# Other products from GSD

## stand alone products

GSD also offers fully functional standalone door controls for less complex door management. This attractive design, with modern aesthetics, will complement any building.

- **GSD Digital Keypad**
- **GSD Proximity Switch**
- **GSD Biometric Switch**

**Features:**
- 50 users
- Access control
- Door monitoring
- Manager user
- Fire and intruder alarm interface
- Backlighting
- Tamper resistant
- 5 Amp relays
- Indoor or outdoor use
- Robust polycarbonate housing with stainless steel keys
- Mounts onto a standard electrical back box

| | GSD 2 DOOR DIGITAL KEYPAD | GSD DIGITAL KEYPAD | GSD PROXIMITY SWITCH | GSD BIOMETRIC SWITCH |
|---|---|---|---|---|
| Multi format RFID reader | | | ✓ | |
| PIN Access | ✓ | ✓ | | ✓ |
| FingerPrint Access | | | | ✓ |
| IP Rating | IP67 | IP67 | IP67 | IP65 |
| No of doors controlled | 2 door | 1 door | 1 door | 1 door |
| Power | 12v to 24v Ac or DC | 12v to 24v AC or DC | 12v to 24v AC or DC | 12v DC only |

## Contents

**GSD** Wi-Plus Controller

Global Security Devices Ltd: No.3 Broomhill Business Complex, Tallaght, Dublin 24, Ireland, Phone: +353 (1) 524 2691, Email: info@globalsecurity.ie

www.globalsecurity.ie

## Installation Manual V2.08

## Technical Specs - GSD Wi-Plus Controller

| Power Supply | 12 DC |
|---|---|
| Current consumption | 120mA |
| Current consumption with load (max) | 160mA |
| Relay Contact Rating | 5 Amps /240V ac |
| Moisture Resistance | Indoor Use Only |
| Dimensions | W. 135mm D. 46mm H. 200mm |

## Technical Specs - Wi-Plus Door Controls

| Power Supply | 12 DC |
|---|---|
| Current consumption | 110mA |
| Current consumption with load (max) | 145mA |
| Relay Contact Rating | 5 Amps /240V ac |
| Operating Temperature | - 20°C  to +60°C |
| Moisture Resistance | IP 67 ( IP65 on Wi-Bio ) |
| Dimensions  - Flush Mount | W. 87mm D. 21mm H. 119mm |
| - Surface Mount | W. 87mm D. 35mm H. 119mm |

## Features

| Doors controlled | 10 |
|---|---|
| Users | 5000 |
| User Groups | 16 |
| Time Zones | 16 |
| Door Groups | 16 |
| Reporting Facility | Yes |
| Challenge Facility | Yes |
| Logging | Unlimited |
| Input/Output Mapping | CCTV & Lift control |
| Supports Wireless & RS485 Networks | Yes |
| Automatic Backup Facility | Yes |
| Database Encryption | Yes |

## Installation Steps

| Step | Description | Page |
|---|---|---|
| 1 | Install the Controller using the Installation Diagrams | 4-5 |
| 2 | System Overview | 6-7 |
| 3 | Wire the Controller using the Wiring Diagrams | 8 |
| 4 | Install and wire each Door Control. Refer to the Door Control Manual for instructions. | |
| 5 | Connect the Controller to the PC using Network Diagrams | 9-11 |
| 6 | Restoring Factory Defaults | 11 |
| 7 | Phase 1- Setting up the GSD Controller via the PC application | 12 |
| 8 | Phase 2 - Configuring the GSD Controller via the PC application | 13 |
| 9 | Phase 3 - Defaulting Door Controls | 14 |
| 10 | Phase 4 - Enrolling Door Controls | 15-16 |
| 11 | Phase 5 - Configuring Users | 17 |
| 12 | Phase 6 - Configuring Access Levels | 18 |
| 13 | Phase 7 - Downloading Configuration | 18 |
| 14 | Enrolling User Fingerprints | 19 |
| 15 | Correct Finger Placement techniques | 20-23 |

1. To open front cover of GSD Controller, remove screw cap using screwdriver then loosen screw.

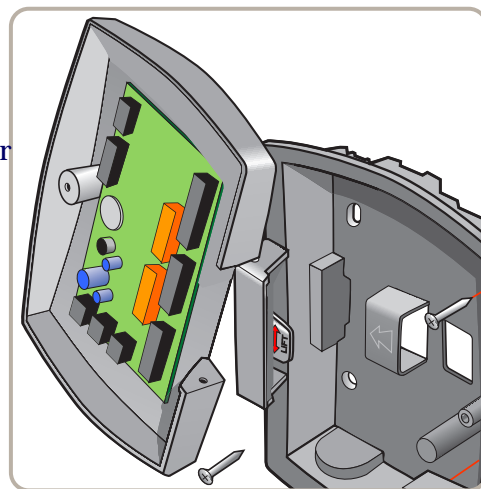3. screw the rear enclosure to the wall. as shown below.
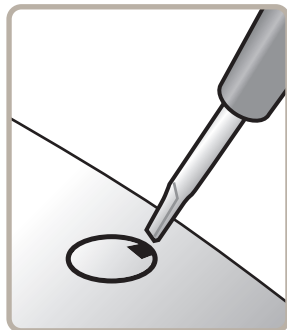
2. Remove door from unit (see inset) before screwing the rear enclosure to the wall.
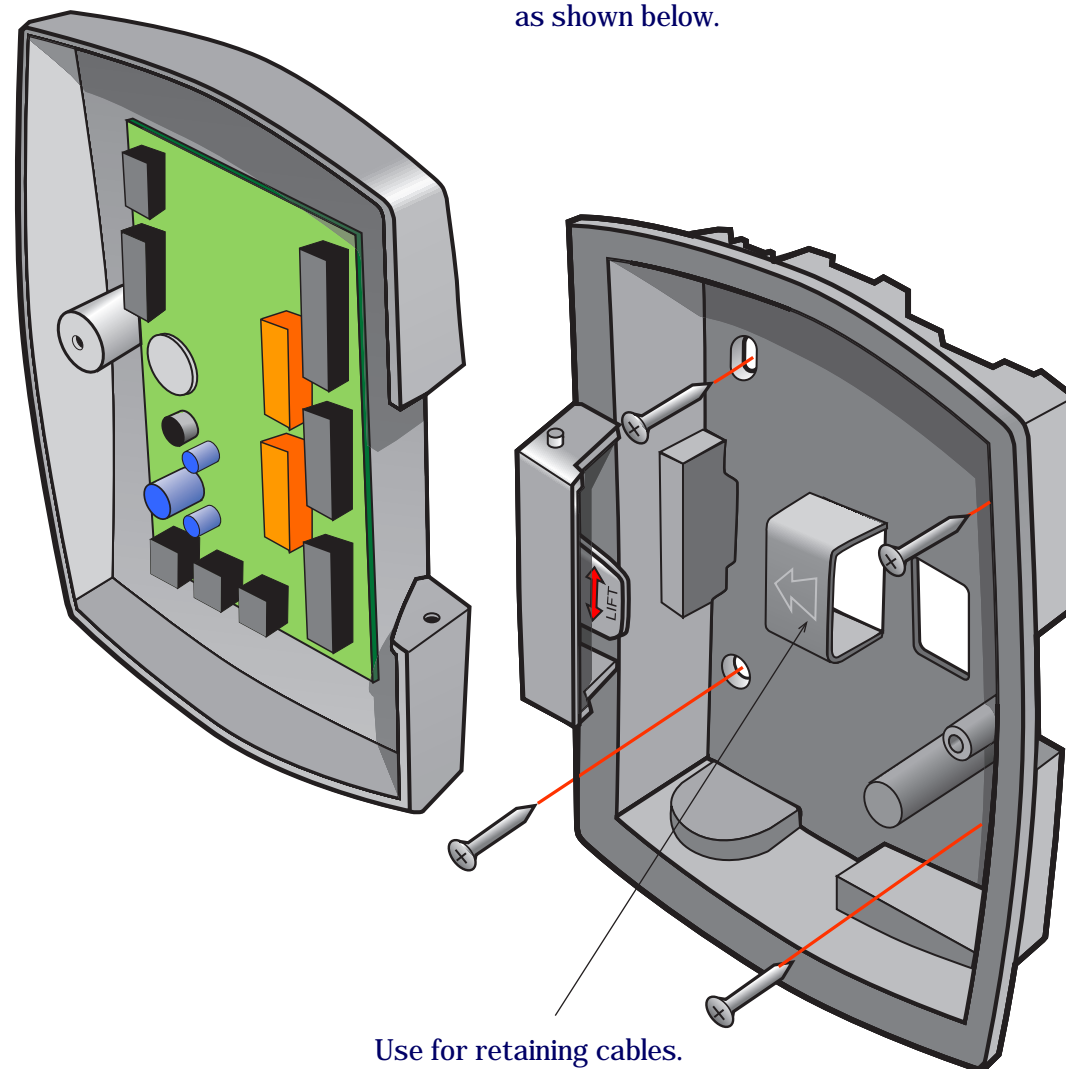
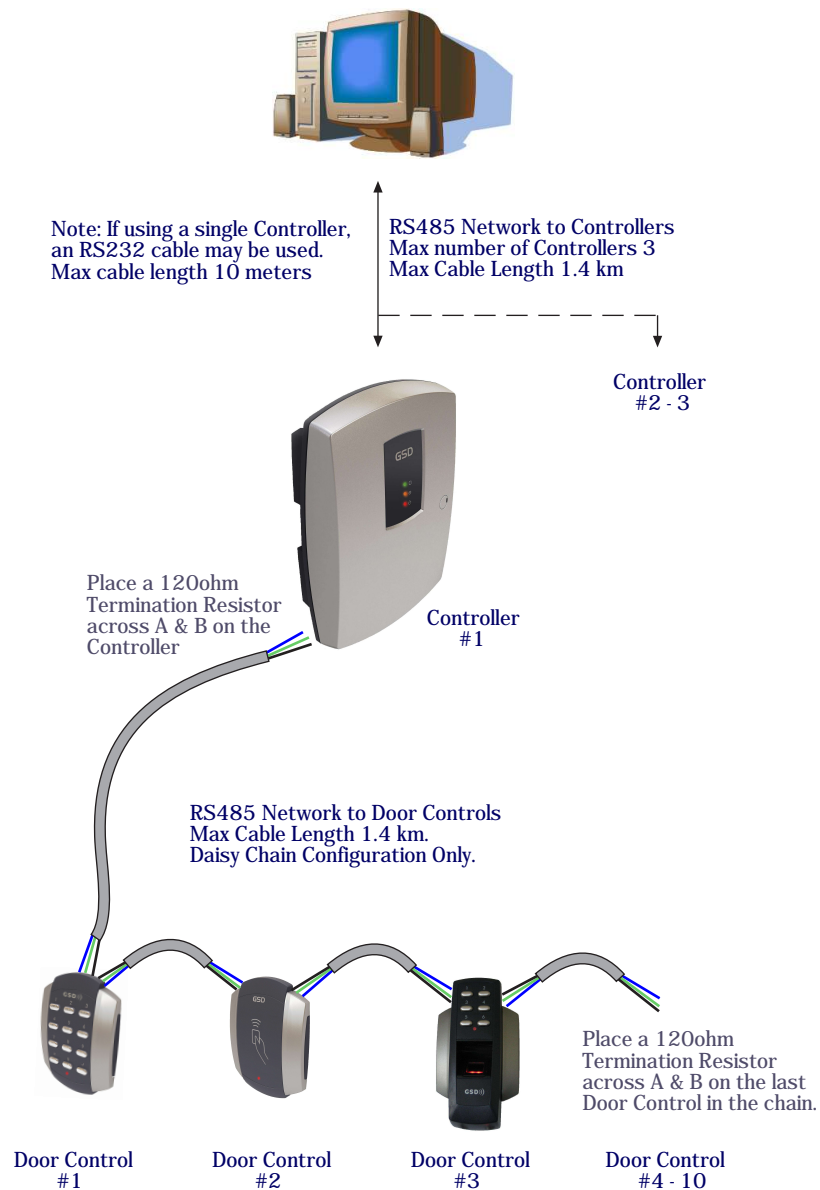To remove front cover lift tab up and unhook door.
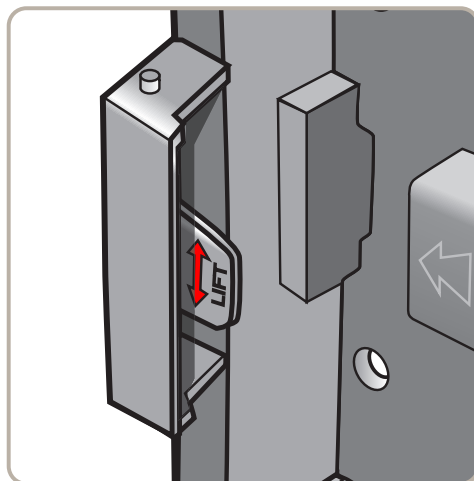
4. Re-attach the front cover

To re-attach front cover: hook door over top pip and rotate into position and push tab down to secure.
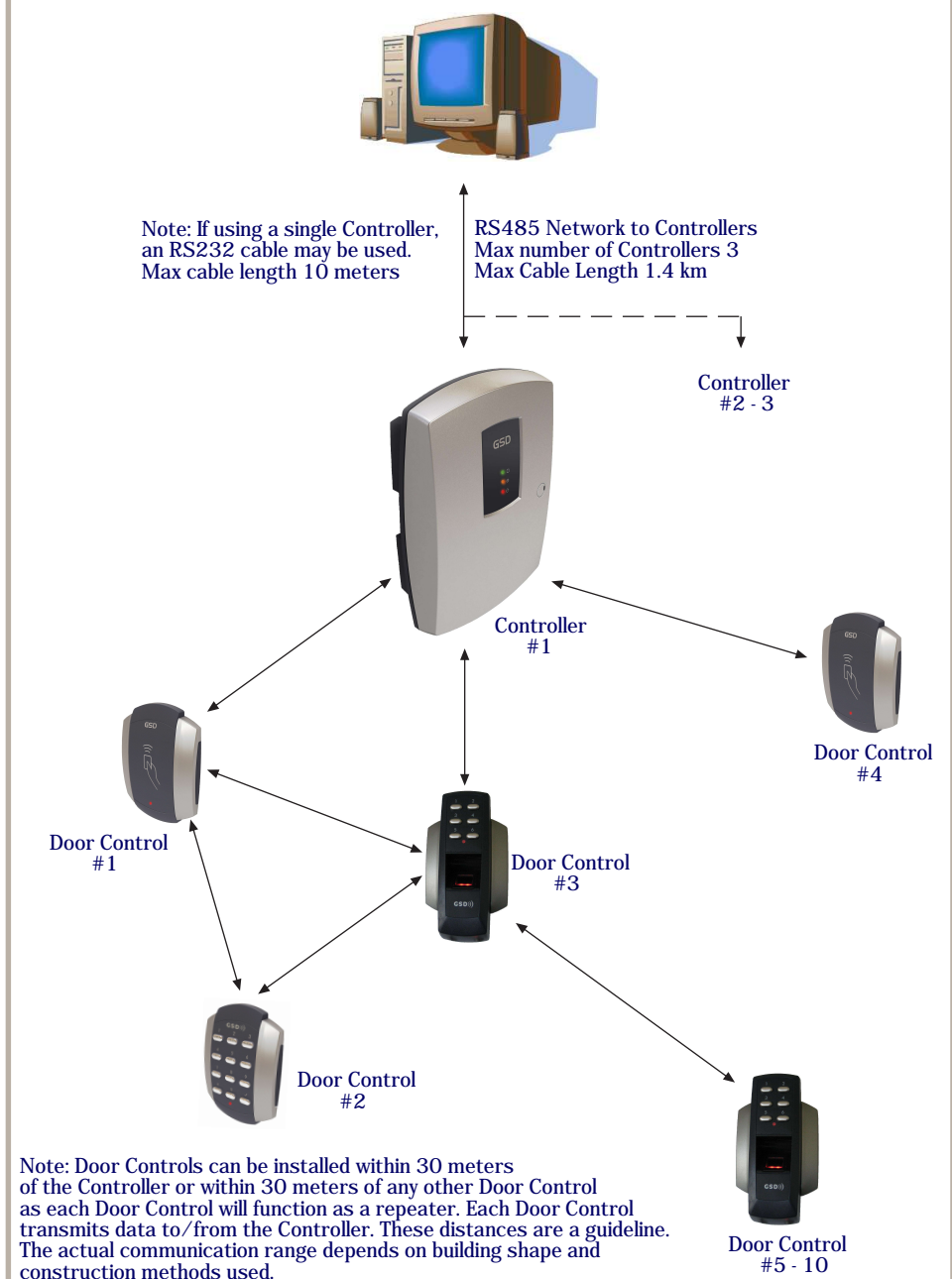
Use for retaining cables.

## RS485 Connection to Door Controls

Note: If using a single Controller, an RS232 cable may be used. Max cable length 10 meters

RS485 Network to Controllers
Max number of Controllers 3
Max Cable Length 1.4 km

Controller
#2 - 3

Place a 120ohm Termination Resistor across A & B on the Controller

Controller
#1

RS485 Network to Door Controls
Max Cable Length 1.4 km.
Daisy Chain Configuration Only.

Place a 120ohm Termination Resistor across A & B on the last Door Control in the chain.

Door Control
#1

Door Control
#2

Door Control
#3

Door Control
#4 - 10

## Wireless Connection to Door Controls

Note: If using a single Controller, an RS232 cable may be used. Max cable length 10 meters

RS485 Network to Controllers
Max number of Controllers 3
Max Cable Length 1.4 km

Controller
#2 - 3

Controller
#1

Door Control
#4

Door Control
#1

Door Control
#3

Door Control
#2

Door Control
#5 - 10

Note: Door Controls can be installed within 30 meters of the Controller or within 30 meters of any other Door Control as each Door Control will function as a repeater. Each Door Control transmits data to/from the Controller. These distances are a guideline. The actual communication range depends on building shape and construction methods used.

## Wiring Diagrams with Fire Alarm

12V Sounder

PC Network Connections can be used for multiple controllers See page 10 for wiring

Use PC Direct Connections if using a single controller See page 9 for wiring

Note : Used ONLY for Wired 485 Network Connections.
A
B
0V

Outputs

PC Network — A  B  COM  TX  RX

PC Direct

Door Network — A  B  COM

TCP_IP

VOUT  OP4  OP3

NC  COM  NO  NC  COM  NO

OP1/RLY 1  OP2/RLY 2

+V  0V  Power In

12V Linear Power supply

OFF  ON  1 2 3 4

IP1  IP2  0V  IP3  IP4

Inputs  3V Lithium

E.g. IP3 configured as Fire Alarm Override on PC application

Fire Alarm Panel

0V

NOTE:
Common 0V from the Fire Alarm Panel and the 0V from the Controller to avoid any ground loop issues.

When the fire alarm is activated ( ie 0V removed from IP3) all fire doors will be opened.

## Network Diagrams for Single Controller

DB9 Female Serial Cable

Connect DB9 cable to serial port on PC

Maximum cable length 10 meters

6  1
7  2
8  3
9  4
   5

PC Network — A  B  0V  TX  RX

PC Direct

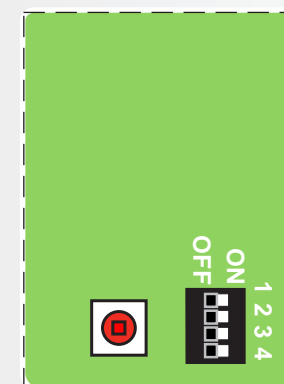Door Network — A  B  0V

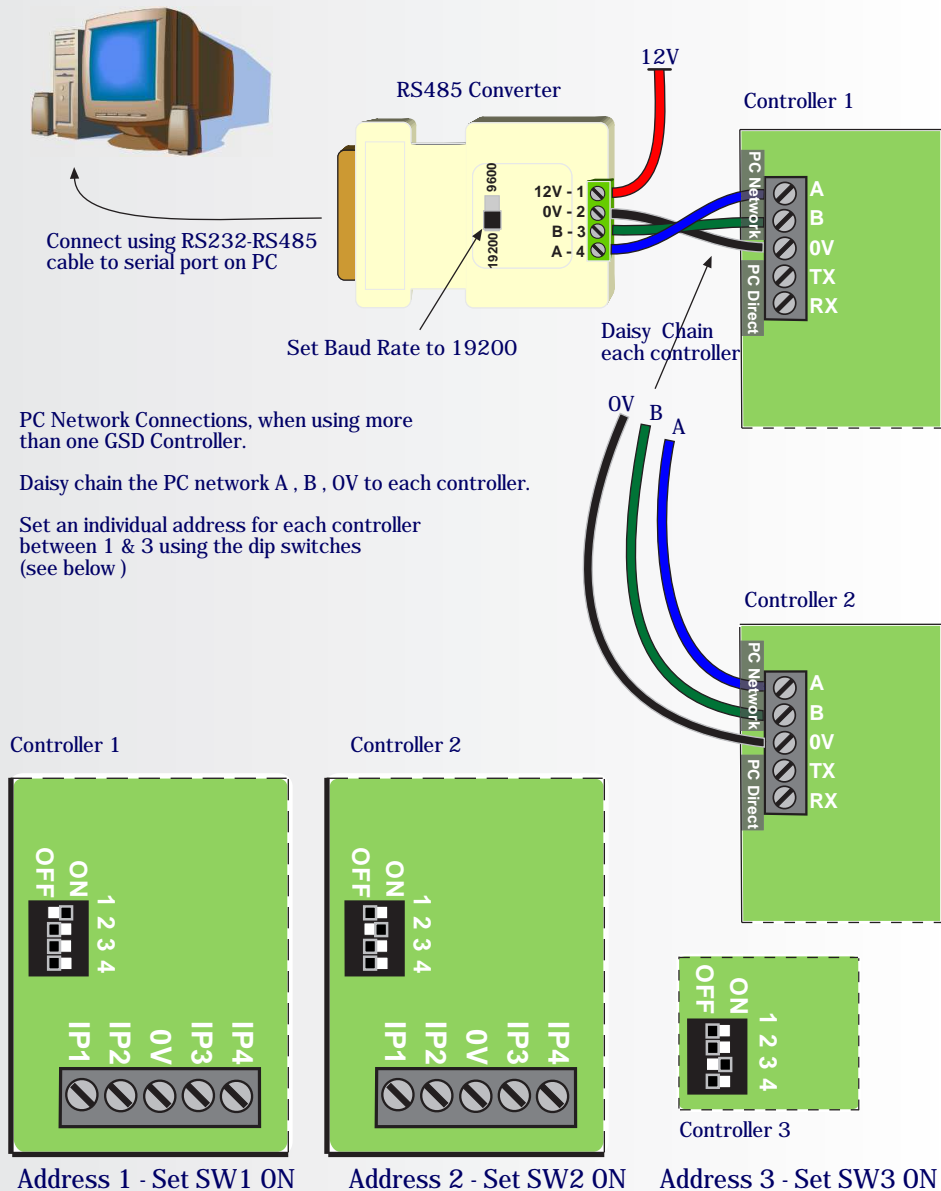PC Direct Connection can be used, when using ONLY one GSD Controller.

Set the Direct address to ALL dip switches OFF (see below )

OFF  ON  1 2 3 4

**Direct Connect - All Dip Switches OFF**

See page 11 on "Configuring GSD Controller Communication" to setup the application for serial communications
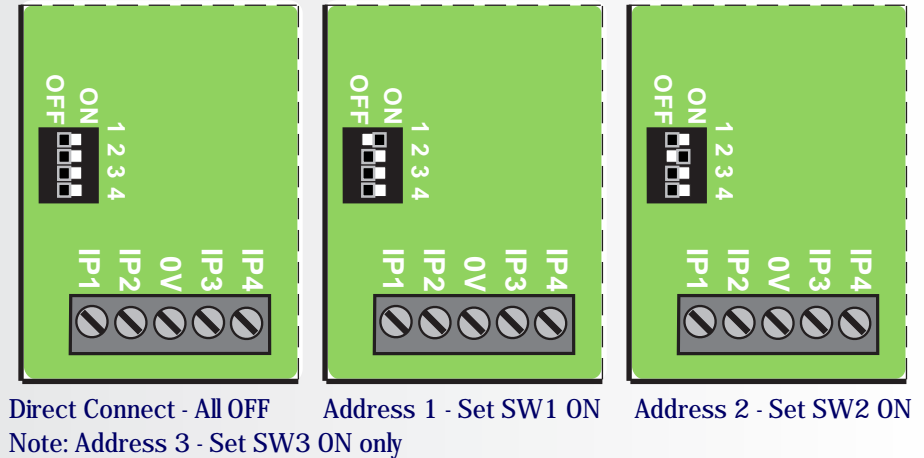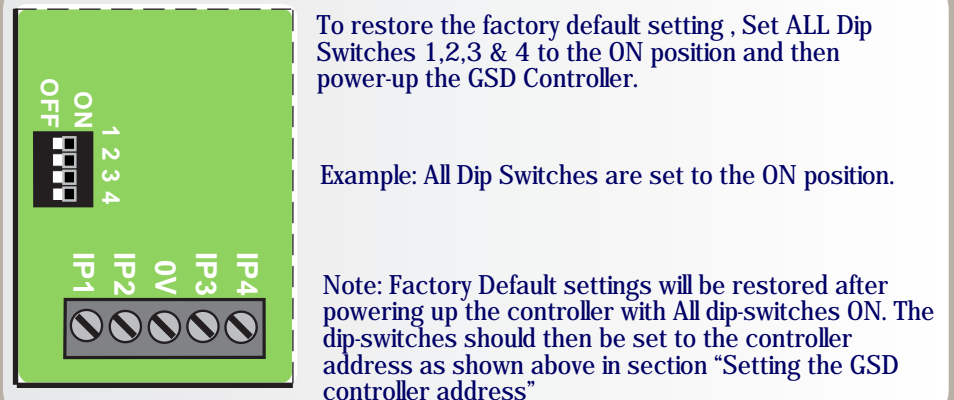
## Network Diagrams for Multiple Controllers

Connect using RS232-RS485 cable to serial port on PC

RS485 Converter

12V

Controller 1

Set Baud Rate to 19200

12V - 1
0V - 2
B - 3
A - 4

9600
19200

PC Network

A
B
0V
TX
RX

PC Direct

Daisy Chain each controller

0V  B  A

PC Network Connections, when using more than one GSD Controller.

Daisy chain the PC network A , B , 0V to each controller.

Set an individual address for each controller between 1 & 3 using the dip switches (see below )

Controller 2

PC Network

A
B
0V
TX
RX

PC Direct

Controller 1

OFF
ON
1 2 3 4

IP1
IP2
0V
IP3
IP4

Address 1 - Set SW1 ON

Controller 2

OFF
ON
1 2 3 4

IP1
IP2
0V
IP3
IP4

Address 2 - Set SW2 ON

Controller 3

OFF
ON
1 2 3 4

Address 3 - Set SW3 ON

## Configuring GSD Controller Communications

| Step | Description |
| --- | --- |
| 1. | On the "Controller" tab, set the "Connection - Type" to "Serial" |
| 2. | On the "Settings" tab in the communications section, Select the Serial Port number from the drop-down list connected to the Controller. |

## Setting the GSD Controller address

The Controller Address is set by configuring the Dip switches as shown below.

OFF
ON
1 2 3 4

IP1
IP2
0V
IP3
IP4

OFF
ON
1 2 3 4

IP1
IP2
0V
IP3
IP4

OFF
ON
1 2 3 4

IP1
IP2
0V
IP3
IP4

Direct Connect - All OFF          Address 1 - Set SW1 ON          Address 2 - Set SW2 ON
Note: Address 3 - Set SW3 ON only

## Restoring Factory Settings

OFF
ON
1 2 3 4

IP1
IP2
0V
IP3
IP4

To restore the factory default setting , Set ALL Dip Switches 1,2,3 & 4 to the ON position and then power-up the GSD Controller.

Example: All Dip Switches are set to the ON position.

Note: Factory Default settings will be restored after powering up the controller with All dip-switches ON. The dip-switches should then be set to the controller address as shown above in section "Setting the GSD controller address"

## Phase 1 - Setting up the GSD Controller

| Step | Description |
|------|-------------|
| 1. | Install the GSD Controller and power up |
| 2. | Begin by Defaulting/Restore Factory Settings on the controller via the dip switch settings (see instructions on page 11) |
| 3. | Important! Once powered up and the controller has completed the default the process – reset the dip switches to the correct address positions. (see instructions on page 11) |
| 4. | Follow instructions on the CD provided to install the GSD PC application. To download the latest drivers, enter the following link in your web browser. http://www.globalsecurity.ie/userfiles/files/GSDWin Access en-US.zip Note: Make sure the USB enrollment reader is not connected to the PC before the GSD application is installed. |
| 5. | Launch the application:<br>A. Launch the application by clicking the GSDWin icon on the desktop. The "Site Database Management" will appear.<br>B. Click on "Create New Site", then click "Create New Wi-Plus Site" and save the name of the new installation site. The application will then launch.<br>C. Log in to the application as the Engineer (not the administrator) with the password 6666.<br>D. Connect to the GSD Controller. Refer to page 9 -13 for connection diagrams. For a serial connection , set the correct com port number by going to the "Settings" tab and choosing the com port that the serial cable is connected to, from the drop-down list in the communications section.<br>E. The Controller icon will change colour from gray (off-line) to green (on-line) to show that the Controller is communicating with the application.<br>F. Go to the 'Current Events' tab to view the current log messages from the Controller |

## Phase 2 - Configuring the GSD Controller

| Step | Description |
|------|-------------|
| 1. | Open the 'Doors' tab in the main menu to add the required number of new doors to be part of this network. One door will already be added by default. Click on the "+" button to add new doors. "-" to remove doors. |
| 2. | Make sure all desired doors are "Enabled" and then click "Save". |
| 3. | Open the Settings Tab and do a "Configuration Download" to the Controller – this gives the Controller a clean set of instructions before beginning to enroll doors onto the network. |
| 4. | Create a New Wireless Network.<br>WARNING! A New Network should only be created on first installation. Creating a new network will overwrite any existing network information and any enrolled Door Controls will be un-enrolled. All Door Controls will have to be defaulted and re-enrolled on the new network that has just been created!<br>A new network is now ready to be created.<br>Go to the 'Controllers' tab and Click on 'Wireless Network' and then click on 'Create New Network'.<br>Click Yes on the pop-up to proceed.<br><br>Note: It will take about 20 - 60 seconds to complete. a pop-up will appear when the network has been created. |

## Phase 3 - Defaulting Door Controls

| Step | Description |
|------|-------------|
| | All Door Controls should be installed at this point and powered up. |
| 1. | All Door Controls must be defaulted before joining a network.<br>Note: Door Controls will be shipped with their factory default settings.<br>Enter Engineer mode on each Keypad Door Control in the following way<br>A.  Press  X followed by 6666<br>B.  Enter 55 –to default<br>C.  Press the tick to confirm – the keypad will now go through the process of defaulting itself.<br>D.  The process could take 20-30 seconds. The LED will flash once every second when it is complete<br>E.  Repeat the process for all keypad Door Controls<br><br>Enter Engineer mode on each Wi-Bio Door Control in the following way<br>A.  Enter 6666<br>B.  Enter 55 –to default<br>C.  Scan Finger to confirm – the Door Control will now go through the process of defaulting itself.<br>D.  The process could take 20-30 seconds. The LED will flash once every second when it is complete.<br>E.  Repeat the process for all Wi-Bio Door Controls<br><br>Enter Engineer mode on each Prox Only Door Control in the following way<br>A.  Add a programming card to the Door Control by presenting a card twice on power-up. The security wing must be removed first!<br>B.  Present this new programming card to enter Engineer mode.<br>C.  Present the programming card again to select "Default mode".<br>D.  Present any other card once to default the Door Control.<br>E.  The process could take 20-30 seconds. The LED will flash once every second when it is complete |

## Phase 4 - Enrolling Door Controls

| Step | Description |
|------|-------------|
| 1. | The controller is now ready to allow Door Controls to enroll onto the Network – Go to the 'Controllers' tab and Click on 'Wireless Network' and then click "Allow Doors to Join". This opens the network and starts the controller scanning for any new doors that do not already have an address – only Door Controls without an address can be enrolled. |
| | Note: For Wired 485 Door Controls, right click on the Controller on the right hand side of the application and select 'Manually Assign Address' from the drop down menu.<br>Once all new Door Controls are found by the Controller they will all 'beep' with the number of the next available address/door position on the Controller.<br>e.g. if door 2 is the next available address then all Door Controls will beep at the same time with 2 beeps. This is basically saying that any door can be assigned to this address – it's up to the installer to decide which one.<br>Also – you will notice that the Key back light of the keypad Door Controls will be illuminated with the next available address as well.<br>i.e. Key 2 will be illuminated for this example. |
| 2. | Go to the Door control that you want to make door 2 on the network system (it should be beeping 2 times). Press any key on this keypad and the system will automatically assign this door control to door 2 address on the system. Present a card if the Door Control is Prox Only. |
| | Note: All other Door Controls will now start beeping with the next available address i.e.  '3 beeps' (address 3) in this instance and so on every time you enroll a new Door Control. The key back light will also correspond to each address as the system fills up. E.g. The 3 key will light up to indicate address 3. |

## Phase 4 - Enrolling Door Controls

| Step | Description |
|---|---|
| 3. | Once all Door Controls are enrolled onto the network – go back to the PC application and click 'Secure Network' button.<br>–this safeguards the systems and secures the network. |
| 4. | Select each Door on the application and configure individual settings such as Door Name, Timed Actions, Relay Times, Ajar Times, Door Option and Alarm Options etc.<br><br>Timed Actions:<br>IMPORTANT: A timezone must be selected in 'Timed Actions' for one of the options: Card and PIN, Any Card, Card or PIN , or PIN only.<br>If all of these are set to 'inactive' then access will be denied for all cards and PINs on that Door Control.<br><br>Example: To Enable PIN codes only on a Wi-PIN&Prox:<br>Set the Timed Action "Card or PIN" to "Inactive" and set the Timed Action "PIN Only" to "All day,Every Day". This will grant access for PIN codes and deny access for cards and fobs. |

## Phase 5 - Configuring Users

| Step | Description |
|---|---|
| 1. | Enable a User by ticking the 'Enabled' box for each User. |
| 2. | Assign a Name to the User |
| 3. | Assign a UserGroup from the drop-down menu. The Usergroup will determine the access levels for this User. Refer to section on page 18 'Configuring Access Levels' for information on User Groups. |
| 4. | Assign a Card , PIN number or enroll FingerPrints for the User. Refer to section FingerPrint Enrolment on page 19<br>Click 'save' to transmit these changes to the Controller. |

## Phase 6 - Configuring Access Levels

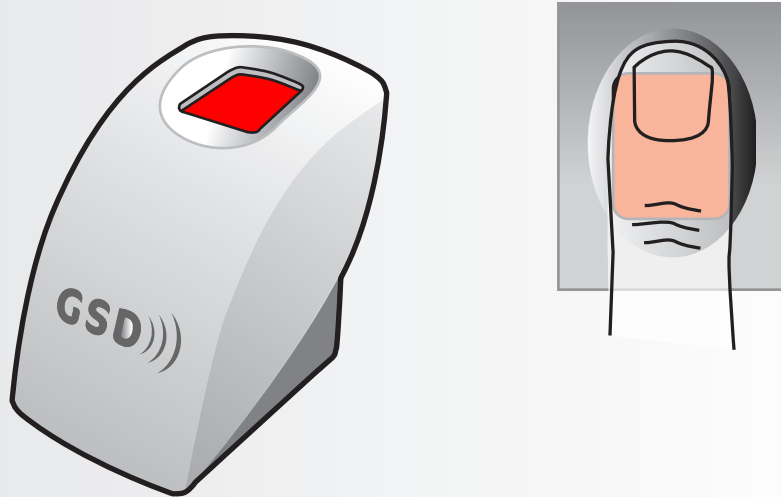| Step | Description |
|---|---|
| | Access Levels are controlled by creating UserGroups and assigning the UserGroup to a User as described in section 'Configuring Users'. |
| 1. | UserGroups are created by combining pairs of DoorGroups with Timezones. Each UserGroup can have up to 6 pairs of DoorGroups and Timezones. Select DoorGroups and Timezones from the drop-down menus to add to the current UserGroup. |
| 2. | Timezones are the periods of time for each day of the week that access will be granted. Select times and tick the days of the week this time is valid. 4 time periods can be created for each timezone. Select 'Holiday Access' to grant access for holiday periods. Double click on the 'Holiday Access' to add days to the holiday periods. Use the calendar to select these days. |
| 3. | DoorGroups are created by grouping doors together. e.g. all the entry and exit doors could be grouped together as 'Peremiter Doors'. Select a Door from the 'All Available Doors' window and drag it to the 'Doors in Current Group' to add it to the Door Group. Repeat for adding doors as desired. |

## Enrolling User Fingerprints

| Step | Description |
|---|---|
| | Note: Make sure the USB Fingerprint reader is attached to the PC |
| 1. | On the Users Tab , Select a User for fingerprint enrolment |
| 2. | Click on the 'Fingerprints' button. |
| 3. | Click on '+' button to begin and place finger on the enrolment reader. An image of the fingerprint will appear on the screen. Ensure that the image quality is good and a value of at least 90% is achieved. Refer to section 'Finger Placement' for correct finger placement and example of good quality image. Repeat this process if this is not achieved on first attempt. Two fingerprint templates can be saved for each user. |
| 4. | Click 'Save' using a good quality template only. Poor Quality templates can lead to false rejections later when trying to gain access . |

## Phase 7 - Downloading Configuration

| Step | Description |
|---|---|
| | After all users, access levels and door control settings have been finalised, a full download to the controller should be carried out. |
| 1. | Go to the 'Settings' tab and click on 'Download Configuration'. A pop-up window will appear, tracking the status of the download. All settings will be downloaded to the Controller and Door Controls. |

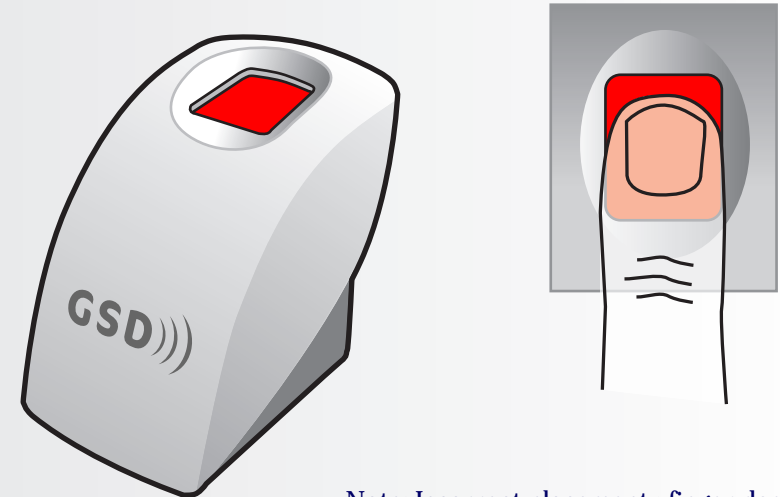## Correct Finger Placement



✓ Good Quality Image

Note: Ensure that the core of finger is centered on the sensor window during the enrollment process. This will increase the quality of the fingerprint template. Ensure a value of at least 90% is achieved.

Note: Good Quality image, Fingerprint core is center of sensor window

Note: The System does not store the finger print. It uses an algorithm to generate a binary representation using sample points from the fingerprint. It uses this information to then validate each users fingerprint.

## Incorrect Finger Placement



Note: Incorrect placement : finger does not fully cover the sensor window.
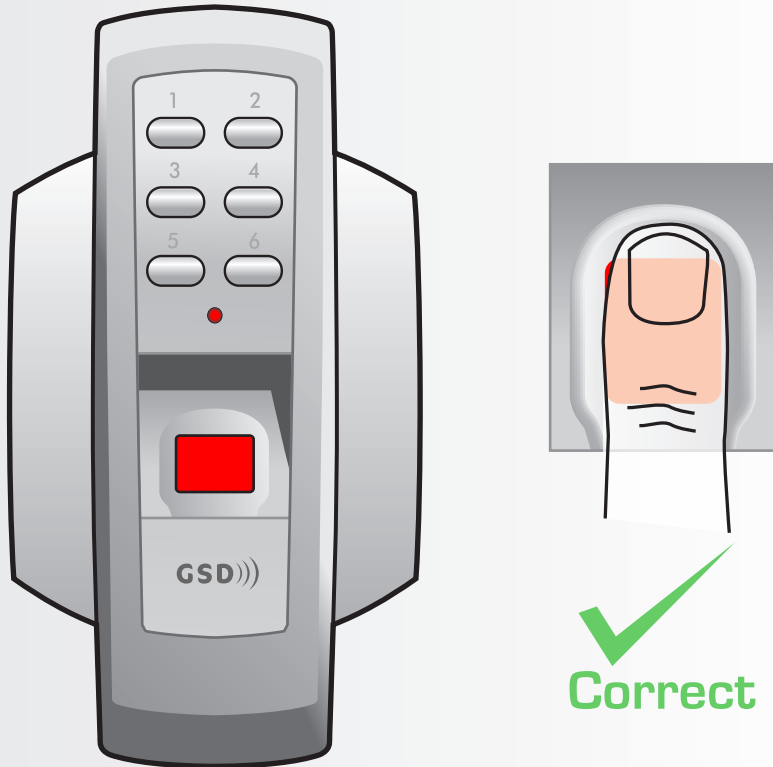
X Poor Quality Image

Note: Poor Quality image, No Fingerprint core on sensor window.

This can result in poor template quality that can lead to false rejection issues later when the user is trying to gain access.

## Correct Finger Placement



**Correct**

**Note:** Ensure that the finger is centered and placed flat to the surface and fully covers the sensor window.

**Note:** Finger must remain on the sensor window until the door control acknowledges that the finger has been scanned by sounding a beep and turning off the red light. This will take approximately 1 second.

## Incorrect Finger Placement



**X** **Incorrect**

**Note:** Incorrect placement : finger does not fully cover the sensor window.
The door control will not respond and the red light will not turn off if the sensor window is not fully covered by the finger.