

Easikey® 1000

Installation and User Guide

17047 Ver 1.8 DRAFT C January 2003

Issue Record

Version	Date	Software	Details
1.0	Oct 95	V1.0	Original Release
1.1	Nov 95	V1.0	Update PSU descriptions
1.2	Oct 96	V1.02	Changes to PCB and new boxed versions
1.3	Jun 98	V1.13	Updates to text and format
1.4	Apr 99	V1.13	Change to Personnel printout
1.5	Feb 00	V1.13	Updates to text, fuse rating updated
1.6	Nov 00	V1.13	Update to power supply diagram, 12V power supply to reader, printer terminal block used for upload/download
1.7	Aug 01	V1.13	Easikey 1000 Plus note added, DCIN connector added to Figure 1, 3A power supply on Figure 3, Figure 4 improved.
1.8	Jan 03	V1.13	RFID and FCC notices added

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IMPORTANT:

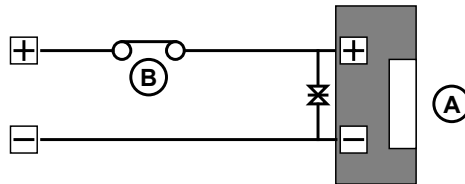
When installing the PAC equipment the following should be noted:

HEALTH AND SAFETY

Installation must be wired in accordance with National Wiring Regulations (BS7671, IEE National Wiring Regulations in the UK). Failure to do so can result in injury or death by electric shock.

It must also comply with any local Fire, Health and Safety regulations. A secured door that may be part of an escape route from an area must be fitted with:

- A fail-safe lock (A). So that the door will be released if the power fails. Ideally a magnetic lock should be used as these are less likely to jam or seize.
- A normally-closed break-glass or manual pull (B) in the lock supply wiring. So that in an emergency the fail-safe lock can be immediately depowered.



The controller must be earthed.

Isolate the controller supply before working on the controller.

CABLING

The cabling used in the PAC Access Control Systems (six wire bus, reader cables, etc.) are not prone to electrical interference. However, you should avoid routing cable close to heavy load switching cables and equipment. If this is unavoidable, cross the cable at right angles every 3.3-6.6ft/1-2m to reduce the interference.

RFID Devices

As similar RFID technology is now widely used in a number of other industries, for example automotive immobilisers, it is possible that interaction between your access control ID and other devices may cause one or the other to function incorrectly. Should you suspect that you have experienced such a problem the solution is to separate your access control ID from other RFID devices.

FCC Notice

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC ID OQL-EK-1000P

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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Abbreviations Used in this Document

AVR	Automatic Vehicle Recognition
ac	alternating current
dc	direct current
DC	Door Contact
DCIN	Direct Current In
CTS	Clear to Send
DTR	Delay Transmit/Receive
GND	Ground
EMF	Electro-Motive Force
ID	Identity
LED	Light Emitting Diode
MOV	Metal Oxide Varistor
N/C	Normally Closed
N/O	Normally Open
PIN	Personal Identity Number
PSU	Power Supply Unit
RTE	Request to Exit
RX	Receive
SIG	Signal
TMP	Tamper
TX	Transmit
VCA	Valid Code Accepted
VE	Voltage Entry

1. About this Document

This document covers the installation and use of the Easikey 1000 door controller. The following versions are available:

- **Easikey 1000** 21446
- **Closed Boxed Easikey 1000** with 3A PSU 21448
- **Closed Boxed Easikey 1000** with 1.5A PSU 21450
- **Open Boxed Easikey 1000** with 3A dc PSU 21452
- **Open Boxed Easikey 1000** with 1.5A ac PSU 21453

This document is designed to be used by both the installation or maintenance engineer and the end user who administers the system on a day to day basis.

1.1 The Installation or Maintenance Engineer

The first part of this document describes how to install, commission and maintain the system. All engineers working on the Easikey 1000 should be familiar with the following sections:

- 2 **The Easikey 1000.** Describes how the system works and its various features. **Read this first as it will help you understand the system.**
- 3 **Installation of the Controller.** Describes power supply requirements (including battery backup), controller siting and fitting for both the Easikey 1000 and the Boxed Easikey 1000.
- 4 **Installing Readers and Lock.** Describes the fitting of PAC readers, **Request to Exit** switches and lock requirements. The use of PIN, Wiegand, AVR and Magstripe readers are also described.
- 5 **Door Monitoring and Alarm Relays.** Describes door monitoring and alarm relay facilities.
- 6 **Setting Up the System.** Describes how to install or change the master key, set the system clock and set the door data, and checking the system to ensure all facilities are working.
- 7 **Setting the Door Data.** Describes how to set up lock release time, door left open time, apply time profiles and door options, etc.
- 8 **Installer Facilities.** Describes upload/download, anti-passback, etc.
- 9 **System Administration.** Describes the use of editor keys.

1.2 The User of the System

The second part of this manual is aimed at the end user who should become familiar with the following sections:

- 2 **The Easikey 1000.** Describes how the system works and its various features, not all of which may be implemented in your system. **Read this first as it will help you understand your system.**
- 9 **System Administration.** Describes the use of editor keys.
- 10 **Displays and Alarms.** Describes the displays which may appear during normal operation of the system.
- 11 **Adding and Voiding Keys.** Describes the most common activities of key administration. There are step-by-step instructions on how to add and remove keys from the system.
- 12 **Time Profiles.** Description of time profiles, how they are used and how to program them.
- 13 **Editor Keys.** Description of how to administer the keys that allow changes to be made to the system.
- 14 **Other Functions.** Describes some of the less frequently used actions such as setting the clock, manually opening or closing a door and the printer facilities.

2. The Easikey 1000

2.1 Introduction

The Easikey 1000 is a two door access control system using PAC's proximity key technology. The complete system consists of a door controller with a key pad and display, one or two door readers sited at the controlled doors and a number of PAC electronic keys - PAC's electronic key, proximity card, Magstripe card, PIN reader or Wiegand device. It can also be used with PAC's AVR system. See Appendix A - Equipment for a list of parts suitable for use with the Easikey 1000.

Note

Up to two types of "key" can be used to program each controller. Programming is carried out via:

- The internal reader built into the controller. If this is used, the electronic key **must** be a proximity key.
- An external reader connected to the controller. This can be a Magstripe reader, AVR, PIN reader or Wiegand reader. In this case, the ID Device used is dependent on the attached reader.

Both readers can be used to program the controller.

2.2 How it Works

The system operates when a PAC key is presented close to a door reader, a Magstripe card is swiped through a Magstripe reader and so on. A unique code programmed into the key is transmitted to the reader and back to the controller. When the controller receives the code, it checks:

1. Is the code one that has been programmed into its memory?
2. If so, is it allowed through this door?
3. At this time and on this day?

If the answer to all these questions is yes, the door controller will operate an electric lock (or possibly some other type of locking mechanism) for a set number of seconds, allowing the key holder to pass through the door.

Often there will be pushbutton of some type on the secure side of the door, the **Request to Exit** switch, to allow anyone to leave the area.

Note

The information provided in this document assumes that proximity keys are used. Appendix B - Using External Readers details any differences required if other "keys" are used, such as Magstripe cards.

2.3 Features

2.3.1 Access Points

The Easikey 1000 will control either one or two doors, each of which may be up to 100m away from the controller. Several types of reader may be used (see Appendix A - Equipment) along with **Request to Exit** switches. The door controller will supply 12V dc in either fail-safe (power to lock) or fail-secure (power to unlock) locks.

2.3.2 Personnel

Up to 1000 individual keys can be stored in the memory of the controller. Each key can be allowed through either door, both doors or no door at all (locked out). A time profile can be assigned to a key or to a door in order to restrict access to certain days and times.

2.3.3 Door Monitoring Alarms

Each door may be monitored through a **Door Contact** switch. This enables the system to generate the following alarms:

- **Unauthorised Access Alarms.** These are generated when a door is opened without a valid key being presented or a request to exit signal being received.
- **Door Left Open Warnings.** These are generated when the door is held open for longer than the *Door Open Time*. It should be noted that the *Door Open Time* starts **after** the *Lock Release Time* has expired.

2.3.4 Time Profiles

Both doors and personnel can be assigned time profiles. A door can be programmed to open, for example, between 9.00am and 5.00pm Monday to Friday, but require a key outside those hours. Similarly, a time profile can be assigned to a key which will only allow it to be used on certain days and at certain times. Up to 8 different time profiles can be created; each containing up to 3 time periods.

2.3.5 Printer Facilities

The Easikey 1000 door controller keeps a record of the most recent 1000 transactions. When a printer is connected, any stored transactions are printed first with subsequent transactions being printed as they happen. If the printer is switched off, or otherwise disconnected, the transactions are stored and will be printed out from the point at which printing stopped when the printer is reconnected.

In addition, while in **Editor** mode, the database information, keys, time profiles and door information and the movements of individual keys can be printed.

The only action the user need take is to ensure that the printer is kept supplied with paper and does not jam.

3. Installation of the Controller

3.1 Introduction

The following diagram shows the Easikey 1000 controller with dimensions, connections, etc.

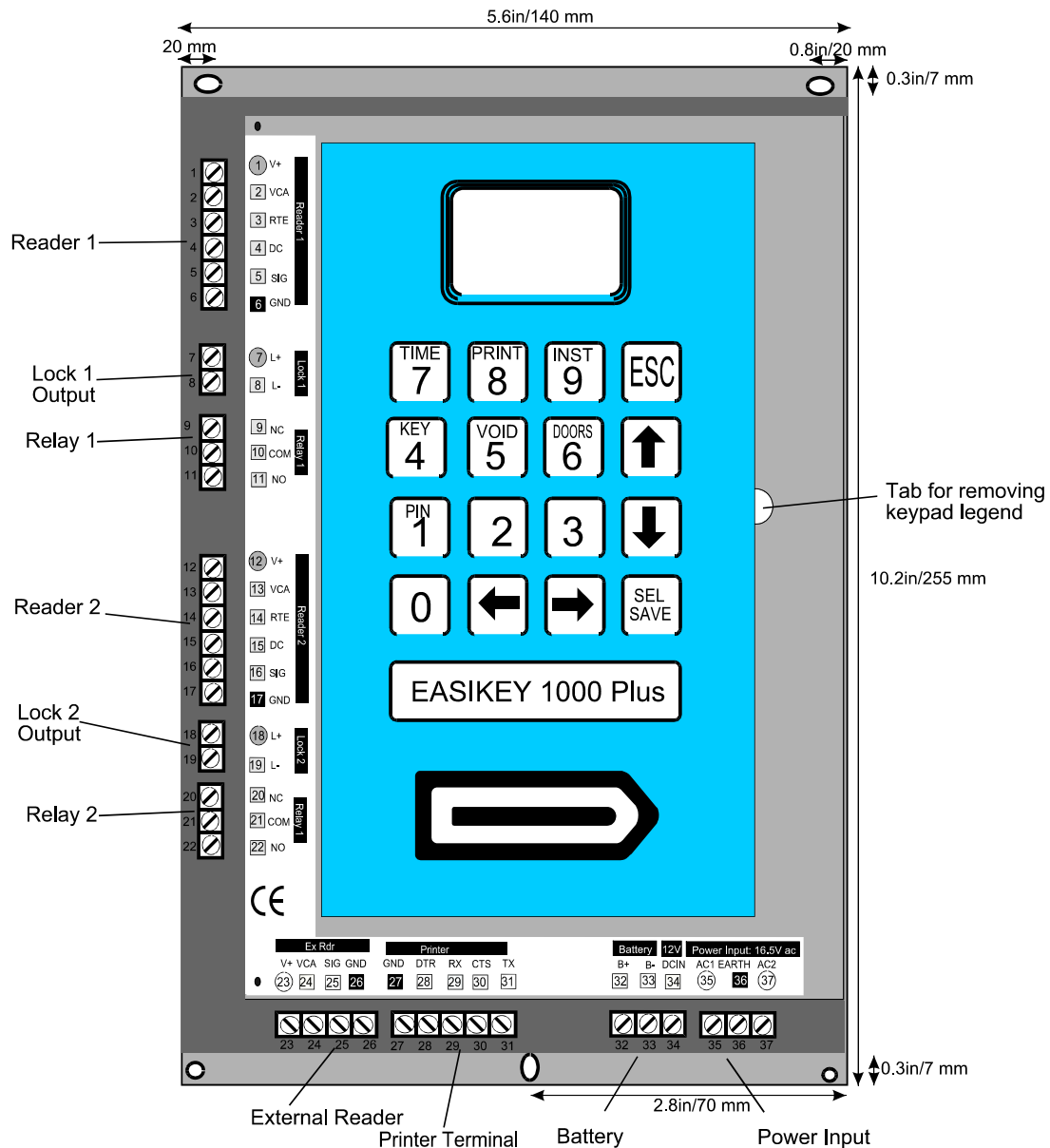


Figure 1 Easikey 1000 Controller

The Easikey 1000 will need an enclosure and a power supply.

Two boxed versions of the Easikey 1000 are available:

- A “closed” box which must be opened to administer the system.
- An “open” box which has a cutout in the lid which allows access to the keypad without opening the box. In this instance, only the Installation Engineer should have access to the box.

Note

EASIKEY 1000 Plus indicates that the controller has door monitoring and alarm relay facilities, see Section 5.

3.2 "Closed" Box Version

This version has a built-in power supply with room in the enclosure for two 6Ah lead acid batteries.

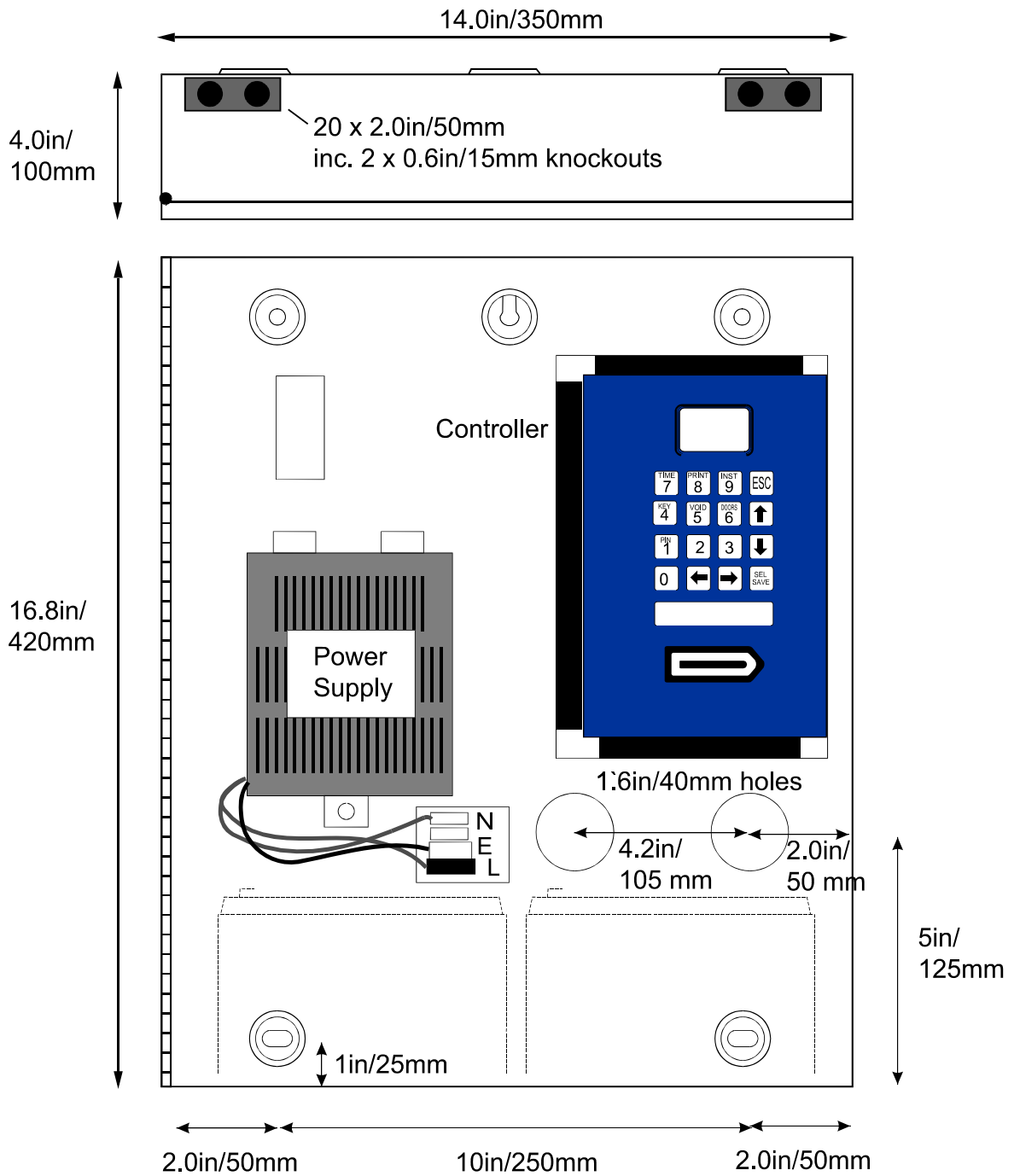


Figure 2 "Closed" Boxed Easikey 1000

3.3 "Open" Box Version

This version is also available with a built-in power supply with room in this enclosure for one 12V 2.8Ah lead acid battery.

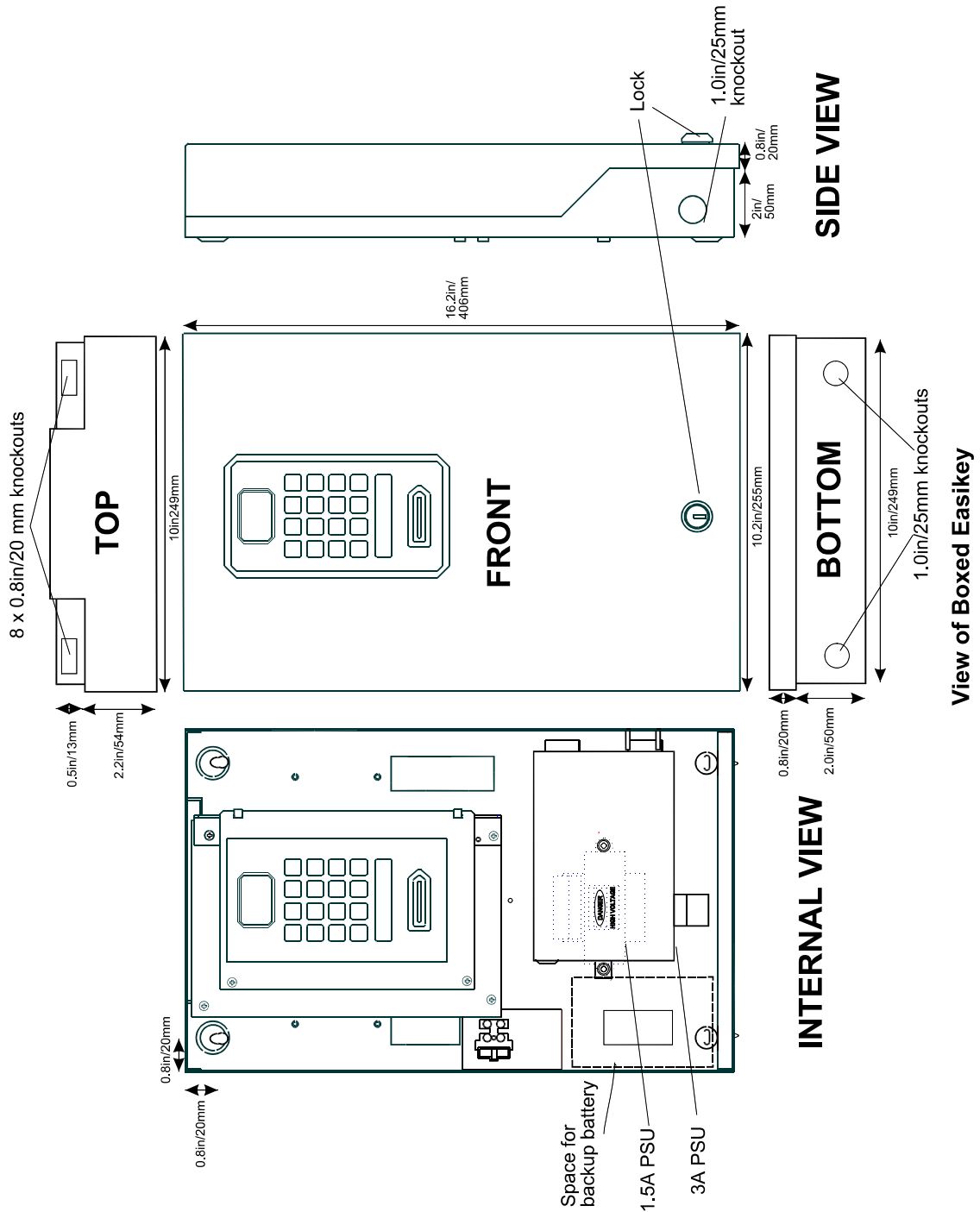


Figure 3 "Open" Boxed Easikey 1000

3.4 Power Supply

The Easikey 1000 requires a 12V(3A)/24V(1.5A) dc power supply or an ac transformer rated at 16.5V ac at 1.5A.

Notes

1. The red LED is constantly lit when the alternating current is present except when in the **Editor** mode.
2. The controller and two readers require 600mA. In addition, enough current must be available to power the locks attached to the controller. Therefore, a power supply capable of providing between 600mA and 3A in total should be used, depending on the current consumption of the locks.
3. The database is stored in battery-backed memory and will be preserved whether the controller is powered or not. This backup will last up to 12 months when the controller is not powered. A NICAD rechargeable, non-replaceable battery is used to provide memory backup and this is kept at full charge as long as the controller is powered. If the battery is flat, it will be recharged once power is returned to the controller.

3.4.1 Fuses

The following table details the location, type and rating of each fuse.

Ref	Name/Location	Type	Rating	
			1.5A PSU	3A PSU
FM	Mains fuse on mains terminal block	HBC, anti-surge	160mA	1A
F1	Battery fuse at bottom of PCB*	20mm glass, quick blow	3.15A	3.15A
F2, F3	Lock supply fuse - by reader channels*	20mm glass	500mA	1A

* The lock supply and battery fuses are located in vertical fuse holders on the controller.

3.5 Power Supply Connections

The following diagrams show how the different power supplies should be connected to the controller.

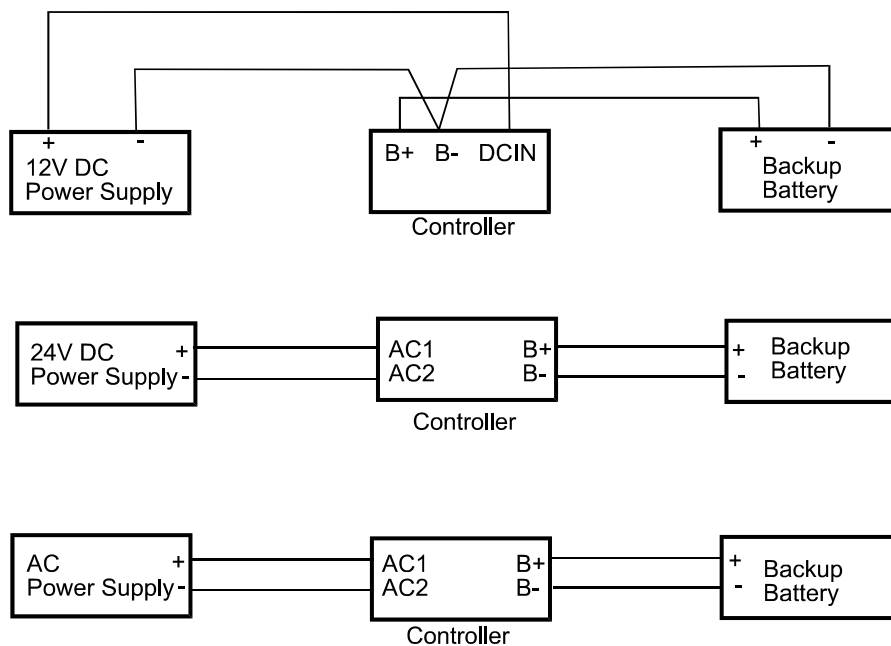


Figure 4 Power Supply Connections

3.6 Battery Backup

Battery backup is a feature of the power supply chosen. The capacity of the battery required should be calculated based on:

- The current consumption of the controller and readers (up to 600mA).
- The current consumption of the locks when operating normally (up to 1A each).
- The type of lock (fail-safe or fail-secure).
- The length of time the system should operate without mains power.

Example

An Easikey 1000 with two readers and two 300mA fail-safe locks will continuously draw about 1.2A. A 2.8Ah battery will therefore provide approximately 2 hours supply.

Note

The battery is connected to the battery terminals **B+** and **B-**. When the battery is low (less than 12V), the green LED is constantly lit except when in **Editor** mode.

3.7 Fitting the Controller

The controller should be mounted in a secure but accessible location bearing in mind that operators are going to have to program the system at the controller. The controller should be mounted so that the display is at about eye level.

There are several holes on the backplate that may be used for mounting.

If you are using the Boxed Easikey 1000 there are several holes in the back of the box (see Figure 2 and Figure 3) that may be used for mounting.

3.8 External Readers

Each Easikey 1000 controller can have an external reader fitted which can be used to administer the system in conjunction with or instead of the internal reader. The external reader is used when keys other than proximity are used. The external reader, if used, is connected to the controller via plug in sockets on connectors 23-26 inclusive situated on the bottom edge of the controller.

3.9 Printer

3.9.1 Printer Specification

An 80-column dot matrix printer with a serial interface is required. The serial interface must be set, using switches and/or jumpers, with the following parameters:

- 4800 baud
- 8 data bits, 2 stop bits
- No parity
- Hardware handshake using DTR/CTS. When the printer is busy, it should force DTR low.

PAC have used the EPSON LX series and the OKI Microline 182 printers successfully in the past.

3.9.2 Printer Cable

The following cable is required:

Use 0.22mm² 4-core unscreened signal cable, maximum length 15m.

Easikey 1000		Printer	
5-way printer terminal block		25-pin male D-type connector	
TX	————	3	RX
CTS	————	20	DTR
RX			
DTR			
GND	————	7	Signal Ground

4. Installing Readers and Lock

4.1 Readers

There are several types of readers which can be used with the Easikey 1000, namely:

- Proximity readers.
- PIN readers.
- Magstripe readers (PAC format only).
- Wiegand readers (via PAC Wiegand interface unit).
- AVR readers.

The reader is connected to either reader connector 1 (connections 1-6) or 2 (connections 12-17). The wiring for each type of reader is described below.

4.1.1 Proximity Reader Wiring

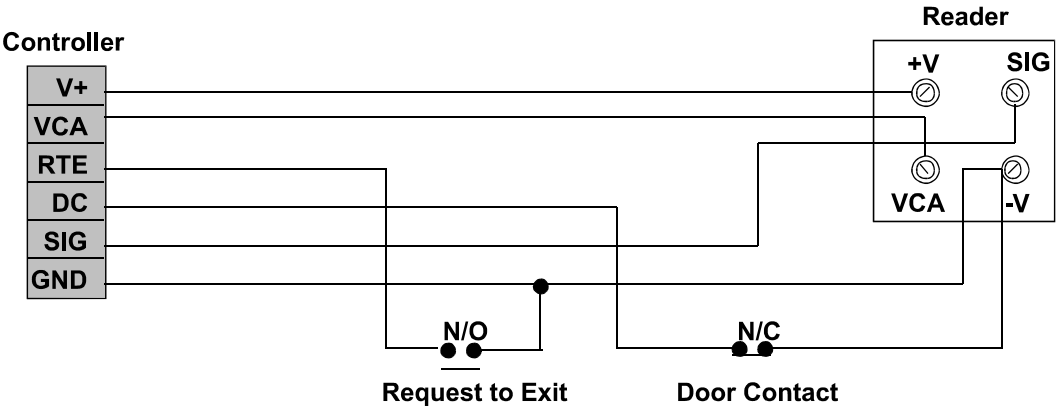


Figure 5 Proximity Reader Wiring Diagram

See Appendix A - Equipment for a list of PAC readers suitable for use with the Easikey 1000. Use the most appropriate reader for the location bearing in mind, internal or external, vandal resistance, decor, panel mounting etc.

4.1.2 PIN Reader Wiring

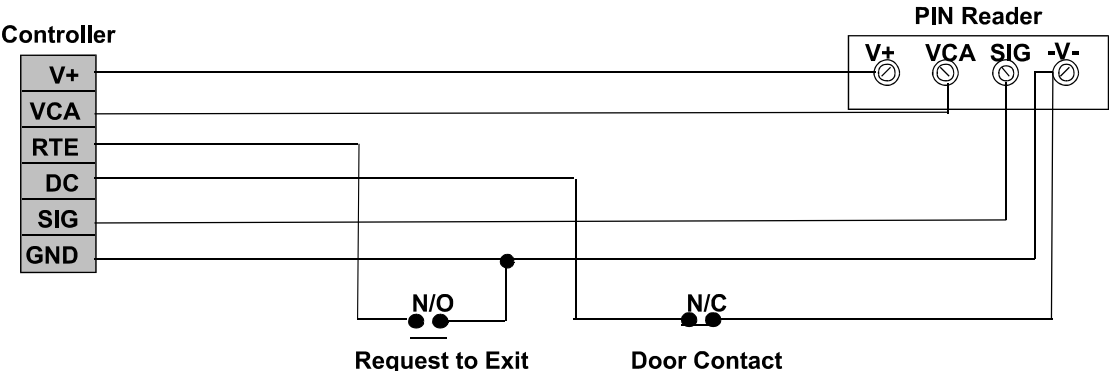


Figure 6 PIN Reader Wiring Diagram

4.1.3 Magstripe Reader Wiring

All connections to the Magstripe reader are made to a 4-conductor flying lead as follows:

Length: 3m **Gauge:** 7/0.2, 0.22mm²

Colour	Signal	Notes
Red	+12V	12V dc input 9-16V dc, 50mA typical.
Black	-V	Power and signal return
Blue	SIG	Signal
Yellow	VCA	Valid code accept. Active low, LED changes state when the input falls below 0.6V.
Drain Wire		This wire should be connected to earth. Do not connect it to the -V terminal.

Notes

1. Unlike PAC proximity readers, **shielded** cable is recommended for the interconnection between the reader and door controller.
2. It is essential that on long cable runs, at least the minimum voltage is maintained at the reader.

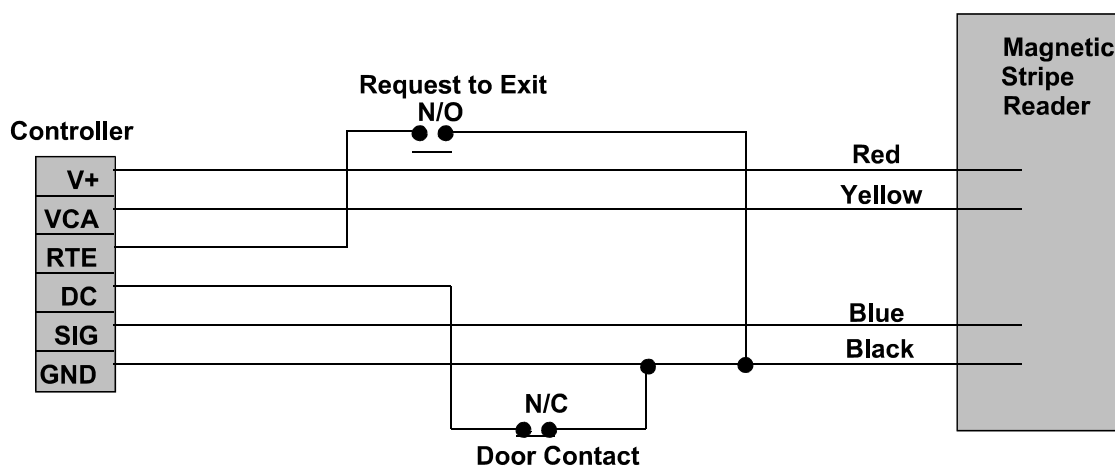


Figure 7 Magnetic Stripe Reader Wiring Diagram

Note

The door contact is optional.

4.1.4 Wiegand Readers Wiring

Wiegand devices are attached using PAC's Wiegand interface unit which converts the Wiegand code output by the Wiegand device into a format that would be sent by a conventional PAC reader, making the Wiegand device transparent to the Easikey 1000 controller.

There are two jumper connections on the Wiegand interface unit's circuit board which should be set as follows:

Jumper J1 Open
 Jumper J2 Closed

Refer to *17132 PAC Wiegand Interface Installation Instructions* for full details.

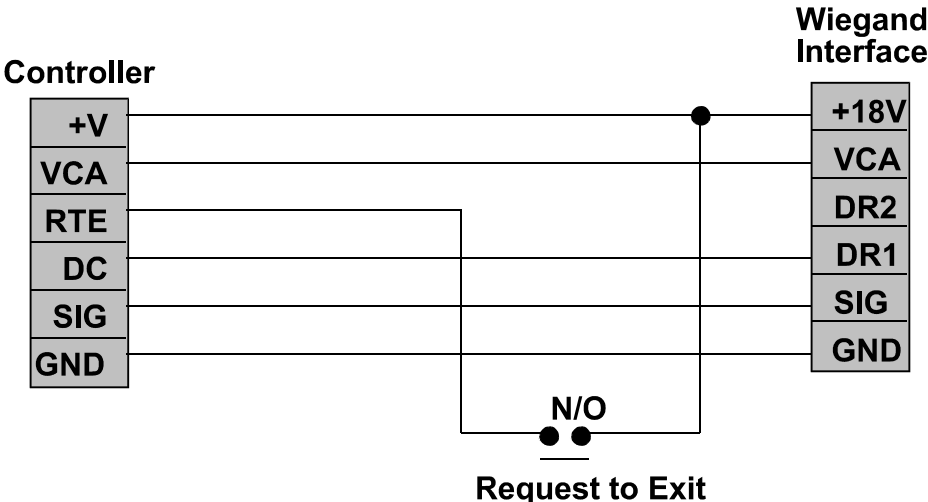


Figure 8 Easikey 1000 Controller to Wiegand Interface Wiring Diagram

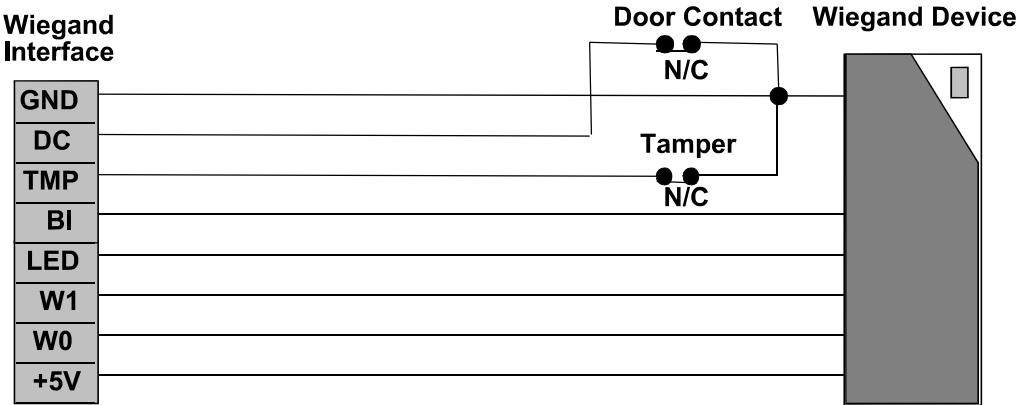


Figure 9 PAC Wiegand Interface to Wiegand Device Wiring Diagram

Note

The door contact is optional.

The following is the wiring for a typical Wiegand device (when no door monitoring or reader tamper is being used):

Wiegand Interface	Wiegand Device
8-way terminal block	integral cable or terminals
+5V	5V/+V
W0	DATA0
W1	DATA1
LED	LED
BI	N/C
TMP	
DC	
GND	GND/-V

Figure 10 Typical Wiegand Device Wiring Diagram

4.1.5 AVR Reader Wiring

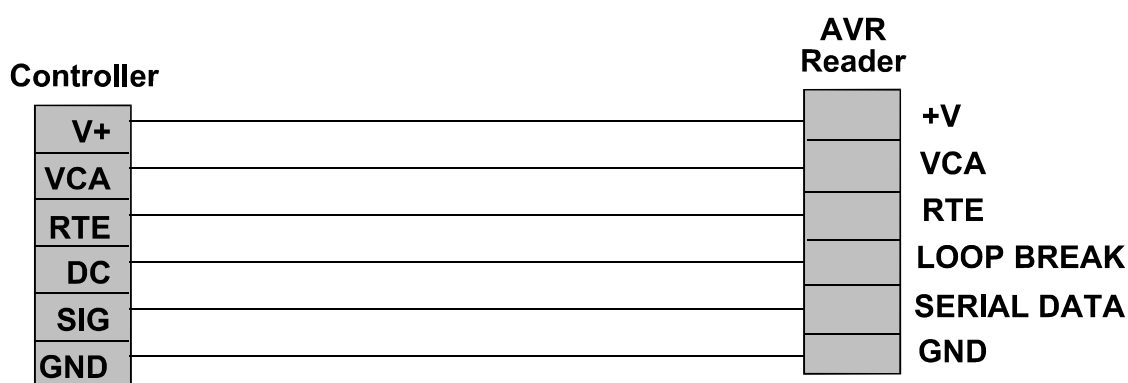


Figure 11 AVR Reader Wiring Diagram

Note

A reader with a smaller loop, without the Loop Break and RTE connections, is connected to the Easikey 1000 to read the transmitter codes into the controller for programming.

4.1.6 Reader Fitting

See the datasheet supplied with the PAC reader being used for specific details for fitting that type of reader.

In general:

- Readers should be mounted at a convenient height, usually at about the height of a door handle, on the unhinged side of the door.
- Readers should be mounted at least 1m apart to prevent any interaction between them.
- Consider future service requirements such as access to cables, etc.

4.1.7 Reader Cabling

Use unscreened multistranded tinned copper signal cable, the type commonly used in alarm installations. The gauge depends on the distance from the controller to the reader **and** the type of reader.

4 cores are used to connect the reader itself; the other 2 cores are for the optional request to exit signal and the optional door monitoring signal.

4.1.7.1 Magstripe Readers

6-conductor, multi-stranded, **shielded** cable should be used for the following distances and gauges:

up to 100m 0.22mm²

4.1.7.2 Wiegand Readers

6-conductor, multi-stranded, **shielded** cable should be used for the following distances and gauges:

up to 100m 0.22mm²

4.1.7.3 All Other Readers

4/6-conductor, multi-stranded, **unshielded** cable should be used for the following distances and gauges:

up to 100m 0.22mm²

The readers are not prone to electrical interference, however avoid routing cable close to heavy load switching cables and equipment. If this is unavoidable, cross the cable at right angles every 1-2m.

4.1.8 Reader Connections

All PAC readers have 4 terminals; +V, VCA, SIG and -V. Each reader is connected to the door controller reader 1 or reader 2 terminal block. The door controller has 2 further connections, DC and RTE. These provide door/cable monitoring and request to exit inputs respectively.

Reader Marking	Description	Connects to Controller 6-way terminal block
+V	Supply: 12V.	V+
VCA	Valid code accepted, illuminates the green LED at the reader.	VCA
	Request to exit.	RTE
	Door monitoring.	DC
SIG	The signal from the reader to the controller.	SIG
-V	Supply: 0V.	GND

4.2 Request to Exit (RTE)

4.2.1 Wiring Detail

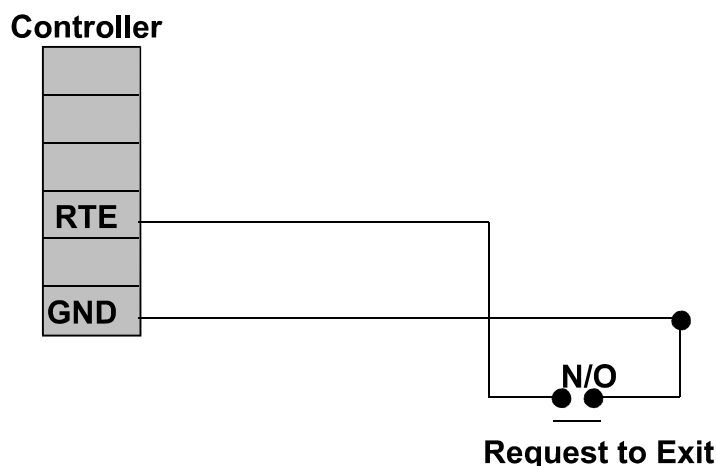


Figure 12 Request to Exit Wiring Diagram

Note

As connecting RTE to ground (-V) will always operate the lock, ensure that the request to exit wiring is not accessible from outside the secure area (e.g. if the reader is removed from the wall.)

The **Request to Exit** switch allows persons within the secure area to leave by signalling to the door controller to operate the lock without using a key. The switch is necessary when door monitoring is used (see Section 5) to enable the controller to distinguish between a forced door and a valid exit.

The switch should be 'normally open' which closes momentarily when pressed.

The switch can be located away from the door, for example, at a reception desk or as part of a door entry system. In which case, it is possible to change the printed event report to *Request for Entry* (see Section 7). More than one switch can be used (if wired in parallel) for a door if required.

If an attempt is made to keep the door open by holding down the **Request to Exit** switch, the door will lock after 5 cycles of the lock release time and, if a printer is fitted, an *RTE Button Held Down* report is produced.

4.3 Door Contact (DC)

The door monitoring facility is described in this section.

4.3.1 Lock Output

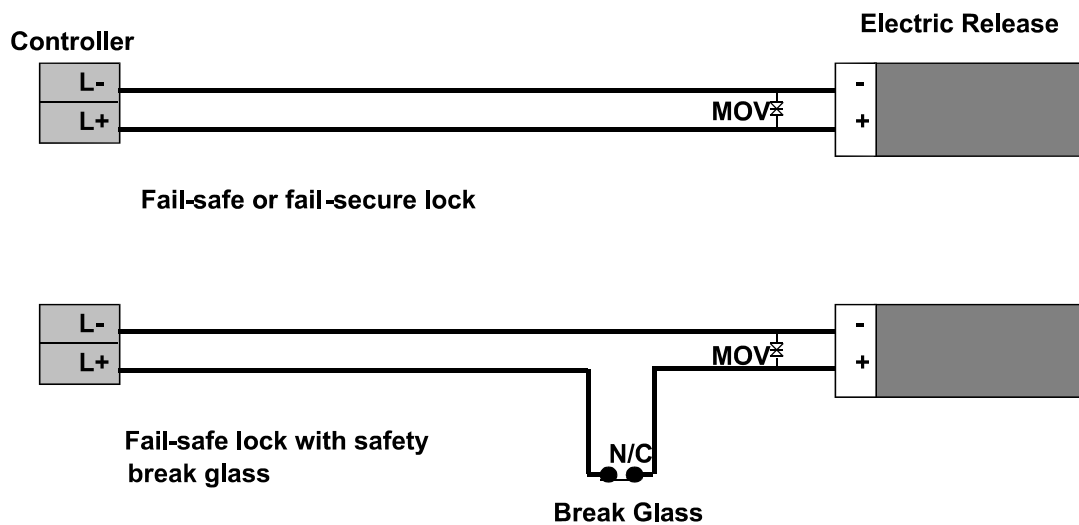


Figure 13 Lock Output Wiring Diagram

All locks should be fitted according to the manufacturer's instructions.

The Easikey 1000 provides a lock output for each reader channel. These outputs are capable of providing:

- 12V lock at up to 1A each for the dc PSU (part numbers 21450, 21453)
- 12V lock at up to 500mA each for the ac PSU (part numbers 21448, 21452).

Each lock output is protected by a fuse fitted next to the reader connector as follows:

- A 1A, 20mm glass, quick blow fuse for those with the dc PSU.
- A 500mA, 20mm glass, quick blow, fuse for those with the ac PSU.

Each output can be independently set as fail-safe (power to lock) or fail-secure (power to unlock), see Section 7.

The cable between the door controller and the lock should be of such a gauge as to provide at least the minimum voltage required to operate the lock. The resistance of the cable and the current drawn by the lock will determine the type of cable.

4.3.2 Lock Suppression

All locks **must** be fitted with a means of suppressing back EMF ('spikes') generated by most electric releases, especially magnetic locks. All PAC readers are now supplied with a Metal Oxide Varistor (MOV). This device should be fitted across the lock terminals at the lock. This device will prevent long term damage being done to the door controller.

4.3.3 Safety

Any door that is considered a fire door or is on an escape route must have some means of overriding the electric release in an emergency. Usually this is achieved by the use of fail-safe locks (power to lock) fitted with a normally closed break-glass **in the lock supply**. When the break-glass is operated, the supply to the lock is broken and the door will be released without any intervention from the door controller.

5. Door Monitoring and Alarm Relays

This section describes the following facilities:

- **Door Monitoring.** This allows you to monitor each door by using a **Door Contact** switch. *Unauthorised Access* and *Door Left Open* alarm messages can then be generated and used to increase the security of the system.
- **Alarm Relays.** An alarm relay is provided on each door channel which can be used, for example, to generate an audible alarm when an *Unauthorised Access* or *Door Left Open* situation is detected.

5.1 Wiring Detail

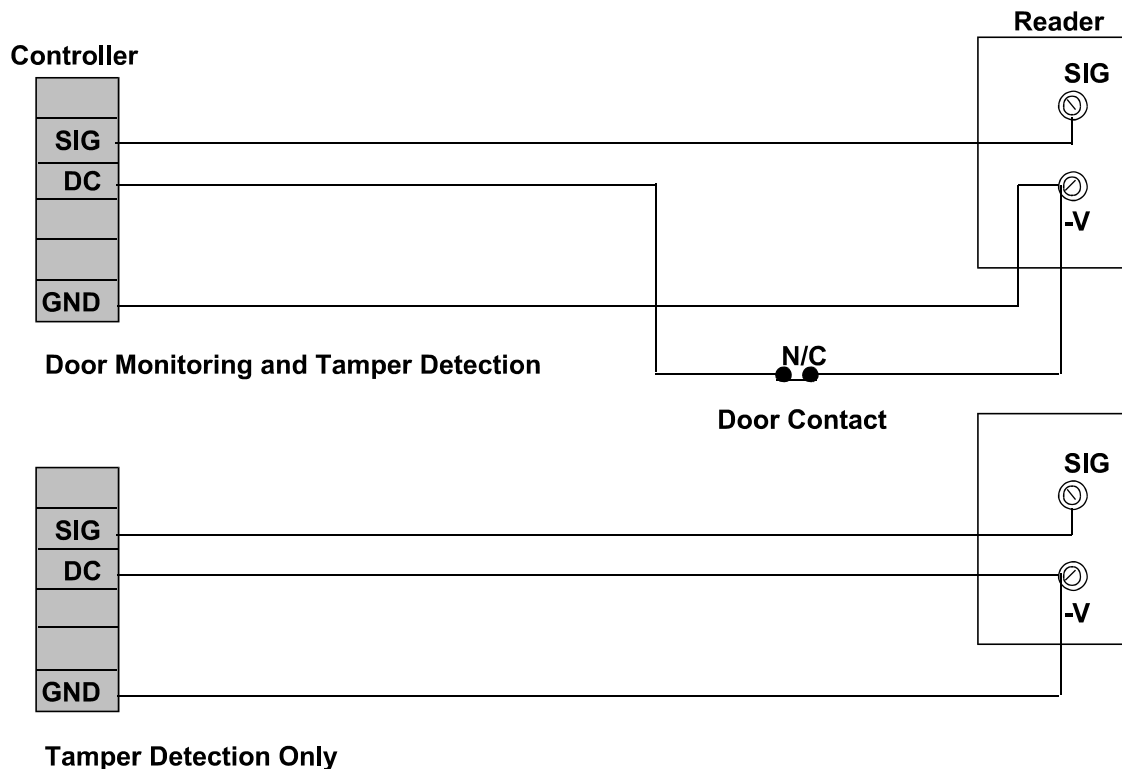


Figure 14 Door Monitoring and/or Tamper Detection Wiring Diagram

5.2 Door Contact Monitoring

The Easikey 1000 has the ability to monitor a door contact allowing the following reports to be generated:

- *Unauthorised Access Alarm* which provides warning of a forced door.
- *Door Left Open Warning* which is generated after a set period of time. This time is set in the door database (see Section 7).

In addition, there is a cancellation of lock release time which allows the door to lock after someone has passed through even though the lock release time has not expired.

The door contact should be a **Normally Closed** switch that is open whenever the door is open. Care should be taken when fitting door contacts to ensure that they operate only when the door is opened and close only when it is secure.

To help prevent false alarms:

- Keep reed switches away from large magnetic fields, such as those generated by magnetic locks. This is a particular problem with metal door frames.
- Ensure that the switch does not operate if the door moves in its frame, in draughty or windy conditions.
- An efficient door closer should be fitted that secures the door once someone has passed through.

5.3 Cable/Reader Anti-Tamper

In addition to monitoring a door contact, the DC connection also provides a tamper detection function. Tamper is detected when the SIG line breaks at the same time as DC opening. This is achieved whether or not a door contact is fitted. To provide full protection of the cable and reader the DC core should be terminated at the reader -VE terminal to ensure that the DC to -VE circuit breaks when the reader is removed.

IMPORTANT

Tamper detection does not operate when the door is manually unlocked, automatically unlocked via a time profile or while the door is open through the use of a key or RTE.

The functions described here are set up in the door database. See Section 7 for details on how these facilities are enabled.

5.4 Alarm Output Relay

Relay

NC	Normally Closed
COM	Common
NO	Normally Open

A relay is provided on each channel with Common, Normally Open and Normally Closed terminals. Both relays have the same fixed function, changing over in the event of an `Unauthorised Access` alarm or a `Cable/Reader Anti-Tamper` alarm. The relay will change back when the alarm is accepted.

Alarm relay 1 is activated for alarms on reader 1 and alarm relay 2 is activated for alarms on reader 2. Each relay is de-activated when it is accepted by an editor key or the door is closed.

Note

The relay changes over for the `Door Left Open` warning.

The relay contacts are rated at 0.4A at 125V ac and 2A at 30V dc.

Note

When channel interlock is active, alarms on both readers activate alarm relay 1. Alarm relay 2 is not used.

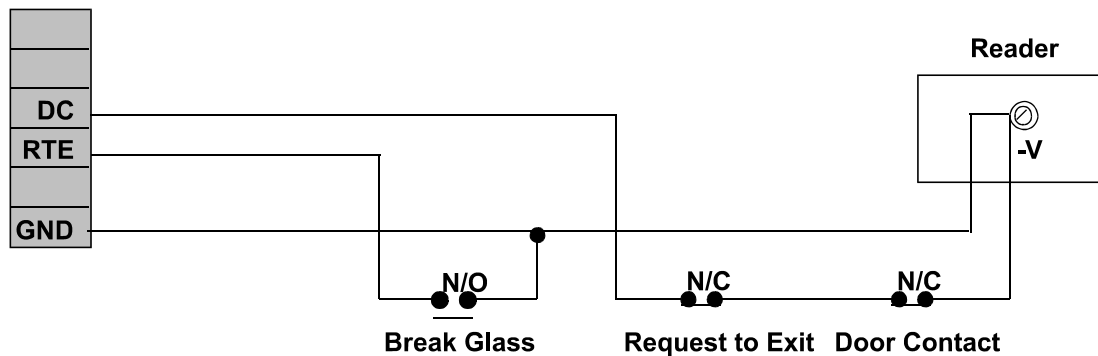
5.5 Emergency Override/Free Exit

There is a special case where both the RTE and DC signals are interpreted differently to those described above. The RTE signal is used to monitor an **Emergency** switch, such as a break glass, and DC provides a `Free Exit` report. See Section 7.1.4 for how to enable this feature.

Note

When this feature is used, there is no tamper detection and no door alarm monitoring.

Controller



Special Case for Emergency Override and Free Exit

Figure 15 Emergency Override/Free Exit Wiring Diagram

5.5.1 Emergency Override

When connected as shown, operating the break glass will open the door and produce an `Emergency Override On` report at the printer. When the switch is restored an `Emergency Override Off` report is produced and the door will be locked again.

Note

This feature should not be fitted as the sole means of escape, see Section 4.3.3.

5.5.2 Free Exit

In the case of the door contact, this will produce a `Free Exit` report **and operate the lock** when the switch is opened. A **Normally Closed** switch may be used to operate as a **Request to Exit** switch in addition to having a door contact switch in series. The door contact will allow `Door Left Open` warnings to be produced.

Note

The lock will operate whenever the door contact is opened. Care should be taken that the door contact cannot be broken from the secure side of the door.

6. Setting Up the System

Follow this section through to set up the system for the first time.

6.1 Switching On

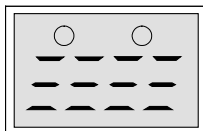
Once the door controller is fitted, with readers and locks in place, the unit can be powered up for the first time. The procedure for initial start-up is as follows:

1. Disconnect all reader, lock and printer terminal blocks at the controller.
2. Apply the 12V dc power. The screen will briefly display **8888** and beep 4 times. The display will then be clear and the red power-on LED will light.
3. Connect the first reader.
4. If fitted, operate the RTE for the first reader. If no RTE is fitted, use a short piece of wire to short RTE to -V at the terminal block. The display should show **oP** and the green LED on the reader should illuminate.
5. Repeat for the second reader if required.
6. Now install the master key (see Section 6.2).
7. Program the door data (see Section 7).
8. Connect the locks and ensure they operate in accordance with the door data settings.
9. Check the clock (see Section 14.1).

6.2 Installing the Master Key

To install the master key:

1. Press the small **Reset** button, **SW1**, situated on the top left-hand corner of the circuit board. The controller will beep 4 times. While it is beeping press the **Reset** button again. The display will flash all its horizontal bars.



2. Present an ID device (proximity token, Magstripe card, etc) to the controller reader being used (either internal or external). This will become the master key.
3. The controller will beep and the display will alternate between **CLr** and **ALL?** This means "Do you want to wipe out the whole database?". If this is a new, unprogrammed system, the answer should be "Yes". Press **VOID/5** followed by **SEL/SAVE** to wipe out the database. If you do not want to wipe out the whole database, just press **ESC**.

IMPORTANT

If you are replacing, the master key, press **ESC**. The display will clear. Present the new master key. The display will show:



indicating that you are in **Editor** mode and may select one of the functions.

When the master key is installed, after wiping the database the following parameters are set:

- The master key is also installed as user key 0001 with access through both doors and no time profile set.
- Each door is given a lock release time of 5 seconds.
- Each lock is set to fail secure (power to unlock).

6.3 Replacing the Master Key

To replace the master key follow the steps shown above in Section 6.2 but when the display alternates between *CLR* and *ALL?*, press **ESC** to preserve the existing database.

When the database is preserved, nothing is changed except that the master key is installed in the key database with complete access. It will normally go into position 0001 replacing the old master key unless another key has this number, in which case it goes in the next available position.

7. Setting the Door Data

The **DOORS/6** key allows you to set up or change various parameters concerning the doors and locks. These parameters are described below, followed by a procedure for setting them.

7.1 Description of Parameters

7.1.1 Lock Release Time

This is the amount of time that the lock will be operated. Usually about 5 seconds is sufficient to allow people to open the door. You may need to set a longer time for older or disabled people. When door monitoring (see Section 5) is used, any unexpired lock release time is cancelled as soon the door closes.

7.1.2 Door Open Time

This is the amount of time allowed **after the expiry of the lock release time** before a door left open warning is given. Usually between 10 and 20 seconds is set.

A value **must** be entered here if door monitoring and/or cable tamper detection is required. **If this value is 0, door and cable monitoring is disabled.** It may be useful at times to disable door monitoring while investigating the cause of false alarms.

7.1.3 Door Time Profile

Here a time profile, 1-8, is entered if automatic opening and closing is required. See Section 12 for more details.

7.1.4 Door Options

There are 5 options that can be set. Each is displayed as a vertical bar, full height when set, half height when not set.

7.1.4.1 Lock Mode

UNSET Lock operates as fail-secure, power applied to unlock door.
 SET Lock operates as fail-safe, continuous power to keep door secure, removed to unlock.

7.1.4.2 Free Exit

This option modifies the way that DC and RTE are monitored.

UNSET DC monitors door contact and reader/cable tamper.
 RTE is request to exit.
 SET DC will give Free Exit without an alarm.
 RTE gives Emergency Override On when closed, Emergency Override
 Off when opened.

7.1.4.3 RTE Report

This option controls the type of report printed when RTE is operated.

UNSET Request to Exit
 SET Request for Entry

7.1.4.4 AVR

This option must be set if an AVR reader is to be used.

UNSET Any attached AVR will not be recognised.
 SET Any attached AVR attached will be recognised.

7.1.4.5 Set/Reset

UNSET Presenting a key to the reader will release the lock for the time specified by the lock release time.

SET Presenting a key to the reader will release (unlock) the lock. It will stay in this state until the key is again presented to the reader when the door will again lock.

7.2 The DOORS/6 Function

Press **↑↓** at any time to move between door 1 and door 2.

Press **↔** at any time to move between parameters. The parameters are presented in the order described above.

Press **ESC** at any time to return to **SEL?**

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	SEL?	Press DOORS/6 .
3	<i>d1Lt / 005</i>	Lock release time for door 1. Either: Type a new time, 0-255, followed by SEL/SAVE , or Press ↓ to go to door 2, or Press → to go to next parameter.
4	<i>d1dt / 000</i>	Door open time for door 1. Either: Type a new time, 0-255, followed by SEL/SAVE , or Press ↓ to go to door 2, or Press ↔ to go to next parameter.
5	<i>d1tP / 0</i>	Time profile for door 1. Either: Type a new time profile 0-8 followed by SEL/SAVE , or Press ↓ to go to door 2, or Press ↔ to go to next parameter.
6	<i>d1oP / 000</i>	Door options for door 1. See Section 7.1.4 for descriptions of each option. Either: Press 1,2,3,4 or 5 to set or unset followed by SEL/SAVE . or Press ↓ to go to door 2, or Press ↔ to go to next parameter.
7	<i>d1UL / LoC</i>	Manual lock/unlock for door 1. See Section 14.4.

8. Installer Facilities

This section describes facilities available using the **INST/9** key.

8.1 Setting the Clock

It is important when using time profiles, or if you are using the printer to log events, that the clock and calendar are checked regularly. Use the following procedure for setting the clock:

- If at any point you enter an invalid value, like 15 for the month, you will get a long beep and the original value re-displayed.
- If the date is invalid, e.g. 31/06/93, you will be returned to the year value, step 4 in the procedure below. Re-enter the correct month and date.

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press INST/9
3	<i>SEtC</i>	Press SEL/SAVE
4	<i>Yr93</i>	Type the new year value (e.g. 93) and press SEL/SAVE . Press ↓ to move to the next item.
5	<i>Mt05</i>	Type the new month value (e.g. 05) and press SEL/SAVE . Press ↓ to move to the next item.
6	<i>dt06</i>	Type the new day value (e.g. 06) and press SEL/SAVE . Press ↓ to move to the next item.
7	<i>dy2</i>	Type the day of the week, Mon=1, Tue=2, Wed=3, Thu=4, Fri=5, Sat=6, Sun=7, and press SEL/SAVE . Press ↓ to move to the next item.
8	<i>Hr11</i>	Type the hour and press SEL/SAVE . Press ↓ to move to the next item.
9	<i>Mn08</i>	Type the minute and press SEL/SAVE . The clock is now set. Press ESC .
10	<i>SEL?</i>	Press ESC to leave the Editor mode.

8.2 Upload/Download

It is possible to use the serial ports on two Easikey 1000 controllers to copy the database from one to the other.

To do this a cable should be made up as follows:

Use 0.22mm² 4-core unscreened signal cable, maximum length 15m.

Easikey 1000		Easikey 1000
5-way printer terminal block (connector no.)		5-way printer block terminal (connector no.)
GND (27)	————	GND (27)
DTR (28)	————	CTS (30)
RX (29)	————	TX (31)
CTS (30)	————	DTR (28)
TX (31)	————	RX (29)

Once the two controllers are connected the following procedure should be performed:

Note

The transfer can be cancelled at any time by pressing **ESC** at both controllers.

Step	Sending Unit	Receiving Unit	Action
1			Present an editor key to each controller reader.
2	<i>SEL?</i>	<i>SEL?</i>	Press INST/9 at each controller.
3	<i>SetC</i>	<i>SetC</i>	Press ↓ at each controller.
4	<i>in</i>	<i>in</i>	Press ↓ again at sending controller only.
5	<i>oUt</i>	<i>in</i>	To start the transfer: Press SEL/SAVE twice on the receiving controller then: Press SEL/SAVE twice on the sending controller.
6	<i>oUt / nnn</i>	<i>in / in</i>	The sending controller will display <i>oUt</i> alternating with the percentage complete. The receiving controller will flash <i>in</i> . When complete, both displays will return to <i>SEL?</i>
7	<i>SEL?</i>	<i>SEL?</i>	Press ESC to leave Editor mode.

8.3 Editor Keys

This function is fully described in Section 13.

8.4 Channel Interlock

When a reader is used on both sides of a door to monitor both entry and exit, it is only necessary to feed one lock. The same lock, lock 1, will be operated by both reader 1 (entry) and reader 2 (exit). Lock 2 is not used. Door monitoring and RTE, if used, are on channel 1.

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press INST/9 .
3	<i>SetC</i>	Press ↓ 4 times.
4	<i>P00</i>	Press → to toggle Channel Interlock ON/OFF
5	<i>P00.</i>	
6	<i>SEL?</i>	Press ESC to leave Editor mode.

8.5 Anti-Passback

When two readers are used to control both entry into an area and exit out of the area, anti-passback may be set. This will prevent a key being used to enter an area it has already been used to enter first leaving the area. If an attempt is made to use the key to enter the area again, a `No Access: Pass Back` report will be generated on the printer. As with channel interlock, channel 1 is considered the entry reader and channel 2 the exit reader.

Passback may either be active until the key is used to leave the area, or a time limit may be assigned after which the key may be used to enter the area again. The time limit is useful if people are likely to leave the area without using their keys, without the time limit they would be unable to get back in the area.

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press INST/9 .
3	<i>SetC</i>	Press ↓ 4 times.
4	<i>P00</i> or <i>P00.</i> if Channel Interlock is set.	Type a value followed by SEL/SAVE . 0 No pass back 1 Pass back with no time limit. 2-60 Number of minutes after which a key will work again if it is not used to leave the area.
5	<i>P15</i> (with an anti-passback time set to 15 mins)	
6	<i>SEL?</i>	Press ESC to leave Editor mode.

8.6 Software Version Display

It may be useful at times to verify the software version used in the controller. You may be asked for this by PAC Technical Support.

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press INST/9 .
3	<i>SetC</i>	Press ↓ 5 times.
4	<i>v100</i>	In this case version 1.00 is displayed. Press ESC .
5	<i>SEL?</i>	Press ESC to leave Editor mode.

9. System Administration

9.1 The Controller Keypad and Display

This section describes how to use the controller keypad to administer the system.

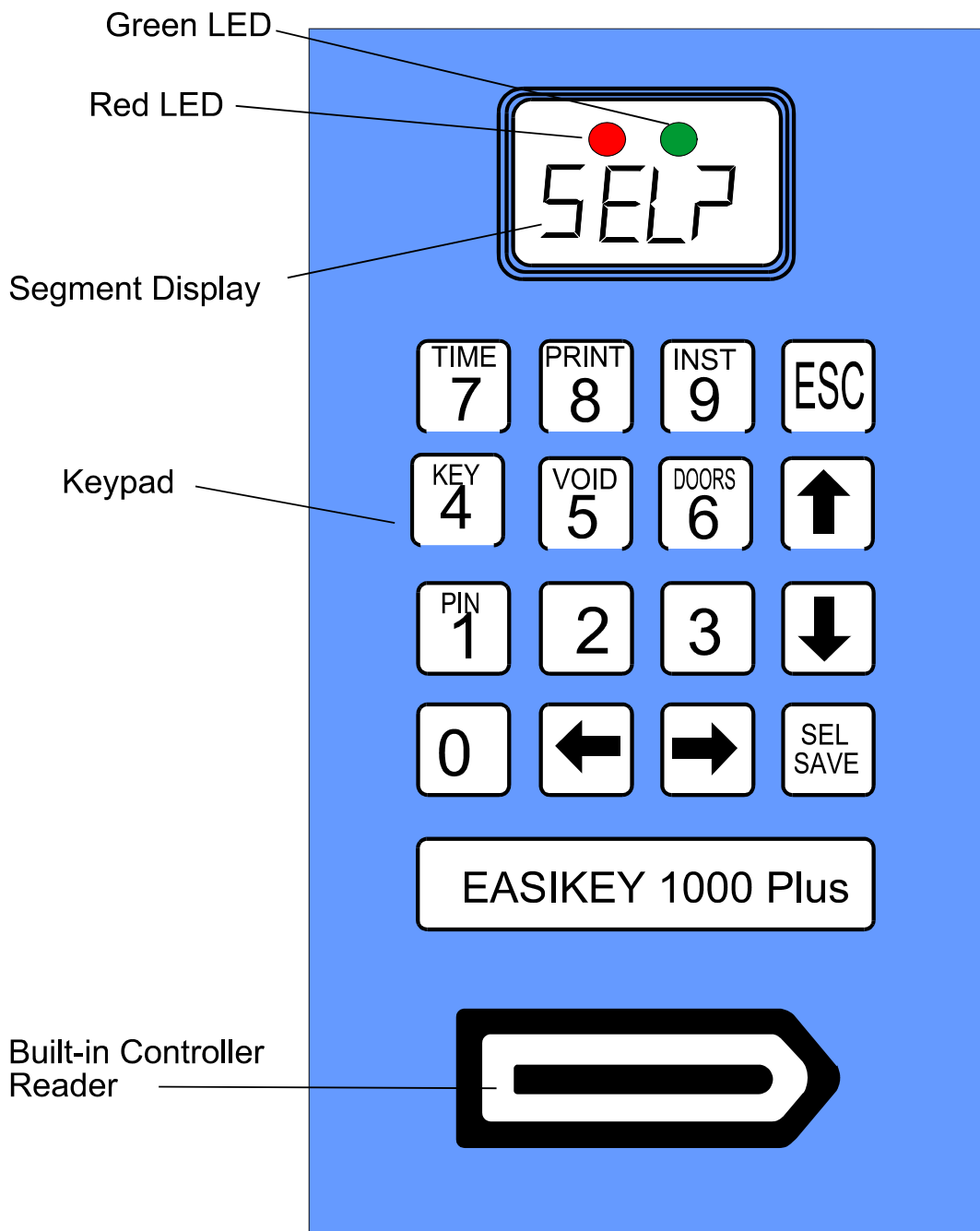


Figure 16 Controller Keypad and Display

9.2 Editor Keys

In order to perform any administration on the system, an editor key is required. This allows the operator to access editing functions at the controller and also to accept alarms.

There is one master key which is a special editor key that can add or remove editor keys as well as perform other editor key functions.

The master key is created when the system is first installed, although it can be changed at a later date if lost or stolen.

9.3 How to use an Editor Key

Whenever any changes need to be made to the system an editor key should be presented to the built-in key reader. If the key is valid the screen will display **SEL?** From this point, press one of the following keys:

PIN/1	Allows the PIN number associated with a key to be displayed
KEY/4	Allows keys to be added or edited.
VOID/5	Allows keys to be removed from the system.
DOORS/6	Allows the door information, including manual lock/unlock, to be edited.
TIME/7	Allows time profiles to be set up and alter.
PRINT/8	Allows the use of print functions.
INST/9	Provides access to clock setting, add/delete editor keys, set channel interlock, set anti-pass back and upload/download
ESC	Leaves Editor mode.

Other keys used when in **Editor** mode are:

←→↑↓	Arrow keys for moving around.
SEL/SAVE	Used when entering data or to confirm operations.

9.3.1 Entering Data

You will need to enter different types of data at certain points in **Editor** mode. Important points to remember:

- Whenever you add or change any data item you **must** press **SEL/SAVE** to confirm.
- You can press **ESC** to leave the data unaltered.

Different types of data use different methods:

- **Typing:** For instance when you need to enter a key number or a time in a time profile. When pressed, each number appears at the *cursor position*, a flashing underline. You can use the arrow keys, **←→**, to move the cursor position.
- **Toggling:** In this case, pressing certain keys changes the state of the data. For example, when changing days of the week in time profiles, pressing 1 for Monday, 2 for Tuesday, etc., will change the current state; if it is on, pressing the key will switch it off and vice versa.

9.3.2 Editor Time-Out

If after entering **Editor** mode, no keys are pressed or no key is presented to the controller reader for 3 minutes, the **Editor** mode will time-out. This means it will return to the normal display and the editor key will have to be presented again. This can be a useful feature if you are not sure how to get out of the system - just leave it and it will automatically leave **Editor** mode.

10. Displays and Alarms

The Easikey 1000 door controller will display various characters on its 4-character screen and produce a sound as a response to certain conditions. These are described below.

Also included in this section are example printer reports produced when a printer is attached to an Easikey 1000.

10.1 Power Indicators

When **not** in **Editor** mode (to add/delete keys, etc.) the red and green LEDs are used as power indicators as follows:

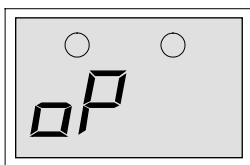
- The red LED is constantly lit indicating that ac supply is healthy.
- The green LED is constantly lit when the battery (if any) is low (less than 12V).

These are not referred to elsewhere in the document and it is assumed that power is supplied to the unit.

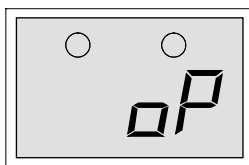
10.2 Normal Displays

When nothing is happening, the display is blank and no sounds are produced.

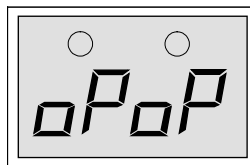
Whenever a door is opened normally, either with a key or by using a **Request to Exit** switch, the display will show:



Door 1 Open



Door 2 Open



Both Doors Open

Printer Example

	DATE	TIME	DOOR	USER	TRANSACTION
[0123]	12/06/95	10:34	1	0092	Access Authorised
[0124]	12/06/95	10:35	2		Request to Exit
[0125]	12/06/95	10:50	2		Manual Unlock
[0126]	12/06/95	13:30	1		Automatic Unlock

10.3 Door Left Open Warning

This warning will only be given if door monitoring is being used - check with the installer of the system to see if this is the case.

If a door is left open longer than the time set, the **oP** (shown above) will start to flash for the particular door left open. The **oP** will continue to flash until the door is closed. There is no sound associated with this warning.

Printer Example

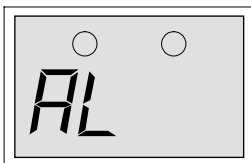
	DATE	TIME	DOOR	USER	TRANSACTION
[0233]	12/06/92	12:34	1		Door Left Open
[0234]	12/06/92	12:35	1		Door Closed

10.4 Unauthorised Access Alarm

This alarm will only be given if door monitoring is being used - check with the installer of the system to see if this is the case.

If a door is opened without a key being used, time profile being active, manual unlock used or a **Request to Exit** switch being pressed, the controller interprets this condition as **Unauthorised Access**. In this case, the alarm has to be accepted by presenting an editor key to the controller reader.

This alarm gives exactly the same displays and sounds as for **Cable** or **Reader Tamper** alarm (see Section 10.6). However, the printer report is different.

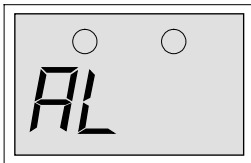


Display **AL**, Flashing

Sound Every 2 seconds

Unauthorised access or cable tamper.

Present editor key to accept, the sound will stop.



Display **AL**, Steady

Sound Silent

Accepted alarm or cable/reader tamper.

The alarm condition still exists, either the door is still open or the cable/reader is still tampered.

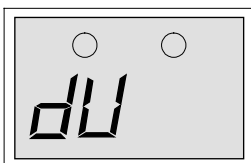
Printer Example

	DATE	TIME	DOOR	USER	TRANSACTION
[0278]	12/06/92	13:34	1		Unauthorised Access
[0282]	12/06/92	13:35	1	MASTER	Local Alarm Accepted
[0285]	12/06/92	13:37	1		Alarm Cleared

10.5 Duress Alarm

This alarm will only be given if a PIN reader is being used and the keyholder is forced to open the door under duress. If the PIN is, for example, 1234, the keyholder may enter 1235 instead. This will open the door but send a code to the controller indicating that the door has been opened under duress.

The alarm generated at the controller is as follows:



Display **dU**, Flashing

Sound Every 2 seconds

PIN Code Duress.

Present editor key to accept the alarm; the sound will stop and display will clear.

Printer Example

	DATE	TIME	DOOR	USER	TRANSACTION
[0278]	12/06/92	13:34	1		PIN Code Duress
[0282]	12/06/92	13:35	1	MASTER	Local Alarm Accepted

10.6 Cable or Reader Tamper Alarm

This alarm will only be given if the reader has been wired to detect this condition - check with the installer of the system to see if this is the case.

This alarm gives exactly the same displays and sounds as for Unauthorised Access alarm (see Section 10.4). However, the printer report is different.

Printer Example

	DATE	TIME	DOOR	USER	TRANSACTION
[0278]	12/06/92	13:34	1		Anti-tamper Alarm
[0282]	12/06/92	13:35	1	EDITOR - 1	Local Alarm Accepted
[0285]	12/06/92	13:37	1		Alarm Cleared

10.7 Alarm Relays

In the case of the Easikey 1000 alarms (Door Left Open, Unauthorised Access and Cable or Reader Tamper), the alarm relays can be used to operate, for example, an audible alarm such as a siren, etc.

11. Adding and Voiding Keys

11.1 Key Numbers

A key, when added into the system, is given a number between 0001 and 1000. Normally when a key is added it will be given the first available number in the list. For example, if a system contained keys 0001, 0002, 0003, 0004 and 0006, the next key added would be given number 0005, the following keys would be 0007, 0008 and so on. However, it is possible to override the automatic number and give a key a specific number, provided the number is not already in use - see Section 11.2.3.

It is important to keep a record of key numbers issued (on the Programming Worksheet) as it may be necessary to void a lost key at a later date, in which case the number given to the key **must** be known.

11.2 Access Levels and Time Profiles

Each key added to the system can be assigned an access level and a time profile. This defines which doors the key is allowed through and at what times and days the key can be used.

If you decide to use access levels and/or time profiles, it is a good idea to group all keys with the same access requirements together as this makes adding blocks of keys much easier.

11.2.1 Access Levels

A key may be allowed access to door 1 only, door 2 only, both doors or neither door. Allowing a key access to neither door can be useful when a key is lost or stolen. Rather than using VOID it may be better to lock the key out then, if a printer is fitted, there will be a record if an attempt is made to use the key.

When adding or editing a key, the access level is displayed as two dots on the right of the display, the left half of the display indicating time profile. If the first dot is lit, that key will have access to door 1, the second dot indicates access to door 2 (see Figure 17). If neither dot is lit, the key is locked out.

11.2.2 Time Profiles

A key may be restricted to which days and at what times it may be used. This is done by assigning one of 8 different time profiles to the key. If a key is assigned a time profile of 0, there will be no time restriction at all; it will operate 24 hours a day, 7 days a week.

See Section 12 for more details on how to create and use time profiles.

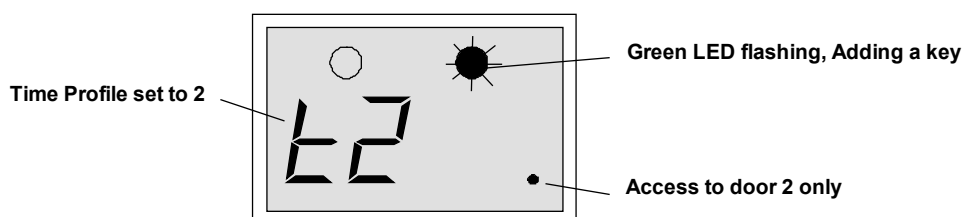


Figure 17 How the System Displays Access Level and Time Profile When Adding a Key

11.2.3 Adding a New Key

Follow the procedure shown below for adding a new key. If you are adding more than one new key, see Section 11.3.

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press the KEY/4 key.
3	<i>0000</i>	Present a new key to the controller reader.
4	<i>0019 / t0..</i>	<p>At this point, if both the green and red LEDs come on, the key already exists in the database and may be edited (see Section 11.4). If this is a new key, the green LED only will flash and the display will alternate between the next available key number and the time profile and access level. The example shows key 0019 as the next available number.</p> <p>At this point you may wish to select your own number rather than the number given by the system. If not, go to step 6 below.</p> <p>To select an alternative number press SEL/SAVE, the display will change to:</p>
5	<i>0000</i>	Now either type in the number you require and press SEL/SAVE , or use the ↑ and ↓ keys to go up and down the list of numbers. Numbers already assigned will flash with the red and green LEDs steady, free numbers will alternate with their time profile and access level and the green LED flashing.
6	<i>0019 / t0..</i>	Now any changes can be made to the access level and time profile. If no changes are to be made, go to step 8.
7	<i>0019 / t1 .</i>	<p>To change the time profile, press 1-8 for the time profile you wish to apply. As soon as you press a key the display will stop alternating. Press SEL/SAVE to confirm. The display will start flashing again.</p> <p>To change access levels, press ← to toggle on/off the dot for door 1, and → to toggle on/off the dot for door 2.</p> <p>The example shows key 0019 with time profile 1 and access through door 2 only.</p>
8	<i>0020 / t1 .</i>	<p>Present the editor key (it must be the same one as used in step 1 above) to the controller reader. The green LED will now go steady and the next available number will flash.</p> <p>If you wish to add more keys see Section 11.3; otherwise, press ESC.</p>
9	<i>SEL?</i>	Press ESC to leave Editor mode.

11.3 Adding Several Keys

When you want to add several keys in one go, this can be easily done by following the Section 11.2.3 procedure until the end of step 8. At this point, instead of pressing **ESC** take the following steps:

Step	Example Display	Action
9	0020 / t1 .	The green LED will be steady and the next available key number will be alternating with its access level and time profile. Make any changes to the access level and time profile as described above. Notice that any changes are carried over to the next key making it very convenient for adding keys with the same access requirements. Present the new key to the controller reader - there is no need to present an editor key.
10	0021 / t1 . 0022 / t1 . 0023 / t1 .	Continue presenting new keys, one after the other, until all keys are recorded. If a key is presented that is already in the database, its number will briefly be displayed before the display returns to the next available number. If you fill the database with 1000 keys, the display will show FULL .
11	0024 / t1 .	When finished, either press ESC or present the editor key.
12	SEL?	Press ESC to leave Editor mode.

11.4 Editing a Key

To change the access level or time profile assigned to a key, you require either the key itself or the number assigned to the key. The key is edited using the following procedure.

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	SEL?	Press the KEY/4 key.
3	0000	Either: present the key to the controller reader, or: type the key number and press SEL/SAVE , or: use ↑↓ to select the key number and press SEL/SAVE . If the green LED is flashing, the key presented is not in the system or the number selected is unused.
4	0019 / t1..	If the key presented or the number selected is in the database, both red and green LEDs will be on, and the display will be alternating between the key number and the access level/time profile. In the example, key 0019 has been selected, has time profile 1 assigned and is allowed through both doors. Make any changes as described in Step 7 of Section 11.2.3.
5	t2 .	The display will go steady, press SEL/SAVE to confirm.
6	0019 / t2 .	You will be returned to the alternating display. Return to step 3 if you want to change other keys (press SEL/SAVE if you want to type another number). Otherwise, press ESC .
7	SEL?	Press ESC to leave Editor mode.

11.5 Voiding a Key

A key can be removed from the database provided you have the key or you know its number.

Note

If a key has been lost or stolen and you have a printer fitted, it may be better to edit the key's access level to provide no access (see Section 11.2.1) rather than void it. This will then show if an attempt is made to use the missing key.

To void a key use the following procedure:

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press the VOID/5 key.
3	<i>0000</i>	The red LED will be lit. Either: present the key to the controller reader. If you present a key that does not exist, there will be a long beep. or: type the key number and press SEL/SAVE , or: use ↑↓ to select the key number and press SEL/SAVE . Valid keys will flash along with the red LED; invalid keys will flash with red and green LEDs steady.
4	<i>0019</i>	Present the editor key to delete the key. There will be a confirming beep and the display will return to:
5	<i>SEL?</i>	Return to step 2 above to delete more keys or press ESC to leave Editor mode.

Note

See Section 13.2 on how to void editor keys

11.6 Identifying a Key

If a key is found it can quite easily be identified by presenting it to the controller reader:

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press the KEY/4 key.
3	<i>0000</i>	Present the key to the controller reader.
4	<i>0019 / t1 .</i>	If the key exists in the controllers database, the red and green LEDs will be steady and the key number, alternating with its access level/time profile, will be displayed. Press ESC twice to leave Editor mode or follow Section 11.4 procedure if you wish to make any changes.

12. Time Profiles

Time profiles are a powerful tool for restricting access of personnel or for automating the opening and closing of doors.

Typical examples are:

1. A public access door through which anybody can pass between 9:00am and 5:00pm, Monday to Friday, but outside these hours a key is required.
2. Some staff are only allowed access between 8:30am and 5:30pm, Monday to Friday; 8:30am to 12:00pm Saturday.
3. Cleaners are allowed access only between 7:00am and 9:00am Monday to Saturday.
4. Shift workers can gain access between 8:00pm and 6:00am Monday to Friday.

Note

If you give a door a time profile of 0, it will require a key 24 hours a day, 7 days a week. If you give a key a time profile of 0, it will have access 24 hours a day, 7 days a week. If you are never going to use time controls of any type, there is no need to set up any time profiles at all, just use a time profile of 0 for both doors and keys.

12.1 How They Work

There are 8 different time profiles. Each time profile consists of up to three time periods. A time period consists of a begin time, an end time and the days of the week to which it applies. For instance, example 1 above requires just one time period, 9:00am (begin time) to 5:00pm (end time) Monday to Friday (days of the week); example 2 requires two time periods, 8:30am to 5:30pm Monday to Friday plus 8:30am to 12:00pm Saturday only.

Time profiles applied to doors will automatically open the door at the begin time of each time period and automatically close the door at the end time of each time period. Doors can also be manually locked and unlocked, see Section 14.4.

Time profiles attached to a key will allow access only when the time at which the key is presented falls within the time profile.

It is recommended that different time profiles are used for doors and personnel even if they are identical. This means that if a change is required to the door opening times at a later date, these can be achieved without affecting the personnel access times and vice versa.

When using time profiles, it is important to check the time and date at regular intervals, say once a month, to ensure that the system operates accurately, see Section 8.1.

Notes

1. A time profile always starts at the **beginning** of the first minute of the time period. That is, in example 1, when the time changes from 8:59 am to 9:00 am. A time profile always finishes at the **end** of the final minute of the time period. That is when the time changes from 5:00pm to 5:01pm.
2. A time period cannot cross midnight. When, as in example 4 above, it is necessary to cover such a time, two time periods are required, one from the begin time up to midnight (use 23:59), with another time period from midnight (use 00:00) to the end time.

In addition to the 3 time periods, each time profile has a status setting, either ON or OFF. When a time profile is in use, its status will be ON; when it is OFF, the effect depends on the application:

- When applied to personnel, a time profile that is switched OFF will lock out all personnel with that profile until the time profile status is switched back ON.
- When applied to a door, a time profile that is switched OFF will stop the door automatically opening. It will also lock a door that is currently open according to that time profile.

12.2 How to Set Time Profiles

Setting up time profiles is achieved by presenting an editor key and pressing the **TIME/7** key. The first display you will see is the status of time profile 1 shown as **T1St** alternating with **on** or **oFF**.

It is best to think of the time profile database as a grid, 8 rows representing time profiles, 10 columns being one for the Status and three for each time period. You use the **←→↑↓** keys to move a 'window' around the grid. If you attempt to move outside the window there will be a beep.

		←			→						
		Time Period A			Time Period B			Time Period C			
	Stat.	begin	End	days	be	End	days	be	End	days	
n	tnSt	tnAb	tnAE	tnAd	tn	tnbE	tnbd	tn	tnCe	tnCd	
					bb			Cb			
	1	on	0900	1700	o	oo	0000	o	oo	0000	o
	2	on	0830	1730	o	o8	1200	o	oo	0000	o
↑	3	on	0700	0900	o	oo	0000	o	oo	0000	o
	4	on	2000	2359	o	oo	0800	o	oo	0000	o
	5	oFF	0000	0000	o	oo	0000	o	oo	0000	o
↓	6	oFF	0000	0000	o	oo	0000	o	oo	0000	o
	7	oFF	0000	0000	o	oo	0000	o	oo	0000	o
	8	oFF	0000	0000	o	oo	0000	o	oo	0000	o

Wherever you are in the grid, you will see the item name alternating with the item value. When you press a number key to make a change, the display will go steady. Work through the example given below as this shows you in detail how to change values. Changes are made as follows:

- You change the status by pressing the **1** key, i.e. pressing 1 will reverse whatever is currently displayed. Press **SEL/SAVE** when the correct status is displayed.
- You change times by typing the 4 digits in 24 hour format, e.g. for 1.00pm you would press 1,3,0 and 0 followed by **SEL/SAVE** to confirm.
- The day periods are set by switching on or off seven vertical bars in the display. For instance, Monday to Friday is represented as **||||o**, while Saturday only would be represented as **||||o**. Each bar is changed by pressing 1-7, where 1 represents Monday, 2 Tuesday up to 7 for Sunday.

Example

Add time profile 5 with two time periods, 8:00am to 1:00pm Monday to Friday and 2:00pm to 6:00pm Monday to Thursday (i.e. no access allowed at lunch times or Friday afternoon):

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press TIME/7
3	<i>t1St / on</i>	The status of time profile 1 (may be either on or OFF). Press ↓ 4 times to get to time profile 5.
4	<i>t5St / OFF</i>	Press 1, the display will go to a steady on . Notice if you press 1 again the display will change back to OFF . Make sure on is displayed and press SEL/SAVE to confirm.
5	<i>t5St / on</i>	Press →.
6	<i>t5Ab / 0000</i>	The begin time of period A (00:00). Type 0800 followed by SEL/SAVE . Notice how the display goes steady as soon as you press a key.
7	<i>t5Ab / 0800</i>	Press →.
8	<i>t5AE / 0000</i>	The end time of period A (00:00). Type 1300 (for 1:00pm) followed by SEL/SAVE .
9	<i>t5AE / 1300</i>	Press →.
10	<i>t5Ad / 10000</i>	The days for period A (none at the moment). Type 12345 followed by SEL/SAVE . Notice that as each number is pressed the corresponding bar doubles in size. Press the same number again and it goes back to half size. Make sure the first 5 bars (Mon, Tue, Wed, Thu, Fri) are set.
11	<i>t5Ad / 11110</i>	Press →.
12	<i>t5bb / 0000</i>	The begin time of period B (00:00). Type 1400 followed by SEL/SAVE .
13	<i>t5bb / 1400</i>	Press →.
14	<i>t5bE / 0000</i>	The end time period B. Type 1800 followed by SEL/SAVE .
15	<i>t5bd / 10000</i>	The days for period B. Type 1234 followed by SEL/SAVE .
16	<i>t5dd / 11110</i>	You have completed both time periods for this time profile. Now make sure that the third time period is clear. Press →.
17	<i>t5Cb / 0000</i>	Should show 0000, if not, press 0000 followed by SEL/SAVE . Press →.
18	<i>t5CE / 0000</i>	Should show 0000, if not, type 0000 followed by SEL/SAVE . Press →.
19	<i>t5Cd / 10000</i>	Should show 10000, if not press appropriate numbers to make all bars half size. Press ESC twice to leave Editor mode.

This completes the setting up of a complete time profile.

13. Editor Keys

This section describes how to administer editor keys. These functions can only be performed when using the master key.

The system allows up to 5 editor keys to be assigned, each one being able to accept alarms, and use **Editor** mode. Making a key, an editor key will not automatically allow it to be used at a door. If this is required, it should be added as a user key as well.

13.1 Adding an Editor Key

Step	Example Display	Action
1		Present the master key to the controller reader.
2	<i>SEL?</i>	Press the INST/9 key.
3	<i>SetC</i>	Press ↓ 3 times.
4	<i>Edit</i>	Press SEL/SAVE .
5	<i>E000</i>	Present the new key to the controller reader.
6	<i>E002</i>	At this point, if the red LED comes on and the number flashes, the key already exists as an editor. If this is a new key, the green LED only will flash and the display will flash. The example shows key 2 as the next available number.
7	<i>E003</i>	Present the master key to the controller reader. The green LED will now go steady and the next available number will flash. You may add more editor keys now if you wish.
8	<i>SEL?</i>	Press ESC to leave Editor mode.

13.2 Voiding an Editor Key

Note

The master key **cannot** be voided.

Step	Example Display	Action
1		Present the master key to the controller reader.
2	<i>SEL?</i>	Press the INST/9 key.
3	<i>SetC</i>	Press ↓ 3 times.
4	<i>Edit</i>	Press SEL/SAVE .
5	<i>E000</i>	Either present the key to the controller reader, or type the key number and press SEL/SAVE , or use ↑↓ to select the key number and press SEL/SAVE . Existing keys will flash along with the red LED. Invalid keys will flash with red and green LEDs steady.
6	<i>E003</i>	Present the master key to delete the key. There will be a short beep and the display will return to:
7	<i>SEL?</i>	Return to step 2 above to delete more keys or press ESC to leave Editor mode.

14. Other Functions

14.1 Setting the Clock

This is described in Section 8.1.

14.2 Display PIN

Where a PIN reader is being used with the Easikey 1000, it is necessary to know the PIN before the key is issued as the key must be presented to the reader **and** the PIN entered to open the door. To find the PIN associated with a key:

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press PIN/1 .
3	<i>Show/Id</i>	Present the key to the reader.
4	<i>1234</i>	PIN number displayed.

Note

The PIN is derived from the key/card and **cannot** be changed.

14.3 Display Last Five Keys Used

Note

No editor key is required for this function.

It is possible to display the last five keys used on the readers connected to the Easikey 1000 controller as follows:

- Press the **KEY/4** key. This displays the last key to be used with the left (red) LED lit if access was through door 1. The right (green) LED is lit if access was through door 2.
- Press **KEY/4** to display the next key used. Up to five keys can be displayed. On the sixth press the display goes blank.

Note

The display will blank after ten seconds if no key is pressed.

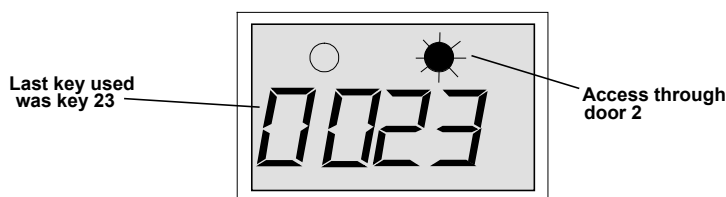


Figure 18 Sample Display

14.4 Manual Lock and Unlock

It is possible to manually lock and unlock a door from the controller. It may be necessary to do this, for instance when a door needs to be kept open while contractors are working in an area, or equipment is being moved around. Also a door normally open on a time profile may need to be locked while a receptionist or guard is not available.

14.4.1 Doors Controlled by a Time Profile

Manual lock will lock the door, keys will then be required to gain access. If no further action is taken, the door will unlock again at its next automatic opening time.

If the door is manually unlocked and no further action is taken, it will lock again at its next automatic closing time.

14.4.2 Doors not Controlled by a Time Profile

Manual unlock will unlock the door and it will stay unlocked until manually locked again.

14.4.3 To Lock/Unlock a Door

Use the following procedure to lock/unlock a door:

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press DOORS/6 .
3	<i>d1Lt / 0005</i>	Press → 4 times.
4	<i>d1UL / Loc</i>	The display now shows the current state of door 1 (Loc =locked, ULoC =unlocked). To lock/unlock, door 2 press ↓ .
5	<i>d1UL / Loc</i> or <i>d2UL / Loc</i>	To unlock a door, press 1 followed by SEL/SAVE , the display will change to ULoC and the door will unlock. To lock a door, press 0 followed by SEL/SAVE , the display will change to LoC and the door will lock. Press ESC .
6	<i>SEL?</i>	Press ESC to leave the Editor mode.

14.5 Printer Functions

14.5.1 Transaction Logging

All Easikey 1000 door controllers keep a record of the most recent 1000 transactions, a transaction being any of the different types of event that may occur such as Access Authorised, Manual Lock, Automatic Lock, Editor On, etc. (see Appendix C -Transactions for details of all the different types of transaction).

When a printer is connected, the controller will print these events as they happen. If the printer is switched off, or otherwise disconnected, the events will be stored and printed from the point at which printing stopped when the printer is reconnected.

The only action the user need take is to ensure that the printer is kept supplied with paper, does not jam, and make sure the paper flows freely through the printer.

Sample Transaction Printout

	DATE	TIME	DOOR	USER	TRANSACTION	15/06/93
[0054]	15/06/93	12:09	2		Door Left Open	
[0055]	15/06/93	12:10	2		Door Closed	
[0056]	15/06/93	12:14	1	0045	Access Authorised	
[0057]	15/06/93	12:14	2	0052	No Access: Level	
[0058]	15/06/93	12:15		EDITOR - 1	Editor On	
[0059]	15/06/93	12:17		EDITOR - 1	Editor Off	
[0060]	15/06/93	12:18	1		Request to Exit	
[0061]	15/06/93	12:19	1	0045	Access Authorised	
[0062]	15/06/93	12:23	1	0045	Access Authorised	
[0063]	15/06/93	12:30	1		Automatic Unlock	
[0064]	15/06/93	12:33	2	0120	No Access: Time	
[0065]	15/06/93	12:42	2		Unauthorised Access	
[0066]	15/06/93	12:43	2	MASTER	Local Alarm Accepted	
[0067]	15/06/93	12:44	2		Alarm Cleared	

14.5.2 User Selected Reports

There are 3 features accessible to the user from the **PRINT/8** key.

- Printout of the database including personnel, keycode, time profiles and door data.
- Printout of transactions applying to an individual key.
- Clearing all transactions in the controller.

14.5.3 Printing the Database:

This function prints personnel, time profile and door data. The printer will automatically go to the top of a new page, the display will show the progress of the report.

Press **ESC** to interrupt the printout.

1		Present an editor key to the controller reader.
2	SEL?	Press PRINT/8
3	PrdA	Press SEL/SAVE to start database printout.
4	db / Prnt tP / Prnt dr / Prnt	..printing personnel database ..printing time profiles ..printing door data
5	SEL?	Press ESC to leave Editor mode.

Sample Database Printout

```

Easikey 1000 SYSTEM      PERSONNEL PRINTOUT      05/06/93  11:10  page 01

  ID KEYCODE  DOORS      TIME 1              TIME 2              TIME 3
0001 12345678  1,2
0002 BD5B54E6  1    08:30 17:30 MTWTF--  08:30 12:00 -----S-  00:00 00:00 -----
0003 6B0604BC  2    08:30 17:30 MTWTF--  08:30 12:00 -----S-  00:00 00:00 -----
0045 174DE464  1,2
0052 0A032469  1
0064 D803E43D  1,2  20:00 23:59 MTWTF--  00:00 08:00 -TWTFS-  00:00 00:00 -----

Easikey 1000 SYSTEM      TIME PROFILE PRINTOUT

RECORD STATUS      TIME 1              TIME 2              TIME 3
 1    On   09:00 17:00 MTWTF--  00:00 00:00 -----  00:00 00:00 -----
 2    On   08:30 17:30 MTWTF--  08:30 12:00 -----S-  00:00 00:00 -----
 3    On   07:00 09:00 MTWTFS-  00:00 00:00 -----  00:00 00:00 -----
 4    On   20:00 23:59 MTWTF--  00:00 08:00 -TWTFS-  00:00 00:00 -----
 5    Off  00:00 00:00 -----  00:00 00:00 -----  00:00 00:00 -----
 6    Off  00:00 00:00 -----  00:00 00:00 -----  00:00 00:00 -----
 7    Off  00:00 00:00 -----  00:00 00:00 -----  00:00 00:00 -----
 8    Off  12:30 13:30 MTWTF--  00:00 00:00 -----  00:00 00:00 -----

Easikey 1000 SYSTEM      DOOR DATA PRINTOUT

Door 1 LOCK TIME      = 005
      DOOR TIME        = 010
      TIME PROFILE     = 8
      OPTIONS          = Reverse Lock, Request to Exit
      DOOR             = Locked

```

```

Door 2 LOCK TIME    = 005
      DOOR TIME     = 010
      TIME PROFILE  = 0
      OPTIONS       = Request to Exit
      DOOR          = Locked

```

14.5.4 Printing Selected Key Transactions

This will print all the transactions associated with a particular key number currently in memory. The period of time this covers will depend on how long the system takes to generate 1000 transactions.

Press **ESC** to interrupt the printout.

1		Present an editor key to the controller reader.
2	SEL?	Press PRINT/8 .
3	PrdA	Press ↓ .
4	Prtr	Press SEL/SAVE .
5	0000	Type the key number you require, press SEL/SAVE . There may be a short pause while the controller searches through all the transactions.
6	tr /Prnt	Printing transactions
7	SEL?	Press ESC to leave Editor mode.

Sample Transaction Printout for User 45

```

Easikey 1000  SYSTEM      PERSONNEL PRINTOUT      05/06/93  11:10  page 01

```

	DATE	TIME	DOOR	USER	TRANSACTION
[0056]	05/06/93	12:14	1	0045	Access Authorised
[0061]	05/06/93	12:19	1	0045	Access Authorised
[0062]	05/06/93	12:23	1	0045	Access Authorised
[0092]	05/06/93	12:30	2	0045	No Access: Level

14.5.5 Clearing the Transaction Memory

This is useful if no printer has been connected for some time and you do not want up to 1000 old transactions to be printed.

1		Present an editor key to the controller reader.
2	SEL?	Press PRINT/8 .
3	PrdA	Press ↓ .
4	Prtr	Press ↓ .
5	CLrt	Press SEL/SAVE .
6	CLr /ALL?	Press VOID/5 followed by SEL/SAVE to erase all transactions from memory. There will be a short confirming beep.
7	SEL?	Press ESC to leave the Editor mode.

15. Appendix A - Equipment

This appendix contains a complete list of all PAC equipment suitable for use with the Easikey 1000. Any PAC item not contained in this appendix should be considered unsuitable for this product. If in doubt, check with PAC Technical Support.

PAC Part No.	Description
Door Controllers	
21446	Easikey 1000 - 2 door controller.
21450	Boxed Easikey 1000 with 1.5A PSU (in metal case)
21448	Boxed Easikey 1000 with 3.0A PSU (in metal case)
21453	Boxed Easikey 1000 with 1.5A ac PSU (in metal case with cutout)
21452	Boxed Easikey 1000 with 3.0A ac PSU (in metal case with cutout)
Easi Readers	
20377	Mullion - black
20387	Mullion - white
20421	Panel mount reader
20378	Vandal resistant - stainless steel
20388	Vandal resistant - brass
PAC Readers	
40031	Magstripe reader
20360	Flush mount PAC PIN - stainless steel (brass also available)
20461	Surface mount PAC PIN - stainless steel (brass also available)
20530	AVR reader module
ID Devices	
21020	Token - electronic proximity key.
20263, 20264 20270	Proximity card - plain Proximity card -PAC logo Proximity card - plain (recommended for printing and lamination purposes)
20266 20267	Proximity card - plain with mag stripe (not encoded) Proximity card - PAC logo with mag stripe (not encoded)
40025 40026	Magstripe hi-co card - uncoded Magstripe hi-co card - coded
20087	AVR transmitter
Ancillary Products	
20742	Wiegand interface unit

16. Appendix B - Using External Readers

16.1 Introduction

Two different types of ID device can be used on each Easikey 1000, one of which **must** be a proximity key (card). System administration is via the built-in reader for proximity keys/cards and via an external reader attached to the controller for other types of ID devices.

There are four types of external reader which can be used with the Easikey 1000, namely:

- PAC Magstripe Readers.
- PAC PIN Readers.
- PAC AVR Readers.
- Wiegand Readers (via PAC Wiegand interface unit).

Note

Only one of the above can be used with proximity keys on any system. You cannot have a system which supports both Magstripe readers and PIN readers.

Whichever external reader is required (if any) is connected to the external reader connectors (23-25 inclusive) on the bottom of the controller.

Note

Where a Wiegand reader is used, this is connected using a PAC Wiegand Interface Kit.

16.2 Magstripe Readers

Where a Magstripe reader is connected to the Easikey 1000, card administration is exactly the same as for key administration. For example, to install a card as the master key, the procedure is as described in Section 6.2 section except that instead of presenting the card to the built-in reader it is swiped through the Magstripe reader.

16.3 PIN Readers

Where a PIN reader is connected to the Easikey 1000, card administration is exactly the same as for fob administration. For example, to install a card as the master the procedure is as described in Section 6.2. When a PIN reader is used the card must be presented to the reader **and** the associated PIN entered.

Note

PIN time profiles are **not** available

To find out what the PIN is for a card:

Step	Example Display	Action
1		Present an editor key to the controller reader.
2	<i>SEL?</i>	Press PIN/1 .
3	<i>Show/Id</i>	Present the key to the reader.
4	<i>1234</i>	PIN number displayed.
5	<i>SEL?</i>	Press ESC to leave the Editor mode.

Note

The PIN must be provided to the User along with card.

A duress feature is also available if a PIN reader is used. For example, if the PIN is 1234, a PIN of 1235 can be entered (PIN plus 1). This will open the door but generates an alarm indicating that the door was opened under duress.

16.4 AVR Readers

Where an AVR reader is connected to the Easikey 1000, administration is exactly the same as for key administration. For example, to add an AVR to the system the procedure is as described in Section 11.2.3. A “mini-loop” is set up to administer the system.

Note

Before administering AVRs the **AVR** option **must** be set as detailed in Section 7.1.4.

16.5 Wiegand Readers

Where a Wiegand reader is connected to the Easikey 1000 via a PAC Wiegand interface unit, card administration is exactly the same as for key administration. For example, to install a card as the master the procedure is as described in Section 6.2.

16.6 Keys

Throughout this document reference has been made to "presenting keys". Where other ID devices are used this should be taken to mean:

- Magstripe Swipe card through the reader.
- Wiegand Swipe card through the reader
- AVR Pass transmitter over the loop.

17. Appendix C -Transactions

Normal Entry and Exit

Access Authorised	Normal key authorisation.
Entry Authorised	Only used when anti-pass back or interlock is set. Key has entered area.
Exit Authorised	Only used when anti-pass back or interlock is set. Key has left the area.
Request to Exit	Normal use of Request to Exit switch.
Request for Entry	Special use of Request to Exit switch, see Section 7.
Free Exit	Special use of Request to Exit switch, see Section 7.

Alarms and Warnings

Unauthorised Access	A locked door has opened without a valid key being used or a Request to Exit switch being pressed.
Anti-tamper Alarm	The cable has been cut or the reader removed or disconnected.
Local Alarm Accepted	An editor key has accepted the alarm.
Alarm Cleared	The previous alarm condition has been cleared, i.e. the door has been secured or the cable/reader has been reconnected.
Door Left Open	The door has been left open longer than the pre-set time.
Door Closed	The door has closed again after being left open.
RTE Button Held down	The Request to Exit switch is being held down.
Repeated Token Use	The same key has been presented more than 5 times in succession.
PIN Reader Duress	The PIN plus one (eg 1235 instead of 1234) has been entered to indicate door opened under duress

No Access

No Access: Unknown ID	A key has been presented that is not recognised by the controller.
No Access: Locked Out	A key with no access at either door has been presented.
No Access: Level	A key allowed access at the other door has only been presented at this door.
No Access: Time	A key currently excluded from this door with a time profile has been used.
No Access: Pass Back	A key has been excluded because it has been used twice on the same reader in succession.

Door Events

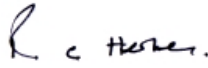
Automatic Lock	The door has locked automatically via a time profile.
Automatic Unlock	The door has unlocked automatically via a time profile.
Manual Lock	An editor has manually locked the door.
Manual Unlock	An editor has manually unlocked the door.

Other Events

Editor On	An editor key has entered Editor mode.
Editor Off	An editor key has left the Editor mode or the Editor mode has timed-out.
Emergency Override On	Special use of Request to Exit switch. The switch is monitoring an Emergency switch (e.g. a break glass).
Emergency Override Off	Special use of Request to Exit switch. The switch is monitoring an Emergency switch (e.g. a break glass).
Unit Closed Down	Power removed from the door controller.
Unit Started Up	The door controller has been switched on.

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Declaration of Conformity	
Application of Council Directives	73/23/EEC
Standard(s) to which conformity is declared	EN55022-B, EN55082-1
Manufacturer's Name	PAC INTERNATIONAL LTD
Manufacturer's Address	1 Park Gate Close, Bredbury, Stockport, U.K. SK6 2SZ
Type of Equipment	Access Control Systems
Product Equipment	Easikey 1000 Series
I, the undersigned, hereby declare that the equipment specified above conforms to the above directive(s) and standard(s).	
Signed	
Date	30 th August 2001
Full Name	Richie Herkes
Position	Managing Director