

# **KeyProx Plus**

## **Access Control System**

### **Installation & User Guide**

Revision 1.2

# ***Revision History***

Revision 1.0	Initial release
Revision 1.1	Added system features - page 5 Changed annual holiday colour to yellow - page 20
Revision 1.2	Modified the drawing to include 311-30 on page 40 Modified various references from 311-50 to 311

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# KeyProx Plus - Access Control System

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## General Description

The system is based on a controller that supports two Secure Card readers which can be mounted up to 50 meters from the controller with a simple 3-wire connection. The controller can be configured to operate a single door or two independent doors.

The controller has a RS-232 connection allowing single controller systems a simple means of connecting to a PC provided the cable run is less than 30 meters.

The controller also has a RS-485 connection that will support up to 16 controllers connected in a RS-485 network to a PC thus allowing the control of up to 32 doors. In this configuration the PC will require a 311 RS-232/485 Interface/Repeater to interface to the RS-485 network.

The Secure Card readers are fully potted and suitable for mounting outdoors. Tampering with these readers will not compromise the systems security.

The security is further enhanced by using the Secure Card technology which prevents third party or duplicated cards operating on the system.

The controller has a 4-way dip switch to set each unit to a unique address in the range 0 - 15. This address is added to the reader identification (reader A or B) to uniquely identify each reader for programming and transaction reporting.

Access Parameter settings are used to define access rights at each of the readers.

Programming is done from a PC using the KeyProx Plus Windows software.

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## System Features

- Controller supports two readers
- Controller can control 2 independent doors or a single door
- Use RS-232 or RS-485 to connect a single controller to a PC
- Up to 16 controllers can be connected using a RS-485 network to a PC.
- Up to 32 independent doors can be controlled
- The system supports 2000 tags
- Each controller stores last 2000 transactions with date & time stamp in non-volatile memory. All transactions - including denied access, push button and alarm conditions are logged.
- Optional Door Switch allows use of 4 timers to solve complex locking problems.
- Optional Exit Push Button for each door
- Access control is achieved by assigning a user an Access Parameter
- There are 2 predefined and 8 user defined Access Parameters. User defined parameters consist of 5 time zones for each day of week + holiday during which access is allowed or denied.
- Any number of days may be defined as a holiday
- Daylight saving is supported
- Timed anti-pass-back can be set to operate at any reader
- Programmable pulse output on each controller to control an external device - can be used as a trigger for CCTV recording etc. or an alarm output for door left open and/or door forced open

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## Conventions

The following conventions are used in this document.

### Notes

Important notes are in bold:

**Notes are in bold**

### Words

#### Card

The names “card” or “cards” also refer to tags, tokens, or secure cards used to gain access at a reader.

# KeyProx Plus Access Control Concepts

The following concepts are used in the KeyProx system.

## Access Parameter (AP)

An Access Parameter is a matrix of days of the week plus holiday and time zones. Each day has 5 user defined time zones during which access can be allowed or denied.

Each CARD is assigned an AP for each of the readers in the system.

KeyProx Plus has 8 used defined APs numbered 1 to 8.

In addition there are 2 predefined APs numbered 0 and 9 with the following functions:

AP0 : No Access at all times.

AP9 : Access at all times.

Below is an example of how a user can program an Access Parameter and this example is based on AP1:

Access Parameter 1											
		TZ1		TZ2		TZ3		TZ4		TZ5	
<b>Mon</b>	<b>00:00</b>	N	07:00	Y	08:00	N	12:00	Y	14:00	N	<b>24:00</b>
<b>Tue</b>	<b>00:00</b>	N	07:00	Y	17:00	N	__:	N	__:	N	<b>24:00</b>
<b>Wed</b>	<b>00:00</b>	N	07:00	Y	17:00	N	__:	N	__:	N	<b>24:00</b>
<b>Thu</b>	<b>00:00</b>	N	07:00	Y	17:00	N	__:	N	__:	N	<b>24:00</b>
<b>Fri</b>	<b>00:00</b>	N	07:00	Y	16:00	N	__:	N	__:	N	<b>24:00</b>
<b>Sat</b>	<b>00:00</b>	N	07:00	Y	13:00	N	__:	N	__:	N	<b>24:00</b>
<b>Sun</b>	<b>00:00</b>	N	__:	N	__:	N	__:	N	__:	N	<b>24:00</b>
<b>Hol</b>	<b>00:00</b>	N	__:	N	__:	N	__:	N	__:	N	<b>24:00</b>

Entries in **bold** cannot be edited - other entries are entered by the user

In this example:

### Monday

TZ1 from 00:00 to 07:00 - access denied

TZ2 from 07:00 to 08:00 - access allowed

TZ3 from 08:00 to 12:00 - access denied

TZ4 from 12:00 to 14:00 - access allowed

TZ5 from 14:00 to 24:00 - access denied

### Tuesday

TZ1 from 00:00 to 07:00 - access denied

TZ2 from 07:00 to 17:00 - access allowed

After 17:00 - access denied

(Blanks in the table are actually 24:00 but are shown as \_\_: \_\_ to improve readability)

### Holidays

TZ1 from 00:00 to 24:00 - access denied

## Anti-Pass-Back (APB)

APB is used to prevent unauthorised access (during a timed period) by handing their card to a second person once the card owner has gained access. Each reader can have its own timed period and can be set between 1 and 255 minutes.

KeyProx Plus has 2 types of APB:

**Local Anti-Pass-Back** This type of APB only applies to two readers connected to the same controller.

For the purpose of explanation, assume that reader A gives IN access to an area and reader B gives OUT egress from the same area. Type 1 APB can only be used if there is an IN reader and an OUT reader on the same controller.

This type of APB prevents a CARD from being used during the timed period at an IN reader if that CARD has already gone IN or at an OUT reader if that CARD has already gone OUT.

At the end of the timed period the CARD is allowed access irrespective of its IN/OUT status.

**Timed Access (APB Type 2)** This function can be used on any door / reader combination. Timed Access prevents the same CARD from being used at the same reader within the time-out period.

## Door Relay Control Times - Explanation

There are 4 different timers associated with door relay control to cater for the many locking problems that are encountered.

### Strike Time (ST)

This is the maximum length of time the strike relay will be energised. If a door switch is connected to the system, the relay will be de-energised when the door is opened.

### Open Delay (OD)

This is a time delay between sensing that the door switch has opened and de-energising the strike relay.

Some locks have an inbuilt switch which may activate before the door has opened far enough to prevent re-locking. Setting an Open Delay of about 1 second overcomes this problem.

### Allowed To Open (AO)

This is the time beyond the end of the Strike Time that the door may be allowed to open without causing a Forced Alarm.

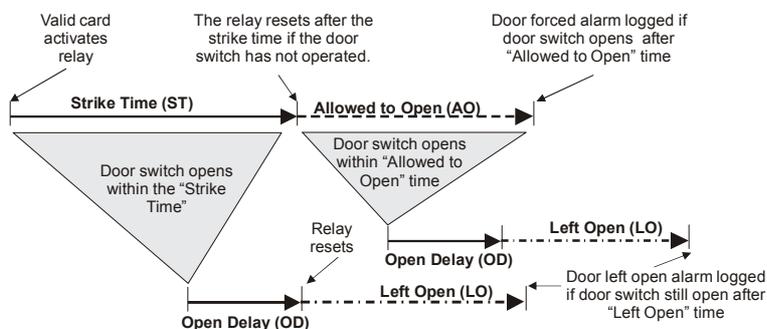
Some locks only require a short pulse to unlock and thereafter remain unlocked. This type only re-lock if the door is actually opened and closed. If the door is unlocked but not opened this is a security risk as the door will remain unlocked.

In this type of application the Strike Time may be set to 0.5 sec and the Allowed To Open to about 10 seconds. If the door is opened after 10 seconds, a Forced Alarm is generated.

### Left Open (LO)

This is the maximum time the door may be held open after a valid access was allowed. Beyond this time a Left Open alarm is generated.

## Graphical Explanation of Door Control Times



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## Reader Operation

In normal operation a card's Access Parameter for a given reader determines if the user is allowed access.

### Normal Operation

During normal access control operation, the LED's on the reader indicate the Reader status as indicated in the table below.

**S = Steady F = Flashing**

Relay in PULSE mode

GRN	RED	YEL	Status / Action Required
		S	In Access mode waiting for a CARD
S		S	Access granted
	S	S	Access denied

Relay in TOGGLE mode

GRN	RED	YEL	Status / Action Required
	S	S	In Access mode waiting for a CARD - Relay NOT energised
S		S	In Access mode waiting for a CARD - Relay energised

### Controller Firmware Update

During a controller firmware update all the LEDs will flash in a pattern while the update is in progress. While this is in progress the system cannot be used.

On completion the LEDs will return to the normal state.

GRN	RED	YEL	Status / Action Required
F	F	F	Firmware upgrade -- LEDs flash in a pattern
	S	S	In Access mode waiting for a CARD

# KeyProx Plus Software

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## Overview

The KeyProx Plus Software is a Windows based program for use with the 655-10 KeyProx Plus controllers.

The software is required for all programming of the system, downloading transactions and printing reports.

**It is essential to read and understand the concepts explained in the “PIN-Lock 180 Series Keypad Handbook” before attempting to use this software.**

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## Installation

To install the software run the setup.exe file provided on the CD-ROM.

At the prompt it is recommended that you accept the default path.

When the installation is complete the PC will need to be restarted.

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## Run

The first time the software is run it automatically inserts the Username and Password

The default password for the username “Administrator” is “admin”

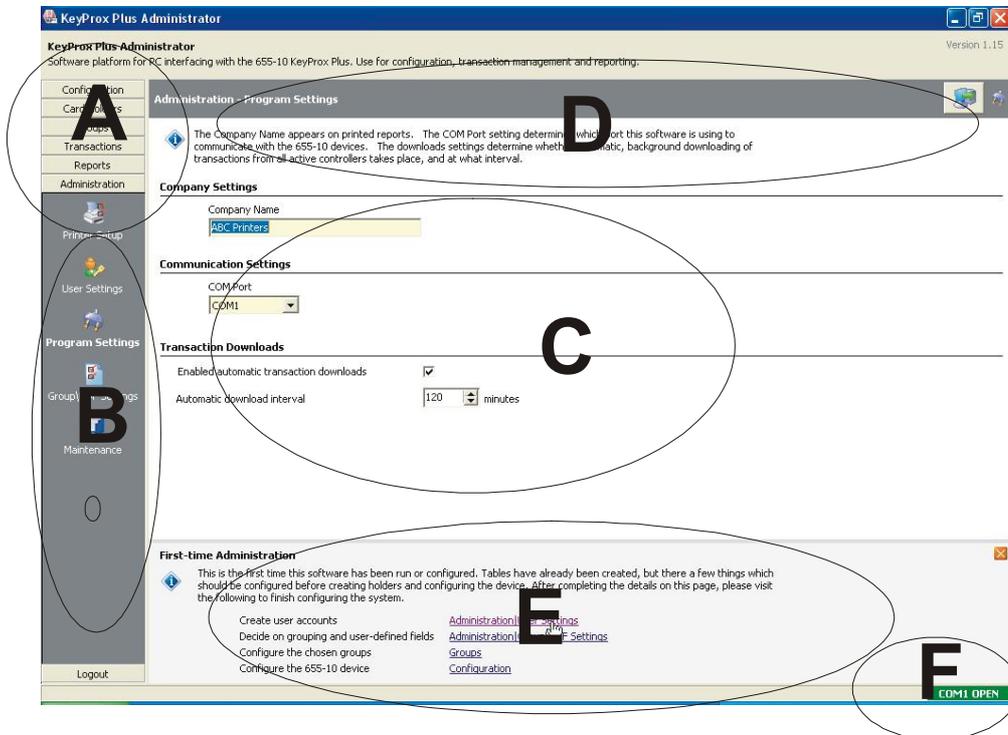


The screenshot shows a Windows-style dialog box titled "655-10 KeyProx Plus Administrator". Below the title, it reads "GSC Systems (Pty) Ltd." and "Version 1.00 © 2006". The dialog contains two input fields: "Username" with a dropdown menu showing "Administrator" and "Password" with a masked field containing "\*\*\*\*\*". At the bottom, there are "Cancel" and "OK" buttons with red and green checkmark icons respectively.

Click OK and the program will create the required tables and then display the main screen.

## KeyProx Plus Administrator Main Screen

This is the main program screen. To explain the layout, each section has a letter which is linked to the detailed explanation that follows.



### Menu (A)

These are the main menu headings and appear in light grey on the left side of the screen. Click on a heading to open up the sub-menu of functions. Menu headings appear both above and below region B.

### Functions (B)

The items shown against the dark grey background under the menu heading are the functions for the selected menu. If there are more function items than can be displayed, scroll arrows will appear at the top and bottom of the function area.

### Fields (C)

This area shows the fields associated with the selected function.

### Information (D)

This area shows help information related to the selected function.

### First Time Administration (E)

This window is displayed when the program is run for the first time. It will continue to be displayed until the orange "close" button (X in top right of this area) is clicked.

**Once closed the window cannot be opened again. Exiting the program does not close this window.**

This window provides a guide to the actions that should be completed before adding any CARD Holders. Clicking on the underlined links on the right of the actions will take you directly to that function.

### Comms State (F)

This indicates the state of the serial link to the keypad.

Coms OK      Green background with message COM1 ONLINE or BUSY

Coms Failed    Red background with message OFFLINE or COM1 CLOSED

**The comms state is only updated when an attempt is made to communicate with the KeyProx Plus network.**

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## Program Settings

When the program is run for the first time the program will open at the Administration - Program Settings screen with the First Time Administration guide at the bottom of the screen.

### Administration - Program Settings

The first time the program is run it will display the Administration|Program Settings screen. The following fields need to be set:

**Company Settings**

---

Company Name  
[ABC Printers]

**Communication Settings**

---

COM Port  
[COM1]

**Transaction Downloads**

---

Enabled automatic transaction downloads   

Automatic download interval    [20] minutes

**Language**

---

[English (United States)]

#### Company Settings

The Company Name entered here will appear on printed reports.

#### COM Port

Communications to the KeyProx Plus system is via RS-485 or RS-232 and if COM PORT 1 is not the correct port on the PC, the appropriate one must be selected from the drop down box.

#### Transaction Downloads

Checking this box will initiate an automatic download of transactions from all active controllers at the specified interval.

#### Language

If available, other languages can be selected here.

### User Settings

Now create user accounts by clicking on Administration|User Settings as shown below:

### First-time Administration



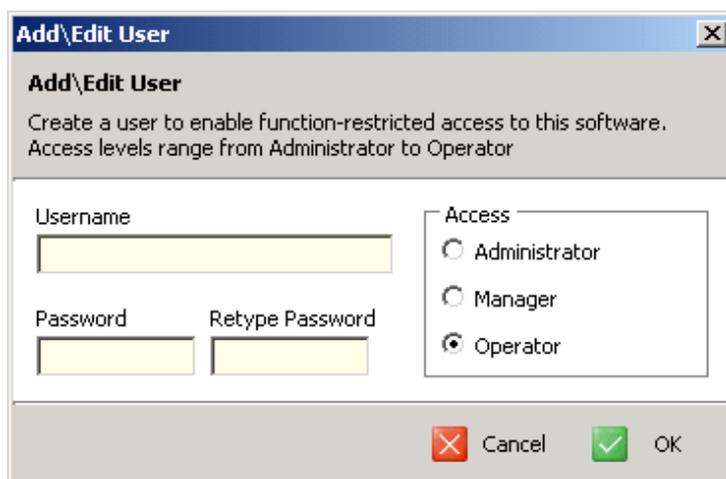
This is the first time this software has been run or configured. Tables have already been created, but there are a few things which should be configured before creating holders and configuring the device. After completing the details on this page, please visit the following to finish configuring the system.

- Create user accounts [Administration\User Settings](#)
- Decide on grouping and user-defined fields [Administration\Group\UDF Settings](#)
- Configure the chosen groups [Groups](#)
- Configure the 655-10 device [Configuration](#)

This will take you to the Administration - User Settings screen. The only user listed will be the Administrator. At this point you should change the Administrator password by highlighting Administrator and then clicking on the edit button. Enter the new password and confirm by entering it a second time in the adjacent box.



To add a new user, click on the orange + button and the dialogue box will open.



Enter the user Username and Password and then select an Access level for the operator.

**Administrator** has access to all functions

**Manager** has access to all functions except those relating to system configuration.

**Operator** is only able to download and view transaction data.

**The last user that has Administrator access cannot have their access level changed nor can they be deleted. Without an Administrator there is no way to gain access to this level.**

## Group\UDF Settings

Now create Group\UDF settings by clicking on the link to the next task.

### First-time Administration



This is the first time this software has been run or configured. Tables have already been created, but there are a few things which should be configured before creating holders and configuring the device. After completing the details on this page, please visit the following to finish configuring the system.

Create user accounts	<a href="#">Administration\User Settings</a>
Decide on grouping and user-defined fields	<a href="#">Administration\Group\UDF Settings</a>
Configure the chosen groups	<a href="#">Groups</a>
Configure the 655-10 device	<a href="#">Configuration</a>

This will open the Administration - Group\UDF Settings screen and allow you to define up to 5 groups for report grouping and up to 5 user defined fields which will be added to the CARD Holders screen. To use a field, click the check-box next to the field and enter a name for the field.

In the example below, 2 groups and 2 UDFs are enabled.

#### Groups

<input checked="" type="checkbox"/> Use Group 1, named as	Department
<input checked="" type="checkbox"/> Use Group 2, named as	Cost Centre
<input type="checkbox"/> Use Group 3, named as	
<input type="checkbox"/> Use Group 4, named as	
<input type="checkbox"/> Use Group 5, named as	

#### User Defined Fields

<input checked="" type="checkbox"/> Use UDF 1, named as	Extension
<input checked="" type="checkbox"/> Use UDF 2, named as	Car Registration
<input type="checkbox"/> Use UDF 3, named as	
<input type="checkbox"/> Use UDF 4, named as	
<input type="checkbox"/> Use UDF 5, named as	

## Groups

Now define the headings for each of the groups enabled by clicking on the link to the next task.

### First-time Administration

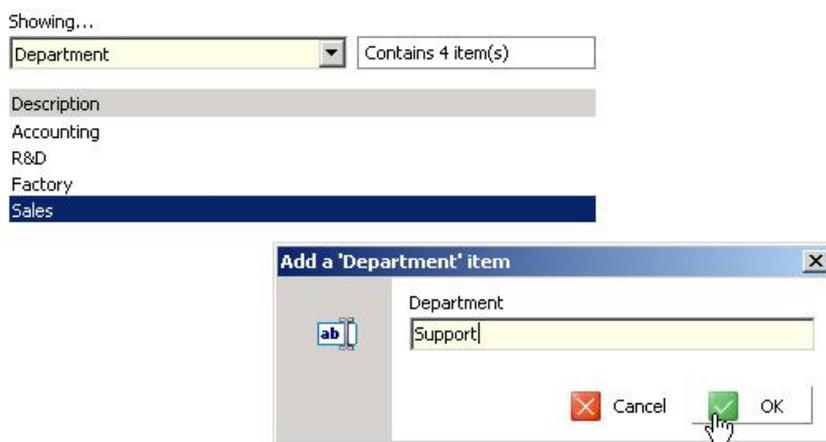


This is the first time this software has been run or configured. Tables have already been created, but there are a few things which should be configured before creating holders and configuring the device. After completing the details on this page, please visit the following to finish configuring the system.

Create user accounts	<a href="#">Administration\User Settings</a>
Decide on grouping and user-defined fields	<a href="#">Administration\Group\UDF Settings</a>
Configure the chosen groups	<a href="#">Groups</a>
Configure the 655-10 device	<a href="#">Configuration</a>

Each Group that was enabled and named is listed in the drop-down box. Select one of the groups and click on the orange + button on the left to add a name of a heading.

The example below shows adding headings for the group Department .



Headings can be edited or deleted by highlighting the heading and clicking on the Modify or Delete button on the left side of the screen.

## Configuration

Now configure the system by clicking on the last task.

**First-time Administration**

 This is the first time this software has been run or configured. Tables have already been created, but there are a few things which should be configured before creating holders and configuring the device. After completing the details on this page, please visit the following to finish configuring the system.

- Create user accounts [Administration\User Settings](#)
- Decide on grouping and user-defined fields [Administration\Group\UDF Settings](#)
- Configure the chosen groups [Groups](#)
- Configure the 655-10 device [Configuration](#)

A mouse cursor is pointing at the "Configuration" link.

The Configuration-Controllers screen is displayed showing all possible 16 controllers greyed-out.

All settings can be edited without the controllers connected to the PC but if they are connected and have been correctly addressed it is recommended that you first download their current configuration by clicking on the Get Configuration button.



This causes the program to try and establish communications with all of the controllers.

On completion, all controllers that have responded will be shown in the list in normal text (not greyed-out).

**Configuration - Controllers**

Up to 16 controllers may be implemented in the system.

**Controllers**

Ctrlr #	Door A							Door B							Time Master
	Doors	ST	OD	AO	LO	SW	Notifies	ST	OD	AO	LO	SW	Notifies		
0	1	3	1	0	30	Not used	FL								Yes
1	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
2	2	3	1	0	30	Present		3	1	0	30	Present			No
3	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
4	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
5	1	3	1	0	30	Present	FLAD								No
6	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
7	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
8	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
9	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
10	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
11	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
12	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
13	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
14	2	3	1	0	30	Not used		3	1	0	30	Not Used			No
15	2	3	1	0	30	Not used		3	1	0	30	Not Used			No

This screen shows the controller address on the left (Ctrlr #) and rest of the line shows a summary of it's settings.

Double clicking on a controller line or highlighting a line and then clicking on the orange up-arrow button will open the highlighted controller's edit screen.

**Edit Controller**

Enter the details that define the operation of a dual-door controller.

**Controller 0**  Active

Number of doors:  1  2

Reader A description: Main Door IN

Reader B description: Main Door OUT

Time-sync master:

**Reader A**

Beep on alarm:

Anti-passback type:  None  Local APB  Timed access

Anti-passback time: 10 minutes

**Reader B**

Beep on alarm:

Anti-passback type:  None  Local APB  Timed access

Anti-passback time: 10 minutes

**Door A**

Relay operation:  Pulse  Toggle

Relay strike time: 3 seconds

Relay open delay: 1 seconds

Door switch:

Allowed to open: 0 seconds

Left open: 30 seconds

**Door B**

Relay operation:  Pulse  Toggle

Relay strike time: 3 seconds

Relay open delay: 1 seconds

Door switch:

Allowed to open: 0 seconds

Left open: 30 seconds

**Open Collector Output**

Door A forced  Access allowed on Reader A

Door B forced  Access allowed on Reader B

Door A left open  Access denied on Reader A

Door B left open  Access denied on Reader B

This screen sets all the parameters for the selected KeyProx Plus controller and its associated readers. The various fields are explained below:

**Active**

This box must be checked to allow the program to communicate with the controller. Un-checking this box will not cause the setting to be lost or for the controller to stop functioning. Its function is to speedup the operation of downloading transactions by skipping unused controllers.

### **Number Of Doors**

Setting this to 1 Door disables the Relay B, Exit B and Door Switch B and greys-out setting relating to the Relay B.

A one door controller can have two readers both of which control the same relay (door strike).

Setting this to 2 Door enables the Relay B, Exit B and Door Switch B and makes all entry fields available.

### **Time-sync Master**

One controller on the system must be set as a master timekeeper for all the controllers so that they all keep their time in synchronisation. Only one controller can be the master.

### **Reader A & Reader B**

There are a number of settings in this group box all of which apply for both a 1 and 2 Door controller.

### **Beep On Alarm**

Sets the readers beeper to sound if there is an alarm associated with the reader.

### **Anti-Passback Type**

None: Disables APB at this reader

Local APB: APB is applied between readers attached to the controller. APB status is reset after time-out set in Anti-Passback Time.

Timed Access: Once access has been allowed at this reader, subsequent attempts to gain access at this reader are denied for the duration of the Anti-Passback Time.

### **Anti-Passback Time**

The time period used by Local APB and Timed Access.

### **Door A & Door B**

There are a number of settings in this group box relating to Door A and Door B. If the controller is set as a 1 - Door controller, the settings for Door B are greyed-out.

See page 8 for a detailed explanation of the following times associated with the door strike relay.

### **Relay Operation**

Pulsed: The relay operates for the configured time duration and then resets.

Toggled: Each time a CARD is read the relay changes state. Can be used for arming and disarming an alarm.

### **Relay Strike Time**

Time duration the relay will operate in Pulsed mode.

### **Relay Open Delay**

Time for the Open Delay function

### **Door Switch**

Indicate if a door switch is connected to the controller for this door. This switch is used to control the timing of the door relay, trigger alarms and complete a transaction.

**If a switch is not used but the configuration indicates that a switch is used, transactions will NOT be logged.**

### Allowed to Open

Time for the Allowed to Open function

### Left Open

Time the door can be left open before an alarm event is triggered.

### Open Collector Output

The Alarm/Trigger output of the controller can be set to operate on the selected events. Although all events can operate the output, it may be more practical to only select Door Forced events (alarms) or Access events (triggers).

Check the appropriate boxes to enable the functions required to operate this output.

The output will operate for approximately 1 second for each event.

## Time/Date

Click on Configuration | Time\Date to open the time & date setup screen.

**Date and Time Settings**

Current Time: 14:15:49 (with green play button) | Current Date: 2006/06/23

Time Update Source:

- PC
- Master Time Controller
- Manual

**Apply Daylight Saving time**

Summer Start Date: 2006/05/01

Winter Start Date: 2006/11/01

### Time Update Source

Select the source of time update.

#### PC

This causes the PC's current time and date to be displayed. Pressing the green button will update all controllers with this time and date.

#### Master Time Controller

If selected, this displays the time and date stored in the "Sync-Master" controller. The time is continually updated.

**Note - if there is no "Sync Master" selected this time will not be updated.**

#### Manual

This selection allows the Current Time and Current Date to be edited.

Pressing the green button will update all controllers with this manually edited time and date.

### Apply Daylight Saving time

Check this box to allow daylight saving adjustments to be made by the Sync-Master controller. When checked, the daylight saving dates can be edited.

Summer Time Date: At 00:00 on this date the time is advanced to 01:00.

Winter Time Date: At 01:00 on this date the time is retarded to 00:00.

## Access Parameters

Clicking on Administration | Access Parameters opens this screen.

### Access Parameters



Key	Description
1	Access Parameters #1
2	Access Parameters #2
3	Access Parameters #3
4	Access Parameters #4
5	Access Parameters #5
6	Access Parameters #6
7	Access Parameters #7
8	Access Parameters #8

Double clicking on an Access Parameter or highlighting a line and then clicking on the orange up-arrow button will open the highlighted edit screen.

		TZ1 Allowed		TZ2 Allowed		TZ3 Allowed		TZ4 Allowed		TZ5 Allowed	
Monday	00:00	N	07:00	Y	17:00	N	--:--	N	--:--	N	24:00
Tuesday	00:00	N	07:00	Y	17:00	N	--:--	N	--:--	N	24:00
Wednesday	00:00	N	07:00	Y	17:00	N	--:--	N	--:--	N	24:00
Thursday	00:00	N	07:00	Y	17:00	N	--:--	N	--:--	N	24:00
Friday	00:00	N	07:00	Y	16:00	N	--:--	N	--:--	N	24:00
Saturday	00:00	N	08:00	Y	12:00	N	--:--	N	--:--	N	24:00
Sunday	00:00	N	--:--	N	--:--	N	--:--	N	--:--	N	24:00
Holidays	00:00	N	--:--	N	--:--	N	--:--	N	--:--	N	24:00

### Description

Enter a description for this Access Parameter

### Day/Time Zone Matrix

See page 7 for an explanation of how an Access Parameter functions and how to set the fields.

The 00:00 time of the left column and the 24:00 of the right column cannot be edited.

When entering data you can move from field to field using the tab key.

The time in each field of a row as you move from left to right **MUST** be equal or greater than the time of the previous field or left blank (--:--).

Set the TZ boxes as required to N or Y to indicate if access is allowed in that time zone. Double clicking in the TZ boxes will also toggle the setting between N & Y.

## Holidays

Clicking on Administration | Access Parameters opens this screen

2006	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M						
Jan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
Feb				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28					
Mar			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Apr						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
May	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
Jun				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
Jul						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Aug			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Sep					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Oct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
Nov			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
Dec					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

This screen is used to define a set of holidays used in the Access Parameter.

Only one set of holidays can be defined.

The blue arrows at the top right of the screen are used to change the calendar year.

**Holiday (red)** These are holiday dates that are unique to the current year and will not repeat on the same dates in other years. In the example the red dates are for the Easter weekend.

**Annual Holiday (yellow)** These are holiday dates which always fall on the same date every year and will automatically appear as holidays in subsequent years.

Double clicking on a date will cause that date to be cycled through -> holiday (red) -> annual holiday (yellow) -> normal day (white or blue)

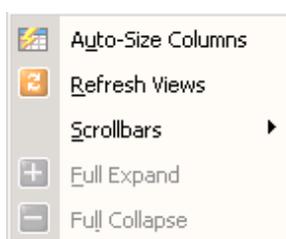
---

## Card Holders

This menu displays a screen which lists all CARD Holders that are in the database.

First Name ▲	Last Name	Contact Number	Extension	Car Registration
Andrew	Spine	8124598	23	CA 234-678
James	Jacobs	4578126	29	CA 229709
John	Handler	4568912	19	CY 782-987
Peter	Jones	7845123	14	CA 674-613

Mouse right clicking in the main body of the screen opens the following window:



This allows you to one of the following:

### **Auto-size columns**

This makes the columns in the CARD main screen fit the displayed data.

### **Refresh Views**

Updates the information in the CARD main screen.

### **Scrollbars**

This enables scroll bars if the data on the main screen is larger than the window.

### **Full Expand (only in Group view)**

Expands all the groups.

### **Full Collapse (only in Group view)**

Collapses all the groups.

See page 24 for an explanation on Group view

The menu on the left has functions for adding, editing and deleting of CARD Holders.

## Add

Clicking on the Add button in the menu function area opens the first of 3 windows for adding a PIN Holder.



The screenshot shows a window titled "Add/Edit Holder" with a blue header bar. Below the header is a subtitle "Add/Edit Holder" and a description: "Create a Card Holder record. Enter information about the person, their groups, card details and access parameters." The main section is titled "Personal Details" and includes a checked "Active" checkbox. The form contains several input fields: "First Name", "Last Name", and "Contact Number" are standard text boxes. Below them are "Extension" and "Car Registration" text boxes. There are also three "Unused" text boxes, which are greyed-out. At the bottom of the window, there is a "Cancel" button on the left and a "Next" button on the right.

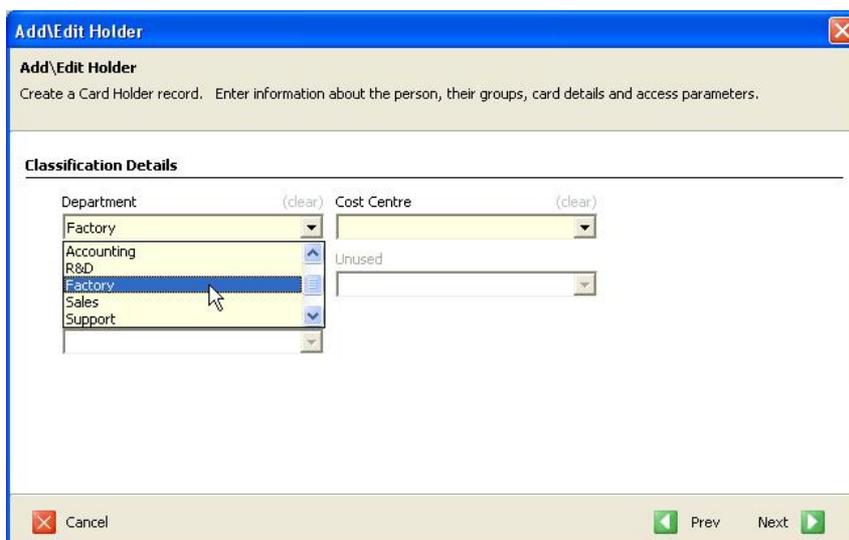
The fields First Name, Last Name and Contact Number are standard fields and are always shown. The remaining 5 fields are User Defined Fields (UDF) and although all 5 fields are shown, the unused fields are 'greyed-out'.

The "Active" tick box is automatically filled for a new record. By deactivating

When completed, click on the Next button in the bottom right corner of the window to display the next window.

This screen shows all 5 of the Groups but only those that have been enabled have drop-down selection boxes.

The example below shows the window with the 'Department' drop-down box open for selection. The Department names have to be pre-defined in the Groups menu.



The screenshot shows the same "Add/Edit Holder" window, but now the "Classification Details" section is visible. It includes two dropdown menus: "Department" and "Cost Centre", both with "(clear)" links. The "Department" dropdown is open, showing a list of options: "Factory", "Accounting", "R&D", "Factory" (highlighted), "Sales", and "Support". Below these are two "Unused" dropdown menus, which are greyed-out. At the bottom of the window, there is a "Cancel" button on the left, and "Prev" and "Next" buttons on the right.

When complete click on the Next button in the bottom right corner of the window to display the next window.

This window is sets the card details that will be uploaded to the controller.

**Add/Edit Holder**

Create a Card Holder record. Enter information about the person, their groups, card details and access parameters.

**Card Details**

Card Number   Apply anti-passback to this card

**Access Parameters at Readers**

0A	0B	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
8A	8B	9A	9B	10A	10B	11A	11B	12A	12B	13A	13B	14A	14B	15A	15B
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

Access Parameters 0 means access is always denied. Access Parameter 9 means access is always allowed.

Cancel Prev OK

### Card Number

Enter the card number for this person. The number is printed on the card.

### Apply anti-passback to this card

The APB settings of a Reader are only applied to this card if this box is checked.

### Access Parameters at Readers

All possible reader addresses are shown even if a reader is not used. By default all readers are set to 9 which is a predefined parameter that allows access at all times.

Select the desired access parameter for each of the reader from the drop-down box.

## Edit

To edit a Card Holder, highlight the name and click on Edit.

## Clone Master & Clone

It is possible to copy certain parameters from one card holder to a group of others. Highlight the card holder that is to be the source and click on "Clone Master".

Now select the cardholders that you want to be the destination of the parameters from the Clone Master. Do this using standard Windows selection commands:

- Shift-select Highlight the first record by clicking on that record then press and hold the shift key and click on the last record of a group. This will highlight all the records between and including the first and last selected records.
- Ctrl-select Press and hold the Ctrl key while clicking on each of the records you want to select. This will cause only these selected records to be highlighted.

Once you have highlighted the records you want to alter, click on the Clone button.

This will open the parameter select window



Tick the boxes of the parameters you want to copy from the Clone Master and then click OK.

## Delete

To delete a Cardholder, highlight the name and click on Delete.

## Grouping

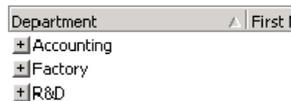
The Card Holders can be displayed with No Grouping (shows all the Card Holders) or grouped by one of the defined groups.

Clicking on the Group button displays the Group selection box. Only Groups that are enabled in the Groups Menu are displayed



In this example Department is selected and results in the Card Holders sorted into their departments.

The main screen now shows each Department with a '+' next to it and all the Card Holders are hidden from view.



To see the Card Holders belonging to a group click on the '+' to expand that group

Department	First Name	Last Name	Contact N...	Cost Centre
+ Accounting				
- Factory	John	Handler	9824573	Project 102
	James	Jacobs	8765341	Project 101
+ R&D				

Click on the '-' to contract the group.

## Sort Order

Clicking on a heading causes the Card Holders data to be sorted on that heading. Clicking repeatedly on the same heading toggles the sort order between ascending and descending.

The sort field is indicated by a small arrow head at the end of the field and the sort order by the direction of the arrow.

Last Name ▾	Depa
Spine	R&D
Jones	R&D
Jacobs	Factc

## Export

The complete database of Card Holders can be exported as a .CSV file for import to spreadsheets or other 3rd party programs.

Each variable in the export file is separated by a semicolon.

---

## Transactions

The Transaction menu displays the transactions recorded by the keypad.

Transactions aren't automatically downloaded as this operation takes a few minutes which is inconvenient if all you want to do is browse the last download.

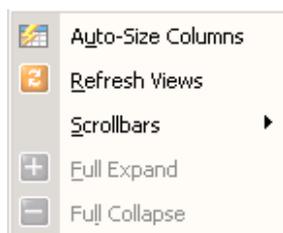
The functions are explained below.

### Download

Clicking on this function button downloads the transactions from the keypad. The download will always take about 90 seconds as it downloads the entire transaction memory. Once started, the download cannot be aborted.

### Columns

The transaction screen can be re-sized to display all columns by right clicking inside transaction area of the screen and selecting "Auto-Size Columns".



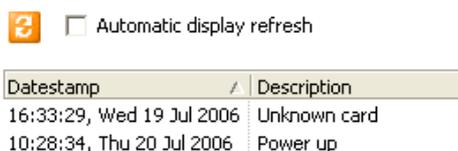
## Refresh & Auto Refresh

If the system is set to automatically download transactions (see page 12) then the orange refresh button and the Automatic Display Refresh check-box are shown at the top of the transaction screen.

To see transactions as they are downloaded, click on the Automatic Display Refresh check-box (this will disable the orange refresh button). In this mode as soon as transactions are downloaded, the screen is updated and the most recent record will be highlighted (display mode must be "No Grouping").

In this mode it is difficult to scroll up and down the transactions database because the next auto refresh will force the display to the most recent record. To prevent this, uncheck the auto refresh button.

In this mode the display can be update by clicking on the orange refresh button.



## List By Card Holder

Clicking on this function button displays transactions sorted by date and time.



The transactions relating to a particular day are displayed by clicking on the + button next to day. Clicking on the - button will hide (collapse) the transactions.

## List By Date\Time

Clicking on this function button displays transactions by Card Holder.



The transactions relating to a particular person are displayed by clicking on the + button next to their name. Clicking on the - button will hide (collapse) their transactions.

## No Grouping

Clicking on this function button shows all the transactions. The sort order can be determined by clicking on one of the headings.

Transactions - No Grouping				
Datestamp	Description	First Name	Last Name	
15:25, Wed 21 Apr 2004	Valid Transaction	John	Handler	
15:25, Wed 21 Apr 2004	Denied, Unknown			
15:25, Wed 21 Apr 2004	Valid Transaction	Peter	Jones	
15:25, Wed 21 Apr 2004	Valid Transaction	David	Asher	
15:25, Wed 21 Apr 2004	Valid Transaction	Jane	Price	
14:10, Wed 21 Apr 2004	Normal Powerup			

## Filtering | Not-Filtered

Clicking on the Filtering | Not-Filtered function toggles between the two modes. When it displays "Filtering", a filter section opens at the bottom of the screen.

**Quick Range** Select...

 This month Between 00:00:00 2004/04/01 and 23:59:59 2004/04/30

Changing the settings of the filter limits what is displayed in the transaction screen.

Changing the filter values will normally automatically change what is displayed. If not, click on the orange 'Refresh' button.

## Export to CSV

This exports the entire transaction database to a .CSV file for import to spreadsheets or other 3rd party programs.

Each variable in the export file is separated by a semicolon.

---

## Reports

The reports menu lists all the reports that can be printed and data that can be exported by the program.

Clicking on a report or export function causes the program to jump to the appropriate menu item where you again click on the 'Print Current View' function or export function.

Clicking on any printed report will open the print pre-view screen.

To print click on the Print button or to exit click on the 'X'.



## Printer Configuration

This is set in the Configuration menu by clicking on 'Print Configuration'

---

## Maintenance

From the Administration Menu, click on the Maintenance function button to display the Maintenance screen.

### Transaction History

The Transaction database size increases every time data is downloaded from the system. Not only does a large database use a large amount of hard disk space, it also slows down search and sort activities. The Transactions part of this screen sets a limit on how much data is stored in the database.

#### Transactions

---

Delete Transactions older than

2006/03/14

▼

90

days



Delete now

Automatically remove old transactions on startup

Delete records older than the date set or by age in number of days. Editing either of these will automatically change the other.

Click on the green 'Delete Now' to truncate the database.

Check the box to make this happen automatically each time the program is started.

## Backup

### Backup\Restore\Repair

---

Default Backup\Restore directory

C:\Program Files\KeyProxPlus\Backups



I need to  Backup  Restore  Repair\Optimize

Download memory, which contains the hardware configuration and the card number records. This can be used to restore the memory in event of data being lost etc.



Download now...

Create Database Backup, which includes the configuration, card holders and transactions. This is necessary to safeguard PC data.



Create now...

To backup data from the database, click on the 'Backup' button.

The default path for the backup is shown in the directory box and it is recommended that you use this setting.

### Download Now

This backup dumps the entire controller memory to disk. This backup is useful for diagnostics (by GSC) or to restore data to a new controller or one that has lost data.

To backup the data from the controller, click on the 'Download Now' button. A screen offers to download a selected controller or all controllers.

Click OK and the download will start. Download time is about 2 minutes per controller.

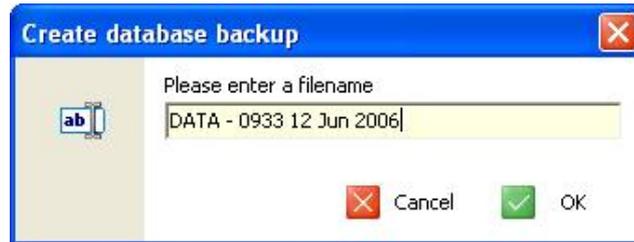
A file name is created with a name based on time & date the backup was created and the controller number. The example below shows a backup created at 14:56 on 17 July 2006 from controller 1.

DATA - 1456 17 Jul 2006 Ctrl1.GSCBIN

### Create Now

This backup saves all PC database files.

To backup the database files, click on the 'Create Now' button.



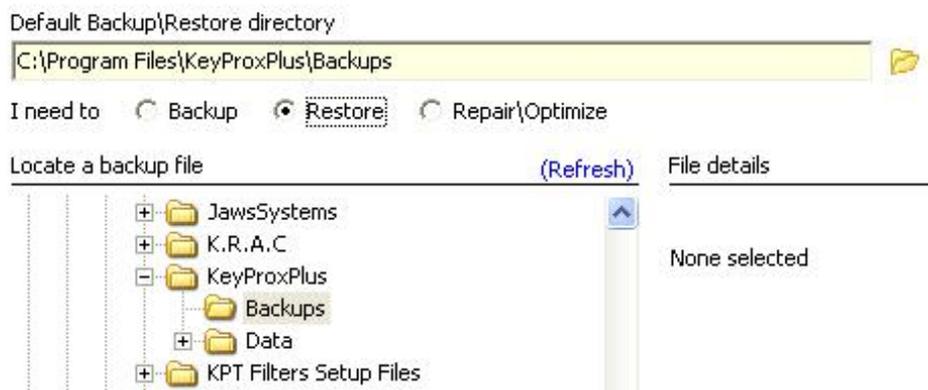
A default file name is offered which is made up of the current time and date. It is recommended that you use this filename.

Click OK and the download will start. Backup time will depend on the size of the database file.

### Restore

To restore data, click on the Restore button and a directory tree with file names is displayed.

#### Backup\Restore\Repair



If the selected file type is a 'Binary Memory Dump' (controller backup), select what needs to be restored and then click on the 'Restore Now' button.

If the selected file type is 'Database Backup', click on the 'Restore Now' button and a warning window will pop-up - click 'Yes' to continue.

**Restoring will overwrite existing data - it is recommended that you do a backup before restoring in case the restored data is incorrect.**

## Repair

Sometimes database files get corrupted or the database gets very fragmented due to lots of add additions and deletions. In these cases it may be necessary to repair the tables or optimise them.

Click on the 'Repair\Optimize' button.

I need to  Backup  Restore  Repair\Optimize

Repair tables when the program has reported a problem loading, or data looks corrupt. All indexes associated with the tables are rebuilt, and this can help to speed up certain operations.

 **Repair now...**

Automatically repair database on startup

Optimization is used to re-pack the data inside a table. If significant changes have been made to a table, an optimization will likely result in faster access and less disk space.

 **Optimize now...**

Automatically optimize database on startup

The 'Automatic' boxes can be checked so that these functions happen at startup but as the database files get bigger this will slow down the startup time.

---

## Directory Structure

Provided the default path was selected during installation, the program, data and backup files will be in:

Program files	C:\program files\KeyProxPlus
Data files	C:\program files\KeyProxPlus\data
Backup files	C:\program files\KeyProxPlus\backups

# Installation

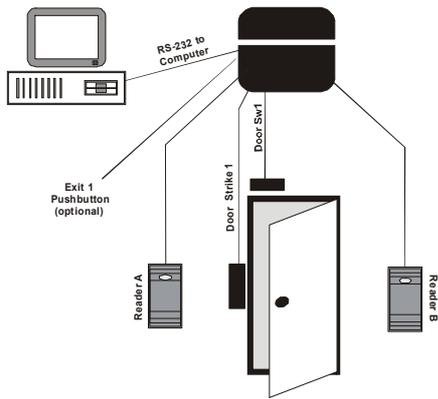
The KeyProx Plus controller has both a RS-232 and a RS-485 interface.

Use the RS-232 interface for simple installation having a single controller and where the distance between the controller and the PC is less than 30 meters.

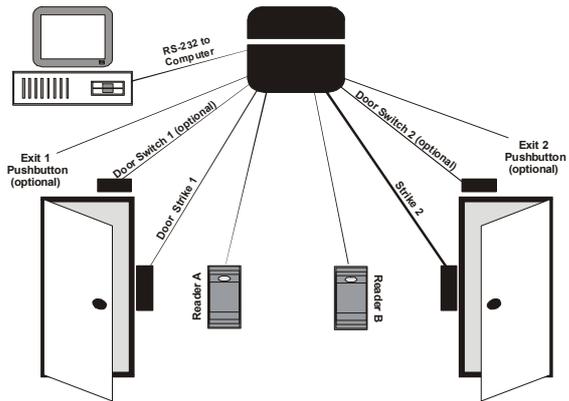
The drawings below show typical RS-232 installations.

## Single Door System

RS-232 connection to PC - max 30m



## Two Door System

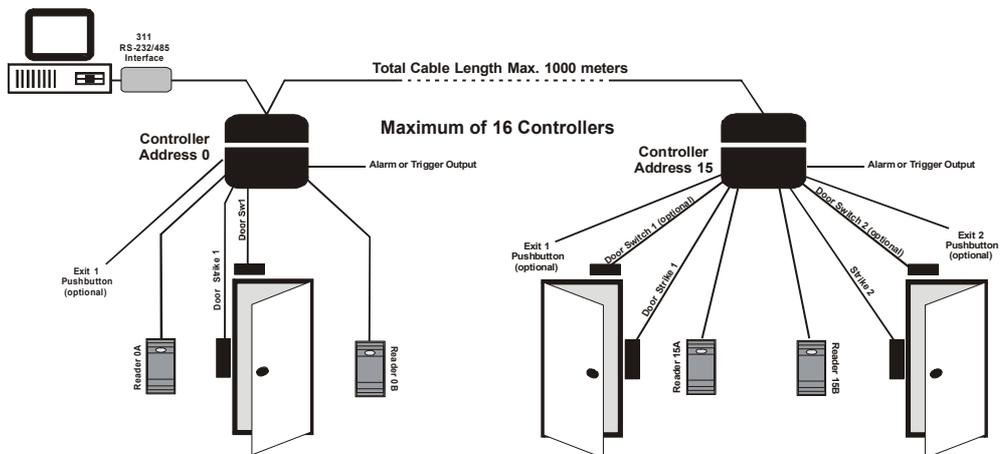


RS-485 must be used where the distance between the controller and the PC is greater than 30 meters or for installations of multiple controllers.

The PC will require a 311 Interface/Repeater to interface the RS-232 from the PC to the RS-485 of the controller network.

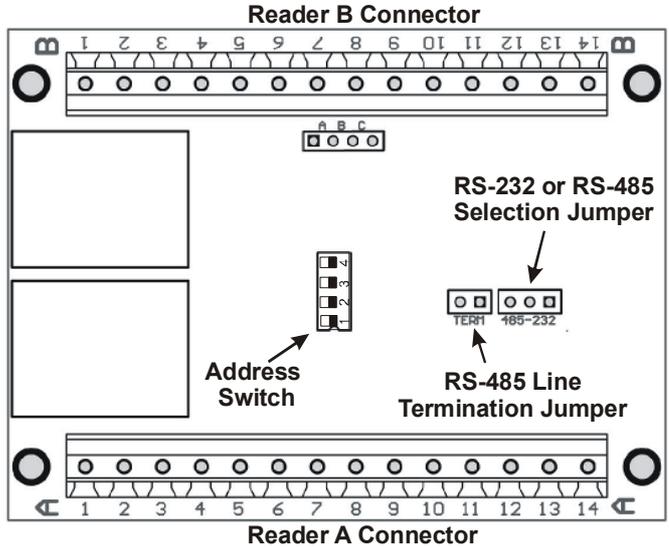
The drawing below shows a typical RS-485 installation.

## Multi-Controller System



# KeyProx Plus Controller

The drawing below shows the KeyProx controller board and indicates the position of the READER A connector, READER B connector, jumpers on the board and the address switch.



## The READER A Connector

Connector A	Description	
1	Relay Door A	COM (common)
2		NC (normally closed)
3		NO (normally open)
4	Reader A connections	+12V
5		DATA
6		0V
7	Switch Connections Door A	EXIT (normally open push button )
8		0V (for push button and door switch)
9		DOOR (status - switch closed when door closed)
10	Connections to PC and other controllers	COMMS GND (RS-232/485 ground)
11		RS-485 +
12		RS-485 -
13		RS-232 TX
14		RS-232 RX

## The READER B Connector

Connector B	Description	
1	Relay Door B	COM (common)
2		NC (normally closed)
3		NO (normally open)
4	Reader B connections	+12V
5		DATA
6		0V
7	Switch Connections Door B	EXIT (normally open push button )
8		0V (for push button and door switch)
9		DOOR (status - switch closed when door closed)
10	Alarm/Trigger Output	0V
11		+5VDC
12		OUT (open collector output)
13	Controller and reader power	+12V
14		0V

## Controller Connector Details

### Relays

The relays have voltage free contacts and they are rated at:

5A @ 120VAC and 2.5A @ 240VAC for non-inductive loads

3A @ 28VDC for inductive loads.

Relay A operates the door strike for:

Reader A & B in a single door configuration

Reader A in a two door configuration

Relay B operates the strike for Reader B in a two door configuration. It is not used in single door configuration.

### EXIT

A push button connected to this input can be used for remote door release.

A normally open pushbutton wired between Exit and 0V will operate the associated relay as if activated by a valid Card and the relay operation time will be the same as the door strike time setting.

In a single door configuration the EXIT connection on the Reader B connector has no function.

### DOOR

A door switch wired to these connections will detect if a door is opened.

This is used to:

- Reset the door relay
- Trigger alarm conditions if a door is forced or left open.
- Complete a transaction record. (a card allowed access is not logged as a valid transaction until the door opens)

Wire the switch between the DOOR and 0V connections. The switch must be electrically closed when the door is closed.

**If a switch is not used but the reader setup indicates that a switch is used, transactions will NOT be logged.**

In a single door configuration the DOOR connection on the Reader B connector has no function.

### **Comms Connections**

For RS-232 connect to the RS-232 TX, RS-232 RX and COMMS GND connections on Reader A connector. (See page 36 & 37 for wiring details)

Make sure the selection jumper is in the 232 position.

For RS-485 connect to the RS-485+, RS-485- and COMMS GND connections on Reader A connector. (See page 38 for detailed information on RS-485 wiring)

Make sure the selection jumper is in the 485 position and, if at the end of the RS-485 line, that the termination jumper is ON. (See page 38 for explanation.)

Use the 311 RS-232/RS-485 Interface/Repeater to interface the controller network to the PC.

### **OUT, +5V & 0V**

The Alarm/Trigger output is an open collector NPN transistor capable of sinking 50mA. It may be used to switch an external relay or any compatible external equipment.

A relay with protection diode may be connected between +5V and OUT. The relay must be rated for 5VDC and draw less than 50mA.

Alternatively a 12VDC Relay can be connected between the +12V and OUT connections provided the relay draws less than 50mA.

### **POWER: +12V & 0V**

Power supply connections for the Controller and Readers. This supply may also provide power for the door strikes. Ensure that the power supply can supply the peak power of both door strikes, readers and the KeyProx Plus controller all operating at the same time. Overloading the power supply can cause a brownout which may result in erratic behaviour of the system.

The typical power requirements are:

Controller	120 mA
Each Reader	80 mA

### **READER: +12V, DATA & 0V**

This reader is potted and has 3 wires exiting from the rear.

The wires are:	Red	+12VDC
	Yellow	DATA
	Black	0V

These connections are wired to the corresponding connections of either READER-A or READER-B on the controller ( see connection diagrams for details).

Cable length between a reader and the controller must not exceed 50m.

Shielded cable is not required provided the cabling is not used in an electrically noisy environment. If shielded cable is used, the shield must be connected to 0V at the Controller connector.

The cable should be 3-core with a minimum cross section of 0.22 mm<sup>2</sup>.

***Solid core wire is NOT recommended***

### 232 - 485 Selector Jumper

This jumper determines the output type for the controller - (see Comms Connections above).

### RS-485 Line Termination Jumper

This jumper must be on if the controller is at the end of the RS-485 network. All other controllers must have the jumper off (see explanation on page 38)

### Address Switch

In a multi-controller installation each unit must have a unique address in the range of 0 to 15. The address is set using the address switch based on the following table:

Note the numbers at the top of the columns refer to the number on the switch.

The entries in the table refer to the switch position 1 = ON and 0 = OFF

Adrs	1	2	3	4	Adrs	1	2	3	4
0	0	0	0	0	8	1	0	0	0
1	0	0	0	1	9	1	0	0	1
2	0	0	1	0	10	1	0	1	0
3	0	0	1	1	11	1	0	1	1
4	0	1	0	0	12	1	1	0	0
5	0	1	0	1	13	1	1	0	1
6	0	1	1	0	14	1	1	1	0
7	0	1	1	1	15	1	1	1	1

The address switch may also be used to identify the source of data in installations that consist of a number of controllers that are not connected together by a RS-485 network.

### ABC Jumper

This is used to force a system reset which clears all memory and sets the unit back to the default setting.

To reset, remove power, short out the 2 pins in position A and the 2 pins in position C and then reapply the power.

The LEDs on the readers will flash while the memory is cleared. The memory is cleared when the LEDs stop flashing and the YELLOW goes steady. Power-down and remove the reset jumpers and then power-up.

**Note: This is deliberately made difficult to prevent an accidental reset. Use the jumper from the 232 - 485 selector for position A and short position C with a screwdriver.**

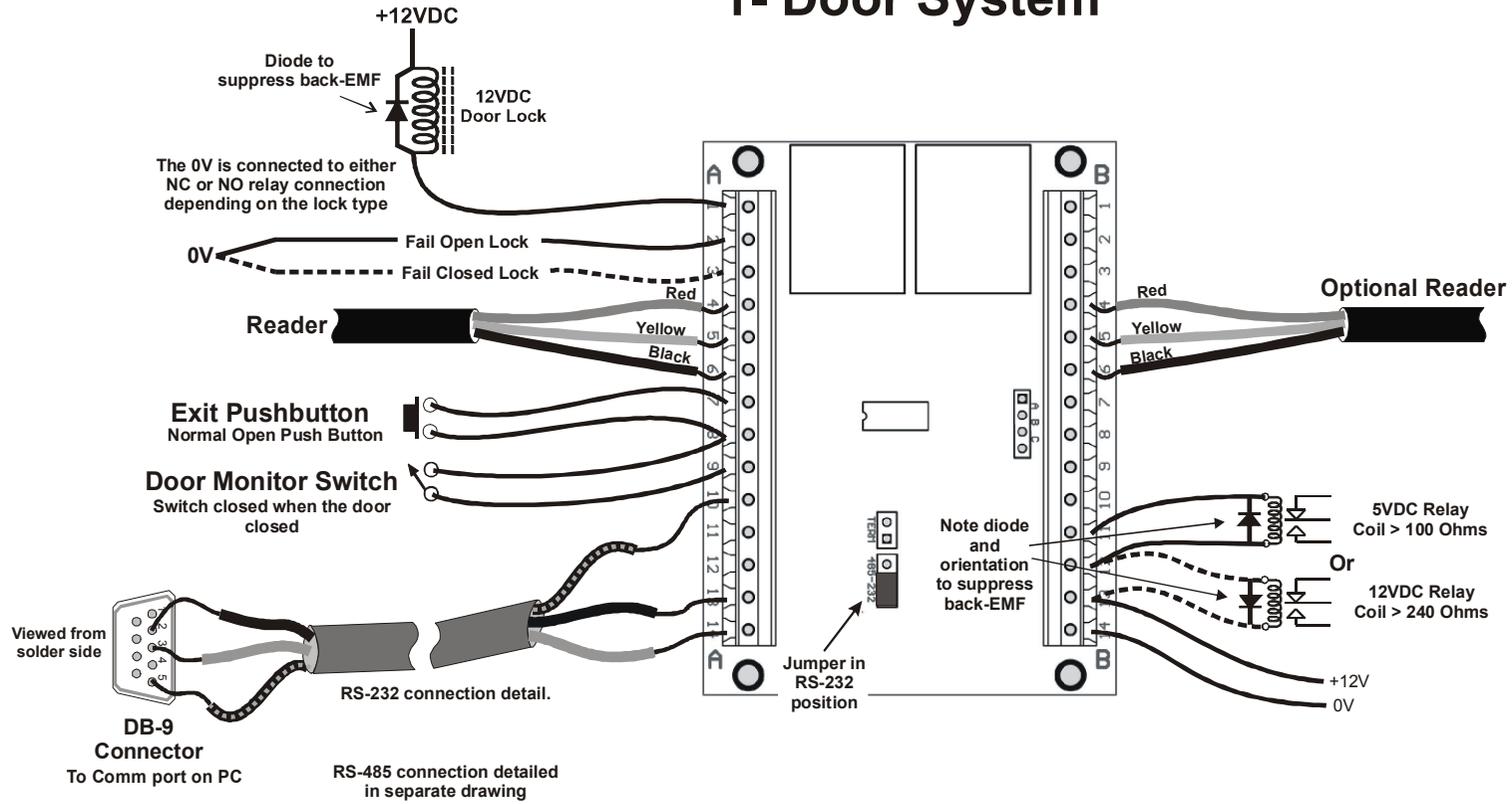
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## Controller Wiring & RS-232

The drawings on the following pages detail the connections to the KeyProx Plus controller for 1 door and 2 door installations.

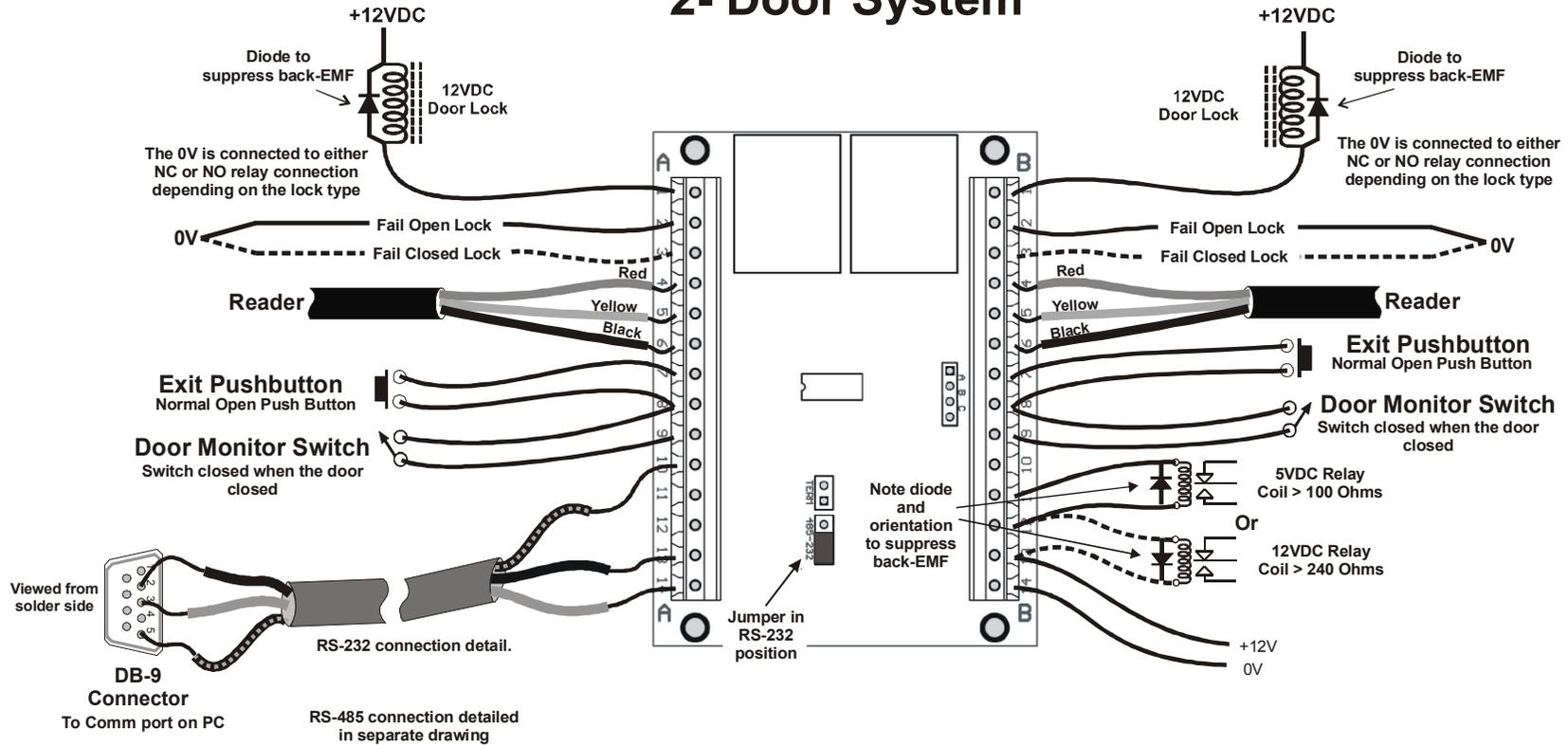
The drawings also show connection detail for the RS-232 connection to the PC.

# KeyProx Plus Connections 1- Door System



The following drawing shows typical connections for a controller wired to a single door. If only one reader is used it must be connected as Reader A.

# KeyProx Plus Connections 2- Door System



The following drawing shows typical connections for a controller wired to two separate door.

## RS-485 Installation

RS-485 allows long cable lengths (up to 1000 meters in ideal conditions) and multiple units to share a common cable. Installations are normally trouble-free provided the following guidelines are observed.

In an RS-485 network there are 3 connections; 485+, 485- and GND (COMMS GND). A twisted pair cable is used to connect all the 485+ connections and all the 485- connections of the devices together. A common GND connection is also made to each device.

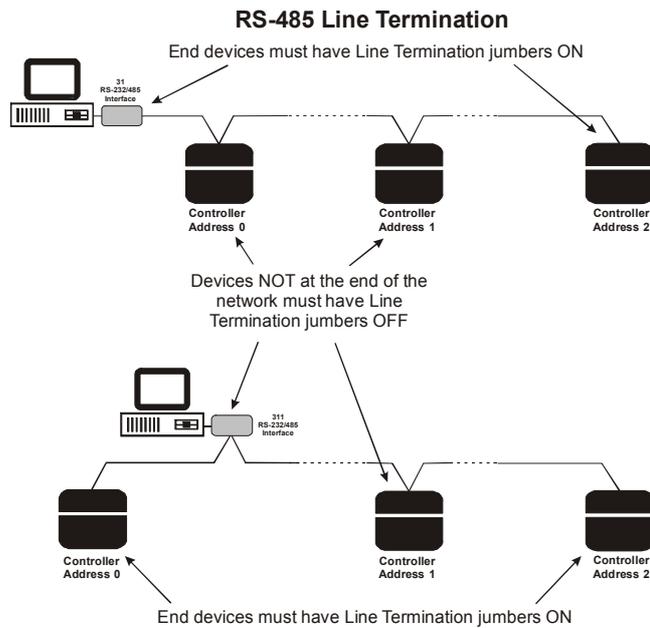
Cabling must loop from device to device. Star and stub wiring must be avoided as these could cause communications problems.

### Line Termination

In a RS-485 network, the correct use of line termination is essential to avoid communications problems.

Only the devices at the ends of the RS-485 network must have their Line Termination jumpers ON.

The drawings below explain which devices have their jumpers on and which off.



### RS-485 Wiring

A clean signal return path is essential for reliable performance on a RS 485 network and a Common Ground wire connection must be provided between all of the network components. In addition networks between buildings with different earthing points need isolation to avoid problems and possible damage.

#### Common Ground Wire Connection

A common ground wire must connect between the COMMS GND connection on the KeyProx Plus controllers (READER A connector pin 10) and the GND connection of the 311 RS-232/485 interface/repeater.

To prevent unintentional earthing of this common ground, it is essential to use floating power supplies in which the 0V (-) output is **NOT** connected to Earth.

The common ground wire is earthed at the 311 interface and this EARTH connection should be connected to the building earth point to ensure the system is correctly earthed.

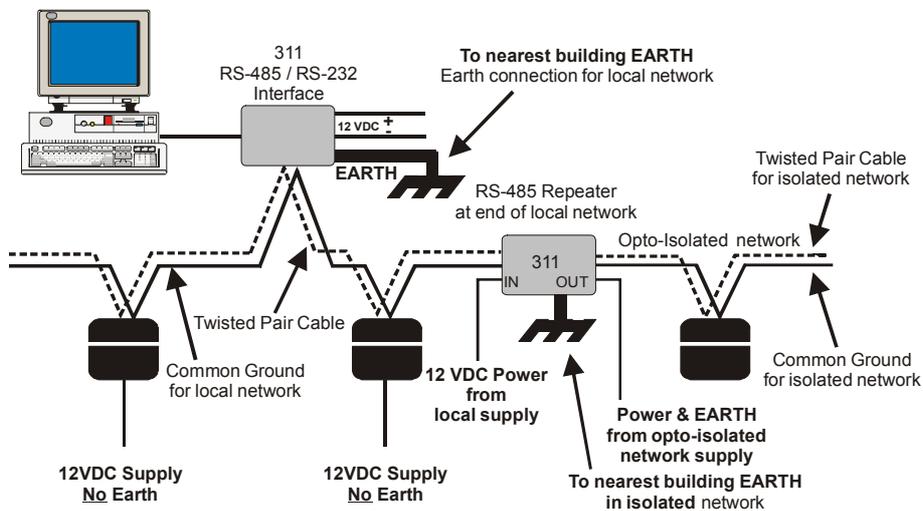
Earthing at more than one point (i.e. using power supplies whose earth is connected to the 0V (Gnd) of the supply) could cause damage to equipment during earth fault conditions.

### Opto-Isolated RS 485 repeater

If the RS-485 network extends between buildings, an opto-Isolated repeater (311 RS232/485 Interface/Repeater) must be used to prevent possible damage to components due to potential differences between buildings. The same applies for large buildings with separate earth networks.

The Opto-Isolated unit provides earthing for the isolated side of the network and its EARTH connection must be connected to the building earth point.

The drawing below details the use of the EARTH connections and opto-isolated repeater.



### Cables

Recommended cable is:

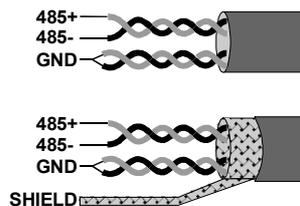
*Mylar screened Category 5 cable with 2 twisted pair multi-strand 0.22mm<sup>2</sup> wires.*

This cable is used extensively by the computer industry and is inexpensive.

### **Solid core wire is NOT recommended**

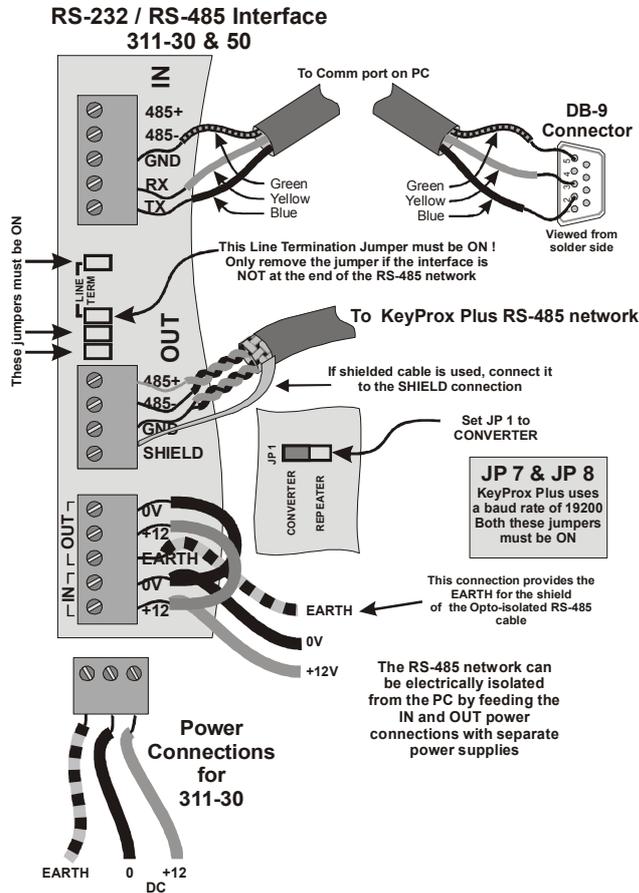
The drawings below show how to use a 2 pair twisted pair cable to provide the 485+, 485- and GROUND wires.

If Shielded cable is used the shield must **NOT** be used as the GROUND wire.



## 311 RS-232/485 Interface

The drawing below details the connection of the 311 interface to the KeyProx Plus network and to the PC.



## 485 Wiring to Controller

The drawing below shows how the twisted pair cable, ground connection and optional shield are wired to the controller board. Note how the cable from one controller to the next is wired. Do not use stubs or star connections when wiring the RS-485 network.

