

# Access Controller

Solo and Duplo Versions

## Quick Installation Guide



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# Introduction

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The Ringdale Access Controller combines a power supply and battery charger, space for one lead acid battery up to 17 AH, as well as a networkable access controller which can be connected to a number of reader devices such as proximity card or swipe card readers, pin number keypads and even a fingerprint reader. The controller can be used to drive a number of security devices, including Ringdale's pulse door strike or electronic bolt and time and attendance systems to provide a complete solution to a company's access control requirements.

The Access Controller provides an uninterruptable power supply when connected to a battery backup. In normal operation the battery is trickle charged via two mains transformers and during a power failure the battery continues supplying power.

The Access Controller can be connected to any Ethernet network to provide a comprehensive management and monitoring capability, allowing a great amount functionality and a high standard of supervision using the Sentinel software provided (see the separate manual *Sentinel Software Installation and Configuration Guide* that accompanies the product).

There are two versions of the Access Controller:

The **Solo** version is suitable for driving one bolt , door strike etc. and one ID reader.

The **Duplo** version is suitable for driving two bolts , door strikes or other devices in any combination with two ID readers.

This guide is designed to provide quick installation instructions for both versions of the Ringdale Access Controller, refer to the sections suitable for your version where appropriate.

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# Important Information

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**Please read this information before attempting any installation procedures.**

## **WARNING**

**When connecting the transformer to the mains electricity supply ensure that the Access Controller is safely isolated.**

**Do not remove the earthing nuts fastened to the side and door of the Access Controller - these are marked with red sealant.**

**If testing or using the Access Controller without a battery back-up fitted ensure that the connectors at the end of the battery leads are insulated.**

**If it becomes necessary to upgrade the firmware on the controller, or reset the controller to its factory default setting, please contact Ringdale technical support to be guided through the procedure (contact details at the back of the manual).**

## **Location Advice**

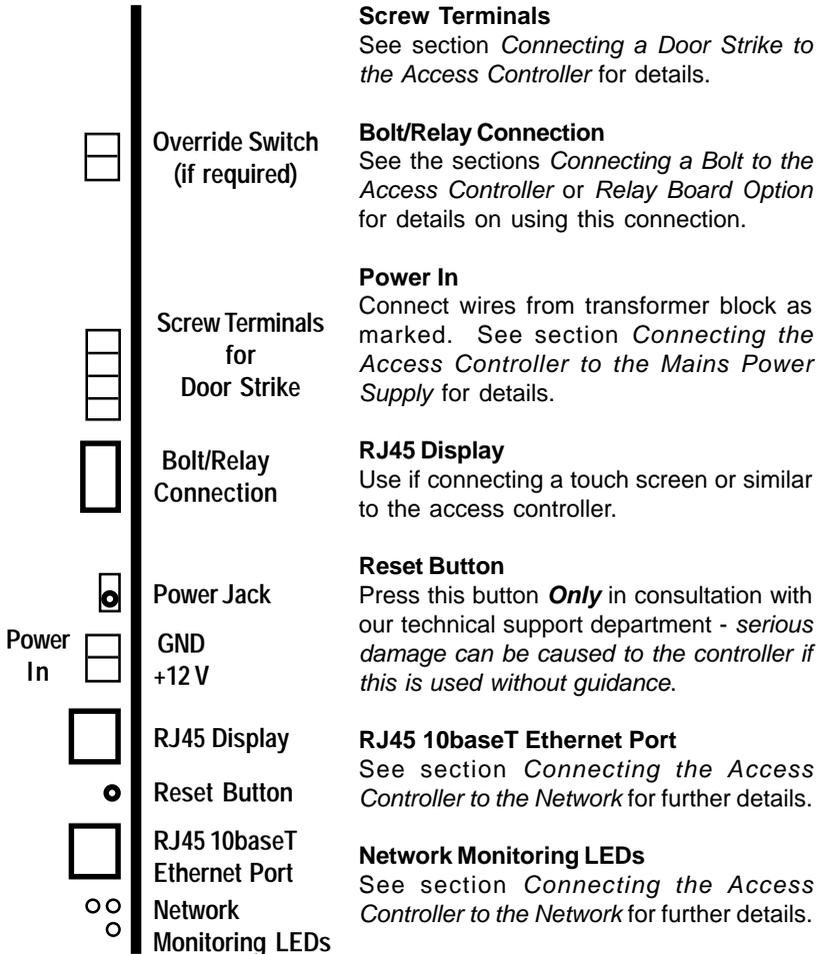
**When installing the Access Controller, please take into account the length of cable required to connect the controller to the device, card reader, network and mains power supply.**

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# Solo Access Control Board Connections

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Front View of Connections on the Control Board (fixed to the right side wall of the box) for the *Solo* Version only



**Not shown:** ID reader connection.  
See section *Connecting the ID Reader to the Access Controller* for details on using this connection.

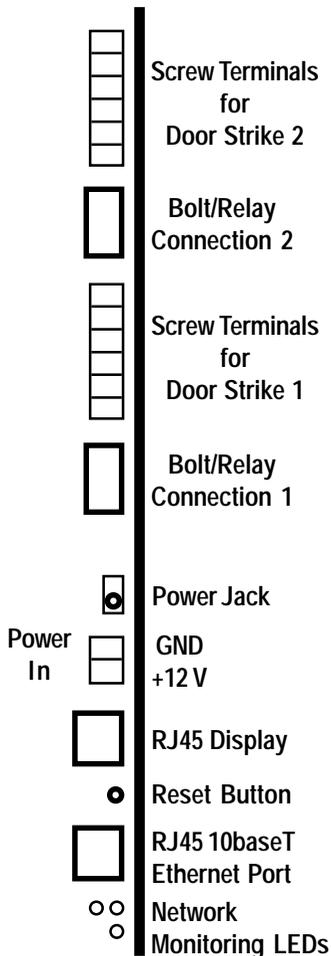
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# Duplo Access Board Connections

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Front View of Connections on the Control Board (fixed to the right side wall of the box) for the *Duplo* Version only



## Screw Terminals

See section *Connecting a Door Strike to the Access Controller* for details.

## Bolt/Relay Connection

See the sections *Connecting a Bolt to the Access Controller* or *Relay Board Option* for details on using this connection.

## Power In

Connect wires from transformer block as marked. See section *Connecting the Access Controller to the Mains Power Supply* for details.

## RJ45 Display

Use if connecting a touch screen or similar to the access controller.

## Reset Button

Press this button **Only** in consultation with our technical support department - *serious damage can be caused to the controller if this is used without guidance.*

## RJ45 10baseT Ethernet Port

See section *Connecting the Access Controller to the Network* for further details.

## Network Monitoring LEDs

See section *Connecting the Access Controller to the Network* for further details.

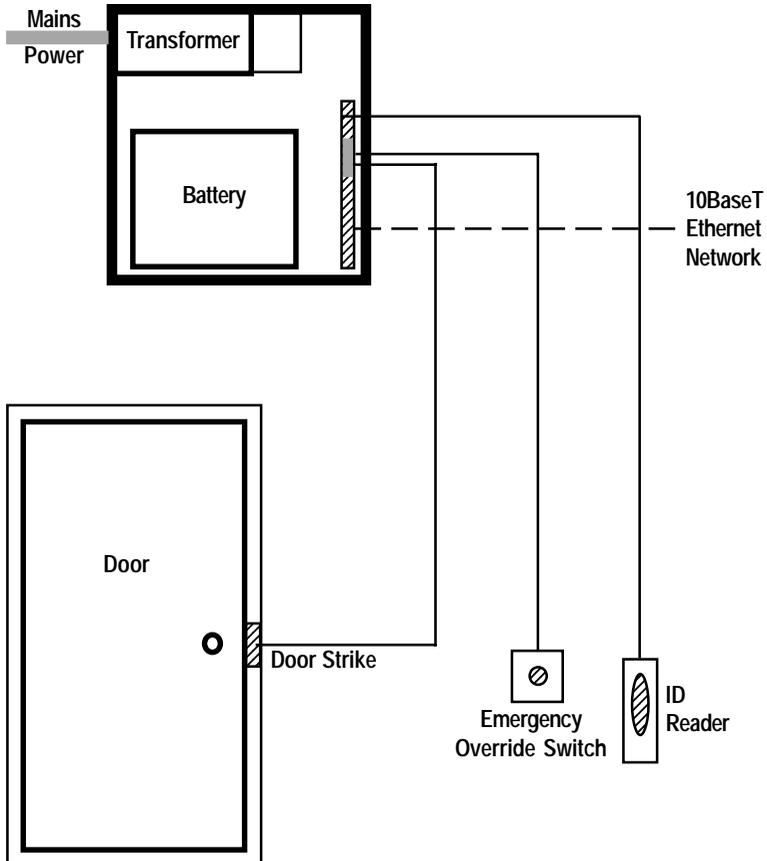
**Not shown:** ID reader connections.  
See section *Connecting the ID Reader to the Access Controller* for details on using these connections.

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## Typical Set-up for Solo Version

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Below is an example of a typical set-up for the Solo version of the Access Controller:



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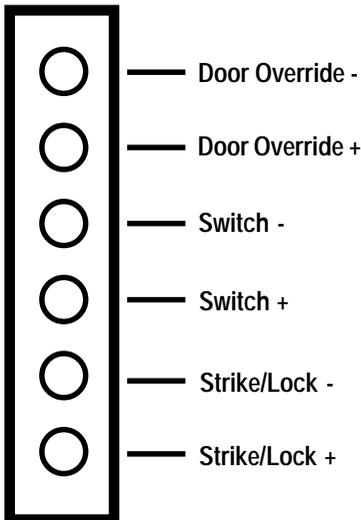
# Connecting a Door Strike to the Access Controller

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The wires from the door strike are connected to the **Screw Terminals** on the **Access Control Board**. The Access Control Board is located on the side of the Access Controller. Below is a front view of the terminals for the Duplo version (there will be two sets of screw terminals to enable two door strikes to be connected so this layout will be repeated twice).

**Note:** the Solo version will have the two Door Override terminals separated from the other terminals as shown in the *Solo Access Control Connections* section. Set-up is the same.

## Screw Terminal Configuration Top to Bottom



The door strike is connected to the 6-way screw terminal as follows:

The 2-way terminal block of the door strike mechanism is marked with +(plus) and -(minus).

Connect a wire from the **+(plus)** terminal of the mechanism to the **Strike +** connector on the screw terminal.

Connect a second wire from the **-(minus)** terminal of the door strike mechanism to the **Strike -** connector on the screw terminal.

### Optional Terminals

Use the **Door Override** terminals if a door override switch is to be fitted.

Another device can be connected to the **Switch** terminals if required (for example a push button for exiting the door or a break glass feature to open the door in an emergency).

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## Connecting a Bolt to the Access Controller

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A Ringdale security bolt can be connected to the Access Controller if required. The bolt will be supplied with the cable for the connection and will have an IDC 6-way connector at each end. The cable from the bolt is connected to the **Bolt/Relay** port on the **Access Control Board**. The Access Control Board is located on the side of the Access Controller. See diagrams in the *Access Board Connections* sections to locate the port. **Note:** for the Duplo version there will be two *Bolt/Relay* ports to enable two bolts to be connected.

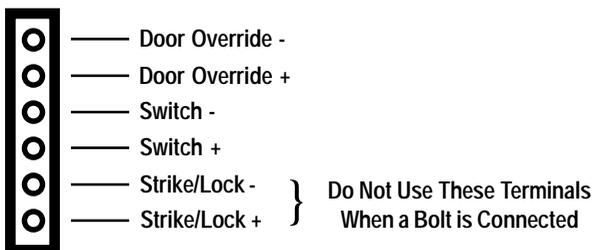
### IMPORTANT

**Insert the cable's 6-way connector with the long edge of the plastic cover facing the high lip of the male port on the Access Control Board.**

If additional switches are required (for example a push button for exiting the door or a break glass feature to open the door in an emergency) the screw terminals alongside the port can be used to add further connections. For details on using these terminals see the section *Connecting a Door Strike to the Access Controller* (the only difference will be that the *Strike/Lock* terminals will be inoperative when the bolt is connected).

### Screw Terminal Configuration

Top to Bottom (as viewed when fitted into box)



The *Bolt/Relay* port can also be used to connect an optional **Relay** board to the Access Controller, giving enhanced functionality. See the section *Relay Board Option* for details of this facility.

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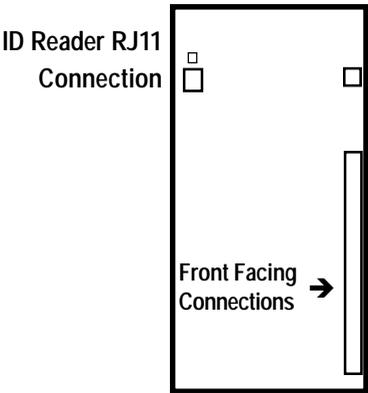
# Connecting the ID Reader to the Access Controller

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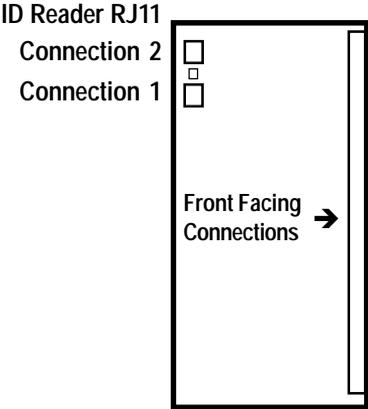
The size and type of ID reader used with your Access Controller will vary according to your requirements. Whichever type you have, it connects to the same place on the **Access Control Board**. The Access Control Board is located on the side of the Access Controller. The Solo version has one ID reader connector, the Duplo version has two. Below is a view of the card reader RJ11 connector/s on the board:

### Access Control Board (side on view)

#### Solo Version



#### Duplo Version



Connect ID reader/s as required

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## Time and Attendance Terminal/ LCD Touch Screen Display Option

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The Access Controller can be used to manage a time and attendance terminal if required (the controller board will need to be running the correct firmware version to do this).

The ID reader is installed in the same way as detailed in the previous section.

The time and attendance system will be supplied with an LCD touch screen. This is connected to the **Display RJ45** port on the Access Control Board. The Access Control Board is located on the side of the Access Controller. See diagrams in the *Access Board Connections* sections to locate the port.

The touch screen will have an In/Out option to allow users to log in and out by putting a finger to the screen.

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# Connecting the Access Controller to the Mains Power Supply

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## WARNING

**ENSURE THAT THE POWER SUPPLY IS ISOLATED BEFORE ATTEMPTING CONNECTION**

Depending on the local safety regulations, it is recommended that the Access Controller be connected to a switchable and/or fused distribution point with a higher rating than the internal mains fuse.

Fuse rating for fuse F1 (Mains Fuse) is T1.0 A/250V  
Fuse rating for fuse F2 (Battery Fuse) is T3.15 A/125V

Always replace a fuse with one of the same rating.

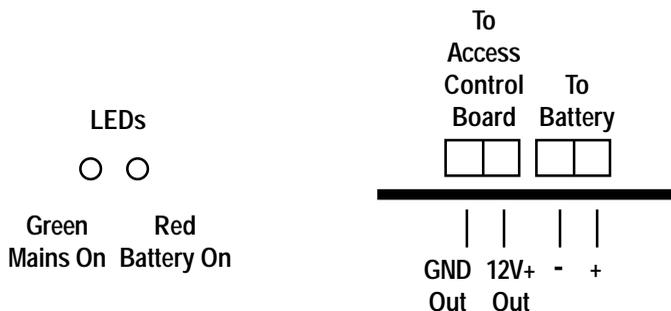
For safety reasons the mains electricity transformers are in the protective casing at the top of the Access Control Box.

**The earth connection from the mains power supply MUST be fitted to the terminal on the side of the Access Control Box.**

There are two different types of mains connections for the Access Controller. Please follow the instructions relevant for your version.

## Plug-in Version

Below is a view of the terminals on the Power Supply board:



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The voltage of the power supply to the Access Control Board should be within the range of 12-15V/1 Amp.

- 1) The **Ground** and **+12 V** wires connect to the Access Control Board that is fixed to the side of the box. See the *Access Board Connections* sections for which screw terminals to use on that board
- 2) The **+** (**positive**) and **-** (**negative**) battery leads fit to the respective connectors on the battery (**Note:** three sets of leads with different connectors will be supplied with the Access Control Box - use the type that is suitable for the battery that you are fitting).

### **Battery Details**

Any sealed lead acid type rechargeable battery of **12V DC** with **1.2Ah** up to **17 Ah** should be suitable up to a maximum size of:

Width: 180 mm

Depth: 75 mm

Height: 167 mm

The storage capacity of the battery to be used will depend on your particular requirements. An example of a suitable 1.2 Ah battery is the YUASA NP1 2-12. An example of a suitable 17 Ah battery is the YUASA NP17-12i.

### ***Warning***

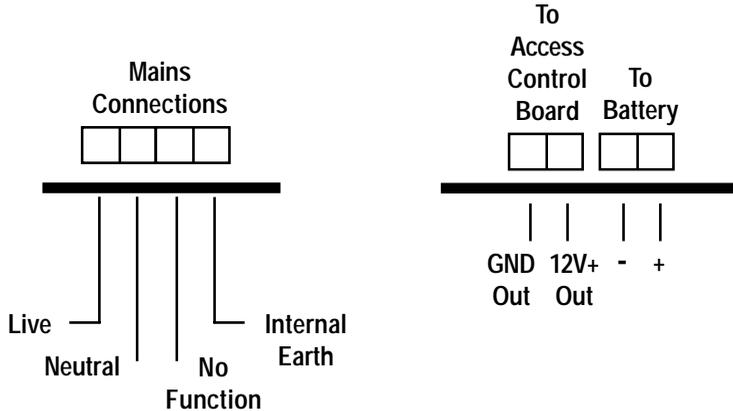
**If testing or using the Access Controller without a battery back-up fitted ensure that the connectors at the end of the battery leads are insulated.**

- 3) Connect the power supply cable from the mains to the socket on the outside of the left hand side of the Access Control Box.

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## Hard Wire Version

- 1) Remove the screws holding the casing in place to view the connections. **IMPORTANT: ISOLATE THE POWER SUPPLY BEFORE REMOVING THE COVER.** Below is a view of the terminals on the board:



The voltage of the power supply to the Access Control Board should be within the range of 12-15V/1 Amp.

Next to the transformers is located the **Voltage Switch**.

**PLEASE ENSURE THAT THE VOLTAGE OF THE POWER SUPPLY CONFORMS WITH THE LOCALLY AVAILABLE MAINS POWER SUPPLY.**

Two red bridges marked 110 means the unit is set for 115 Volts  
One red bridge marked 240 means the unit is set for 230 Volts

- 2) The **Ground** and **+12 V** wires connect to the Access Control Board that is fixed to the side of the box. See the *Access Board Connections* sections for which screw terminals to use on that board

- 
- 3) The + (**positive**) and - (**negative**) battery leads fit to the respective connectors on the battery (**Note:** three sets of leads with different connectors will be supplied with the Access Control Box - use the type that is suitable for the battery that you are fitting).

### Battery Details

Any sealed lead acid type rechargeable battery of **12V DC** with **1.2Ah** up to **17 Ah** should be suitable up to a maximum size of:

Width: 180 mm

Depth: 75 mm

Height: 167 mm

The storage capacity of the battery to be used will depend on your particular requirements. An example of a suitable 1.2 Ah battery is the YUASA NP1 2-12. An example of a suitable 17 Ah battery is the YUASA NP17-12i.

### **Warning**

**If testing or using the Access Controller without a battery back-up fitted ensure that the connectors at the end of the battery leads are insulated.**

- 4) Connect the **Live** and **Neutral** wires from the fused outlet of the mains power supply to the named terminals.

The earth connection from the mains power supply **MUST** be fitted to the terminal on the side of the Access Control Box - **DO NOT** attempt to connect the mains earth to the internal earth terminal on the PCB.

LEDs



On the right side of the transformer PCB are two monitoring LEDs

Green      Red  
Mains On   Battery On

- 5) Replace the casing before connecting the power.
-

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## Connecting the Access Controller to the Network

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The port for the Ethernet network connection is on the **Access Control Board**. The Access Control Board is located on the side of the Access Controller. See diagrams in the *Access Board Connections* sections to locate the port.

Connect the 10base-T network cable to the **RJ-45 Ethernet Port**.

LEDs are provided to allow monitoring of the network connection. The configuration of the LEDs is as follows:

**Yellow - Link LED:** indicates that the connection is functioning.

**Red - TX LED:** blinks on **Transmission** of a data packet.

**Green - RX LED:** Blinks on **Receipt** of a data packet.

Once the Access Controller is connected to the network, the card reader/s connected to the Access Controller can be configured using the Sentinel network proximity card reader software that accompanies the product. Consult the software manual for details on how to install and configure the Sentinel software.

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## Relay Board Option

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The Relay Board is an optional extra that can be fitted to the Access Controller. It offers greater flexibility in the kind of devices that can be connected to the controller. It is especially useful for devices that have their own power supply or use an external power supply.

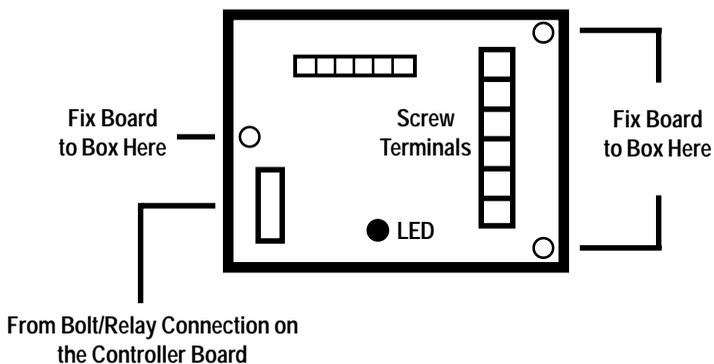
For example, some door locks have their own power supply but can still be connected to the Access Controller by using the Relay Board.

It is suitable for devices of **5-8A/250V**.

### IMPORTANT

**Before fitting the Relay Board into the Access Control Box and connecting a device to it ensure that the control box is safely isolated from the mains supply**

The Relay Board is fitted to the Access Control box in the top right corner (above the main control board). Use the supplied screws to fasten the board to the side of the box using the three prepared fixing points.



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The Relay Board is connected to the Main Controller Board of the access controller using the supplied cable which has a 6-way IDC connector at both ends. The cable connects to the male 6-way port on the Relay Board as shown in the diagram.

Connect the other end of the cable to the **Bolt/Relay** port on the Controller Board - see the *Access Control Board Connections* Section to locate this port.)

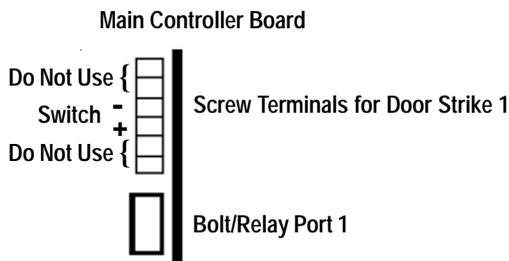
### IMPORTANT

**Insert the cable's 6-way connectors with the long edge of the plastic cover facing the high lip of the male port on the Relay and Controller boards.**

The red LED on the relay board will light to show the connection with the Controller Board is good.

**Note: If the Main Controller Board is of the *solo* type it will have one set of connections as shown below. Only two of the *Screw Terminals* alongside the Relay port will be operational when the port is connected to the Relay Board. These are shown below and their function will duplicate the U3 and U4 terminals on the Relay Board itself (see the screw terminal diagram on the following page to locate these terminals).**

**If the Main Controller Board is of the *Duplo* type it will have two sets of these connections, but the same rule will apply as above for the *Solo* type, only two of the screw terminals will be operational alongside the Relay port being used.**

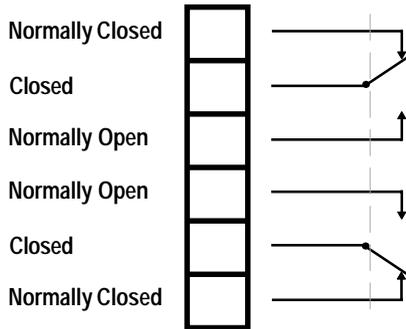


Following are details of the screw terminals on the Relay Board.

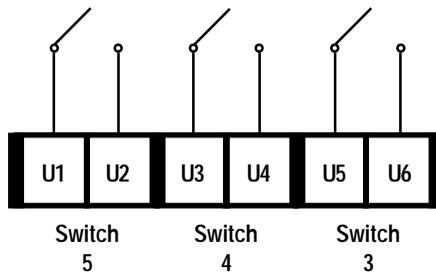
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The configuration of the large screw terminals is as follows.  
**Note:** terminals shown top to bottom as viewed when fitted into the box (wires fitted in from the right):



The configuration of the small screw terminals is as follows.  
**Note:** terminals shown as viewed when fitted into the box (wires fitted in from the top):



### IMPORTANT

How the third party device is connected to the Relay Board will be dependent on the requirements of that device. Please consult the installation manual for the device before attempting connection.

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# Enrolment Reader Option

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This option provides a dedicated Desktop ID Reader for use with administration and enrolment only. The reader fits conveniently on the administrator's desk, allowing registration of new users and amendments to existing user ID details to be carried out without the user needing to go to the location of the operational ID reader/s themselves.

This reader doesn't need to be connected to an access control box as it requires neither a battery backup or connection to a specific door strike/bolt/LCD screen, it only needs to communicate with the network, allowing the ID reader to be managed by the supplied Sentinel software (See separate manual for details of the software). This is done using an enrolment controller, a much smaller unit that can fit conveniently under the desk.

**Note: If the optical USB Fingerprint Reader option has been chosen, this will not require an enrolment controller. See the separate section at the end of this chapter for details of installation.**

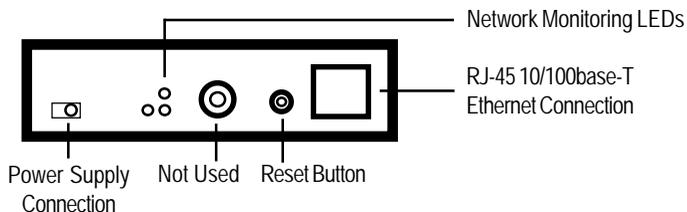
The ID reader connects to the controller, which in turn connects to any 10/100baseT Ethernet network .

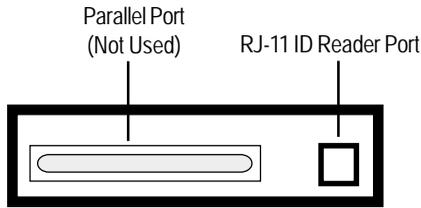
## Important

The enrolment controller is configured to the network using the Sentinel software in exactly the same way as the access control boxes- please see the separate *Sentinel* manual for details of this.

## Connections

The connections on the controller are as follows:





## Connecting the I.D. Reader to the Controller

Connect the **RJ-11 cable** from the reader to the **RJ-11 Port** on the controller (located beside the parallel port as shown above).

All individual readers are supported (for example: proximity card, fingerprint, swipe card etc. Currently combi readers are not supported).

## Connecting the Controller to the Network

Connect a **10base-T/100baseTX** cable from the network to the **RJ-45 Ethernet Port** (as shown on the first panel).

There are three **Network Monitoring LEDs** - the **Red** LED blinks when the controller *transmits* data to the Ethernet Network. The **Green** LED blinks when the controller *receives* data from the Ethernet network. The **Yellow** LED indicates the network link is good.

## Connecting the Controller to the Power Supply

Connect the **Power Pack** to the **Power Supply Connection** on the controller (as shown on the first panel) and then connect the *Power Pack* to the mains power supply (**Important: Do not connect to the mains power supply until the installation is complete**).

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## Other Connections

The *Parallel* port and *Round Socket* on the controller are not used for this version.

### Reset Button

Press this button **Only** in consultation with our technical support department - *serious damage can be caused to the controller if this is used without guidance.*

### Important

For successful use of the fingerprint reader, the fingerprint pad must be kept clean - please view the tips described in the *Fingerprint Registration* section of the *Setting Up Users for the ID Reader* chapter of the *Sentinel* manual.

### Non-Optical Fingerprint Beep Codes

When using the fingerprint reader, the following beep codes are used: **One beep** - Fingerprint read successfully, followed by another single beep to acknowledge fingerprint authorisation. **Five beeps** - Fingerprint recognized but user not authorised for access. **Ten beeps** - Fingerprint not recognized.

## Optical USB Fingerprint Reader Option

If installing the optical fingerprint reader, a controller is not required. Simply connect the reader to an available USB port on the PC running the Sentinel software.

*u.are.u Integrator Gold* software will need to be installed on the PC (this is the fingerprint reader management software that works invisibly) and is supplied with the device.

Sentinel will automatically detect the fingerprint reader and it will be ready for use.

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