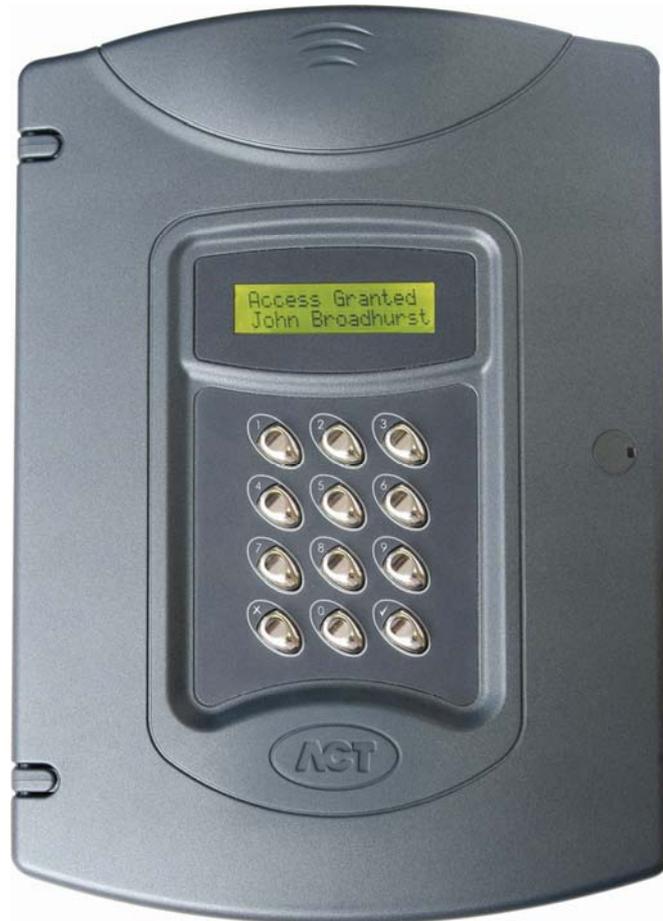


ACT

Access Control Technology



**Operating and Installation Instructions for the
ACTpro 4000 Access Control System**

18-00071

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About ACTpro 4000

The ACTpro 4000 is a two door controller that can extend to a total of 16 doors via ACTpro door stations. In turn up to 250 ACTpro 4000s may be networked via a PC interface to facilitate up to 4,000 doors. The ACTpro 4000 can support 60,000 users.

Product Specification

- 60,000 users
- 1,024 user groups
- 256 time zones
- TCP/IP Networking
- 10/100 Mbps Fast Ethernet
- Flash upgradeable firmware
- Timed anti passback
- Entry and exit reader support
- DDA individual timer facility
- Voltage monitoring
- Low bandwidth requirements
- DHCP or Static IP address
- Auto discovery simplifies installation
- Faster download speeds for large databases
- Monitor controller status via a web page

Ordering Information

ACTpro 4000	2 door controller, supports 60,000 users
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Operating Instructions

The ACTpro 4000 is a 16 door access control unit supporting 60,000 users. It supports 100MBit TCP/IP connection and USB communications. DHCP client and local web page server are also provided. The Autodiscovery feature, supported by the latest version of ACT software, allows ACTpro 4000 controllers to be found on a LAN and added to the database.

All user functions are accessed via two six-digit codes. The first code is for the **Operator** who is responsible for the day-to-day administration of the system, adding and deleting users, setting names and assigning time-zones etc. The second code is for the **Installer** who performs the initial configuration of the system and decides on communications settings, interfaces, and modes of operation.

Default Codes			
Operator	123456	Installer	999999

Menu System

All user functions are accessed via a menu system. The menu (or submenu) title appears on the top line of the display. The bottom line contains the current item in the menu. The three keys on the bottom row of the keypad are used for navigation:

Menu Navigation Keys		
✘ Quit to previous menu.	0 Next menu item	✓ Select item or Submenu

Text Entry

Textual descriptions (user names etc.) are entered via a simple text entry system. Each of the digits **1-9** may be used to enter letters, numbers or symbols according to the table below. Pressing the required digit once will bring up the first letter in that group. Subsequent presses will step through the group and then back to the first letter. Pressing the **0** key advances to the next character and pressing the **✘** key moves back to the previous character. The **✓** key accepts the currently displayed text. If the cursor is at the first location in the display, pressing the **✘** key gives the option to cancel all the displayed text.

Text Entry Keys					
1	a b c A B C 1	2	d e f D E F 2	3	g h i G H I 3
4	j k l J K L 4	5	m n o M N O 5	6	p q r P Q R 6
7	s t u v S T U V 7	8	w x y z W X Y Z 8	9	SPC - & . + ' / 9 0
✘	Previous Character	0	Next Character	✓	Accept displayed text

Operator Menu

User Setup	Enable	Allow a user or range of users to open the door.
	Disable	Prevent a user or range of users from opening the door.
	Assign Names	Enter a name for each user.
	Assign Groups	Assign users to groups.
	Assign Options	Specify options for each user.
	Assign PIN's	Set the individual PIN for each user.
	Learn Cards	Learn randomly coded cards (e.g. Bank Cards).
	Batch Cards	Assign a batch of cards to a range of users.
Group Setup	One-To-One	Assign a card to a user.
	Card Validity	Set a validity period for a user.
	Enable	Allow users in specified groups to open the door.
	Disable	Prevent users in specified groups from opening the door.
	Assign Names	Enter a name for each group.
	Access Rights	Specify what access rights apply to each group.
	Assign Options	Specify output and PIN options for each group.
	Assign PIN's	Set the PIN for each Group.
System Log	Timed Anti-passback	Sets the Period for Timed Anti-passback operation for each group.
	Display Log	Show the system log on the display.
	Print Log	Print the system log on an attached serial printer.
Control Door	Filter Log	Prevent events entering the system log.
	Lock Door	Lock door - prevent all cards from opening it.
	Unlock Door	Unlock door - relay is activated so cards are not required.
	Normalise Door	Set a door back to normal operation.
	Pass Door	Momentarily open a door for the programmed time.
User Tracking	AUX output on	Switches the auxiliary output on.
	AUX output off	Switches the auxiliary output off.
	Log in	Log a user into the tracking area.
Set Date/Time	Log out	Log a user out of the tracking area.
	Clear All	Remove all users from the tracking area.
Date/Time	Date/Time	Set the current date and time for the system.

Time Zones	Specify the time periods and days which apply to a given time zone.
Set Holidays	Specify which days within the next year are holidays.
Issue Number	Set the current system issue level (if issue checking option enabled).
Change PIN	Change the PIN used to access the operator menu.

Exit from the menu is automatic if no keys are pressed for a period of time

User Setup

The **User Setup** menu allows the operator to enable and disable individual users, and to change the configuration information for each user. In each of the user setup functions, the user is selected by either using the **0** key to advance to the required user, or alternatively by using the numeric keys **1-9** to directly enter the number of the desired user. The top line of the display will show the name for each user if one has been entered, otherwise the number only will be displayed.

Enable

The **Enable** function allows a user or range of users to be enabled. Pressing the ✓ key enables the displayed user. This means that the card or token belonging to this user will be recognized and may be allowed entry to the protected area. Note that the **Group Disable** function or programmed access rights may override an enabled user.

Disable

The **Disable** function allows a user or range of users to be disabled. Pressing the ✓ key disables the displayed user. This means that the card or token belonging to this user will no longer be recognized and will not allow entry to the protected area.

Assign Names

The **Assign Names** function allows a 16 character textual name to be assigned to users between 1 and 5000. This name will be shown with any displayed or printed log events involving this user. Pressing the ✓ key selects text entry mode.

Assign Groups

The **Assign Groups** function allows a user or range of users to be assigned to a group. Any of the 60,000 users can be assigned to one of 1024 groups.

The Display will show the user number on the top line and the group that that user is assigned to on the bottom line. The displayed user number may be advanced by the **0** key.

Also any user may be displayed by entering the user number, and then pressing the ✓ key followed by the ✕ key.

Pressing the ✓ key prompts for a group number to be entered, entering the group number and pressing the ✓ key again assigns the currently displayed user to the group entered.

A range of users may be assigned to the displayed group number, entering the first user number in the range of users followed by the ✓ key, and then entering the last user number followed the ✓ key will assign all the users in the range to the group displayed. This method can also be used to assign a single user to a group by entering the same user number for the first and last user in the range.

Assign Options

The **Assign Options** function allows additional options to be assigned to each of the 60,000 users. The available options are displayed in brackets in the form [23TRA] with non-assigned options displayed as a dash. Pressing the ✓ key allows the options to be altered. When changing options, the 0 key advances to each option and the ✓ key selects or deselects the displayed option.

Option		Description
2	Activate O/P 2	The general-purpose output OP2 is activated for its programmed duration when this user is granted access.
3	Activate O/P 3	The general-purpose output OP3 is activated for its programmed duration when this user is granted access.
T	Toggle Relay	When the user with toggle capability is granted access, the relay is toggled so the door will remain permanently open until the next time the card or token is read. The door must be set for Toggle Relay operation.
R	Extended Relay Time	If this option is selected the Main Relay will fire for an Extended time when a user with this option is granted access. The Extended relay time is set on a door by door basis. See installer menu->door settings
A	Aux Arm/Disarm	Setting this option gives the user the rights to activate/deactivate an external Alarm. See end of the manual for more details.

Note: *The options assigned to an individual user operate in addition to those assigned to the group.*

Assign PINs

The **Assign PINs** function allows a different PIN to be assigned to each user. Initially, the PIN will be **unset**. Pressing the ✓ key will prompt for the user PIN to be entered (it will not be displayed). The PIN must then be re-entered for verification. The PIN will be accepted as long as it does not conflict with any existing PIN (or duress PIN). Entering all zeros will delete the PIN. The actual PIN is never shown on the display.

In **PIN Only** operation, the user PIN must be entered to gain access. In this case, the PIN must be unique. In **PIN & Card** operation the user PIN must be entered after the user has presented a card to the reader. If a PIN for a user is not set, then the relevant group PIN may be used instead (PIN & Card only).

Learn

In **Learn Mode**, all 60,000 users may be allocated a randomly coded card in place of the usual site coded or batch card.

Initially the display will show **Not Assigned** for the selected user indicating that a learned card has not been assigned. Pressing the ✓ key prompts the user to select a door to learn from. After selecting a door, the user presents a card to the reader at that door. When the user presents the card to the reader, a unique 10-digit number generated from the data on the card is displayed. This card may then be used to gain access, and will replace any previously learned card.

Instead of presenting the card, the 10-digit number may be directly entered on the keyboard, if it is known in advance.

Learning cards is particularly useful for visitors who could, for example, use their personal bankcards to gain access for the duration of their visit.

Batch Cards

The **Batch Cards** function allows a sequential batch of cards to be assigned to a sequential range of users (e.g. card numbers 1001 to 1200 assigned from user 1 to user 200, where user 1 has card 1001). The ACTpro 4000 supports up to 100 batches. Users may be assigned different cards in different batches if desired.

Initially, the display will show the batch as **Not Assigned**. Pressing the ✓ key prompts the user to enter a 10 digit number of the first card in the batch, once entered and the ✓ key pressed again the user will then be prompted to enter the 10-digit number of the last card in the batch. Note: If the card number has less than 10 digits then enter the number with leading 0's so that it has 10 digits e.g. card number "60775" must be entered as "0000060775"

If the cards entered are already assigned to another batch, then the user is prompted to try again. The display will then request the user number to be assigned to the first card in the batch.

Site coded cards are disabled if any batch cards are assigned on the system. However, site coded cards may be entered as a batch, one to one or learned cards.

One-To-One

In ***One-To-One Mode***, any known card may be assigned to any of the 60,000 users. If the site code and card number are known then they may be entered in from the keypad or the card may also be presented to a reader (similar to Learn Mode).

Card Validity

The ***Card Validity*** menu allows all users to be assigned a validity period. A user is considered invalid if the current date is not within the validity dates.

Group Setup

A ***Group*** provides the means to manage which users are allowed access to specific doors at specific times. A group consists of 8 Time zones/Doors combinations plus options. The ***Group Setup*** menu allows the operator to configure these groups.

Any of the 60,000 users may be assigned to one of 1024 groups.

A group is selected by either using the **0** key to advance to the required group, or alternatively by using the numeric keys **1-9** to directly enter the number of the desired group. The top line of the display shows the name of each group if one has been entered, otherwise the number will be displayed.

Enable

Enable the displayed group by pressing the **✓** key. This means that the cards or tokens belonging to all users in the group will be recognized and will be allowed entry to the protected area provided that the individual users are also enabled.

Disable

Disable the displayed group by pressing the **✓** key. This means that the cards or tokens belonging to all the users in the group will no longer be recognized and will not be allowed entry to the protected area even if the individual users are enabled.

Assign Names

The **Assign Names** function allows a 16 character textual name to be assigned to each group. Pressing the ✓ key selects text entry mode. The group name is entered or deleted in exactly the same fashion as for individual user names.

Access Rights

The **Access Rights** function allows up to 8 time zone and door combinations to be specified for all users in a group. When a group is selected, the combinations will be displayed on the top line of the display in the form **ABCDEFGH + -**. The **0** key may be used to highlight one of these combinations and the bottom line of the display will show that time zone and door combination. Pressing the ✓ key allows the combination to be altered.

1) Select Group

Group 3	0 for next group
Timed Access	✓ to display access rights

2) Displaying access rights

A B C D E F G H + -	0 for next combination
At all times	✓ to change combination
Selected Doors	

3) Changing time zone

Time zone	0 for next time zone
At all times	✓ to select

4) Changing door combination

Door 7	0 for next door
← [23---7---AB] →	✓ to select/deselect
	✗ when done

In addition, **Full Access** or **No Access** may quickly be set for the group by highlighting and selecting the **+** or **-** symbols respectively:

5) Setting Full Access

A B C D E F G H + -	✓ to set full access
Full Access ?	

6) Setting No Access

A B C D E F G H + -	✓ to set no access
No Access ?	

Assign Options

The **Assign Options** menu can be used to apply additional options to a group. The assigned options are displayed in brackets in the form **[23TB]** with non-assigned options displayed as a dash. Pressing the ✓ key allows the options to be altered. When changing options, the **0** key advances to each option and the ✓ key selects or deselects the displayed option.

	Option	Description
2	Activate O/P 2	The general-purpose output OP2 is activated for its programmed duration when users in this group are granted access.
3	Activate O/P 3	The general-purpose output OP3 is activated for its programmed duration when users in this group are granted access.
T	Toggle Relay	When the user is granted access, the relay is toggled so the door will remain permanently open until the next time the card or token is read. The door must be set for Toggle Relay operation.
B	Track Bypass	If tracking bypass is enabled, then users in this group are always allowed access through anti-passback doors.

Note: *The options assigned to an individual user operate in addition to those assigned to the group.*

Assign PINs

The **Assign PINs** function allows a different PIN to be assigned to each group of users. Initially, the PIN will be **unset**. Pressing the ✓ key will prompt for the PIN for the displayed group to be entered (it will not be displayed). The PIN must then be re-entered for verification. The PIN will be accepted as long as it does not conflict with any existing PIN (or duress PIN). The actual PIN is never shown on the display. If set, a PIN directly assigned to a user will take priority over this PIN.

Timed Anti-passback

The anti-passback feature is designed to stop users giving their cards to other users seeking to gain access to an area. It does this by requiring users to exit an area before re-entry will be granted.

When a user is granted access through a timed anti-passback door, then the user will not be granted access again, until (1) the anti-passback time period expires or (2) the user exits.

The **Timed Anti-passback** period is set on a user group basis. Each group may have its own timed anti-passback period.

Pressing the ✓ key allows the anti-passback time for the displayed group to be changed.

The anti-passback period can be set from 0 days, 0 hours and 0 minutes **D=00 H=00 M=00** up to 6 days, 23 hours and 59 minutes **D=06 H=23 M=59**. The anti-passback period has resolution of one minute.

An anti-passback time of 0 days, 0 hours 0 minutes effectively disabled **Timed Anti-passback**. **Timed Anti-passback only functions on doors which are configured as timed anti-passback doors. See installer menu.**

System Log

The **System Log** menu allows the operator to view events in the historical event log, and to request a printout of the entire log.

Display Log

The **Display Log** function allows the operator to view events in the historical log directly on the LCD display. When this option is selected, the latest event in the log is displayed with the time and date on the top line of the display, and the event details being scrolled across the bottom line. Each log event will be displayed in turn (stepping backwards in time) until the end of the log is reached. Pressing the **0** key advances immediately to the previous event without waiting for it to be displayed. Pressing the **✓** key locks the current event on the display until **✓** is pressed again. Pressing the **X** key exits from the display log function.

Print Log

The **Print Log** function allows the user to request the immediate printing of the entire system log on an attached serial printer. If real-time log printing is enabled, new events will be buffered until the complete log print is completed. Note that selection of this function only starts the log printing, and this may take a few minutes to complete. The display will indicate that printing has commenced, and return to the previous menu. If this function is re-selected before the log has been completely printed, then the option to stop the printout is given.

ACT recommends the Epson LQ-300:

Wiring between Printer & Controller:	Controller	Printer
	0v TX RX	SERIAL (25 way connector)
	0V-----	PIN 7
	TX-----	PIN 3
	RX-----	PIN 20

Printer settings:

CHARACTER TABLE **PC850**

PAGE LENGTH OF TRACTOR **11 INCHES**

SKIP OVER PERFORATION **OFF**

AUTO TEAR OFF **OFF**

GRAPHIC PRINT DIRECTION **BI-D**

SOFTWARE **ESC/P2**

AGM **OFF**

AUTO LINE FEED **OFF**

INTERFACE **SERIAL**

DATA LENGTH **8 BITS**

BIT RATE **9600BPS**

EXT/ACK **OFF**

PARITY BIT **NONE**

STATE REPLY **OFF**

Filter Log

The **Filter Log** function allows the user to prevent certain events from being entered on the system log. Normally all events are logged, but to prevent ACTWin pro from having to store a lot of information on a large installation, some events may be filtered out.

The event types that can be filtered are access granted, access denied, alarms (mains fail, tamper etc.), door events (exit button pressed etc.) and others. The **0** key advances to each event type and the **✓** key enables or disables the displayed event type.

The events may also be filtered out on certain doors. Normally all doors are allowed, but the user may prevent certain doors from reporting events.

Control Door

The **Control Door** menu allows the operator to control the door or externally connected equipment such as lighting or heating. The door failsafe option may be considered to be disabled for the following control door examples.

Lock Door

The **Lock Door** function causes the door relay to be de-energized. The bottom line of the display will show "Door Locked" and the red LED on the reader will flash. All subsequent cards will be rejected until the door is unlocked or returned to its normal state.

Unlock Door

The **Unlock Door** function causes the door relay to be energized. The bottom line of the display will show "Door Unlocked" and the green LED on the reader will flash.

Normalise Door

The **Normalise Door** function causes the door relay to be de-energized and the door to return to its normal state. The LED on the reader stops flashing and all subsequent operation will be the normal response to card activity.

Pass Door

The **Pass Door** function causes the door relay to be energized for the programmed period of time. This may be used to grant access to a person waiting outside the door.

AUX output on

The **AUX output on** function causes the auxiliary output relay to be energized. It will remain energized until the output is explicitly switched off. The output may be used to control externally connected equipment such as lights or heating.

AUX output off

The **AUX output off** function causes the auxiliary output relay to be de-energized. The output may be used to control externally connected equipment such as lights or heating.

User Tracking

The user tracking option allows the controller to remember which users are in or out of the defined area. If anti-passback or timed anti-passback doors are assigned, then these define

the tracking area, however users will not be allowed to re-enter the area until they have been recorded as exiting, or they may re-enter through a timed anti-passback door after the timed anti-passback period has expired. If perimeter doors are assigned, then these define the tracking area, however users may re-enter without restriction. If both are assigned, then the anti-passback doors and the timed anti-passback doors define the tracking area. The **Users Present** output and **User Limit A & B** outputs operate on the tracking area.

Log in

This function manually enters a user into the area. An event is logged for tracking. This is typically used when a user has forgotten their card. Manual login is not available if anti-passback doors are defined – card access **MUST** be used.

Log out

This function manually removes a user from the area. An event is logged for tracking. This is typically used when a user has forgotten their card or when they have violated anti-passback procedures and require entry.

Clear All

This function manually removes all users from the area. An event is logged for tracking. This is typically used at the end of a day or week to remove any users from the system who have neglected to use their cards when exiting.

Date/Time

Set Date/Time

The **Set Date/Time** function allows the operator to adjust the date and time on the controller's real-time clock. The built-in clock is normally accurate to within 60 seconds per month and will occasionally need adjusting to maintain the accuracy of logged events.

The display will prompt the user to enter the correct year (1996-2030), month (1-12), date (1-31), hour (0-23) and minute (0-59). The seconds will be zeroed. The prompt "**Set?**" is displayed on the bottom line of the LCD. The clock will not actually be updated until the ✓ key is pressed, allowing the operator to wait until the time is exactly correct. Any other key will exit without altering the time.

The day of the week calculation and leap year adjustments are made automatically by the controller's internal clock, even if power is not present. ACTWin pro automatically changes the controller time to match that of the PC.

Time Zones

A time zone is a combination of times and days. Time zones are part of the group configuration, and provide the times and days when users assigned to a group may have

access. As an example: In a manufacturing environment, production workers are allowed access Monday to Thursday from 8.30 to 17.00, and on Friday from 8.30 to 15.00 only. To grant access to the workers at these times only, the times and days would be set up in a time zone, and then group would be configured with this time zone using the Access Rights menu. Users assigned to this group would only have access at the specified times and days.

Each time zone consists of up to eight periods of time and a corresponding combination of assigned weekdays or holidays. The time zone is in force during the hours specified in any of the eight time periods, but only on the days specified for that period.

The current time zone number will be displayed on the top line of the display. The desired time zone may be selected using the **0** key or directly by entering the time zone number. The lower line on the display will indicate if that time zone is active or inactive. Pressing the **✓** key allows the time zone to be edited. In edit mode, the top line of the display shows the available periods in the form **ABCDEFGH * -**. The **0** key allows one of the eight periods to be selected and pressing **✓** allows the period to be set.

Note: Time zones are also used by Timed Actions, which are part of Door Settings.

- 1) Select Time zone

Time zone 3
Not Programmed

 - 0** for next time zone
 - ✓** to edit time zone

- 2) Select period

A B C D E F G H + -
Week Days
08:30 -> 17:00


 - 0** for next period
 - ✓** to edit period

- 3) Changing days/holidays

Wednesday
← [TWTF—1—4] →

 - 0** for next day/holiday
 - ✓** to select/deselect
 - X** when done

- 4) Changing time period

Period
08:30 -> 17:00

 - 0-9** to set time
 - ✓** for next minute/hour
 - X** when done

In addition, the time zone may be assigned a name or all time periods cleared quickly by highlighting and selecting the ***** or **-** symbols respectively:

- 5) Assigning time zone name

A B C D E F G H * -
Assign Name ?

 - ✓** to assign name

6) Clearing a time zone

A B C D E F G H *	✓ to clear time zone
Clear ?	

The assigned name will be displayed in place of **Time zone N** whenever the time zone is displayed or being selected from a list. In addition, there is a built in time zone “**24 Hours**” which is always active. There are 256 time zones available on the ACTpro 4000.

Set Holidays

The controller has a built in holiday scheduler that is used in conjunction with the operation of the time zones. When the scheduler is entered, the top line of the display shows the twelve months in the form **JFMAMJJASOND -**. A particular month may be selected by using the **0** key, and the ✓ key allows that month to be edited.

1) Select month

JFMAMJJASOND -	0 for next month
March	✓ to edit month

2) Edit holiday

Wed 1 Mar 2000	0 for next day.
Holiday 1	✓ to change holiday type
	✗ when done

Any number of days within the next year may be tagged as being holidays. In effect, each holiday type is an extra day of the week, and will ensure that only time zones with the correct holiday types selected will be active.

Issue Number

This option allows the user to set the current system issue level to a number between zero (default) and 255. Only cards that have an issue number greater than or equal to the system issue level will be granted access. A card without an issue number encoded (Proximity, Wiegand, etc.) has an effective issue level of zero.

Issue numbering is intended for use in situations where all cards on the system are replaced on a regular basis. As an example, a health club might use its membership cards to allow the members access to different facilities. Towards the end of the year when members renew their subscription, they are given a new membership card with a higher issue number encoded on it. For a period of time, the old and new cards will both be granted access. At some point in the New Year, the system issue level is increased to the new level, leaving only paid up members with access. Life members could be given cards with an issue level of 255, which will always work.

Note: Issue numbering is usually only possible with standard ACT site-coded cards.

Change PIN

The Change PIN function allows a different PIN to be configured for the operator. The user will be prompted to enter a new six-digit code (it will not be displayed). The PIN must then be re-entered for verification. The PIN will be accepted as long as it does not conflict with any existing code (or duress code).

Installer Menu

System Settings	Operation	PIN Only	PINs alone are used to gain access.
		Learn	All 60,000 may use random coded cards.
		Exit PINs	Exit PINs may be used in PIN only mode.
		User Limiting	Prevent access if the user limit is reached.
		One-To-One	Card numbers may be assigned to all users.
	Display	Multiple	Users may have multiple cards.
		T & A	Keypad may be used for Time and Attendance.
		Terminal	
		Backlight	Keypad backlight enabled.
	Language	Keypad Beep	Keypad beep enabled.
		Show Status	Display current status of doors on LCD.
		Show Events	Display events on LCD as they occur.
		Tech Bleep	Controller bleeps for technical fault.
	Language		Set the controllers operational Language.
	PIN Length		Sets the length of user/group PIN codes.
Fire Doors		Allows the definition of doors with fire override.	
User Tracking	Perimeter	Define Perimeter doors.	
	Anti-passback	Define Anti-passback doors.	
	Timed anti-passback	Define Timed Anti-passback doors.	
	Internal Doors	Define Internal doors.	
	Tracking Reset	Set time for auto-reset (auto-logout).	
Outputs	User Limits	Set user limits A & B.	
	Door 1	Define door 1 output special functions.	
	Door 2	Define door 2 output special functions.	
Door Settings*	Operation	Push Button	Door release button enabled.
		Lock Saver	Relay de-energized as door opens.
		Chime	Buzzer sounds as door opens.
		Guest Button	On external keypad fires AUX/buzzer.

		Exit Always	Time zones don't apply to exit readers.
		Interlock	Only one door may be open at any time.
		Silent	Confirmation tones disabled.
		Exit PIR	Door stays open while Push Button closed.
		Failsafe	Door relay is normally energised.
		Toggle Relay	Door has toggle operation.
		Exit PINs	PIN required to exit.
		Monitor Arm.	AUX input monitors Intruder panel status.
		Breakglass	AUX input monitors breakglass.
		Access Only	Door Relay activates on access only.
	Alarms	Door Forced	Aux relay activated if door forced.
		Door Ajar	Aux relay activated if door left ajar.
		Duress Alarm	Aux relay activated by duress code.
		Door Open	Aux relay active while door open.
		Acc. Granted	Aux relay fires access granted.
		Exit Granted	Aux relay fires Exit granted.
		Acc. Denied	Aux relay fires when access denied.
		Exit Denied	Aux relay fires when Exit denied.
		Relay Follow	Aux relay active if main Relay is active.
Arm Intruder	Aux relay activates to arm Intruder panel		
Breakglass	Aux relay activates on Break glass detected.		

* *Installer will first be required to select a door.*

Door Settings* (contd.)	Timers	Relay Time	Time for which relay is active.
		Extended Relay Time	Time period when relay is active for an extended time.
		OP2 Time	Time for which OP2 is active.
		OP3 Time	Time for which OP3 is active.
		Ajar Time	Max time which door can be open.
		AUX Time	Time for which AUX output is active.
		Reporting	Door Ajar
	Door Forced		Door Forced events report in log.
	Door Open		Door Open events report in log.
	Door Closed		Door Closed events report in log.

		Push Button	Push Button events report in log.
		Read Error	Log and report reader errors.
		Mains Fault	Log and Report an electric Mains Fault.
		Dis. Tamper	Disable door Tamper reports.
	Timed Actions	Dis. Contact	Disable door Contact reports.
		Unlock Door	Specify times when door is unlocked.
		Lock Door	Specify times when door is locked.
		PIN Required	Specify times when PIN is required.
		Any Card	Specify times when any card gains access.
		Activate OP2	Specify times when OP2 is active.
		Activate OP3	Specify times when OP3 is active.
		Activate AUX	Specify times when AUX is active.
		PIN Only	Specify times for PIN Only operation.
		PIN or Card	Specify times for PIN or Card operation.
Twin Users		Two different cards required for access.	
Normalise		Specify times when door is normalized.	
Communications	Assign Name	Assign a name to a door.	
	Set Address	Set the network address of this door.	
	Comms Speed	Select communications speed.	
	No Hist. Log	Disables the reporting of offline log events in slave mode.	
	Print All	Enables real-time logging on attached serial printer.	
	Remote Doors	Enable/Disable remote doors connected via DS100 modules.	
	IO Modules	Enable/Disable Input/Output modules.	
	Set Password	Set a password for remote communications.	
	TCP/IP Settings	IP Address	Sets the IP address of the Controller.
		TCP Port Num	Sets the TCP port number for comms. with ACTWin pro.
TCP Port Num2		Sets a second TCP port number for communications	

	Network Mask	Sets the Network Mask.
	Default Gateway	Set the default gateway (also known as default route).
	MAC Address	Displays the MAC address.
	NetBIOS Name	Displays the NetBIOS name.
	Network Speed	Set the ACTpro 4000 IP network speed.
	Enable DHCP	Enable DHCP operation.
Central/Sat	Central Server	Enable/Disable ACTpro 4000 as Central Server.
	Central IP Addr	Set the IP address of the Central Server.
Card Setup	Site Code 1	Enter the primary site code for the system.
	Site Code2	Enter a secondary site code for the system.
	Card Format	Enter a custom card format for the system.
Diagnostics	Version	Displays the current software version.
	Reader test	Reads a card and displays the received information.
	Voltage Check	Display voltage supplied to ACTpro 4000.
	Factory Diag	For Factory Use only. – Do not use.
	Last Reset	Displays a code indicating the reason for the last reset.
Change PIN	Change the PIN used to access the Installer menu.	
Factory Defaults	Restore the system to its factory default settings.	

** First it is required to select a door.*

Exit from menu is automatic if no keys are pressed for a period of time.

System Settings

The **System Settings** menu allows the installer to access a number of different configuration menus controlling different aspects of the setup of the controller. Pressing the ✓ key toggles the setting of a displayed option.

Operation

This menu allows the installer to select or de-select a number of options relating to the default operation of the controller.

- The **PIN Only** option allows reader-less operation using PIN codes that are directly entered on the keyboard (or on an external keypad). 60,000 PIN codes supported.
- The **Learn** option allows users to use randomly coded cards. Almost any card with valid ISO track 2 data may be used (for example bankcards) as well as some types of wiegand card.
- The **Exit PINs** option is requires PIN codes to be entered before the user is allowed to exit.
- The **User Limiting** option will prevent access to tracked users when the user limit is reached.
- The **One-To-One** option allows any card number to be captured and assigned to any of the 60,000 users.
- The **Multiple** option allows users to have more than one card on the system.
- The **TnA Terminal** option allows the keypad to be used as a Time and Attendance terminal. When a card is read from door 1 or door 2, the users name is displayed and they can choose to clock-in or clock-out.

Display

- The **Backlight** option forces the keypad to be permanently illuminated, overriding the default automatic operation, which is to operate only when a user menu has been entered.
- The **Keypad Beep** option forces the keypad to make a short beep in response to any key being pressed. This option is selected by default.
- The **Show Status** option enables the displaying of continuous door status on the display. This option is enabled by default.
- The **Show Events** option enables the displaying of events on the display as they occur. This option is enabled by default.
- The **Tech Bleep** option specifies that the ACTpro 4000's onboard buzzer will sound intermittently if a technical fault (mains, tamper or door offline) condition exists.

Language

The ACTpro 4000 display supports the following languages English, Polish, French, Spanish, Dutch and Italian. The language is selected from this menu.

PIN Length

The length of PIN codes used in PIN Only and PIN & Card modes may be set between 4 and 9 digits. If a PIN length greater than six is set, then the length of the operator and installer codes will increase to this length. (Leading zeros added to PIN).

Fire Doors

This function allows a group of doors (or all doors) to be configured for fire override. A 0Volt signal from a fire alarm (or other) system is applied to the **AUX input on door 1**. This maintains normal operation. When the 0Volt signal is removed, the selected doors are held open until the 0 Volt signal is re-applied. Typically, a normally-closed relay on the fire panel, with the common connected to 0 Volts, is used for this purpose. Please note that this facility is present for convenience only, it does not remove the need to have an alternate mechanical means of escape.

User Tracking

- Doors may be defined as **Perimeter** doors by pressing the ✓ key so that the door number is displayed. Those not defined as a **Perimeter** door are displayed as -. Users that enter through a perimeter door are tracked but not restricted. Tracking of a user means it is logged if the user is in the tracking area or not. Entering through any perimeter doors logs the user into the area. Exiting any perimeter door logs the user out of the area. **Note: If either Anti-passback or Timed Anti-passback doors are defined then perimeter doors are ignored.**
- Doors may be defined as **Anti-passback** doors by pressing the ✓ key so that the door number is displayed. Those not defined as **Anti-passback** doors are displayed as -. The **Anti-passback** doors define the tracking area. Users are allowed entry to the area only if they have previously exited.
- Doors may be defined as **Timed Anti-passback** doors by pressing the ✓ key so that the door number is displayed. Those not defined as **Timed Anti-passback** doors are displayed as -. **Timed Anti-passback** doors define the tracking area. Users are allowed entry to the area only if they have previously exited or after the Timed Anti-passback period has expired. The **Timed Anti-passback** period is defined on a user group basis. **Note: If a door is specified as an Anti-passback door and as a Timed Anti-passback door, then the door will operate as a Timed Anti-passback door.**
- **Internal Doors** are doors that are inside the perimeter of the installation. Access is denied on these doors if the cardholder has not already entered through the perimeter or Anti-passback doors.

- **Tracking Reset** is used to auto-reset (log all users out) at a specific time each day, or may be reset manually. In addition users may be individually logged in or out. This is recorded in the system log.
- Two **User Limits A & B** may be configured. These can be used to generate outputs when the number of users in the area reaches a certain level. This may be used for certain security critical areas. In addition an output may be configured to operate when any users are present within the area. This could be used to switch on or off certain equipment when the area is empty. The larger of the two limits is also used to determine how many tracked users to admit into the anti-passback area. Once this limit is reached, access is denied to other tracked users. This could be used in a car-park application. User Limiting must be enabled for this to operate (see System Settings > Operation).

Outputs

The ACTpro 4000 has 6 onboard outputs that can operate in addition to the local relay. These are the open collector outputs OP2 and OP3 (for doors 1 and 2) as well as the two auxiliary 1A relays. Normally these outputs perform the same functions as other doors, according to the programmed user and/or door settings. However the onboard outputs on the ACTpro 4000 may be given alternate functions as outlined below.

Door 1	AUX AUX Any Door	Auxiliary relay activates when any auxiliary relay is activated for any door on the controller.
	OP2 Tech Fault	Open collector output OP2 activates when a technical fault condition exists (tamper/mains fail/door offline).
	OP3 Any Door Open	Open collector output OP3 activates when any door on the controller is open.

Door 2	AUX Users Present	Auxiliary relay activates when one or more users are logged in to the tracking area.
	OP2 User Limit A	Open collector output OP2 deactivates when the number of users in a tracking area is at or above User Limit A.
	OP3 User Limit B	Open collector output OP3 deactivates when the number of users in a tracking area is at or above User Limit B.

Door Settings

The **Door Settings** menu allows the installer to access a number of different configuration menus controlling different aspects of the selected door. The door for which the settings are to be changed is first selected using the **0** key and then the **✓** key is pressed to enter the menu.

The **0** key is used to select the required option or setting which is changed using the **✓** key.

Operation

This menu allows the installer to select or de-select a number of options relating to the default operation of the door.

- The **Push Button** option allows the relay to be activated when the external push-button contact is closed. This option is selected by default.
- The **Locksaver** (anti-tailgate) option truncates the relay timer when the door opens. This ensures that the door will be locked as soon as it closes even if a very long relay time is programmed. This also prevents overheating of the lock solenoid.
- The **Chime** option momentarily energizes the buzzer output whenever the door contact is seen to open. The onboard buzzer also makes a chime sound.
- The **Guest Button** option activates the AUX relay for the programmed duration when the key or ✓ key an externally connected keypad is pressed.
- The **Exit Always** option allows the holder of a valid enabled card to exit at all times irrespective of the configured time zones.
- The **Interlock** option prevents the door being opened when the AUX input is active. OP3 activates when the door is open or the door relay is active.
- The **Silent** option prevents the door buzzer from sounding when access is granted or denied.
- The **Exit PIR** option will keep the door open while the external push-button contact is closed. This allows a PIR to be used as the exit switch.
- The **Failsafe** option sets the door relay to be normally energised. This means that the door will open if the power supply to the controller fails.
- The **Toggle Relay** option allows the door to be toggled open or closed by users with the Toggle Relay option enabled.
- The **Exit PINs** option configures the door to always require a valid PIN code before exiting the door.
- Setting the **Monitor Arming** option indicates that the AUX input is connected to an external alarm panel and is monitoring the alarm state. When the AUX input is low, the panel is armed and access is denied to users. This option is only valid if the Arm Intruder Alarm Option is also set.
- The **Breakglass** option indicates that the AUX input is connected to a breakglass unit.
- The **Access Only** option only activates the door relay on an access granted. Exit granted will not activate the relay.

Alarms

This menu allows the installer to enable or disable a number of alarm events that can be generated by the controller:

- The **Door Forced** alarm occurs when the door contact opens without the relay having been energized. The AUX relay is activated until a valid card is presented.
- The **Door Ajar** alarm occurs when the door has remained open for longer than the duration programmed into the door ajar timer. The AUX relay is activated while the door remains open.
- The **Duress** alarm occurs whenever a duress code is entered during Pin & Card operation. The duress code is the PIN code for that user with the last digit advanced by one.
- The **Door Open** alarm activates the AUX relay whenever the door is open.
- The **Access Granted** alarm activates the AUX relay for the programmed duration whenever a valid card is presented at an entry reader.
- The **Exit Granted** alarm activates the AUX relay for the programmed duration whenever a valid card is presented at an exit reader
- The **Access Denied** alarm activates the AUX relay for the programmed duration whenever an invalid card is presented to an entry reader.
- The **Exit Denied** alarm activates the AUX relay for the programmed duration whenever an invalid card is presented to an exit reader.
- The **Relay Follow** alarm activates the AUX relay whenever the Main relay is active.
- The **Arm Intruder** option allows the AUX relay to be used to ARM/DISARM external alarm panels. See end of manual for more information.
- The **Break Glass** option activates the AUX relay when a break glass event is detected on the door.

Timers

The door timers menu allows the installer to program the time delays for the relay, AUX output, open collector outputs OP2 and OP3 and the door ajar alarm time. Each timer may be programmed with duration from 1 to 999 seconds. The relay time may be programmed to 0 seconds, which will operate the relay for a quarter of a second approximately. This can be used for turnstile applications. Door Stations will support a maximum duration of 127 seconds.

Timed Actions

This Menu allows the user to set up a number actions that will occur at requested times. The time that a particular action should occur is set up in a time zone and then assigned to that action. When the time time zone is in force, then the assigned action occurs for that duration.

Action	What Happens.
Unlock Door	For the duration of the assigned time zone, the door remains

	unlocked. The Green LED on the Reader will Flash.
Lock Door	For the duration of the assigned time zone, the door remains locked . The Red LED on the Reader will Flash.
PIN Required	For the duration of the assigned time zone, a valid PIN code must be entered after any card is presented. This overrides any PIN required option that may be set for any group or user.
Any Card	For the duration of the assigned time zone, any card presented will be granted access as long as it contains Track 2 data, even if it would not normally be granted access.
Activate OP2	For the duration of the programmed time zone, the user programmable output OP2 is active.
Activate OP3	For the duration of the programmed time zone, the user programmable output OP3 is active.
Activate AUX	For the duration of the programmed time zone, the 1A auxiliary relay output AUX is active.
PIN Only	For the duration of the programmed time zone, the reader is disabled, and access is granted only by entering a valid PIN.
PIN or Card	For the duration of the programmed time zone, either a valid PIN or a valid Card will allow access.
Twin Users	While this time zone is active, two valid cards must be presented to gain access. Used in high security applications where two people must be in the room at the same time.
Normalise Doors	During this time zone a door will revert to normal state, i.e. requires valid card to gain access. Use this to ensure door is closed at certain times in case it is left toggled open.

Communications

This menu allows the installer to configure how the controller communicates with externally connected devices or over a network. It is used primarily to configure the address of the ACTpro 4000. It is also used to enable remote doors.

Set Address

This option allows the address of the controller to be set when it is operating in a networked system or when directly connected to a PC. The valid address may be from 1 to 255 and corresponds to the number of the controller as configured in ACTWin pro.

Comms Speed

Communications on the controller defaults to 9600 baud. However speeds of 19200 and 57600 baud can be selected from this menu. All speeds are permitted for direct connect to a PC. 9600 and 19200 baud are permitted on the single-line RS485 networked interface. 9600 baud only is permitted on the ACT 4-Line RS485 interface.

No Hist. Log

This option suppresses the reporting of events occurring while offline *in slave mode only*. Normally when the controller is operating in slave mode, events are logged locally if the controller is offline, and are transmitted to the PC when communications are restored.

Print All

This option selects real-time printing to an attached serial printer. Each event is time stamped and printed immediately on the printer. Real-time printing will be temporarily suspended while a full log printout requested from the operator menu is in progress.

Remote Doors

This menu is where additional door stations are configured as extra doors on the ACTpro 4000 controller. The new door (Door 3 to 16) is selected using the **0** key and the current status of the door is displayed on the bottom line of the LCD. The **✓** key may then be used to enable or disable the door:

- | | | |
|---------------------------------------|---|--|
| 1) To enable, select a Disabled door | Door 3
<hr/> Disabled | 0 for next door
✓ to enable door |
| 2) To disable, select an Enabled door | Door 3
<hr/> Door Normal | 0 for next door
✓ to disable door |

If a non-existent or incorrectly addressed door is enabled, the door will be polled for a short while, then the status will be displayed as **Door Offline**.

IO Modules

The IOM (Input/Output Module) is wired to the controller on the same RS-485 network as the DS100 Door stations. The IOM are addressed using the DIP switches on the PCB. The IOMs may be given any address in the range 1 to 4. No configuration of the IOM is possible from the ACTpro 4000. All configuration can only be performed from ACTWin pro. However the IOM may be enabled from this menu which allows the communications between the ACTpro 4000 and the IOM to be tested without the need for ACTWin pro.

Set Password

A password consisting of a 10 digit number may be programmed into the controller to prevent unauthorized access from remote ACTWin pro users. Ensure this password matches the encryption key used by ACTWin pro.

TCP/IP Settings

ACTpro 4000 supports connection to a Local Area Network (LAN) using Twisted-pair Ethernet (100BASE-T or 10BASE-T) via a standard RJ-45 connector. The ACTpro 4000 supports the TCP/IP networking protocol for communications with ACTWin pro / Lite.

Configuration of TCP/IP Networking requires a **DHCP or Static IP address**.

IP Address

The **IP Address** is an identifier for the ACTpro 4000 on the TCP/IP network. For a static IP address, the address should be entered in dot decimal notation with leading zeros e.g. IP address 192.168.1.25 should be entered as address 192.168.001.025. The network administrator must provide this information. If DHCP is enabled on the ACTpro 4000, this menu displays the IP address assigned by the DHCP server. It cannot be edited.

TCP Port Number

The same **TCP Port Number** must be configured on the ACTpro4000 and ACTWin pro/Lite for the establishment communications. The default port number of 10001 will be acceptable in all cases where the ACTpro4000 and the PC running ACTWin pro/Lite are on the same subnetwork. If they are not on the same subnetwork or you are unsure, then the network administrator should be asked for a suitable **TCP Port Number**.

A second Port Number is also available for communicating with the ACTpro4000. Any port number is suitable **except** the port number immediately above the main TCP port number (i.e. if the main TCP port number is 10001, do not use 10002).

Network Mask

The **Network Mask** is used by the ACTpro 4000 firmware to separate the local subnetwork address from the rest of a given **IP address**. The network administrator can provide this information.

Default Gateway

The **Default Gateway** (Default Route) is the IP address of the router that connects the network to other networks or the Internet. The network Administrator can provide this address.

MAC Address

The **MAC Address** is a unique 48 bit number that identifies the ACTpro 4000 hardware on the LAN. This Address is fixed at the Factory.

NetBIOS Name

The **NetBIOS name** is a unique name that identifies the ACTpro 4000 hardware on the LAN. This name is fixed at the Factory and should be used to identify the controller in ACTWin when in DHCP mode.

Network Speed

The ACTpro 4000 supports 100MBits, 10MBits or Auto detection. Speed is set to 100MBits by default. Setting the speed to Auto detection allows the ACTpro 4000 to negotiate the network speed on power up.

DHCP

DHCP is enabled by default. If a DHCP server is not present or fixed (static) IP address must be used, then disable this option.

Central/Sat

The Central/Sat menu option allows the ACTpro4000 to be configured as a Central Server for other ACTpro4000 or ACTpro3000 units (called Satellites) on a TCP/IP network, or as a Satellite. Changes which occur on a Satellite are reported to the Central Server and are then sent on to the other Satellites on the network. This allows antipassback to operate over multiple controllers.

Central Server

Enable or disable the ACTpro4000 as the Central Server. Only ONE Central Server may exist on a site. In ACTWin pro, the Central Server is called the Cluster Master Controller.

Central IP Addr

If the ACTpro 4000 is a Satellite, enter the IP address of the Central Server here. The Central Server and Satellites **must** all use fixed IP addresses.

Card Setup

The card setup menu is used to inform the controller which cards should be recognized by the system. Usually all that is required is to set the primary site code for the system. The site code is supplied along with any cards ordered, or can be obtained directly from ACT. In addition, a site code from another installation may be entered allowing shared access to the building. Where non-standard cards are being used, possibly from a previous access control or time & attendance system, the card format may be altered to accept these.

Site Code 1

This function allows the 8-digit site primary code for the system to be entered. The controller will recognize only cards with a matching site code. This code should also be quoted

whenever additional cards or tags are being ordered for this installation. The factory default site-code is **10-2770-09**, which allows the use of the test card supplied with the controller.

Site Code 2

This function allows an 8-digit site secondary code for the system to be entered. In addition to the cards containing the primary site code, the controller will also recognize cards with this site code. In this case, an offset may also be specified – this is a value that is added to the card number of cards bearing the secondary site code, to prevent conflicts. If the secondary site code is not being used, it should be set to **00-0000-00**.

Card Format

- When “**Active**” is set to **YES**, the controller will recognize cards with a non-standard (custom) format. The card information must be encoded using ISO/ABA Track 2 format and may contain from 2 to 37 digits.
- When “**Check All**” is set to **YES**, the controller will *also* allow cards encoded with one of its standard built-in formats. This could be used (for example) in a transitional period while older legacy cards are being phased out.
- The **Length** field contains the total number of digits on the custom card. If this value is non-zero, then any card with a different number of digits will be rejected.
- The **Site** field allows the entry of the location of the starting digit of the site code field on the card. The length specifies how many digits are in the site code (1-5).
- The **Card** field allows the entry of the location of the starting digit of the card number field on the card. The length specifies how many digits are in the card number (1-5).
- The **Issue** field allows the entry of the location of the starting digit of the issue number field on the card. The length specifies how many digits are in the issue number (1-3). If issue numbering is not being used, then the start digit and length should be set to zero.

Diagnostics

The Diagnostic menu provides some features that are of use when fault finding.

Version

The version of Firmware plus the date of firmware release running on the ACTpro 4000 is displayed in this menu.

Reader Test

The Reader Test Menu allows a diagnostic of the card data to be displayed.

After entering this Menu a door must be selected where the test is performed and then the "Swipe Card" is displayed on the second line. The card should then be presented to the reader attached to the selected door.

Once the card has been presented, the display will update. The top line shows the number of bits of data followed by the type of data (C for "Clock and Data" or W for "Wiegand"), followed by the number of digits on the card, followed by a slash "/", followed by the last 10 digits read from the card.

If the data on the card matches the ACT site code format then second line will display the Card data in the ACT Site, otherwise it will display data as read from the card.

Example: 32-bit Wiegand Card Data:

32W10/0915265139
0915265139

Voltage Check

This menu displays the voltage supplied to the ACTpro 4000 +12V terminals.

Last Reset

This menu may be used by ACT technical support.

Change PIN

The **Change PIN** function allows a different PIN to be configured for the installer. The user will be prompted to enter a new six-digit code (it will not be displayed). The PIN must then be re-entered for verification. The PIN will be accepted as long as it does not conflict with any existing code (or duress code).

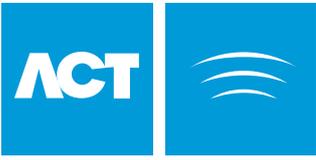
Factory Default

This function returns all settings to the factory default. All user names, time zones, card enables, log information and Operator and Installer Code and all other settings are defaulted.

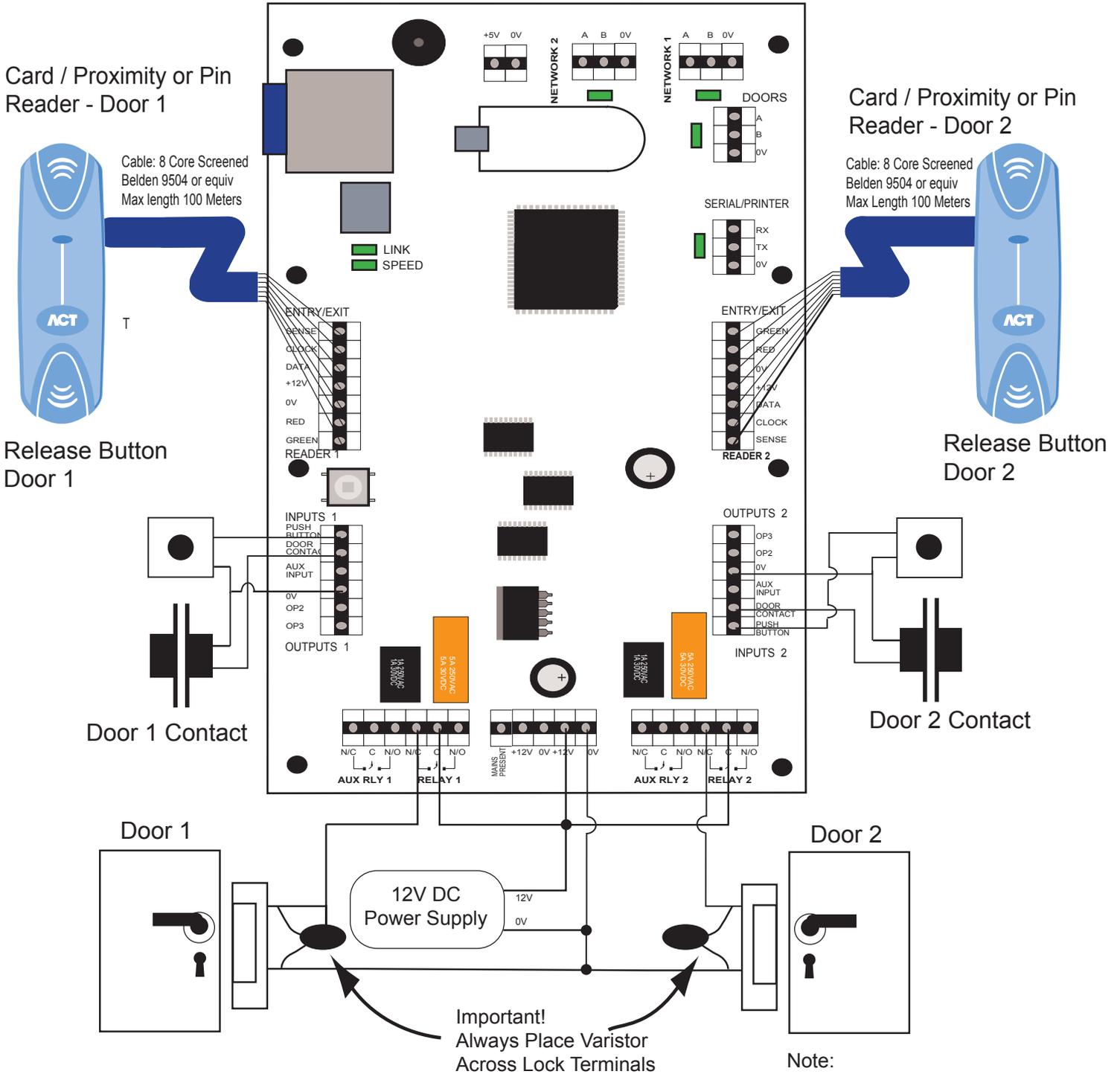
All information previously programmed will be lost, so use this function with care.

In situations where the Installer Code is unknown the Controller may be defaulted as follows: Hold down the **X** key while powering up the Controller, when requested for a Site Code enter the ACT default Site Code 10-2770-09, finally when asked to default controller hit the **✓** key to default.

It is always a good idea to factory default a new controller prior to initial configuration, or if the controller software has been changed or upgraded.



Typical ACTpro 4000 Configuration (Standalone)



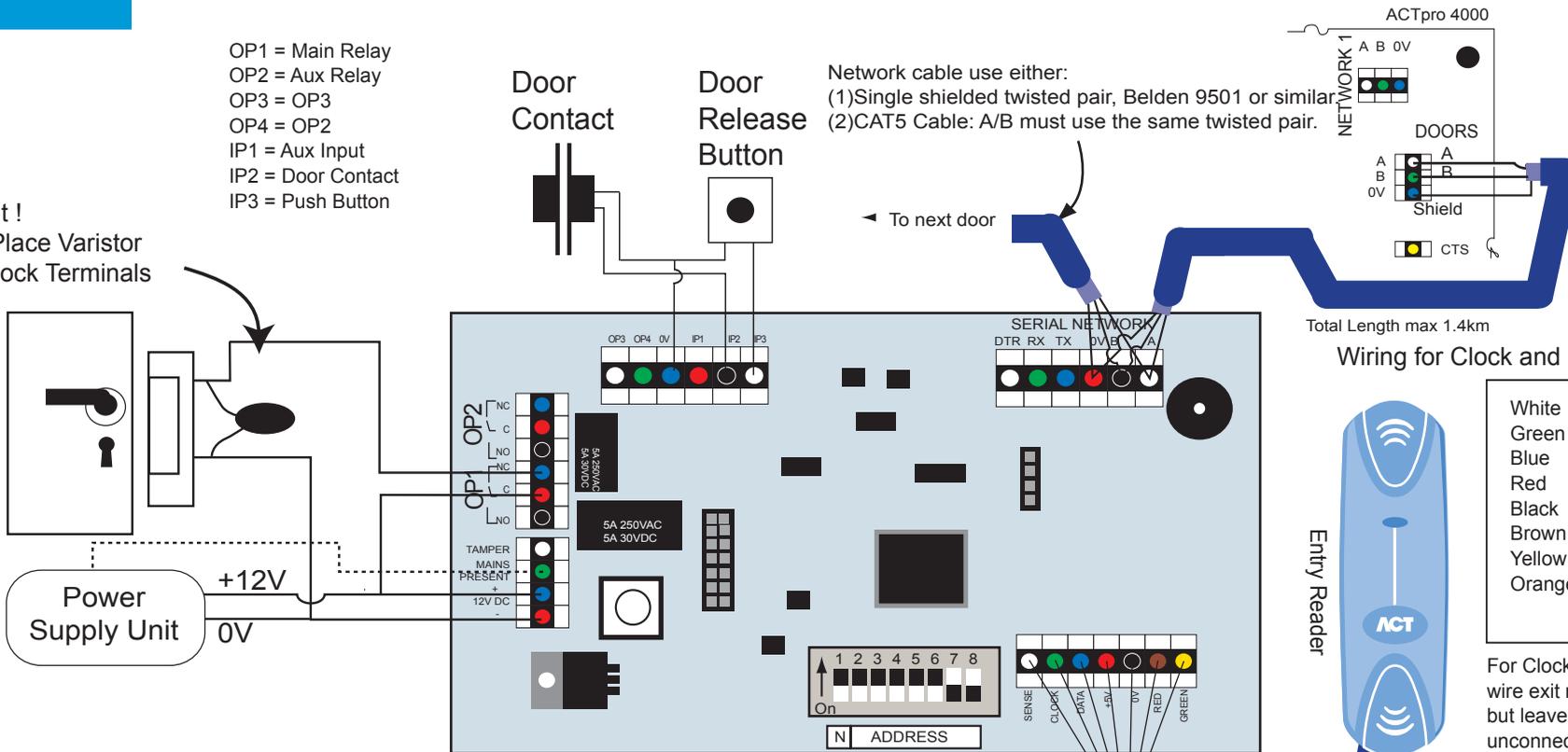
This illustration shows wiring for normally energised locks.
If normally de-energised locks are required, use the N/O relay contacts.



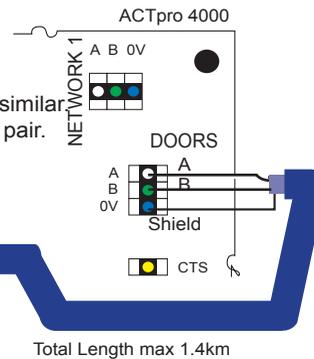
ACTpro 100 Door Station Installation

- OP1 = Main Relay
- OP2 = Aux Relay
- OP3 = OP3
- OP4 = OP2
- IP1 = Aux Input
- IP2 = Door Contact
- IP3 = Push Button

Important!
Always Place Varistor
Across Lock Terminals



Network cable use either:
(1) Single shielded twisted pair, Belden 9501 or similar
(2) CAT5 Cable: A/B must use the same twisted pair.



Wiring for Clock and Data / Wiegand Reader

White	SENSE
Green	CLOCK / DATA 1
Blue	DATA / DATA 0
Red	+5v
Black	0v
Brown	RED
Yellow	GREEN
Orange	(Buzzer Ctrl)

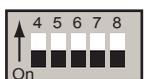


For Clock & Data Readers, wire exit reader in parallel but leave it's sense line unconnected.
For Wiegand Readers, wire the DATA 0 of the exit reader to SENSE on the ACTpro 100

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Note:
If the Mains Present or Door Contact inputs are not used, they should be linked to 0V

This illustration shows wiring for a normally energised lock. If a normally de-energised lock is required, use the N/O relay contacts.



To set the door number, set address switches 4-8 as shown

Required Address	4	5	6	7	8
03	OFF	OFF	OFF	ON	ON
04	OFF	OFF	ON	OFF	OFF
05	OFF	OFF	ON	OFF	ON
06	OFF	OFF	ON	ON	OFF
07	OFF	OFF	ON	ON	ON
08	OFF	ON	OFF	OFF	OFF
09	OFF	ON	OFF	OFF	ON

Required Address	4	5	6	7	8
10	OFF	ON	OFF	ON	OFF
11	OFF	ON	OFF	ON	ON
12	OFF	ON	ON	OFF	OFF
13	OFF	ON	ON	OFF	ON
14	OFF	ON	ON	ON	OFF
15	OFF	ON	ON	ON	ON
16	ON	OFF	OFF	OFF	OFF

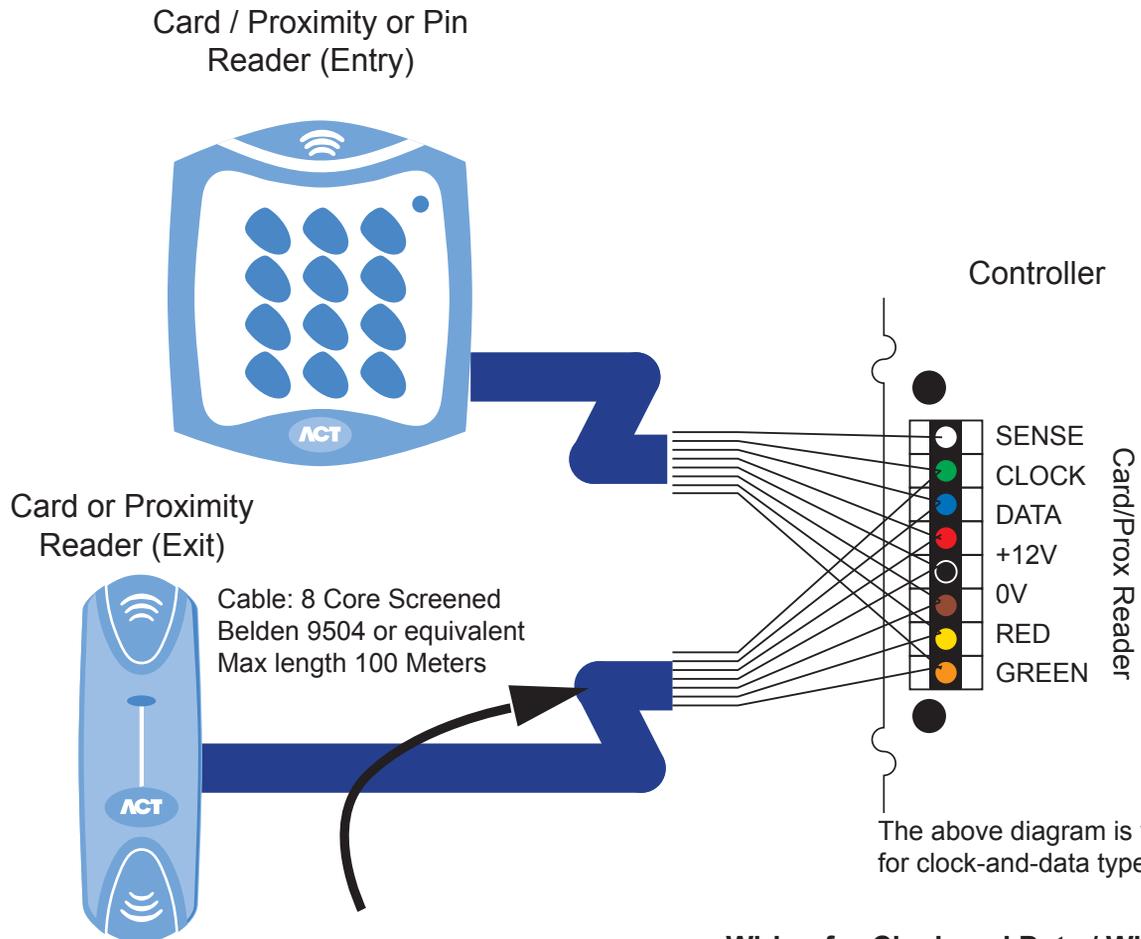
Entry/Exit Reader Max 30M

Cable: 8 Core Screened Belden 9504 or equiv

FACTORY DEFAULT
This unit should be reset to its factory default condition before installation. To do this, power the unit up with ALL switches in the OFF position. The two LED's will illuminate for about 2 sec. The correct switch settings may then be set.

LED Functionality:
Red LED indicates the status of communications with the Controller. While online to the controller the Red LED will flash rapidly. If there is a problem it will flash slowly (about once a second). Green LED will flash if an event occurs on the ACTpro 100

Wiring for Entry/Exit Readers



Wire both readers in parallel but leave the SENSE line on the Exit reader unconnected.

For Wiegand Exit readers

Connect DATA 0 of the exit reader to SENSE on the controller. Leave SENSE on the readers unconnected.

Wiring for Clock and Data / Wiegand Reader

White	SENSE
Green	CLOCK (DATA 1)
Blue	DATA (DATA 0)
Red	+12V
Black	0V
Brown	RED
Yellow	GREEN
Orange	(Buzzer Control)

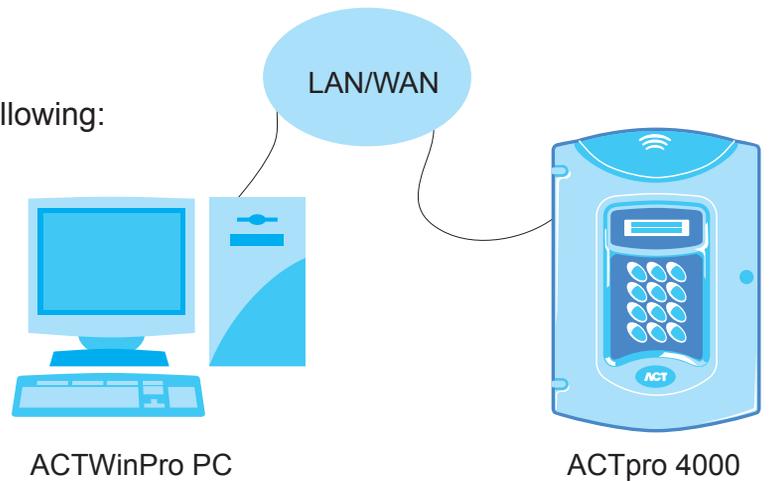
The standard wiring colours for ACTpro Proximity and Pin readers is shown above. Readers may be a maximum of 100m from the controller when powered from +12V.



ACTpro 4000 TCP/IP Features

ACTpro 4000 Ethernet TCP/IP supports the following:

1. Ethernet 100Base-T communications (Default).
2. Ethernet 10Base-T communications.
3. DHCP IP address configuration (Default).
4. Static IP address configuration.
5. NetBIOS Name.



Ethernet 100Base-T/10Base-T networking

The ACTpro 4000 can be connected to 100BT or 10BT ethernet network. By the default the ACT4000 expects to be connected to 100BT network. If the ACTpro 4000 is installed on a 10BT network, change the Network Speed setting from the Installer Menu->TCP/IP Settings->Network Speed.

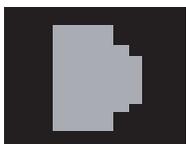
DHCP or Static configuration of the IP address

The default operation of the ACTpro 4000 is to use the DHCP server to obtain its IP address. When the controller is connected to the network, it will obtain its IP address automatically from the DHCP server. The IP address obtained may be viewed from the Installer Menu->TCP/IP Settings->IP Address.

If it is required to use a static or fixed IP address, then DHCP should be disabled. Set Enable DHCP to N from the Installer Menu->TCP/IP Settings->Enable DHCP.

NetBIOS Name

The NetBIOS name of the ACTpro 4000 can be used instead of the IP Address for communication with ACTWinPro. The NetBIOS name is printed on a label on the ACTpro 4000 PCB. It can also be viewed from the Installer Menu->TCP/IP Settings->NetBIOS Name.



RJ45



LINK



SPEED

LEDS:

LINK illuminates to indicate good Ethernet connection. It will also flicker when data is recieved from the network.

SPEED flickers red to indicate packet transmission and reception. It also flickers to indicate network collisions.



ACTpro 4000 TCP/IP Settings

Before installing ACTpro 4000, confirm with the Network Administrator that a DHCP server is available.

DHCP IP Settings

1. Ask the Network Administrator to confirm that a DHCP server is available. If there is no DHCP server then a static IP address must be used.
2. Insert Ethernet cable and power on the ACTpro 4000.
3. The ACTpro 4000 IP address will be automatically assigned by the DHCP server. The IP address assigned can be viewed from the Installer Menu->TCP/IP Settings-> IP Address.
4. From ACTWin, enter the IP address or the NetBIOS name of the ACTpro 4000 into the IP Address box.
5. Connect to the ACTpro 4000.

The screenshot shows the 'TCP/IP Settings' dialog box. On the left side, there are four input fields: 'Location Number' with the value '1', 'Location Name' with 'ACT4000', 'Type of Connection' set to 'TCP/IP network', and 'IP Address' with '172.27.72.10'. On the right side, under 'Comms Details', 'RS232 Direct Connection' is selected. Below that, 'Port' is set to 'COM1' and 'Speed' is 'Normal - 9600bps'. At the bottom right, 'IP Port' is set to '10001'.

When using static IP address, ask the Network Administrator for the following:

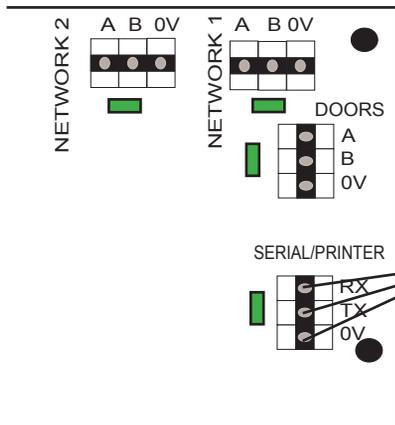
- Static IP Address
- Network Mask
- Default Gateway
- TCP Port Number

Static IP Address

1. Enter the IP address, Network Mask, Default Gateway and Port Number from Installer Menu->TCP/IP Settings.
2. Connect the ACTpro 4000 to the Local Area Network and power on the ACTpro 4000. The green LINK LED should illuminate.
3. From ACTWin, enter the IP address of the ACTpro 4000 or the NetBIOS name.
4. Connect to the ACTpro 4000.



ACTWin pro Serial Configuration



ACTpro 4000

For cable information please see page 44

Direct Connect Cable

ACTWin pro

From the Installer Menu on the keypad, do the following:

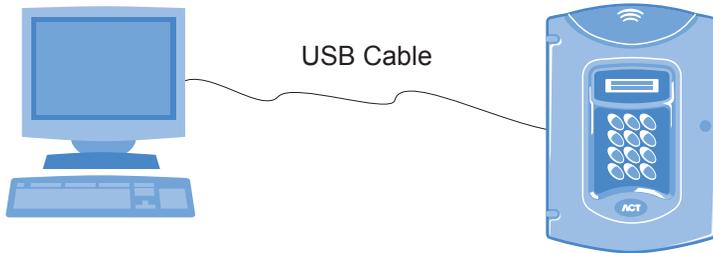
1. Factory Default the controller.
2. For more than one controller an RS-485 network interface is required. Each controller must be set to a unique address, starting at 1.
3. Connect the controller(s) to the PC.
4. From ACTWin pro, configure a new database.
5. Follow the database creation wizard.
6. Ensure that Comms is set up correctly.
7. Connect to the controllers.

Click here to Connect



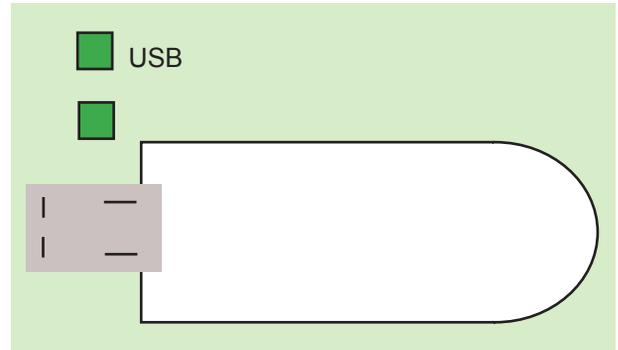
ACTpro 4000 USB Settings

ACTpro 4000 supports USB connection from a PC. Connect the PC to the Micro USB connector at the top of the pcb. Both LEDs above the connector should be on.



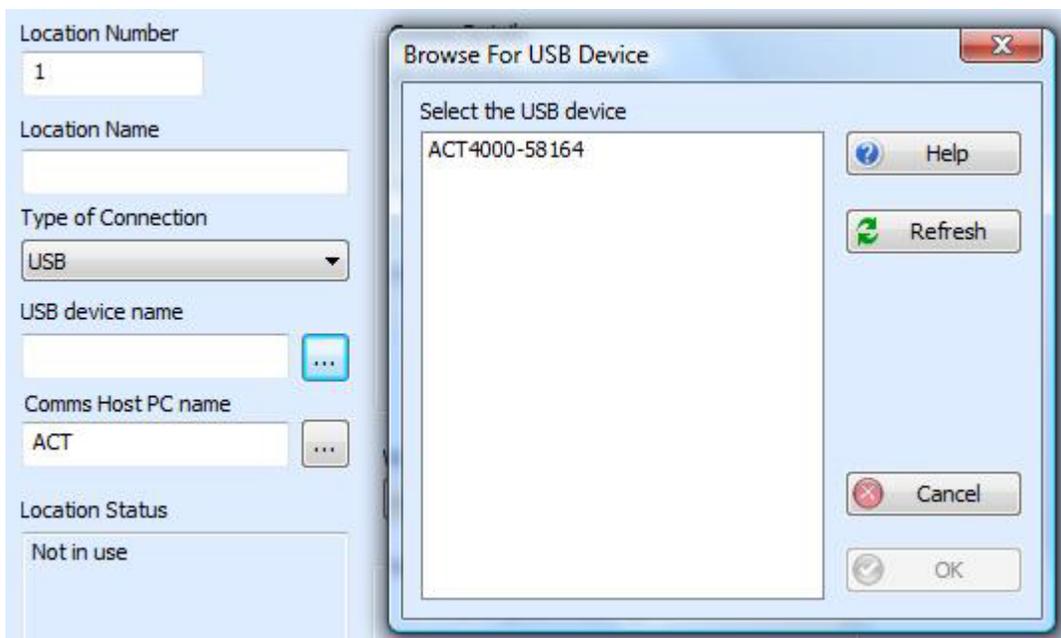
ACTWin pro PC

ACTpro 4000



ACTpro 4000

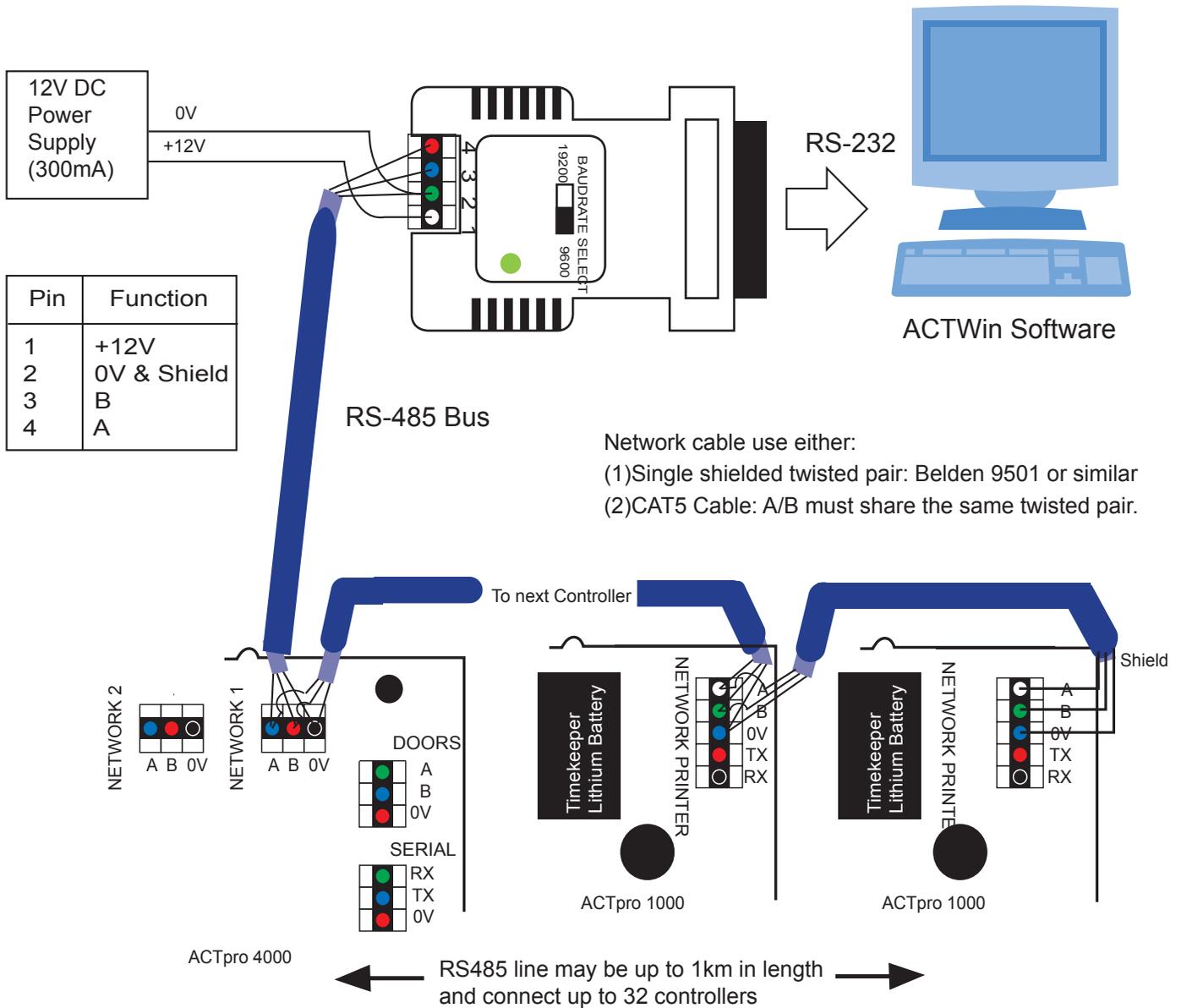
USB Configuration



1. From ACTWin, go to the Locations screen.
2. Click on Type of Connection and select the USB option.
3. Select the USB device that matches the ACTpro 4000 NetBIOS name. The NetBIOS name is printed on a label on the ACTpro 4000. It can also be viewed from the TCP/IP menu from the keypad and display.
4. Click OK.
5. Set up a controller with this location.
6. You can now connect to the ACTpro 4000



ACT Single Line RS-485 Converter



Setup for Network Operation

1. From the ACTpro 4000 Controller keypad Enter Installer Menu->Communications and set a unique address for each controller on the network.
2. From ACTWin pro create a new database. In the database creation wizard check RS-485 Automatic Interface is selected.
3. Connect to the controllers from ACTWin pro. The LED on the RS485 converter should blink rapidly indicating communications in progress.

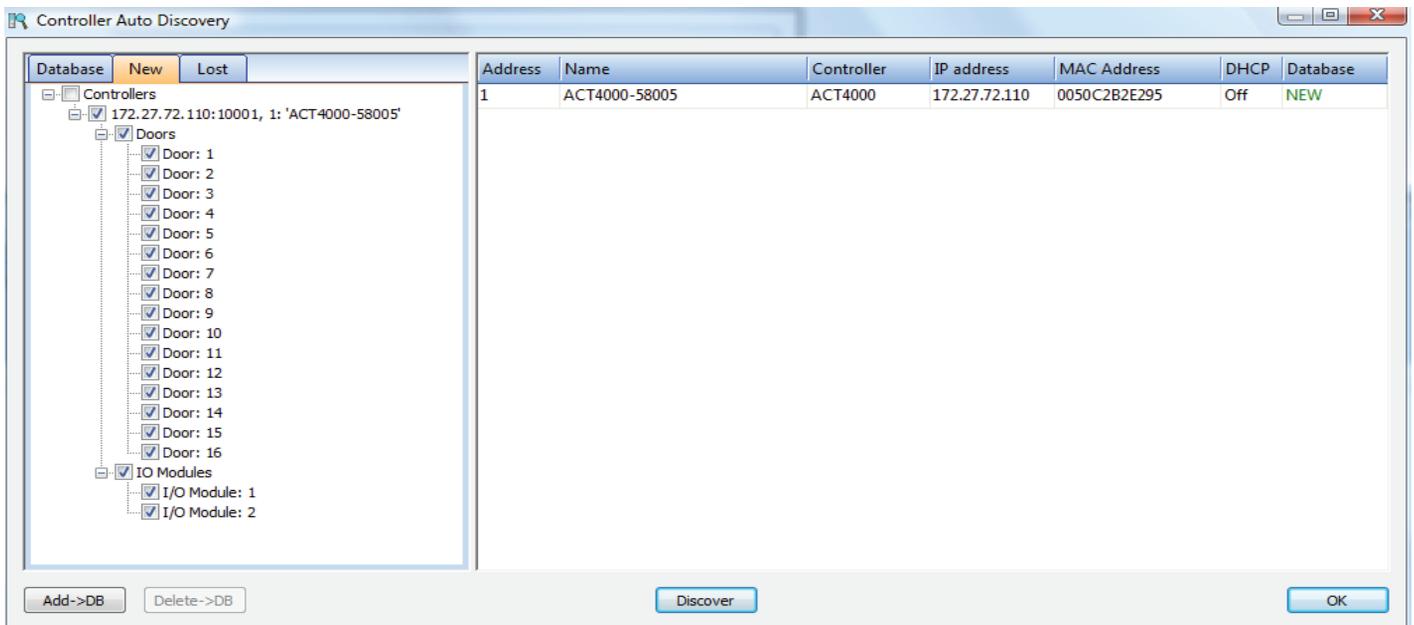


Autodiscover

ACTpro 4000 supports the autodiscover function in ACTWin 2.8 and later. New ACTpro 4000 controllers on an IP network may be found by ACTWin and automatically added to the database. Any doors or I/O modules may be added also. Controllers and doors do not have to be added 'by hand', speeding up installation time.

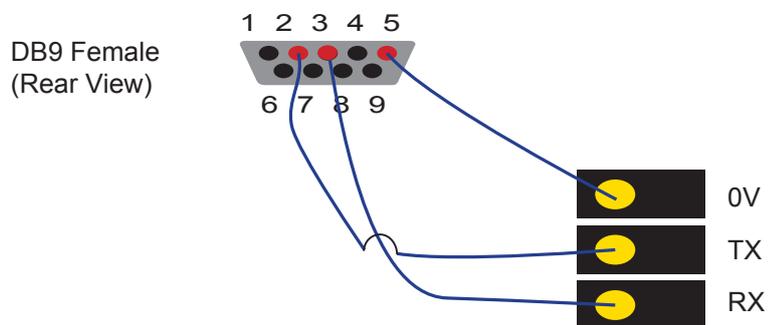
For existing databases click on Database->AutoDiscover

For new databases, click on the AutoDiscover button from the wizard.



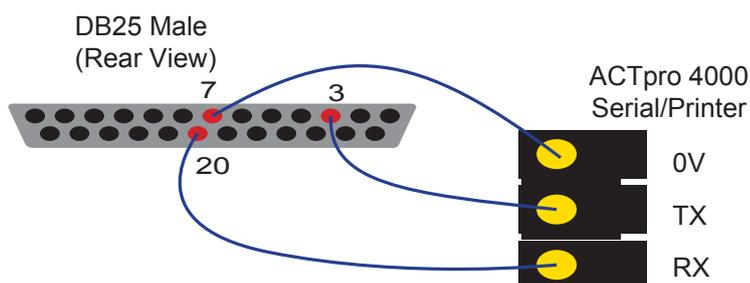
1. Click the Discover button. ACTWin will search for any ACTpro 4000s on the network.
2. Newly discovered controllers are shown under the New tab.
3. Click on the items to add.
4. Click on Add>DB button to add the devices to the database.

Direct Connection Cable (PC COM Port to Controller)



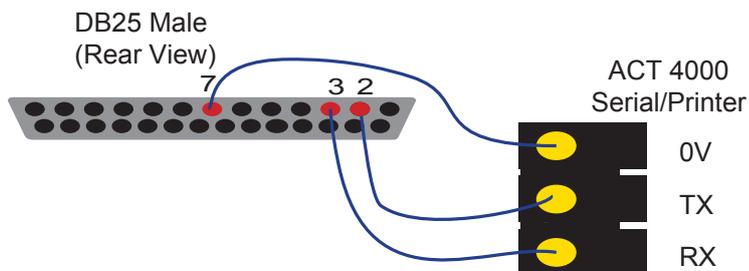
Max cable length is 5m using standard alarm cable
or 30m using twin twisted-pair (use 0V in each pair)

Serial Printer Cable



Max cable length is 5m using standard alarm cable
or 30m using twin twisted-pair (use 0V in each pair)

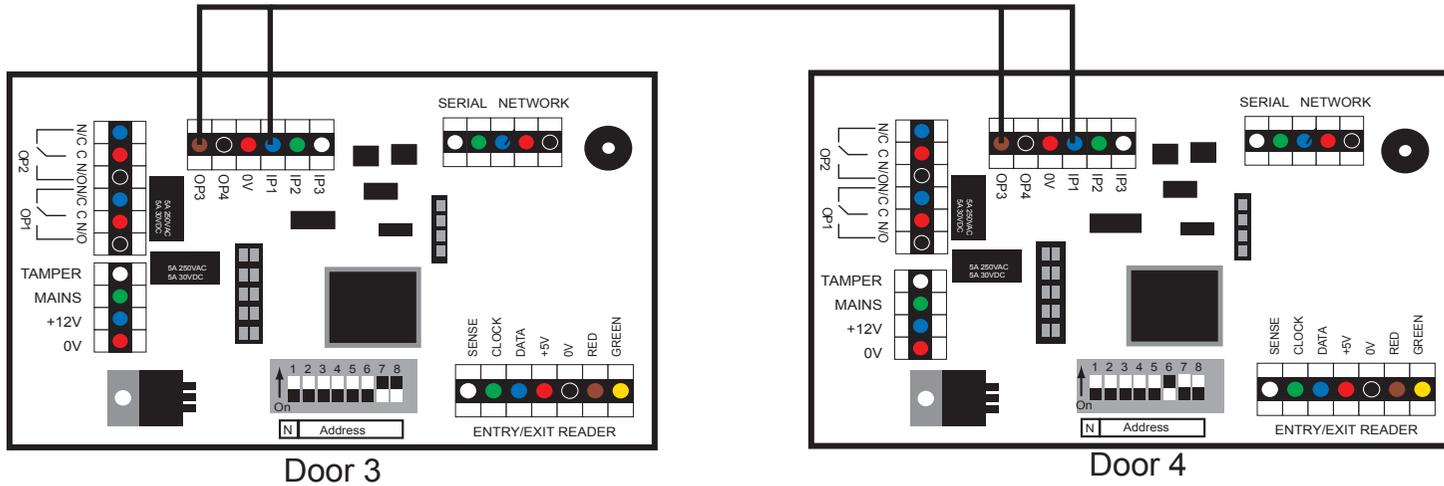
Serial Modem Cable (Modem to Controller)



Max cable length is 5m using standard alarm cable
or 30m using twin twisted-pair (use 0V in each pair)



Interlock Configuration



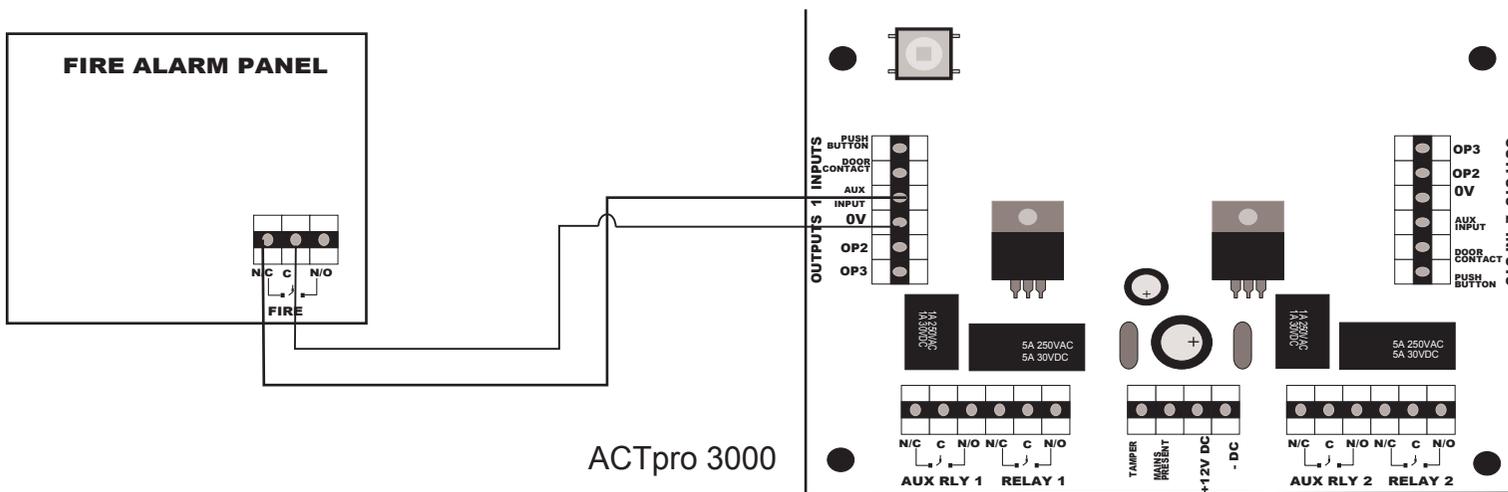
When Interlock is enabled on a door, the door is locked when the AUX input is active. When the door is open, OP3 is active.

- OP1 = Main Relay
- OP2 = Aux Relay
- IP1 = Aux Input
- IP2 = Door Contact
- IP3 = Push Button

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The diagram above shows how to interlock 2 doors. When Door 3 is open, Door 4 is locked and vice versa. Remember to set Interlock for each door to Yes (See Installer Menu > Door Settings > Operation). To Interlock more doors, simply continue linking OP3 and AUX for each new door, as above.

Fire Override Configuration



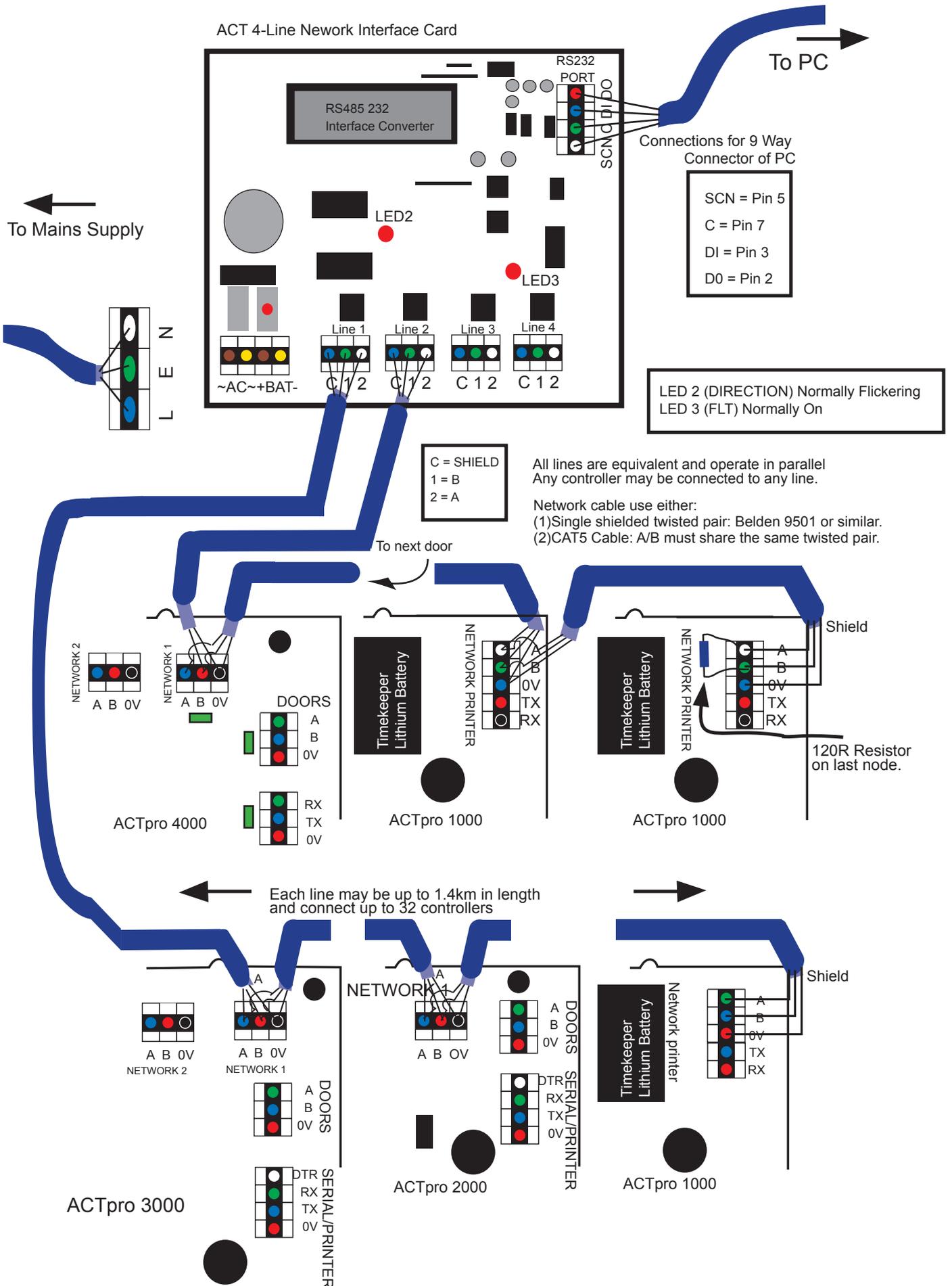
While the 0V signal is maintained at the AUX input on Door 1, the doors in the Fire Doors group maintain normal operation.

When the 0V signal is removed, the doors are opened, and remain open until, the 0V is restored.

To set the Fire Doors group, go to Installer Menu > System Settings > Fire Doors.

From ACTWin pro, go to View > Options > Doors and select a door group for the Fire Override doors.

ACT 4-Line Network Wiring





ACTpro 4000 Hub Operation

The ACTpro 4000 can be used as a Hub to connect up to a total 16 controllers to a PC using just one COM port or USB port, without the need of an ACT single Line RS-485 Converter. It may also be used to connect up to a total of 16 controllers using a single IP address, providing access to the ACTpro 2000 and ACTpro 1000 controllers over a LAN and removing the need for the ACT LAN.

Configuration of ACTpro 4000 for hub operation

- (1) Set the Controller address (Each controller must have a unique address)
(Installer Menu->Communications->Set Address).
- (2) Select Comms Speed.
(Installer Menu->Communications->Comms Speed)
- (3) If necessary configure the TCP/IP Settings.
(Installer Menu->TCP/IP Settings).
- (4) Connect to the PC via the on-board Serial port, USB port or to the LAN via RJ45 connector
- (5) Connect the Network 2 Port (NET2) to the RS485 network of ACT controllers.

ACTpro 4000s that are not acting as a Hub but are connected to the RS485 Network, must connect using Network 1Port (NET1). The NET2 Port is only used when the ACTpro 4000 is acting as a Hub.

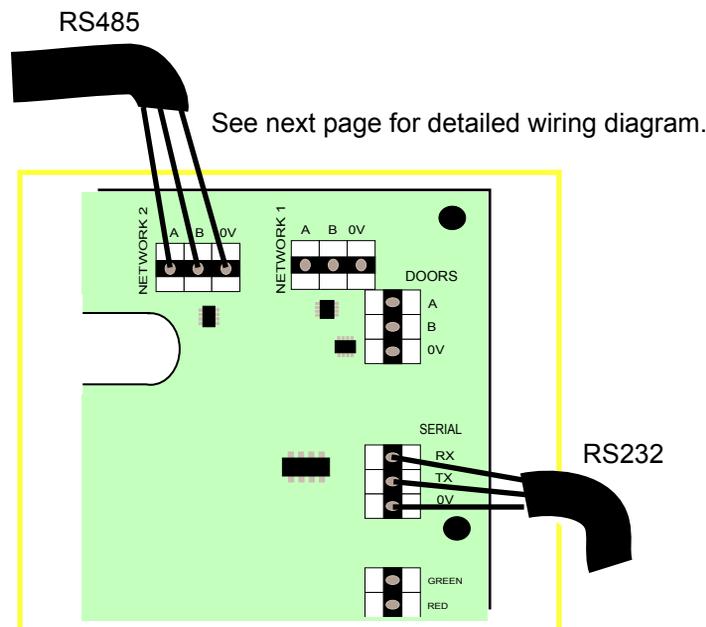
Configuration of Controllers on the RS485 network

- (1) Set the Controller Address (Each controller must have a unique address).
- (2) Select Comms Speed. (Select the same comms speed as selected in the Hub Controller).
- (3) Connect the Controller to the RS485 Network, (NETWORK (NET) on ACTpro 2000/ACTpro 1000, NETWORK1(NET1) on ACTpro 4000/3000).

ACTWin pro/Lite Configuration.

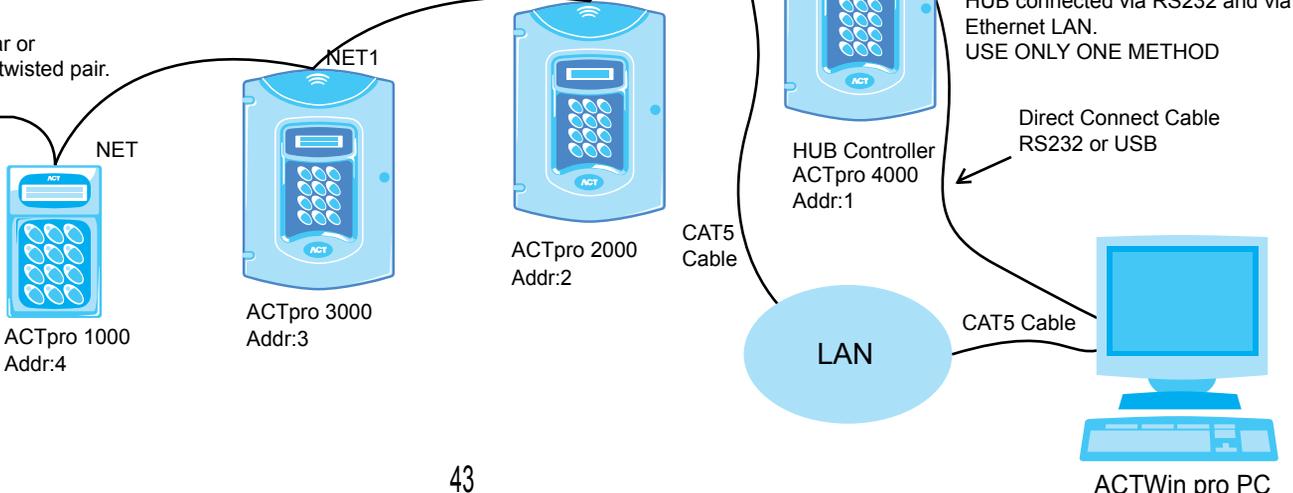
The new database creation wizard in ACTWin pro/Lite will guide you through setting up the access control system. However the following procedure can be followed if working with an existing installation.

- (1) From the Locations and connections menu, Enter a Location number and Name.
- (2) Select the type of connection from the PC to the ACTpro 4000 hub controller (Serial Port, USB or TCP/IP connection).
- (3) If Serial Port was selected as the connection type, select the correct COM port and select the same communications speed as set on the ACTpro 4000 Hub.
- (4) If USB was chosen, select the NetBIOS name of the hub.
- (5) If TCP/IP was chosen, fill in the IP address and TCP port number.
- (6) Select RS485 Network – Automatic Interface
- (7) From Database->Controllers add a new controller for each controller on the system
- (8) For each controller, including the hub, ensure that the Location is the same as that programmed under the Location and Connections menu.
- (9) Ensure the Address and device type is correct for each controller.
- (10) To complete the configuration of the access control system, Users, Doors, Timezone and operation need to be configured.



RS485 Cable
Belden 9501/similar or
CAT5: A/B on one twisted pair.

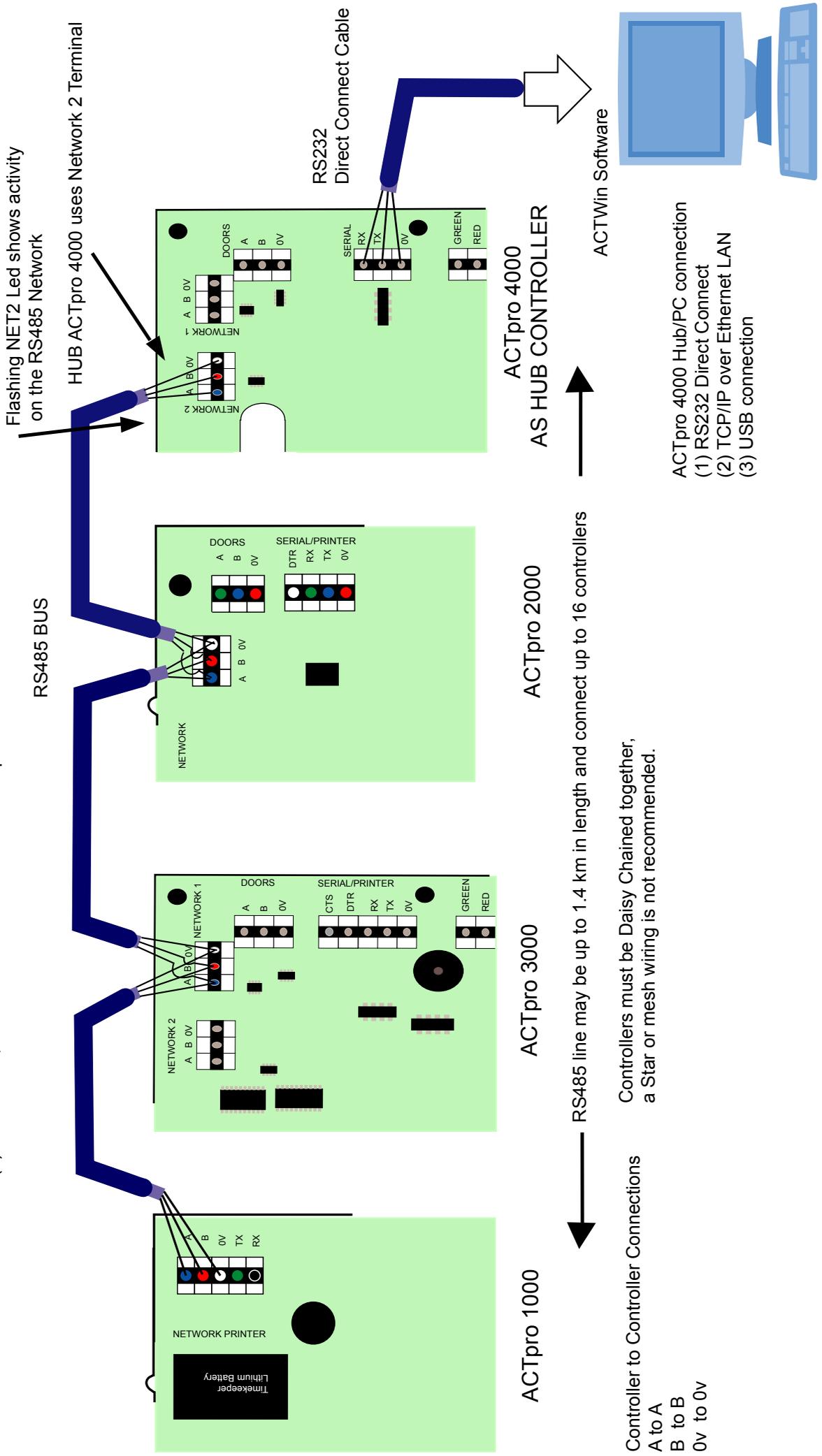
MAX 16 controllers
Max Len 1.4Km



ACTpro 4000 Hub Wiring Diagram

RS485 Network cable use either:

- (1) Single shielded twisted pair. Beldem 9501 or similar.
- (2) CAT5 Cable, A/B must share the same twisted pair.



ACTpro 1000

ACTpro 3000

ACTpro 2000

ACTpro 4000
AS HUB CONTROLLER

RS485 line may be up to 1.4 km in length and connect up to 16 controllers

Controllers must be Daisy Chained together,
a Star or mesh wiring is not recommended.

Controller to Controller Connections
A to A
B to B
0V to 0V

- ACTpro 4000 Hub/PC connection
- (1) RS232 Direct Connect
 - (2) TCP/IP over Ethernet LAN
 - (3) USB connection



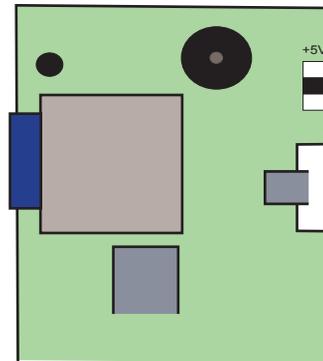
ACTpro 4000 SDCard

The ACT SDCard enables extra features of the ACTpro 4000:

1. 4th and 5th Card for each user. Each user can have up to 5 cards.
2. Extra access rights may be assigned to each user. This is in addition to the access rights assigned as part of the user group.
3. Door plans may be assigned to each user.

Instructions for using ACT SD Card:

1. Power off ACTpro 4000.
2. Insert ACT SDCard into ACTpro 4000.
3. Power on ACTpro 4000.



Note: The ACT SDCard should not be inserted or formatted by a PC, only ACT supplied SD Cards will operate with the ACTpro 4000.

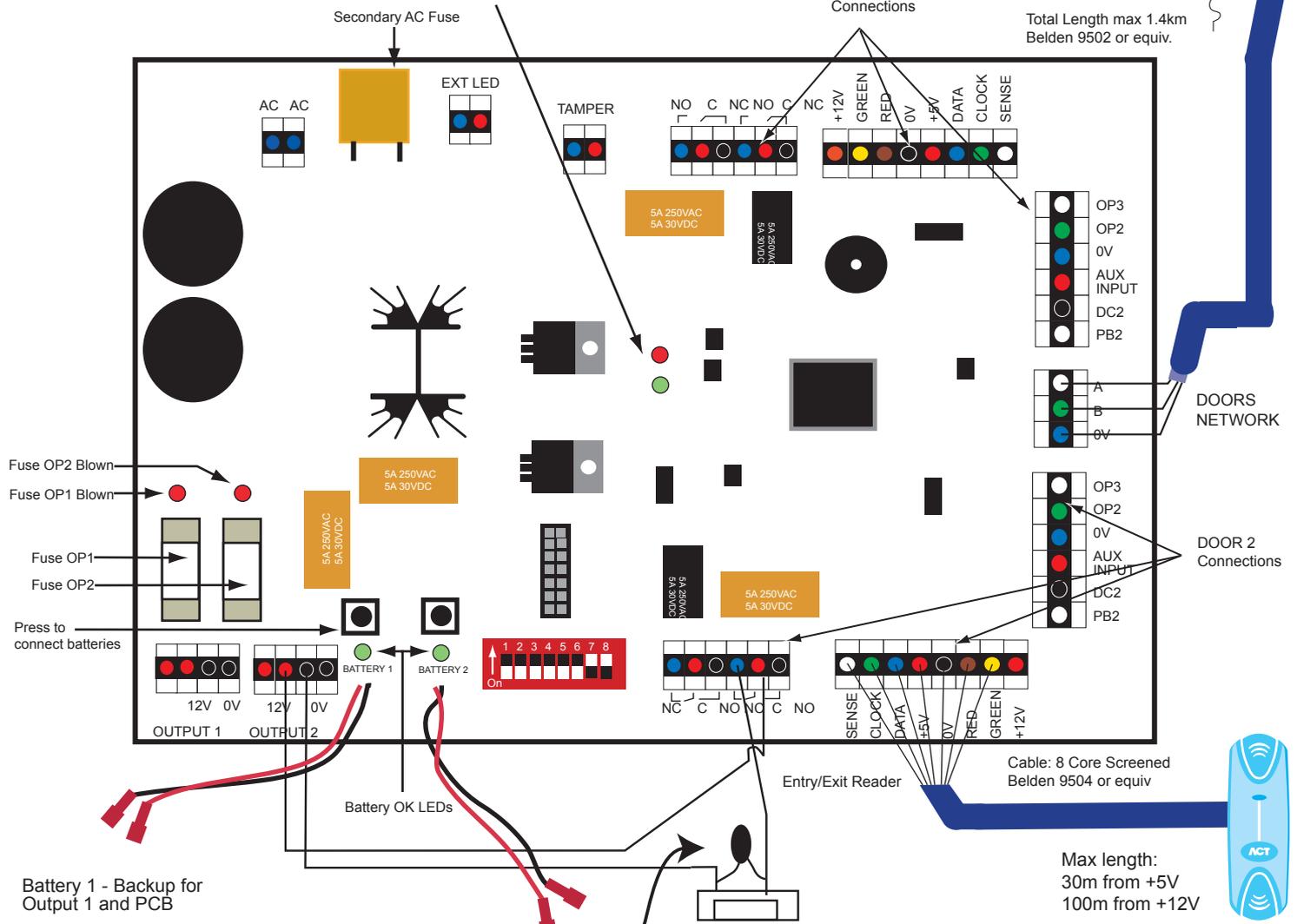
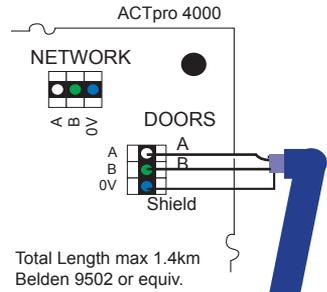


ACTpro 200 Installation

2 Door Controller and Monitored Power Supply

WARNING:
MAINS VOLTAGE
DISCONNECT BEFORE MAINTENANCE

LED Functionality:
 Red LED indicates the status of communications with the Controller.
 While online to the controller the Red LED will flash rapidly.
 If there is a problem it will flash slowly (about once a second).
 Green LED will flash if an event occurs on the ACTpro200.



Battery 1 - Backup for Output 1 and PCB

*Always connect Battery 1.

Battery 2 - Backup for Output 2
 Monitoring for battery 2 can be disabled by setting dipswitch 3 to ON

*Connect Red to Battery positive
 Black to Battery negative

Important !
 Always Place Varistor Across Lock Terminals
 This illustration shows wiring for a normally energised lock. If a normally de-energised lock is required, use the N/O relay contacts.

White	SENSE
Green	CLOCK / DATA 1
Blue	DATA / DATA 0
Red	+5V or +12V
Black	0V
Brown	RED
Yellow	GREEN
Orange	(Buzzer Control)

For Clock and Data Readers, wire exit reader in parallel but do not connect to SENSE.

For Wiegand Readers, wire DATA0 of the exit reader to SENSE.

Mains Voltage	230Vac +10% -15%
Frequency	47-63 Hz
Mains Fuse	630mAmp
Secondary AC Fuse	3.75 Amp Th Fuse
Fuse OP1	1.25 Amps Quick
Fuse OP2	1.25 Amps Quick
Ripple Voltage	<200mV

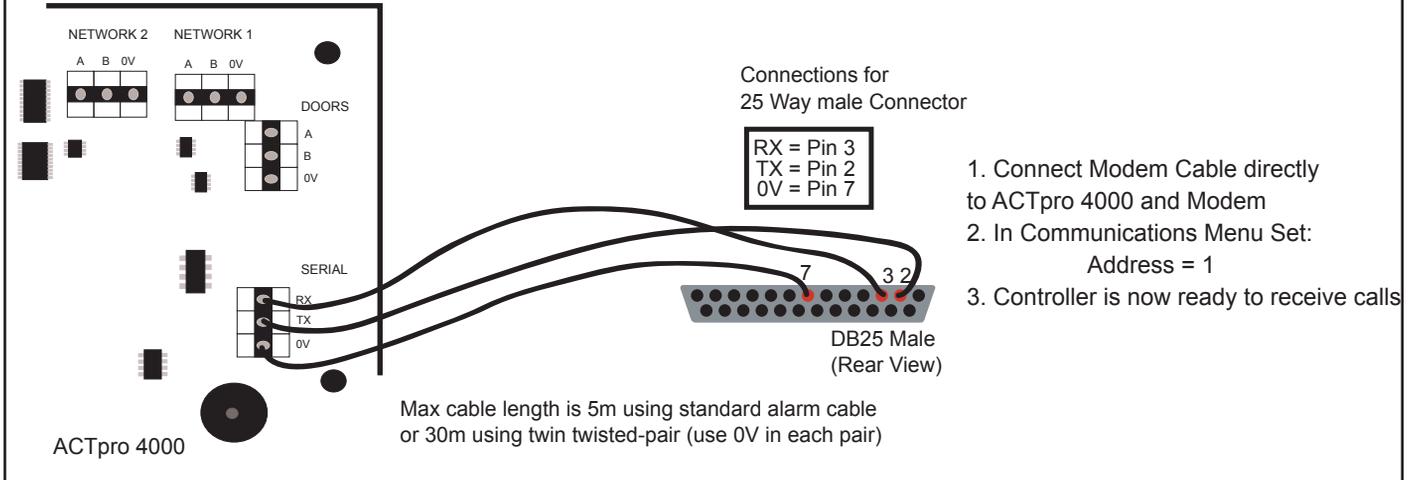
FACTORY DEFAULT
 This unit should be reset to its factory default condition before installation. To do this, power the unit up with ALL switches in the OFF position. The two LED's will illuminate for about 2 sec. The correct switch settings may then be set.

Door Address	4	5	6	7	8
03	OFF	OFF	OFF	ON	ON
04	OFF	OFF	ON	OFF	OFF
05	OFF	OFF	ON	OFF	ON
06	OFF	OFF	ON	ON	OFF
07	OFF	OFF	ON	ON	ON
08	OFF	ON	OFF	OFF	OFF
09	OFF	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON	OFF
11	OFF	ON	OFF	ON	ON
12	OFF	ON	ON	OFF	OFF
13	OFF	ON	ON	OFF	ON
14	OFF	ON	ON	ON	OFF
15	OFF	ON	ON	ON	ON
16	ON	OFF	OFF	OFF	OFF

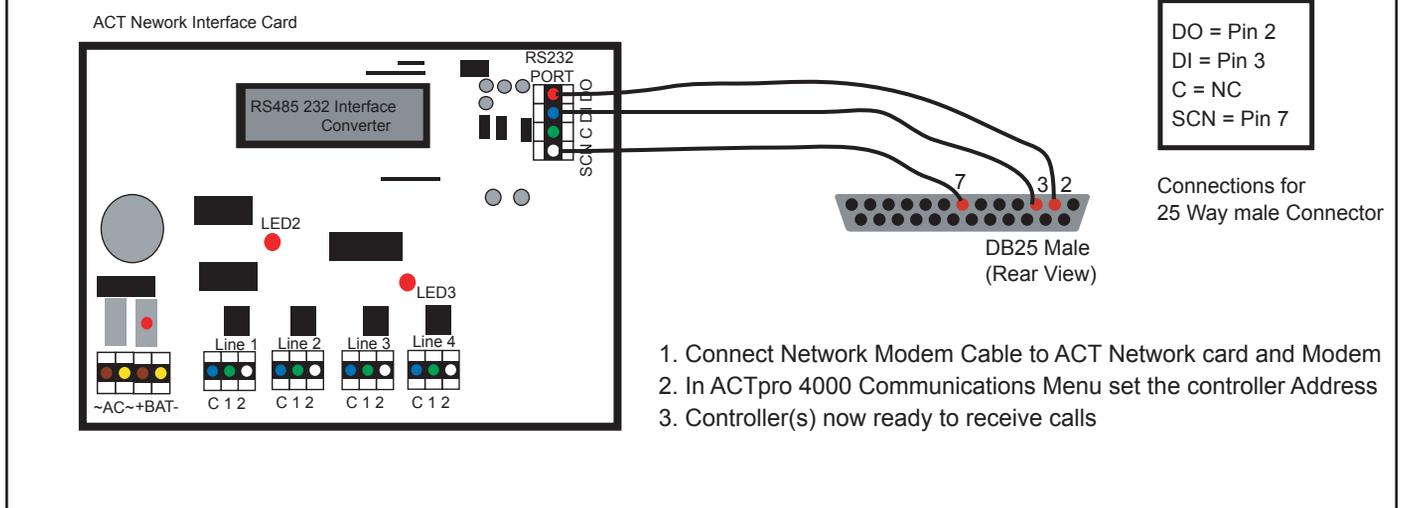
Example:
 When the dipswitch is set to 3, Door 1 is set to Address 3 and Door 2 is set to Address 4.
 When the dipswitch is set to 4, Door 1 is set to Address 4 and Door 2 is set to Address 5.

ACTWinPro users must tick Mains Fault Reporting in the door view Mains fault

Direct Connection from Modem to Controller



Modem Connection for ACT Network

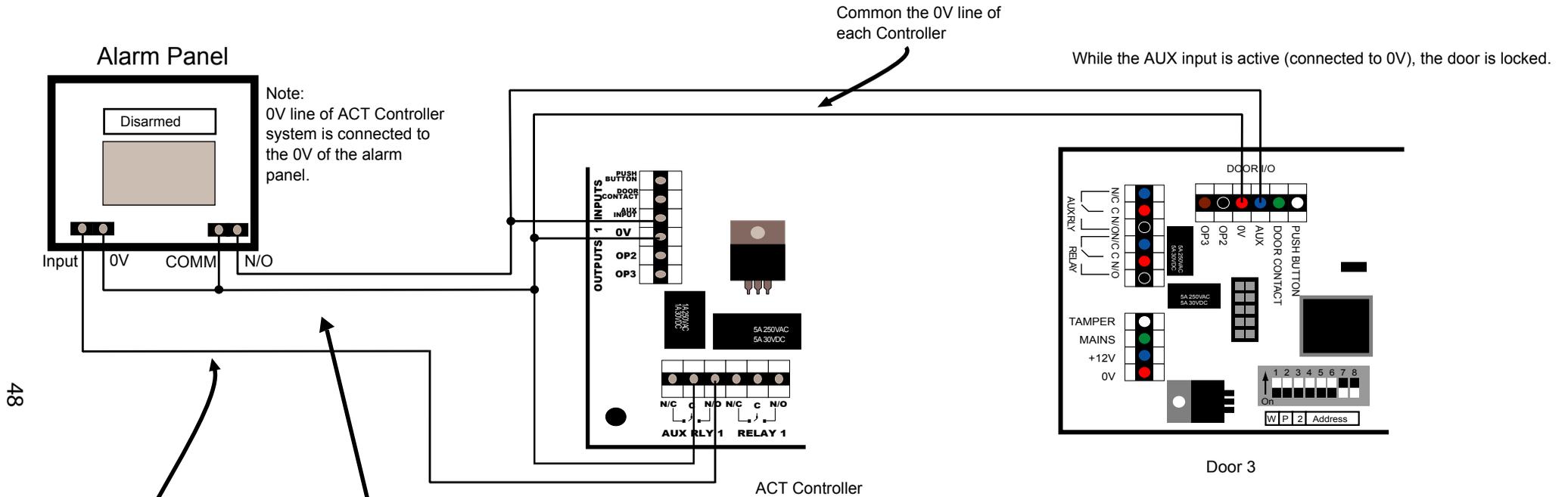


ACTWin pro Setup for Modem Operation

1. Connect the ACT modem to the PC and install modem driver.
2. In ACTWin pro, Click on the Locations and Connections icon on the toolbar.
3. Configure the remote site name in the Location Name.
4. Select the Type of Connection as Modem.
5. Enter the remote sites' telephone number.
6. Select the newly installed modem as the Dialup Modem.
7. Set up remote controller(s) in the Controller View. Set the location as the remote site name.
6. The controller(s) will appear under the remote site name in the System View window.
7. Double click on the telephone icon beside the remote site name in System View window.
8. Modem will now contact remote Site and connect to the controller(s).
9. To finish the call, click the disconnect button on ACTWin pro



Alarm Panel Wiring Diagram



STEPS TO PROGRAM THE ACT Controller FOR ARM/DISARM

Connect AUX Relay output from controller to arm input on panel. The AUX relay can be set to pulse of toggle. Toggle by programming the AUX Relay time to zero.

Optional signal from the alarm panel to indicate armed or disarmed status. If 0V is connected to AUX Input, the panel is armed.

NOTE: If multiple doors are required to lock when the alarm is armed, then it is required that each door monitor the alarm status. If the Alarm is not being monitored then only the door that is wired to control the alarm panel will lock.

1. Complete the wiring in the diagram above for the door that the system will be Arm/Disarmed from.
2. Enter the installer Menu and select the Door Settings submenu. Then select the Door number of the reader that User will arm and disarm from.
3. In the Alarm section of Door Settings set the "ARM Intruder" option to Yes.
4. If the Alarm Panel provides a signal to indicated the arm/disarm status then in the Operation section of the Door settings set the "Monitor Arming" Option to Yes. If the alarm panel does not provide a status signal then ensure the "Monitor Arming" option is set to No.
5. Exit the installer menu and enter the Operator menu and select "User Settings" chose the "Assign Options" submenu. Select the User that will be allowed to arm and disarm the panel and set the option "AUX ARM/DISARM" option bit. Make sure the user is enabled.
6. The configuration is complete. The User can arm the system at the reader by first pressing the "tick" key followed by presentation of a card. Once the Alarm is armed (as monitored by the AUX IP) the Door will lock.
7. Disarming is achieved by again pressing the "tick" key and presenting the Card.



ACTpro IOM IO Module Installation

Installation of an IO Module requires the following

- (1) Wiring Inputs and Outputs.
- (2) Providing 12V Power.
- (3) Wiring IO Module A,B and 0V RS485 signals to the Controller.
- (4) Setting the IO Module address

All Configuration of Input/Output Operation is performed from ACTwin

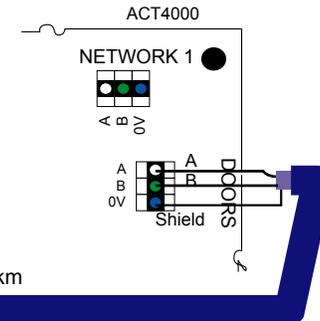
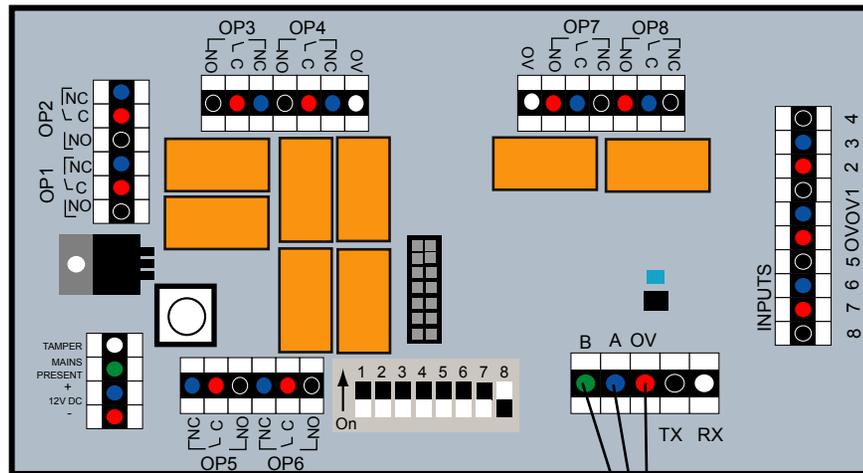
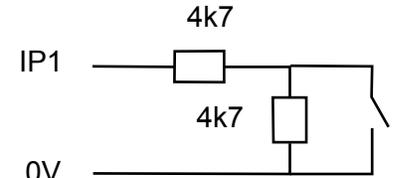
Upto 4 IO Modules maybe connected a single ACT Controller.

The IO Modules share the same network as Door stations (DS100s).

Therefore a controller may support up to 16 Doors and 4 IO Modules.

INPUTS:

All 8 inputs may be supervised (enabled from ACTWin software). Supervised inputs maybe in one of 4 states, Normal,Active,Short or Open circuited. Supervised inputs required the installer to provide 2 resistors per Supervised input as shown below.



A/B/OV RS485 WIRING

Total Length max 1.4km

Network cable use either:

- (1) Single shielded twisted pair, Belden 9501 or similar.
- (2) CAT5 Cable: A/B must use the same twisted pair.

LED Functionality:

Red LED indicates the status of communications with the Controller. While online to the controller the Red LED will flash rapidly. If there is a problem it will flash slowly (about once a second). Green LED will flash if an event occurs on the IO Module.

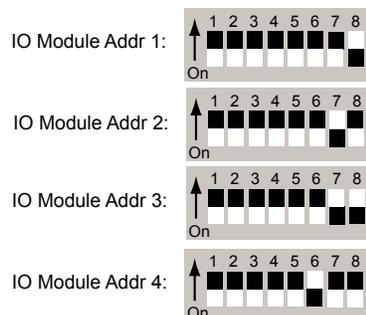
To next Door or IO Module

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If the Mains Present or Door Contact inputs are not used, they should be linked to 0V

SETTING IO MODULE ADDRESS

IO Module address is set via the DIP switches. Up to 4 IO Modules maybe connected to a ACTpro 2000 controller.



FACTORY DEFAULT

This unit should be reset to its factory default condition before installation. To do this, power the unit up with ALL switches in the OFF position. The two LED's will illuminate for about 2 sec. The correct switch settings may then be set.

ACTpro 4000 System Diagram

