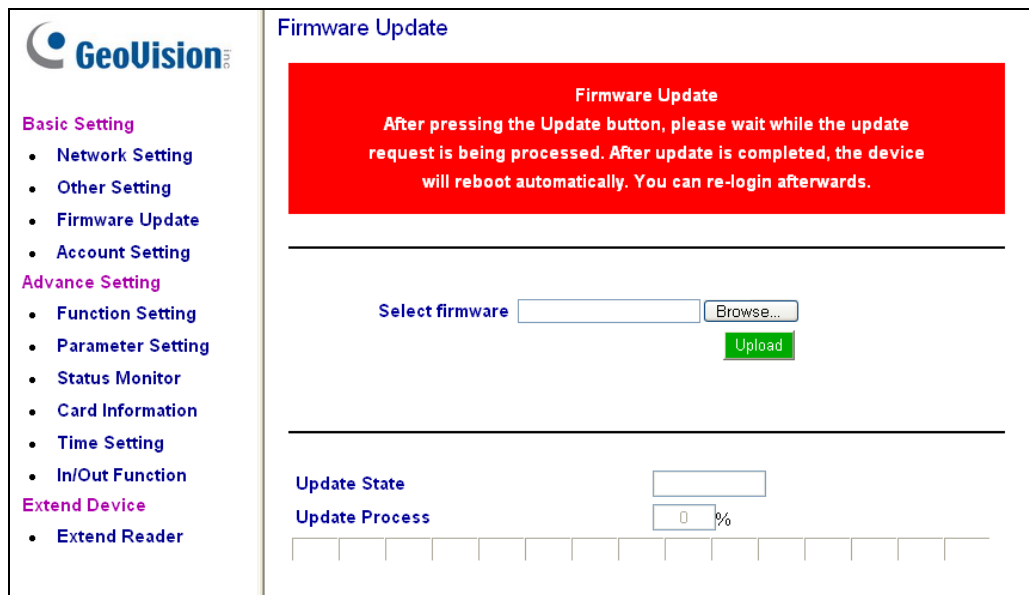


Figure 5-19

2. Click the **Browse...** button to open the firmware file (*.bin)
3. Click the **Upload** button. This update procedure may take 60 seconds to complete.
4. When the Update is complete, a dialog box appears and asks you to reboot the system.

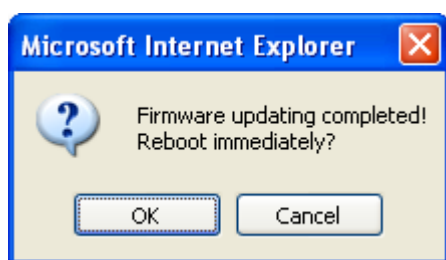


Figure 5-20


5. Click **OK**. GV-AS100/GV-AS110/GV-AS120 starts the Reboot operation.

Note: It is required to reboot GV-AS100/GV-AS110/GV-AS120 after firmware update. Without rebooting, the firmware update is not complete.

5.1.5.D Changing Login ID and Password

To change the login ID and password:

1. In the left menu, click **Account Setting**.
2. On the Security Configuration page, modify the login name and password. The password is case sensitive and is limited to alphabets and numbers.



The screenshot displays the 'Security Configuration' page in the GeoVision web interface. On the left is a navigation menu with categories: 'Basic Setting' (Network Setting, Other Setting, Firmware Update, Account Setting), 'Advance Setting' (Function Setting, Parameter Setting, Status Monitor, Card Information, Time Setting, In/Out Function), and 'Extend Device' (Extend Reader). The 'Account Setting' option is selected. The main content area is titled 'Security Configuration' and contains two sections: 'Account' and 'Password'. The 'Account' section has a 'Login Name' field with the value 'admin'. The 'Password' section has 'Password Change' and 'Password Confirm' fields, both masked with dots. At the bottom of the form are 'Submit' and 'Cancel' buttons.

Figure 5-21

5.1.5.E Advanced Settings

You can execute and edit door/Wiegand operations and settings, turn on Alarms, view status, display card information stored in GV-AS100/GV-AS110/GV-AS120, set the device time and edit the input/output functions.

The changes in some of the Advanced Setting page will effect the options available on other pages. Below is a diagram drawing the relationships between each Advanced Setting page.

The Relationship Diagram between each Advanced Setting Page

- Advance Setting**
- **Function Setting**
 - **Parameter Setting**
 - **Status Monitor**
 - **Card Information**
 - **Time Setting**
 - **In/Out Function**
 - **Extend GeoFinger**

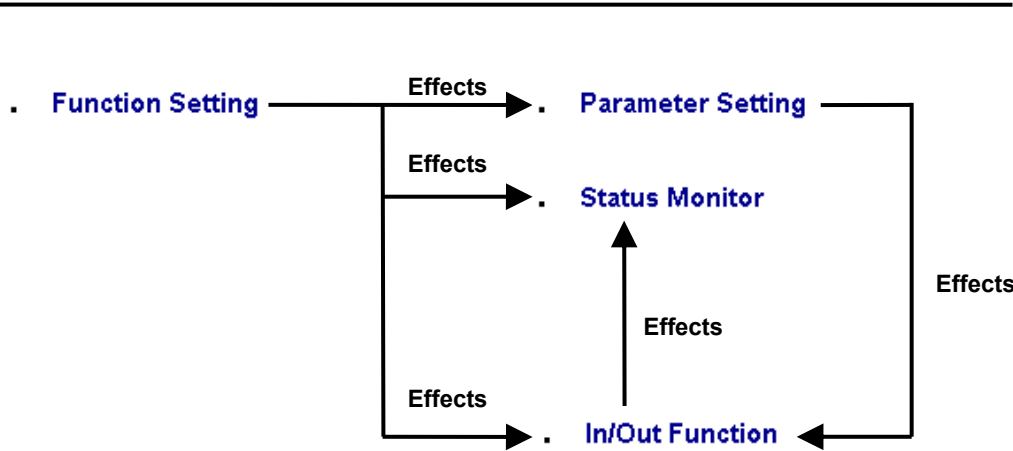
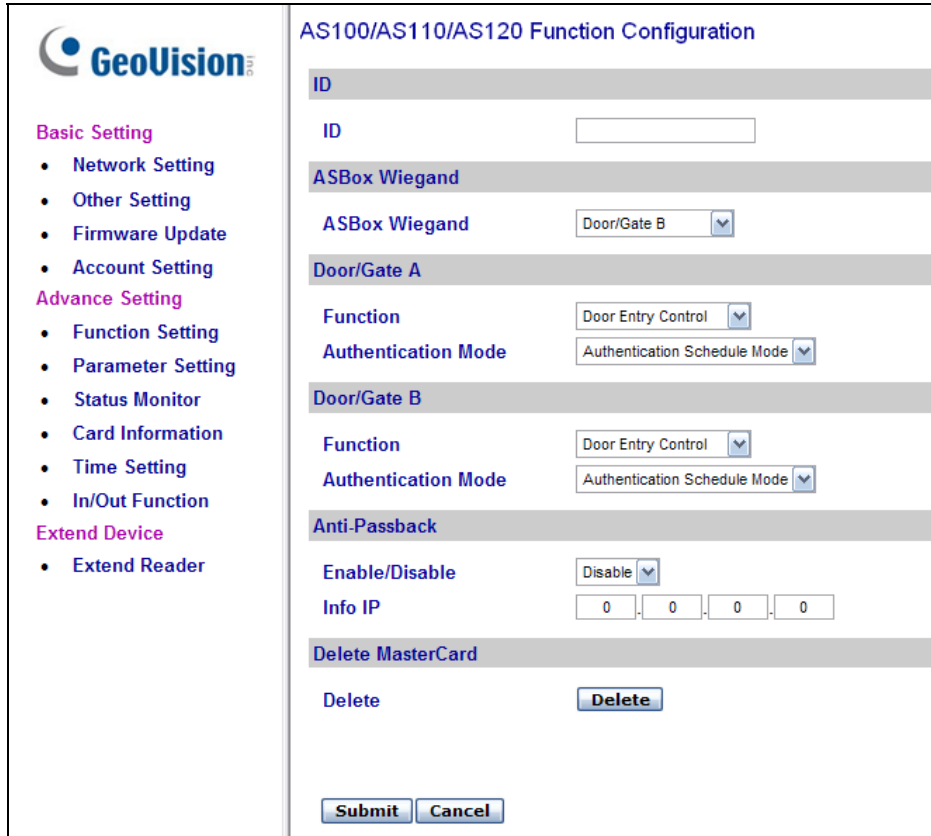


Figure 5-22

5.1.5.E.a Function Setting

In the left menu, click **Function Setting**. This **AS100/AS110/AS120 Function Configuration** page appears.



The screenshot shows the 'AS100/AS110/AS120 Function Configuration' page. On the left is a navigation menu with 'Basic Setting' and 'Advance Setting' categories. The main area is divided into several sections:

- ID**: A text input field for the ID number.
- ASBox Wiegand**: A dropdown menu currently set to 'Door/Gate B'.
- Door/Gate A**: Contains 'Function' (dropdown: Door Entry Control) and 'Authentication Mode' (dropdown: Authentication Schedule Mode).
- Door/Gate B**: Contains 'Function' (dropdown: Door Entry Control) and 'Authentication Mode' (dropdown: Authentication Schedule Mode).
- Anti-Passback**: Contains 'Enable/Disable' (dropdown: Disable) and 'Info IP' (four input fields, each containing '0').
- Delete MasterCard**: A 'Delete' button.

 At the bottom are 'Submit' and 'Cancel' buttons.

Figure 5-23

[ID]

Enter the ID number for GV-AS100, GV-AS110 or GV-AS120. This ID is used by GV-ASManager to differentiate among multiple units of GV-AS100/GV-AS110/GV-AS120. ID number can only be between 1 and 255.

[ASBox Wiegand]

Select the function for Wiegand Input on GV-ASBox from the drop-down list.

- **No Function:** Wiegand Input is not in use.
- **Door/Gate A Entry:** Wiegand Input becomes the entry point for Door/Gate A.
- **Door/Gate A Exit:** Wiegand Input becomes the exit point for Door/Gate A.
- **Door/Gate B:** Wiegand Input becomes Door/Gate B.

[Door/Gate A]

Select the function type and authentication mode for the use of Door/Gate A.

- **Function:** Select the function for GV-AS100/GV-AS110/GV-AS120 on Door/Gate A.
 - ⊙ **Door Entry Control:** Sets GV-AS100/GV-AS110/GV-AS120 as entry reader on the Door A. The Wiegand reader connected on GV-AS100/GV-AS110/GV-AS120 will be set as exit reader.
 - ⊙ **Door Exit Control:** Sets GV-AS100/GV-AS110/GV-AS120 as exit reader on the Door A. The Wiegand reader connected on GV-AS100/GV-AS110/GV-AS120 will be set as entry reader.
 - ⊙ **Parking Entry Control:** Sets GV-AS100/GV-AS110/GV-AS120 as entry reader on the parking Gate A.
 - ⊙ **Parking Exit Control:** Sets GV-AS100/GV-AS110/GV-AS120 as exit reader on the parking Gate A.
 - ⊙ **Elevator Control:** GV-AS100/GV-AS110/GV-AS120 is installed in the elevator for access control.

Note: The **Parking Entry Control** and **Parking Exit Control** only work when the sensor input of Car Detection is activated. When the card is present but the sensor input is not activated, the message “No Car In Zone” will appear in the GV-AS100 LCD.

- **Authentication Mode:** Select the authentication mode for the Door/Gate A.
 - ⊙ **Local Unlock Mode:** Remains open. The held-open state cannot be cleared through GV-ASManager.
 - ⊙ **Local Lock Mode:** Remains locked. The locked state cannot be cleared through GV-ASManager.
 - ⊙ **Fixed Card Mode:** Grants access after the card is presented, and ignores the authentication schedule of GV-ASManager.
 - ⊙ **Fixed Card + PIN Mode:** Grants access after the user presents the card and then enters the card’s PIN code, and ignores the authentication schedule of GV-ASManager.
 - ⊙ **Fixed Card/Common mode:** Grants access after the user presents the card or enters the door’s password, and ignores the authentication schedule of GV-ASManager.
 - ⊙ **Authentication Schedule Mode:** Follows the authentication schedule set on GV-ASManager.

[Door/Gate B]

This option becomes available only after **Door/Gate B** is selected from the **ASBox Wiegand** option above.

Select the function type and authentication mode for the use of Door/Gate B. The Function and Authentication Mode options are the same as those of Door/Gate A. But remember that the settings here are used to define the Wiegand reader connected to GV-ASBox.

[Anti-Passback]

This setting lets you perform Anti-Passback applications across multiple GV-AS Controllers. Anti-Passback prevents use of a card to gain successive entries without exit to a controlled area. For details on setup, see *Chapter 6 Anti-Passback* on *GV-ASManager User's Manual*.

- **Enable/Disable:** Enables or disables the Anti-Passback function.
- **Info IP:** Enter the IP address of the next corresponding GV-AS100/GV-AS110/GV-AS120.

[Delete MasterCard]

- **Delete:** Click the **Delete** button to delete the current MasterCard information.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

5.1.5.E.b Parameter Setting

In the left menu, click **Parameter Setting**. This **AS100/AS110/AS120 Configuration** page appears. The contents of Parameter Setting change based on your settings for Door/Gate A and Door/Gate B in the **Function Setting** page (Figure 5-23).

GeoVision INVT

Basic Setting

- Network Setting
- Other Setting
- Firmware Update
- Account Setting

Advance Setting

- Function Setting
- **Parameter Setting**
- Status Monitor
- Card Information
- Time Setting
- In/Out Function

Extend Device

- Extend Reader

AS100/AS110/AS120 Configuration

Events

Door A		Door B	
Anti-passback	NO	Anti-passback	NO
Lock Reset Time	5 (1~255)	Lock Reset Time	5 (1~255)
Held Open Time	5 (5~9999)	Held Open Time	5 (5~9999)
Fire Action	Unchange	Fire Action	Unchange
Alarm Continuous Time	5 (1~10)	Alarm Continuous Time	5 (1~10)

Alarm

Door A		Door B	
Held Open	NO	Held Open	NO
Forced Open	NO	Forced Open	NO
Fire Alarm	NO	Fire Alarm	NO
Access Denied	NO	Access Denied	NO
Tamper	NO	Tamper	NO

Common Password

Door A		Door B	
Common Password	Common Password
Password Confirm	Password Confirm

AS100 Input Name

Input 1 Name	AS100 Input 1
Input 2 Name	AS100 Input 2
Input 3 Name	AS100 Input 3
Input 4 Name	AS100 Input 4

Figure 5-24

IMPORTANT: Once connecting to GV-AS100/GV-AS110/GV-AS120, GV-ASManager will load its parameters to the GV-AS Controller. That means some of the Parameter Settings you have configured here may be rewritten by GV-ASManager later.

[Events]

Set the parameters for the events.

Events	
Door A	Gate B
Anti-passback	Gate Open Time
Lock Reset Time	Held Open Time
Held Open Time	Fire Action
Fire Action	Alarm Continuous Time
Alarm Continuous Time	

Figure 5-25

- When **Door Entry/Exit Control** or **Parking Entry/Exit Control** is selected in the **Function Setting** page (Figure 5-23), these options become available:

Option	Description
Anti-Passback	Enables or disables the Anti-Passback function. The option is only available for Door/Gate A .
Gate Open Time	Sets the time (1 to 255 sec.) that a parking gate remains open after which the gate will automatically be locked. The option is only available when Parking Entry/Exit Control is selected.
Lock Reset Time	Sets the time (1 to 255 sec.) that a door remains open after which the door will automatically be locked. The option is only available when Door Entry/Exit Control is selected.
Held Open Time	Sets the time (5 to 9999 sec.) that a door/gate can be held open before an alarm is generated.
Fire Action	Locks or unlocks the door/gate when a fire condition occurs. Otherwise, remains the door's current state by selecting <i>Unchanged</i> .
Alarm Continuous Time	Sets the time (1 to 10 sec.) that the alarm will continuously go off before it ends.

- When **Elevator Control** is selected in the **Function Setting** page (Figure 5-23), these options become available:

Option	Description
Relay on Time	Sets the time (1 to 255 sec.) that an elevator door remains open after which the door will automatically be closed.
Fire Action	See the same option above.
Alarm Continuous Time	

[Alarm]

Select **Yes** or **No** to enable or disable the alarm function. If you have defined the alarm conditions in [Output Function] of the **In/Out Function** page (Figure 5-31), remember to activate the corresponding alarms here; otherwise, even though the alarm conditions are met, the expected alarm will not be triggered. The default settings for all the alarms are set to **NO**.

Alarm			
Door A		Gate B	
Held Open	NO	Held Open	YES
Forced Open	NO	Forced Open	YES
Fire Alarm	YES	Fire Alarm	YES
Access Denied	YES	Access Denied	YES
Tamper	YES	Tamper	YES

Figure 5-26

- When **Door Entry/Exit Control** or **Parking Entry/Exit Control** is selected in the **Function Setting** page (Figure 5-23), these options become available:

Option	Description
Held Open	This alarm activates whenever the door is held open over the set period of time.
Forced Open	This alarm activates whenever the door is opened by force.
Fire Alarm	This alarm activates whenever fire is detected.
Access Denied	This alarm activates whenever entry is denied due to using the wrong card or entering the wrong password.
Tamper	This alarm activates whenever vandalism occurs, e.g. the opening of Controller's cabinet.

- When **Elevator Control** is selected in the **Function Setting** page (Figure 5-23), these options become available:

Option	Description
Fire Alarm	See the same option above.
Access Denied	
Tamper	

[Common Password]

When **Fixed Card/Common Mode** is selected as **Authentication Mode** in the **Function Setting** page (Figure 5-23), you can gain access by using the card or entering this Common Password (door's password).

Common Password			
Door A		Gate B	
Common Password	<input type="password"/>	Common Password	<input type="password"/>
Password Confirm	<input type="password"/>	Password Confirm	<input type="password"/>

Figure 5-27

[AS100 Input Name]

Rename the input names.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

5.1.5.E.c Status Monitor

In the left menu, click **Status Monitor**. This page appears.

Figure 5-28

[Status Monitor]

Status Monitor displays the current status of each input, output and alarm. **Control Mode** will change depending on the chosen Door/Gate's **Authentication Mode** in the **Function Setting** page (Figure 5-23). The listed number of outputs will change depending on the chosen **Output Type** in the **In/Out Function** page (Figure 5-31).



= Indicates the current input/output device is triggered.



= Indicates the current input/output source is not triggered.



= Indicates the current event is triggered.



= Indicates the current light is on.



= Indicates the current light is off.

Note: Outputs must be turned on in the **In/Out Function** page to be monitored here.

5.1.5.E.d Card Information

In the left menu, click **Card Information**. This **Card Configuration** page appears.

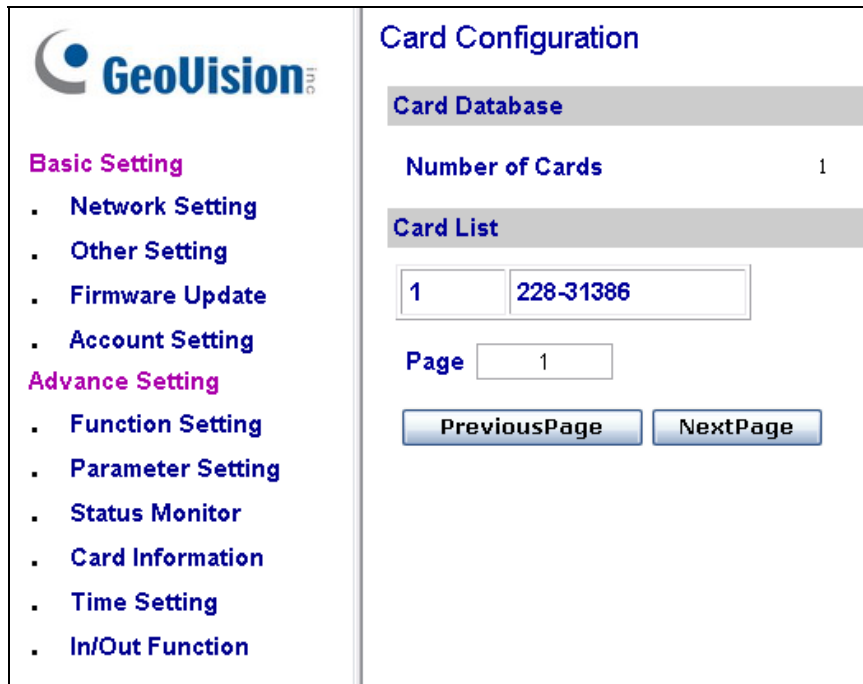


Figure 5-29

[Card Database]

Shows the number of cards currently stored in GV-AS100/GV-AS110/GV-AS120.

[Card List]

Displays the list of cards stored in GV-AS100/GV-AS110/GV-AS120. If there are many pages, you can choose to jump to any page by entering the page number in the **Page** field.

Click **Previous Page** button to go to the previous page of the Card List, or click **Next Page** button to go to the next page of the **Card List**.

5.1.5.E.e Time Setting

In the left menu, click **Time Setting**. This **Time Configuration** page appears.

Figure 5-30

[System Local Time]

- **Local Time:** Displays the current date and time of GV-AS100/GV-AS110/GV-AS120.
- **Time Zone:** Displays the current time zone of GV-AS100/GV-AS110/GV-AS120.

[Local Time]

- **Disable:** Disable the manual configuration of time and date.
- **Setup:** Enable the manual configuration of **Time Zone**, **Date** and **Time** for GV-AS100/GV-AS110/GV-AS120.

[Daylight Savings Time (DST)]

- **Disable:** Disable the manual configuration of DST.
- **Time Zone:** Enable the manual configuration of DST by setting the **Start Time** and **Stop Time** for the DST period.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

5.1.5.E.f In/Out Function

In the left menu, click **In/Out Function**. This **ASBox IO Configuration** page appears.

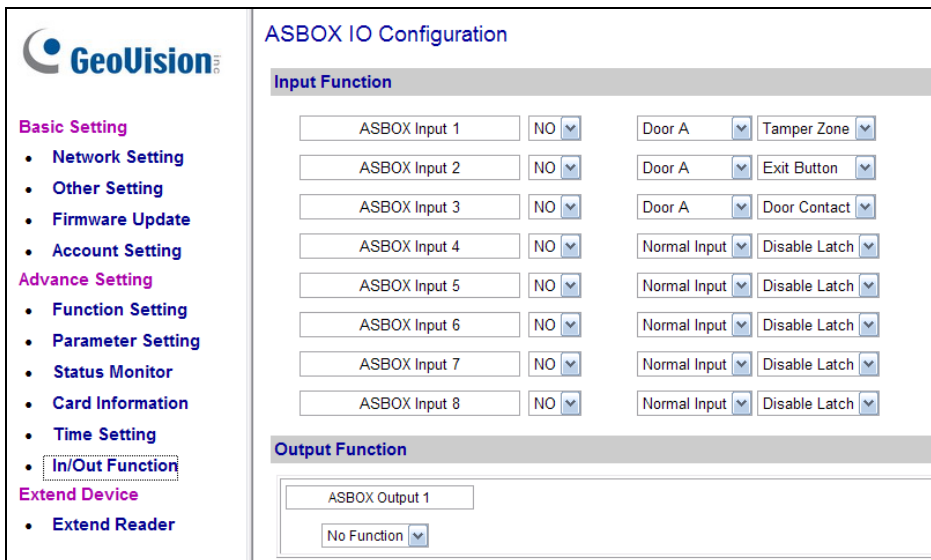


Figure 5-31

[Input Function]

Here you can define each sensor input that is connected GV-ASBox and select the most fitting **Input Type** (No. 3, Figure 5-32) and **Input Function** (No. 4, Figure 5-32) to describe the sensor input. Through the sensor input, an alarm event can be detected and it can then trigger the alarm device.

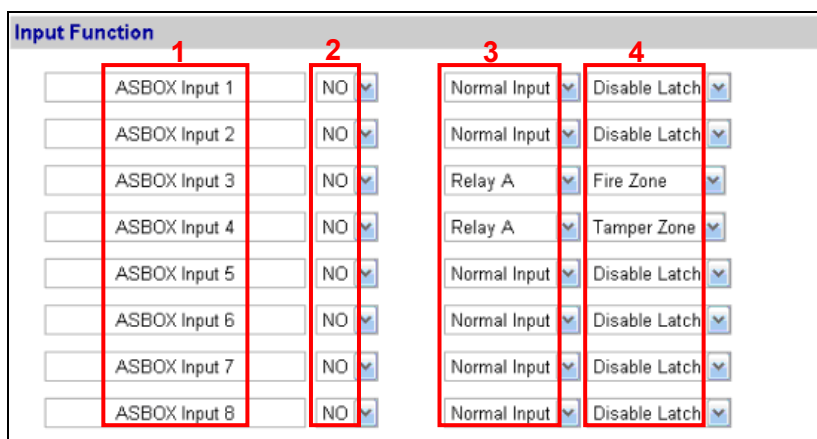


Figure 5-32

Below is the explanation based on the numbers marked on the above figure.

1. **ASBOX Input #:** Edit the name of the Input.
2. **NO/NC:** Configure the input to **NC** (normally closed) or **NO** (normally open) mode.

3. **Input Type:** Configure the input type. Input Type defines the type of sensor that is connected to the input of GV-ASBox. Options available for the input type change based on your settings of **Door/Gate A** and **Door/Gate B** in the **Function Setting** page (Figure 5-23).
 4. **Input Function:** Configure the input function. Options available for the input function change based on the settings of **Input Type** above.
- When **Door Entry/Exit Control** is selected in the **Function Setting** page (Figure 5-23), these **Input Type** and **Input Function** become available:

Input Type	Input Function	Description
Normal Input	Enable Latch Disable Latch	The Normal Input is used for a normal detection mode in which the input is set to trigger an output. Instead of constant output alarm in N/O and N/C, the Enable Latch option provides a momentary alarm when triggered.
Door A or B	Fire Zone Tamper Zone Exit Button Door Contact	Depending on the type of sensor and the location where it is installed, select the best Input Function name to fit the sensor description. When the sensor is activated, an alarm event occurs and the alarm device can be triggered. For alarm events, see [Alarm], <i>5.1.5.E.b Parameter Setting</i> . For example, when the Door Contact sensor detects unauthorized access, a “Force Open” event occurs and it can trigger the “Force Open” alarm.

- When **Parking Entry/Exit Control** is selected in the **Function Setting** page (Figure 5-23), these **Input Type** and **Input Function** become available:

Input Type	Input Function	Description
Normal Input	Enable Latch Disable Latch	See the same Input Type above.
Gate A or B	Fire Zone Tamper Zone Exit Button Car Detection	See the “Doo A or Door B” Input Type above. For example, when the Car Detection sensor detects any car driving by, a “Parking Entry” or “Parking Exit” event occurs and the parking gate will respond the event accordingly.

- When **Elevator Control** is selected in the **Function Setting** page (Figure 5-23), these **Input Type** and **Input Function** become available:

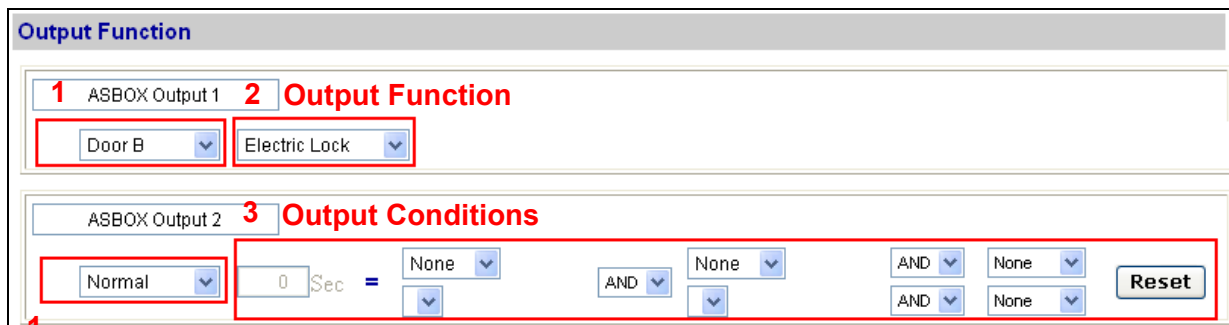
Input Type	Input Function	Description
Normal Input	Enable Latch Disable Latch	See the same Input Type above.
Relay A or B	Fire Zone Tamper Zone	See the “Door A or Door B” Input Type above. For example, the Tamper Zone sensor is installed on GV-ASBox. So whenever there is any attempt to open the Box, the “Tamper” event occurs and it may trigger the “Tamper” alarm.

Note: For alarm outputs, the corresponding alarms must be enabled (YES) in the **Parameter Setting** page (Figure 5-24). If alarms are set to be disabled (NO), the alarm function here will not work when triggered.

[Output Function]

Here you can define each output device that is connected to GV-ASBox, such as locking devices, various alarms or Exit Button. Only **Output 5 to Output 8** can be connected to Lights.

Select from the drop-down list to configure **Output Type** (No. 1, Figure 5-33). Depending on the chosen **Output Type**, either **Output Function** (No. 2, Figure 5-33) or **Output Conditions** (No. 3, Figure 5-33) will become available.



Output Function

ASBOX Output 1 **2 Output Function**

Door B Electric Lock

ASBOX Output 2 **3 Output Conditions**

Normal 0 Sec = None AND None AND None AND None Reset

1 Output Type

Figure 5-33

Output Function Settings:

When **Output Type** (No. 1, Figure 5-33) is set to be **Door #**, **Gate #** or **Relay #**, the options similar to the figure below become available.



Figure 5-34

Below is the explanation based on the numbers marked on the above figure.

- 1. **ASBOX Output #:** Edit the name of the Output.
 - 2. **Output Type:** Configure the output type. Options available for the output type change based on your settings of **Door/Gate A** and **Door/Gate B** in the **Function Setting** page (Figure 5-23).
 - 3. **Output Function:** Configure the output function. Options available for the output function change based on your setting of **Output Type** above.
- When **Door Entry/Exit Control** is selected in the **Function Setting** page (Figure 5-23), these **Output Type** and **Output Function** become available:

Output Type	Output Function	Description
Door #	Electric Lock	Output is triggered when the card is presented to open the locking device.
	Alarm Event	Output is triggered when the defined alarm events occur.
	Entry Card	Output is triggered when the card is presented to enter the door.
	Exit Card	Output is triggered when the card is presented to exit the door.

- When **Parking Entry/Exit Control** is selected in the **Function Setting** page (Figure 5-23), these **Output Type** and **Output Function** become available:

Output Type	Output Function	Description
Gate #	Electric Lock	See the same function above.
	Alarm Event	
	Security Card	Output is triggered when the security card is presented.
	Entry Card	Output is triggered when the card is presented to enter the parking gate.
	Exit Card	Output is triggered when the card is presented to exit the parking gate.

- When **Elevator Control** is selected in the **Function Setting** page (Figure 5-23), these **Output Type** and **Output Function** become available:

Output Type	Output Function	Description
Relay #	Electric Lock	See the same function above.
	Alarm Event	
	Security Card	

Output Condition Settings:

When **Output Type** (No. 1, Figure 5-33) is set to be **Normal**, **Toggle**, **Pulse**, **Normal Lighting**, **Toggle Lighting** or **Pulse Lighting**, the options similar to the figure below become available.



**Available in
Pulse/Lighting**

Figure 5-35

There can be a maximum of 4 conditions that can be set up to trigger an output. 2 conditions are Door/Gate/Relay conditions and 2 conditions are Input conditions. Each condition is related to each other through **AND/OR**. **AND** means that all conditions with **AND** must be triggered before the output is triggered. **OR** means that only 1 of the condition with **OR** is needed to be triggered before the output is triggered. It is also valid to have certain conditions as **AND** and certain conditions as **OR**.

Only **Output 5 ~ 8** can be connected to Lights. So **Normal Lighting**, **Toggle Lighting** and **Pulse Lighting** can only be selected from **Output 5 ~ 8**. For **Pulse** and **Pulse Lighting**, the output is triggered for the amount of time set in the **Sec** field (seconds).

In the Output Condition Settings, these **Output Type** and **Output Condition** options become available:

Output Type	Output Condition			
	Door A or B	Gate A or B	Relay A or B	Input (x2)
Normal	Access Granted	Access Granted	Access Granted	Select None to disable the condition, or select between Input 1 and Input 8 to trigger the output.
Toggle	Access Denied	Access Denied	Access Denied	
Pulse	Fire Alarm	Fire Alarm	Fire Alarm	
Normal Lighting	Tamper	Tamper	Tamper	
Toggle Lighting	Duress Event	Duress Event	Duress Event	
Pulse Lighting	Held Open	Held Open	/	
	Forced Open	Forced Open		
	Exit Button	Exit Button		
	Door Contact	Car Detection		

Click **Reset** button to return the **Normal, Toggle, Pulse, Normal Lighting, Toggle Lighting** or **Pulse Lighting** triggered state to be normal.

Note: The **Reset** button is more commonly used for the **Toggle** or **Toggle Lighting** output. Because once triggered, the output will go on forever. A **Reset** button is needed to turn it off.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

5.1.5.E.g Extended Reader

In the left menu, click **Extend Reader**. This **Extend Reader Configuration** page appears.

GeoVision

Extend Reader Configuration

GV-Reader Function

	Serial Number	Function	Setting Status
<input type="checkbox"/>	ID 0 <input type="text"/>	No Function <input type="button" value="v"/>	
<input type="checkbox"/>	ID 1 <input type="text"/>	No Function <input type="button" value="v"/>	
<input type="checkbox"/>	ID 2 <input type="text"/>	No Function <input type="button" value="v"/>	
<input type="checkbox"/>	ID 3 <input type="text"/>	No Function <input type="button" value="v"/>	

GeoFinger Function

	Serial Number	Function	Setting Status
<input type="checkbox"/>	<input type="text"/>	No Function <input type="button" value="v"/>	
<input type="checkbox"/>	<input type="text"/>	No Function <input type="button" value="v"/>	
<input type="checkbox"/>	<input type="text"/>	No Function <input type="button" value="v"/>	
<input type="checkbox"/>	<input type="text"/>	No Function <input type="button" value="v"/>	

Figure 5-36

Define each GV-Reader and GV-GF Fingerprint Reader connected to GV-AS100/GV-AS110/GV-AS120.

1. Select which door that the GV-Reader/GV-GF Fingerprint Reader is installed.
2. If you are using a GV-RK1352 Reader or GV-GF Fingerprint Reader, type the **serial number**. Leave the field blank if you are using other types of readers.
3. Click **Submit** to detect the GV-Reader/GV-GF Fingerprint Reader. If any GV-Reader/GV-GF Fingerprint Reader is detected, a green mark will appear in the **Status** field; if not, a red mark will appear.

5.1.6 GV-ASBox Specifications

CPU		8-bit RISC microprocessor
Power		100 ~ 240V AC, 50 ~ 60Hz
Battery		12V, 5Ah
RS-485 Interface		2 separate interfaces for GV-Readers and GV-GF Fingerprint Readers (Max. 4 readers)
Wiegand Interface		1 Wiegand interface, 26 ~ 64 bit format
		12V DC Power Supply, 200mA
Communication Protocol		RS-485
Digital I/O	Input	8 inputs, dry contact, NO / NC
	Output	8 outputs
Operating Temperature		0 ~ 65°C / 32 ~ 149°F
Operating Humidity		10% ~ 90% RH (non-condensing)
Board Dimensions (W X H X D)		214 x 206 x 48.5 mm / 8.43 x 8.11 x 1.91 in
Weight		850 g / 1.83 lb
Certification		CE, FCC, RoHS

5.2 Optional GV-ASNet

The optional GV-ASNet is the network expansion module for GV-AS100, GV-AS110 and GV-AS120. With the GV-ASNet, GV-AS100/GV-AS110/GV-AS120 can be connected to the GV-ASManager and you can access the Web interface of GV-AS100/GV-AS110/GV-AS120.

5.2.1 Main Features

- Add TCP/IP networking capability to GV-AS100, GV-AS110 and GV-AS120
- Access GV-AS100, GV-AS110 and GV-AS120's features through Web-based interfaces
- Support 2 units of GV-Readers and GV-GF Fingerprint Readers

5.2.2 Packing List

- GV-ASNet
- Power Adaptor 12V DC
- Battery Power Cable

5.2.3 GV-ASNet Overview

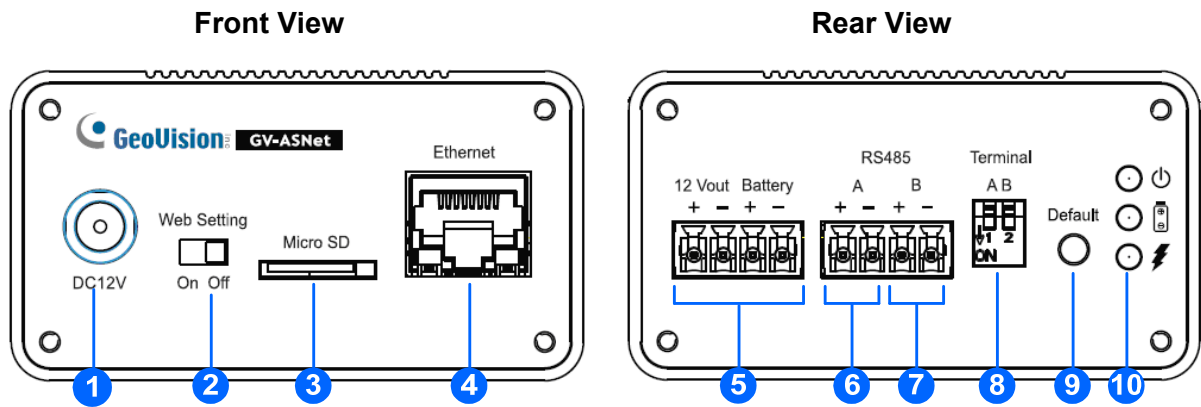


Figure 5-37

No.	Name	Function
1	DC Power Input (12V)	Connects to power supply.
2	Web Setting	Enables the Advanced Settings on Web interface of GV-AS100/GV-AS110/GV-AS120.
3	Micro SD	The Micro SD slot is not functional at this point.
4	Ethernet	Connects to the network.
5	12V+/12V- Battery	Power supply for GV-AS100/GV-AS110/GV-AS120.
6	RS485A+/RS485A-	Connects to GV-AS100/GV-AS110/GV-AS120.
7	RS485B+/RS485B-	Connects to GV-Readers.
8	Terminal A/B	Enables RS-485 interface.
9	Default button	Resets all configurations to factory defaults.
10	Power LED	Shows the power source and battery charging status of the GV-ASNet. See 5.2.4.C Other Settings for more details.

5.2.4 Installation

This section describes how to connect other devices to GV-ASNet.

5.2.4.A Connecting GV-AS100/GV-AS110/GV-AS120

The table and figure below show the pin assignments of related connectors on the rear view of the GV-ASNet for connection to GV-AS100/GV-AS110/GV-AS120.

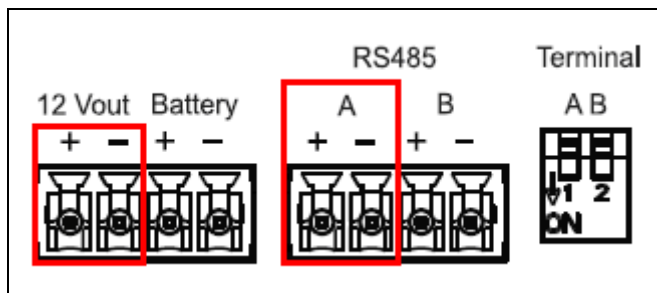


Figure 5-38

Pin	Function	Pin	Function
12V+	12V Power Supply to GV-AS100/110/120	12V-	GND for Power Supply to GV-AS100/110/120
RS485A+	GV-AS100/110/120 Connection	RS485A-	GV-AS100/110/120 Connection

For connection to GV-AS100/GV-AS110/GV-AS120, **Terminal A** and **Terminal B** must be turned ON.

5.2.4.B Connecting GV-Readers and GV-GF Fingerprint Readers

You can connect up to **2 units of GV-Readers and GV-GF1901/1902** readers to GV-ASNet. Multiple GV-Readers and GV-GF Fingerprint Readers can be connected with a single RS-485 cable to the RS485 B+ and B- on GV-ASNet. You will need to connect the GV-Readers or GV-GF Fingerprint Readers to external power supply.

The figure and table shows the pin assignments for related connectors.

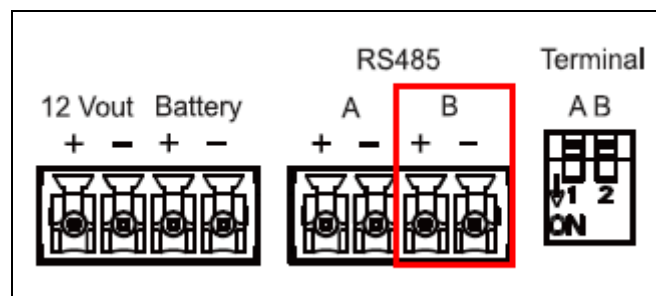


Figure 5-39

Pin	Function	Pin	Function
RS485B+	GV-Reader / GV-GF Fingerprint Readers Connection	RS485B-	GV-Reader / GV-GF Fingerprint Readers Connection

To define each GV-Reader and GV-GF Fingerprint Reader, you need to use the GV-AS100/GV-AS110/GV-AS120 Web interface. See 5.2.5.B.g *Extended Setting*.

5.2.4.C Other Settings

The figure below shows the location of the **Web Setting Switch**, **Default Button** and **Power Status LED**.

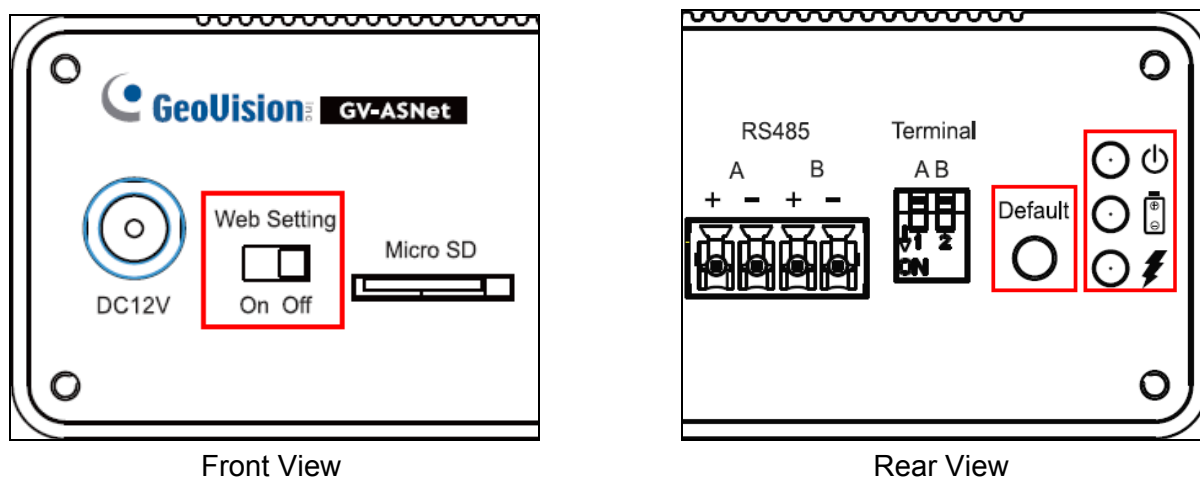


Figure 5-40




5.2.4.C.a Web Setting Switch

When the **Web Setting** switch is set to ON, you can modify **Advanced Settings** of GV-AS100/GV-AS110/GV-AS120 through the Web interface. When the switch is set to OFF, Advanced Settings are not accessible. For details on Advanced Settings, see 5.2.5.B *Advanced Settings*.

5.2.4.C.b Restoring Factory Defaults

To restore factory default values, press the Default button on GV-ASNet for 6 seconds. After this it may take up to 3 minutes to restore GV-ASNet to default values.

5.2.4.C.c Power Status LED

The three LED located on the right of the rear panel indicate the power status of the GV-ASNet. When the power LED  is red, it indicates that the GV-ASNet is powered. When the main power source is off and that the GV-ASNet is running on battery, the battery LED  turns green. An orange charging LED  means that the battery is being charged.

5.2.5 Web-Based Configurations of GV-AS100/GV-AS110/GV-AS120

Through GV-ASNet, GV-AS100, GV-AS110 and GV-AS120 can communicate with GV-ASManager over the network. Using GV-ASNet, you can also access the GV-AS100/GV-AS110/GV-AS120's Web interface.

Designed for use on the network, GV-ASNet must be assigned an IP address to make it accessible. Follow these steps to network GV-ASNet:

1. Connect the network cable to the **Ethernet** port on GV-ASNet.
2. Use a computer on the same LAN with GV-ASNet to assign the IP address.
 - The default address of GV-ASNet is <https://192.168.0.100>
 - The default Username and Password for login are **admin**

Note the computer used to set the IP address must be at the same network or subnet sequence assigned to GV-ASNet.

3. GV-ASNet is able to support two network environments: Fixed IP and DHCP. See *5.1.5.A Installing GV-AS100/GV-AS110/GV-AS120 on a Network* for further setup.
4. To configure the Advanced Setting on the Web configuration interface, set the **Web Setting** switch on GV-ASNet to be ON.

5.2.5.A Basic Setting

The Basic Setting consists of four types of settings:

Category	Setting	Description
Basic Setting	Network Setting	There are different methods to install GV-ASNet on the network. See <i>5.1.5.A Installing AS100/GV-AS110/GV-AS120 on a Network</i> .
	Other Setting	See <i>5.1.5.B System Setup</i> .
	Firmware Upgrade	See <i>5.1.5.C Upgrading Firmware</i> .
	Account Setting	See <i>5.1.4.D Changing Login ID and Password</i> .

5.2.5.B Advanced Settings

You can execute and edit door operations and settings, turn on Alarms, display card information stored in GV-AS100/GV-AS110/GV-AS120 and set the device time.

5.2.5.B.a Function Setting

In the left menu, click **Function Setting**. This **AS100/AS110/AS120 Function Configuration** page appears.

Figure 5-41

[ID]

Enter the ID number for GV-AS100, GV-AS110 or GV-AS120. This ID is used by GV-ASManager to differentiate among multiple units of GV-AS100/GV-AS110/GV-AS120. ID number can only be between 1 and 255.

[Door/Gate A]

Select the function type and authentication mode for the use of Door/Gate A.

- **Function:** Select the function for GV-AS100/GV-AS110/GV-AS120 on Door/Gate A.
 - ⊙ **Door Entry Control:** Sets GV-AS100/GV-AS110/GV-AS120 as entry reader on the Door A. The Wiegand reader connected on GV-AS100/GV-AS110/GV-AS120 will be set as exit reader.
 - ⊙ **Door Exit Control:** Sets GV-AS100/GV-AS110/GV-AS120 as exit reader on the Door A. The Wiegand reader connected on GV-AS100/GV-AS110/GV-AS120 will be set as entry reader.

- ⊙ **Parking Entry Control:** Sets GV-AS100/GV-AS110/GV-AS120 as entry reader on the parking Gate A.
- ⊙ **Parking Exit Control:** Sets GV-AS100/GV-AS110/GV-AS120 as exit reader on the parking Gate A.
- ⊙ **Elevator Control:** GV-AS100/GV-AS110/GV-AS120 is installed in the elevator for access control.

Note: The **Parking Entry Control** and **Parking Exit Control** only work when the sensor input of Car Detection is activated. When the card is present but the sensor input is not activated, the message “No Car In Zone” will appear in the GV-AS100 LCD.

- **Authentication Mode:** Select the authentication mode for the Door/Gate A.
 - ⊙ **Local Unlock Mode:** Remains open. The held-open state cannot be cleared through GV-ASManager.
 - ⊙ **Local Lock Mode:** Remains locked. The locked state cannot be cleared through GV-ASManager.
 - ⊙ **Fixed Card Mode:** Grants access after the card is presented, and ignores the authentication schedule of GV-ASManager.
 - ⊙ **Fixed Card + PIN Mode:** Grants access after the user presents the card and then enters the card’s PIN code, and ignores the authentication schedule of GV-ASManager.
 - ⊙ **Fixed Card/Common mode:** Grants access after the user presents the card or enters the door’s password, and ignores the authentication schedule of GV-ASManager.
 - ⊙ **Authentication Schedule Mode:** Follows the authentication schedule set on GV-ASManager.

[Anti-Passback]

This setting lets you perform Anti-Passback applications across multiple GV-AS Controllers. Anti-Passback prevents use of a card to gain successive entries without exit to a controlled area. For details on setup, see *Chapter 6 Anti-Passback on GV-ASManager User’s Manual*.

- **Enable/Disable:** Enables or disables the Anti-Passback function.
- **Info IP:** Enter the IP address of the next corresponding GV-AS100/GV-AS110/GV-AS120.

[Delete MasterCard]

- **Delete:** Click the **Delete** button to delete the current MasterCard information.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

5.2.5.B.b Parameter Setting

In the left menu, click **Parameter Setting**. This **AS100/AS110/AS120 Configuration** page appears. The contents of Parameter Setting change based on your settings for Door/Gate A in the **Function Setting** page (Figure 5-41).

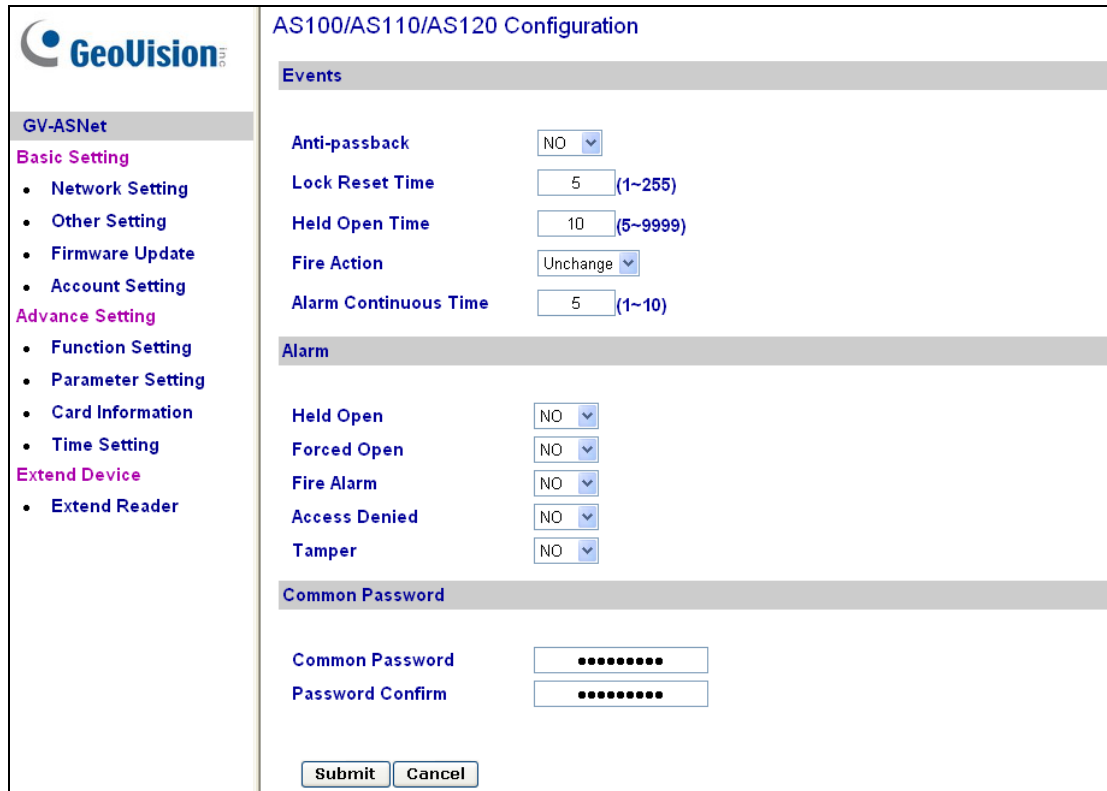


Figure 5-42

IMPORTANT: Once connecting to GV-AS100/GV-AS110/GV-AS120, GV-ASManager will load its parameters to GV-AS100/GV-AS110/GV-AS120. That means some of the Parameter Settings you have configured here may be rewritten by GV-ASManager later.

[Events]

Set the parameters for the events.

Events	
Anti-passback	NO <input type="button" value="v"/>
Lock Reset Time	<input type="text" value="5"/> (1~255)
Held Open Time	<input type="text" value="10"/> (5~9999)
Fire Action	Unchange <input type="button" value="v"/>
Alarm Continuous Time	<input type="text" value="5"/> (1~10)

Figure 5-43

- When **Door Entry/Exit Control** or **Parking Entry/Exit Control** is selected in the **Function Setting** page (Figure 5-41), these options become available:

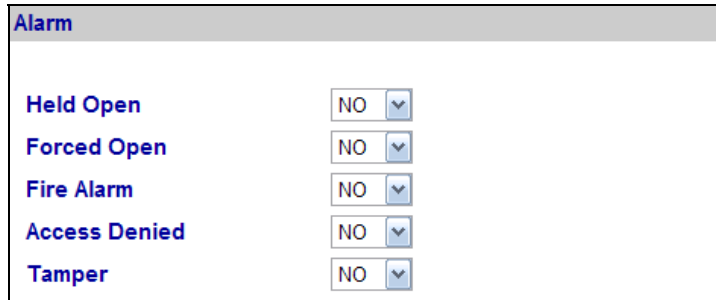
Option	Description
Anti-Passback	Enables or disables the Anti-Passback function. The option is only available for Door/Gate A .
Gate Open Time	Sets the time (1 to 255 sec.) that a parking gate remains open after which the gate will automatically be locked. The option is only available when Parking Entry/Exit Control is selected.
Lock Reset Time	Sets the time (1 to 255 sec.) that a door remains open after which the door will automatically be locked. The option is only available when Door Entry/Exit Control is selected.
Held Open Time	Sets the time (5 to 9999 sec.) that a door/gate can be held open before an alarm is generated.
Fire Action	Locks or unlocks the door/gate when a fire condition occurs. Otherwise, remains the door's current state by selecting <i>Unchanged</i> .
Alarm Continuous Time	Sets the time (1 to 10 sec.) that the alarm will continuously go off before it ends.

- When **Elevator Control** is selected in the **Function Setting** page (Figure 5-41), these options become available:

Option	Description
Relay on Time	Sets the time (1 to 255 sec.) that an elevator door remains open after which the door will automatically be closed.
Fire Action	See the same option above.
Alarm Continuous Time	

[Alarm]

Select **Yes** or **No** to enable or disable the alarm function. The default settings for all the alarms are set to **NO**.



Alarm	
Held Open	NO ▼
Forced Open	NO ▼
Fire Alarm	NO ▼
Access Denied	NO ▼
Tamper	NO ▼

Figure 5-44

- When **Door Entry/Exit Control** or **Parking Entry/Exit Control** is selected in the **Function Setting** page (Figure 5-41), these options become available:

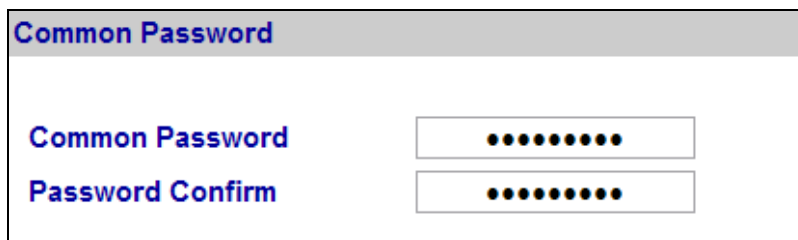
Option	Description
Held Open	This alarm activates whenever the door is held open over the set period of time.
Forced Open	This alarm activates whenever the door is opened by force.
Fire Alarm	This alarm activates whenever fire is detected.
Access Denied	This alarm activates whenever entry is denied due to using the wrong card or entering the wrong password.
Tamper	This alarm activates whenever vandalism occurs, e.g. the opening of Controller's cabinet.

- When **Elevator Control** is selected in the **Function Setting** page (Figure 5-41), these options become available:

Option	Description
Fire Alarm	See the same option above.
Access Denied	
Tamper	

[Common Password]

When **Fixed Card/Common Mode** is selected as **Authentication Mode** in the **Function Setting** page (Figure 5-41), you can gain access by using the card or entering this Common Password (door's password).



Common Password	
Common Password	<input type="password"/>
Password Confirm	<input type="password"/>

Figure 5-45

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

5.2.5.B.c Card Information

In the left menu, click **Card Information**. This **Card Configuration** page appears.

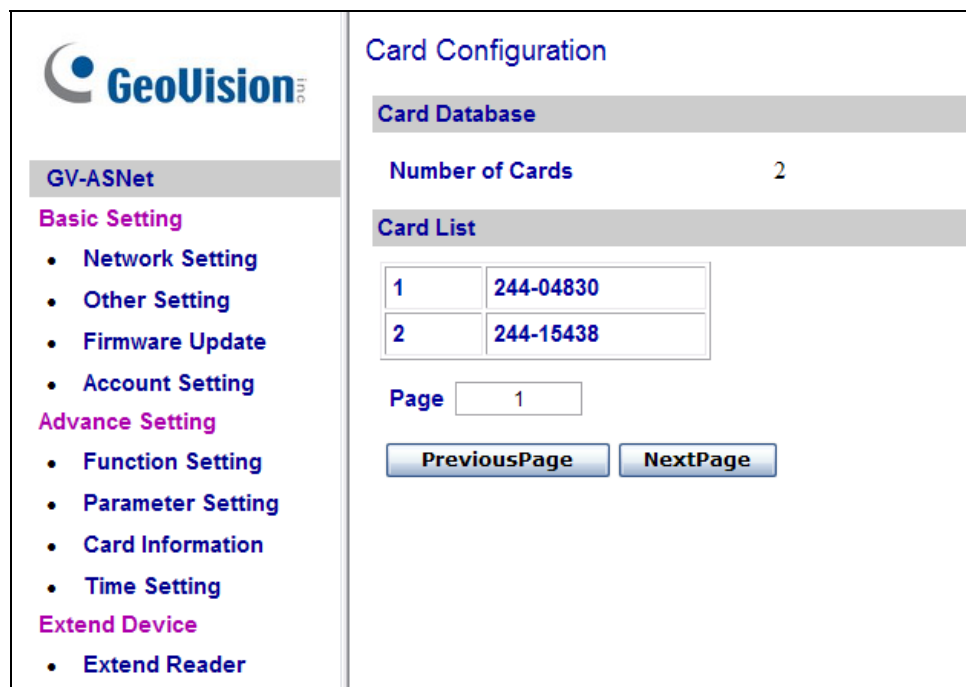


Figure 5-46

[Card Database]

Shows the number of cards currently stored in GV-AS100/GV-AS110/GV-AS120.

[Card List]

Displays the list of cards stored in GV-AS100/GV-AS110/GV-AS120. If there are many pages, you can choose to jump to any page by entering the page number in the **Page** field.

Click **Previous Page** button to go to the previous page of the Card List, or click **Next Page** button to go to the next page of the **Card List**.

5.2.5.B.d Time Setting

In the left menu, click **Time Setting**. This **Time Configuration** page appears.

GeoVision

GV-ASNet

Basic Setting

- Network Setting
- Other Setting
- Firmware Update
- Account Setting

Advance Setting

- Function Setting
- Parameter Setting
- Card Information
- Time Setting

Extend Device

- Extend Reader

Time Configuration

System Local Time

Local Time 2010/11/17 14:57:26

Time Zone +8:00

Local Time

Disable

Setup

TimeZone

Hour	Min
0	0

Date

Year	Month	Date
2009	January	1

Time

Hour	Min	Sec
0	0	0

Daylight Savings Time(DST)

Disable

Enable

Start Time

Month	Date	Hour
January	10	11

Stop Time

Month	Date	Hour
February	12	23

Figure 5-47

[System Local Time]

- **Local Time:** Displays the current date and time of GV-AS100/GV-AS110/GV-AS120.
- **Time Zone:** Displays the current time zone of GV-AS100/GV-AS110/GV-AS120.

[Local Time]

- **Disable:** Disable the manual configuration of time and date.
- **Setup:** Enable the manual configuration of **Time Zone**, **Date** and **Time** for GV-AS100/GV-AS110/GV-AS120.

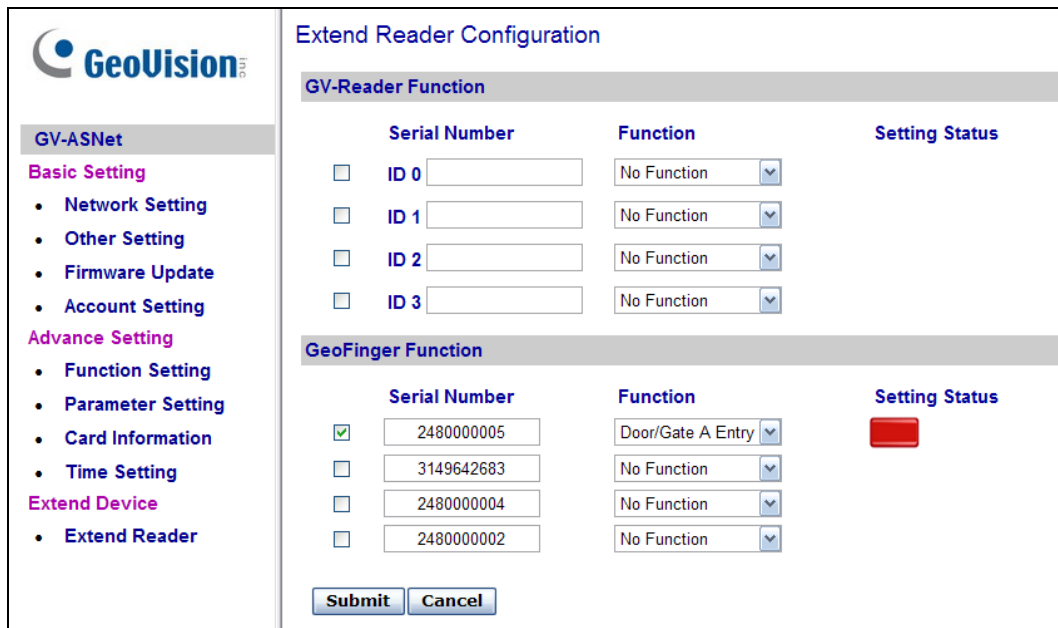
[Daylight Savings Time (DST)]

- **Disable:** Disable the manual configuration of DST.
- **Time Zone:** Enable the manual configuration of DST by setting the **Start Time** and **Stop Time** for the DST period.

Click **Submit** button to save the changes, or click **Cancel** button to return the changes to its previous state.

5.2.5.B.e Extended Reader Setting

In the left menu, click **Extend Reader**. This **Extend Reader Configuration** page appears.



GV-Reader Function		
Serial Number	Function	Setting Status
<input type="checkbox"/> ID 0	No Function	
<input type="checkbox"/> ID 1	No Function	
<input type="checkbox"/> ID 2	No Function	
<input type="checkbox"/> ID 3	No Function	

GeoFinger Function		
Serial Number	Function	Setting Status
<input checked="" type="checkbox"/> 2480000005	Door/Gate A Entry	■
<input type="checkbox"/> 3149642683	No Function	
<input type="checkbox"/> 2480000004	No Function	
<input type="checkbox"/> 2480000002	No Function	

Figure 5-48

Define each GV-Reader and GV-GF Fingerprint Reader connected to GV-AS100/GV-AS110/GV-AS120. Select the door that the GV-Reader or GV-GF Fingerprint Reader is installed and type the **Serial Number** found on GV-Reader and GV-GF Fingerprint Reader. Click **Submit** to detect GV-Reader or GV-GF Fingerprint Reader. If any GV-Reader or GV-GF Fingerprint Reader is detected, a green mark will appear in the **Status** field; if not, a red mark will appear.

5.2.6 GV-ASNet Specifications

CPU	8-bit RISC microprocessor
Power	100 ~ 240V AC, 50 ~ 60Hz
Battery	12V, 5Ah and 12V, 12Ah
RS-485 Interface	1 RS-485 interface only for GV-Readers and GV-GF Fingerprint Readers (Max. 2 readers)
Communication Protocol	RS-485
Operating Temperature	0 ~ 65°C / 32 ~ 149°F
Operating Humidity	10% ~ 90% RH (non-condensing)
Dimensions (W X H X D)	118.3 x 74 x 40 mm / 4.7 x 2.9 x 1.6 in
Weight	300 g / 0.66 lb
Certification	CE, FCC, RoHS

6. GV-ASManager Quick Start Guide

6.1 Introduction

All GV-AS Controllers come with GV-ASManager software, which offers full control of the entrances of your premise. Up to 255 units of GV-AS Controllers can be monitored and controlled by one GV-ASManager.

This chapter offers a quick guide on how to install GV-ASManager and how to set up controllers, doors and cards. For details, refer to the *GV-ASManager User's Manual*. To see how the GV-ASManager and GV-AS Controller can be set up, refer to the *Installation* section for each GV-AS Controller in previous chapters.

6.2 Installation

This section explains how to install and log in GV-ASManager.

6.2.1 System Requirement

For GV-ASManager version 3.0 or later, the minimum hardware and software requirements are:

OS	32-bit	Windows XP / Vista / 7 / Server 2008
	64-bit	Windows Vista / 7 / Server 2008
CPU	Pentium 4, 3.0 GHz with Hyper-Threading	
Memory	2 x 256 MB Dual Channels	
Hard Disk	2.0 GB	
VGA	NVIDIA GeForce 7300 GT 128MB (PCI slot), or ATI Radeon 9550 / 9600 / X1050 Series 256MB (AGP slot) No support for onboard VGA	
DirectX	End-User Runtimes (November 2008)	
Software	.NET Framework 3.5 SQL Server 2005 Express (optional)	
Browser	Internet Explorer 7.0 or later	
<p>Note: The software programs End-User Runtimes (November 2008) and .NET Framework 3.5 are necessary to run the GV-ASManager. The software programs can be found in the accompanying software CD.</p>		

6.2.2 Installing the GV-ASManager

Starting from version 2.0.1, the GV-ASManager software that comes with GV-AS Controller can manage one controller. If you need to manage more than one controller, USB dongle is required. The available types of dongles for purchase are as follows:

USB Dongle for GV-ASManager

- **Dongle 4** is used for connection of up to 4 GV-AS Controllers.
- **Dongle 10** is used for connection of up to 10 GV-AS Controllers.
- **Dongle 30** is used for connection of up to 30 GV-AS Controllers.
- **Dongle 50** is used for connection of up to 50 GV-AS Controllers.
- **Dongle 255** is used for connection of up to 255 GV-AS Controllers.

USB Dongle for Connecting IP Cameras

Starting from GV-ASManager 3.0, no USB dongle is needed to connect to IP cameras.

To install the USB Dongle drivers:

1. Insert the USB Dongle to your computer.
2. Insert Software CD to your computer and a window will pop up automatically. Select **Install or Remove GeoVision GV-Series Driver** and click **Install Geovision USB Devices Driver**.

To install the GV-ASManager:

To run **GV-ASManager V2.0 or later**, you must first install DirectX End-User Runtimes (November 2008) and .NET Framework. Follow these steps to install the programs.

1. Insert Software CD to your computer and a window will pop up automatically.
2. If you don't have DirectX 9.0c installed in your computer, select **Install DirectX 9.0c**.
3. Select **Install DirectX End-User Runtimes (November 2008)**.
4. Select **Install Microsoft .NET Framework Version 3.5**.
5. Select **Install GeoVision V3.0.0.0 Access Control System**, click **GeoVision Access Control System** and follow on-screen instructions to complete the installation.

Note: If you are upgrading from a previous version to GV-ASManager V3.0 but want to keep your current database, refer to *Note for the User of Upgrading GV-ASManager* in *GV-ASManager User's Manual* for detailed instructions.

6.2.3 Logging in

Before using the GV-ASManager, you need to set the login ID and password and create a database.

1. Click **Start**, point to **Programs**, select **Access Control** and click **ASManager**. When you start the system for the first time, the system will prompt you for a Supervisor ID and Password as below.

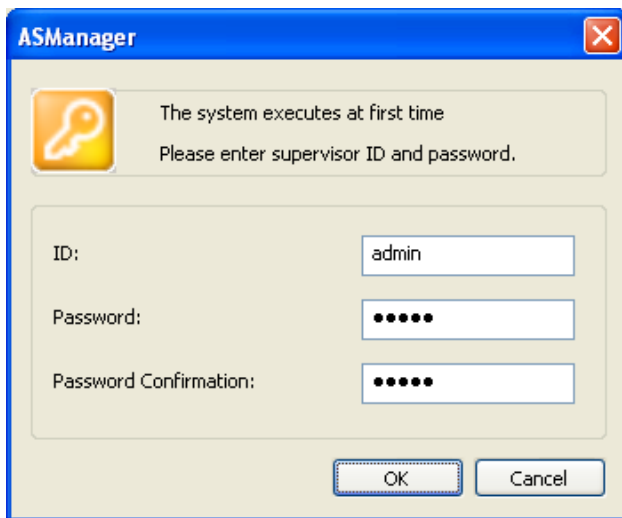


Figure 6-1

2. Type a name you wish to be the Supervisor in the ID field and type the password.
3. Click **OK**. The message "Can't open database. Would you like to set up database?" appears.
4. Select **Yes** to create a database. The ID and password you have configured in Step 1 are required to access the feature. This dialog box appears.

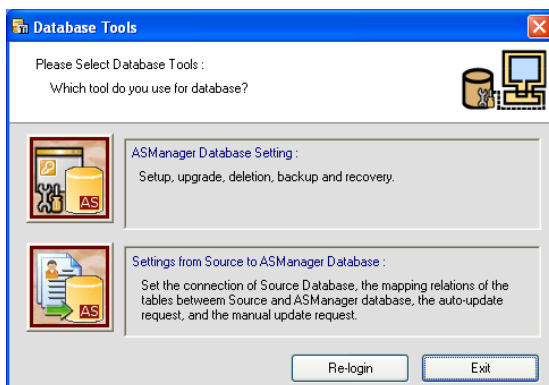


Figure 6-2

5. Select **ASManager Database Setting**. The ASManager Database Setting dialog box appears.

6. You can create either a Microsoft Access database or a Microsoft SQL database. To create a Microsoft SQL database, see *Chapter 12 Database Settings* in *GV-ASManager User's Manual*.

To create a Microsoft Access database when using GV-ASManager for the first time, Select **Setup MDB / MSSQL Database for ASManager**. The Setup Database Connection dialog box appears. Select **Microsoft Office Access Database**, and click **OK**. The program starts creating a database. When it is complete, the message “*Setup database connection successfully*” will appear.

7. Restart **ASManager**. You can see the main screen of the GV-ASManager.

Note:

1. After you upgrade GV-ASManager, it is recommended to also upgrade the GV-AS Controller firmware. To upgrade the controller firmware, use the **Update to the latest firmware version** function in the Net Module Utility. See *Chapter 13 Net Module Utility* in *GV-ASManager User's Manual*.
 2. By default the Access database is created at C:\Access Control\ASManager\ASRes.
-

6.3. The Main Screen of GV-ASManager

After you run the GV-ASManager, the following main screen will appear.

6.3.1 Main Screen

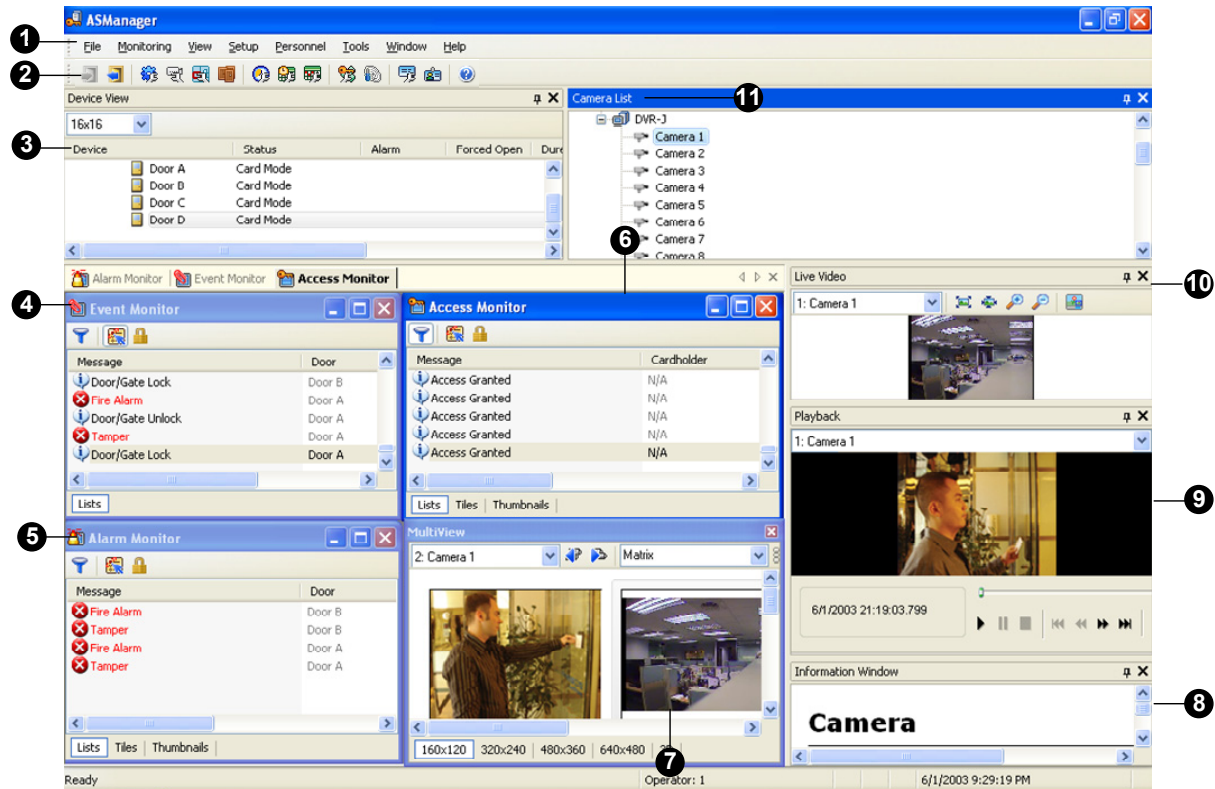


Figure 6-3

No.	Name	Function
1	Menu Bar	The Menu Bar includes the options of File (log in / out the GV-ASManager), Monitoring (display monitor windows of alarm, access and event), View (display the function windows), Setup (set up connected devices and schedules), Personnel (set up the cardholders' accounts), Tools (set up for notification and log) and Window (arrange the display of different windows).
2	Toolbar	The Toolbar includes the options of Login, Logout, Devices, Areas, Door Groups, Time Zones, Weekly Schedules, Holidays, Access Groups, Cards, Cardholders, ASLog and About.
3	Device View	Displays a list of connected doors and their current status. You

		can change the size of icons to 16 x 16, 24 x 24 or 32 x 32 from the drop-down list.
4	Event Monitor	Displays monitored events of doors.
5	Alarm Monitor	Displays alarm events of doors.
6	Access Monitor	Displays access activities of doors.
7	MultiView	Displays live views of connected cameras from multiple IP devices.
8	Information Window	Displays the information of doors, card readers and monitored events.
9	Playback	Plays back recorded events from a compatible GeoVision IP device.
10	Live Video	Displays the live view of one connected camera.
11	Camera List	Displays a list of connected cameras.

Note: After closing the main screen, GV-ASManager will continue to run in **Windows Task Manager**.

6.3.2 Toolbar



Figure 6-4

The buttons on the Toolbar of GV-ASManager:

No.	Name	Function
1	Login	Logs in the GV-ASManager.
2	Logout	Logs out the GV-ASManager.
3	Devices	Defines controllers and doors.

4	Cameras	Searches the GV IP devices on the same network.
5	Areas	Configures Global Anti-Passback.
6	Door Groups	Assign controllers and doors into door groups to be able to quickly upload fingerprints to multiple controllers and doors. For details, see <i>7.4.4 Uploading Fingerprints to Controllers Using Door Groups</i> .
7	Time Zones	Defines the minutes and hours of the day when a user is granted access to a secure site.
8	Weekly Schedules	Defines the days of the week when a user is granted access to a secure site.
9	Holidays	Defines the specific dates as holidays.
10	Access Groups	Sets up different groups to define who can access what door at what time of a day.
11	Fingerprint Access	Uploads the enrolled fingerprints to the controllers.
12	Cards	Creates and edits a database of card information.
13	Cardholders	Creates and edits a database of cardholder information.
14	About	Displays the version of GV-ASManager.

6.4 Basic Setup

To set up your access control system, follow these steps:

- **Step 1 Configuring a Controller**

Establish the communication between the GV-AS Controller and GV-ASManager.

- **Step 2 Configuring a Door**

Define the doors on a door controller.

- **Step 3 Adding Cards**

Enroll cards into GV-ASManager to grant access.

6.4.1 Configuring a Controller

1. On the menu bar, click **Setup** and select **Device**. The Controller List dialog box appears.
2. Click the **Add** icon on the top left corner. This dialog box appears.

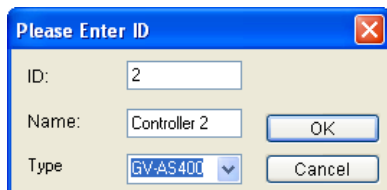


Figure 6-5

3. Enter **ID** and **Name** of the Controller, select **Type** of the Controller and click **OK**. This dialog box appears.

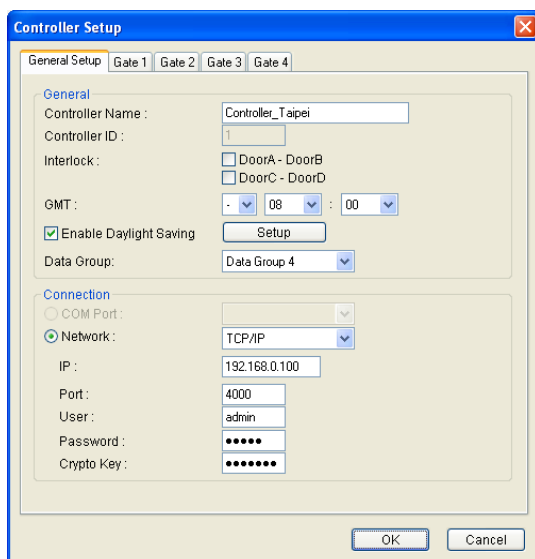



Figure 6-6

Note: The Controller ID is set ahead with GV-ASKeypad or Web interface. Refer to previous chapters for setting Controller ID.

4. In Connection section, select the communication mode between the GV-AS Controller and GV-ASManager.
 - If using RS-485 connection, select **COM Port** that is used for connection.
 - If using Ethernet, select **Network** and select **TCP/IP** or **LocalDDNS**. Type the IP address, device name (if LocalDDNS is selected), port number, login user, login password and Crypto key (3DES code) of the GV-AS Controller.

Note: The default values of GV-AS Controller are: IP address **192.168.0.100**; username **admin**; password **admin**; Crypto key (3DES code) **12345678**.

5. To check if the above connection settings are correct, you can click **OK** at this step and back to the main screen. The icon  appearing on the Device View window indicates the connection is established.

6.4.2 Configuring a Door

1. To define the doors on the controller, click the **Door/Gate** tab. This dialog box appears.

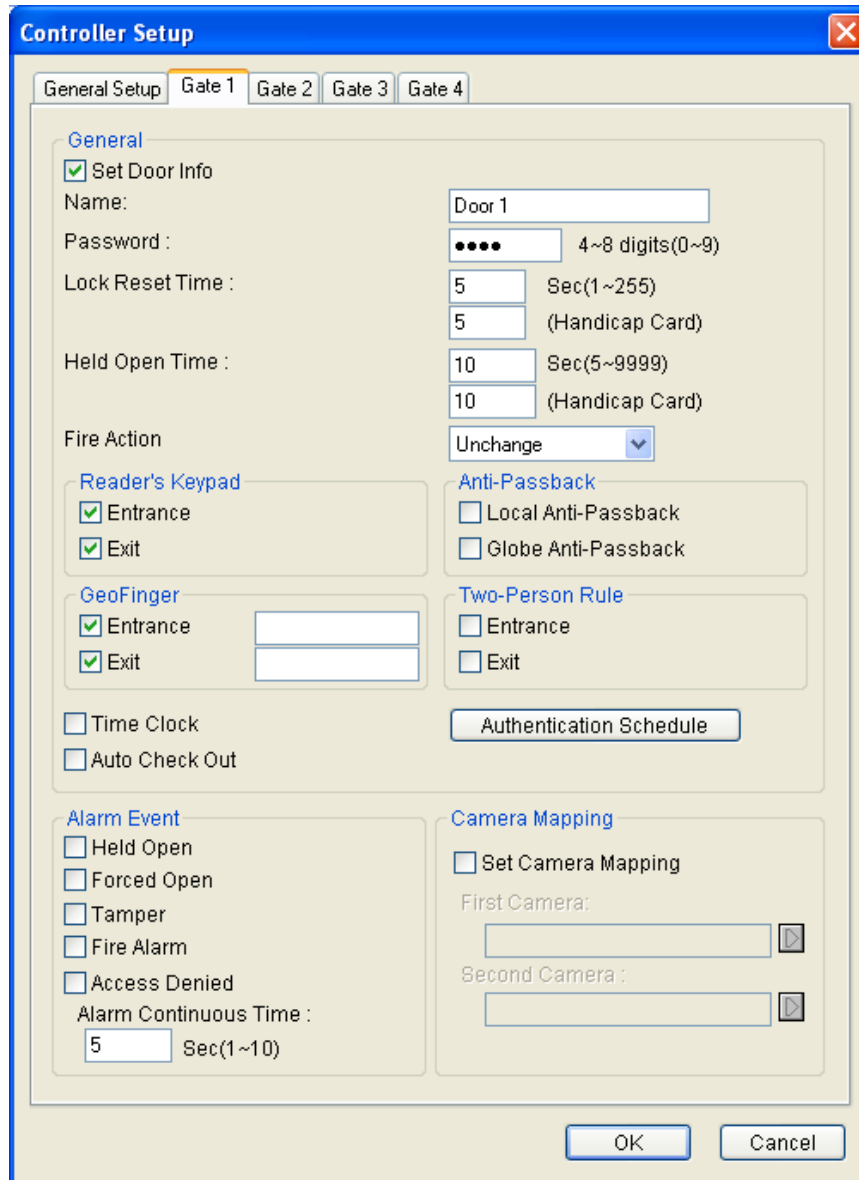


Figure 6-7

2. In the General section, enable **Set Door Info** to configure door settings such as password, lock reset time and fire action etc.
 - **Password:** Give a password to the door. The default setting is 1234.
 - **Lock Reset Time:** If the door is monitored, type the number of seconds the door can be held open. After the specified time expired, the door will automatically be locked.
 - **Fire Action:** Set the door to be locked or unlocked when a fire alarm condition occurs.

- The **Authentication Schedule** is an OPTIONAL setting for specifying different access modes at different periods of time; otherwise the default access mode is **Card Mode** that requires users to present the card only to be granted access. To apply an access mode, select one access mode on the toolbar and drag the mouse over the timelines. For more details on each type of access mode, see the *Adding Controllers* section in *Chapter 4, GV-ASManager User's Manual*.

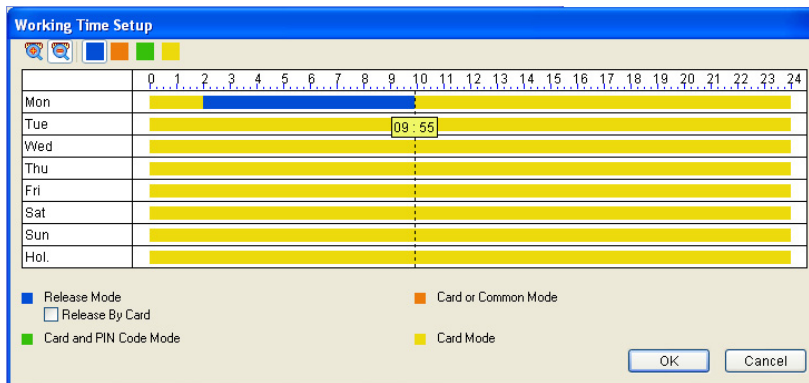



Figure 6-8

- The settings in the Alarm Event and Camera Mapping section are OPTIONAL. For details on camera mapping, see *Chapter 5 Video Integration* in *GV-ASManager User's Manual*.
- The settings in the Alarm Event section are OPTIONAL unless an alarm device is installed on the GV-AS Controller.
- Click **OK** several times and return to the main screen. A controller folder tree will be displayed on the Device View window and you will see the  icon when connection between the controller and GV-ASManager has been established.

Note: For the disconnection messages displayed on the Status column, see *D. Controller Status* in *Appendix of GV-ASManager's User Manual*.

6.4.3 Adding Cards

Once you have configured the controller, you may start enrolling cards. All new cards must be enrolled into the GV-ASManager before access is allowed.

Depending on how many cards you need to program, you can simply add them one at a time or use the batch function to add a group of cards. You can also refer to *Chapter 4 Settings in GV-ASManager User's Manual* to see how to import and export card data.

6.4.3.A Adding a Single Card

1. To add one card, use one of these ways:
 - Present the card to the reader. The message *Access Denied: Invalid Card* is displayed. Right-click the message and select **New/Edit Card**. The New a Card dialog box appears with card number and code type entered. Next, follow Step 3 to complete other settings.
 - On the menu bar, click **Personnel** and select **Cards**. This window appears.

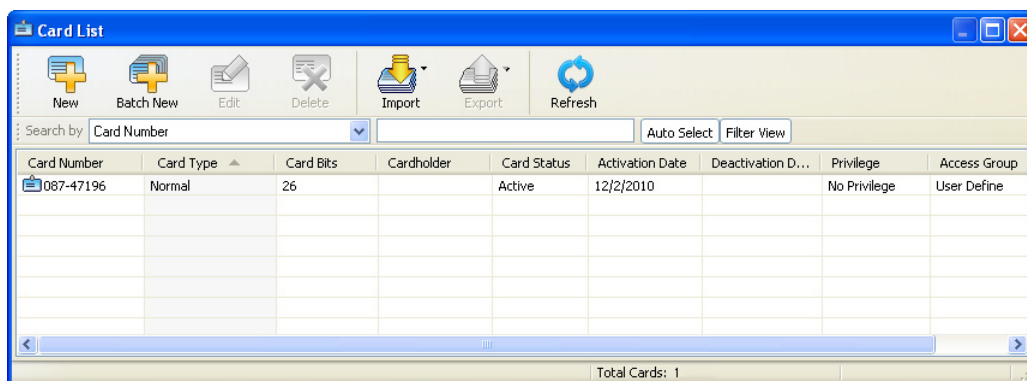


Figure 6-9

2. Click the **New** button on the toolbar. This dialog box appears.

The 'New a Card' dialog box contains the following fields and options:

- Cardholder: [Empty text box]
- Card Number: 123-45678
- Code Type: Wiegand26
- Card Status: Active
- Card Type: Normal
- Activation Date: 8/ 1/2011
- Deactivation Date: 8/31/2011 (checked)
- Pin Code: [Masked]
- Privilege: No Privilege
- Support GV-AS200: (checked)
- Access Group: DISABLE

Controller A_Reception	
Door 1	24-hour restricted
Door 2	24-hour restricted
Door 3	24-hour restricted
Door 4	24-hour restricted
Controller B_Warehouse	
Controller C_Lab	

Data Group: No Groups

Buttons: OK, Cancel

Figure 6-10

3. The settings are available for the card:

- **Card Number:** Enter the card number.
- **Code Type:** Select the code format of the card.
- **Card Type:** Select one of the following card types.
 - **Normal:** The card opens the door when it is under Card Mode, the default mode.
 - **Patrol:** The card is assigned to the person in charge of patrolling a location, e.g. a guard. When the patrol-type card is presented to the reader, the access will be recorded but the door will NOT unlock. The feature may be set together with **Privilege** below. The user may have the privilege to stop alarm sounds and clear alarm events during patrolling.
 - **Two-person A Card:** Two-person A/B rule. The card is defined as Card A and Card B must be presented after Card A to unlock the two-person-rule enabled door.
 - **Two-person B Card:** Two-person A/B rule. The card is defined as Card B and Card A must be presented before Card B to unlock the two-person-rule enabled door.
 - **Visitor:** This card is assigned to a visitor and visitor's access can be managed using GV-VMWeb.

- **Security:** The security card can enable the Security Mode where no cards can be granted access. Only the security card can disable the Security Mode.
 - **Handicap:** When the handicap card is used, the door will remain unlocked for the time specified in Lock Reset Time and Held Open Time for handicap card. To see how to set prolonged Lock Reset Time and Held Open Time for handicap card users, refer to *Chapter 4 Settings, GV-ASManager User's Manual*.
 - **Activation/Deactivate Date:** Specify when the card is active or inactive.
 - **PIN Code:** Enter a four-digit personal code for the card. The default setting is 1234.
 - **Privilege:** Assign one of these privileges to the cardholder:
 - **Stop Alarm:** The cardholder can stop alarm sounds by presenting the card.
 - **Clear Event:** The cardholder can clear alarm events by presenting the card. All alarms in the Device View window are erased. A record of these alarms is still kept in the Alarm Monitor.
 - **Access Group:** Access Groups control which personnel can access which door and at what time.

For first-time users of the GV-ASManager, the access group is not yet established. Select **User Define** for test run.
 - **Controller:** The Controller column displays the associated doors. The selection for each door will be automatically brought up when one access group was entered.

For first-time user of the GV-ASManager, select **24-hour access** for each door for test run.
 - **Data Group:** Assign the card to a data group or select **No Groups** to disable the data group function. You can then allow or forbid a user to read/write/execute the functions listed under the data group. Refer to *Adding a New User* in Chapter 7 for more details.
4. Present the enrolled card to the reader. Once the card has been accepted, the message *Access Granted* will be displayed.

6.4.3.B Adding a Group of Cards

Before you use the Batch function to enroll new cards, please note that the group of cards must be numbered sequentially.

1. On the menu bar, click **Personnel** and select **Cards**. The Card List dialog box appears.
2. Click the **Batch New** button on the toolbar. This dialog box appears.

The screenshot shows a dialog box titled "Batch new cards" with a close button in the top right corner. The dialog contains several input fields and dropdown menus arranged in two columns. The left column includes: "Card Number" (text box with "100-00000 ~ 100-00500"), "Card Status" (dropdown menu with "Active"), "Activation Date" (calendar dropdown with "08/01/2011"), "Deactivation Date" (checkbox checked, dropdown with "08/31/2011"), "Pin Code" (text box with "****"), "Access Group" (dropdown menu with "DISABLE"), and "Data Group" (dropdown menu with "Data Group 10"). The right column includes: "Code Type" (dropdown menu with "Wiegand26"), "Card Type" (dropdown menu with "Normal"), "Privilege" (dropdown menu with "No Privilege"), and a checked checkbox for "Support GV-AS200". At the bottom right, there are "OK" and "Cancel" buttons.

Figure 6-11

3. The settings in the dialog box are the same as those of adding a single card. See Step 3 in the *Adding a Single Card* section above.

Note: Cards that were enrolled using the Batch function will have the same PIN. If you want to change the PINs of certain cards, you have to enter the PIN using the **Edit** function on the Card List dialog box.

7. Troubleshooting

Q1: GV-ASManager cannot connect to GV-AS Controller over the Internet.

There are several causes for this problem such as IP address conflict, incorrect connection settings and network failure. Follow the steps below to assign the fixed IP to the GV-ASManager and GV-AS Controller respectively. This procedure can determine if the problem is caused by the faulty devices and incorrect network settings.

1. Disconnect the hub or switch, which connects the GV-ASManager and GV-AS Controller, from the network.
2. Give the GV-ASManager a fixed IP address that is NOT used by another device, e.g. 192.168.0.154.

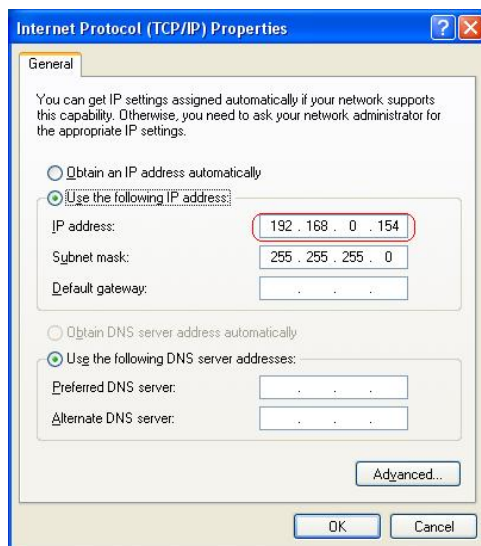


Figure 7-1

3. Reset the GV-AS Controller module and Ethernet module to factory defaults.
 - a. Plug the GV-ASKeypad to the GV-AS Controller.
 - b. Remove the jumper cap from the 2-pin **Default** jumper.
 - c. Press the **Reset** button.
 - d. Replace the jumper cap back to the 2-pin **Default** jumper.
 - e. To reset the Ethernet Module, press and hold the **Default EN** button for 6 seconds.

- Open the browser and enter the GV-AS Controller default address: <http://192.168.0.100>

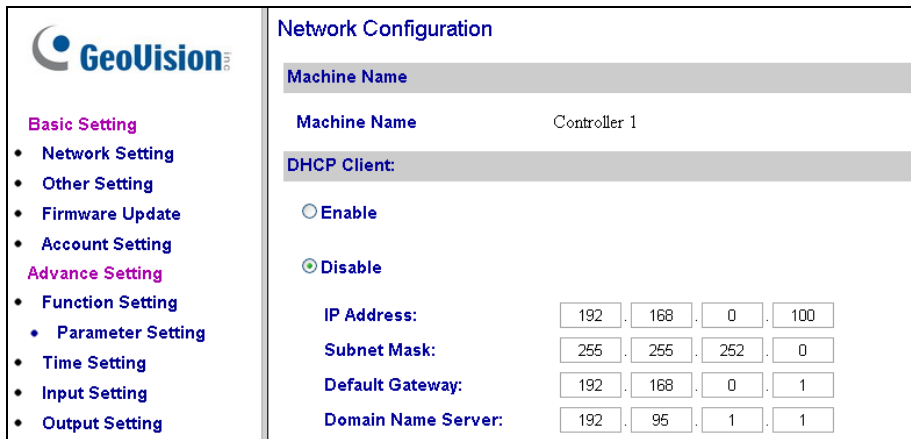


Figure 7-2

- In the IP address field, give the GV-AS Controller an IP address that is NOT used by another device, e.g. 192.168.0.XXX.
- On the GV-ASManager, enter the following settings:

Controller ID: 1

Network: TCP/IP

IP: 192.168.0.XXX

Port: 4000

User: admin

Password: admin

Crypto key: 12345678

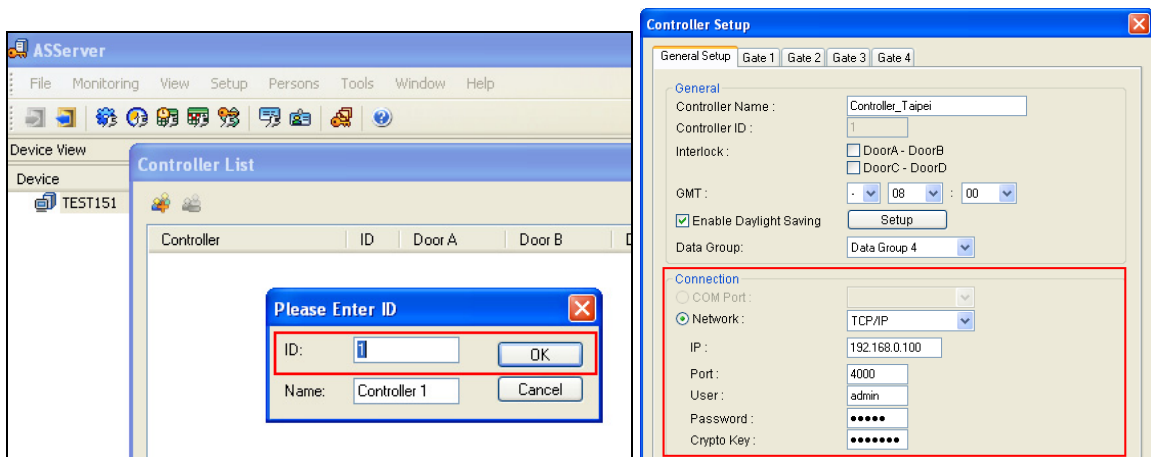



Figure 7-3

- The connection between the GV-ASManager and GV-AS Controller should be established, and the connection icon  should appear. If disconnection happens after you connect the hub or switch to the network, then it should be other network problems. Please contact your network administrator.

Q2: The connection established between the GV-ASManager and GV-AS Controller is interrupted.

This may be due to IP address conflict. Follow these steps to troubleshoot the problem:

- Disconnect the hub or switch, which connects to the GV-ASManager and GV-AS Controller, from the network.
- Run Windows **Command Prompt**. Take Classic Windows Start Menu for example, click **Start**, select **Accessories** and click **Command Prompt**.
- Type **arp -d** and press **Enter**.

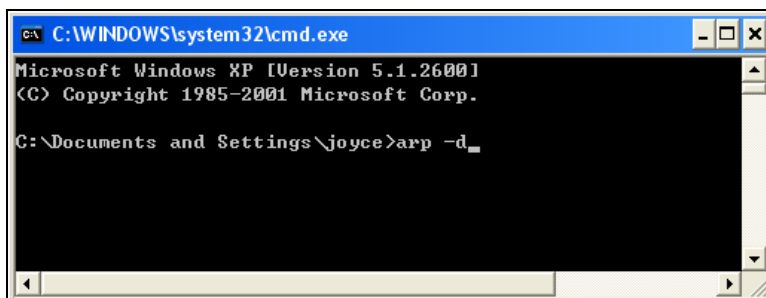


Figure 7-4

- Give the GV-ASManager a fixed IP address that is NOT used by another device. See Figure 7-1.
- Open the browser and enter the assigned IP address of GV-AS Controller. The Network Configuration page appears. See Figure 7-2.
- In the IP address field, give the GV-AS Controller an IP address that is NOT used by another device, e.g. 192.168.0.XXX.
- On the GV-ASManager, enter the following settings. See Figure 7-3.

Controller ID: 1

Network: TCP/IP


IP: 192.168.0.XXX

Port: 4000

User: admin

Password: admin

Crypto key: 12345678

8. The connection between the GV-ASManager and GV-AS Controller should be established, and the connection icon  should appear. If disconnection happens after you connect the hub or switch to the network, then it should be other network problems. Please contact your network administrator.

Q3: GV-ASManager cannot receive card messages but the reader accepts the card when the connection between the GV-ASManager and GV-AS Controller is well established.

It may be due to memory failure in the GV-AS Controller. Reset both the GV-AS Controller module and the Ethernet module to factory settings. Refer to Step 3 in Question 1.

Q4: The GV-ASManager cannot retrieve the video from the DVR for playback.

1. Make sure the **Remote ViewLog Service** on **Control Center Server** is enabled on the DVR.
2. Make sure the time on the GV-ASManager and the DVR is consistent.
3. Make sure the event file you want to play back has been created completely on the DVR. For example, the assigned time length of every recorded event on the DVR is 5 minutes. The desired event of 5 minutes must have been displayed on the ViewLog Event List, so you can access the event file for playback.

Q5: After I add a card by presenting to the reader, the message “Access Denied Invalid Card” still appears.

It may be the card format is not compatible with the GV-AS Controller. For GV-AS100, GV-AS110, GV-AS120 and GV-AS400, ensure the format is 26~64 bits. Otherwise, send us the related information of your card format so that we can customize the format for you.

Q6: The GV-ASManager cannot receive card messages from the GV-Reader connected to the GV-AS Controller through RS-485 interface.

1. Make sure the GV-Reader is correctly wiring to the GV-AS Controller and Switch 4 on the GV-Reader is set to OFF.
2. Make sure the correct GV-Reader ID is set on the GV-AS Controller.

Q7: How can I find more help?

Visit our website at <http://www.geovision.com.tw>

Write to us at support@geovision.com.tw