

Access Easy Controller™

Hardware Installation Manual

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Table of Contents

CHAPTER 1 BEFORE YOU BEGIN.....	1-1
CHAPTER 2 OVERVIEW OF ACCESS EASY CONTROLLER™.....	2-1
BASIC ACCESS EASY CONTROLLER CONFIGURATION	2-2
INDUSTRIAL COMPLIANCE.....	2-3
CHAPTER 3 SYSTEM LAYOUT	3-1
SINGLE CONTROLLER SYSTEM.....	3-2
TWO CONTROLLER SYSTEMS	3-3
THREE CONTROLLER SYSTEMS	3-4
CONTROLLER SPECIFICATIONS	3-5
<i>Hardware Specifications</i>	3-5
CHAPTER 4 IS ACCESS EASY CONTROLLER THE CORRECT CHOICE FOR YOUR CLIENT?4-1	
CHECKLIST FOR EVALUATING A POTENTIAL ACCESS EASY CONTROLLER APPLICATION.....	4-1
WHEN THE NETWORK DOES NOT MEET THE REQUIREMENTS OF ACCESS EASY CONTROLLER.....	4-4
CHAPTER 5 HOW TO INSTALL THE ACCESS EASY CONTROLLER.....	5-1
PRELIMINARY	5-1
CONTROLLER INSTALLATION	5-2
CHAPTER 6 HOW TO INSTALL READER AND FIELD DEVICES	6-1
TESTING A HID MINIPROX READER.....	6-5
TESTING A HID PROXPOINT READER.....	6-7
TESTING A HID PROXPRO READER	6-9
TESTING PROXPRO READER WITH KEYPAD	6-11
TESTING S-SERIES CARD READER.....	6-13
TESTING S-SERIES FINGERPRINT CARD READER.....	6-15
CHAPTER 7 COMMON ALARM OUTPUT	7-1
<i>Alarm (All Input Points)</i>	7-2
<i>Door Forced Opened and Door Held Opened</i>	7-2
<i>Panel AC Failure</i>	7-2
<i>Controller Tamper</i>	7-2
<i>Duress</i>	7-2
CHAPTER 8 HOW TO SET UP THE ACCESS EASY CONTROLLER AND THE COMPUTER	8-1
OVERVIEW	8-1
ACCESS EASY CONTROLLER SET-UP	8-1
CHAPTER 9 HOW TO INSTALL TCP/IP & SET THE IP ADDRESS ON A COMPUTER	9-1
NETWORK CONFIGURATION ON A WINDOWS COMPUTER (WINDOWS XP)	9-1
NETWORK CONFIGURATION ON A MACINTOSH COMPUTER.....	9-5
CHAPTER 10 DIAL-UP NETWORKING	10-1
INTRODUCTION.....	10-1
GENERAL	10-1
MODEM GUIDELINES.....	10-1
SPECIAL GUIDELINES FOR UL COMPLIANT INSTALLATION	10-2
INSTALLING THE MODEM	10-2
<i>Modem Switch Settings</i>	10-5
DIAL-IN SECURITY FEATURES	10-7
CONTROLLER SETUP	10-7
HANDLING OF IP ADDRESSES BY ACCESS EASY CONTROLLER	10-9
CHANGING THE DIAL-IN IP ADDRESS	10-9
CONFIGURING A WINDOWS COMPUTER TO DIAL THE ACCESS EASY CONTROLLER	10-10
CONFIGURATION A MACINTOSH COMPUTER TO DIAL THE ACCESS EASY CONTROLLER	10-14
HANDLING SIMULTANEOUS NETWORK AND DIAL-IN CONNECTIONS	10-16

CHAPTER 11 HOW TO CONFIGURE A WEB BROWSER TO WORK WITH ACCESS EASY CONTROLLER.....	11-1
WEB BROWSER SET-UP ON A WINDOWS COMPUTER.....	11-1
WEB BROWSER SET-UP ON A MACINTOSH COMPUTER.....	11-6
CHAPTER 12 HOW TO SET INITIAL CONTROLLER CONFIGURATION	12-1
CHAPTER 13 HOW TO RESTORE A BACKUP COPY OF DATABASE TO THE ACCESS EASY CONTROLLER.....	13-1
TOOLS NEEDED	13-1
BEFORE STARTING THE UPDATE	13-2
RECOVERING CONTROLLER DATABASE FROM A WINDOWS COMPUTER	13-3
CHAPTER 14 THE CPU CARD	14-1
INTRODUCTION.....	14-1
COMPONENT LAYOUT OF THE CPU CARD	14-2
<i>Other components</i>	14-5
CHAPTER 15 4-READER BOARDS AND 8 INPUT/8 OUTPUT BOARDS.....	15-1
COMPONENT LAYOUT OF 4 - READER CARD AND 8-I/O CARD	15-1
TECHNICAL OVERVIEW OF 4-READER BOARD.....	15-4
<i>Reader Connectors</i>	15-4
<i>Output Connectors</i>	15-5
<i>15VDC Input Termination</i>	15-7
<i>IDE Connectors</i>	15-7
<i>LED Indicators</i>	15-8
TECHNICAL OVERVIEW OF 8-INPUT/OUTPUT BOARD	15-9
<i>Output Connectors</i>	15-10
<i>15VDC Input Termination</i>	15-12
<i>IDE Connectors</i>	15-12
<i>LED Indicators</i>	15-12
CHAPTER 16 SECURE/COMMUNICATION CARD	16-1
CONNECTOR LAYOUT OF SECURE/COMMUNICATION CARD	16-1
TECHNICAL OVERVIEW OF SECURE/COMMUNICATION CARD.....	16-4
<i>LED Indicators</i>	16-8
CHAPTER 17 18VAC INPUT POWER SUPPLY CARD	17-1
18V AC INPUT POWER SUPPLY CARD FOR MAIN CONTROLLER UNIT.....	17-2
<i>Technical Overview of 18VAC Input Power Supply Card</i>	17-3
18VAC POWER SUPPLY CARD FOR RIE UNIT	17-6
<i>Technical Overview of 18VAC Input Power Supply Card for RIE Unit</i>	17-7
CHAPTER 18 15V DC INPUT POWER SUPPLY CARD	18-1
15V DC INPUT POWER SUPPLY CARD FOR MAIN CONTROLLER UNIT.....	18-1
<i>Technical Overview of 15VDC Input Power Supply Card</i>	18-3
15VDC POWER SUPPLY CARD FOR RIE UNIT	18-6
<i>Technical Overview of 15VDC Input Power Supply Card</i>	18-8
CHAPTER 19 CONVERTOR CARD.....	19-1
CONNECTOR LAYOUT OF CONVERTOR CARD	19-1
TECHNICAL OVERVIEW OF CONVERTOR CARD.....	19-3
<i>Jumper Setting</i>	19-8
<i>LED Indicators</i>	19-11
CHAPTER 20 POWER SUPPLY REQUIREMENT AND CONNECTION	20-1
CURRENT CONSUMPTION	20-1
CONNECTION IN THE MAIN CONTROLLER	20-2
CONNECTION IN THE RIE UNIT.....	20-7
CHAPTER 21 TROUBLESHOOTING NETWORK CONNECTIVITY PROBLEMS	21-1
CHAPTER 22 TROUBLESHOOTING LOGIN PROBLEMS	22-1

CHAPTER 23 FREQUENTLY ASKED QUESTIONS.....	23-1
GENERAL QUESTIONS	23-1
CONTROLLER QUESTIONS	23-3
READER AND DOOR QUESTIONS.....	23-4
INPUTS AND OUTPUTS	23-6
NETWORK QUESTION	23-7
APPENDIX A RJ45 CABLE ASSEMBLY PROCEDURE	A-1
THE CABLE AND RJ45 PLUG.....	A-1
<i>Cutting and Stripping the Cable</i>	A-1
CABLE COLOUR CODE.....	A-2
PROCEDURE TO TERMINATE MODULAR PLUG CABLE ASSEMBLY	A-4
APPENDIX B SELECTING A CORRECT BATTERY SIZE	B-1
HOW TO CHOOSE THE CORRECT BATTERY SIZE FOR YOUR APPLICATION	B-1
EXAMPLE	B-2
APPENDIX C. DETAIL WIRING	C-1
<i>Main Controller (for UL Listed System)</i>	C-2
<i>Main Controller (for CE Listed System)</i>	C-4
APPENDIX D BLANK CONFIGURATION FORM.....	D-1

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CHAPTER 1

Before You Begin

The Access Easy Controller Hardware Installation Manual contains detailed information and connections diagrams about using the Access Easy Controller hardware and peripheral field devices.

In this manual, we will use the following terminologies to describe the components and peripheral field devices in the Access Easy Controller hardware manual, please take note of the following terminologies.

Terminology	Name
Access Easy Controller	Access Easy Controller with CPU board, 4 wiegand interfaces/2x4 wiegand interfaces and door controls (8 IN/OUT), secure comm. Board, Converter board, Power supply – Charger board. AC/DC converter CE or AC/AC Transformer UL.
RIE	Access Easy Extension enclosure with power supply – Charger board, AC/DC converter CE or AC/AC Transformer UL.
4 Reader Board / Card	Access Easy Extension 4 wiegand interfaces and door controls (8 IN/OUT), fitting parts.
8 IN/OUT Board / Card	Access Easy Extension 8 input and 8 output, fitting parts.
Converter Board / Card	Access Easy Extension conversion serial RS485 to reader or IO boards (1 for each enclosure).
CPU Board / Card	Access Easy CPU Card.
Secure Comm. Card	Access Easy Secure/Communication Card.
Power Supply Card	Access Easy AC/DC Converter CE or AC/AC transformer UL.
Power Supply	Access Easy Power supply – Charger CE / Charger UL.
EM Reader	Access Reader 8000 Wiegand EM Prox.
S-Series Reader	S-Series EM Prox / HID Prox / Mifare Prox.

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CHAPTER 2

Overview of Access Easy Controller™

The Access Easy Controller is a modularly designed access control system. It consists of main CPU Card and from one to four Card Reader Controller cards and/or Input-Output cards. With a full configuration of our Card reader controller cards and four Input-Output cards, a fully configured Access Easy Controller can support up to 16 cards readers, 32 alarm type input points and 32 controllable output points. In its minimum configuration, a Access Easy Controller will support four card readers, plus all necessary supporting hardware (door lock/strike outputs, door contact inputs and request-to-exit inputs).

Based on hardware configuration and database setup, Access Easy Controller offers the customer feature and functions often available only with high-end access control controllers.

- Door access control using card readers, or card reader and PIN code
- In and Out readers for high security areas
- Anti-passback control
- Alarm monitoring of reader controlled doors for Door Held and Door Forced conditions
- Alarm monitoring of non-reader doors and other inputs
- Manual door unlocking and locking
- Automatic door locking and unlocking based on schedules
- Automatic Arming and Disarming of input points
- Lighting and output control based on schedules
- Special scheduling option for holidays
- Built-in reporting capabilities
- Common alarm output for connection to intrusion alarm system

Since the Access Easy Controller can support such wide range of applications, it is necessary for one to understand how to configure it and select the necessary hardware, such as card readers or additional I/O Cards.

Unlike almost all other access control controllers, no special software is needed on a host computer. The software needed to program and operate the Access Easy Controller is built into the controller. Data entry and system monitoring functions are performed by connecting to the controller with a standard Web browser, such as Netscape Navigator or Microsoft's Internet Explorer. All database management screens are presented in simple, easy to use HTML format in much the same manner as screen presentations from almost any Internet Web site.

For information on using the data entry and monitoring screens, refer to the *Access Easy Controller Software User's Manual*.

Basic Access Easy Controller Configuration

Access Easy Controller – The basic Access Easy Controller consists of single metal enclosure containing five circuit boards: a CPU, a 4-reader controller, a Secure/Communication card, Power supply card and a RS485 Convertor card. There is space inside the enclosure to add one additional controller card, either a second 4-reader board, or an optional 8-Input/8-Output card. Space is also provided for a 12-volt standby battery. The controller is powered from an external 18-volt transformer (for UL Listed system) or 15VDC Power Supply Unit (for CE and UL Listed system). The enclosure is key locked and is equipped with a tamper switch to detect when the controller door is opened.

CPU Card – The CPU card contains a microprocessor, RAM memory and all necessary electronic circuitry to interface with the other circuit boards. The CPU card also contains the hardware and software needed to interface to an Ethernet-type network and to communicate with host computers using TCP/IP protocol.

4-Reader-board – The 4-reader board contains all circuitry necessary to interface with, and operate, up to four card readers. It also provides wiring termination points for the readers, door strikes or magnetic locks, door contacts and request-to-exit devices. The reader board interfaces to the CPU card via the RS485 Convertor card. Power for the board is provided by a separate two-wire connection from the Power Supply Card.

8-Input/8-Output Card – The 8-Input/8-Output card provides the circuitry necessary to monitor 8-alarm type (non-reader) inputs, and to control up to eight external devices, such as bells, fans, lights, etc. The card also provides wiring termination points for the input and output devices. The card interfaces to the CPU card via the RS485 Convertor card. Power for the card is provide by a separate two-wire connection from Power Supply Card.

Power Supply Card – We have categorized the Access Easy Controller system into UL Listed system and CE Listed system. The UL Listed system consists of a 18VAC Power Supply Card that takes in an external 18VAC and converts it to 12VDC and 5VDC that are needed by the electronics. Whereas, the CE Listed system, uses a 15VDC Power Supply Card that takes in 15VDC from a Power Supply Unit and converts it to 12VDC and 5VDC. In the rest of this manual, we will provide both the configuration and installation of the UL Listed system and CE Listed system.

Converter Card – The RS485 Converter Card provides the communication link between the CPU card and rest of the cards, mainly the 4-Reader Controller Card and the 8-Input/8-Output Card. Power for the card is provided by a separate two-wire connection from the Power Supply Card

RIE – A metal enclosure identical in size to the basic controller. It contains a power supply card, and space to install up to three additional reader controller and/or Input-Output cards. A RS485 Converter card is used to connect the interface cards in the expansion controller to the main controller. Power to the expansion controller is provided from a separate 18-volt transformer for UL Listed system or a built-in 15VDC Power Supply Unit for CE Listed system. Space is provided within the expansion chassis for a 12-volt standby battery.

Industrial Compliance

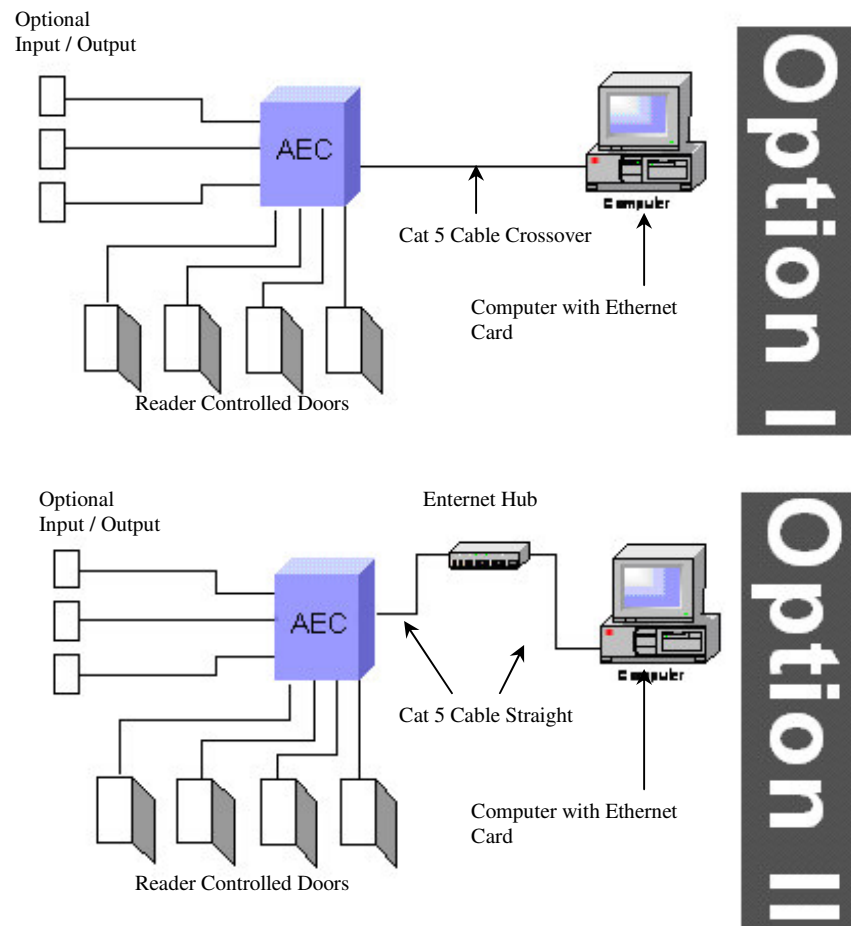
Access Easy Controller is compliance to the following industrial standards:

- CE
- FCC
- UL294

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CHAPTER 3

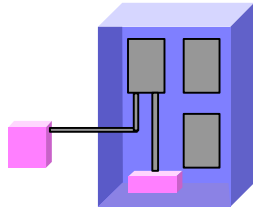
System Layout



Option I: Direct connection, computer with Ethernet Card to Access Easy Controller; Option II: LAN connection, Computer with Ethernet Card to network Hub, Access Easy Controller to Network Hub

System configurations vary, based on capacities required by the customer. The following three tables detail Access Easy Controller system configurations and the hardware required to obtain the desired capacity.

Single controller System



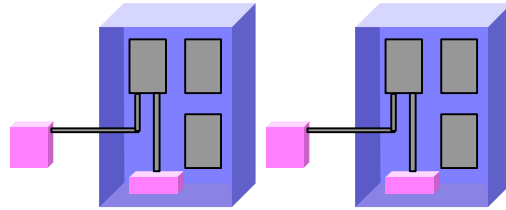
UL & FCC Version

System Type	Max. Readers	Max. Inputs	Max. Outputs	Access Easy Controller AEC 4W UPS 2 / AEC 8W UPS 2	4-reader board AEC 4W EXT	8-Input/8-Output Card AEC 8I8O EXT	Converter Card AEC SER EXT	RIE AEC EXT UPS 2
System A	4	0	0	1	-	-	-	-
System B	8	0	0	1	1	-	-	-
System E	4	8	8	1	-	1	-	-

CE Version (Not for UL Listed System)

System Type	Max. Readers	Max. Inputs	Max. Outputs	Access Easy Controller AEC 4W UPS 1 / AEC 8W UPS 1	4-reader board AEC 4W EXT	8-Input/8-Output Card AEC 8I8O EXT	Converter Card AEC SER EXT	RIE AEC EXT UPS 1
System A	4	0	0	1	-	-	-	-
System B	8	0	0	1	1	-	-	-
System E	4	8	8	1	-	1	-	-

Two Controller Systems



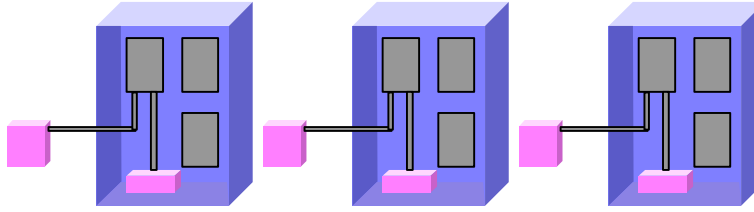
UL & FCC Version

System Type	Max. Readers	Max. Inputs	Max. Outputs	Access Easy Controller AEC 4W UPS 2 / AEC 8W UPS 2	4-reader board AEC 4W EXT	8-Input/8-Output Card AEC 8I8O EXT	Converter Card AEC SER EXT	RIE AEC EXT UPS 2
System C	12	0	0	1	2	---	1	1
System D	16	0	0	1	3	---	1	1
System F	8	8	8	1	1	1	1	1
System G	12	8	8	1	2	1	1	1
System H	16	8	8	1	3	1	1	1
System I	4	16	16	1	---	2	1	1
System J	8	16	16	1	1	2	1	1
System K	8	16	16	1	1	2	1	1
System M	8	24	24	1	1	3	1	1
System N	8	24	24	1	1	3	1	1
System Q	4	32	32	1	---	4	1	1

CE Version (Not for UL Listed System)

System Type	Max. Readers	Max. Inputs	Max. Outputs	Access Easy Controller AEC 4W UPS 1 / AEC 8W UPS 1	4-reader board AEC 4W EXT	8-Input/8-Output Card AEC 8I8O EXT	Converter Card AEC SER EXT	RIE AEC EXT UPS 1
System C	12	0	0	1	2	---	1	1
System D	16	0	0	1	3	---	1	1
System F	8	8	8	1	1	1	1	1
System G	12	8	8	1	2	1	1	1
System H	16	8	8	1	3	1	1	1
System I	4	16	16	1	---	2	1	1
System J	8	16	16	1	1	2	1	1
System K	8	16	16	1	1	2	1	1
System M	8	24	24	1	1	3	1	1
System N	8	24	24	1	1	3	1	1
System Q	4	32	32	1	---	4	1	1

Three Controller Systems



UL & FCC Version

System Type	Max. Readers	Max. Inputs	Max. Outputs	Access Easy Controller AEC 4W UPS 2 / AEC 8W UPS 2	4-reader board AEC 4W EXT	8-Input/8-Output Card AEC 8I8O EXT	Converter Card AEC SER EXT	RIE AEC EXT UPS 2
System L	16	32	32	1	3	4	2	2
System O	12	24	24	1	2	3	2	2
System P	16	24	24	1	3	3	2	2
System R	8	32	32	1	1	4	2	2
System S	12	32	32	1	2	4	2	2
System T	16	32	32	1	3	4	2	2

CE Version (Not for UL Listed System)

System Type	Max. Readers	Max. Inputs	Max. Outputs	Access Easy Controller AEC 4W UPS 1 / AEC 8W UPS 1	4-reader board AEC 4W EXT	8-Input/8-Output Card AEC 8I8O EXT	Converter Card AEC SER EXT	RIE AEC EXT UPS 1
System L	16	32	32	1	3	4	2	2
System O	12	24	24	1	2	3	2	2
System P	16	24	24	1	3	3	2	2
System R	8	32	32	1	1	4	2	2
System S	12	32	32	1	2	4	2	2
System T	16	32	32	1	3	4	2	2

Controller Specifications

Hardware Specifications

General

- Power Supply:
 - Input Supply: 18 VAC (UL Listed System)
230VAC (CE Listed System, using Power Supply Unit)
 - Battery backup: 12V, 7.0AH
 - Battery charging: Built-in charger
- Card Reader supported:
 - Basic controller supports 4 readers
 - Fully configured pane supports up to 16 readers
 - Strike Output Relays: Included on reader interface card.
 - Door Contact Inputs: Included on reader interface card.
 - Request-to-exit Inputs: Included on reader interface card.
- Reader Type: Any 2-wire Wiegand output reader. HID Proximity readers recommended. The following readers have been verified by UL for compatibility with the controller :
 - HID MiniProx Reader
 - HID 20676 ProxPro with Keypad Reader
 - HID 20676 ProxPro without Keypad Reader
 - HID 20520 ProxPoint Reader
- Inputs: Maximum of 32. Both normally open and normally closed devices supported.
- Outputs: Maximum of 32 (From-C PCB mounted output control relays). Contact rating: 1 Amp @ 24 VDC.
- Dimensions of Access Easy Controller and RIE :
H: 525mm x W: 455mm x D: 90mm

CPU Card

- CPU type: 32-bit Microprocessor
- Type of Memory: 128 MB RAM, 32 MB Flash
- Ports:
 - 1 or 2 Ethernet Port
 - 2 RS-232 Port
 - 1 Parallel Port

Interface Cards

Cards	4-Reader	8-Input/8-Output
Power Required	15VDC (from Power Supply Card)	15 VDC (from Power Supply Card)
Number of Wiegand Readers Supported	4	-
Number of Input Monitoring Points	8*	8
Number of Output Control Relays	8**	8

* Input Monitoring Points on the 4-reader board consists of door contact input and request-to-exit inputs associated with reader controlled doors.

** Output Control Relays on the 4-reader board are the door strike/magnetic lock control relays for the reader-controlled doors.

Operating Environment

Operating Temperature	0 to 50 deg. C
Humidity	10% to 95% non-condensing

Recommended Web Browsers:	Microsoft Internet Explorer 4.0 and later, Netscape Navigator 4.0 and later. (Netscape 6.0, 6.1 and 6.2 are not supported)
Number of Concurrent Logins:	2
Software Protection:	Can create up to 25 individual user accounts, each with password protection. SAM controls license of number of user accounts.
Database Integrity:	Built-in data encryption used for processing of sensitive information such as: user passwords, PINs, etc
Number of Cards Supported:	20,478
Number of Access Groups	255
Number of Time Schedules:	255
Intervals per Time Schedule:	Four intervals per day, plus holidays support.

CHAPTER 4

Is Access Easy Controller the Correct Choice for Your Client?

The advanced design of the Access Easy Controller requires that the customer has a specific network configuration in place for the controller to perform properly. While the network requirements needed to support Access Easy Controller are fairly generic, there may be instances where the customer's network configuration will be such that the controller will not work.

Use this checklist to evaluate if the Access Easy Controller will work in the proposed customer's environment. If you can answer "Yes" to all questions, then the Access Easy Controller will work in your customer's application.

If any item is answered "No", then stop immediately and proceed to the indicated paragraph for a further discussion of that item. In this discussion, possible solutions are offered that the customer can implement to overcome the deficiency and provide the type of network environment required by Access Easy Controller.

If you are unable to answer all items with "Yes", then Access Easy Controller will not perform reliably for the customer, and all alternative access control solution should be considered.

Checklist for Evaluating a Potential Access Easy Controller Application

- 1 The Access Easy Controller's database management is performed over the customer's network. Does the customer have a network in place?
☐ Yes
☐ No. Go to step 2.1
- 2 The Access Easy Controller only communicates over an Ethernet network. Is the customer's network an Ethernet network?
☐ Yes
☐ No. Go to step 2.2

- 3 The Access Easy Controller connects to the customer's network using a standard category-5 cable. The customer will need to provide a network termination point that can be used for connection of the Access Easy Controller. Typically, the termination point will be either a RJ-45 wall jack that is wired into the network, or a port on an Ethernet hub. Can the customer provide either a wall jack or hub port for connection of the Access Easy Controller?

_____ Yes

_____ No. Go to step 2.3

- 4 The wall jack or hub port that will be used for connection of the Access Easy Controller to the customer's network must be located within 100m cabling distance from the location where the Access Easy Controller will be installed. Is the network termination point located within 100m of the Access Easy Controller?

_____ Yes

_____ No. Go to step 2.4

- 5 The Access Easy Controller communicates using TCP/IP protocol. Does the customer's network support TCP/IP protocol?

_____ Yes

_____ No. Go to step 2.5

- 6 To manage the Access Easy Controller's database, at least one computer on the customer's network must be configured to support TCP/IP communication. Does the customer have at least one computer on the network that is configured for TCP/IP?

_____ Yes

_____ No. Go to step 2.6

- 7 The person responsible for managing the Access Easy Controller's database will do so by using a standard Web browser, such as Microsoft Internet Explorer or Netscape Navigator, to communicate with the controller. Does this person's computer have an operational Web browser on it?

_____ Yes

_____ No. Go to step 2.7

- 8 The Access Easy Controller will require a static IP address. Is the customer's network capable of supporting static addresses?

_____ Yes

_____ No. Go to step 2.8

Congratulations! By answering all questions with a "Yes" response, you have validated that the Access Easy Controller is the proper access control solution for your customer. A few final pieces of information will be needed from the customer to schedule the installation of the Access Easy Controller. This information is needed so that the controller can be configured and setup prior to connection on the customer's network. The information includes:

- An IP address for the controller.
- The subnet mask that is used on the network (or sub-network) to which the Access Easy Controller will be connected.
- If the controller will need to go through a gateway to communicate over the network, then the IP address of the gateway will be needed.
- Also, if the e-mail feature is to be used, then IP Address of the SMTP mail server will be required.

Request this information from the customer and record it below.

Controller IP address: _____. _____. _____. _____

Subnet mask: _____. _____. _____. _____

Gateway address: _____. _____. _____. _____

Outgoing SMTP mail server: _____. _____. _____. _____

Outgoing mail server port: _____

Controller's E-mail account name and domain: _____. _____. _____

Finally, note the following information that will be needed by the installer.

Location where the Access Easy Controller is to be installed:

Location of the wall jack or hub to be used by the controller to connect to the customer's network:

When the network does not meet the requirements of Access Easy Controller

The following paragraphs provide expanded discussion of network items that were identified as not compatible with Access Easy Controller during completion of the network survey.

For each item, at least one solution will require hardware or software changes within the customer's computer. These modifications should always be done by customer, their IT department, or their supplier of IT hardware and systems. Bosch Security systems personnel should not modify the hardware and/or software configuration of customer's computer.

2.1 No network in place

You arrived here because the customer does not have a network in place. That does not automatically mean that Access Easy Controller is not a viable access control solution.

There are two possible solutions.

- a. The customer can configure an existing non-networked computer to work with Access Easy Controller by adding a network card and drivers. The configured computer can now be connected directly to the Access Easy Controller using a crossover type cable.
- b. The customer can purchase a network ready computer and have it configured with a network card and the necessary drivers to work with Access Easy Controller. A basic low-end computer, such as a Celeron 466 MHz, will be all that is needed to support Access Easy Controller.

2.2 Network is not an Ethernet network

You arrived here because the customer's network topology is other than Ethernet. Access Easy Controller will not work on non-Ethernet networks, such as Token-Ring, etc.

Possible solutions:

- a. Most computers can support multiple network adapters. Suggest that the customer modify the configuration of one or more computers by adding an Ethernet adapter and configuring Ethernet drivers.
- b. Dedicate a non-networked computer to work with Access Easy Controller. This computer will need to be configured with an Ethernet adapter and TCP/IP protocol drivers. It can then be directly connected to the Access Easy Controller using the crossover type cable provided with the controller.

2.3 No connection point available into the customer's network

You arrived here because there is no way to connect the Access Easy Controller to the customer's network. Usually this happens because the network architecture uses coaxial cabling or thick-net cabling rather than category-5 thin-net cabling. This shortfall can usually be easily overcome.

Possible solutions:

- a. The customer's hubs should be checked. Many hubs provide connectors for all three types of Ethernet cabling. If a hub is found with an available RJ-45 jack, then the Access Easy Controller can be connected to that jack.
- b. If the network cabling is coaxial type, then a hub with both coaxial and RJ-45 connectors can be added to the network. A new segment of coax will be needed to be inserted to link the new hub into the existing network. The Access Easy Controller can then be terminated at any RJ-45 jack on the new hub.

2.4 No network connection is available within 100m of the Access Easy Controller

You arrived here because there is no network connectivity available in the general area where the Access Easy Controller is to be installed.

Possible solutions:

- a. Relocate the controller to a location where network connectivity is available.
- b. Add a hub at a midway point between the controller and the location where network connectivity can be obtained. The hub will serve to regenerate the network data and essentially double the available distance between the Access Easy Controller and the network connection point.
- c. Install Ethernet extenders. Ethernet extenders are available through Black Box™ Corporation and most other computer networking supply houses. These extenders, when properly installed, can substantially extend the distance between the Access Easy Controller and the network hub,

2.5 The customer's network does not support TCP/IP

You arrived here because the customer's network operates under a protocol other than TCP/IP. Most computer networks can support multiple protocols. If the customer's network operates using a protocol other than TCP/IP, then in many cases all that is necessary is to be add the TCP/IP protocol into the network environment. This type of work should be done by customers, their IT department, or other computer supplier.

Possible solutions:

- a. Modify the existing network configuration to add the TCP/IP protocol.
- b. Provide a non-networked computer to work with Access Easy Controller. This computer will need to be configured for 100 MB Ethernet and TCP/IP protocol. This computer can then be directly connected to the Access Easy Controller using the crossover type cable.

2.6 The customer does not have a computer running the TCP/IP protocol

You arrived here because the customer does not have any computer on the network configured to support the TCP/IP protocol. This protocol is the only one supported by the Access Easy Controller. To manage the controller's database, the customer will need at least one computer running the TCP/IP network protocol.

Possible solutions:

- a. The customer can modify the existing network configuration of one or more computers to include the TCP/IP protocol.
- b. The customer can provide a non-networked computer to work with Access Easy Controller. This computer will need to be configured for 100 MB Ethernet and TCP/IP protocol. This computer can then be directly connected to the Access Easy Controller using the crossover type cable.

2.7 A Web browser program is not available on the computer of the person designated to manage the Access Easy Controller's database

You arrived here because a Web browser program is not available on the computer of the person designated to maintain the Access Easy Controller's database. Because all of Access Easy Controller's database screens are written in industry standard HTML language, a Web browser is necessary to manage the database. Either Netscape Navigator version 4.0 and later or Microsoft Internet Explorer version 4.0 and later can be used.

Possible solutions:

- a. Install a copy of Web browser program on one or more computers. Both Microsoft and Netscape offer their browsers for the download free of charge over the Internet. Browser programs are available for Window™, Apple/Macintosh™, and Unix™ operating systems. The Access Easy Controller can communicate with either the Netscape browser or the Microsoft browser running under any of the standard operating systems (Windows, Apple, or Unix).

Note: There are several third party browser programs available on the marketplace. None of these have been validated by Bosch for proper operation with Access Easy Controller.

- b. Dedicate a new computer configured with a browser to work with Access Easy Controller.

2.8 Customer's network can't support static addresses

You arrived here because the customer's network configuration is not capable of supporting static IP addresses. Many times, a customer's network is configured to support Dynamic Address Allocation. Under Dynamic Address Allocation procedures, each time a computer signs on to the network it will be allocated an IP address. The address assigned to a computer under dynamic address allocation rules will vary from one login session to the next.

Possible solutions:

- a. Configure the network to support static addresses. Customers should check with their IT department or computer vendor. Most networks that are configured for Dynamic Address Allocation will also support static addressing.
- b. The customer can provide a non-networked computer to work with Access Easy Controller. This computer will need to be configured for 10 MB Ethernet and TCP/IP protocol. This computer can then be directly connected to the Access Easy Controller using the crossover type cable.

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CHAPTER 5

How to Install the Access Easy Controller

Preliminary

- 1 You will need to obtain the following information from the customer before the controller can be installed.
 - a. Mounting location for controller and lock/strike power supplies. The selected location should be secure and offer protection from accidental damage. It should also provide reasonable temperature and humidity conditions, and should be free from sources of electrical and electromagnetic interference.
 - b. 110 VAC power source for UL Listed system or 230 VAC power source for Non UL Listed system. The power source should be protected against accidental shutoff.
 - c. Network connection point – either a wall jack or an available hub where a category-5 cable can be plugged in, to provide the Access Easy Controller with access to the customer's network.
- 2 The customer will also need to provide you with some additional information before the controller can be made operational.
 - a. An IP address for the controller
 - b. The subnet mask to be used by the controller.
 - c. If a gateway is used by the customer's network, then obtain the gateway address to be used by the controller.
 - d. E-mail server IP address, port number, and domain name (only needed if the customer intends to use the controller's e-mail notification services).
 - e. Location of an analog telephone line (only needed if a dial-in connection will be used).

Note If the Access Easy Controller is going to be directly connected to a host computer on its own private network, and not be connection to

the customer's company network, then the controller's default IP address setting (129.2.0.41) can be used.

- 3 For a UL-compliant installation, adhere to the following installation guidelines:
 - a. The controller must be installed in the same room as the network jack or hub.

Controller Installation

Installation and wiring must be done in accordance with all applicable electrical and safety codes.

- 1 Mount the controller and strike/lock power supply.
 - Remove any necessary knockouts from the top and/or back of the Access Easy Controller enclosure to provide access for wiring.
 - Install conduits as needed to protect wiring.
 - For UL Listed System: Wire the 18 VAC transformers to the Access Easy Controller, but do not plug in the transformer at this time.
 - For CE Listed System: Wire the 230 VAC to the Power Supply Unit in the Access Easy Controller, but do not switch on the power yet.

Note: A UL Listed transformer must be used for the UL Listed system, in order to satisfy UL requirements. Basler Electric model 1563600AA001 transformer has been tested to satisfy UL requirements.

- Wire AC power to the strike/lock power supply.
 - Pull all required wiring from the controller to field device location.
2. Inspect all circuit cards
 - Check all circuit board mounting screws for snugness.
 - Verify that socket mounted components are secure.
 - Verify jumper and switch settings of all cards.
 3. Install any needed expansion cards.
 - Mount cards in cabinet.

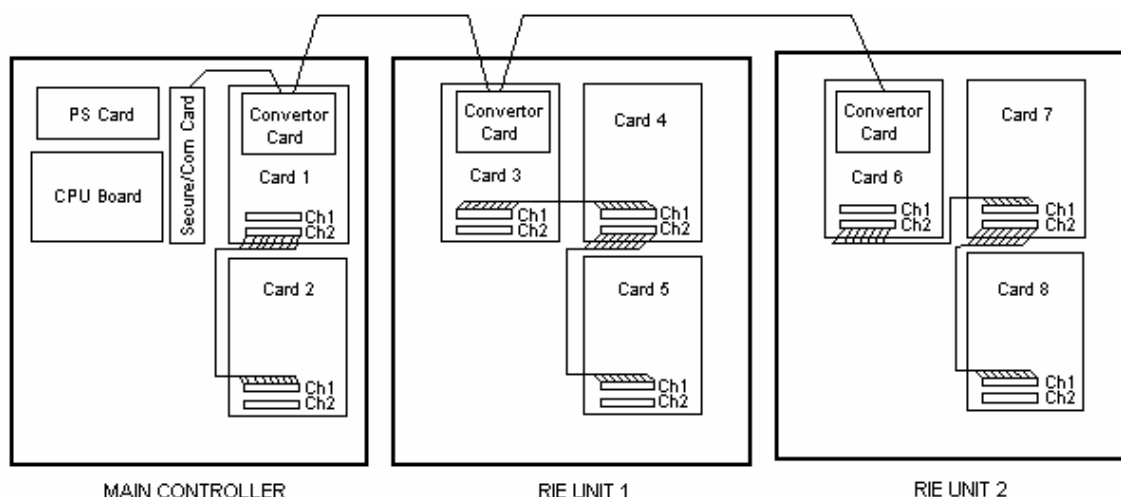
- Install IDE expansion cables.
 - Install power cables.
 - Set jumpers and switches on cards.
4. Apply AC power to controller.
- The power LEDs should light on all circuit boards.
 - The CPU card should perform a power-up self-test.

NOTE: This test takes about 90 seconds to complete.

When completed, LEDs 1, 2 and 3 should alternately flash in the lower corner of the Secure/Communication card, LED 10 and 11 will flicker. Also, the sounder on the CPU card may activate.

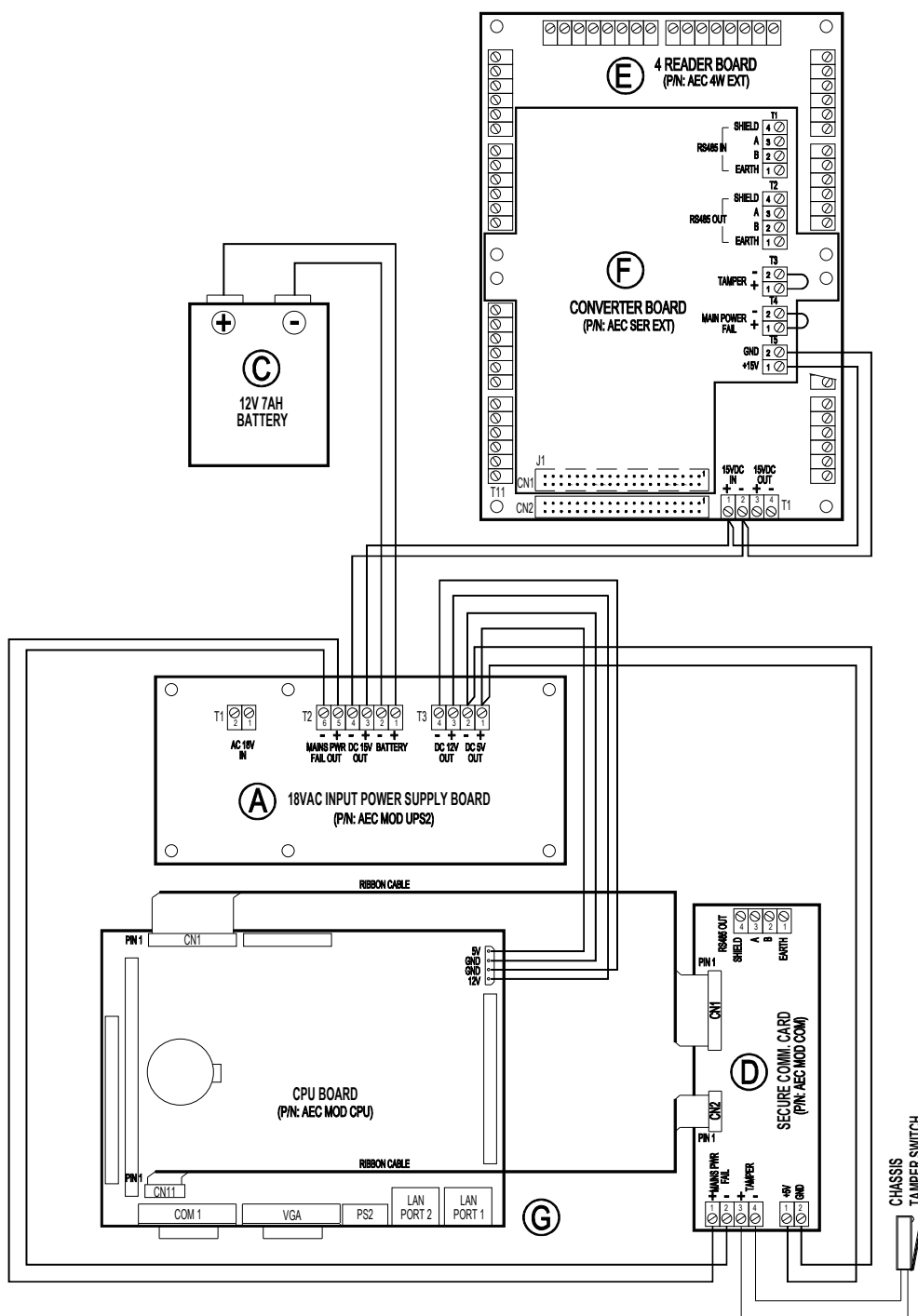
- Install and connect the backup battery. Use a 12V, 7.0AH battery to provide four hours of standby power as required by UL.
- Use a rubber band or a piece of tape to temporarily close the cabinet tamper switch. This should silence the sounder.

This completes the basic controller installation. Refer to the section “How to Set Initial controller Configuration” for instructions on setting the controller’s IP address.

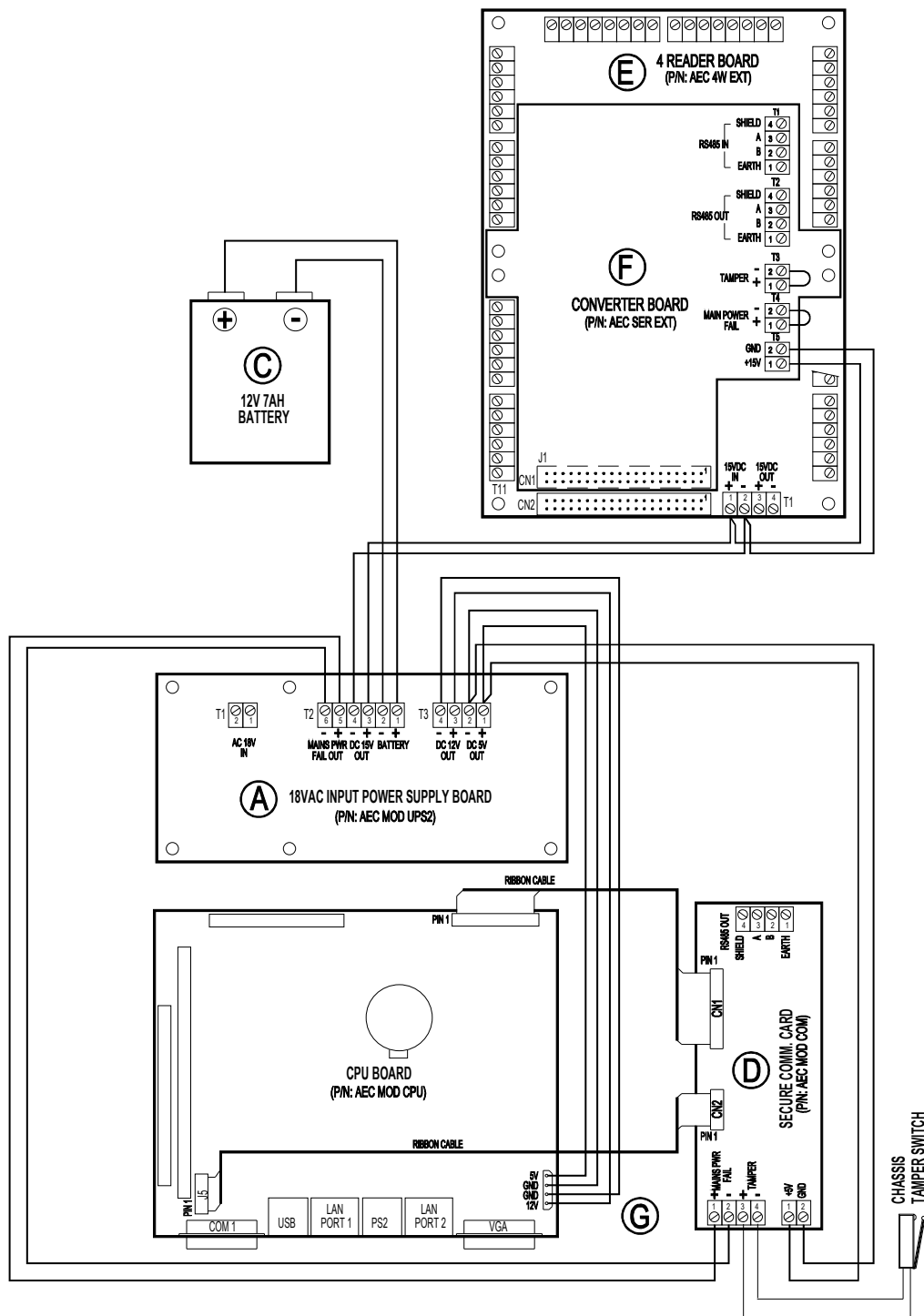


RS485 Cable Interconnection for Access Easy Controller and add-on cards/Expansion Units.

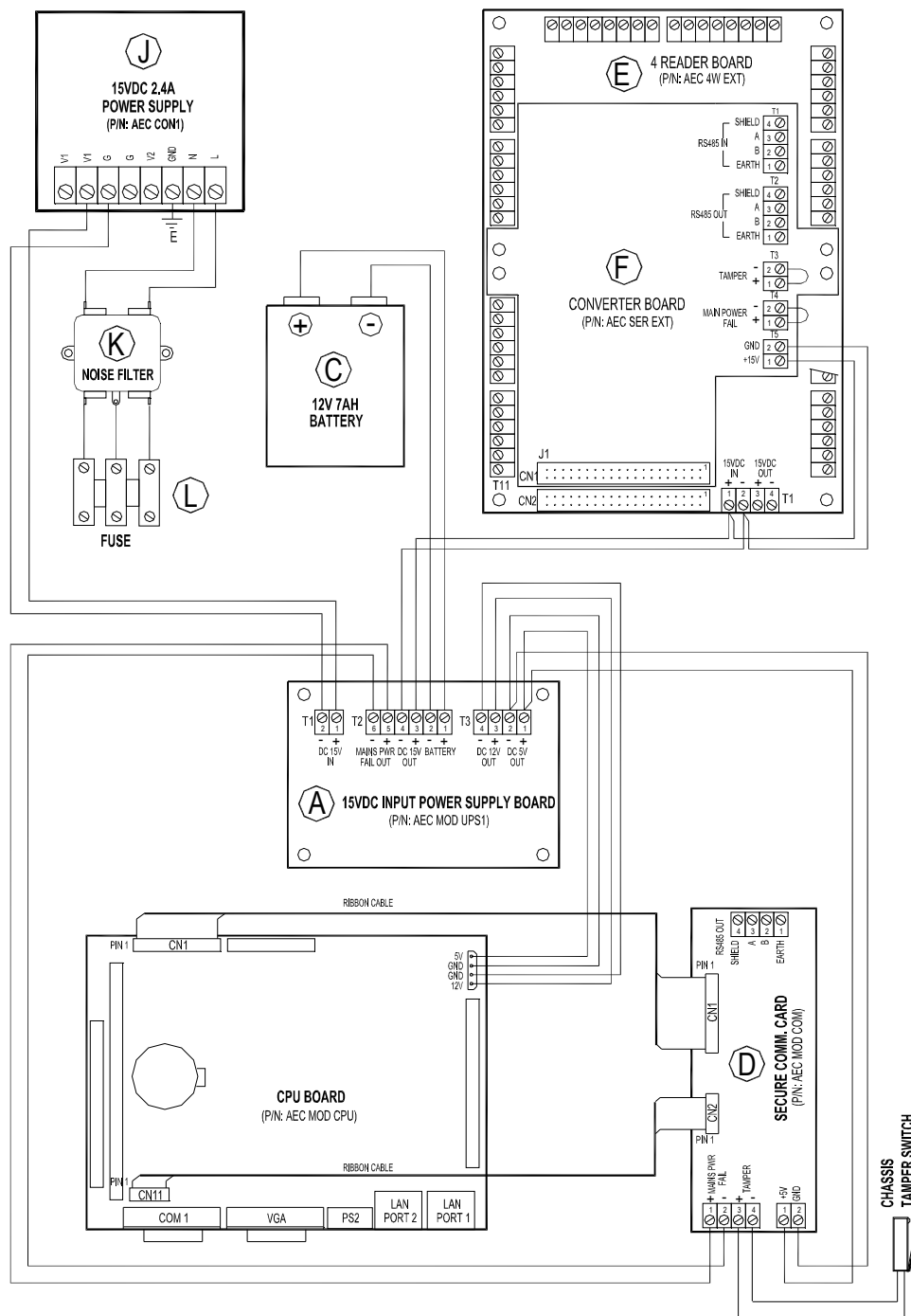
The followings figure shows the different type of CPU cards that can be deployed in the Main Controller.



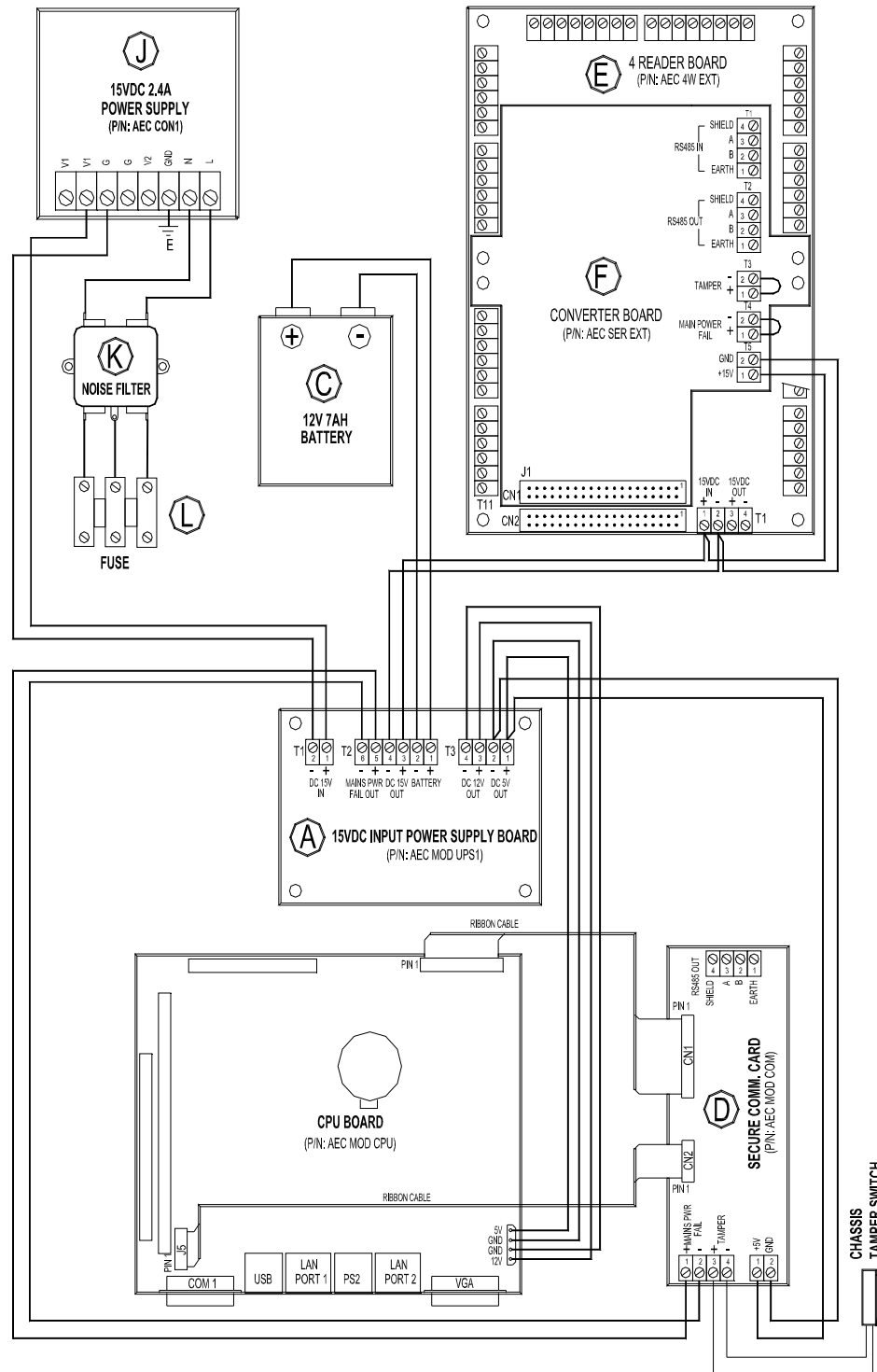
Internal wiring diagram of the AEC for UL Listed System



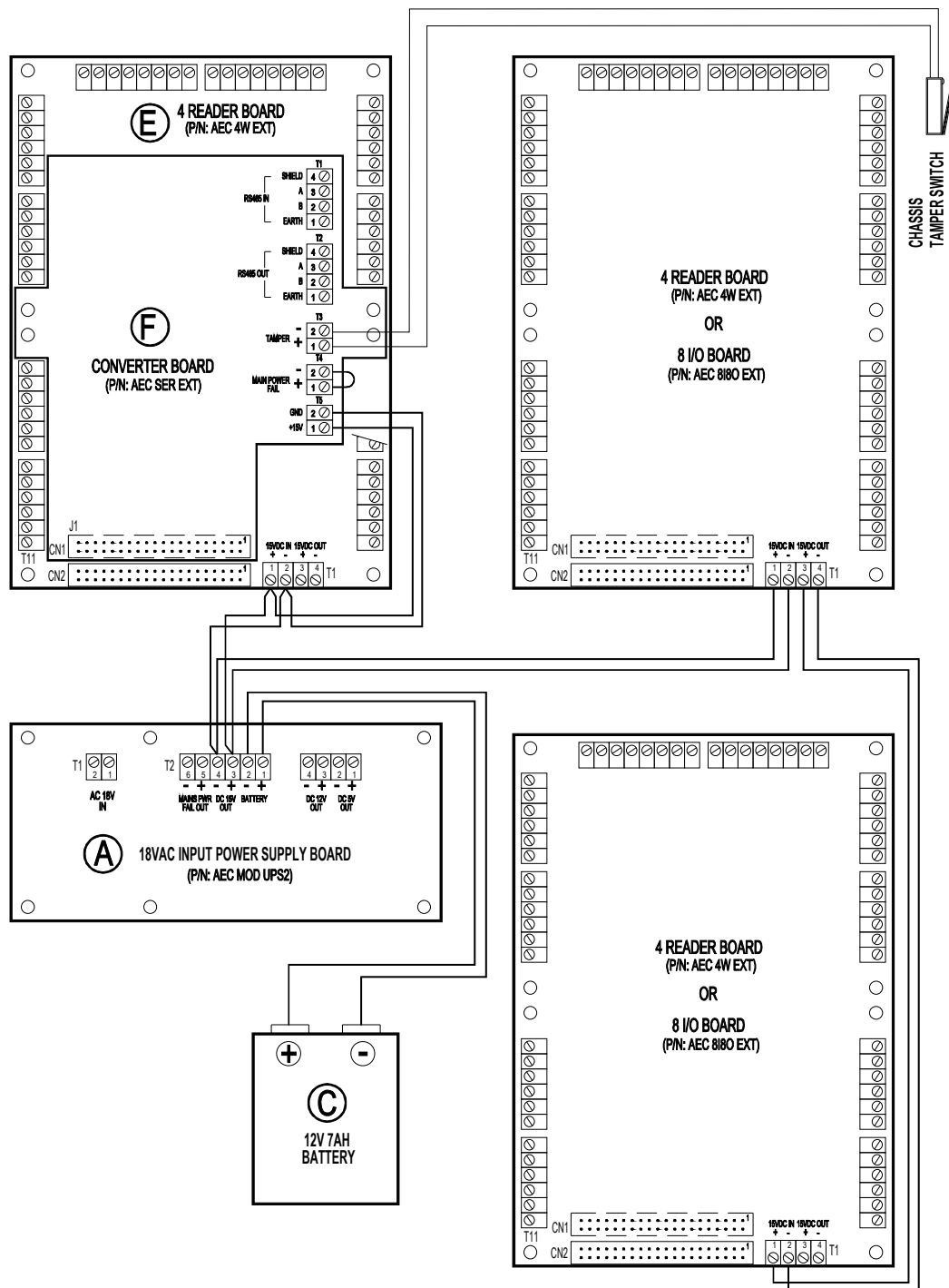
Internal wiring diagram of the AEC (CPU board with USB Port) for UL Listed System

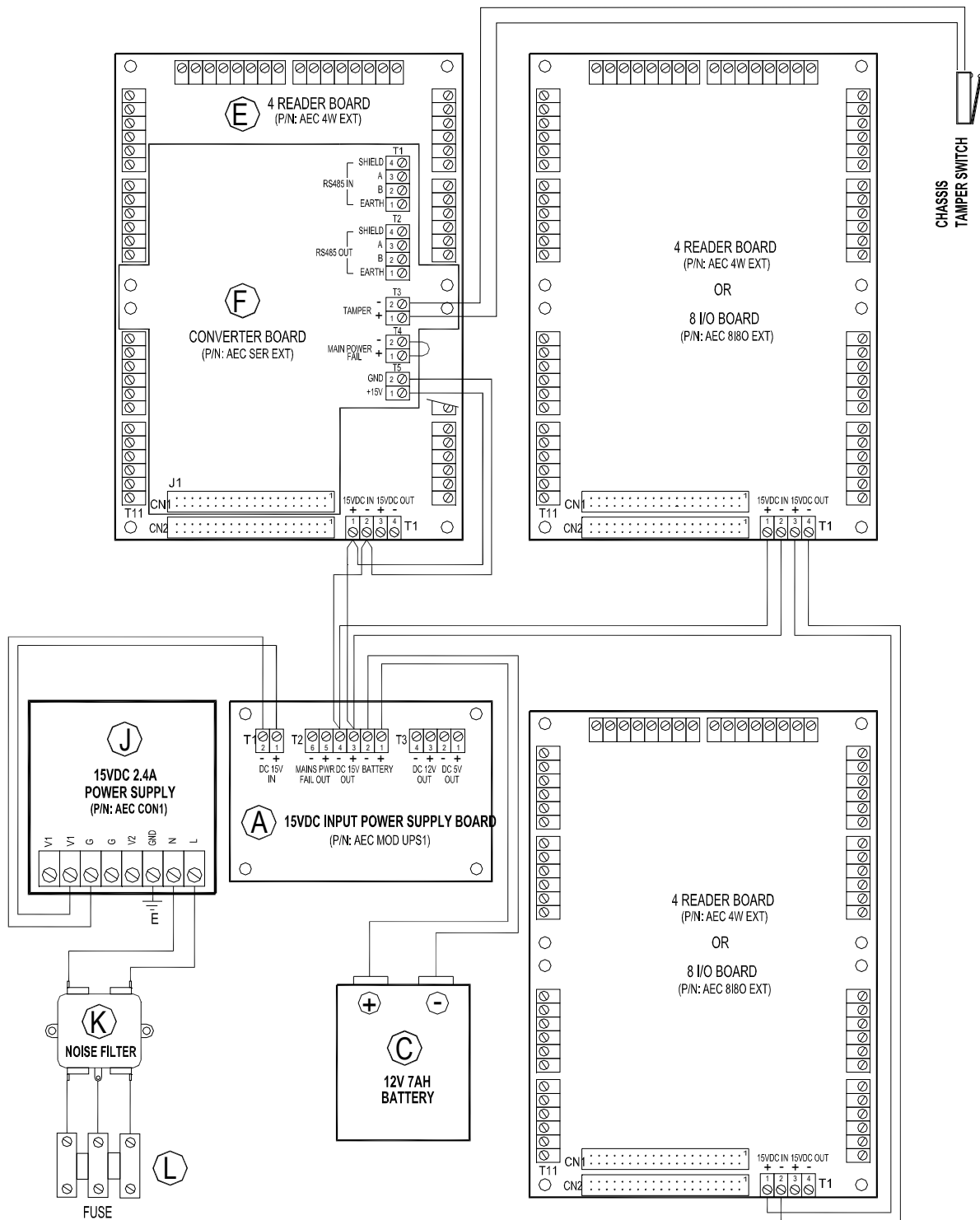


Internal wiring diagram of the AEC for CE Listed System

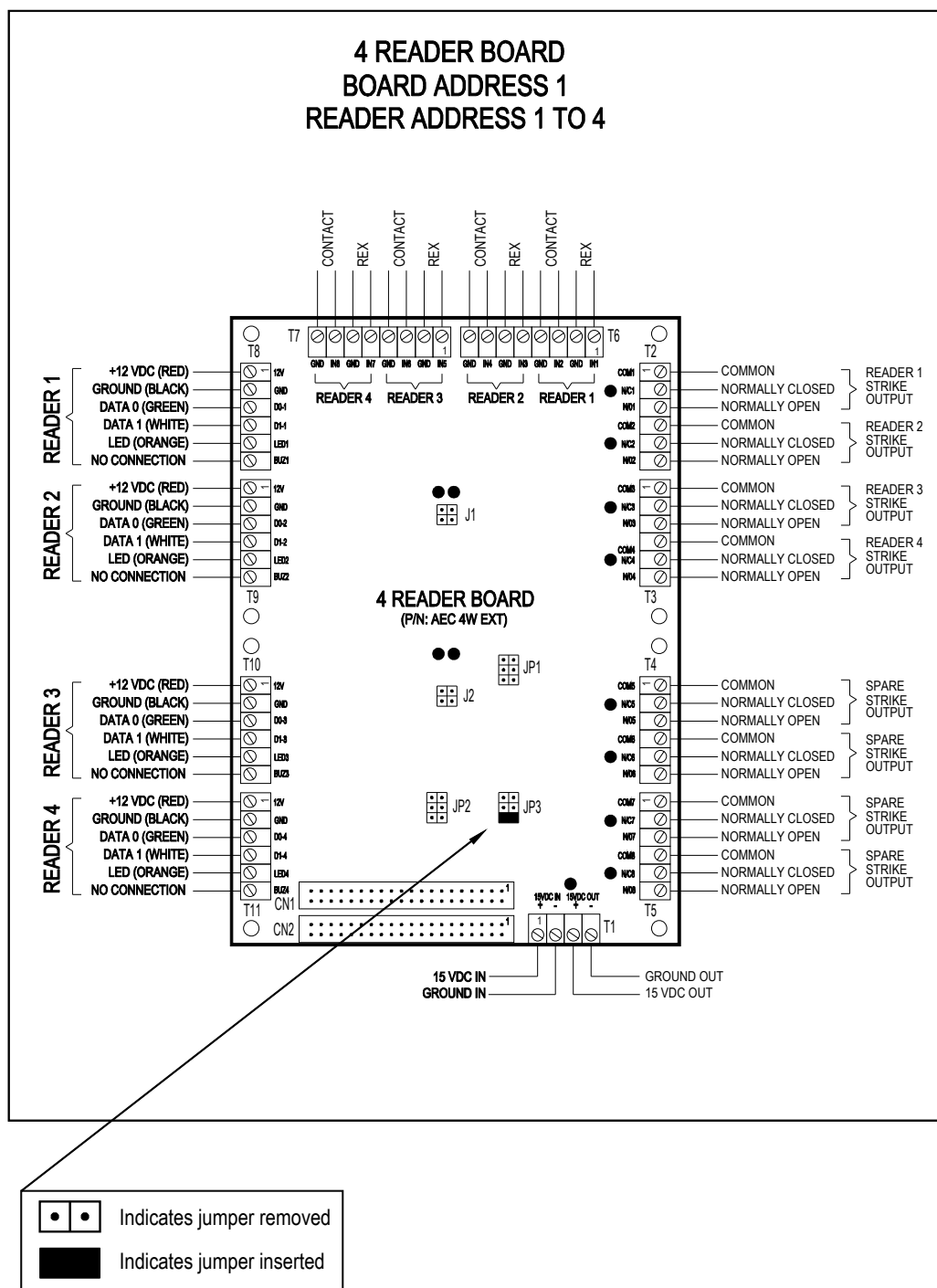


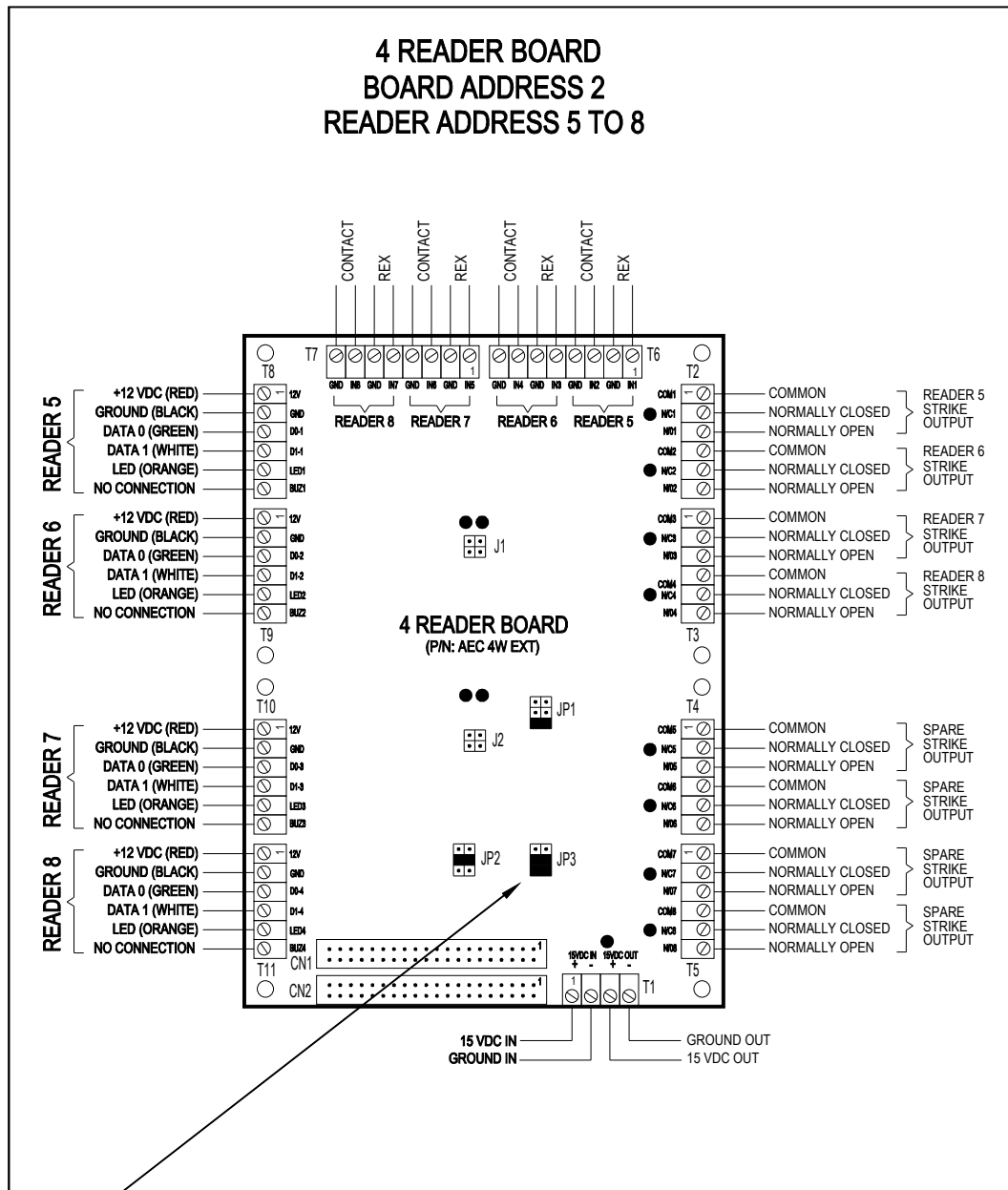
Internal wiring diagram of the AEC (CPU board with USB Port) for CE Listed System

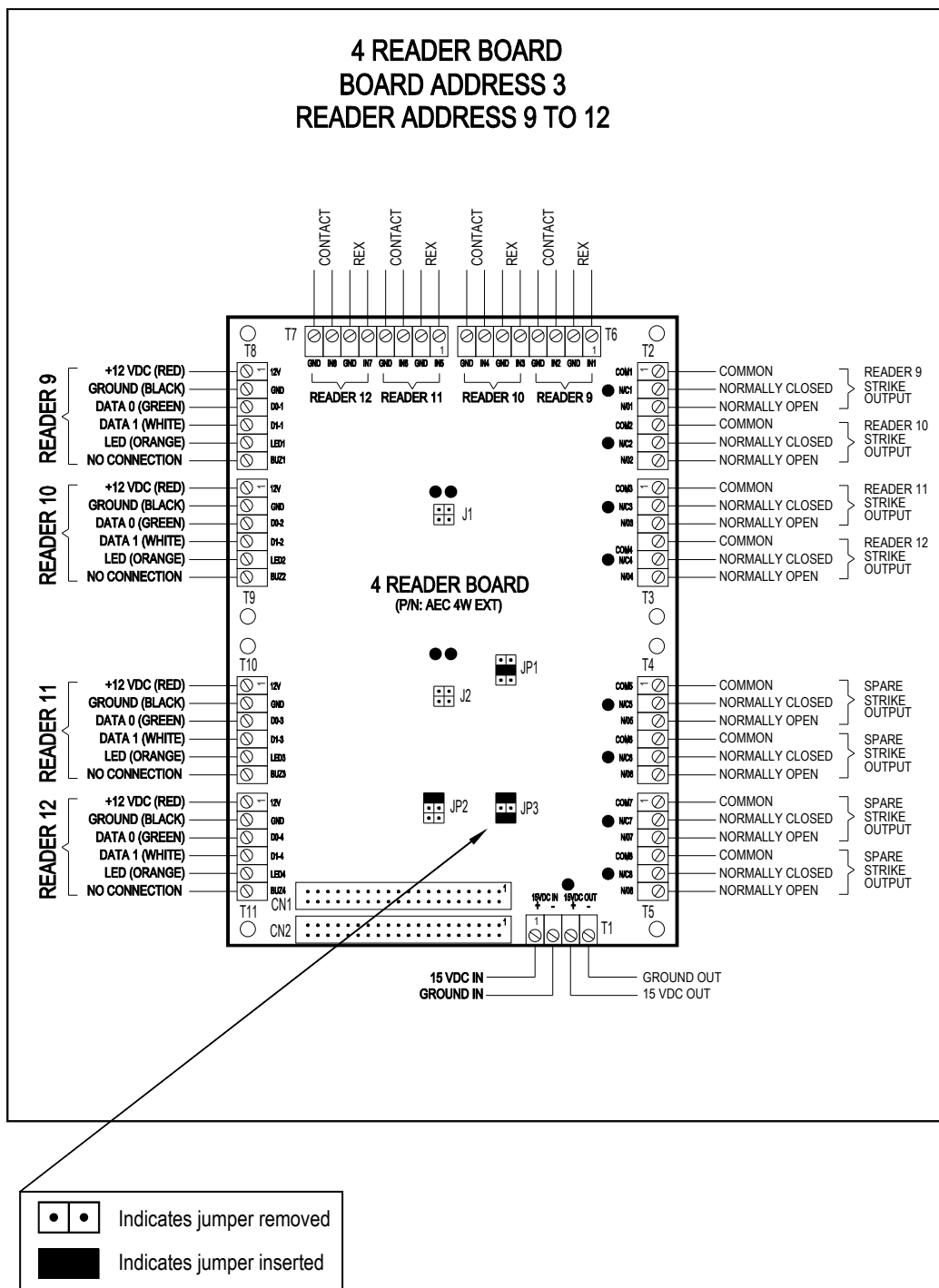




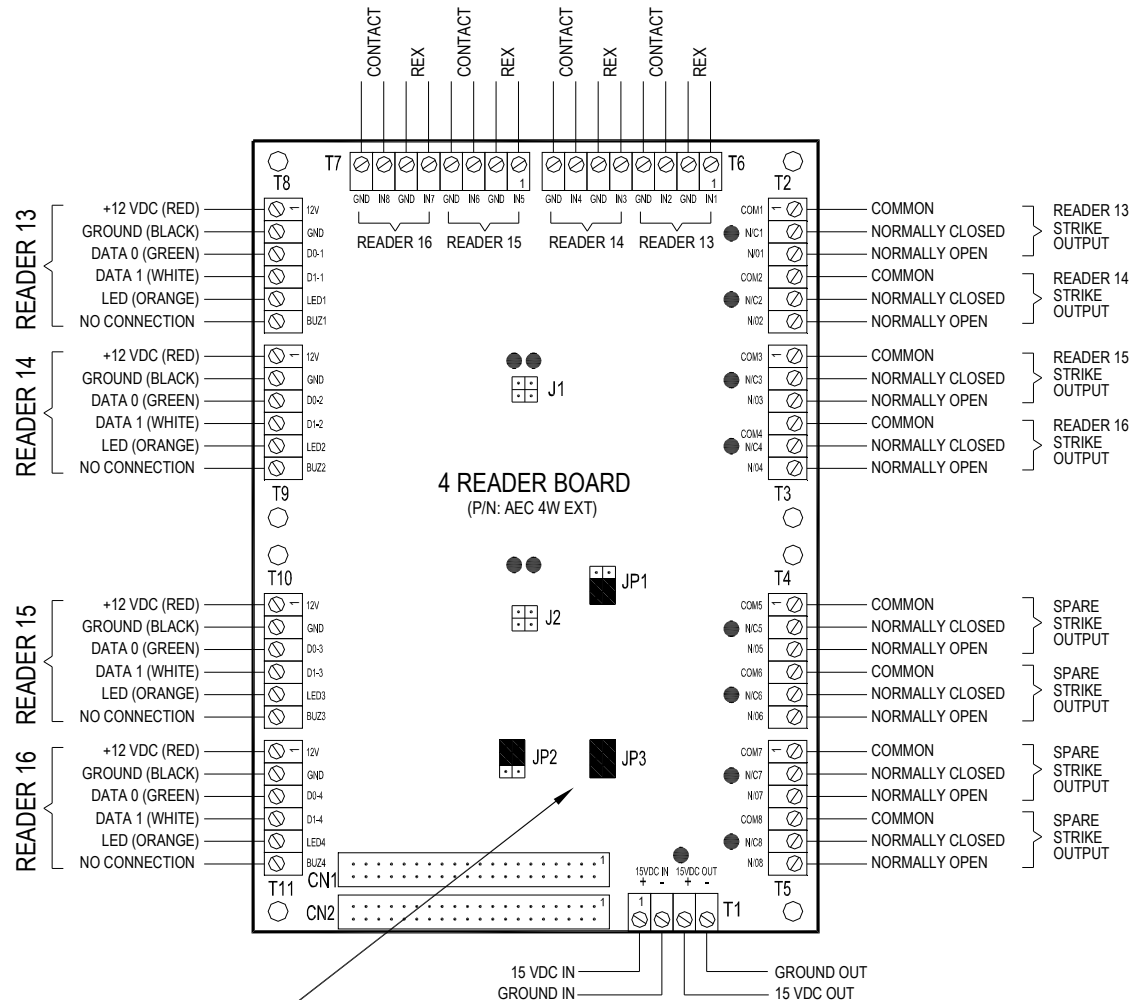
Internal wiring diagram for RIE II Unit For CE Listed system



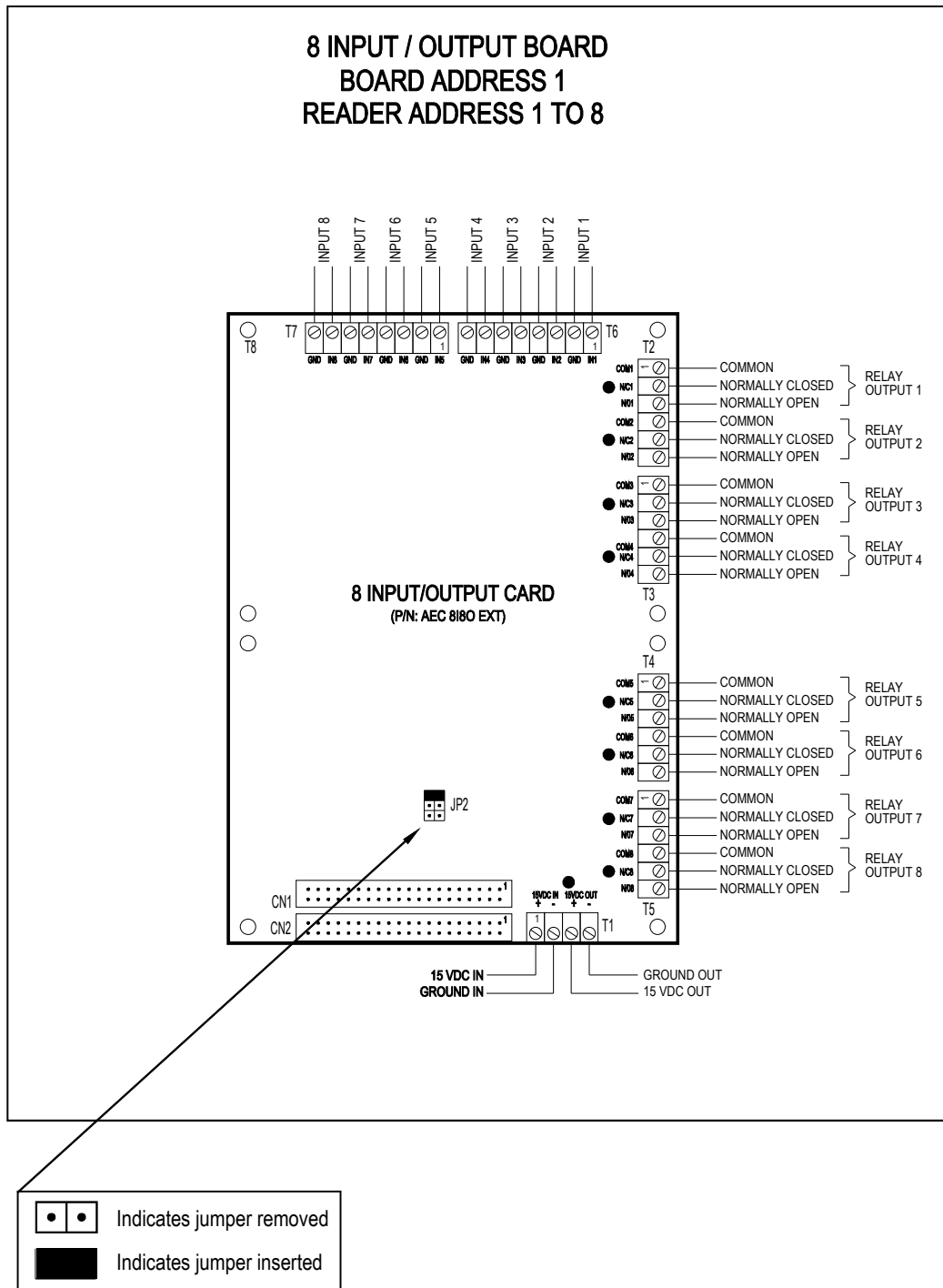


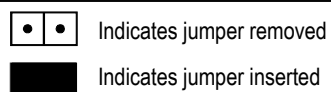
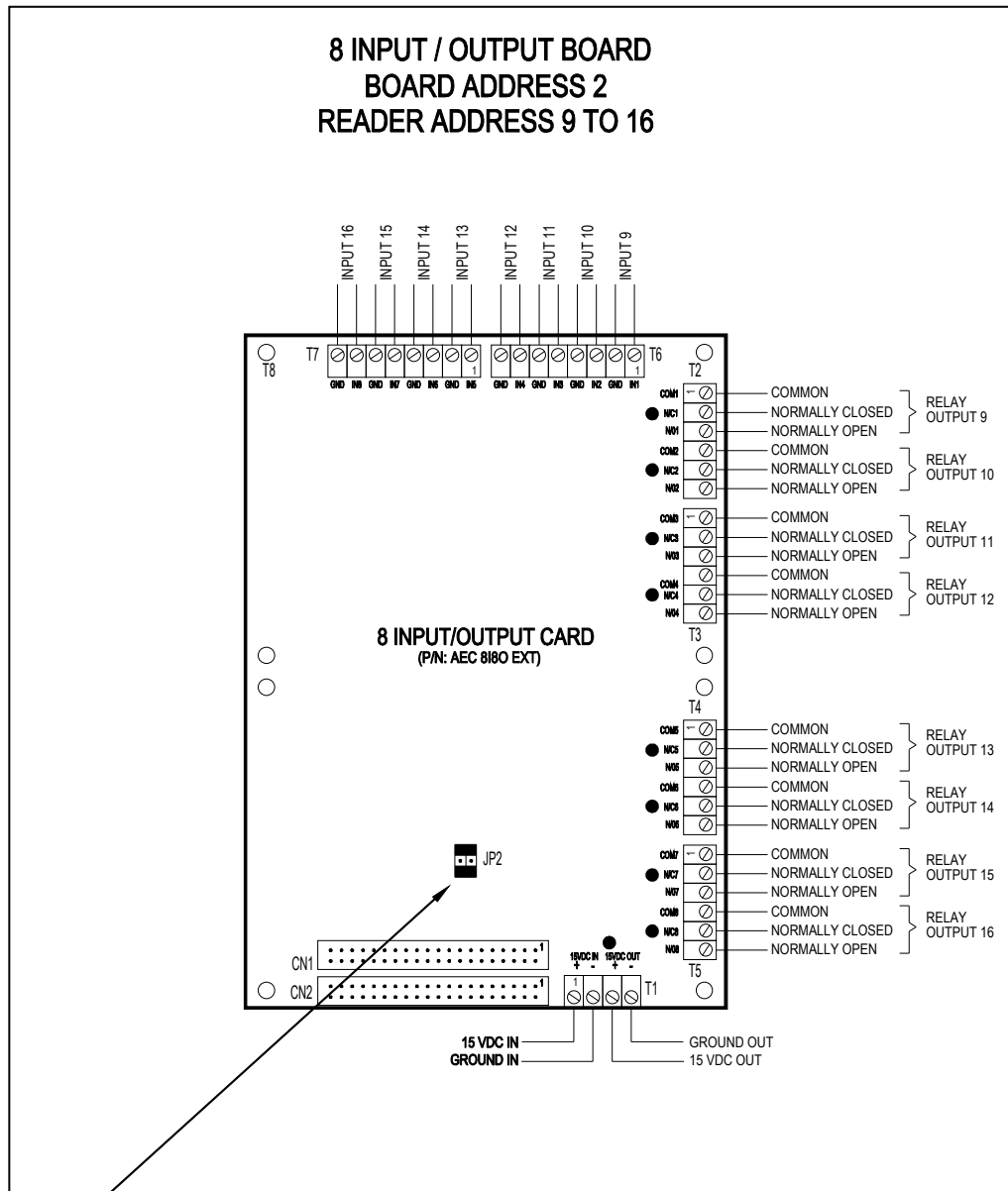


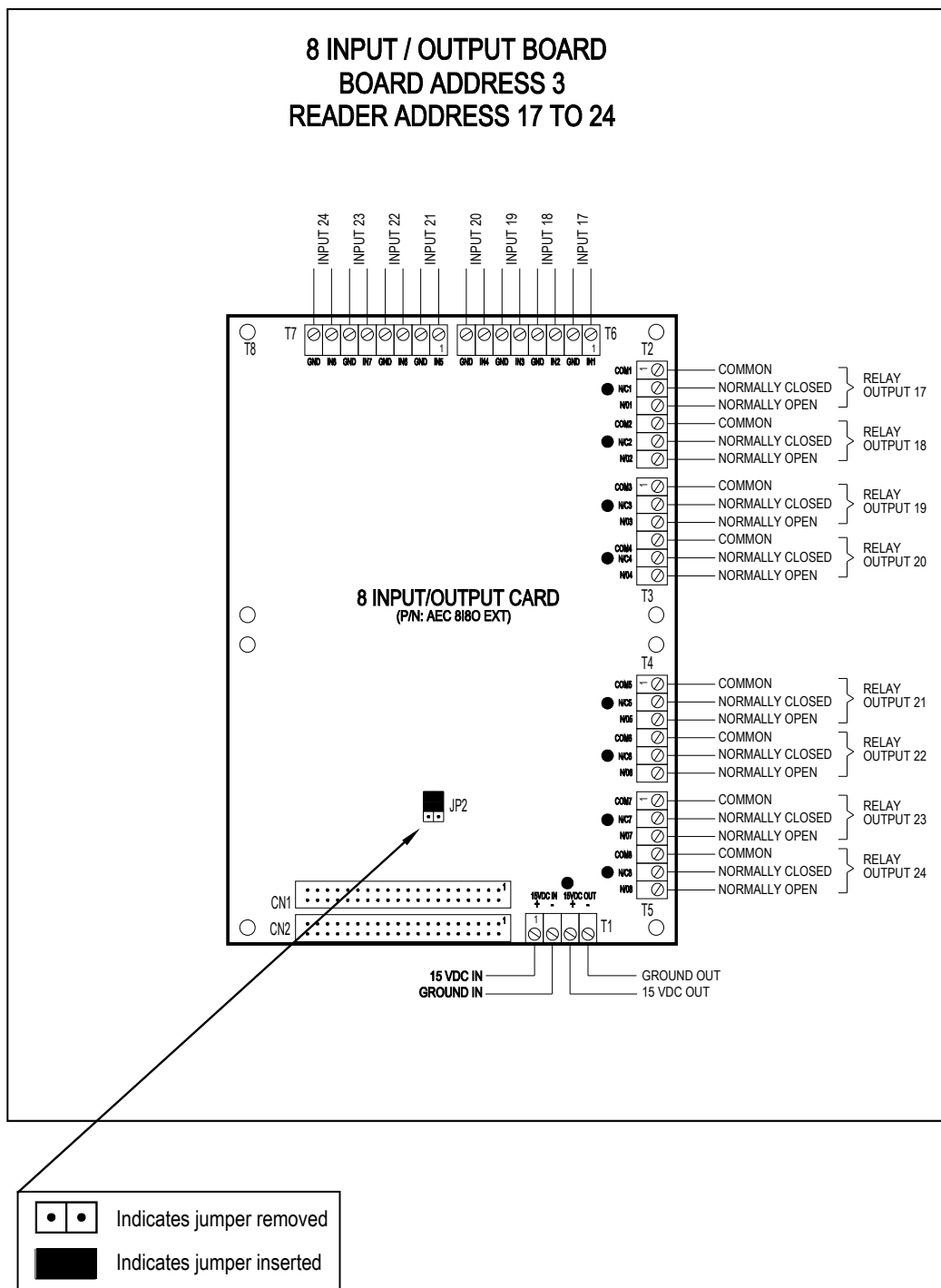
4 READER BOARD BOARD ADDRESS 4 READER ADDRESS 13 TO 16

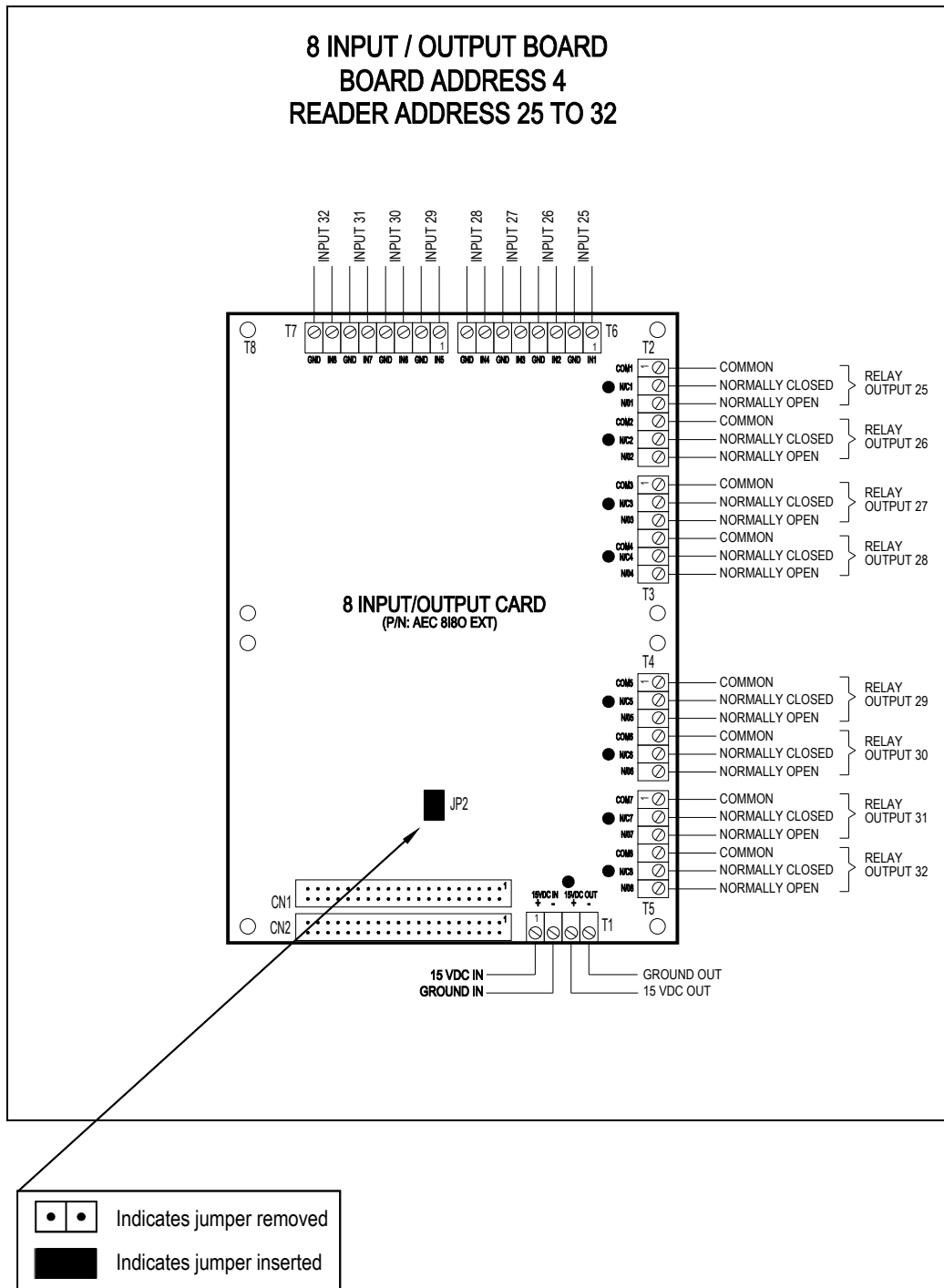


Indicates jumper removed
 Indicates jumper inserted









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CHAPTER 6

How to Install Reader and Field Devices

This section summarizes the installation requirements for readers, door strikes and magnetic locks, door contacts, request-to-exit devices, and miscellaneous alarm devices.

The following readers and field devices have been verified by UL for compatibility with the controller:

- HID MiniProx Reader
- HID ProxPro with Keypad Reader
- HID ProxPro without Keypad Reader
- HID ProxPoint Reader

Before mounting or wiring any hardware, be sure to read and understand the manufacturer's documentation provided with each piece of equipment.

Also, be sure to use wire types and installation practices in full compliance with all applicable codes, and in conformance with all requirements of local jurisdictional authorities.

1. Mount and wire readers in accordance with the manufacturer's instruction provided with the readers.
 - When mounting a reader on a metal mullion or metal junction box, the screws provided with the reader must be used. When mounting the reader on any other surface, use appropriate fasteners.
 - The shield drain wire from the reader cable should be spliced to the shield conductor of the reader cable coming from the Access Easy Controller. The cables shield must be left floating at the controller end. This configuration provides the best shielding from external interference, and minimizes the likelihood of reader generated interference.

2. Mount and wire door strikes and/or electric locks.
 - Wire in accordance with manufacturer's instructions.
 - The door strike relays on the Access Easy Controller 4-reader control cards are designed to handle 1A@ 24 VDC Resistive. This should satisfy most door strikes and magnetic locks. Should larger current locks or strikes need to be controlled, then external interface relays must be installed. External interface relay should also be used with all AC-powered door strikes.

VERY IMPORTANT You must install a back-biased suppression diode across the coil of all DC powered door strikes and magnetic locks. The diode provides protection against the back-emf that is generated when a strike/lock coil is de-energized. Refer to the door-wiring diagram for additional details.

WARNING	NEVER CONNECT A DOOR STRIKE OR MAGNETIC LOCK CIRCUIT TO ACCESS EASY CONTROLLER OR ANY OTHER ACCESS CONTROL CONTROLLER WITHOUT THE PROTECTION DIODE INSTALLED
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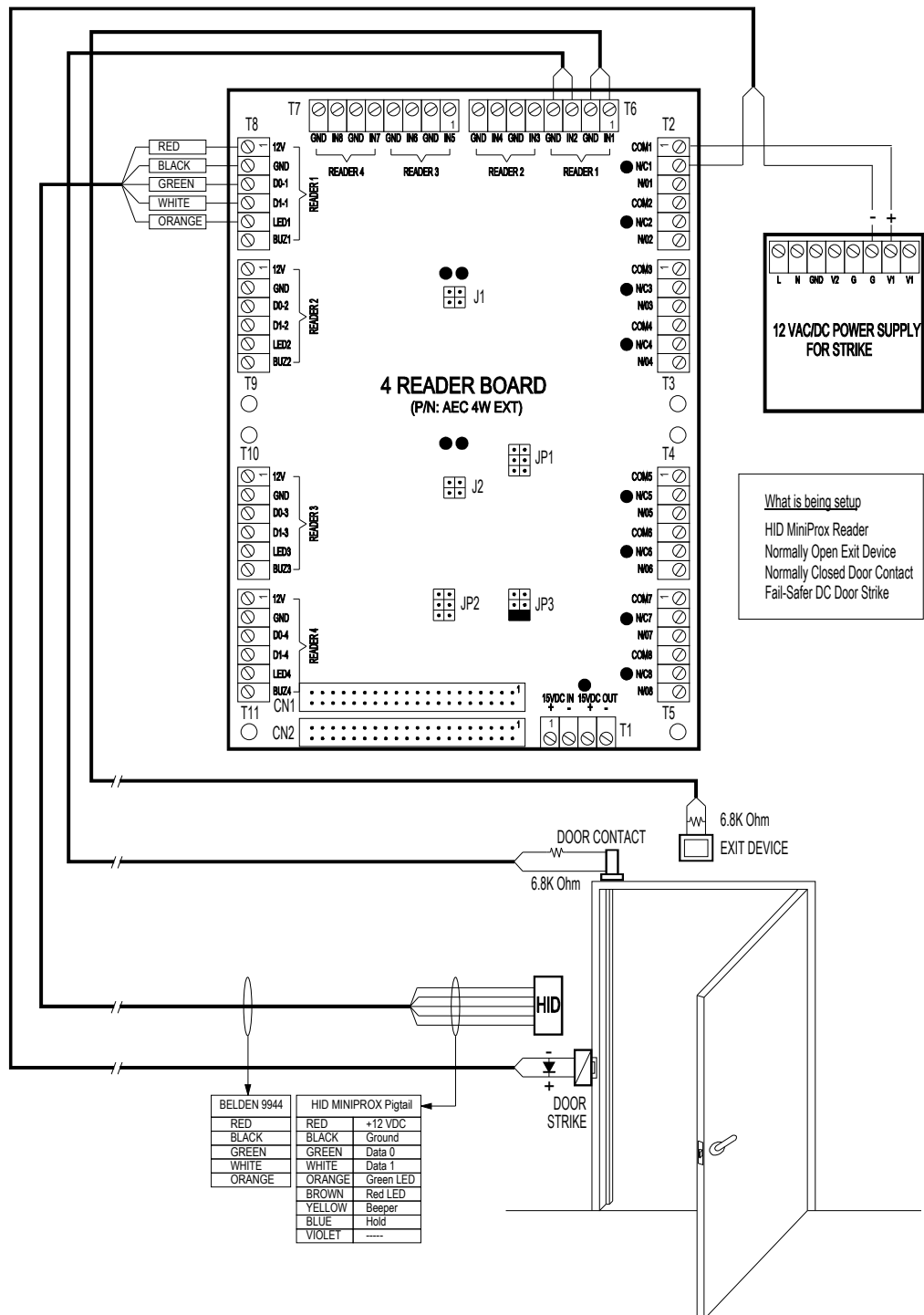
3. Mount and wire door contacts and request-to-exit devices.
 - Install 6.8K ohm end-of-line resistors at each devices. The resistor should be wired in parallel (across) normally open devices and in series with normally closed devices. Refer to door wiring diagrams for additional details.
 - When using PIR type request-to-exit devices, be sure to read manufacturers instructions carefully. Many of these devices need an internal jumper position changed to work properly in access control applications. Changing this jumper setting allows the units to quickly reset after they have detected motion. Without changing the jumper, some devices take up to 30 seconds to reset after they detect motion. Refer to manufacturer's instruction for additional details.
 - Wireless PIR devices are not recommended for use in access control systems and should not be used as request-to-exit devices on Access Easy Controller applications.
4. Wire any output devices that are to be controlled by the controller.
 - Output circuits are typically used to control alarm bells, lighting circuits, or similar equipment.
 - The output relays on the Access Easy Controller 8-Input/Output card board are designed to handle 1A @ 24 VDC Resistive. If it is necessary to control larger current devices or AC powered devices, then external interface relays must be installed.

5. Connect all field devices wiring to the 4-reader and 8-Input/Output boards in the Access Easy Controller.
 - Refer to the device wiring diagrams in this manual to identify the termination points for the various devices.
 - All controller termination land on removable terminal strips. We suggest you carefully remove the terminal strips before landing the wires. Once all wires have been landed on a terminal strip and verified, gently re-insert the terminal strip on the circuit card.
 - If wiring directly to the terminal strips without first removing the strip from the card, use caution that bare wires do not accidentally touch any components or foils on the circuit boards.
 - Terminate all unused door contact and request-to-exit circuits by circuits by connecting a 6.8K ohm resistor directly across the appropriate terminals. Also terminate unused input zones on 8-Input/Output card boards.

The following pages contained door wiring diagrams for most of the common HID readers used with the Access Easy Controller. Instructions are also provided on how to test the readers.

The following readers have been verified by UL for compatibility with the controller:

- HID MiniProx Reader
- HID ProxPro with Keypad Reader
- HID ProxPro without Keypad Reader
- HID ProxPoint Reader



Testing a HID MiniProx Reader

1. Connect the terminal strip where the cable from the reader is terminated to the proper connector on the 4-reader board.

Result: The reader red and green LEDs will alternately flash for a few seconds, and the beeper in the reader will beep three times in a sequence of two beeps, short pause, one beep. The red LED will remain lit.

2. Present a card to the reader.

Result: The green LED should light briefly and the reader should sound a short beep. This indicates that the reader recognized the card.

3. Depending on the setup of the controller database for the card used in the previous step, one of two events will occur within a second of the beep in step 2. Note that either response indicates that the reader is working.

- If the card is configured to allow access through the reader, then the green LED will light for a few seconds indicating that access has been granted.
- Or, if the database has not yet been configured, then the red and green LEDs will flash in a rapid alternating pattern for two to three seconds indicating that access has been denied.



Testing a HID ProxPoint Reader

1. Connect the terminal strip where the cable from the reader is terminated to the proper connector on the 4-reader board.

Result: The reader and green LEDs will alternately flash for a few seconds. Then the red LED will remain lit.

2. Present a card to the reader.

Result: The green LED should light briefly indicating that the reader recognized the card.

- If the card is configured to allow access through the reader, then the door strike relay on the reader card will activate and the red door strike LED on the same card will light indicating that access has been granted.
3. Depending on the setup of the controller database for the card used in the previous step, one of two events will occur within a second of the beep in step 2. Note that either response indicates that the reader is working.
 - If the card is configured to allow access through the reader, then the green LED will light for a few seconds indicating that access has been granted.
 - Or, if the database has not yet been configured, then the read and green LEDs will flash in a rapid alternating pattern for two of three seconds indicating that access has been denied.



Testing a HID ProxPro Reader

1. Connect the terminal strip where the cable from the reader is terminated to the proper connector on the 4-reader board.

Result: The reader red and green LEDs will alternately flash for a few seconds, and the beeper in the reader will beep three times in a sequence of 2 beeps, short pause, one beep. The red LED will remain lit.

2. Present a card to the reader.

Result: The green LED should light briefly and the reader should sound a short beep. This indicates that the reader recognized the card.

3. Depending on the setup of the controller database for the card used in the previous step, one of two events will occur within a second of the beep in step 2. Note that either response indicates that the reader is working.

- If the card is configured in the controller's database to allow access through the reader, then the green LED will light for few seconds indicating that access has been granted.
- Or, if the database has not yet been configured, then the red and green LED will flash in a rapid alternating pattern for two to three second indicating that access has been denied.

The above tests validate that the reader is functioning correctly.

If installing a keypad type reader, then you will need to further configure the reader database before you can properly validate keypad operation. Refer to the software manual for information of configuring the reader database to support card and PIN operating. After making necessary database updates, the keypad can now be tested as described in the next section.



Testing ProxPro Reader with Keypad

1. Make necessary database updates as described in the previous paragraph to configure the reader for card and PIN operation.
2. Present a card to the reader.

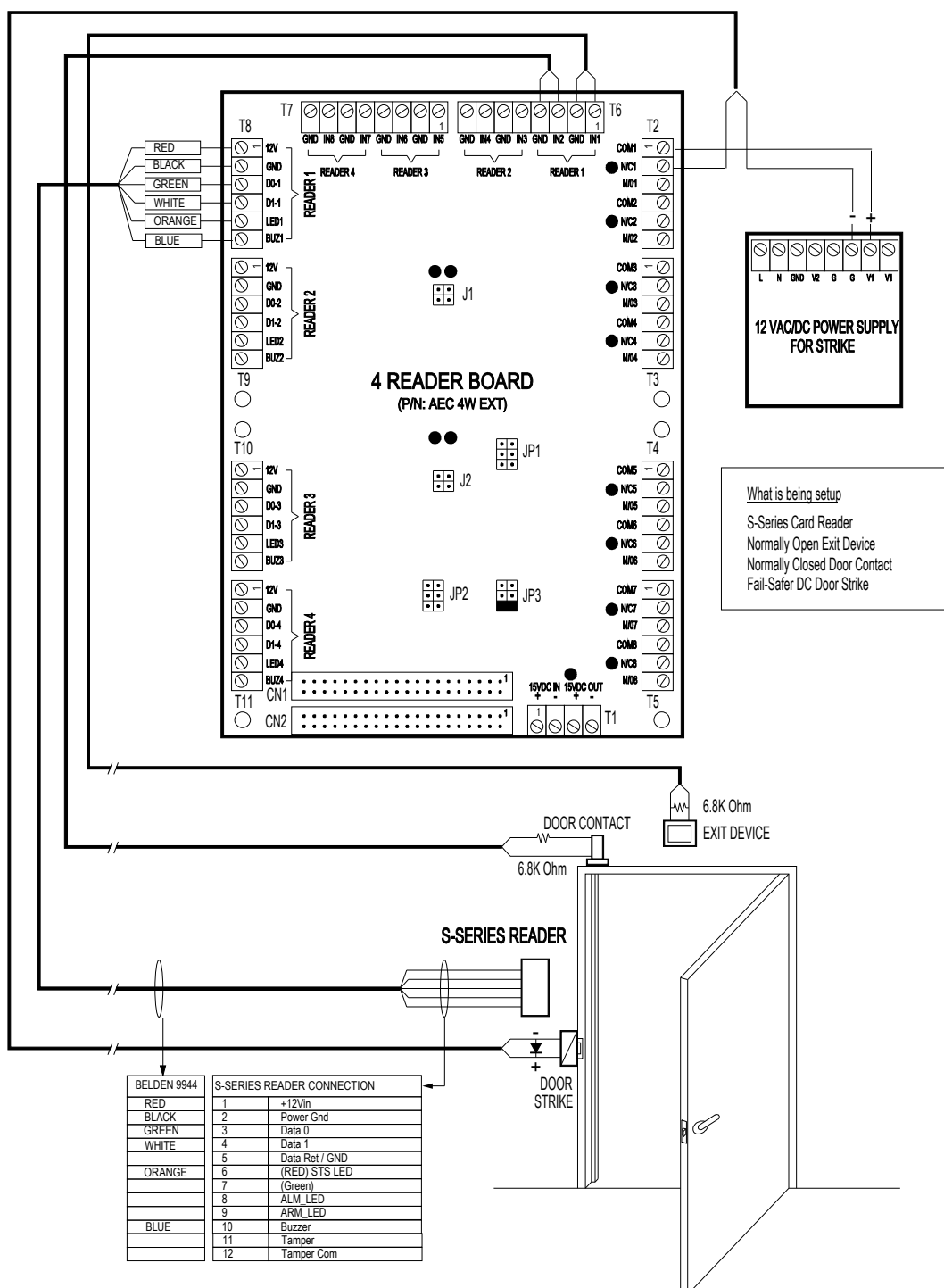
Result: The green LED should light briefly and the reader should sound a short beep. This indicates that the reader recognized the card.

The reader should then begin a slow alternating flash of the red and green LEDs indicating that the PIN code should be entered.

1. Enter the card's PIN code by slowly pressing the numeric keys on the reader's keypad. After entering the last digit, press the # key to complete PIN entry.

Result: An audible beep will be heard after each key is pressed.

2. Depending on the setup of the controller database for the card used in the previous step, one of two events will occur within a second after pressing the # key in the previous step. Note that either response indicates that the reader and keypad are working.
 - If the card is configured to allow access through the reader and the correct PIN code was entered, then the green LED will light for a few seconds indicating that access has been granted.
 - Or, if the database has not yet been fully configured, then the red and green LED will flash rapidly in an alternating pattern for two of three seconds indicating that access has been denied.



Testing S-Series Card Reader

1. Configure the reader for card and PIN operation, please refer to the Access Easy Controller Software User Manual for detail in enabling the card and PIN operation.

2. Swipe a card to the reader.

Result: The green LED should turn off briefly and the reader should sound a short beep. This indicates that the reader recognized the card.

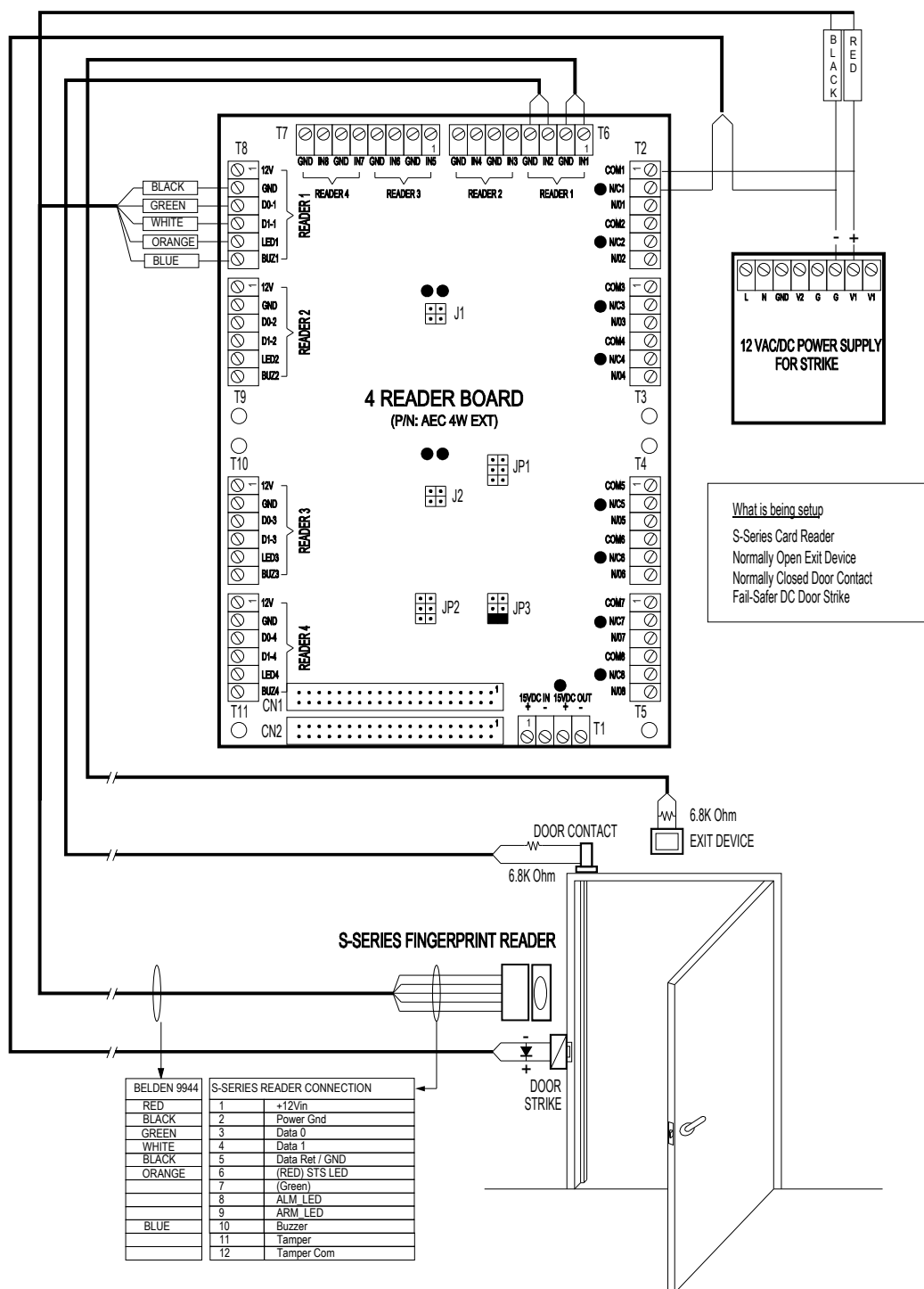
The reader should then begin a slow flash of the green indicating that the PIN code should be entered.

3. Enter the card's PIN code by slowly pressing the numeric keys on the reader's keypad. After entering the last digit, press the Enter key to complete PIN entry.

Result: An audible beep will be heard after each key is pressed.

4. Depending on the setup of the controller database for the card used in the previous step, one of two events will occur within a second after pressing the Enter key in the previous step. Note that either response indicates that the reader and keypad are working.
 - If the card is configured to allow access through the reader and the correct PIN code was entered, then the green LED will turn off for a few seconds indicating that access has been granted.

Or, if the database has not yet been fully configured, then the green LED will flash rapidly for two or three seconds indicating that access has been denied.



Testing S-Series Fingerprint Card Reader

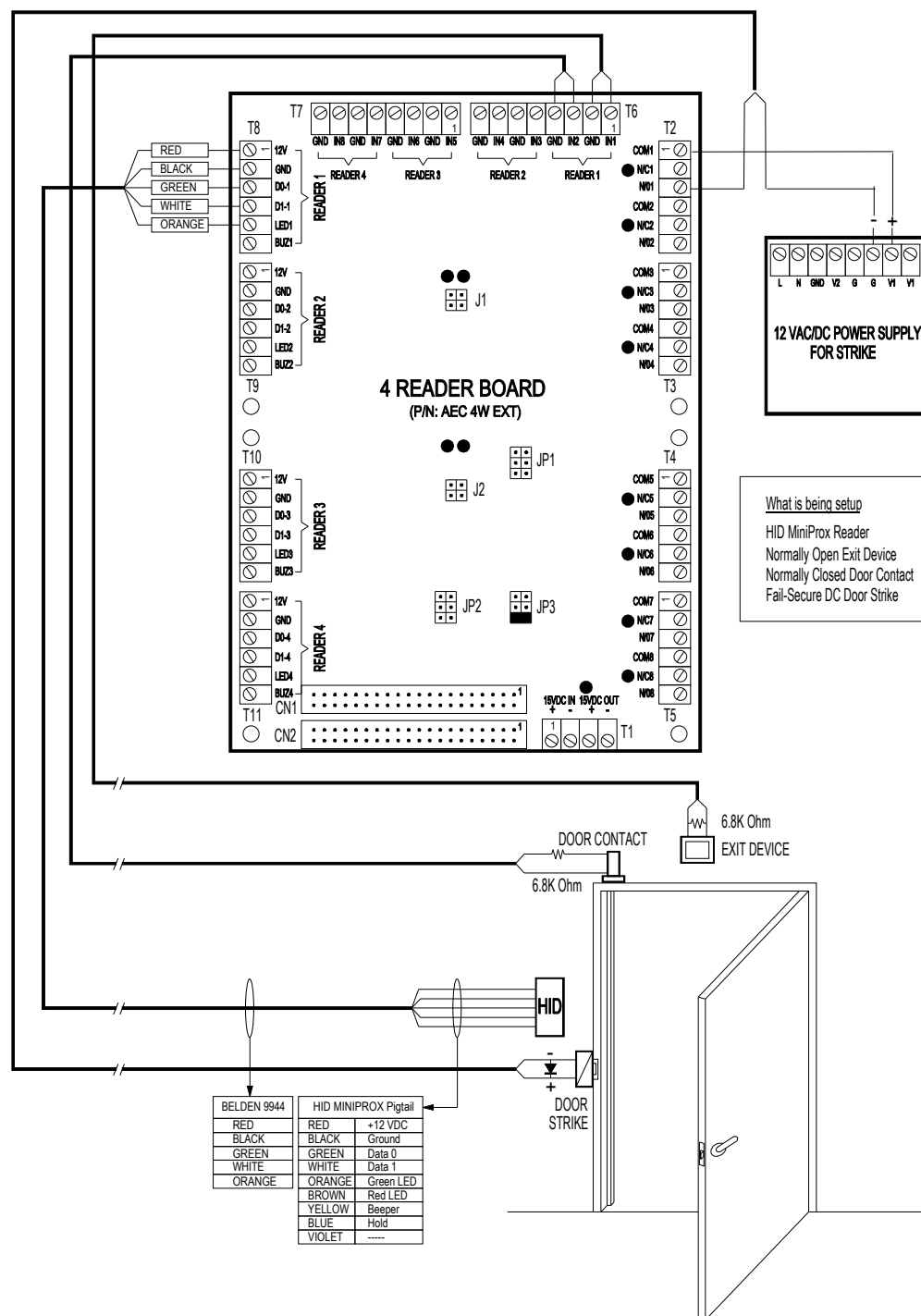
1. Configure the reader for card, PIN operation and fingerprint enrolment, please refer to the Access Easy Controller Software User Manual for detail in enabling the card and PIN operation and fingerprint enrolment manual for detail in indexing the fingerprint.
2. Swipe a card to the reader.
3. The fingerprint reader should then begin a fast flickering of red indicating that fingerprint should be scanned.
4. Once fingerprint is verified, the reader should then begin a slow flush of the green indicating that the PIN code should be entered.

Enter the card's PIN code by slowly pressing the numeric keys on the reader's keypad. After entering the last digit, press the Enter key to complete PIN entry.

Result: An audible beep will be heard after each key is pressed.

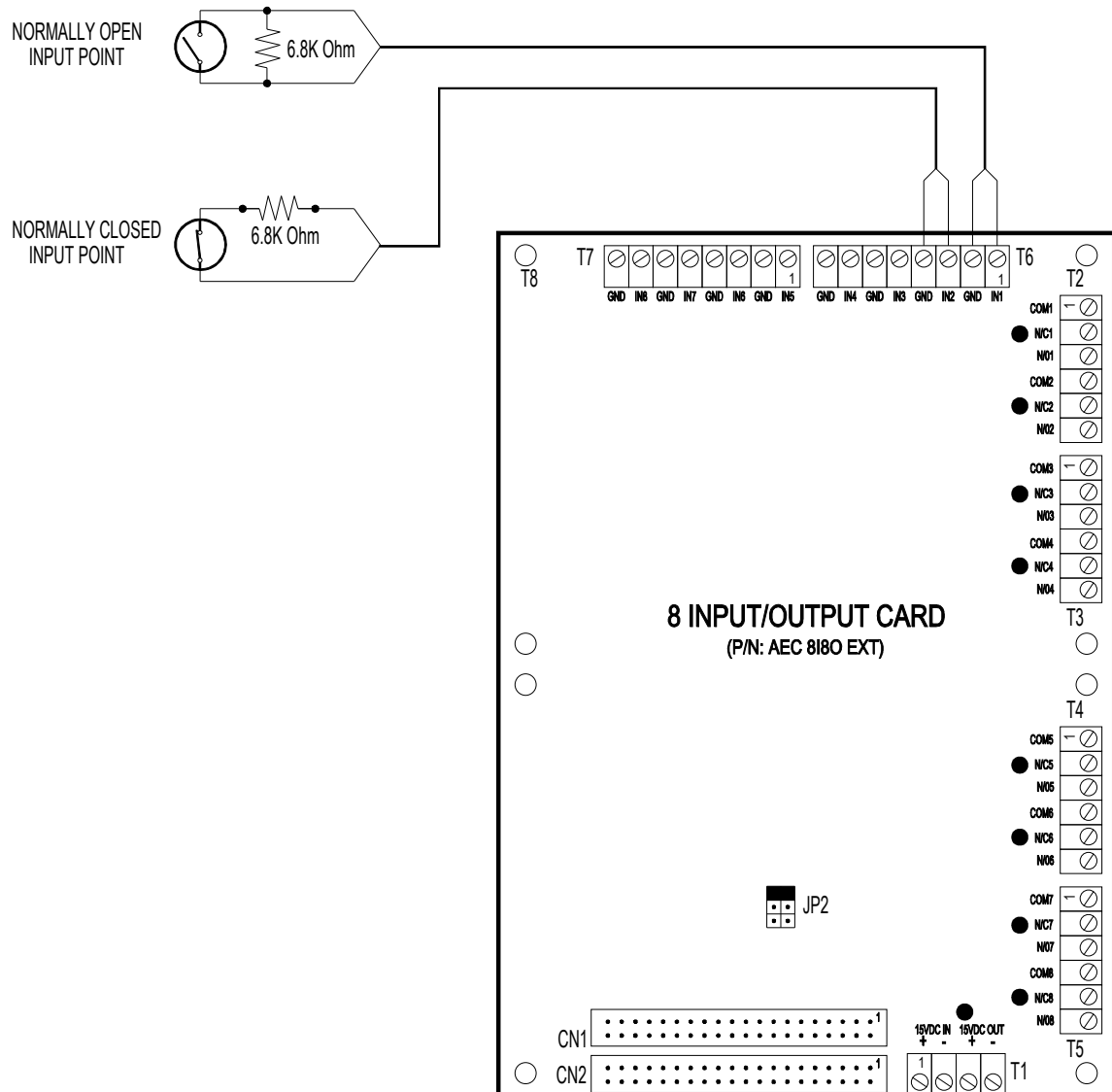
5. Depending on the setup of the controller database for the card used in the previous step, one of two events will occur within a second after pressing the Enter key in the previous step. Note that either response indicates that the reader and keypad are working.
 - If the card is configured to allow access through the reader and the correct PIN code was entered, then the green LED will turn off for a few seconds indicating that access has been granted.

Or, if the database has not yet been fully configured, then the green LED will flash rapidly for two of three seconds indicating that access has been denied

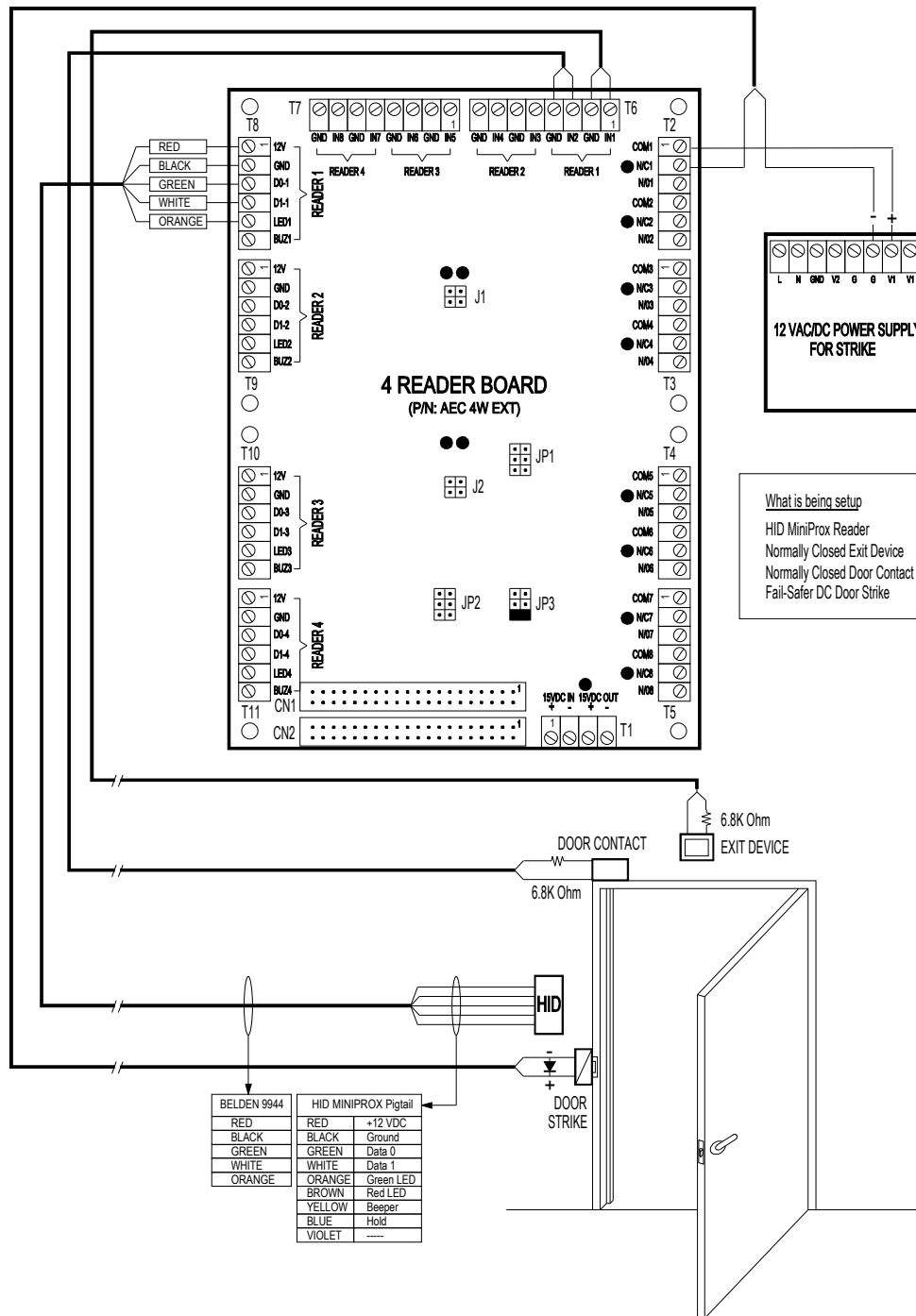


Wiring Diagram of a Fail-Secure Strike

WIRING INPUTS



Wiring Diagram for End-of-line(EOL) Resistors



Wiring Diagram for Normally Closed Door Contact And Request To Exit Device

CHAPTER 7

Common Alarm Output

Overview

The Access Easy Controller provides a Common Alarm output that can be used to provide a hand-off to an intrusion alarm system, such as a Focus™ system, whenever an alarm condition is detected by the controller.

The Common Alarm output is available from the last relay on the first 4-reader board. The output consists of form-C type dry contacts rated to handle 1A @ 24 VDC Resistive. Refer to the wiring diagram for 4-reader board 1 for wiring information on the Common Alarm output.

The Common Alarm output will activate automatically whenever the Access Easy Controller detects any of the following conditions.

- Door Forced Open is detected from a reader controlled door,
- Door Held Open is detected from a reader controlled door,
- Alarm is detected from an input point on an 8-Input/Output card board,
- AC Power Failure to controller is detected,
- controller Tamper is activated, or
- Duress condition is signalled from a keypad reader.

Once activated, the Common Alarm output will remain activated until the condition that caused activation returns to normal. In the event multiple alarms exist within the controller, the Common Alarm output will remain activated until all alarm conditions have restored.

A duress condition is an exception to the processing explained in the previous paragraph. The Common Alarm output will activate immediately when any user of a card reader signals a duress situation from the reader's keyboard. But, because a duress event does not have a restoration associated with it, the Common Alarm output will remain activated until the duress alarm is acknowledged from the View Activity screen.

The rest of the Chapter describes each type of alarm that will trigger the Common Alarm output.

Alarm (All Input Points)

These Input Points, ranging from address 33 to 64, when *Armed* by schedules or manually via a dedicated Arm/Disarm Reader or through the web page could monitor the input status.

Once triggered, the Common Alarm Output will be turned on until the Input Point is restored or the input is *Disarmed*.

Door Forced Opened and Door Held Opened

These two transactions are related to the 16 Readers (Doors). Should there be such a transaction, the Common Alarm Output will be triggered and will only be restored when the Door Contact is closed i.e. the door is closed.

Panel AC Failure

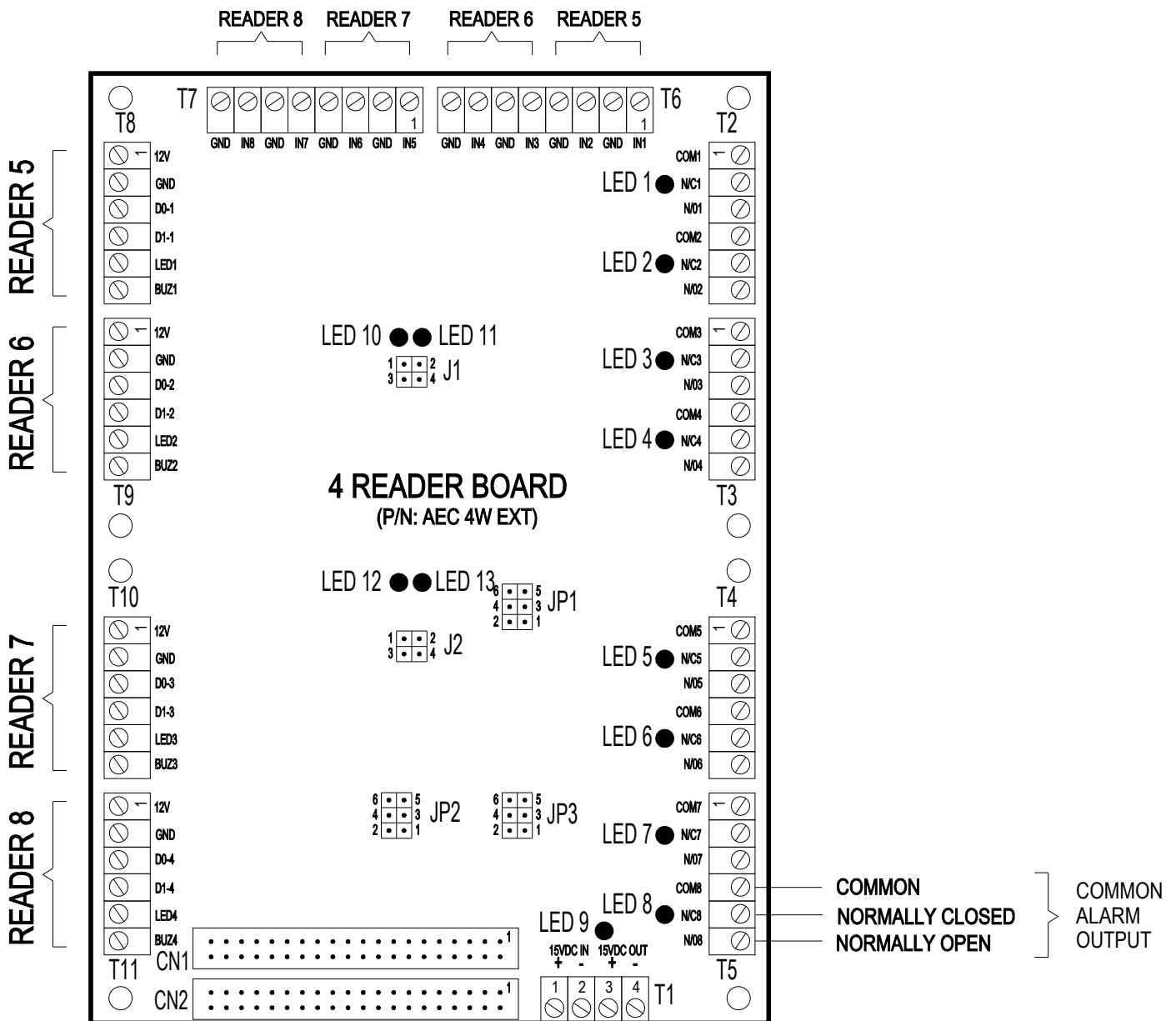
When there is a power outage and the controller is taking power from the backup battery, the message *Panel AC Failure*, will be sent to the *View Activity* web page. The Common Alarm Output will be triggered on and it is only restored when the main power supply is restored.

Controller Tamper

Whenever the Controller's cover is opened, the message *Controller Tamper* will be sent to the *View Activity* web page. The Common Alarm Output will be triggered on and it is only restored when the Controller's cover is closed back.

Duress

Whenever a cardholder activates a duress code, the message *Duress* will be sent to the *View Activity* web page. The Common Alarm Output will be triggered on and it is only restored when the Access Easy Controller software user acknowledged the duress alarm transaction in the *View Activity* web page.



Common Alarm Output

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CHAPTER 8

How to Set Up the Access Easy Controller and the Computer

Overview

Before an Access Easy Controller can be made operational, some basic set-up steps must be performed. This section describes the configuration steps required to prepare the Access Easy Controller for connection to the customer's network. It also summarizes the configuration needed on a computer for the computer to be able to connect to the Access Easy Controller.

Access Easy Controller Set-up

All Access Easy Controllers are shipped from the factory configured with default IP address of 129.2.0.41. Before the controller can be connected to the customer's network, its IP address will need to be changed to fit into the customer's network configuration.

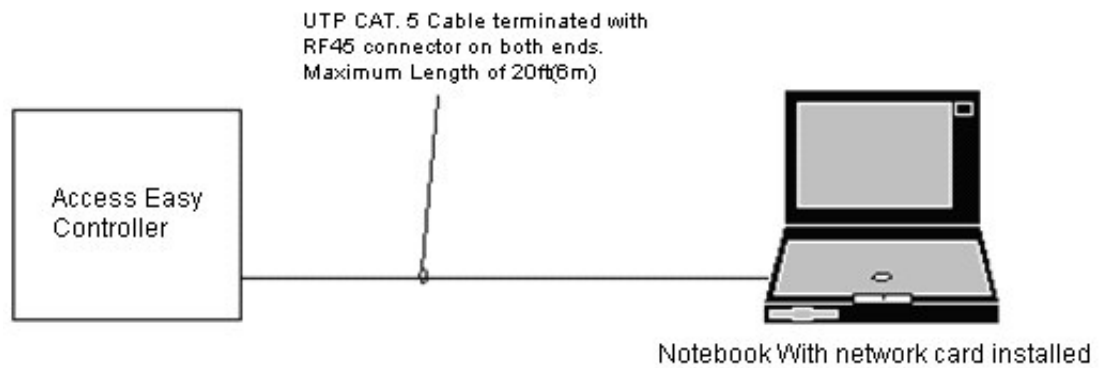
In instances where the controller is going to be connected directly to a stand-alone computer on its own private network, the controller's default address may not need to be changed. All that will be necessary is to configure the computer's network settings so that it has an address on the same network as the controller

For initial setup of the Access Easy Controller, a Notebook or Desktop computer will be required. The computer that will be used for controller setup must have a 10/100Base-T Ethernet card installed in it, and must run a Window or Macintosh operating system. Any version of Windows or Macintosh operating system can be used. The computer must also have a functional Web browser program, such as Microsoft Internet Explorer, version 4.0 and later or Netscape Navigator, version 4.0 and later.

- 1 Configure the computer that is to be used for setting the controller's IP address so that it has an IP address on the same 129.2.0 network as the controller. We suggest you set the computer's IP address to 129.2.0.40, and the subnet mask to 255.255.0.0.

If you are not sure how to change a computer's network settings, refer to the section of this manual entitled *How to Install TCP/IP and Set the IP Address of a Computer*.

- 2 Connect the Access Easy Controller to the computer using a standard Cat-5 crossover cable (Beige Cat-5 cable) as shown below.



- 3 Follow the directors in the section of this manual entitled *How to Set Initial Controller Configuration*.

CHAPTER 9

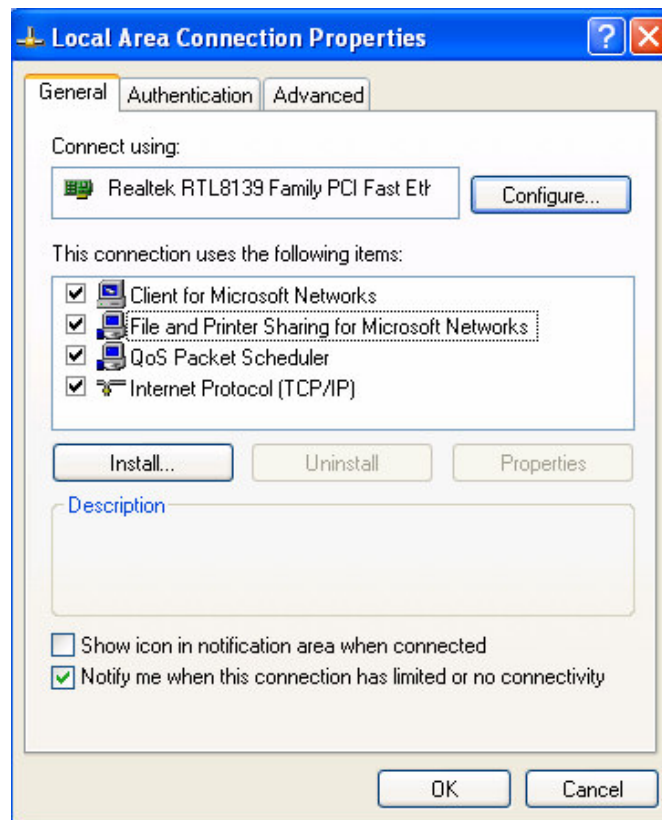
How to Install TCP/IP & Set the IP Address on a Computer

In this section, the necessary steps are described to install the TCP/IP communication protocol on a computer and to assign an IP address to a computer. Two examples are given. The first is for a computer running Windows 98. The second is for Apple Macintosh.

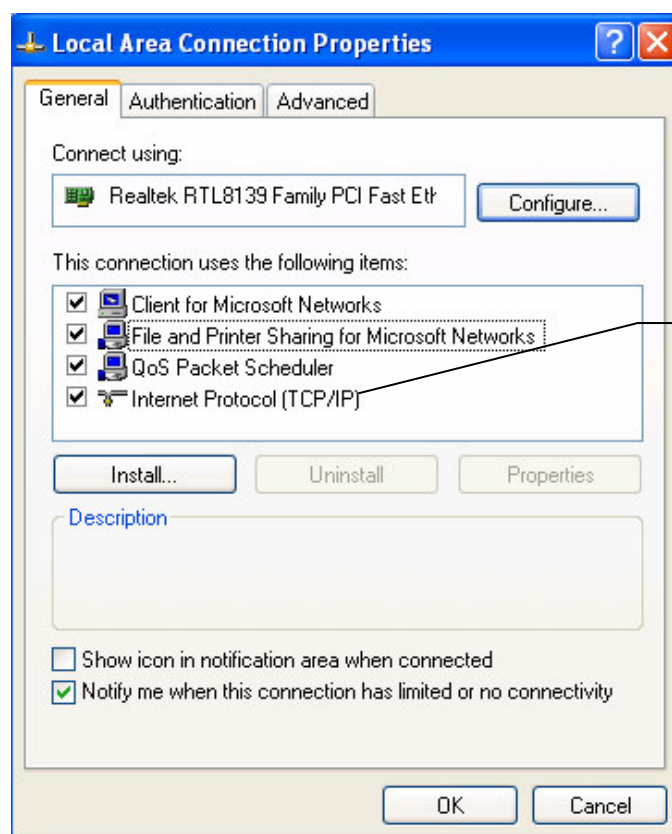
Network Configuration on a Windows Computer (Windows XP)

The example described here is based on Window XP. Slight differences will be noticed in some dialog boxes, displays, and descriptions when the computer is configured with a different version of the Windows operating system. Even with a different version of Windows, the configuration principals are the same the steps are similar.

1. Click on the  button, followed by **Control Panel, Network Connections**.
2. Double-click on the existing network connection  icon and select **Properties**. This will open the Network dialog box shown following.

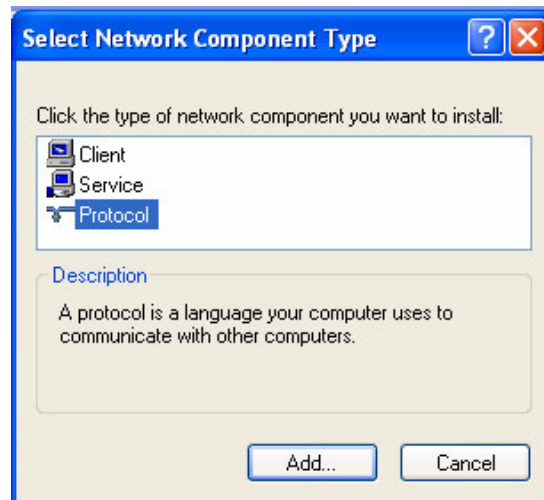


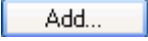
3. Look up for **TCP/IP** from the list as shown in the following diagram. If the component is found, highlight it by single clicking on it. Then skip forward to step 8 of this procedure. However if the component is not found, continue with steps 4 to 7 and install the component.

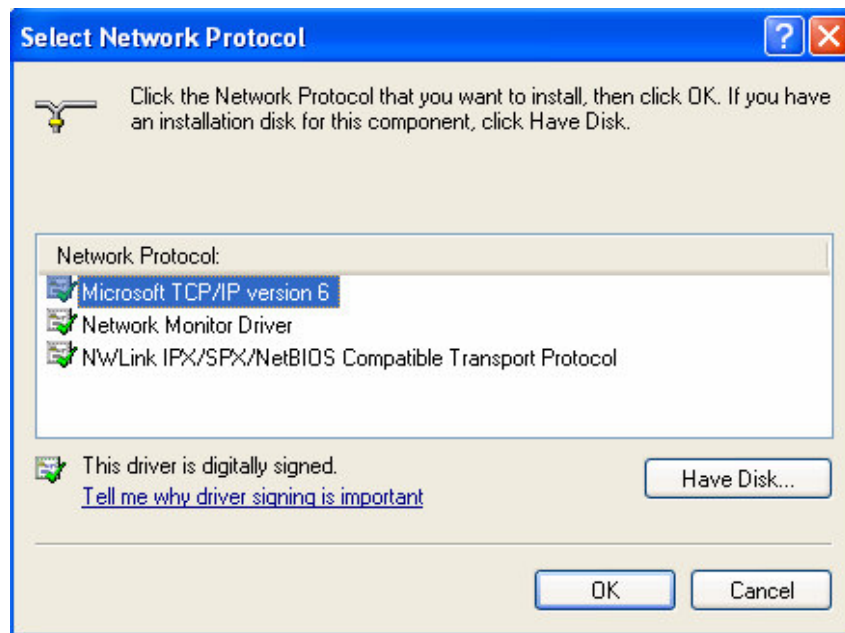


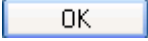
You want to look for an entry showing the TCP/IP internet protocol,

4. If TCP/IP is not found, then you will need to install it. To add the TCP/IP component, click on the  button to bring up the following dialog box.

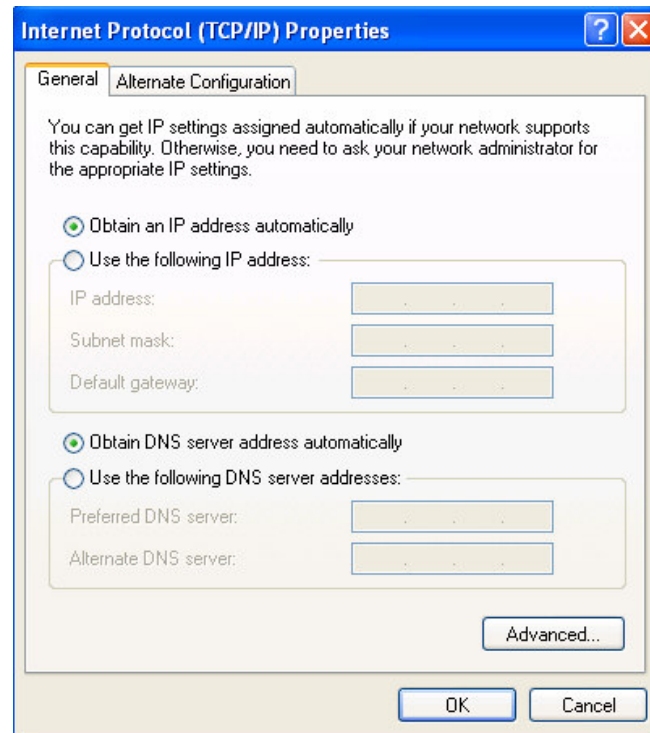


5. Highlight the **Protocol** line by single clicking on it, and then click on .
6. The dialog box that appears is shown below. From this box, select **Microsoft TCP/IP version 6** in the window

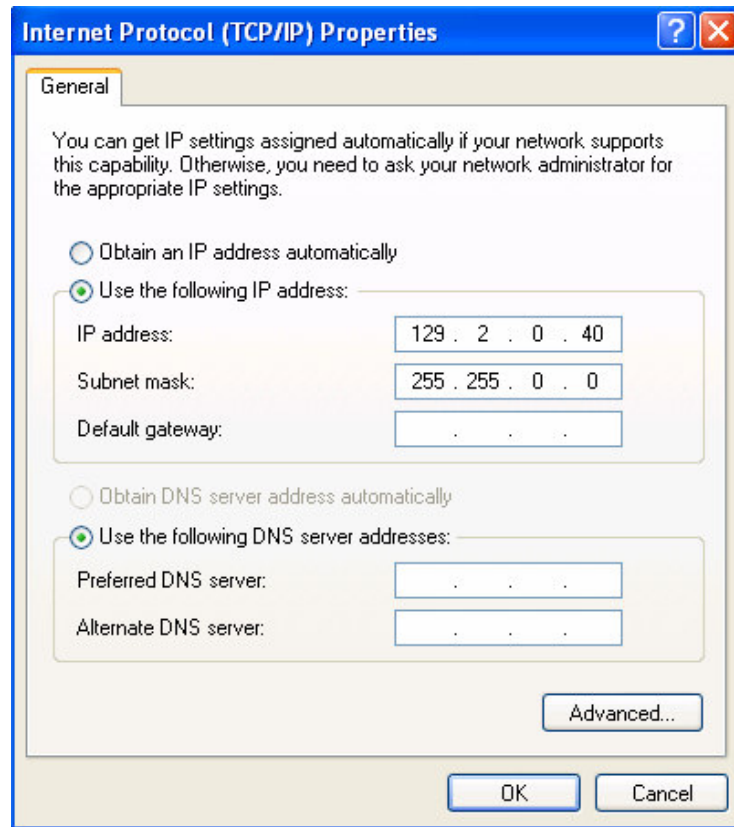


7. Click  to proceed with the component installation. Follow any instructions that may be displayed on the screen. Note that the system may ask you to insert your **Windows Installation Disk** in the CD ROM drive. When finished, go back to step 3 and select the **TCP/IP Protocol – network adapter** line from the list of installed network components. Then proceed to step. 8.

8. With the TCP/IP – adapter component highlighted, click  to define the **TCP/IP Properties**. The TCP/IP properties dialog box will appear as shown following



9. Select **Use the following IP address** radio button. This will enable the fields for **IP Address** and **Subnet Mask**.
10. Enter the **IP Address** and **Subnet Mask Address**. The following examples shows the recommended address and subnet mask to assign to the computer to communicate with a brand new Access Easy Controller as received from the factory. Leave DNS field blank.

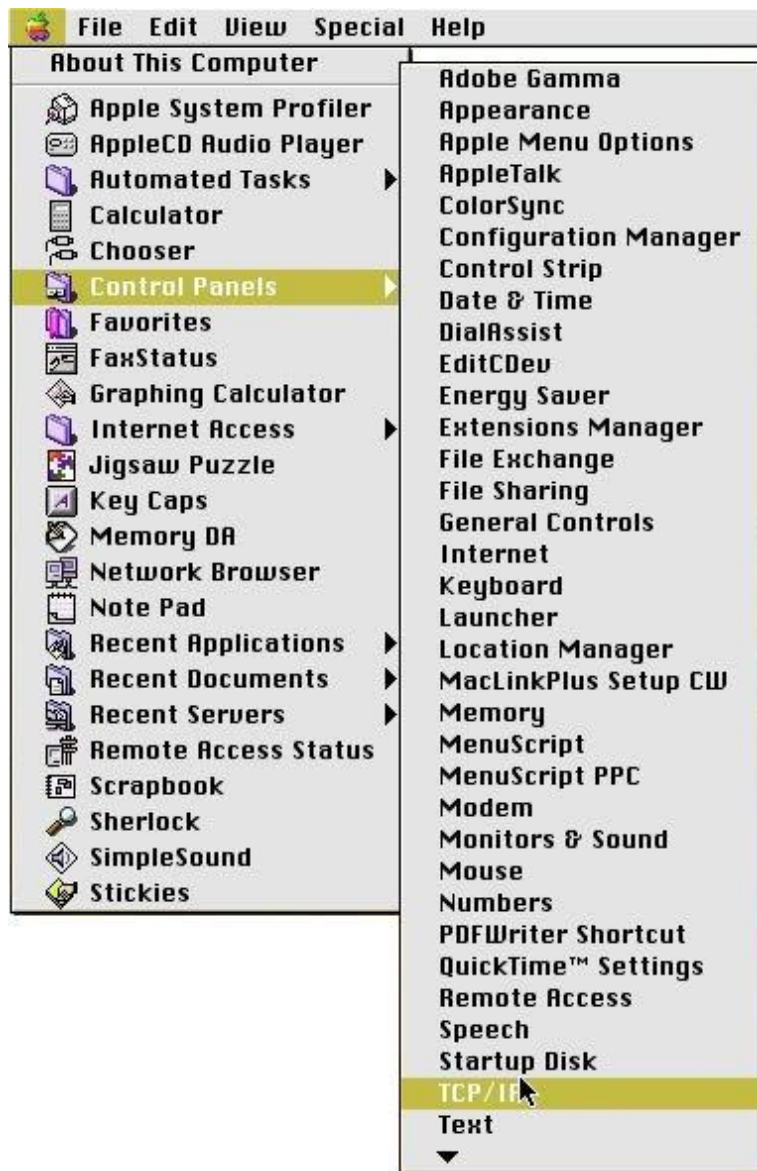


11. Click  after verifying that the IP address and subnet mask have been correctly entered
12. The computer will proceed to configure the TCP/IP settings. When it is finished, you will be prompted to reboot the computer for the new settings to take effect.

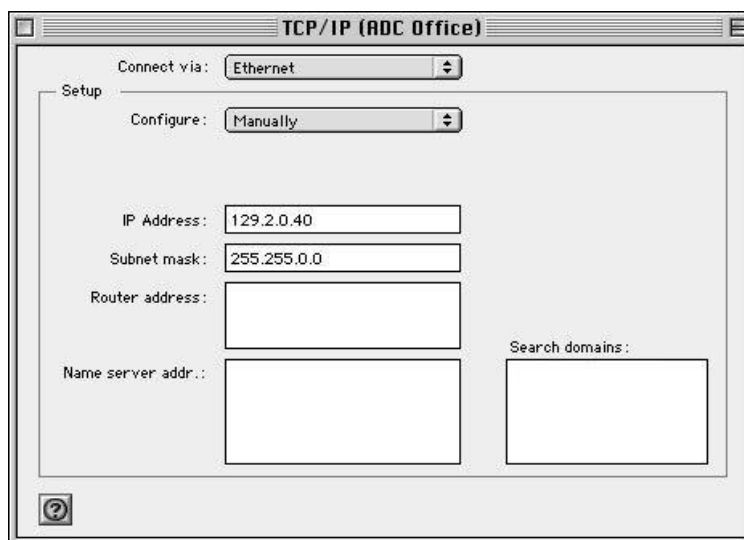
Network Configuration on a Macintosh Computer

The example in this section describes the procedure for configuration the network address on an iMac computer. When configure other models of Apple computers, the screen presentations may be slightly different from those shown here. However, the basic steps will be the same.

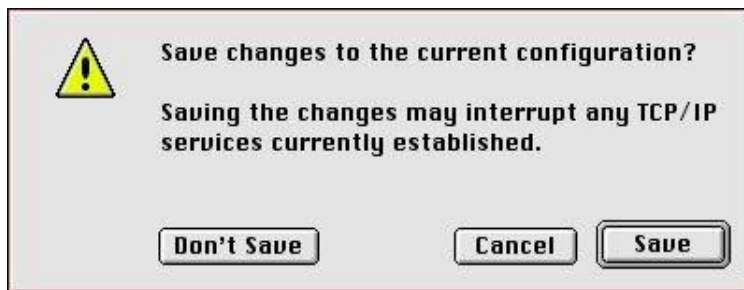
1. Click the **Apple** icon to show a list of control functions.
2. From the list, select **Control Panels, TCP/IP** as shown in the following sample screen.



Result: The TCP/IP dialog box will be displayed as shown following.



- 4 Enter the **IP Address** and **Subnet Mask Address**. The example above show the recommended address and subnet mask to assign to the computer to communicate with a brand new Access Easy Controller as received from the factory.
- 5 Click **Save** when prompted. This message shown below will appear.



- 6 Click **Save** to confirm the action.

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CHAPTER 10

Dial-Up Networking

Introduction

The dial-up networking feature allows a controller administrator to remotely connect to a Access Easy Controller for database management and/or monitoring purposes.

General

The dial-up capability is implemented by connecting the Access Easy Controller's serial port to an external modem, and then connecting the modem to a dedicated analog telephone line. The controller's administrator can then dial into the controller from any computer that supports dial-up networking in much the same manner as is used to connect to a Internet Service Provider.

Modem Guidelines

The Access Easy Controller software has been designed to be as generic as possible in the implementation of modem support and dial-up networking. However, modems tend to have varying characteristics and attributes from one manufacturer to the next, and often from one model to the next within a given manufacturer.

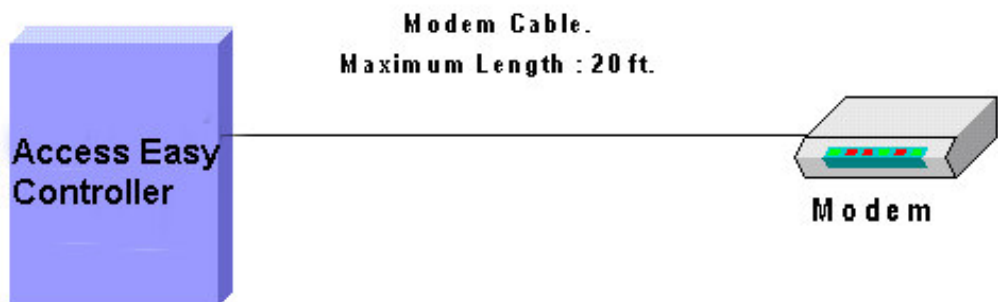
For persons preferring to use a different modem, the set-up characteristics needed by the modem are documented later in this chapter. Also, the pinouts of the cable needed to connect the modem to the controller's serial port are documented in Appendix C of this manual. Understand that when using a non-standard modem, Bosch security Systems and supplier support services will be unable to provide troubleshooting and technical support for modem-related issues.

Special Guidelines for UL Compliant Installation

For UL-compliant installations, follow the special guidelines described below.

The modem must be installed in the same room as the controller.

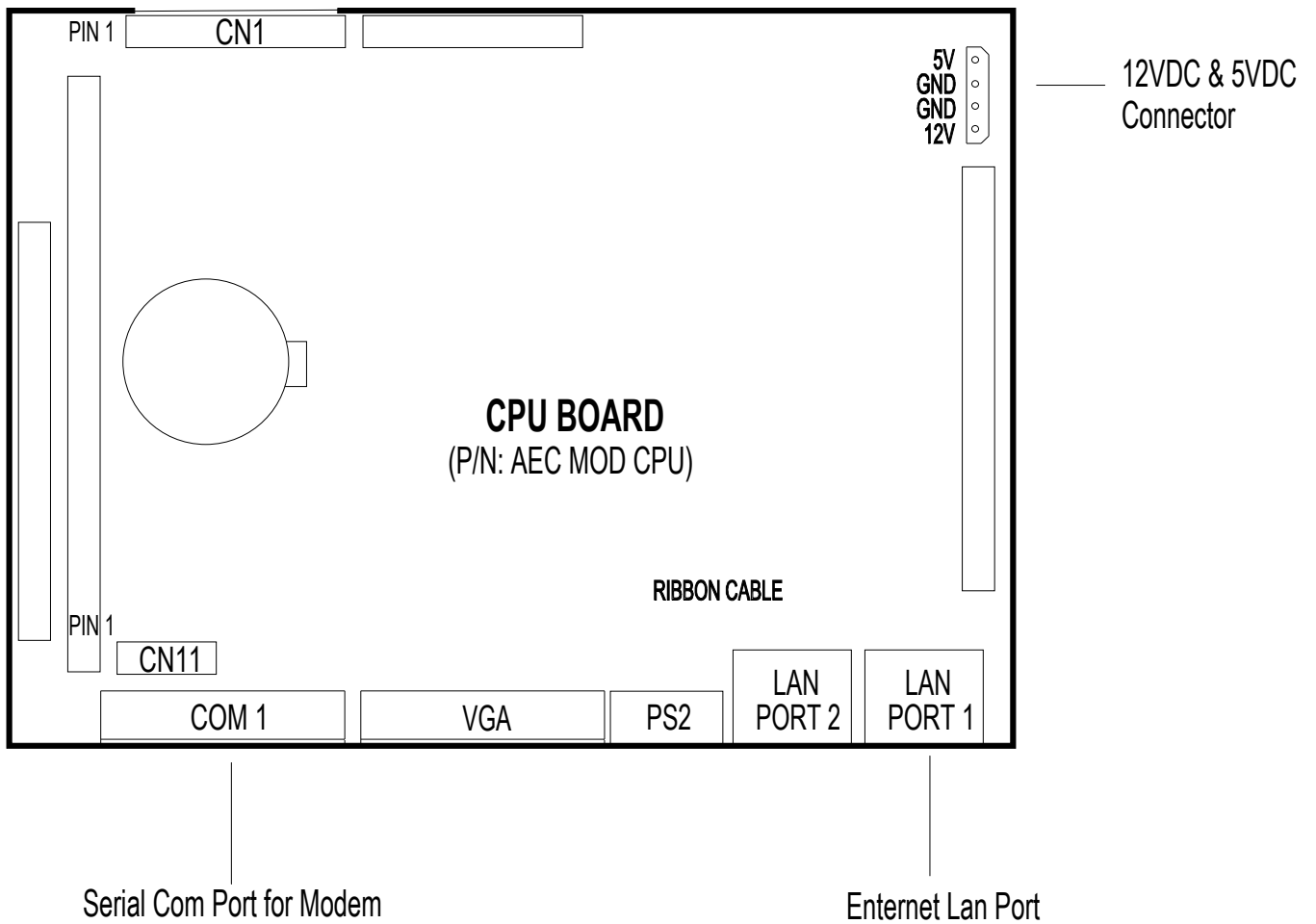
The cable length between the modem and the RS-232 port on the Access Easy Controller must not exceed 5m in length.

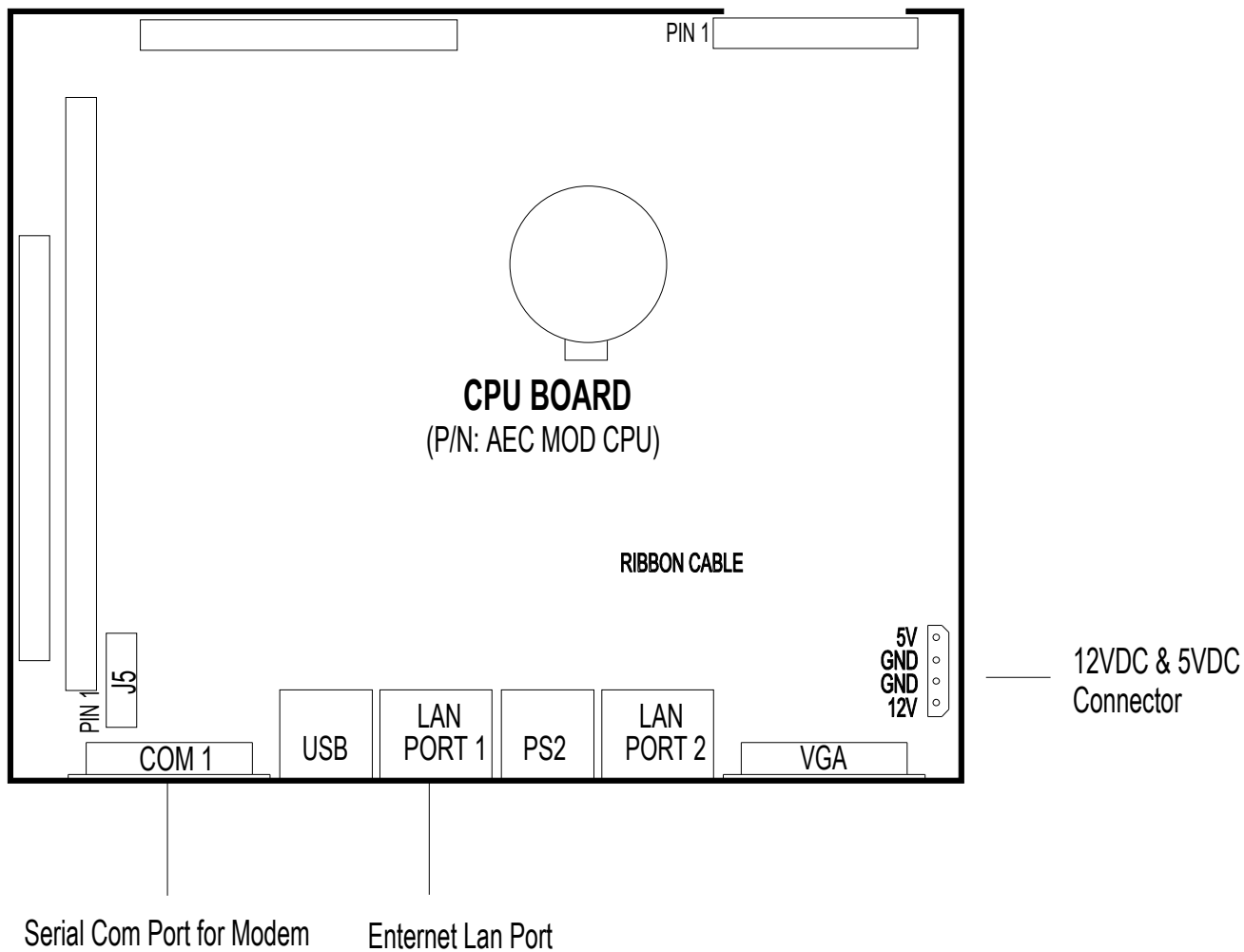


UL examination of the dial-up feature is limited. The examination confirms continued controller operation, including access control decision marking, under fault conditions on the wiring between the controller's serial port and the external modem.

Installing the Modem

1. Connect the modem to the Access Easy Controller's serial port using the cable provided with the modem. If this is a UL-compliant installation, be sure to adhere to the guidelines in the previous section.
2. The following diagrams indicate the location of the controller's serial port that is connected to the modem.

**CPU board**



CPU board with USB Port

3. Plug the cable from the 9-volt transformer supplied with the modem into the connector on the back of the modem. Leave the modem powered off at this time.
4. Connect one end of the telephone cable provided with the modem to the wall jack and the other end into the connector on the back of the modem. There are two connectors on the back of the modem. Be sure to connect the cable to the incoming phone line connector. This connector may be labelled "incoming line" or there may be a drawing of a phone jack to indicate the proper connector.
5. Depending on the model of the modem, some has switches on the back or the side, the following table acts only as a guide for the type of settings that is needed. Please refer to the modem manual for more information.

Modem Switch Settings

Switch	Setting	Function
1	OFF	Data Terminal Ready (DTR) Override OFF – Normal DTR operations: computer must provide DTR signal for the modem to accept comment; dropping DTR terminates a call ON – Modem ignores DTR (Override)
2	OFF	Verbal/Numeric Result Codes OFF – Verbal (word) results ON – Numeric results
3	ON	Result Code Display OFF – Suppresses result codes ON – Enables result codes
4	OFF	Command Mode Local Echo Suppression OFF – Displays keyboard commands ON – Suppresses echo
5	OFF	Auto-Answer Suppression OFF – Modem answers on first ring, or higher if specified in NVRAM ON – Disable auto-answer
6	OFF	Carrier Detect (CD) Override OFF – Modem sends CD signal when it connects with another modem, drops CD on disconnect ON – CD always ON (Override)
7	OFF	Power-on and ATZ Reset Software Defaults OFF – Loads Y0-Y4 configuration from user-defined non-volatile memory (NVRAM) ON – Loads & FO – Generic template from read-only memory (ROM)
8	ON	AT Command Set Recognition OFF – Disables command recognition (Dumb Mode) ON – Enables recognition (Smart Mode)

6. Power up the modem using the off/on switch located on the front. The AA, TR, and CS indicators should light. All others should be off.

NOTE: The next step of this procedure requires that the Access Easy Controller be reset. If the controller is currently in use, then you may want to back up the controller's database before continuing.

7. Reset the Access Easy Controller and wait for the controller to complete its initialisation process. This typically takes about 90 seconds.

Immediately upon the completion of the initialisation process, the controller senses the presence of the modem and sends it a serial of initialisation commands. By carefully watching the lights on the front of the modem, you can see the command transfer take place. The SD and RD indicators will flash faintly for a couple of seconds as the initialisation commands are sent to the modem. The final command in the series instructs the modem to save the current setup. The commands sent to the modem by the controller are listed below.

att	Tone mode
atz	Reset
ate0	Echo Off
ats0=1	One ring to autoanswer
atb0	Selects the ITU-T V.25 answer sequence
at&b1	Fixed DTE speed (serial port rate)
at&w	Save settings

8. Test the modem and modem-to- controller wiring by dialling the phone number to which the modem is connected from any standard telephone. The modem should answer on the first ring and you should hear the usual tones indicating that the modem is attempting to synchronize with the calling party. If modem tones are heard, then this test is successful and you can hang up the phone.
9. The complete modem installation. Proceed below to configure the security features associated with Access Easy Controller dial-up networking.

Dial-in Security Features

The Access Easy Controller includes some additional security features to provide protection against unauthorized access to the controller over the dial-up connection. These include the following:

First, a special login ID and password is used to establish the dial-in session. Once the session has been established, then a second login is required, using a regular user id and password, to gain access to the controller. The special login id and password, which are used only with dial-up networking, is user configurable.

Second, there is a parameter that specifies the maximum number of unsuccessful login attempts that will be allowed. When this value is reached without a successful dial-up login having occurred, the controller will automatically disable the dial-in capability for a user-specified period of time.

The default settings for the security features are:

User ID-PPP
Password – 8088
Number of illegal password attempts – Undefined
Illegal attempts lockout duration – 0 minutes

All the dial-up security parameters are user-configurable. However, it is suggested that they remain at the default settings until the installation is complete and the dial-up connection is fully operational.

Follow the directions below to change the dial-up security settings.

Controller Setup

Dial-up networking allows a user to remotely connect to the Access Easy Controller through a phone line. The following describes the necessary procedures to configure dial-up networking.

1. Log into Access Easy Controller and select Panel Admin. The following is displayed:
2. Select **Dial-in User** to display the following:



Panel Admin Users

Dial In User

User Name:

Password:

Dial In Settings

Number of illegal password attempts:

Illegal attempts lockout duration: minutes (0 - 255)

3. The default Dial-in user name is 'PPP' and the default password is '8088'. For security purposes, we suggest you change the default **User Name** and **Password**.
4. Adjust the Dial-in setting as necessary. Then click **Save**.



Panel Admin Users

 [Dial In User](#)

User #	User Name
1	ADCAD
2	ADCDEMO
3	ADCTECH
4	ADCM
5	VINCENT
6	WILLIAM
7	--empty--
8	--empty--
9	--empty--
10	--empty--
11	--empty--
12	--empty--
13	--empty--
14	--empty--
15	--empty--
16	--empty--
17	--empty--
18	--empty--
19	--empty--
20	--empty--
21	--empty--
22	--empty--
23	--empty--
24	--empty--
25	--empty--



Handling of IP Addresses by Access Easy Controller

When dial-up networking is used to connect to the Access Easy Controller, the connection is made using a communication point-to-point protocol (PPP). The PPP protocol is used whenever a computer establishes a dial-up connection to any server. In the case of Access Easy Controller, the controller acts as the server and established the PPP connection to the customer's computer.

When a dial-in session is started, the server assigns an IP address to the computer that has dialled-in and requested the session. In our case, the server is the Access Easy Controller. The IP address that is assigned to the computer marking the dial-in request is obtained from a database parameter in Access Easy Controller, which can be managed as necessary from the **Panel Admin.**, **Panel Setup** section of the database.

Normally, the dial-up IP address is managed automatically by Access Easy Controller based on the network address that is assigned to the controller during the installation and setup process. If the controller is assigned a Class A network address, then the controller will automatically configure the dial-in IP address to a Class C address. If the controller is assigned a Class B or Class C network address, then dial-up networking will automatically be configured to a Class A address. In most cases, the different class of the dial-in IP address will prevent any conflict or duplication of IP addresses within the customer's network.

Changing the Dial-In IP Address

Normally, the dial-in IP address is managed automatically by the controller and will never need to be changed by the user. A possibility exists, however, that the automatically assigned dial-in IP address could conflict with another computer on the customer's network. In that cause, it will be necessary to modify the default dial-in IP address.

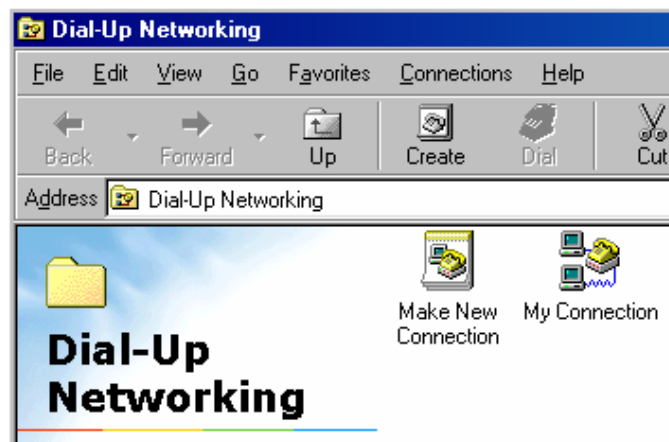
To change the dial-in IP address, connect to the Access Easy Controller over the network and login. Then go the **Panel Admin.**, **Panel Setup** and select the **Dial In IP Settings** hot link. Modify the IP address and save the change, and then back up the database to flash memory.

Configuring a Windows Computer to Dial the Access Easy Controller

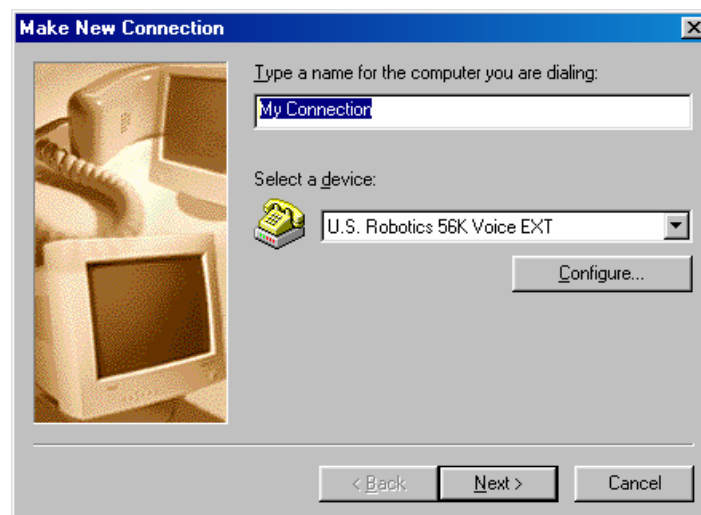
To dial in to an Access Easy Controller from a computer, you must create a connection in Dial-up Networking.

1. On the computer that will be dialling into the Access Easy Controller II, select **Start, Programs, Accessories, Communications, Dial-Up Networking**.

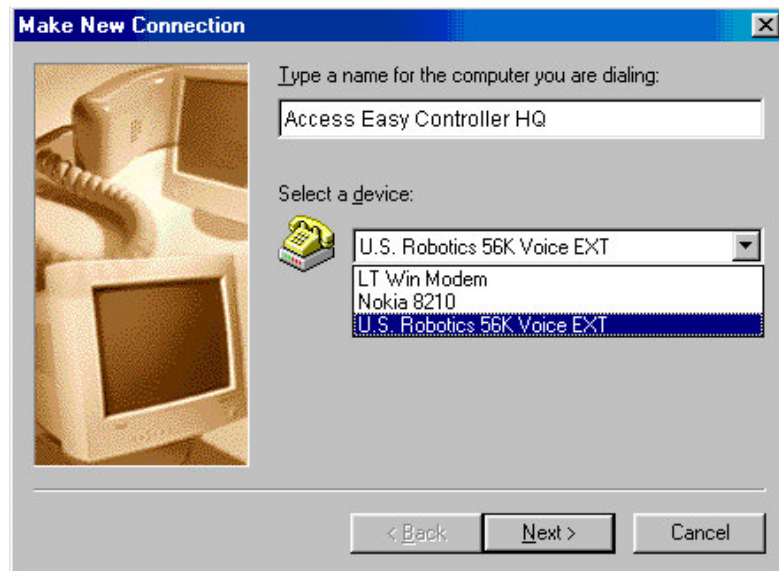
Result: The following window is displayed:



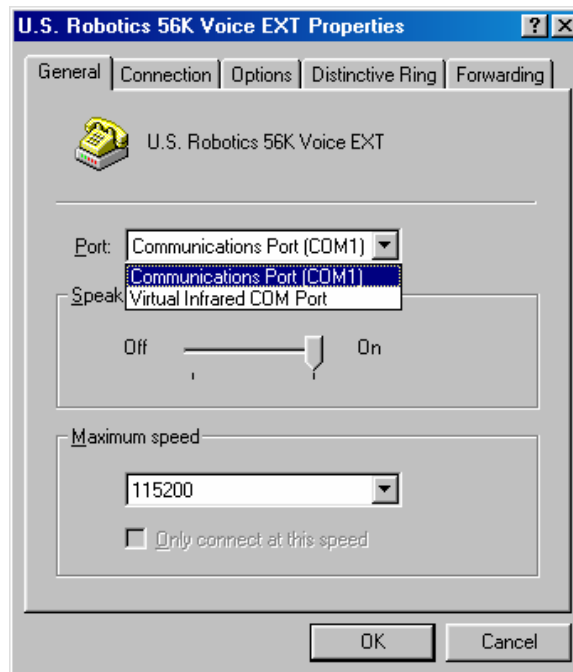
2. Double-click **Make New Connection** and the following window is displayed. Enter a name for the connection (eg, Access Easy Controller HQ)



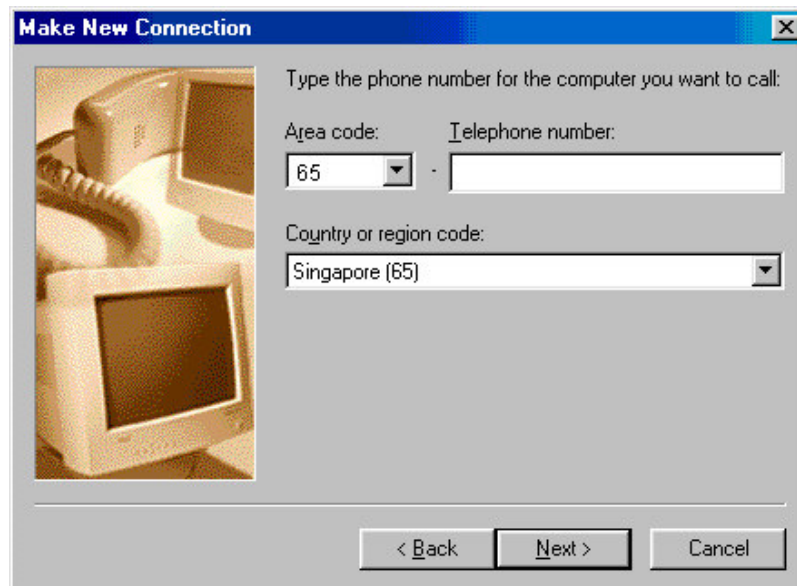
3. Follow all on-screen instructions. Make sure a modem is connected to your computer. Select the appropriate modem from the Select a device list box as shown below.



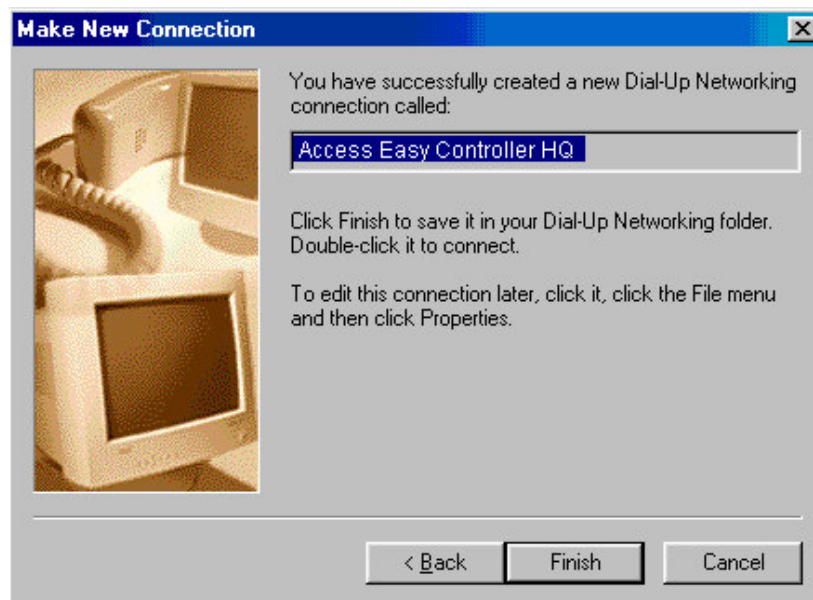
4. Click Next.
5. Configure your modem by selecting the General tab and setting available option, as appropriate. Select the communications port and accept the maximum speed default setting.



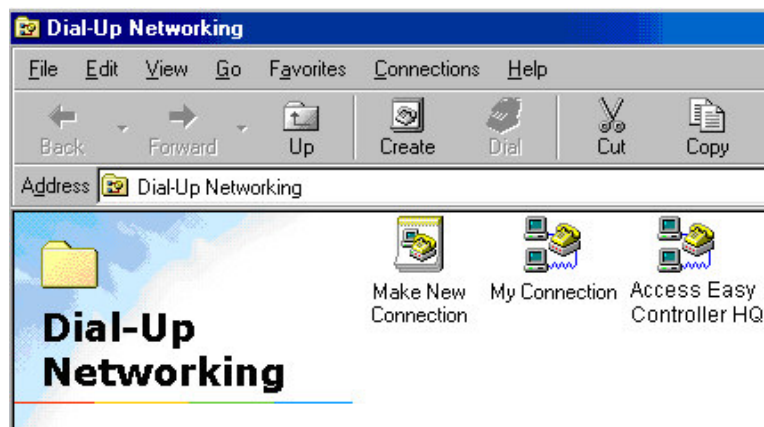
6. After configuring your modem, click OK and continue with the Make New Connection dialog box as shown below. Enter the controller's area code and phone number. Select your country or region code.



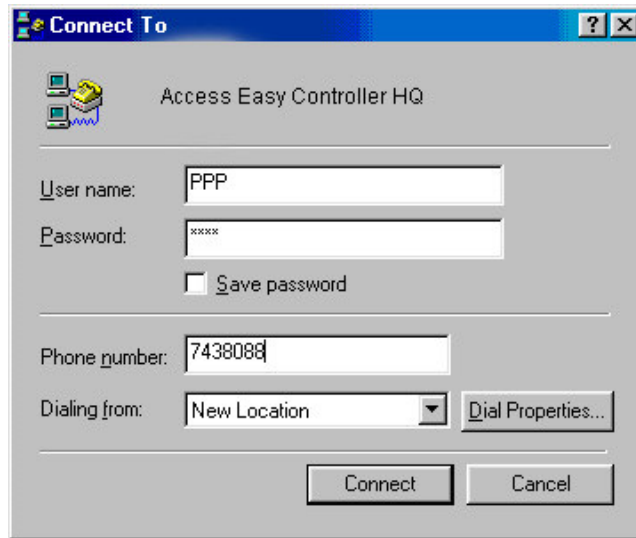
7. Enter the telephone number for the Access Easy Controller to which you want to connect, click Next, and follow the following window is displayed.



8. Click Finish.
9. Return to Dial-in Networking as explained in step 1 to view your new connection.



10. To connect to the Access Easy Controller, double-click the **Access Easy Controller HQ** icon to display the following.



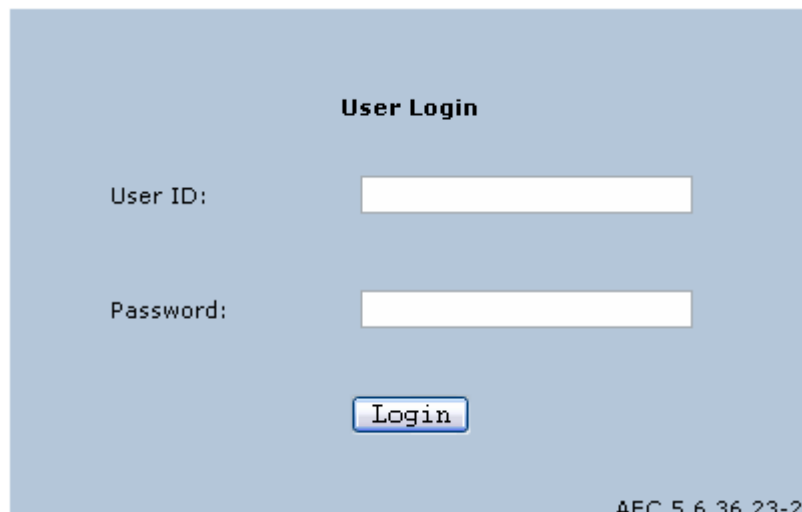
The screenshot shows a Windows-style dialog box titled "Connect To". It has a tabbed interface with the "Access Easy Controller HQ" tab selected. The dialog contains the following fields and controls:

- User name:** A text box containing "PPP".
- Password:** A text box containing "xxxx".
- ☐ **Save password**
- Phone number:** A text box containing "7438088".
- Dialing from:** A dropdown menu showing "New Location".
- Dial Properties...** button.
- Connect** and **Cancel** buttons at the bottom.

11. In the User Name and Password boxes, enter the Dial-In User name and password of the Access Easy Controller to which you want to connect. Then, if it is not already displayed, enter the appropriate phone number and click Connect.

Note: Please be patient. It will take about 30 seconds from the time the controller's modem answers the incoming call until the user id and password are validated and the dial-in user is registered by the controller. Most versions of dial-up networking will display a message to the user when the dial-in authentication process is completed. Wait for the connection to complete before proceeding to the next step.

12. After successfully connecting, open your Web browser. Then enter the IP address of the Access Easy Controller in the address or location bar of the browser and press ENTER. If you have successfully connected to the controller, the Access Easy Controller Login screen is displayed.



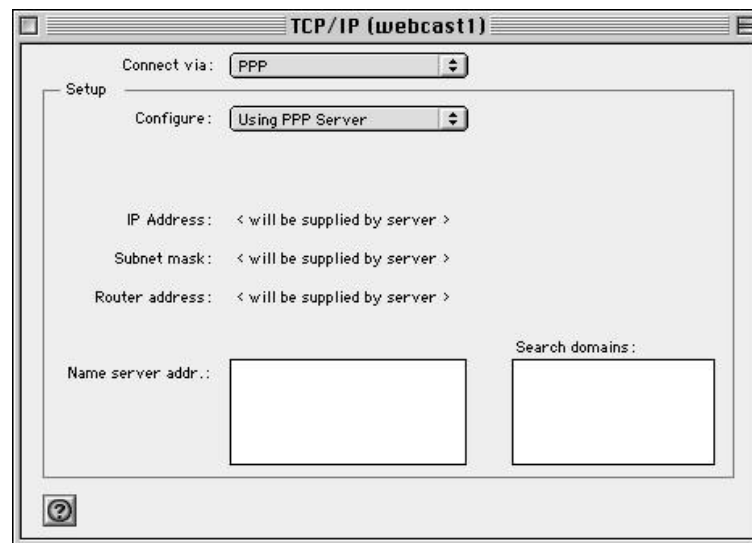
The screenshot shows a web page titled "User Login" with a light blue background. It contains the following elements:

- User ID:** A text label next to a white input box.
- Password:** A text label next to a white input box.
- Login** button: A blue button with white text.
- AEC 5.6.36.23-2**: A small text string in the bottom right corner.

13. Log in to the controller by entering a valid User ID and password and click Login.

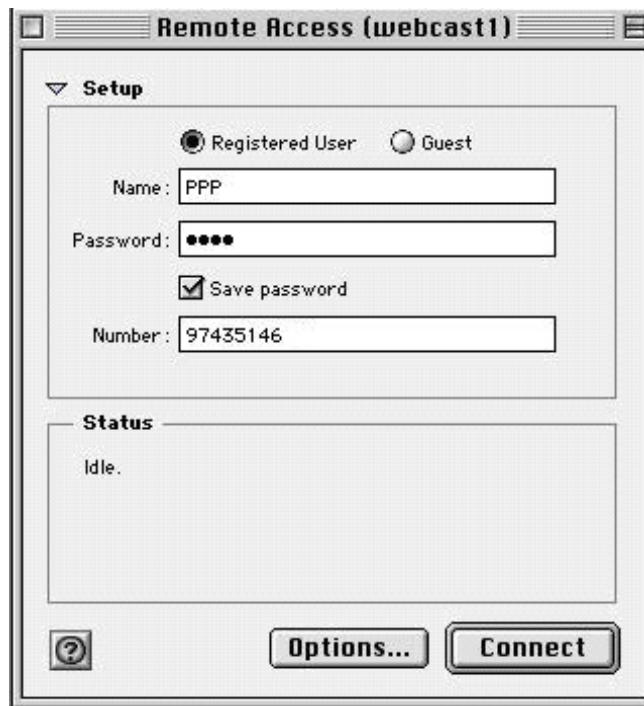
Configuration a Macintosh Computer to Dial the Access Easy Controller

1. Select **Control Panel** from the Apple menu, and then select **TCP/IP**.
2. The **TCP/IP** screen will be shown as below. Change the **Connect via** to PPP and **Configure** to Using PPP Server.

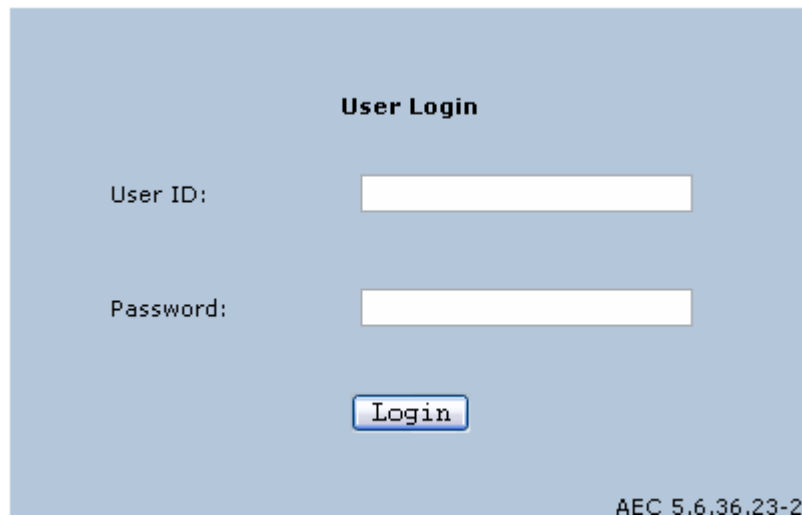


Note : Point-to-Point Protocol is a protocol for communication between two computers using a serial interface, where a personal computer is connected by phone line to a server.

3. Next, select **Remote Access** from the **Control Panel** sub-menu.
4. The **Remote Access** dialog box is displayed. Enter the dial-in user name and password for the Access Easy Controller to which you want to connect. Also enter the dial-in number in the **Number** field.



5. Click Connect to remotely access the Access Easy Controller.
6. After successfully connecting, open your browser and enter the controller's address in the address or location bar of the browser and press ENTER. If you have successfully connected to the controller, the Access Easy Controller screen Login screen is displayed.



7. Enter the **User ID** and **Password**, then click **Login**.

Handling Simultaneous Network and Dial-in Connections

In the unusual case where a user may attempt to connect to Access Easy Controller over a dial-up connection from a computer that is on the same local area network as the controller, there is a possibility that Internet Explorer may not be able to establish the dial-up connection with the controller. There is a setting on the computer that can be changed to force the browser to use the dial-up connection.

In the Windows operating system, go to **Settings, Control Panel** and select the **Internet Options**. Click on the **Connections** tab and make sure the option **Always dial my default connection** is selected. Note that the wording and location of this option will vary slightly depending on operating system version.

CHAPTER 11

How to Configure a Web Browser to Work with Access Easy Controller

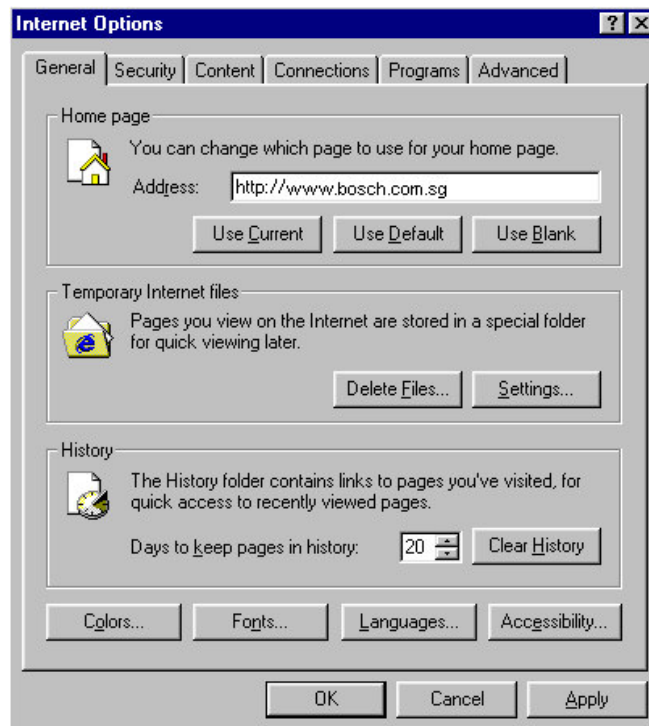
The instructions in this section described the steps necessary to configure a Web browser to operate with the Access Easy Controller. In most instances, the user will not need to make any changes to the setup of a Web browser to connect to an Access Easy Controller. The guidelines presented in this section are intended for first-time browser users and as a technical reference if difficulty is encountered when connecting with an Access Easy Controller.

Web Browser Set-up on a Windows Computer

Follow this procedure to configure *Microsoft's Internet Explorer, version 6.0*. Other Web browsers will be similar.

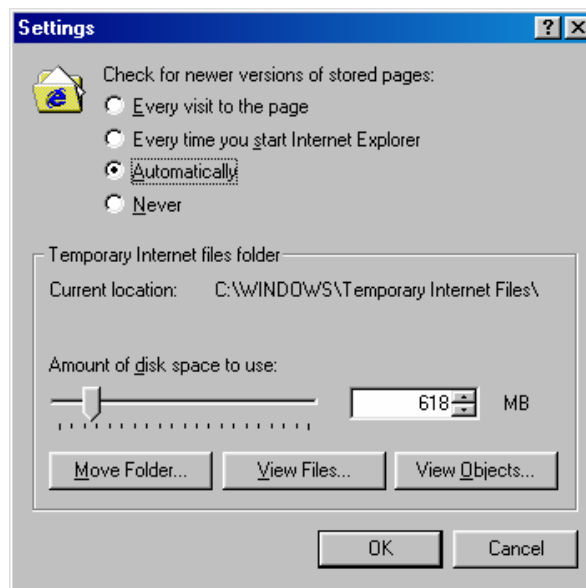


1. From the Windows **Control Panel**, click the **Internet Options** icon. The dialog box appears



2. If you want the Access Easy Controller login page to open every time you activate your Web browser software, then set the **Home page Address** to the Access Easy Controller's assigned IP address.
3. Under **Temporary Internet files**, click  to display the following **settings** dialog box.

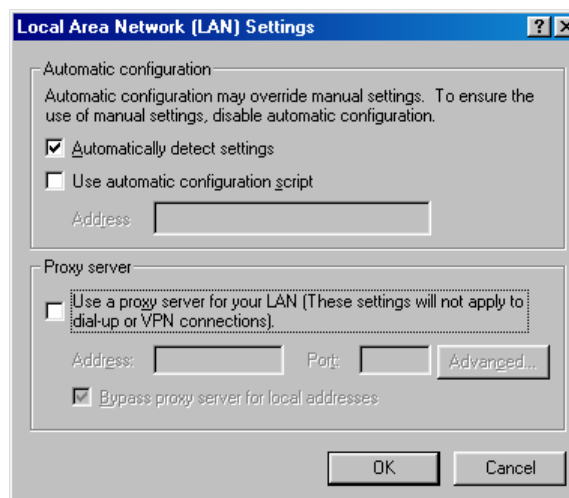
Confirm that the option Check for newer versions of stored pages is set to Automatically as shown. If it is not, select the corresponding radio button to select this option. This step is necessary for the View Activity windows to refresh properly at regular intervals.



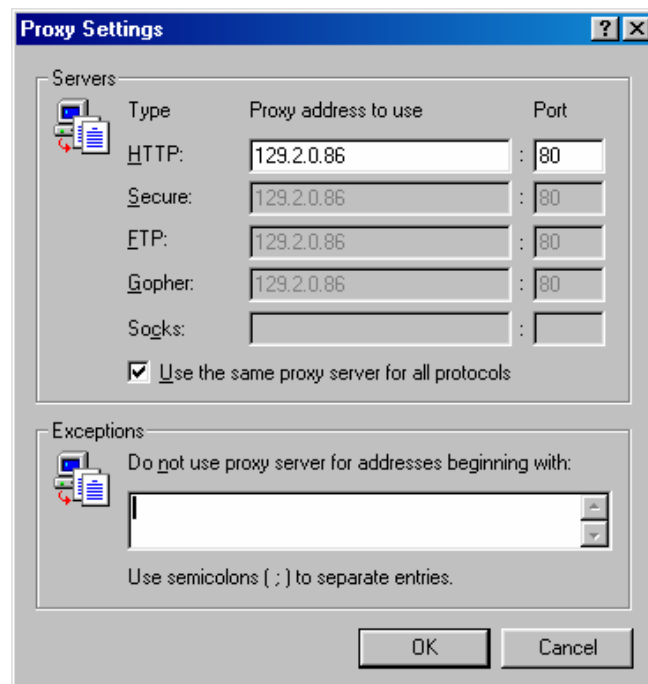
4. Click  to save the changes and exit the Settings windows. You will return to the **Internet Option** dialog box shown on the previous page.
5. From the **Internet Option** screen, select the **Connections** tab to display the Connections dialog box. This screen is shown at the top of the next page.



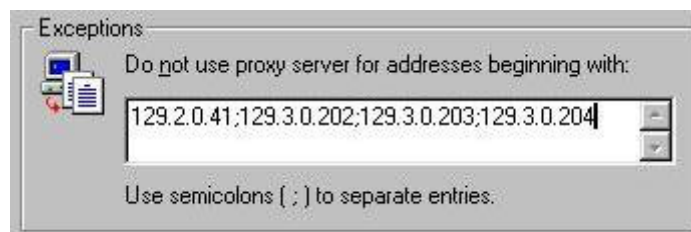
6. Click **LAN Settings...** to display the **LAN Settings** dialog box.



7. If your network does not use a proxy server, then you can skip directly to step 10. If your network does use a proxy server, then select **Use a proxy server for your LAN** to show the **Proxy Settings** dialog box. This window is shown at the top of next page.



8. Enter the default IP address of the Access Easy Controller in the **Exceptions** group box as shown above.
9. If the permanent IP address of the Access Easy Controller is different from the default address, then also enter the controller's permanent address in the **Exceptions** field, separating each address with a semicolon [;]. Note that there may already be addresses listed in the exception field. If that is the case, simply add the Access Easy Controller address to the list, separating each address with a semicolon. The screen capture below shows the default IP Address for Access Easy Controller along with three other IP Addresses (129.3.0.202, 129.3.0.203 and 129.0.204).



10. Click  repeatedly to exit the **Internet Options** window. Then close the Control Controller.
11. Make sure you have a crossover type network cable connected between the computer and the Access Easy Controller. Now run the Web Browser program from Windows. The browser should open.

Note You may receive a warning indicating that the page you are trying to reach is not available. This message is shown on the sample screen below. Do not be concerned with this message at this time.



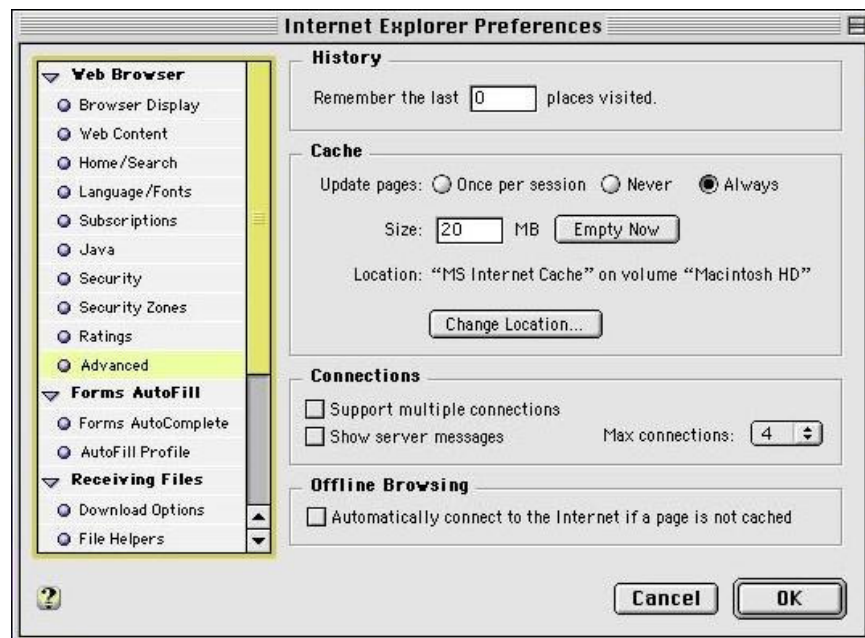
12. Enter the Access Easy Controller's IP address in the browser's **Address** box as shown.
13. Press the **Enter** key or click . This should display the Access Easy Controller's login page.
14. Proceed to login using the default user id: **USER1** and password: **8088**. Upon successful login, the controller's home page will be displayed.
15. From the home page, select **Panel Admin, Panel Setup**. The Network Settings page should be displayed. Make any needed changes to configure the controller for operation on the customer's network. Click **Save** to store the changes.
16. After the database has been saved, reboot the controller. It will now boot using the new IP address. The controller is now ready to be connected to the customer's network.

NOTE For detailed information on database configuration, refer to the Access Easy Controller Software User Manual.

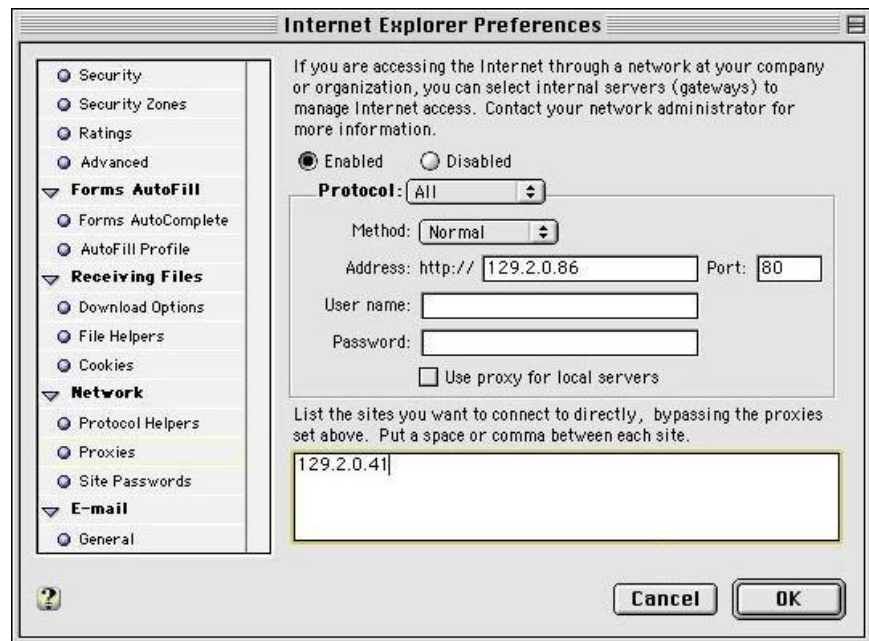
Web Browser Set-up on a Macintosh Computer

Follow this procedure to configure the Microsoft Internet Explorer, version 5.0 for Macintosh. Other Web browsers will be similar.

1. Launch Internet Explorer for Macintosh.
2. From the Toolbar, click **Preferences**.
3. Under the **Web Browser**, select **Advanced**. The Advanced Settings screen will be displayed as following.



4. In the Cache group box, set the **Update pages** option to **Always** by selecting the radio button.
5. If your network does not use a proxy server, then you can skip directly to step 8. If your network does use a proxy server, then scroll down the **Preferences** list until you get to the **Network** section. In this section, select **Proxies** to open the **Proxy Configuration** screen.



6. Enter the default IP address of the Access Easy Controller in box **List the sites you want to connect to directly** at the bottom of the screen as shown in the sample screen above.
7. If the permanent IP Address of the Access Easy Controller is different from the default address, then also enter the controller's permanent address in the **List the site** box, separating each address with a space or comma.
8. Note that there may already be IP addresses listed in this box. If that is the case, simply add the Access Easy Controller address to the list, separating each address with a space or comma. The sample box shown at the top of the next page shows the default IP Address for Access Easy Controller along with three other IP Addresses (129.2.0.45, 129.2.0.44, and 129.3.0.80).

129.2.0.41 129.2.0.45 129.2.0.44 129.3.0.80

9. Click **OK** to close the dialog box.
10. Make sure you have a crossover type network cable connected between the computer and the Access Easy Controller. If the Web browser is not running start it at this time.

Note You may receive a warning indicating that the page you are trying to reach is not available. This message is shown on the drawing below. Do not be concerned with this message at this time.



11. Enter the Access Easy Controller's IP address in the browser's **Address** box as shown.
12. Press the **Enter** key or click . This should open the Access Easy Controller's login page.
13. Proceed to login using the default user id: **USER1** and password **8088**. Upon successful login, the controller's shown page will be displayed.
14. From the home page select the **Panel Admin, Panel Setup**. The Network Settings page should be displayed. Make any needed changes to configure the controller for operation on the customer's network. Click **Save** to store the changes.
15. After the database has been saved, reboot the controller. It will now boot using the new IP address. The controller is now ready to be connected to the customer's network.

NOTE: For detailed information on database configuration, refer to the Access Easy Controller Software User Manual.

CHAPTER 12

How to Set Initial Controller Configuration

The controller's IP address, subnet mask, and gateway address will need to be set before installing the controller on a customer's network. Follow the instructions in this section to configure the controller.

1. Connect a computer running the Windows operating system directly to the Access Easy Controller using the crossover network cable.
 - The computer that you use should be configured for the 129.2.0 network. We suggest the computer be configured for:
 - IP address 129.2.0.40,
 - Subnet mask 255.255.0.0
 - Gateway 0.0.0.0.
 - Use the Crossover cable to connect the computer with the controller.
2. If not already done, power up the controller at this time.
 - The CPU card will perform a power-up self-test. This test takes about 90 seconds to complete. When the self-test is finished, LEDs 1, 2 and 3 should alternately flash in the lower corner of the Secure/Communication Card.

Note: During the power-up self test duration, no communication with the controller is possible.

- Wait until the self-test is complete before proceeding.
3. On the computer, open a Web browser application (either Microsoft Internet Explorer or Netscape Navigator) and enter the controller's IP address (129.2.0.41) in the browser's address or location bar. Then click **GO** (or press **ENTER**) to connect to the controller.

- If you have never used your browser to connect to Access Easy Controller before, it may be necessary to make slight configuration changes within the browser setup to establish connectivity for the first time. The most common setup change needed is to instruct the browser to connect using a LAN rather than a dialup modem.
 - The controller should respond to the connection attempt by displaying the Login window.
4. Login to Access Easy Controller using the master user name “user1” and password “8088”. Then press the Login button.

Result: Upon successful login, the Access Easy Controller home page should be displayed.

5. From the home page, select Panel Admin.

Result: The **Users** list screen should be displayed.

6. From the menu on the left-side menu, select **Panel Setup**.

Result: The **Network Settings** page displays.

7. Modify the Controller’s IP Address, Netmask, and Gateway. Set these fields to the values provided by the customer.

The values for these fields must be set correctly for the controller to be able to operate over the customer’s network. The required settings must be obtained from the customer, or a representative of the customer’s Information Technology department.

After making the setting changes, click **Save** at the bottom of the screen.

8. Now select Reboot controller from the left-side menu. This will cause the controller to reboot and load the new IP address information that was entered and saved in the previous steps.

After rebooting, the controller will begin responding to its new address. It will no longer respond to the default address 129.2.0.41.

9. Before connecting the controller to the customer's network, it is advisable to test it using the new settings to confirm proper setup.
 - To do this, you will need to change the network configuration of your computer to an address on the same network as the controller.
 - As an example, assume that in the previous steps you set the controller's address to 192.9.200.18 and the netmask to 255.255.0.0. To test the controller using your computer, the computer's network setup will need to be changed to a similar address on the same network. For example, you could set the computer to 192.9.200.19. You should set the netmask on the computer to the same value as the controller.
 - After changing network setup on the computer, the computer will need to be rebooted. Once rebooted, you should be able to connect the Access Easy Controller by entering the new controller address in the location or address bar of the browser.
 - If successful connection is made to the controller, the Login screen will be displayed.
10. Once proper operation has been confirmed, Logout of the controller and close your browser. Then disconnect the crossover cable from both the controller and the computer.

The controller is now ready for connection to the customer's network. Usually, this connection will be made to a wall jack or hub using a straight-through network cable.

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CHAPTER 13

How to Restore a Backup Copy of Database to the Access Easy Controller

This procedure explains the steps necessary to restore a copy of the controller's database from a backup stored on a computer.

This procedure provides a way to recover the customer's database without the necessity of complete re-entry. It would typically be used only under the following circumstances:

- The controller's CPU card has been replaced due to a hardware failure.
- To install a software upgrade in an operational controller

In both instances, it is desirable to reinstall the customers' existing database, rather than requiring complete database re-entry.

Tools Needed

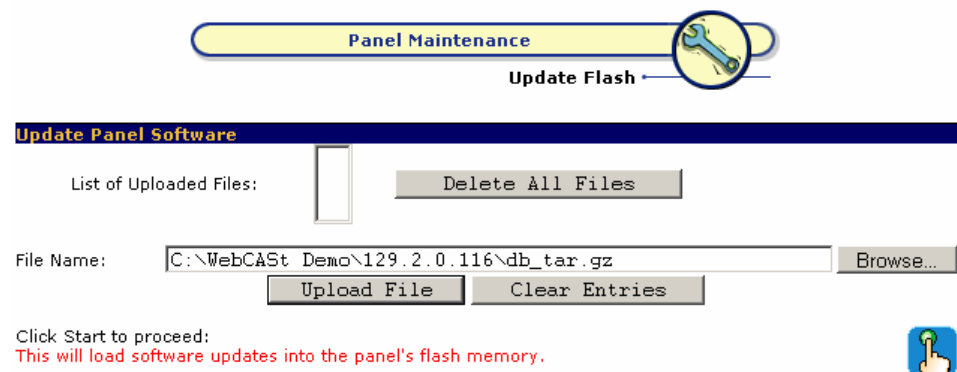
- Computer with network card and Windows operating system
- Connectivity between the computer containing the database and the controller through the network or directly by use of a crossover cable

Before Starting the Update

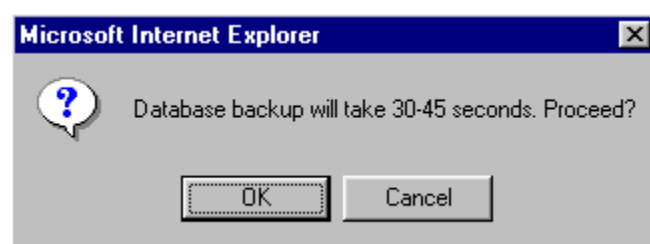
1. Be sure the controller is currently operating by logging on the controller, or having the customer log on to the controller.
2. While logged on, select Panel Admin, Panel Setup and note the IP addresses and PC names listed under the section heading Remote PC Addresses. For security reasons, only a computer with an IP address matching one of the three shown in this section will be allowed to make the FTP connection necessary to recover the controller database.
3. If the IP address of the computer to be used for database recovery does not match one of the three listings shown in the database, then the connection will be denied. In that case, it will be necessary to change the settings of either the computer or the controller's database so that they match. This should be done before proceeding to the recovery procedure. If the controller database is changed, save the changes before proceeding.

Recovering Controller database from a Windows Computer

1. Log into Access Easy Controller, Under *Panel Maintenance* select *Update Flash*.
2. Click on button to select the file you wish to upload. example, if you are uploading the backup system database, select the db_tar.gz from your local director



3. Click on button to upload.
4. Once the file appears in the "List of Uploaded Files, you could now click on the  icon to start the updating process. The following dialog box will appear for confirmation.



5. Click on the **OK** button to proceed. Once the process is completed without error, the following message will appear.

Upgrade Operation Completed. You need to reboot the system for the changes to take effect.



6. Click on the  button and reboot the Access Easy Controller.

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CHAPTER 14

The CPU Card

This chapter provides a brief overview of the Access Easy Controller CPU card. The card layout and functional descriptions of various circuits on the card are described in this chapter. Some major components of the card are identified, and information concerning jumper option is provided.

Introduction

The Access Easy Controller CPU card is 32-bit processor based single board computer (SBC) with one or two 100Base-T Ethernet. There are a serial port (RS232) and one multi-mode parallel (ECP/EPP/SPP) port for linking to the Secure/Communication Card, which provides the security and the RS485 conversion.

It is designed to function as both an embedded Web server and an Access Control Controller.

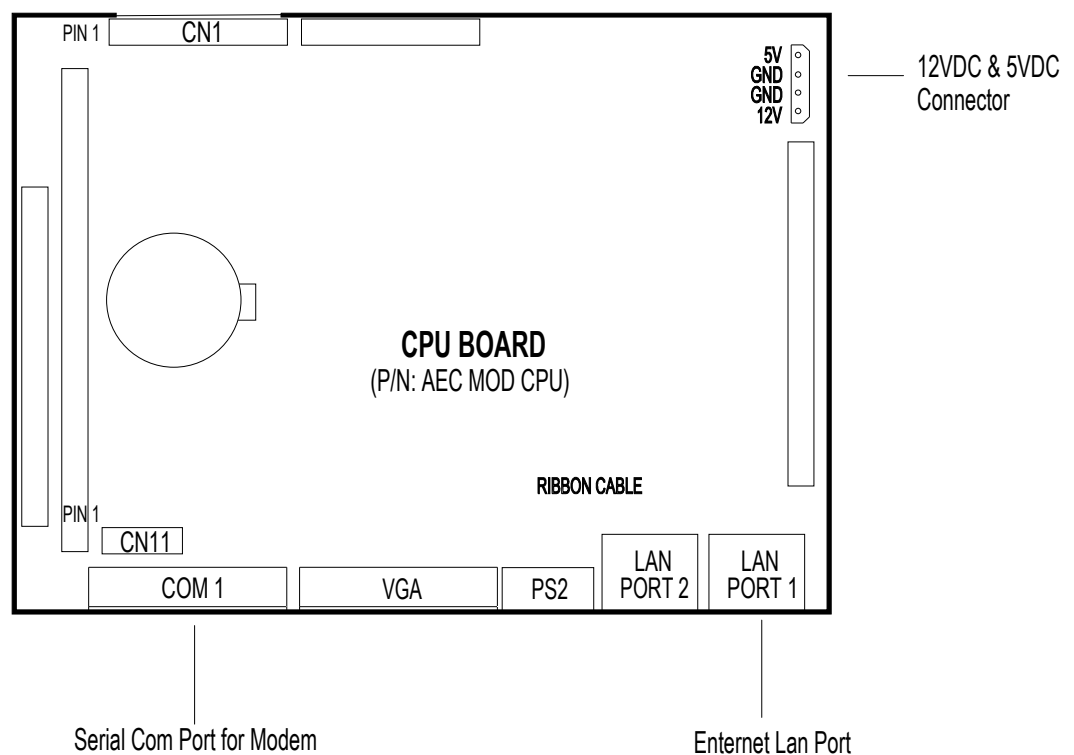
Two communication ports are available on the CPU card. The first is an 100Base-T Ethernet port that is used by the Web server for communication with the customer's monitoring and database management computers. The Ethernet port terminates in an RJ-45 jack located on the CPU card. Standard category 5 type cable is used to connect from the RJ-45 jack to a hub or wall outlet on the customer's network. Alternately, a cross-over cable can be used to connect from the Ethernet jack on the CPU card directly to the Ethernet connector on the customer's computer.

The second communication port is an RS-232 port. This port is used to connect to an external modem to allow dial-up connection to the controller.

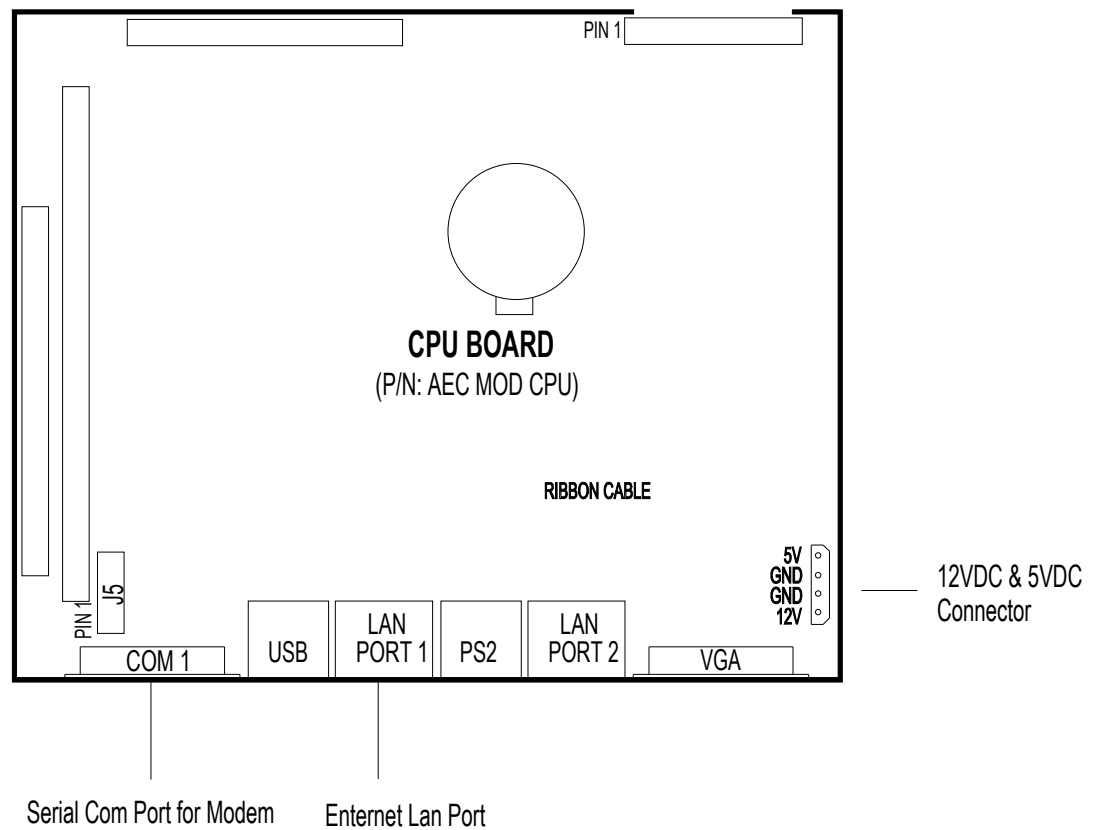
Component Layout of the CPU Card

Refer to the following layout drawings, which show the major physical components on the CPU Card. A brief description is provided on some of the major components.

We have 2 different vendors for the CPU Card, hence the layout of each type will be slightly different. The following drawings will show each type and the location of the relevant components.



CPU board



CPU board with USB Port

Specification for CPU

Input Voltage	+5VDC (4.75V to 5.25V)
Current Consumption	1.35A @ 5VDC (Peak) 1.25 A @ 5VDC (Idle)
Interface	2 x Serial Port Parallel Port 10/100BaseT Fast Ethernet

Ethernet Connector

A *Category 5* cable is connected from this RJ45 socket to the plug-in *100baseT Ethernet card* located in the *Central Monitoring Computer* directly or via a hub. The pin configuration for the socket is shown in the following table: -

100Base-Tx Ethernet connector

Pin	Signal	Pin	Signal
1	Tx+	2	Tx-
3	Rx+	4	NC
5	NC	6	Rx-
7	NC	8	NC

Serial Port for Modem

This is a standard RS232 communication port currently used for modem connection

Please refer to *Appendix* for cable connection and other detail.

Serial Port & Parallel Port Connector for Secure/Communication Card

These are 9pin serial port and 25pin parallel port connectors. These are the links between CPU Card and Secure/Communication Card. The serial port is connected to the Secure/Communication Card CN2, parallel port is connected to CN1 of Secure/Communication Card.

Parallel port

Pin	Signal	Pin	Signal
1	STROBE	2	AUTOFD
3	D0	4	ERR
5	D1	6	\INT
7	D2	8	SLCTINI
9	D3	10	GND
11	D4	12	GND
13	D5	14	GND
15	D6	16	GND
17	D7	18	GND
19	ACK	20	GND
21	BUST	22	GND
23	PE	23	GND
25	SLCT		

RS232 Serial Port

Pin	Signal	Pin	Signal
1	DCDB	2	RXDB
3	TXDB	4	DTRB
5	GND	6	DSRB
7	RTSB	8	CTSB
9	RIB		

5VDC & 12 VDC Power Input

The CPU Card can be powered up by the 18VAC power supply card (UL Listed System) or by 15VDC power supply card (CE Listed System), which will be discussed in the Chapter on 18VAC Power Supply Card & 15VDC Power Supply Card.

Please read the Chapter on *Power Supply Requirement* for further information before connecting any power source to the CPU Card.

Power connector

Pin	Signal
1	+5V
2	GND
3	GND
4	+12Vcc

Other components**Lithium Battery Holder**

This is the location where a 3V Lithium battery is situated. It is used to provide continuous supply to the Real Time Clock circuitry in case of a power outage. The power will only be drawn from this battery on the following conditions: -

1. No power is present to either one of the supply terminal blocks: - 18VAC IN or 15VDC IN, and
2. The external 12V rechargeable battery is not charged sufficiently or is drained for prolong period of time and unable to provide backup power.

It is recommended that this battery be changed every 2 years. Replace it with type CR2032 or equivalent type recommended by the manufacturer's instructions. Please take care of the battery polarity when re-installing, the plus (+) terminal of the battery should be facing up.

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CHAPTER 15

4-Reader Boards and 8 Input/8 Output Boards

This chapter described the interface cards available with the Access Easy Controller. This section identifies and locates key components on the card and includes a brief overview of functional operation.

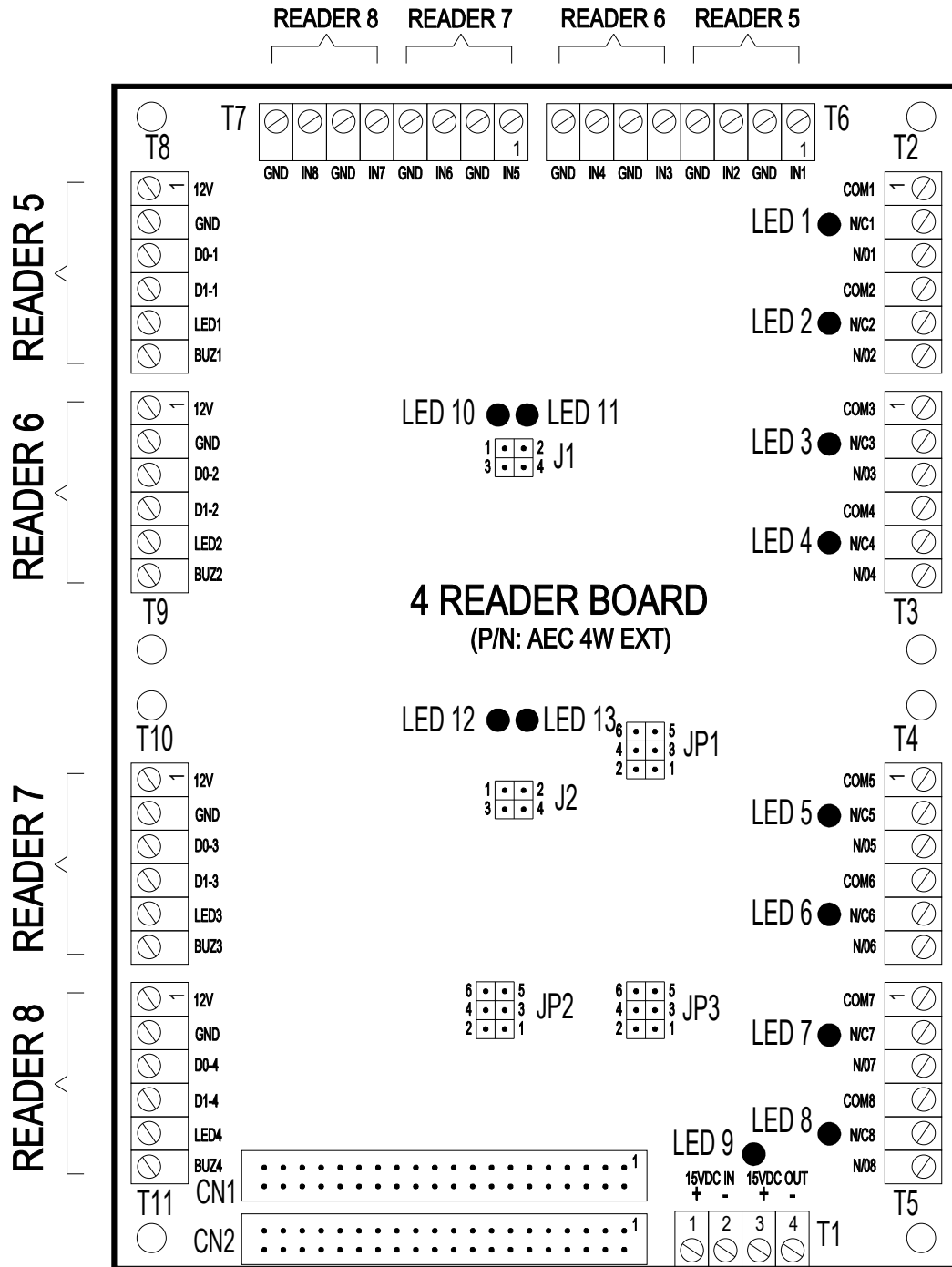
Two types of interface cards are available with the Access Easy Controller. The first is a 4-Reader board, which provides all the termination points needed to fully manage four card readers and all associated support hardware.

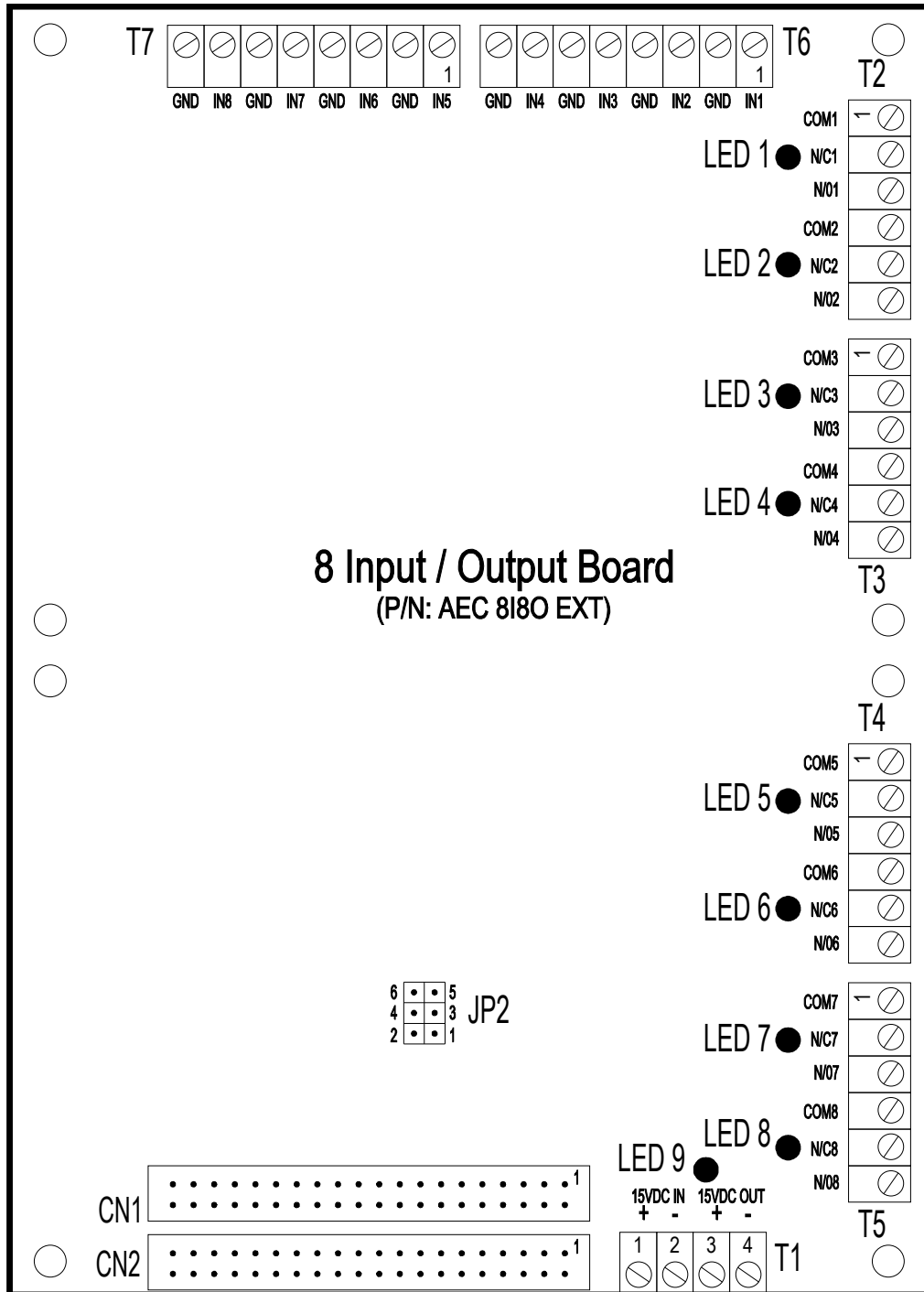
There is also an 8-Input/8-Output board available, which provides eight zones of end-of-line resistor type inputs and eight contact closure outputs. This board is intended for non-reader type applications where it is desirable to monitor such things as emergency exit doors, or motion detectors. This card also provides eight form-C type relay outputs, which can be used to control external equipment, such as lights, gate motor, etc.

The card size and location of mounting holes on both the 4-Reader board and 8-I/O board are the same.

Component Layout of 4 - Reader Card and 8-I/O Card

The diagrams on the following pages show the layout of the two types of interface board. All major components are identified on the diagrams, and brief technical descriptions are provided in the pages that follow.





Technical Overview of 4-reader board

Reader Connectors

The card contains four 6-pin terminal strips down the left side of the card. Each terminal strip provides wiring terminations for one standard Wiegand output reader. The terminal strips are labelled on the cards as T8, T9, T10 and T11. T8 provides the termination points for reader 1. T9 is for reader 2. T10 is for reader 3, and T11 is for reader 4.

The pin configured for each reader connector is shown in the following table.

Pin #	Function
1	+12 VDC
2	Ground
3	Data 0
4	Data 1
5	Green LED Control
6	No Connection

NOTE	Each connector is able to provide a maximum current of 150mA at 12 VDC. This is sufficient power for most readers. Readers requiring higher current will need to have the power supplied from an external power supply.
-------------	---

Two 8-pin connectors across the top of the 4-reader board provide termination points for the door contacts and request-to-exit devices associated with the readers. The terminal strips are identified as T6 and T7 on the 4-reader board.

For each of the four readers this card can control, there are two terminals each for connection of a door contact and a request-to-exit device. Both circuits (contact and REX) are supervised and should be terminated with 6.8K end-of-line resistors. Should either contact or REX device not be used, then the termination resistor should be installed across the terminals within the controller. Refer to the Chapter How to Install Readers and Field Devices, for detailed wiring diagrams.

The chart that follows identifies the various termination points on the terminal strips.

T6 terminal Strip

INO1	Request-to-exit for reader #1
IGND	Request-to-exit for reader #1
IN02	Door contact for reader #1
GND	Door contact for reader #1
IN03	Request-to-exit for reader #2
GND	Request-to-exit for reader #2
IN04	Door contact for reader #2
GND	Door contact for reader #2

T7 terminal strip

IN05	Request-to-exit for reader #3
GND	Request-to-exit for reader #3
IN06	Door contact for reader #3
GND	Door contact for reader #3
IN07	Request-to-exit for reader #4
GND	Request-to-exit for reader #4
IN08	Door contact for reader #4
GND	Door contact reader #4

Output Connectors

Four six-pin terminal strips provide connections for door strike and/or magnetic lock control. The four terminal strips are labelled on the circuit cards as T2, T3, T4 and T5. The output terminals are Form-C type dry contacts from relays located on the 4-reader board. For each output relay, Normally Closed (N/C), Normally Open (N/O) and a common terminal (COM) are provided.

Each relay also has an LED associated with it that lights whenever the relay is activated.

T2 provides output connection points for readers 1 and 2. T3 provides output connection points for readers 3 and 4. T4 provides connection points for two spare relays. T5 provides two spare relay output, except on the first 4-reader board.

On 4-reader board 1, the last relay is assigned in the software to provide a common alarm output from the controller. This relay is intended to provide an easy hand-off by the controller of an alarm indication to an external burglar alarm system. The common alarm relay will activate whenever a Door Forced Open or Door Held Open alarm is detected by the controller. It will also activate when the controller's door tamper circuit is activated, or in occurrence of an AC power failure.

The common alarm relay will reset when all alarm conditions have returned to normal. Detailed information concerning the common alarm output is provided elsewhere in this manual.

NOTE The contacts of all relays are rated at DC 24V/1A maximum.

The pin configuration for each output connectors is shown in the following chart.

Connector T2 (top connector)

Pin#	Function
1	Reader #1 (common)
2	Reader #2 (Normally closed)
3	Reader #1 (normally open)
4	Reader #2 (common)
5	Reader #2 (normally closed)
6	Reader #2 (normally open)

Connector T3 (second connector from top)

Pin#	Function
1	Reader #3 (common)
2	Reader #3 (Normally closed)
3	Reader #3 (normally open)
4	Reader #4 (common)
5	Reader #4 (normally closed)
6	Reader #4 (normally open)

Connector T4 (third connector from top)

Pin #	Function
1	Spare (common)
2	Spare (Normally closed)
3	Spare (normally open)
4	Spare (common)
5	Spare (normally closed)
6	Spare (normally open)

Connector T5 (bottom connector)

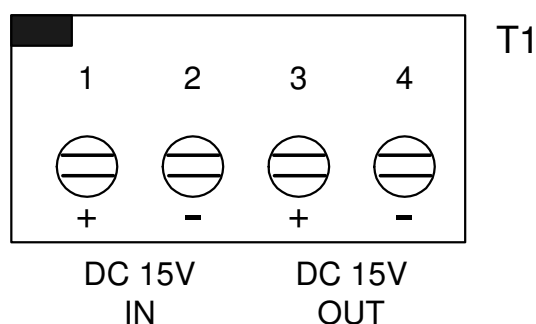
Pin #	Function
1	Spare (common)
2	Spare (Normally closed)
3	Spare (normally open)
4	Common Alarm Output (common)
5	Common Alarm Output (normally closed)
6	Common Alarm Output (normally open)

NOTE The common alarm output relay only exists on 4-reader board 1. On cards 2, 3 and 4 this relay is an additional spare.

15VDC Input Termination

Reference: Terminal Strip T1

Terminals T1-1 and T1-2 are used to provide 15 Volt DC power to the 4-reader board. Power is supplied from the output terminals on the Power Supply card. Terminals T2-3 and T2-4 are available to provide 15 VDC power to other cards. The diagram below shows the configuration of the terminal strip.



IDE Connectors

Reference: CN1 and CN2

These are a pair of parallel-connected 40-pin IDE connectors. They are used as the data link between the 4-reader board and other 4-reader board and/or 8input/8output card board. The connector is used to extend the IDE bus to the next card.

LED Indicators

Reference: LED9

This LED indicates +15 VDC power is present.

Reference: LED 1 to LED 8

LEDs 1 to 8 light whenever the associated relay is activated.

Reference: LED 11 and LED 13

These LEDs should alternately blink in normal operation. This indicates normal communication between the 4-reader board and the CPU card.

Reference: LED 10 and LED 12

These LEDs will blink once each time card is presented to a reader.

LED10 will blink when a card is presented to either reader 1 or 2.

LED12 will blink when a card is presented to either reader 3 or 4.

Jumper Setting

Reference: JP1, JP2 and JP3

These jumpers are used to set the card address as shown below.

4-reader board Address	JP1	JP2	JP3
1	1-2 OUT	1-2 OUT	1-2 IN
	3-4 OUT	3-4 OUT	3-4 OUT
	5-6 OUT	5-6 OUT	5-6 OUT
2	1-2 IN	1-2 OUT	1-2 IN
	3-4 OUT	3-4 IN	3-4 IN
	5-6 OUT	5-6 OUT	5-6 OUT
3	1-2 OUT	1-2 OUT	1-2 IN
	3-4 IN	3-4 OUT	3-4 OUT
	5-6 OUT	5-6 IN	5-6 IN
4	1-2 IN	1-2 OUT	1-2 IN
	3-4 IN	3-4 IN	3-4 IN
	5-6 OUT	5-6 IN	5-6 IN

Reference: JP2 and JP3

These jumpers control the address setting for the reader ports. **JP2** configures addresses for the first two reader ports, while **JP3** configures addresses for the third and fourth readers.

Reference: JP1

Jumper **JP1** sets the addresses for the door contacts, request-to exit inputs and door strike outputs.

Reference: J1 and J2

These jumpers are not in used in the Access Easy Controller application. They are reserved for future implementation.

Technical Overview of 8-Input/Output Board

Two 8-pin connectors across the top of the 8-Input/Output board provide termination points for wiring from door contacts and other alarm sensors. The terminal strips are identified as T6 and T7 on the 8-Input/Output board.

There are two terminals each for input point. Each input is supervised and should be terminated with 6.8K end-on-line resistors. All unused should have the termination resistor installed across the terminals within the controller. Refer to the Chapter entitled “How to Install Readers and Field Devices” for detailed wiring diagrams.

The charts that follow identify the various termination points on the terminal strips.

T6 terminal Strip

INO1	Input Point #1
GND	Input Point #1
INO2	Input Point #2
GND	Input Point #2
INO3	Input Point #3
GND	Input Point #3
INO4	Input Point #4
GND	Input Point #4

T7 terminal strip

INO5	Input Point #5
GND	Input Point #5
INO6	Input Point #6
GND	Input Point #6
INO7	Input Point #7
GND	Input Point #7
INO8	Input Point #8
GND	Input Point #8

Output Connectors

Four six-pin terminal strips provide connection points for connection of external devices that will be controlled by the Access Easy Controller. The terminal strips are labelled on the circuit card as T2, T3, T4 and T5. The output terminals are Form-C type dry contacts from relays located on the 8-Input/Output card board. For each relay, Normally Closed (N/C), Normally Open (N/O) and a common terminal (COM) are provided.

NOTE The contacts of all relays are rated at DC 24V/1A maximum

The relay contacts can be directly connected to many low voltages DC powered devices, including alarm bells, security lights, horns, etc. when using the outputs to control high voltage devices, such as lighting circuits, electric door controllers, gate motors, etc., an external interface relay must always be used. Also, use an external relay when interfacing with AC-power devices.

In all instances where the output relay is used to operate an inductive load, such as when interfacing with an external relay, or powering the coil of an alarm bell, a back-biased diode should be wired across the coil of the driven device. This will protect the electronic circuitry on the 8-Input/Output card board by providing suppression from back-emf when the devices are de-activated.

Each output relay on the 8-Input/Output card board also has an LED associated with it that lights whenever the relay is activated.

Beginning from the top of the 8-Input/Output card board. T2 provides connection points for outputs 1 and 2. T3 provides connection points for outputs 3 and 4. T4 provides connection points for outputs 5 and 6. T5 provides connection points for outputs 7 and 8. the pin configuration for each output connector is shown in the following chart.

Connector T2 (top connector)

Pin #	Function
1	Output #1 (common)
2	Output #1 (normally closed)
3	Output #1 (normally open)
4	Output #2 (common)
5	Output #2 (normally closed)
6	Output #2 (normally open)

Connector T3 (second connector from top)

Pin #	Function
1	Output #3 (common)
2	Output #3 (normally closed)
3	Output #3 (normally open)
4	Output #4 (common)
5	Output #4 (normally closed)
6	Output #4 (normally open)

Connector T4 (third connector from top)

Pin #	Function
1	Output #5 (common)
2	Output #5 (normally closed)
3	Output #5 (normally open)
4	Output #6 (common)
5	Output #6 (normally closed)
6	Output #6 (normally open)

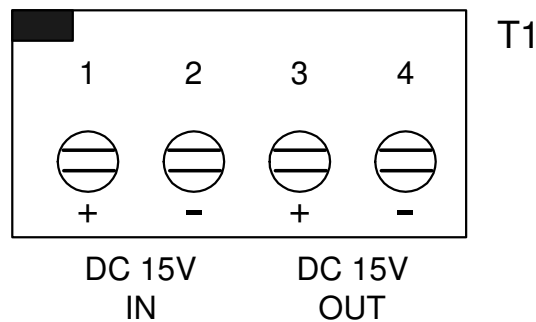
Connector T5 (bottom connector)

Pin #	Function
1	Output #7 (common)
2	Output #7 (normally closed)
3	Output #7 (normally open)
4	Output #8 (common)
5	Output #8 (normally closed)
6	Output #8 (normally open)

15VDC Input Termination

Reference: Terminal Strip T1

Terminals T1-1 and T1-2 are used to provide 15 Volt DC power to the 8-Input/Output card board. Power is supplied from the DC output terminals of either the Power Supply card or another interface card. The DC power is daisy-chained from the DC output terminals T2-3 (+) and T2-4 (-) of the Power Supply card to terminals T1-1 (+) and T1-2 (-) of the first interface card. From this card it is fed from terminals T1-3 (+) and T1-4 (-) to terminals T1-1 (+) and T1-2 (-) of the next interface card. The diagram below shows the configuration of terminal strip T1.



Refer to the Chapter entitled "*The CPU Card*" for additional details.

IDE Connectors

Reference: CN1 and CN2

These are a pair of parallel-connected 40-pin IDE connectors. They are used as the data link between the 8-Input/Output card board and other 4-reader board and or 8-Input/Output card board. One connector is used to feed the IDE bus into the card from either another interface card. The second connector is used to extend the IDE bus to the next card. Each connector may be used as either the incoming bus connector, or the outgoing bus connector.

LED Indicators

Reference: LED9

This LED indicates +15 VDC power is present.

Reference: LED 1 to LED 8

LEDs 1 to 8 light whenever the associated relay is activated.

Reference: JP2

These jumpers are used to set the card address as shown following.

8-Input/Output card board Address	JP1
1	1-2 OUT
	3-4 OUT
	5-6 IN
2	1-2 IN
	3-4 OUT
	5-6 IN
3	1-2 OUT
	3-4 IN
	5-6 IN
4	1-2 IN
	3-4 IN
	5-6 IN

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CHAPTER 16

Secure/Communication Card

This chapter will describe the connection of the Secure/Communication Card with other components of the system as well as a brief introduction of the use of the Secure/Communication Card.

The main function of the Secure/Communication Card is to house the SAM (Secure Access Module). The SAM holds the license to the number of authorised Login Users (Server License only). Without the SAM the Access Easy Controller will not be able to function.

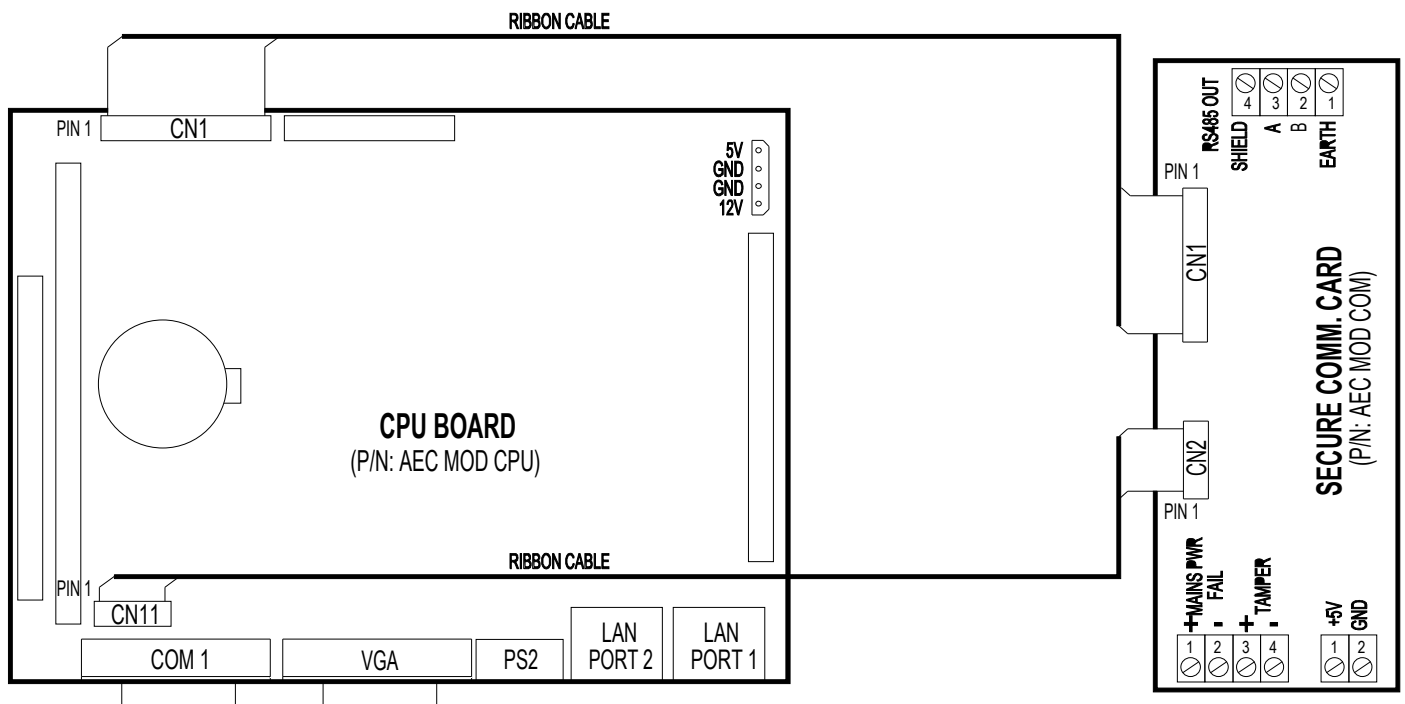
The second function of the card is to provide communication between the CPU and the Reader boards and I/O cards via the Convertor cards. It has a RS485 port that will communicate with the Convertor Cards at 9600bps.

Connector Layout of Secure/Communication Card

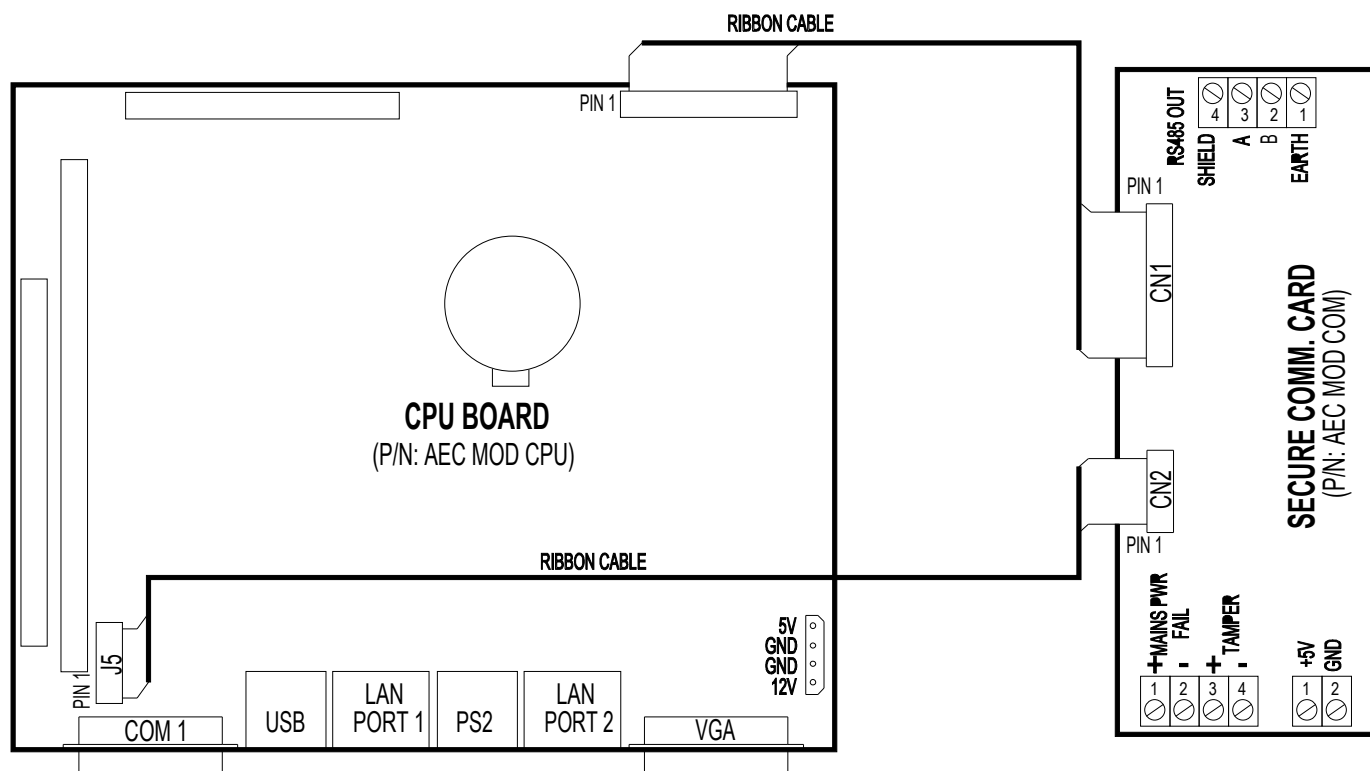
The following layout drawing shows the physical connectors on the Secure/Communication Card. In addition, a brief description is provided on some of the major connectors.

The diagrams below show the connection between the different type of CPU and the Secure/Communication Card.

Note: The Cables used for connection between the CPU Board & Secure/Com card is not interchangeable between two types of CPU Board.



Internal wiring diagram between CPU board and Secure Com Card



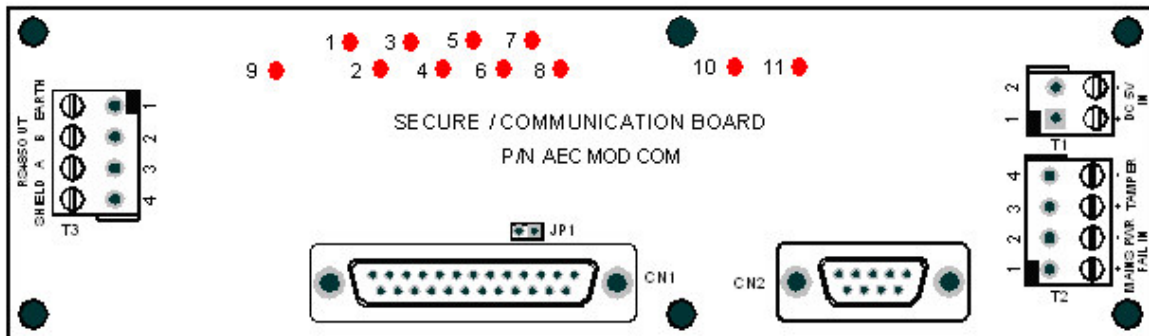
Internal wiring diagram between CPU board(With USB port) and Secure Com Card

Specification for Secure/Communication Card

Input Voltage	+5VDC
Current Consumption	36.5mA @ 5VDC (Peak) 20.3mA @ 5VDC (Idle)
Interface	Serial Port Parallel Port RS485 Port

Technical Overview of Secure/Communication Card

There are several terminal blocks and connectors on the Secure/Communication Card. Detailed explanations are described below.



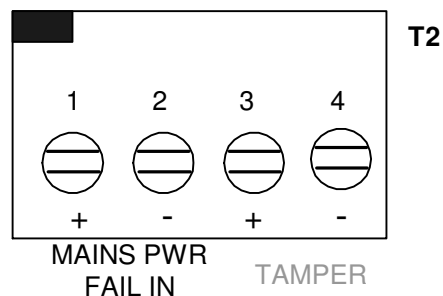
Reference Parallel Port : CN1

This is a parallel port utilized by the CPU. It is one of the communication links between the CPU and the Secure/Communication Card. The communication cable is a 25 way ribbon cable with one end a DB25 female connector and the other is a 26pin IDC connector.

Reference Serial Port: CN2

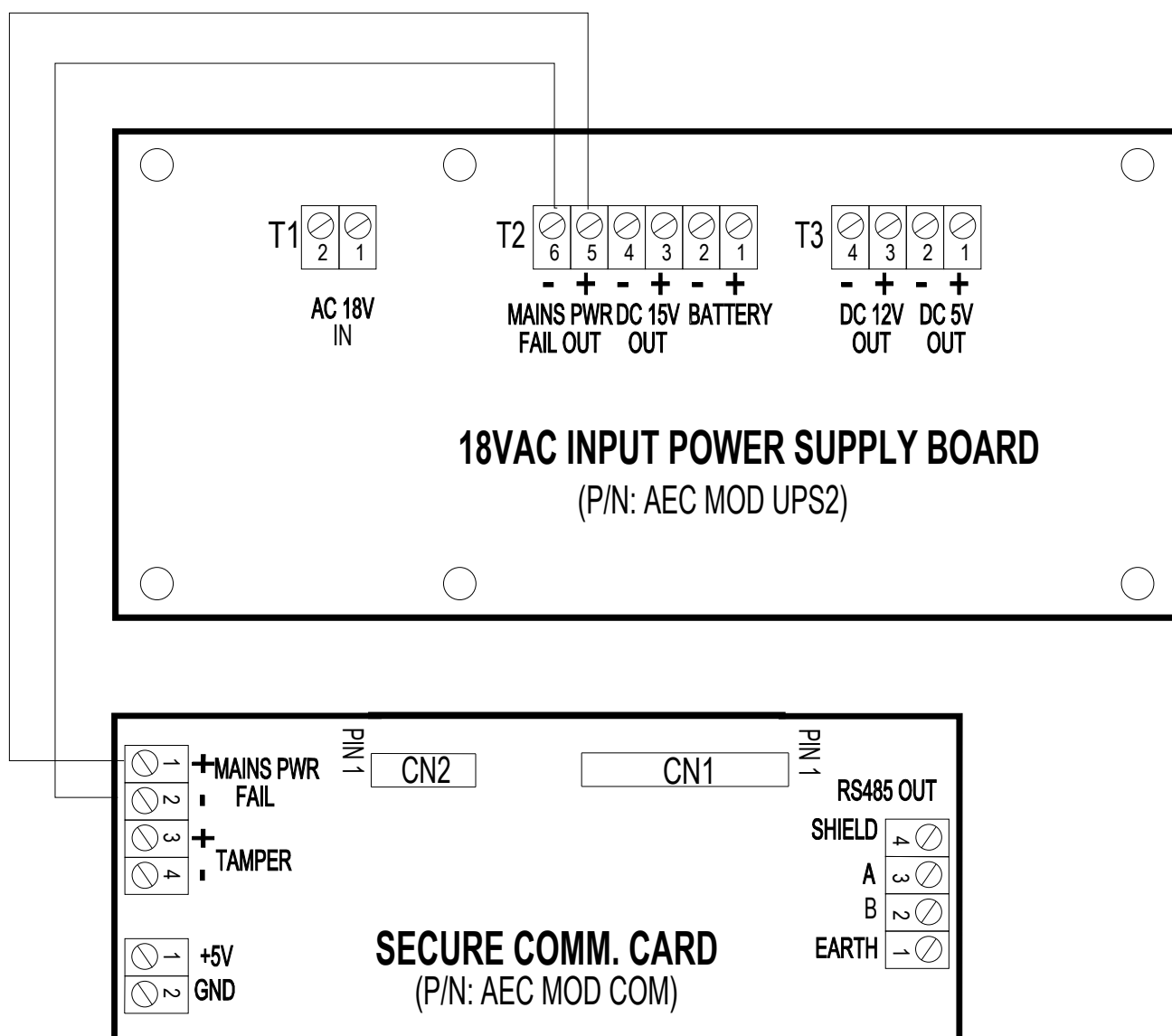
This is a serial port utilized by the CPU. It is one of the communication link between the CPU and the Secure/Communication Card. The communication cable is a 9 way ribbon cable with one end a DB9 male connector and the other is a 10pin IDC connector.

Reference Mains Power Fail: T2-1 & T2-2



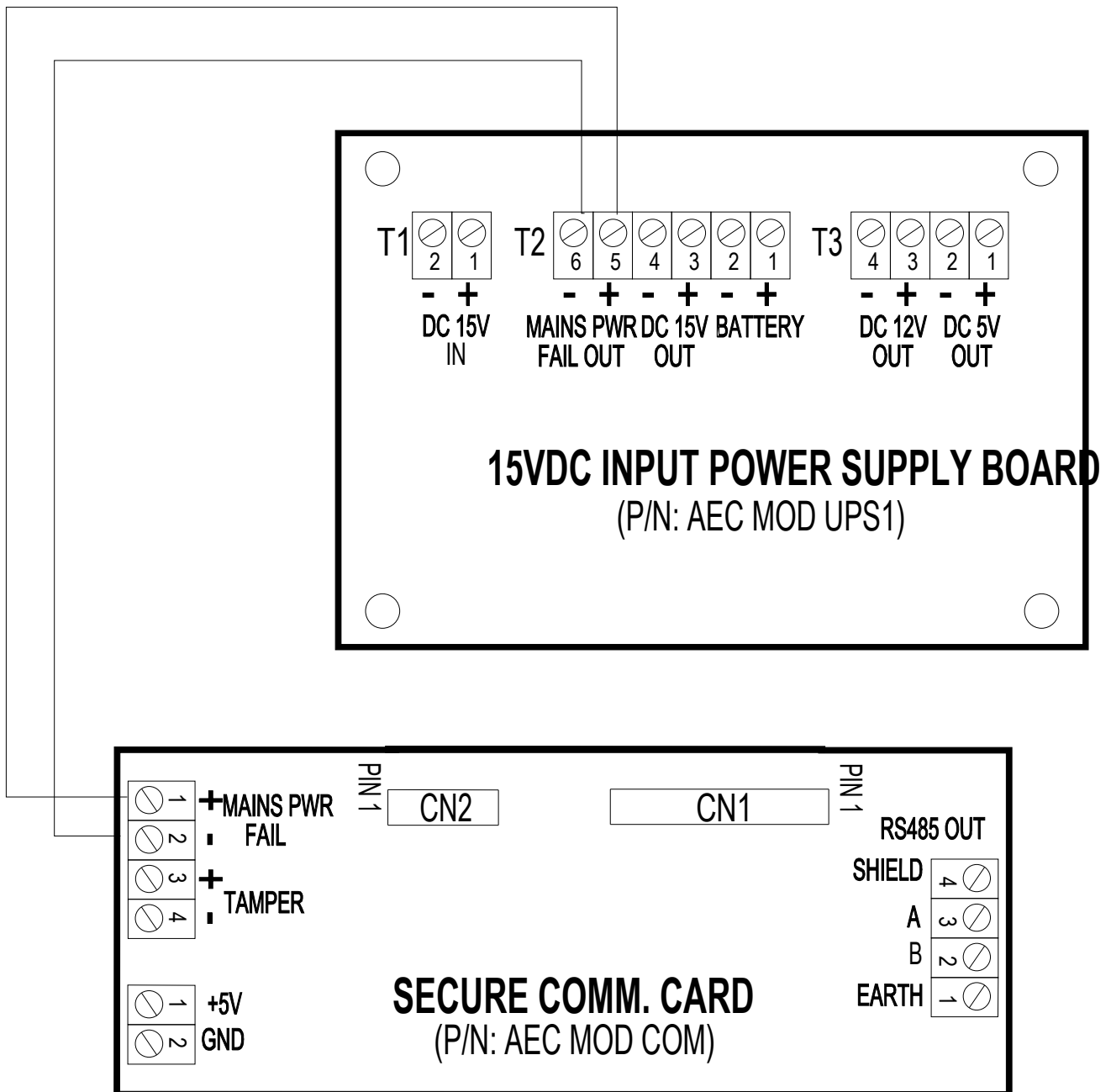
This input allows you to monitor the power source status. When there is a power failure from the source, it could trigger the common alarm output and register as a controller AC fail in the View Activity. To utilize this feature, you will need to provide a dry contact output with normally close contact to this Mains Power Fail input.

The UL Listed version of the Access Easy Controller uses the 18V DC input power supply card that provides a Mains Power Fail output, this output could be terminated to the Mains Power Fails on the Secure/Communication Card to monitor the status of the power source, as shown in the following diagram.

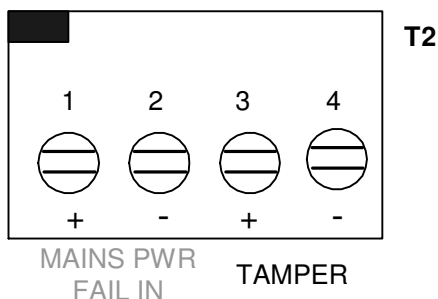


Internal wiring diagram between Power Supply board (UL Listed System) and Secure Com Card

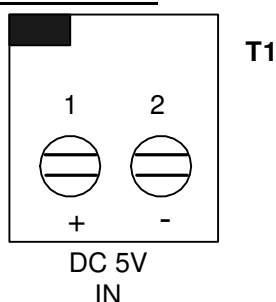
However, if you are having the CE Listed version of Access Easy Controller, you could use output provided by the 15V DC Input Power Supply Card to provide the triggering as shown below.



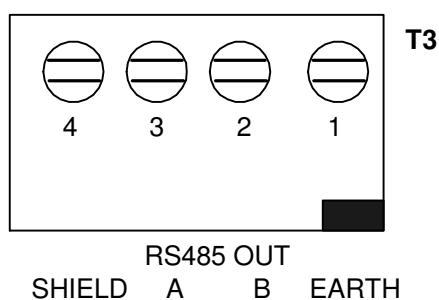
Internal wiring diagram between Power Supply board (CE Listed System) and Secure Com Card

Reference Tamper : T2-3 & T2-4

This terminal block is usually connected to a micro-switch that is used to monitor the enclosure's cover against unauthorised tampering. Any opening of the enclosure will cause the CPU Card's buzzer to sound and the *Common Alarm Output (CAO)* relay to trigger on. A *Controller Tamper* alarm message will be sent to the *View Activity* page.

Reference DC 15V IN: T1-1 & T1-2

These 2 terminals are for connection to an external 5VDC source. Please read the Chapter on *Power Supply Requirement* for further information before connecting any power source.

Reference RS485 connector: T3

These terminals are for connection to the Converter Card. The Access Easy Controller uses RS485 as the communication protocol between the Converter Card and the Secure/Communication Card.

LED Indicators

There are 11 Light Emitting Diodes (LEDs) on the CPU Card. The status of these LED indicators allows for quick diagnostics purposes. Their indicating status is described below: -

- LED 1 to 8* Indicates the stages during a CPU Boot up. After successful startup, LED 1,2 & 3 will runs in a rotating sequence.
- LED 9* Indicates the CPU is accessing the SAM chip on board the Secure/Communication Card. Each time the CPU access the SAM, this LED will blink once.
- LED 10 & 11* These two LED indicates the communication status between the Convertor Card and the Secure/Communication Card. It will be flickering at all time.

CHAPTER 17

18VAC Input Power Supply Card

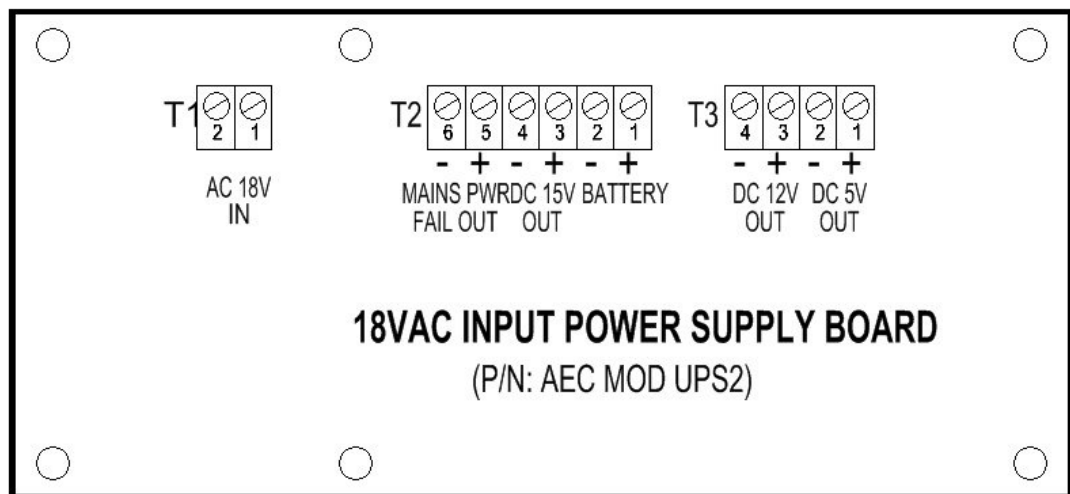
The CPU requires a 5VDC & 12VDC power source to power up while the rest of the Cards, such as Reader Board and I/O Card, requires a 15VDC power source. This 18V AC Input Power Supply card takes in a 18VAC input and provide both the require DC power supply for all the other Cards and attached Readers, it is only available on the Main Controller Unit, which house the CPU, Secure/Communication, Reader Board and I/O Cards. The RIE unit utilized another simplified Power Supply Card, which we will describe in the last section of this chapter.

Note: This card is only available for UL Listed System, CE Listed Version of Access Easy Controller will utilize the 15V DC Input Power Supply Card instead.

DO NOT CONNECT DC POWER TO THIS CARD

18V AC Input Power Supply Card for Main Controller Unit

The following layout drawing shows the physical connectors on the 18V AC Input Power Supply Card. In addition, a brief description is provided on some of the major connectors.



Specification for 18 V AC Input Power Supply Card for Main Controller Unit

Input Voltage	18V AC
Output Voltage	+15V DC +12V DC +5V DC
Max. Output Current	1A @ +15V DC 2A @ + 5V DC or 750mA @ +12V DC 2A @ +5V DC

Technical Overview of 18VAC Input Power Supply Card

There are 3 set of termination blocks on card the 18V AC Input Power Supply Card, the following provides a brief description of the uses for each of them :-

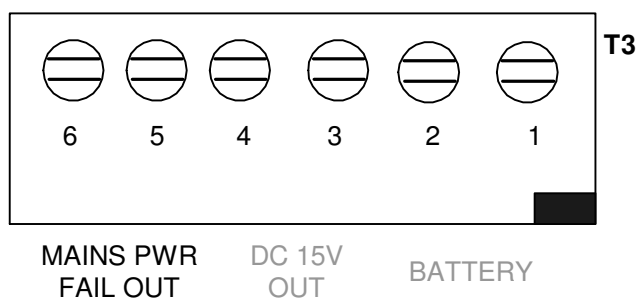
Reference AC Input: T1-1 & T1-2

The 18V AC Input Power Supply Card is designed for the use in UL Listed System only, it accepts 18VAC direct on terminal block T1. This card will convert the AC input into 12VDC and 5VDC output.

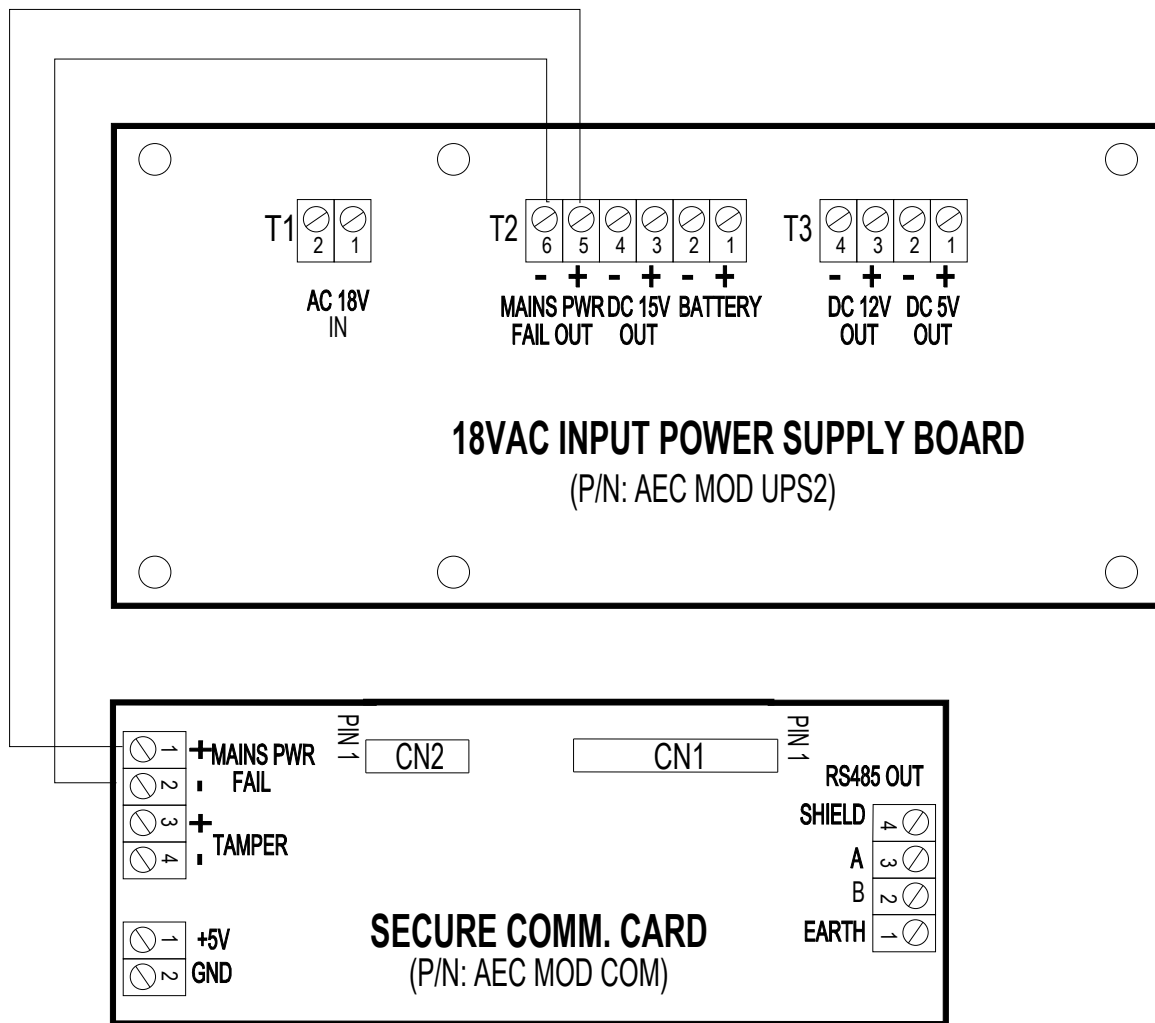
IMPORTANT: This card **ONLY** accept 18VAC. Do not connect 110VAC or 230VAC to this terminal.

Note: To satisfy UL requirements, the Basler Electric P/N 153600AA0001 transformer has been tested with the UL Certification of the Access Easy Controller II. We recommend that this transform is to be used, to provide power to the 18VAC Input Power Supply Card.

Reference Main Power Fail Output: T2-6 & T2-5

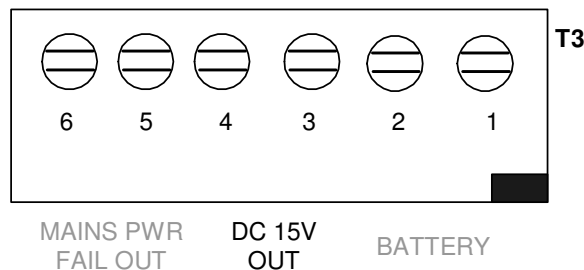


This output allows you to indicate the power source status. When there is a power failure from the 18VAC, it will trigger the Main Power Fail Output from normally close contact to open. To utilize this feature, you connect this output to the Secure/Communication Card's Mains Power Fail input, as shown in the following page.

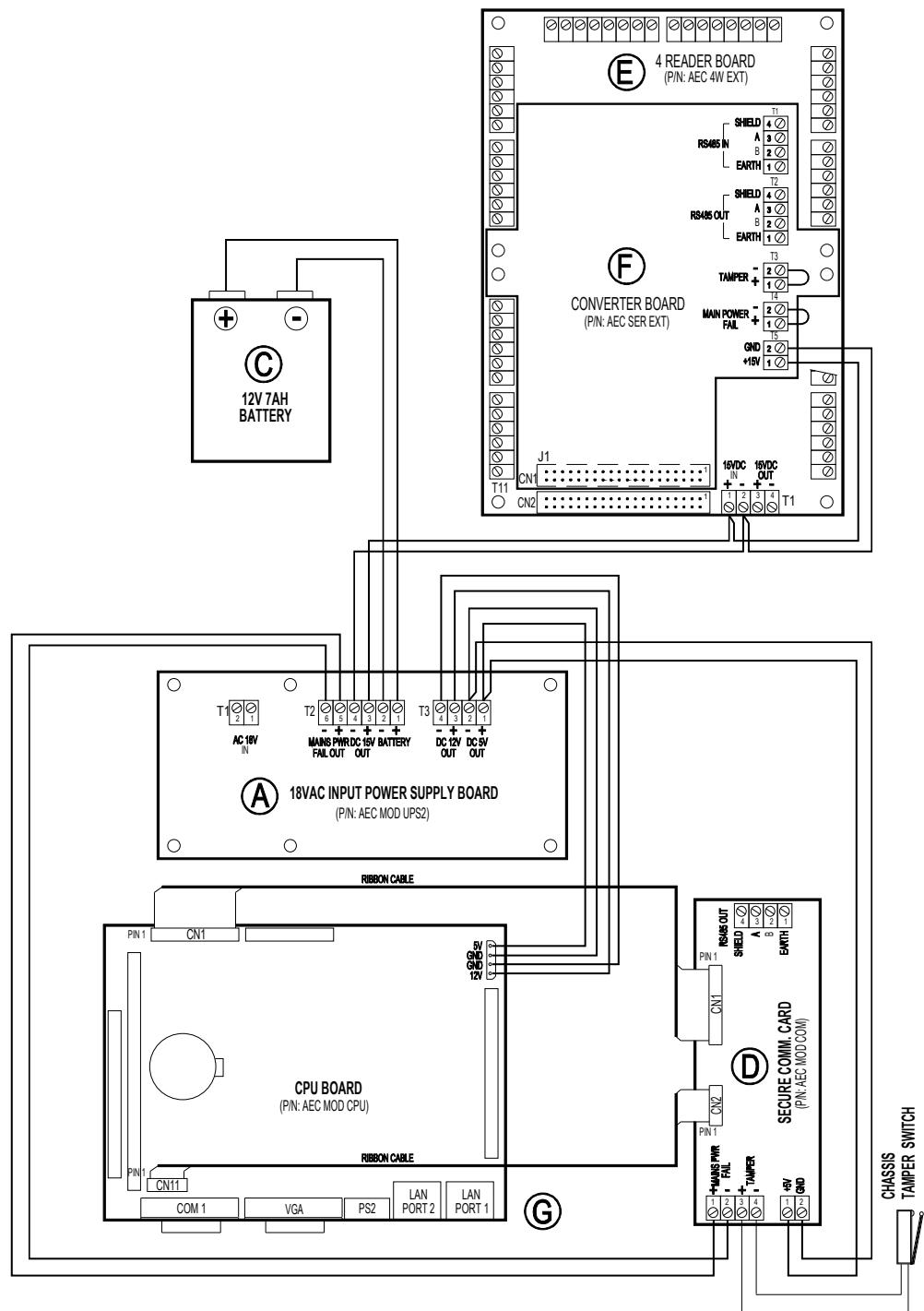


Internal wiring diagram between Power Supply board (UL Listed System) and Secure Com Card

DC 15V Output (T2-4 & T2-3)

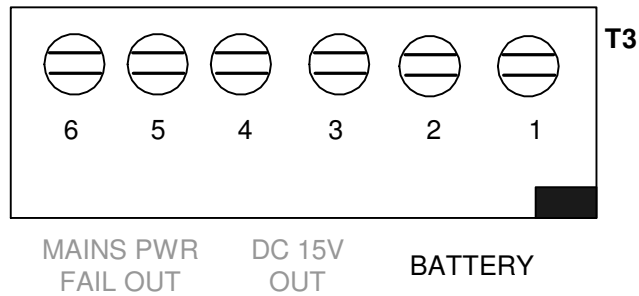


This output provides the power point for the rest of the cards in the same enclosure. Those cards that required the 15VDC are Reader Board, I/O Cards and the Converter Card, although it is not a must to tap the power from this output, it serve as a termination point to loop the power point to the rest of the cards that requires the 15VDC as shown in the following page.

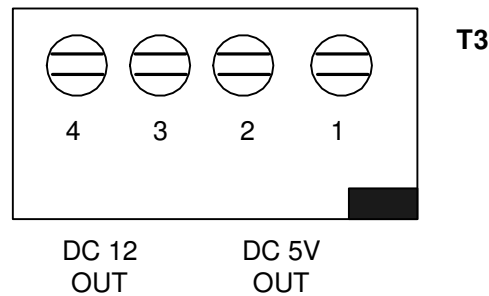


Internal wiring diagram of AEC (UL Listed System)

IMPORTANT: This output could only provide a **Max. Output of 15VDC at 1A. DO NOT CONNECT ANY HIGH POWER CONSUMPTION DEVICES TO IT.** All other devices, such as Locks, should be supplied by a separate power source.

Reference Battery: T2-2 & T2-1

These 2 terminals are for connection to an external 12V rechargeable battery. The battery is trickle charged when ac mains input power is present. During a power outage, this battery is used to power the card and the Reader Board and/or I/O Cards within the same enclosure for a limited duration depending on the total current consumption of the system hardware.

Reference DC 12V Output & DC 5V Output: T3-4 & T3-3, T3-2 & T3-1

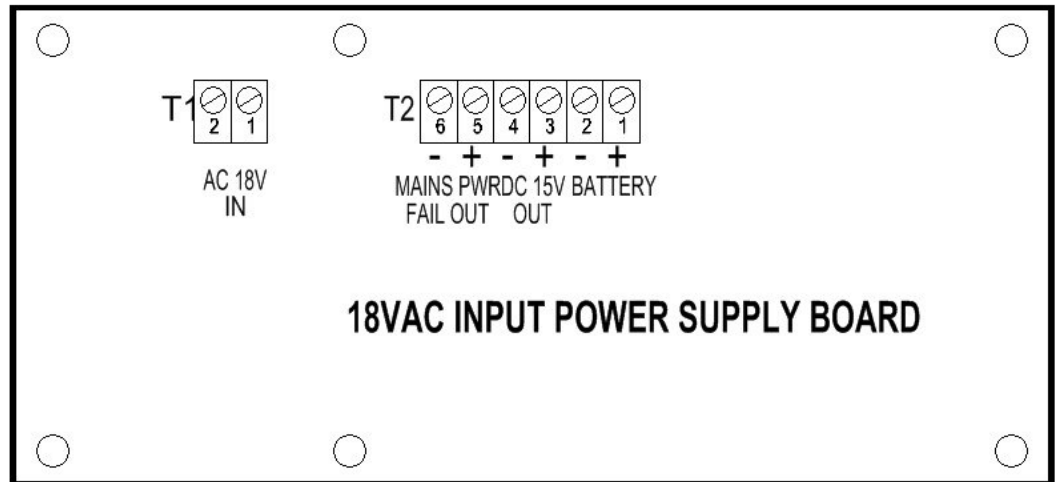
These 2 terminal blocks outputs a voltage supply of 12VDC and 5VDC (see NOTE). It supplies power supply to CPU Card within the same enclosure.

Note: The maximum current drawn is protected by an electronic fuse rated at 1A for 12VDC and 3A for 5VDC.

18VAC Power Supply Card for RIE Unit

This is a simplify version of the 18V AC Input Power Supply Card for the Main Controller Unit that was mention in the above. It utilized the same card but does not provide any 5VDC and 12VDC, only 15VDC supply is provided.

The following shows the layout of the 18V AC Input Power Supply Card used for RIE unit.



Specification for 18V AC Input Power Supply Card for RIE Unit

Input Voltage	18V AC
Output Voltage	+15V DC
Max. Output Current	1A @ +15V DC

Technical Overview of 18VAC Input Power Supply Card for RIE Unit

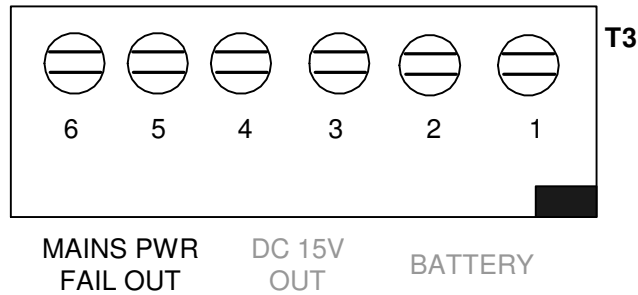
There are only 2 set of termination blocks on card the RIE unit 18V AC Input Power Supply Card, the following provides a brief description of the uses for each of them :-

Reference AC Input T1-1 & T1-2

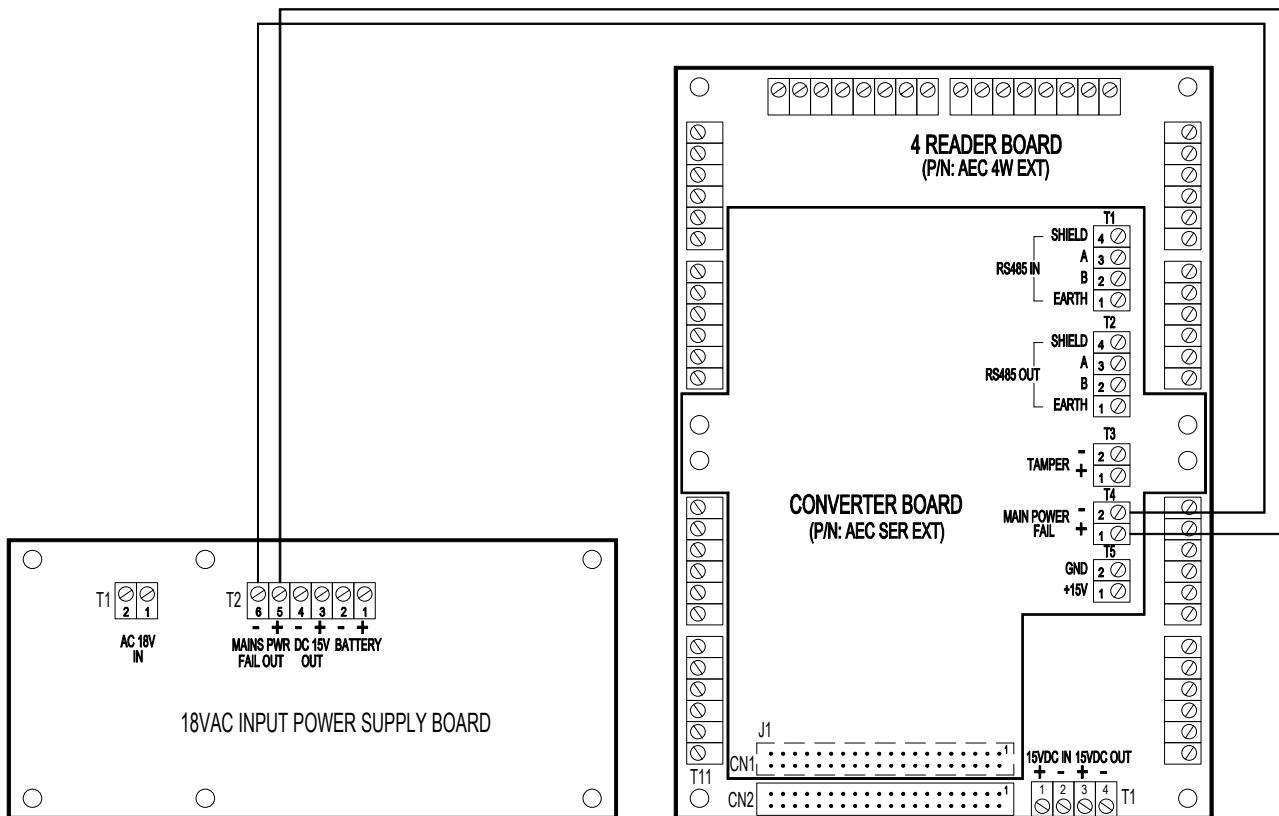
The 18V AC Input Power Supply Card is designed for UL Listed System only, it accepts 18VAC direct on terminal block T1. This card will convert the AC input into 15VDC required by the Reader Board, I/O and Converter Card.

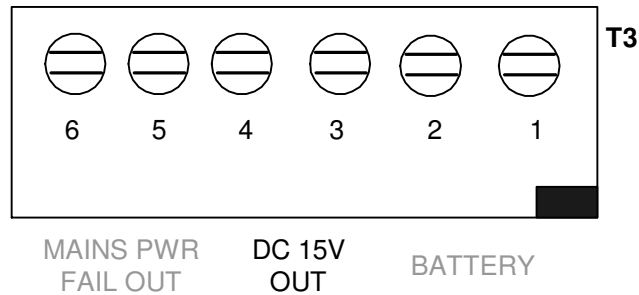
IMPORTANT: This card **ONLY** accepts 18VAC. Do not connect 110VAC or 230VAC to this terminal.

Reference Main Power Fail Output T2-6 & T2-5



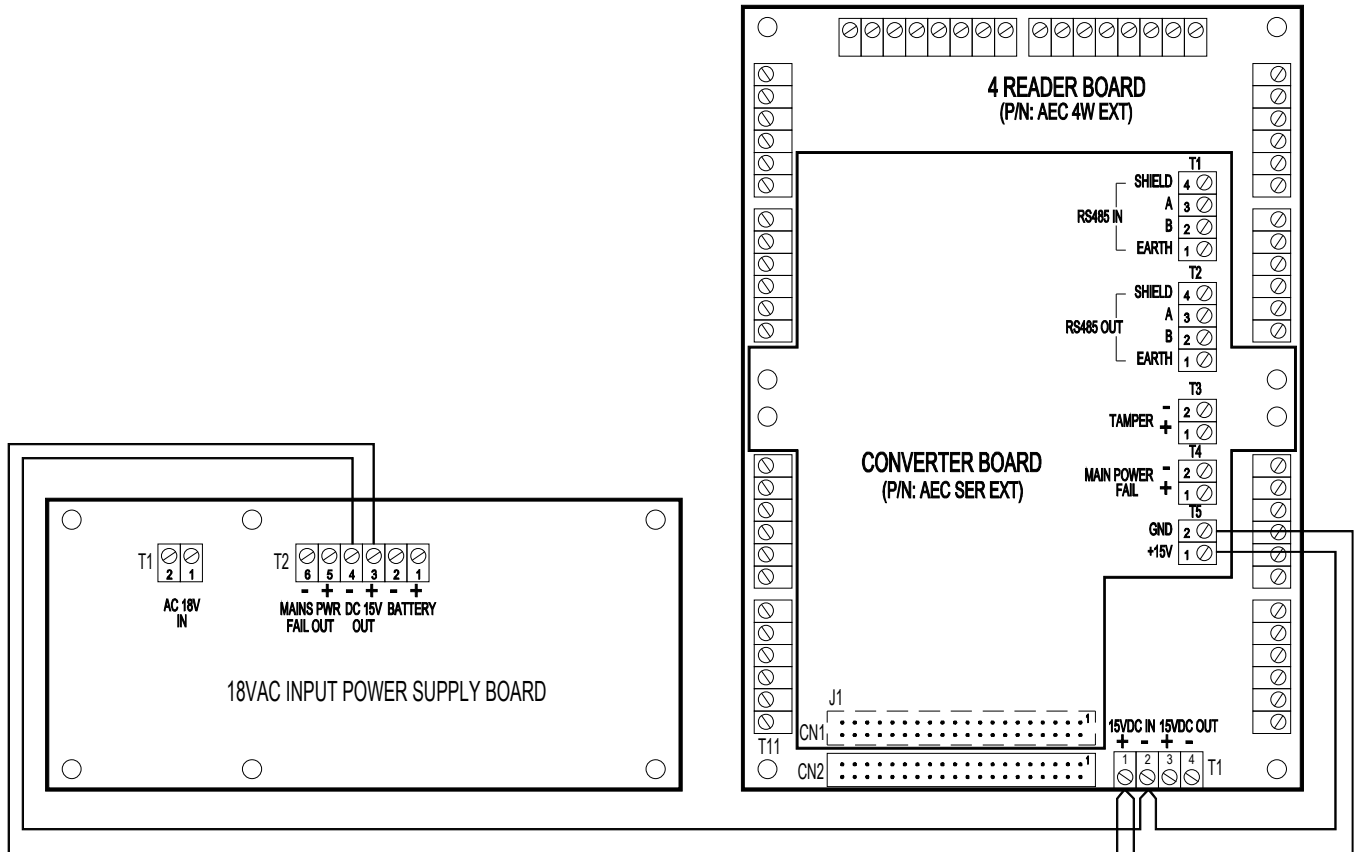
This output allows you to indicate the power source status. When there is a power failure from the 18VAC input source, it will trigger the Main Power Fail Output from normally close contact to open. To utilize this feature, you need to connect this output to the Converter Card's Mains Power Fail input, as shown below.



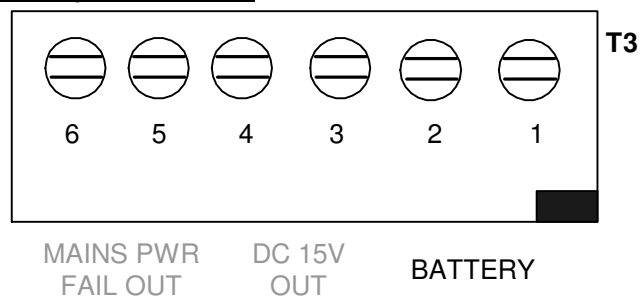
Reference DC 15V Output **T2-4** & **T2-3**

This output provides the power to the rest of the cards in the same enclosure. Those cards that required the 15VDC are Reader Board, I/O Cards and the Converter Card, although it is not a must to tap the power from this output, it serve as a termination point to loop the power point to the rest of the cards that requires the 15VDC as shown below.

IMPORTANT: This output could only provide a **Max. output of 15VDC at 1A. DO NOT CONNECT ANY HIGH POWER CONSUMPTION DEVICES TO IT.** All other devices, such as Locks, should be supplied by a separate power source.



Reference Battery T2-2 & T2-1



These 2 terminals are for connection to an external 12V rechargeable battery. The battery is trickle charged when ac mains input power is present. During a power outage, this battery is used to power the card, Converter Cards and the Reader Board and/or I/O Cards within the same enclosure for a limited duration depending on the total current consumption of the system hardware.

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CHAPTER 18

15V DC Input Power Supply Card

The CPU requires a 5VDC & 12VDC power source to power up while the rest of the Cards, such as Reader Board and I/O Card, requires a 15VDC power source. This 15V DC Input Power Supply card takes in a 15VDC input from an external power supply source and provide both the require DC power supply for all the other Cards, it is only available on the Main Controller Unit, which house the CPU, Secure/Communication, Reader Board and/or I/O Cards. The RIE unit utilized another simplified Power Supply Card, which we will describe in the last section of this chapter.

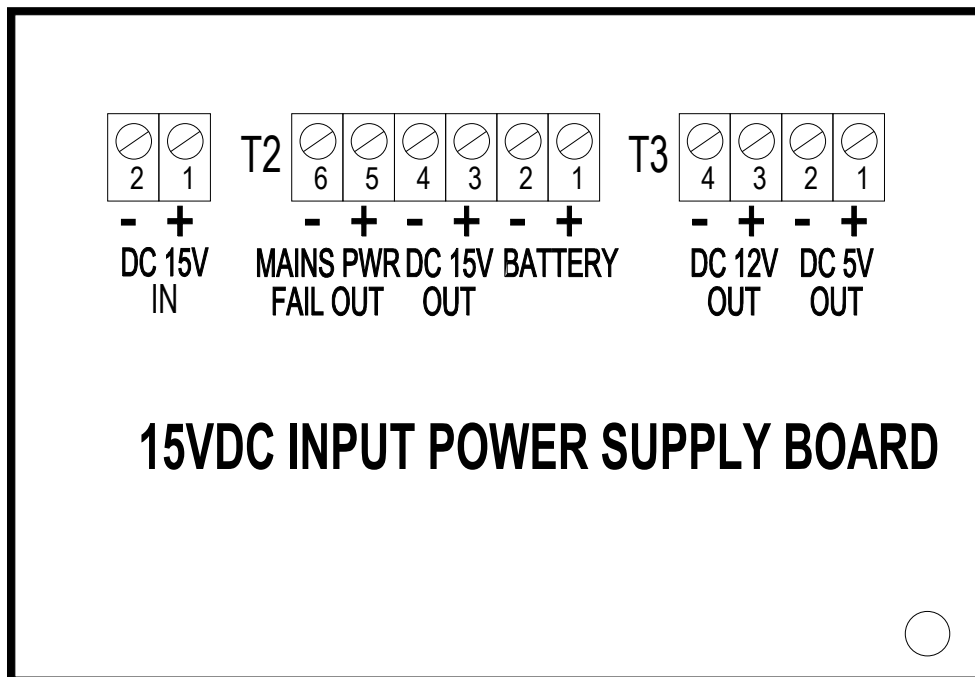
This module is not to be use with UL Listed System.

Note: This card is only available for CE Listed System, UL Listed version of Access Easy Controller will utilize the 18V AC Input Power Supply Card instead.

DO NOT CONNECT AC POWER TO THIS CARD

15V DC Input Power Supply Card for Main Controller Unit

The following layout drawing shows the physical connectors on the 15V DC Input Power Supply Card. In addition, a brief description is provided on some of the major connectors.



Specification for 15V DC Input Power Supply Card for Main Controller Unit

Input voltage	+15V DC
Output voltage	+15V DC +12V DC +5V DC
Max. Output Current	1A @ +15V DC 2A @ + 5V DC or 750mA @ +12V DC 2A @ +5V DC

Technical Overview of 15VDC Input Power Supply Card

There are 3 sets of termination blocks as shown in the previous page, the following provides a brief description of the uses for each of them :-

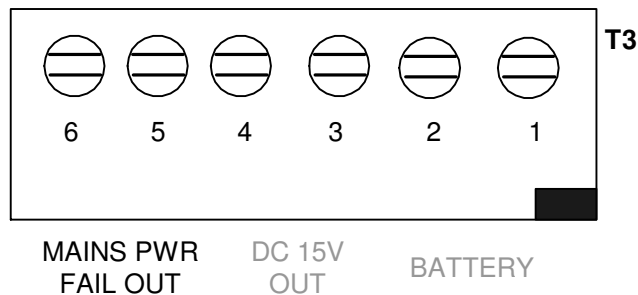
This card is not to be used for UL Listed System

Reference DC 15V Input T1-1 & T1-2

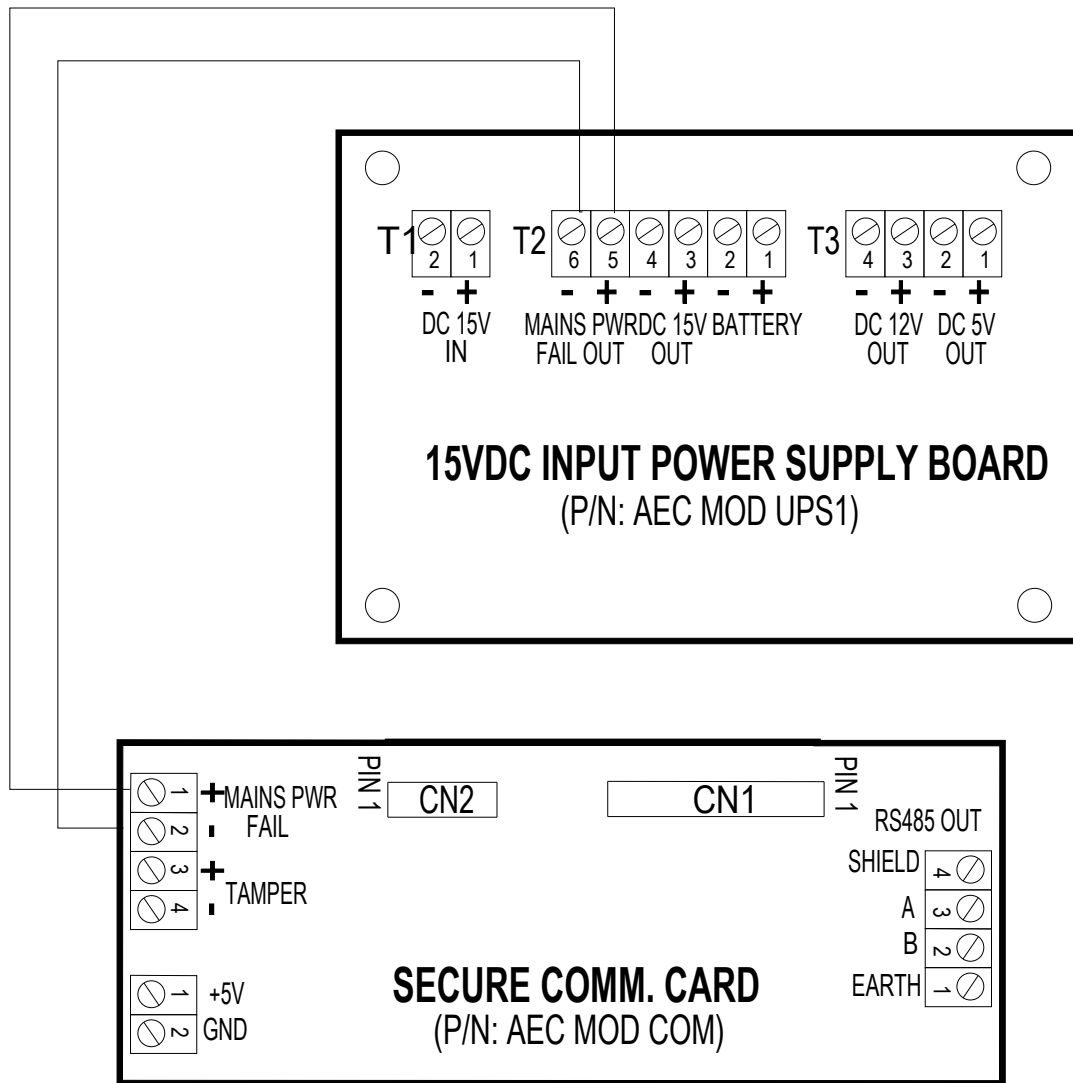
The 15V DC Input Power Supply Card is designed for the use in other part of the world that does not requires UL Listing, it accepts 15VDC direct on terminal block T1 from an external Power Supply Unit.

Note: This card **ONLY** accept 15VDC. Do not connect 110VAC or 230VAC to this terminal.

Reference Main Power Fail Output T2-6 & T2-5

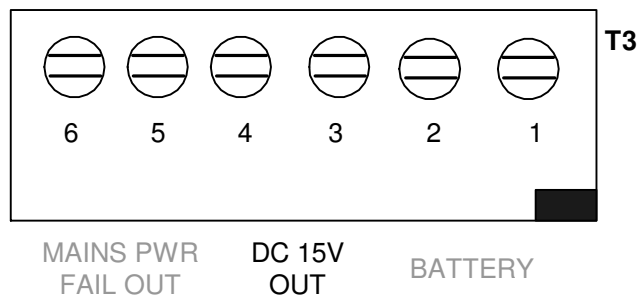


This output allows you to indicate the power source status. When there is a power failure from the 15VDC, it will trigger the Main Power Fail Output from normally close contact to open. To utilize this feature, you need to connect this output to the Secure/Communication Card's Mains Power Fail input, as shown in the following page.

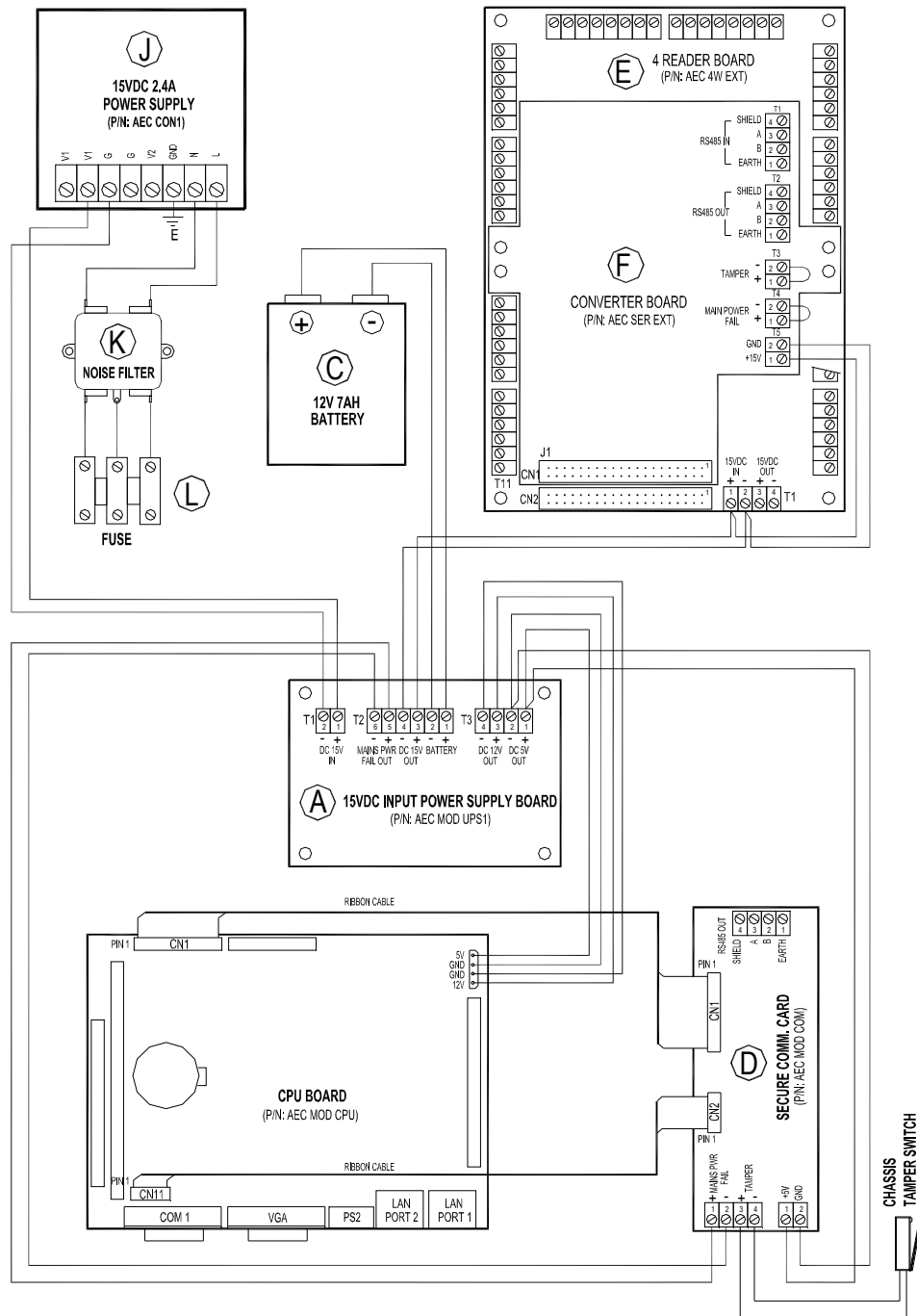


Internal wiring diagram between Power Supply board (CE Listed System) and Secure Com Card

Reference DC 15V Output **T2-4** & **T2-3**

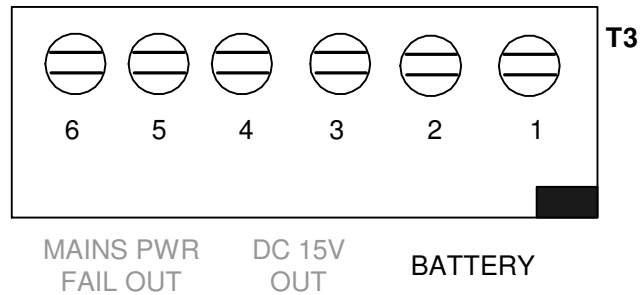


This output provides the power for the rest of the cards in the same enclosure. Those cards that required the 15VDC are CPU Card, Reader Board, I/O Cards and the Converter Card, although it is not compulsory to tap the power from this output, it serve as a termination point to loop the power point to the rest of the cards that requires the 15VDC as shown in the following page.

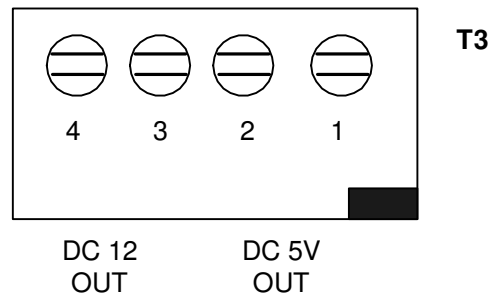


Internal wiring diagram of AEC (CE Listed System)

IMPORTANT: This output could only provide a **Max. output of 15VDC at 1A. DO NOT CONNECT ANY HIGH POWER CONSUMPTION DEVICES TO IT.** All other devices, such as Locks, should be supplied by a separate power source.

Reference Battery T2-2 & T2-1)

These 2 terminals are for connection to an external 12V rechargeable battery. The battery is trickle charged when ac mains input power is present. During a power outage, this battery is used to power the card, Converter Card and the Reader Board and/or I/O Cards within the same enclosure for a limited duration depending on the total current consumption of the system hardware.

Reference DC 12V Output & DC 5V Output T3-4 & T3-3, T3-2 & T3-1

These 2 terminal blocks outputs a voltage supply of 12VDC and 5VDC (see NOTE). It is use for supplying power to CPU Card within the same enclosure.

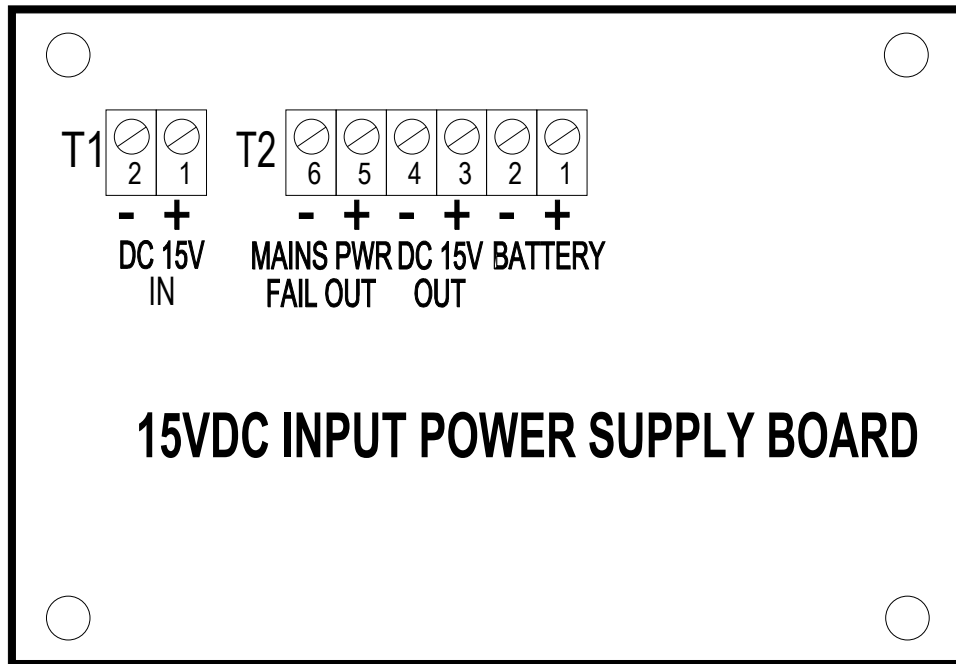
Note: The maximum current drawn is protected by an electronic fuse rated at 1A for 12VDC and 3A for 5VDC.

15VDC Power Supply Card for RIE Unit

This is a simplify version of the 15V DC Input Power Supply Card for the Main Controller Unit that was mention in the above. It utilized the same card but does not provide any 5VDC and 12VDC.

This module is not to be use for UL Listed system.

The following shows the layout of the 15V DC Input Power Supply Card used for RIE unit.

**Specification for 15V DC Input Power Supply Card for RIE Unit**

Input voltage	+15V DC
Output voltage	+15V DC +12V DC +5V DC
Max. Output Current	1A @ +15V DC 1A @ +12V DC 3A @ +5V DC

Technical Overview of 15VDC Input Power Supply Card

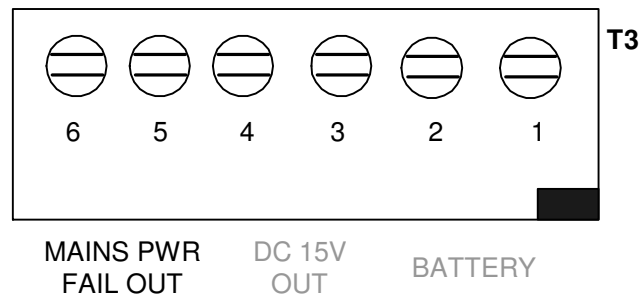
There are only 2 set of termination blocks on card the 15V DC Power Supply Card, the following provides a brief description of the uses for each of them :-

Reference AC Input T1-1 & T1-2)

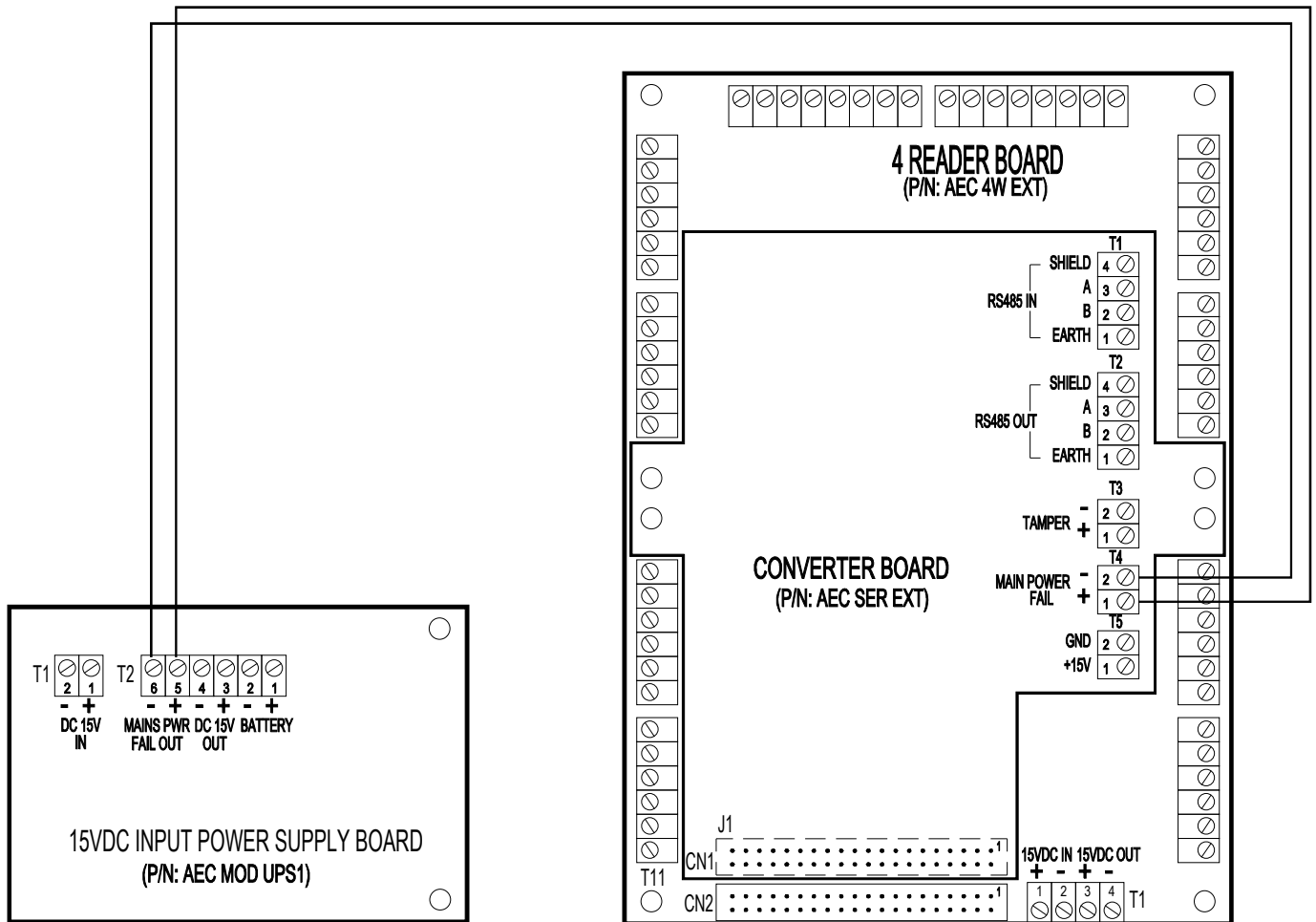
The 15V AC Input Power Supply Card is designed for the use other part of the world that does not requires UL Listing, it accepts 15VDC direct on terminal block T1. This card will supplies the 15VDC required by the Reader Board, I/O and Converter Card.

IMPORTANT : This card **ONLY** accept 15VDC. Do not connect 110VAC or 230VAC to this terminal.

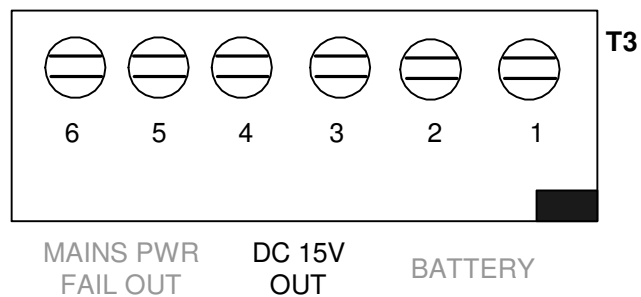
Reference Main Power Fail Output T2-6 & T2-5



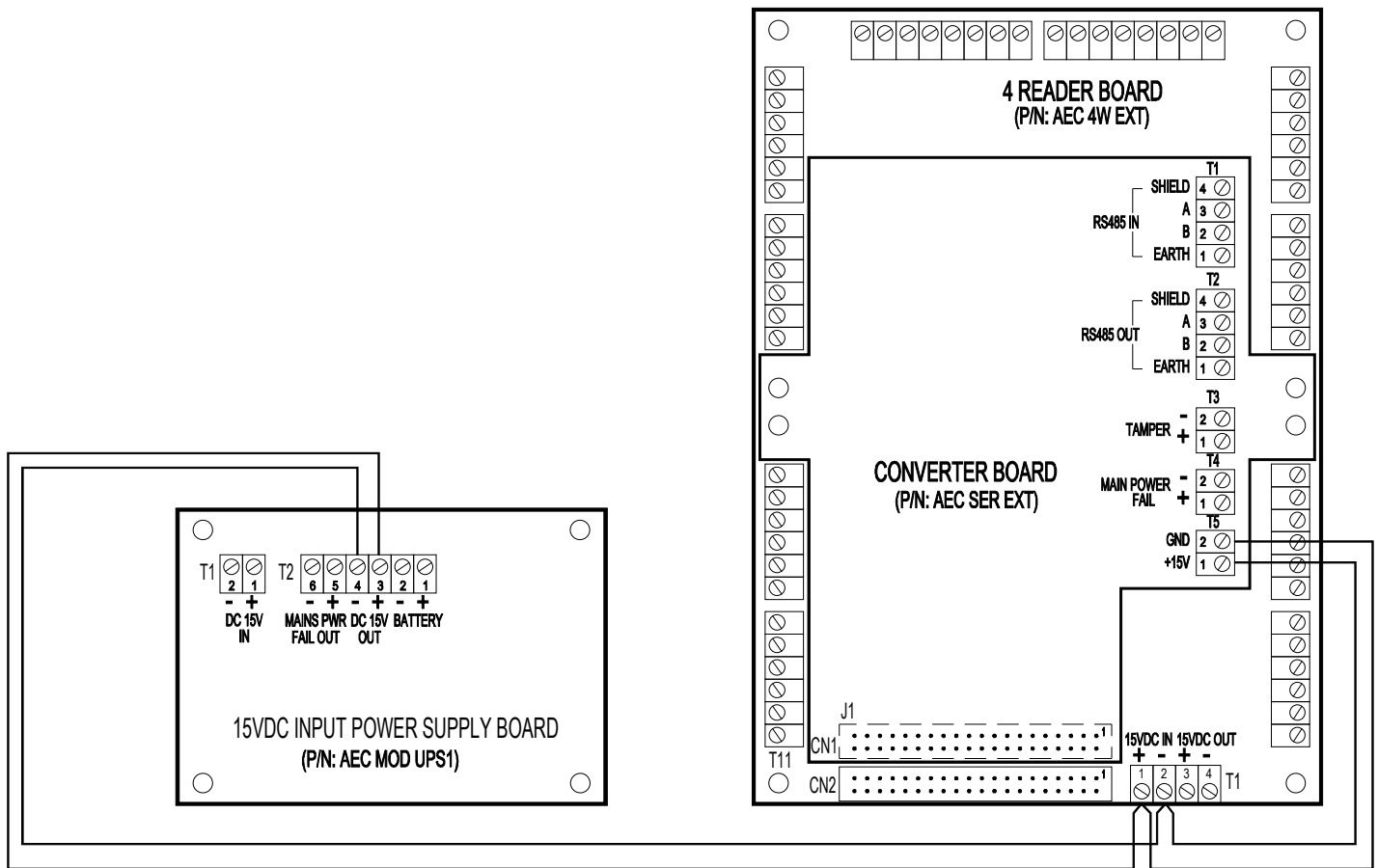
This output allows you to indicate the power source status. When there is a power failure from the 15VDC input source, it will trigger the Main Power Fail Output from normally close contact to open. To utilize this feature, you connect this output to the Converter Card's Mains Power Fail input, as shown in the following page.



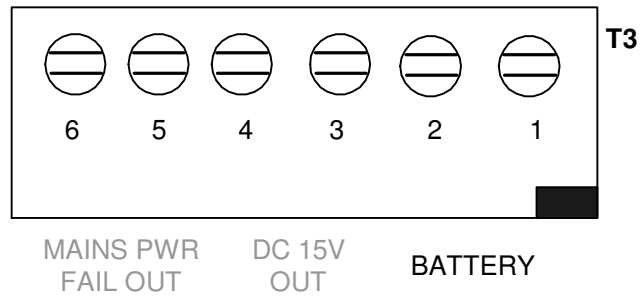
Reference DC 15V Output **T2-4** & **T2-3**



This output provides the power point for the rest of the cards in the same enclosure. Those cards that required the 15VDC are Reader Board, I/O Cards and the Converter Card, although it is not a must to tap the power from this output, it serve as a termination point to loop the power point to the rest of the cards that requires the 15VDC as shown in the following diagram.



IMPORTANT: This output could only provide a **Max. output of 15VDC at 1A. DO NOT CONNECT ANY HIGH POWER CONSUMPTION DEVICES TO IT.** All other devices, such as Locks, should be supplied by a separate power source.

Reference Battery T2-2 & T2-1

These 2 terminals are for connection to an external 12V rechargeable battery. The battery is trickle charged when ac mains input power is present. During a power outage, this battery is used to power the card and the Reader Board and/or I/O Cards within the same enclosure for a limited duration depending on the total current consumption of the system hardware.

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CHAPTER 19

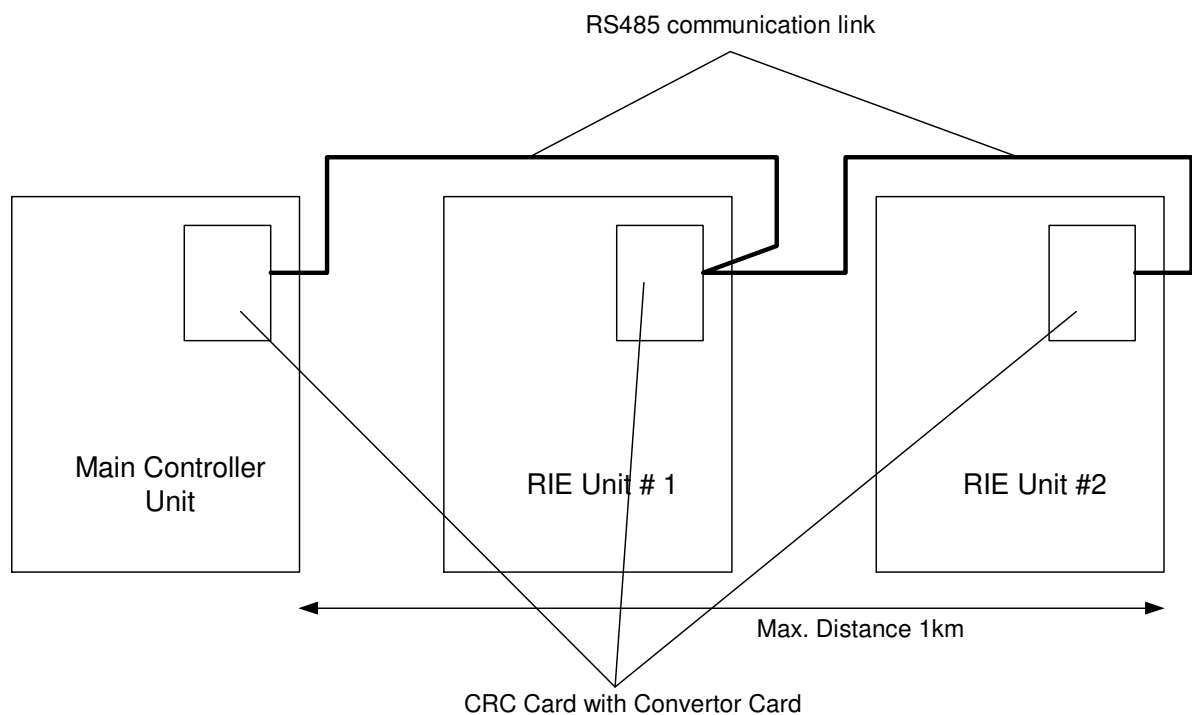
Convertor Card

The main function of the Convertor Card is to provide cascading ability to the system, by using RS485 communication technology, hence, allowing the RIE unit to be mount separately away from the Main Controller Unit.

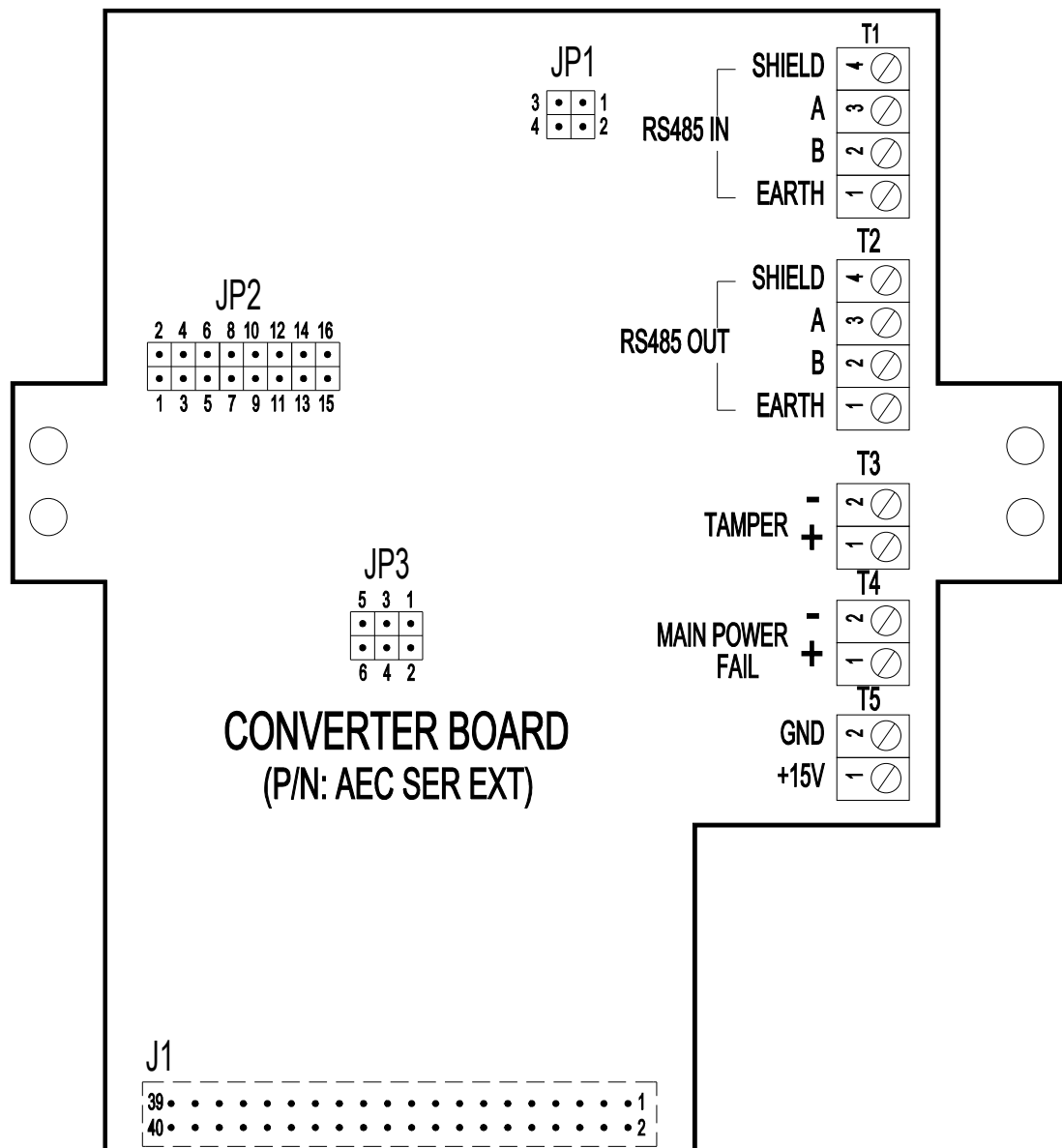
With the use of RS485 communication, the RIE unit can be mounted as far as 1Km away from the Main Controller and multiple RIE units could be link via this RS485 communication link by daisy chain as shown in the diagram below.

Note: Maximum distance between Main Controller unit to the furthers RIE unit in the daisy chain loop is 1km.

Connector Layout of Convertor Card



The following layout drawing shows the physical connectors on the Convertor Card.



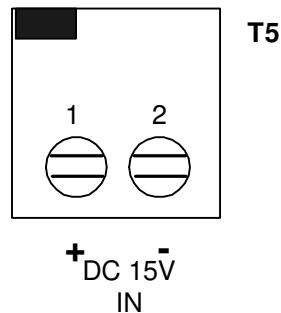
Specification for Convertor Card

Input Voltage	+15V DC
Current Consumption	26.6mA @ +15V DC (Peak) 25mA @ +15V DC (Average)

Technical Overview of Convertor Card

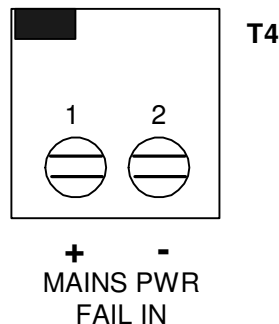
There are 5 set of termination blocks on card the Convertor Card, the following provides a brief description of the uses for each of them :-

Reference DC 15V Input T5



The Convertor Card requires a 15VDC power source to operate, this is provided by the Power Supply Card as mentioned in the previous chapters.

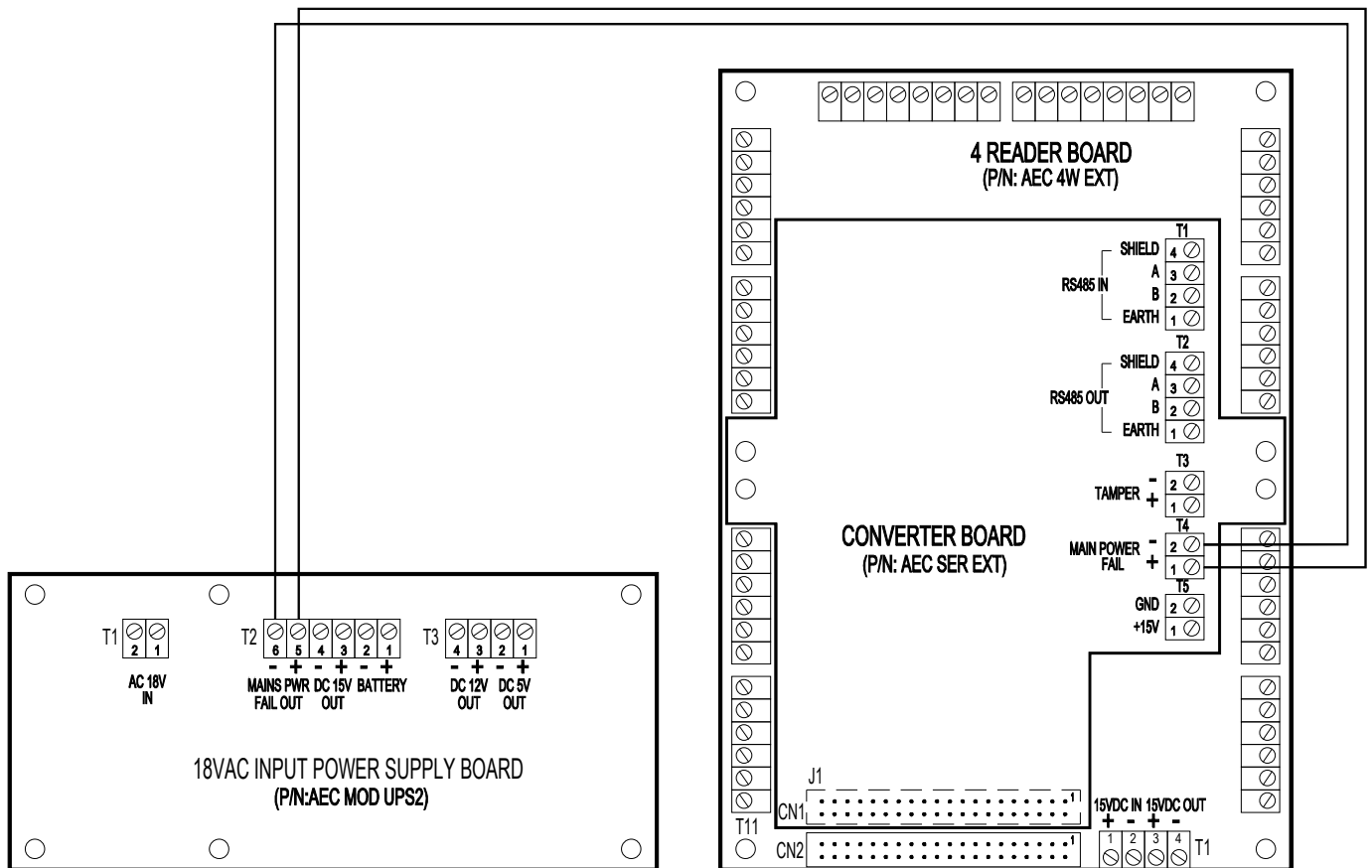
Reference Mains Power Fail Input T4



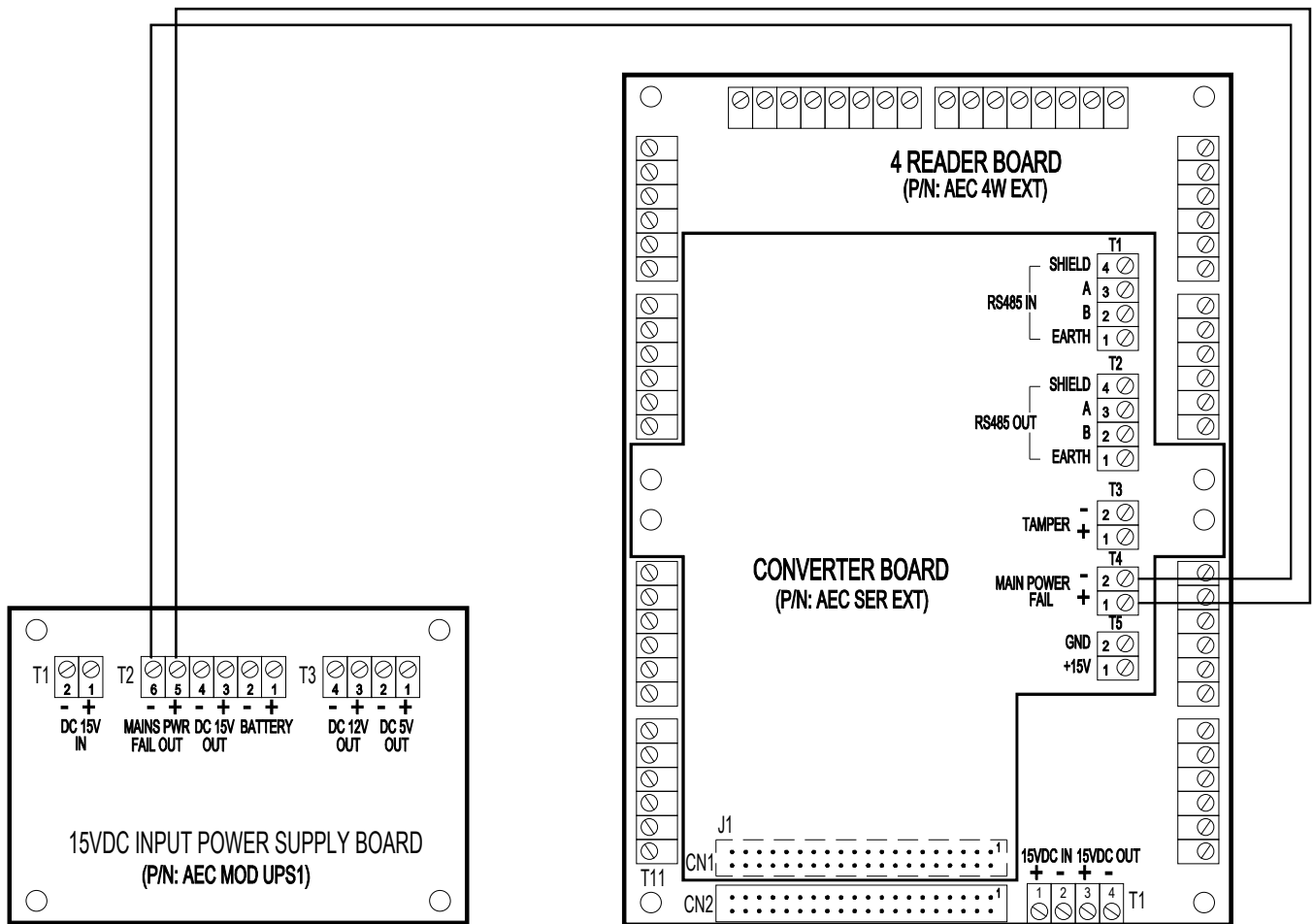
This input allows you to monitor the power source status of the RIE unit. When there is a power failure from the source, it could trigger the common alarm output and register as a controller AC fail in the View Activity. To utilize this feature, you will need to terminate this to the Power Supply Card's MAINS PWR FAIL OUT.

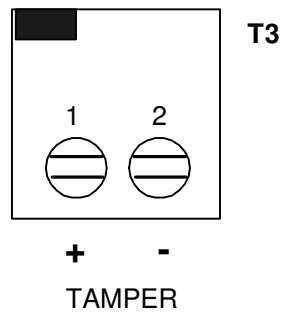
Note: This input will only be used for the RIE Unit, for the Main Controller unit, the Secure/Communications Card's Main Power Fail input is use instead.

The UL Listed version of Access Easy Controller uses the 18V DC input power supply card that provides a Mains Power Fail output, this output could be terminated to the Mains Power Fails on the Convertor Card to monitor the status of the power source, as shown in the following diagram.



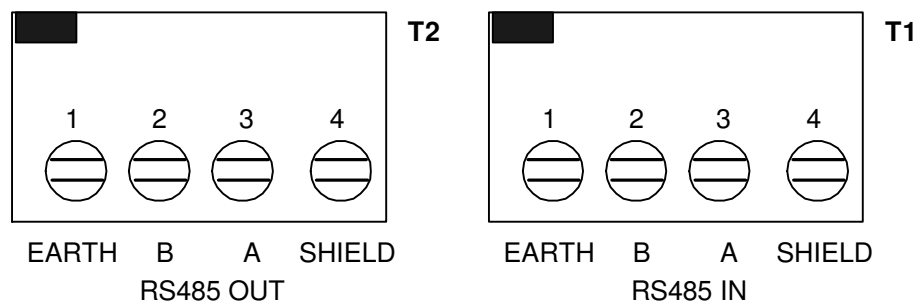
However, if you are having the CE Listed version of Access Easy Controller, you could use the output provided by the 15V DC Input Power Supply Card to provides the triggering as shown in the following diagram.



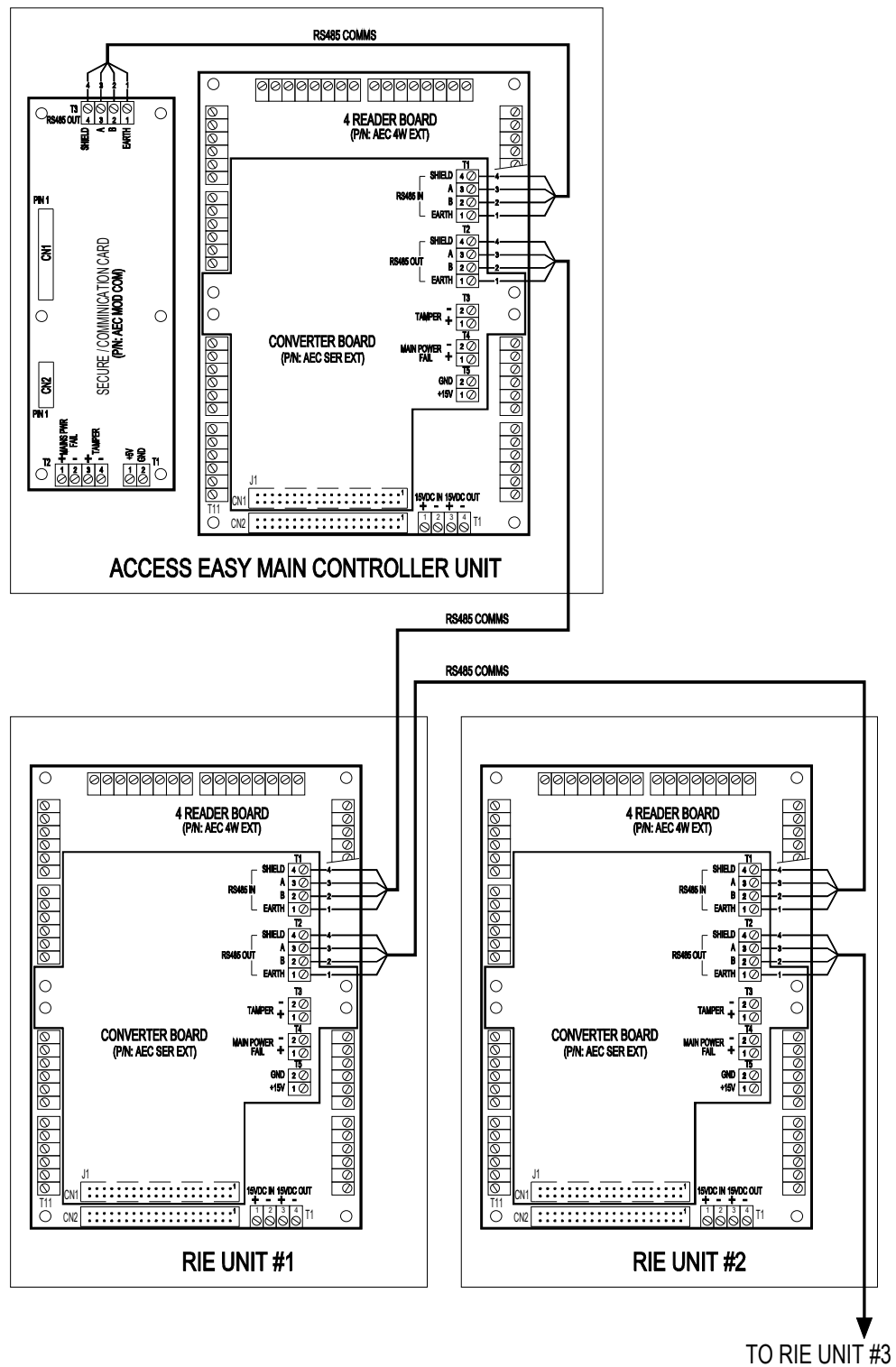
Reference Tamper T3

This terminal block is usually connected to a micro-switch that is used to monitor the enclosure's cover against unauthorised tampering. Any opening of the enclosure will cause the CPU Card's buzzer to sound and the *Common Alarm Output* (CAO) relay to trigger on. A *Panel Tamper* alarm message will be sent to the *View Activity* page.

Note: This input will only be used for the RIE Unit, for the Main Controller unit, the Secure/Communications Card's Tamper input is use instead.

Reference RS485 IN T1 and RS485 OUT T2

These terminals are for the daisy chain connection of the RS485 communication between the Secure/Communications and the Converter Cards. Each IN should be connected to the previous OUT in the daisy chain loop. The following diagram shows how the Converter Cards and the Secure/Communication Card should be terminated.



Jumper Setting

There are a few jumper blocks located on the card that need to be set. The table below shows the Jumper Reference available for the Convertor Card.

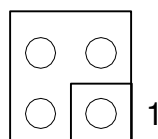
Jumper Reference Table for Convertor Card

Reference	Usage
JP1	End-of-Line Setting
JP2	Reader Board and I/O Present Setting
JP3	For Future Use

Reference : **JP1**

This is the end-of-line activation setting, RS485 requires the end of line resistor to be terminated in the last Convertor Card in the daisy chain loop. We have simplified that, by providing a jumper setting to activate the end-of-line

The diagram below indicates the location of the pin 1.

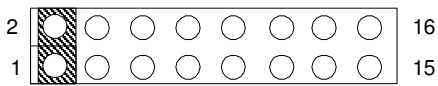
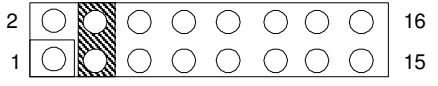
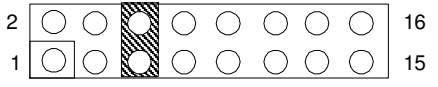
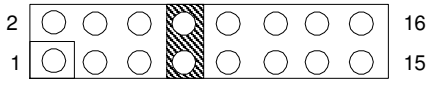
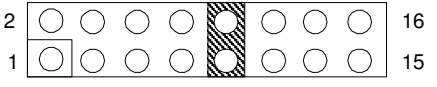
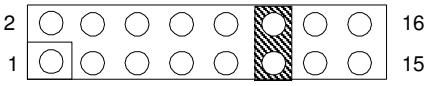
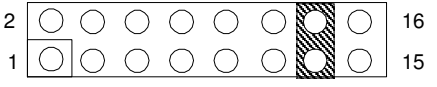
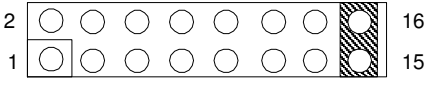


Setting	Jumper J1
Disable end-of-line setting	
Enable end-of-line setting	

Reference : **JP2**

Each Convertor Card can support up to a max of 3 Reader Board or I/O Cards, therefore, it need to know which Cards are connected to it. For example, the RIE unit is fixed with 2 Reader Board and 1 I/O Card, you will need to identify the address of each Cards and set the relevant Jumper on JP2. Each Jumper represents one Card.

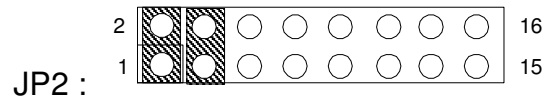
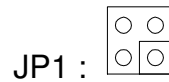
In order to help you easily identify the Card number, the following table provides a reference to the setting required on JP2 verse the Reader Board and I/O Cards in the enclosure.

JP2 Settings			
Readers		I/O	
	Reader 1 - 4		
	Reader 5 - 8		
	Reader 9 - 12		
	Reader 13 - 16		
			Input 1 - 8 & Output 1 - 8
			Input 9 - 16 & Output 9 - 16
			Input 17 - 24 & Output 17 - 24
			Input 25 - 32 & Output 25 - 32

To help you further correctly set the jumper setting of the Convertor, the following examples shows you how it is done.

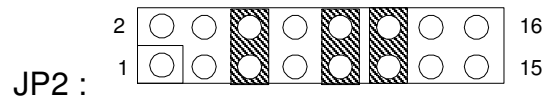
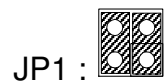
For example, the you may have a Main Controller unit with 2 x Reader Board and a RIE unit with 1 x Reader Board and 2 x I/O Cards. The Jumper setting required will be as follows :

Main Controller Unit's Convertor Card :



Note: JP2 has 2 jumper set at pin 1&2 and pin 3&4, cause the 2 **Reader Board** on the Main Controller Unit controls the readers 1 to 4 for the first **Reader Board** and readers 5 to 8 for the second **Reader Board**.
JP1 does not have any jumper set cause it is the first unit in the RS485 daisy chain loop.

RIE Unit's Convertor Card :



Note: JP2 has 3 jumpers set at pin 5&6, pin 9&10 and pin 11&12, cause the **Reader Board** in the RIE unit controls the readers 9 to reader 12 and the I/O Cards control the I/O range from 33 to 48 respectively.
JP1 has all the jumpers connected, cause the RIE unit is the last unit in the RS485 daisy chain loop.

LED Indicators

There are 4 Light Emitting Diodes (LEDs) on the Convertor Card. The status of these LED indicators allows for quick diagnostics purposes. Their indicating status is described below: -

<i>CPU2</i>	This LED will be blinking constantly, it is an indication of the card is still running normally.
<i>Tx & Rx</i>	Indicates the communication between the Secure/Communication Card. It should be flickering at all times.
<i>Card Read</i>	Whenever a reader reads a card this LED will blink once.

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CHAPTER 20

Power Supply Requirement and Connection

This chapter describes the power supply requirement for all the electronics within each Access Easy Controller enclosure and its connection.

The design of the CPU Card is such that it can be powered externally through the Power Supply Card by either one of the following means: -

- An 18VAC input power source or
- A 15VDC $\pm$ 1% input power source.

WARNING: A 12VDC power supply is inadequate and will not be sufficient to charge the backup battery, although the Access Easy Controller system may work.

There are 2 variations of input power options for all Access Easy Controller s, either requiring an 18VAC or 15VDC input. UL Listed system will employ only the 18VAC input power, CE Listed system will employ only the 15VDC input power.

In order to provide uninterrupted power source to the CPU Card and Reader Boards during a supply outage, a battery charging circuit is incorporated in the Power Supply Card to charge the backup rechargeable battery.

When input power is present, the backup battery is trickle charged.

Note: During battery backup, the 12V supply output from the power supply card is not guaranteed. It is because the voltage drop across the diodes will cause the 12V output to drop to 9-10V

Current Consumption

The table shows the current consumption of the various types of Cards.

Description.	Average Current consumption (DC mA)
CPU Card	1.35 A @ 5VDC
4 Reader Board	140 mA @ 15VDC
8 I/O Card,	140mA @ 15VDC
Secure/Communication Card	36.5mA @ 5VDC
Convertor Card	26.2mA @ 15VDC

The indicated value for Reader Board and I/O Card is the total current consumption of all activated relays.

The data in the table are meant to be use as a general guide. It is the responsibility of the system installer to determine the actual current consumption of the hardware that the external battery is to support in order to provide continuous supply for a known period.

TIP: If a longer Backup time is desired, it is recommended that all the Readers takes its supply from another external power supply unit with its own back-up battery.

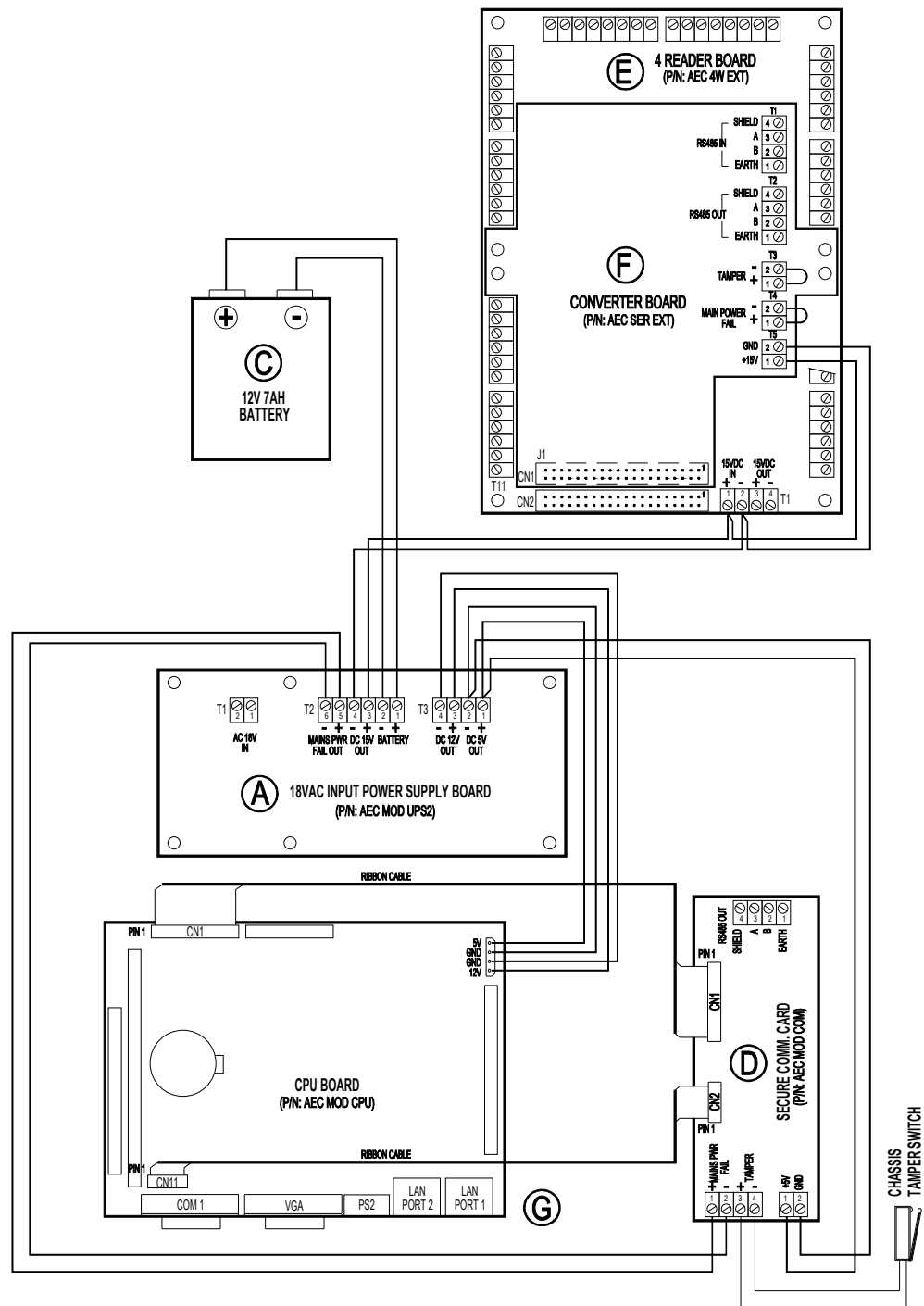
For system that could not be contained within the Main Enclosure, such as a 10-Door Access Control System, additional RIE Unit(s) is added. In such case, the supply to the cards in the RIE Unit(s) are provided via it own *18V AC Input Power Supply Card* in the enclosure, which converts the AC input to DC output, or *15V DC Input Power Supply Unit* (15VDC input is only meant for .CE Listed system)

NOTE: The table only takes into consideration the current consumption of the Readers, CPU, Convertor, Reader Boards and I/O Cards and does not include current consumption of the locks for each door. In practice, a separate power supply is used to provide supplies to Locks.

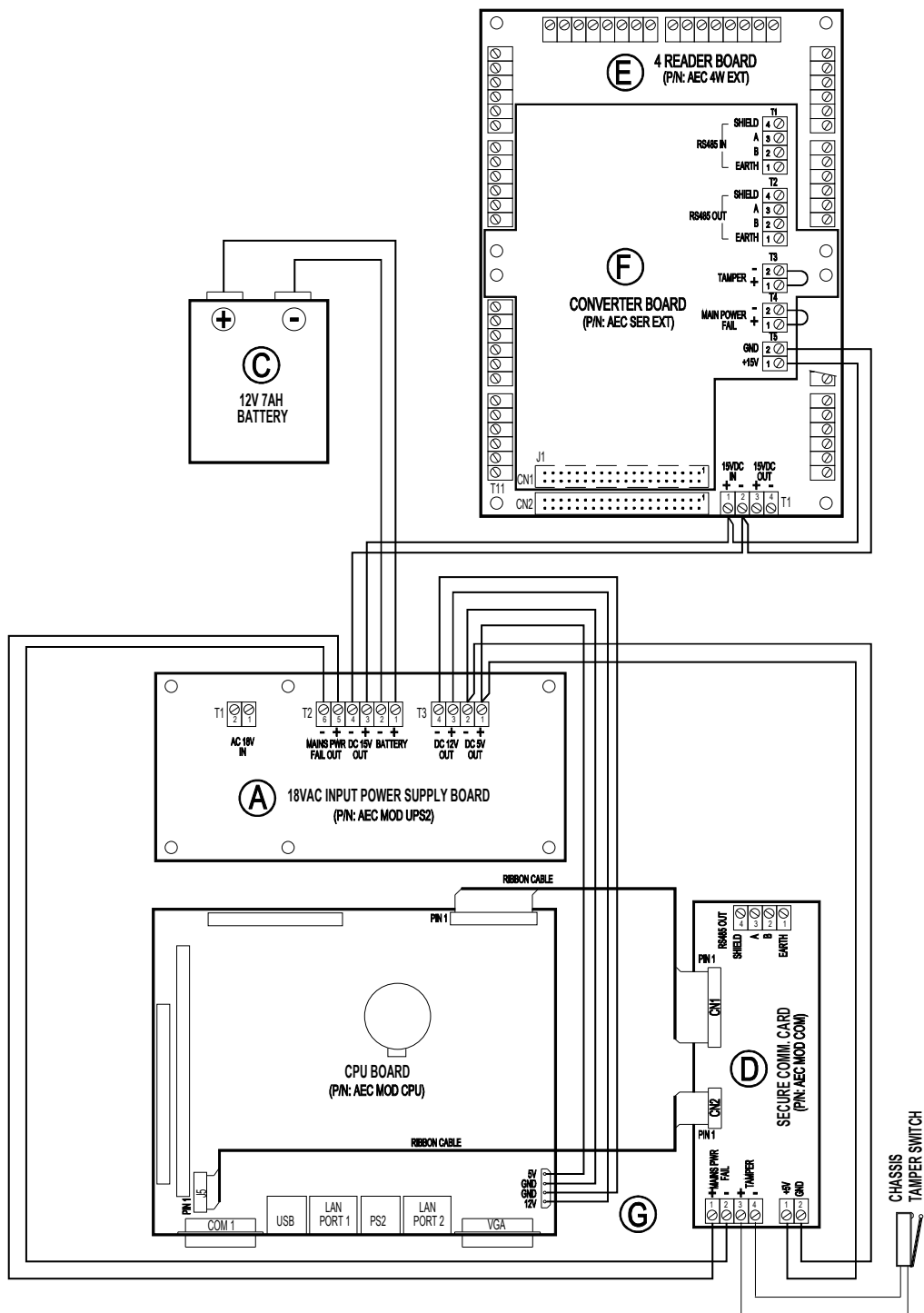
Connection in the Main Controller

The Main Controller could be powered up by either the 18V AC Input Power Supply Card or the 15V DC Input Power Supply Card, depending on the model that have been ordered (18VAC is meant for UL Listed system, 15VDC is meant for CE Listed system) The 15VDC output from both the Power Supply Card is designed to supply power to all relays in all Reader Boards and I/O Cards, within the Main Controller Enclosure. However, when additional Reader Board and I/O Cards are installed in additional enclosures, called *RIE Unit*, separate Power Supply Cards must be installed, and the current ratings of these power supplies must be computed to be adequate

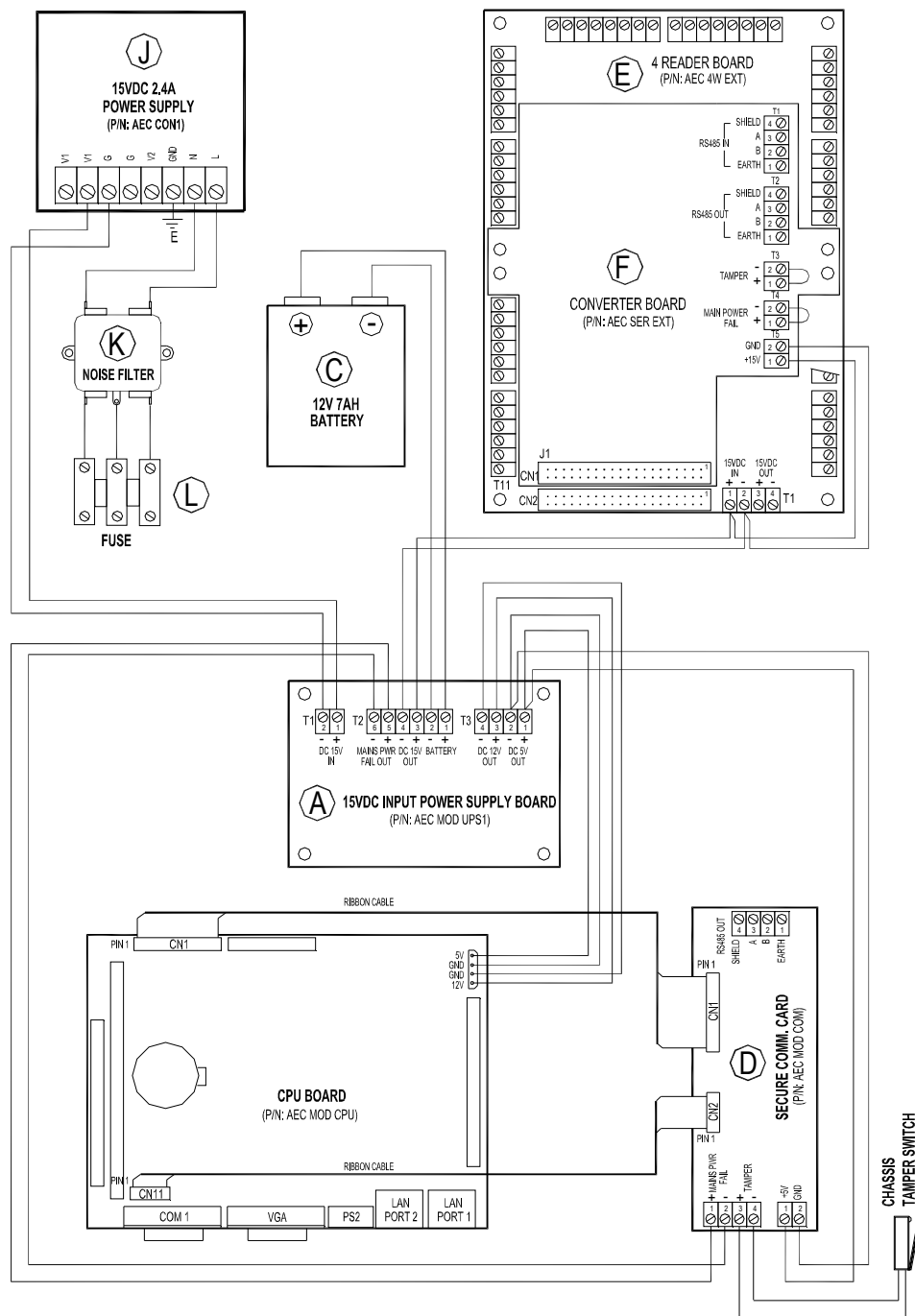
For UL Listed system, a power transformer that satisfy UL requirement is usually used to step down the standard AC voltage, supplied from the public utilities, to the 18V supply. This power transformer should be able to provide a continuous alternating current (ac) of 18V at 3A. Basler Electric model 156300AA001 is recommended for use with Access Easy Controller. The following diagrams show the connection to the CPU Card and various Cards in the Main Controller for the UL Listed version and CE Listed version.



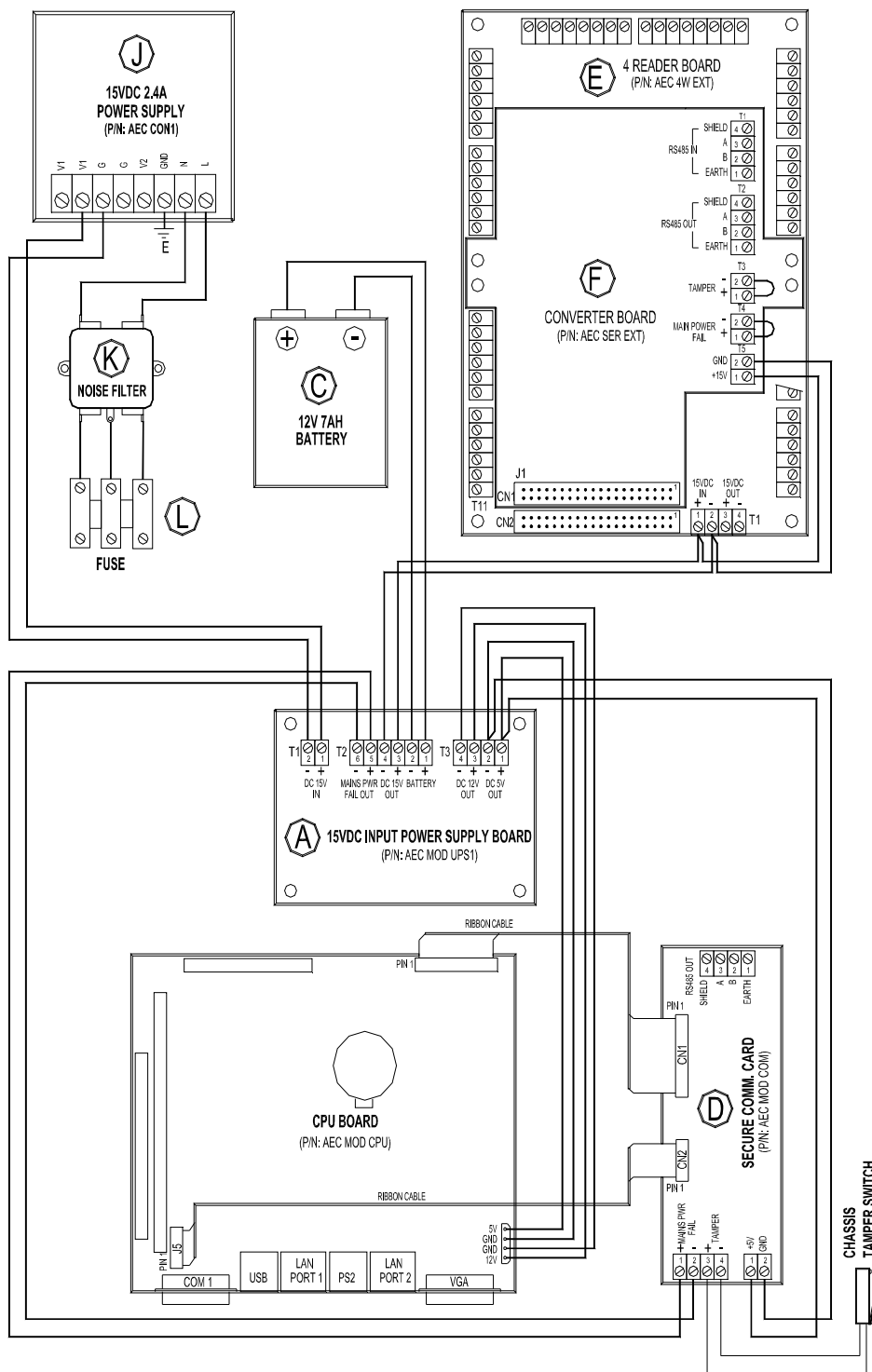
Internal wiring diagram of the AEC for UL Listed System



Internal wiring diagram of the AEC (CPU board with USB Port) for UL Listed System



Internal wiring diagram of the AEC for CE Listed System



Internal wiring diagram of the AEC (CPU board with USB Port) for CE Listed System

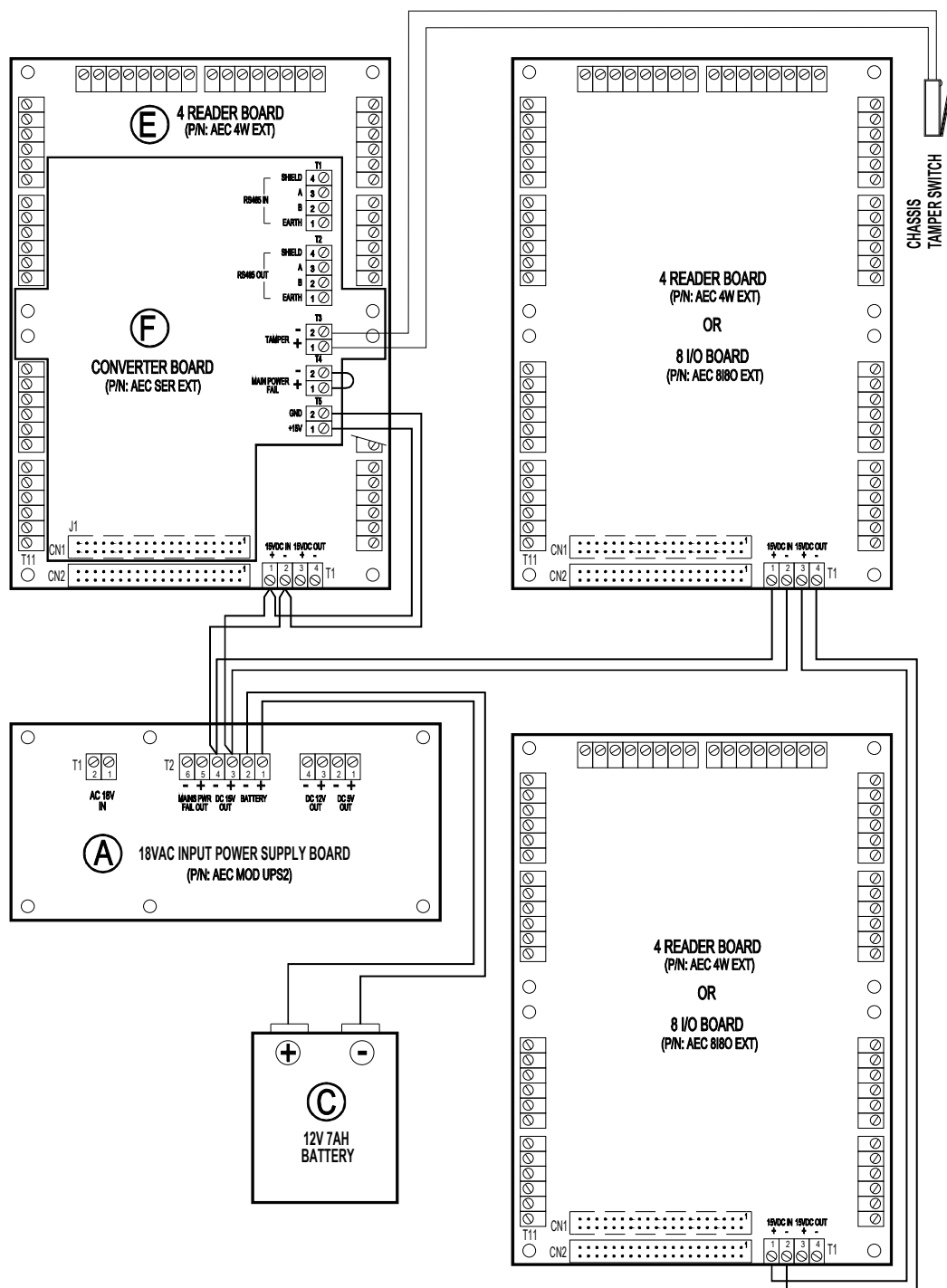
Connection in the RIE Unit

The Reader Boards and I/O Cards accept 15VDC from the *Power Supply Card*. This is usually used in add-on *RIE Unit*.

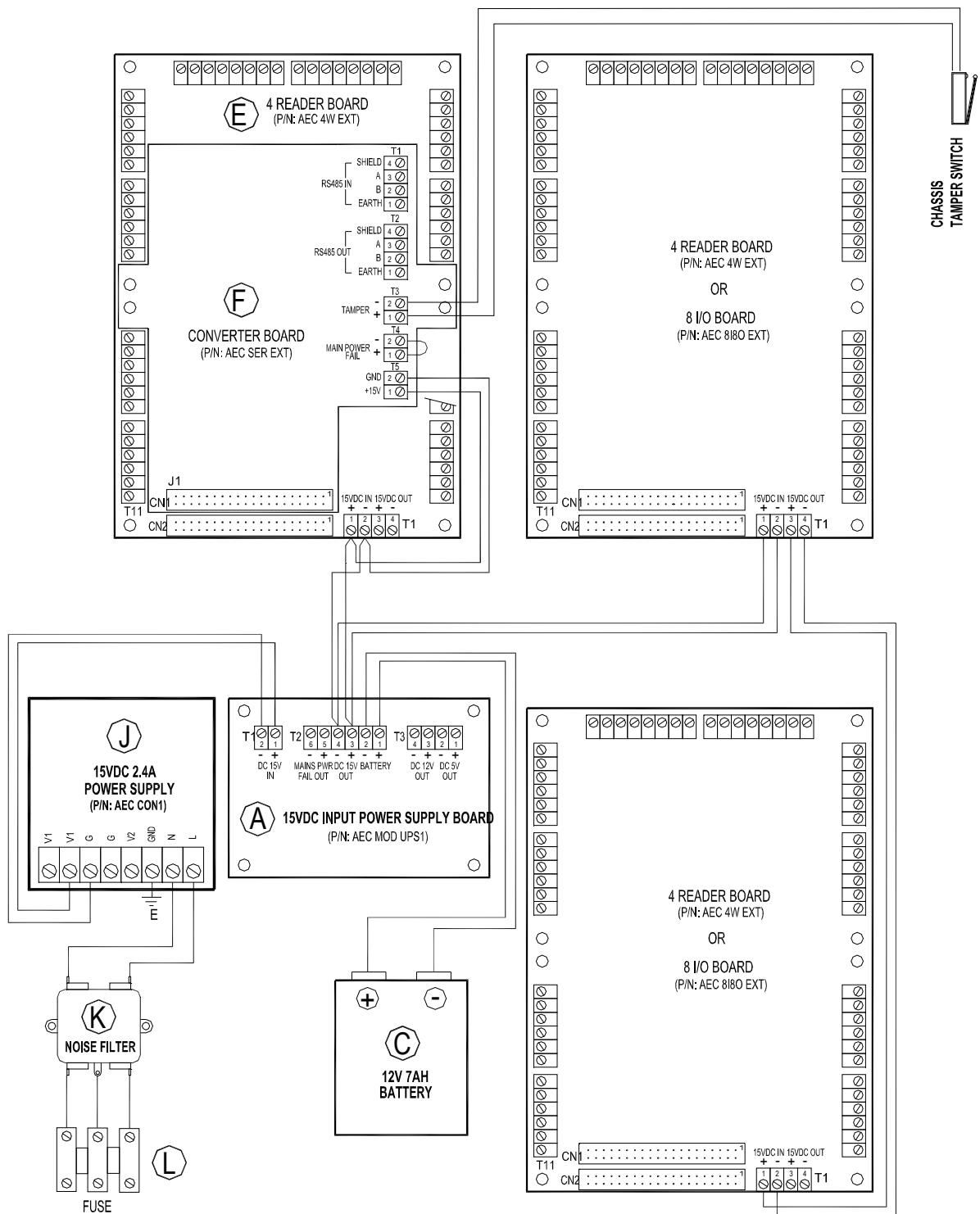
The power supply card, DC 15V Out, provides the power supply to all the relays on the Reader Boards or I/O Cards as well as the relays on card these cards.

The following diagrams show the connection in the RIE Unit

NOTE: All diagrams are shown for example only.



Internal wiring diagram for RIE II Unit For UL Listed system



Internal wiring diagram for RIE II Unit For CE Listed system

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CHAPTER 21

Troubleshooting Network Connectivity Problems

This section offers troubleshooting guidance for those situations when you are unable to communicate with the Access Easy Controller over the customer's network.

Be sure to follow the steps in order when diagnosing the cause of the connectivity problem. Do not skip any steps.

Step 1 – Confirm the controller's compatibility with the customer's network

Procedure:

Review the Access Easy Controller application checklist to confirm the controller's compatibility with the customer's network. The application checklist can be found in Chapter 4 of this manual.

Decision:

Can a "Yes" answer be confirmed for all questions in the application checklist?

Yes – Proceed to step 2.

No – Access Easy Controller will not work in your application. Have the customer make corrections as suggested in the application checklist, then re-start this procedure. If the customer cannot make the suggested corrections, then an alternative access control solution should be suggested.

Step 2 – Confirm that the basic Access Easy Controller is operating correctly

Procedure:

1. Observe LED 1, LED 2 and LED 3 located in the lower right corner of the Secure/Communication card. These LEDs should be continuously flashing in an alternating pattern.
2. Observe DC Power LED 13 on all 4-reader and/or 8-Input/Output card boards installed in the controller. This LED is located toward the bottom right of each card. The LED should be lit steady of all cards.
3. Observe LED 10 and LED 12 on all 4-reader boards installed in the controller. Both LED's should be blinking at a regular rate on all 4-reader boards.

4. Observe the LED 10 and LED 11 located at the lower left of the Secure/Communication card. Both LED's should be flickering.
5. Observe the Tx and Rx LED on the Convertor card. These LEDs should be flickering.
6. Observe the CPU LED on the Convertor card. This LED should be blinking in a steady rate.
7. Observe the Green LED on the RJ45 jack on the CPU Card. It should be lit steady.
8. Observe the Amber LED on the RJ45 jack on the CPU Card. It should be flickering momentarily.

Decision:

Did all indicators perform as described in this step?

Yes – Proceed to step 3

No – There is a basic problem with the controller . Replace the controller

Step 3 – Verify that the Access Easy Controller can connect directly to the technician's computer**Procedure:**

1. Disconnect the controller from the customer's network.
2. Connect the Access Easy Controller directly to the technician's computer using the crossover CAT5 cable.
3. Confirm that the technician's computer is configured for IP address similar to the Access Easy Controller, eg if the Access Easy Controller has an IP address of 192.3.0.66 and Netmask of 255.255.0.0, then the technician's computer has to have an IP address of 192.3.0.67 and Netmask of 255.255.0.0. The Gateway address field should be blank.
4. Connect to the using the Web browser on the technician's computer. The Login screen should be display.

Decision:

Can a connection be make to the controller?

Yes – Proceed to step 4

No – Verify the configuration of the technician's computer. Also, check the cable between the Access Easy Controller and the technician's computer.

Do not proceed further in this test procedure until you are able to establish connectivity between the controller and the technician's computer.

Step 4 – Verify that the Access Easy Controller's network settings are configured correctly for the customer's network

Procedure:

1. Connect to the Access Easy Controller using the technician's computer and login using the master id and password (usually user id: USER1 and password: 8088).
2. Go to the controller Setup, Network Setting page and review the Controller's IP address, Netmask and Gateway.

Decision:

Are the network settings correct for the customer's network?

Yes – Proceed to step 5.

No – Set the controller address by performing the following steps in the order described.

1. Go the **Panel Admin, Panel Setup** and enter the correct network settings. The click **Save** at the bottom of the Network Setting page.
2. Now go to Panel Admin, Database Backup and perform a backup of the controller's database to flash memory. The backup may take up to 90 seconds to complete.
3. After the backup is complete, logout of the controller.
4. Reboot the controller.
5. After the power up sequence has been completed, reconnect the controller to the customer's network using the straight-through CAT5 cable and test connectivity from the customer's computer. If the controller still cannot be reached, repeat this test procedure beginning with step 3.

Step 5 – Verify that the wall jack or hub into which the Access Easy Controller is connected is wired properly.

Procedure:

1. Configure the technician's computer that was used in the previous step to the exact same network settings as the Access Easy Controller. Be sure to reboot the computer after making the TCP/IP configuration changes.
2. Disconnect the Access Easy Controller from the customer's network and connect the technician's computer in its place. Be sure to use the same wall jack (or hub port) as was used by the controller. Also, use the same category-5 cable, used to connect the controller to the hub. Be sure to use a straight-through cable, not the crossover cable that was used in the previous steps of this procedure.
3. Check the indicator LED on the customer's hub for the port to which the technician's computer is connected.

Decision:

Is the green LED lit for the hub port to which the technician's computer is connected?

Yes – The wiring between the computer and the customer's hub is correct. Continue with step 6.

No – On most hub, a yellow or red LED usually indicates cabling problem between the computer and the hub. A non-lit LED usually indicates an open circuit between the computer and the hub. You may want to try a different cable, or a different hub port. Also, be certain the computer is not connected to an Upstream port on the hub.

Some hubs may have indicators different from those described in the preceding paragraph. Refer to the hub's documentation for additional details.

Do not proceed further in this test procedure until this step can be passed.

Step 6 – Validate network configuration using the “ping” command**Procedure:**

With the technician's computer still connected to the customer's network, and the hub port indicating a “green” condition, have the customer use one of his network connected computer's to send a “ping” command to the address of the technician's computer. The “ping” command should be performed from a computer on the same local sub-net as the technician's computer.

Decision:

Did the customer receive a response to the “ping” command?

Yes – Proceed to step 7.

No – There is a network configuration problem.

If the “ping” command returned the message “Request timed out,” then there is a basic network configuration error, possibly the setting of the IP address or subnet mask assigned for the Access Easy Controller. Or the customer's router may not be configured properly. Review these items with the customer.

If the “ping” command returned the message “Network unreachable”, then the customer's router or proxy server may be configured correctly, or the IP address, netmask, or gateway provided for the Access Easy Controller are incorrect.

In either case, do not proceed further in this test procedure until this step is successfully passed.

Step 7 – Confirm that the technician's computer can “ping” the customer's computer and/or gateway on the same local sub-network.**Procedure:**

From the technician's computer, open a DOS window and send a “ping” command to a customer computer on the same local subnet. Ideally, you should “ping” the computer that was used in the previous steps.

Question:

Was a response received to the “ping” command?

Yes – Proceed to step 8.

No – There is a network configuration error.

If the “ping” command returned the message “Request timed out,” then there is a basic network configuration error. Probably sub-net mask or gateway assigned for the Access Easy Controller is incorrect. Or the customer's gateway or router may not be configured properly.

If the “ping” command returned the message “Network unreachable,” then the IP address or netmask of the controller may be wrong.

If the computer uses a gateway, try to “ping” the gateway from the technician's computer.

If a response is received, then the customer's gateway or router may have a configuration problem.

If no response is received, then the gateway address provided by the customer is incorrect, or the gateway is not operating correctly.

Step 8 – Reconnect the Access Easy Controller to the customer's network and test it by using the “ping” command from the customer's computer.**Procedure:**

1. Disconnect the technician's computer from the network and reconnect the Access Easy Controller. Be sure to use the same wall jack or hub port, and the same cable as was used with the computer.
2. Have the customer use one of his network connected computer's to send a “ping” command to the address of the Access Easy Controller. The “ping” command should be performed from a computer on the same local subnet as Access Easy Controller. Ideally, it should be the same computer used in the previous two steps.

Decision:

Did the customer receive a response to the “ping” command?

Yes – Proceed to step 9

No – One or more basic problems still exist. Repeat this procedure beginning with step 2.

Step 9 – Confirm that the Access Easy Controller can be reached using a Web browser**Procedure:**

1. From the same customer computer used in the previous step, have the customer use the Web browser to connect to the Access Easy Controller. The Access Easy Controller Login screen should be displayed.

Decision:

Yes – Proceed to step 10.

No – One or more settings are incorrect in the Web browser.

Check the general connection setup, and proxy settings.

Also, set the browser's security setting to medium. If set on high, connection may be prevented under certain circumstances.

Be certain the browser is attempting to connect over a LAN. Often, the browser may be defaulted to attempt connection over a dial-up network.

If still unable to connect, try another computer.

Step 10 – Log on to the Access Easy Controller**Procedure:**

1. Enter the master user id and password to log on to the Access Easy Controller. Upon successful login, the controller's home page should be displayed.

Decision:

Was the login successful?

Yes – Problem solved.

No – The controller is working properly. However, one or more settings are incorrect in the Web browser. Continue with the next Chapter, Troubleshooting Login Problems, for guidance in resolving browser settings.

CHAPTER 22

Troubleshooting Login Problems

This section offers troubleshooting guidance for those situations when you can successfully connect to the Access Easy Controller, but the login process fails.

The following list summarizes the warning and error messages that could be displayed while attempting to log in to the Access Easy Controller. For each message, refer to the indicated paragraph of this section for information concerning cause and remedial action.

MESSAGE	REFER
Login failed	Problem 1
You are stranger Invalid Access; Browser was unable to determine your identify	Problem 2
Applet is loading, please wait Applet not loaded	Problem 3
No such user name	Problem 4
Incorrect password	Problem 5

PROBLEM 1: Login Failed.

Symptom: When attempting to login to a controller for the first time, the message "Login Failed" is displayed.

Possible causes:

1. Wrong user name or password entered. The default user id is **USER1** and password is **8088**.
2. The browser's security setting is set too high. Access Easy Controller runs a Java script that encrypts and protects user ids and passwords when they are passed over the network. Verify that the Java feature is enabled in the browser.
 - With **Internet Explorer**, click **View, Internet Options**; then select the **Security** tab. In the Internet Zone section, the security level is probably set to **High**. Change the security level to Medium, then click Apply to activate the change. Now, close and reopen **Internet Explorer** to establish a new connection the Access Easy Controller.
 - With **Netscape Navigator**, click **Edit, Preferences**. Then under the Category heading, select **Advanced**. On the Advanced page, Java probably disabled. Select Enable

Java and **Enable JavaScript**. Click **OK** to activate the change. Now, close and reopen **Netscape Navigator** to establish a new connection to Access Easy Controller.

PROBLEM 2: You are stranger.

PROBLEM: Invalid Access – Browser was unable to determine your identity.

Symptom: After entering a user name and password, and clicking on the Login button, a message box is displayed indicating, “You are stranger!” When you click on OK to acknowledge this message, a web page is displayed indicating “Invalid Access – browser was unable to determine your identify.”

Possible cause:

Cookies are probably disabled on the browser.

- With **Internet Explorer**, click **View, Internet Options**; then select the **Advanced** tab. Scroll down the list until you get to the Security section. The Cookies setting is probably set for Disable all cookie use. Change this setting to another option; then click **Apply** to activate the change. Now, close and reopen **Internet Explorer** to establish a new connection the Access Easy Controller.
- With **Netscape Navigator**, click **Edit, Preferences**. Then, under the Category heading on the left side of the Preferences screen, select **Advanced**. On the Advanced page, check the Cookies section. The Cookies configuration is probably set to **Disable cookies**. Change this setting to another option; then click **OK** to activate the change. Now, close and reopen **Netscape Navigator** to establish a new connection to Access Easy Controller.

PROBLEM 3: Applet is loading, please wait.

PROBLEM: Applet not loaded.

Symptom: From the Access Easy Controller login screen, a warning box containing the message “Applet is loading, please wait” or “Applet not loaded” is displayed when you click on the Login box after entering a user id and password.

Possible cause:

Speedy typing may have caused this. You probably clicked **Login** before the Login screen and its underlying software were fully loaded. There is a small program that needs to be loaded along with the login screen. This program is used to encrypt your password for transmission over the network to the controller.

To correct his problem, simply click **OK** to close the warning window; then click on the Login button again.

PROBLEM 4: No such user name.

Symptom: From the Access Easy Controller Login screen, the message “No such user name” is displayed when you click on the Login box after entering a user id and password.

Possible cause:

The user id that you are attempting to login with is not in the controller’s database.

If this is a new user id, then probably the database was not backed up to flash memory after the user account was created.

Try logging in using the master user id and password. Assuming these have not been changed from the default values, the master user id is **USER1** and the password is **8088**.

PROBLEM 5: Incorrect password.

Symptom: From the Access Easy Controller Login screen, the message “Incorrect password” is displayed when you click on the Login box after entering the user id and password.

Possible cause:

You are entering the wrong password for the user id.

- Passwords are case sensitive. Be sure you are typing upper and lower case characters correctly.
- If the password for the user id was recently changed, perhaps the database change was not saved. Try the old password.
- Perhaps the user forgot the password. Log in using any other user id that has database administrative privileges. Then change the password for the user in question. Save the database after making the change.

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CHAPTER 23

Frequently Asked Questions

The Access Easy Controller is a new product in the marketplace. It is targeted toward small to mid-sized users who, because of the expense traditionally associated with access control solutions, have not been able to justify such systems in their security plans. While Access Easy Controller performs all the traditional access control functions, it also introduces some new concepts never before seen in an access control product.

The controller is unique in a number of ways. First, it interfaces to a host computer using the customer's network. Second, a standard Web browser, such as Microsoft Internet Explorer or Netscape Navigator, provides the user interface to the controller. No special application software is needed. Third by using only industry standard HTML pages, database management tasks are the easiest of any access control controller on the marketplace today. And fourth, Access Easy Controller offers a low-cost solution that will fit the budgets of most small businesses.

In order to help in understanding the Access Easy Controller product, we have compiled this list of the most frequently asked question concerning the installation, operation and capabilities of the Access Easy Controller.

General Questions

Question – My old access control system required that a user be logged on and monitoring the system at all times. Does a computer always need to be connected to the Access Easy Controller?

Answer – No. The only time a computer needs to be connected to the Access Easy Controller is when it is necessary to make database changes or review transaction history. Other than at those times, or when the user wants to monitor controller activity, it is not necessary to be logged into, or connected to, the Access Easy Controller.

Once database has been set up, the Access Easy Controller will function indefinitely without user attention. Unlike some access control systems, there are no buffers that will fill up and overflow if the controller is not tended to at periodic intervals.

Question – I would like my receptionist to monitor the Access Easy Controller during business hours, but she has other applications that need to be running on her computer. Can the Access Easy Controller be monitored in the background without affecting the receptionist's ability to run other programs, such as MS Word and Excel?

Answer – Definitely. Have the receptionist login to the Access Easy Controller , open the View Activity screen, and then select the desired setting (Alarm, Valid, Restore or All). Then minimize the View Activity window.

Now the receptionist can open and run other applications, such as MS Word or Excel, as they are needed.

Should Access Easy Controller detect an alarm condition, the audible chime will sound to alert the receptionist to the alarm. The receptionists can then restore the View Activity screen and handle the alarm without disturbing any of the other work he/she was doing. When finished with the alarm, the receptionist need only minimize the View Activity window and he/she will be ready to continue working with the other application.

Question – I noticed that some of the Access Easy Controller graphic and text presentation are slightly different when displayed on my associate's computer than they are on my computer. Is this normal?

Answer – This is normal. Screen displays will vary slightly depending on which browser program you run. Netscape Navigator and Microsoft Internet Explorer display certain HTML code slightly different from one another.

Also, within either browser, there are some slight differences from one revision of the browser to the next. The Access Easy Controller application will work satisfactory with any version of Netscape Navigator from version 4.0 forward. Likewise, the controller will work equally well with Microsoft Internet Explorer, version 4.0 and newer.

If you are using an older version of either browser, then we recommend that you upgrade to a more current version.

Another item that can cause noticeable differences from one computer to the next is the screen resolution setting. The Access Easy Controller pages have been designed to work best with a screen resolution of 800 x 600 and a colour setting of 256 colours. These are the minimum settings needed for satisfactory performance. Greater settings, such as 1024 x 768 resolution or 65,000 colours, will also deliver satisfactory performance.

Question – Can the Access Easy Controller's database be backed up off the controller, perhaps to a diskette, in case the controller should suffer a massive failure of any type? I would hate to have to manually re-enter the entire card database for our 500 employees. Also, if I can back up the controller's database to a diskette, is there a way to restore the database back into the controller?

Answer – Yes to both questions. The Access Easy Controller's database can easily be saved to a computer, either on the hard disk or a diskette. To perform a database backup to a computer, simply follow the instructions on the Database Backup screen.

Question – When I am monitoring the Access Easy Controller, I notice that the View Activity screen only displays the ten most recent records. Is there any way to increase the number of records displayed at one time on the View Activity screen?

Answer – Yes. The number of records to be displayed on the View Activity screen can be increased by increments of 10 up to a maximum of 70.

Changing the value is easy. A person with administrative privileges will need to go to the controller Setup screen. From there, click on the button labelled “Activity View Setting”. On this screen, use the pull-down list to select the number of activities to be displayed at a time on the View Activity screen. After selecting the desired value, click on the “save” button to store the change.

The change will be effective immediately. Should anyone be running the View Activity screen at the time the setting change is made, that person will need to exit the View Activity screen and re-enter it to take advantage of the change.

Question – My old access system uses HID proximity readers and cards. Can Access Easy Controller replace my old access system without changing the HID proximity reader and cards?

Answer – Yes, as long as the HID proximity readers provides wiegand output and you know the card format of the cards, you can replace your old access system with Access Easy Controller without changing the readers and the card. Please refer to the Access Easy Controller Software User Manual for details in configuration card formats.

Controller Questions

Question – For how long will a fully charged battery maintain Access Easy Controller operation during a power failure?

Answer – Assuming that the standard 12 Volt, 7.0 Amp Hour supplied with the controller is fully charged, it will typically provide four hours of operation during a power outage. This estimate is based on a controller configured with two 4-reader boards, each with four readers connected to it, for a total controller configuration of eight readers. The estimate also assumes that the readers are HID ProxPro, MiniProx or ProxPoint models.

A controller configured with other than the HID model readers listed above will typically experience less operational time to standby batteries. Likewise, a controller configured with less than eight readers can be expected to operate for a slightly longer time on standby power.

Question – I would like to install an expansion chassis at the other end of the building from where the controller is located. This will make for shorter cable runs from the expansion controller to the readers at the end of the building. What is the maximum distance that the expansion chassis located away from the main chassis?

Answer – As the expansion chassis can be connected in the RS485 loop, you could locate it to a maximum of 1Km away from the main chassis.

Question – Can I get separate controller Tamper alarms for the main Access Easy Controller and the expansion controller s?

Answer – Yes, each controller Tamper can be terminated to the Tamper alarm input of either the Converter Card or the Secure/Communication Card in the Controller. This way you will have individual Controller's tamper monitored separately, however, whenever there is an activation from either one of the tamper, the Access Easy Controller will announce as controller tampered.

Question – Can the Access Easy Controller work with normally closed alarm devices? I already have normally closed door contacts in place that I would like to monitor with the Access Easy Controller.

Answer – Yes. Normally closed devices will work with Access Easy Controller. Access Easy Controller can monitor both normally open and normally closed devices. The controller database is defaulted to expect normally open type devices; however, it is an easy task to change the setting of any input point to expect normally closed type operation.

Question – The CPU Card was faulty and I did backup the latest soft copy of the database. Is there any other way I could recover my data?

Answer – Yes, if fault was not due to the compact flash memory card, we could just replace the Access Easy Controller CPU and insert the previous compact flash memory card and the system will work as per previous configuration.

Question – When the server is configuring the connected controller's IP address, why is the subnet mask and gateway not required especially when they are connected on different subnet?

Answer – It is not required because both the server and individual controllers have already defined what their subnet mask is and where is their gateway. For example, when the server (129.2.0.42, gateway 129.2.0.254) is sending some information to the controllers (129.5.x.x, gateway 129.5.x.254), since these controllers are not within the same subnet it will be routed to his gateway (129.2.0.254). Similarly when the controllers want to return the acknowledgement, it will be routed through the gateway (129.5.x.254).

Reader and Door Questions

Question – What is the maximum cable length between the Access Easy Controller and any card reader?

Answer – The maximum cable length between the controller and the reader is 150m when using the recommended Paige 6-conductor shielded cable. Maximum cable length will be less when using non-standard cable.

Question – Reader 1 through 4 were easy to install and make operational. However, I am having difficulty getting the readers above 4 to operate. What could be causing this?

Answer – This is probably a database issue. Because all Access Easy Controllers contain reader card 1, the database is defaulted with the first four readers enabled. When adding additional reader interface cards to the

controller, you will need to activate the additional readers in the database before they will start working.

To do this, select Card Readers from Access Easy Controller menu. Then, from the reader list screen select the reader that you want to make operational. When this reader's detail screen is displayed, click on Next to go to the second page of detail data.

If you look at the Scheduling Options section on this page, you will see that Unlock Reader is selected. Deselect Unlock Reader by choosing one of the other scheduling options; then click on the "Save" button to save the modified record. The reader should now be operational.

Question – There is a beeper in HID MiniProx reader that sounds each time a card is presented to the reader. On interior doors this beeper is annoying. Can it be turned off?

Answer – No. The HID MiniProx reader offers no option to disable the beeper. The best solution in areas where the beeper is annoying is to install a ProxPro reader. The ProxPro reader has a setup switch that will disable the beeper.

Question – I can't seem to get a green LED indication on a ProxPoint reader when access is granted as a result of a valid card read. Why is this?

Answer – Early production of the ProxPoint reader did not provide for control of the green LED. The solution is to either replace the ProxPoint reader with a later production model that includes green LED support, or replace the ProxPoint reader with a MiniProx reader.

Question – The PIR that I am using as my request-to-exit sensor performs inconsistently. It will work the first time a person approaches the door to exit, but may not work at all when a second person approaches the door some 10 to 15 seconds later. What is wrong?

Answer – There is nothing seriously wrong. This is a common occurrence with certain models of PIR detectors.

The reason is because some PIR models take up to 30 seconds or longer to reset after detecting motion. This is done to minimize swinging alarm situations when the PIR is connected to an intrusion alarm system. Until the PIR resets after detecting the first motion, it will not detect any subsequent motion. We suspect this may be the reason the detector fails to react when a second person approaches the door closely behind the first person.

The solution is easy. Most motion detectors that exhibits this operational characteristic have a switch or jumper setting that you can change which will allow the detector to immediately reset after the motion, which activated the detector, has cleared. You will need to check the manufacturer's documentation for the PIR model that you are using to make this jumper change.

Question – All my reader controlled doors are interior doors to offices and stockrooms. Will the Access Easy Controller work correctly if door contacts are not installed on these doors?

Answer – The controller will work just fine. Door contacts, while usually installed, are optional with Access Easy Controller. Realize, however, that without installing contacts, the controller will be unable to detect and report Door Held Open and Door Forced Open conditions from these doors.

Question – What should be done if an employee forgotten his/her PIN code?

Answer – The Administrator should login to Access Easy Controller, locate the employee's records, reassign a new PIN code and inform the employee. The employee can then change the new code at any Readers with keypad.

Question – What should be done if an employee report that he/she cannot access a door after presenting his/her card?

Answer – The Administrator can check the View Activity transaction for the record and determine the cause of the denied access.

Example 1: Transaction shows "Access Denied", this shows that the employee has no access rights to the door.

Example 2: Transaction shows "Invalid Schedule", this shows that the employee is not allowed to access this door during this time period.

Example 3: Transaction shows "Access Denied - Passback", this shows that the employee did not present his/her card to the exit reader when he/she exits from the door (the employee could have followed someone through the door).

Inputs and Outputs

Question – Can the controller also monitor doors that do not have readers connected to them, such as emergency exit doors?

Answer – Yes. We would install contacts on these doors and connect them to an 8-Input/Output card board. The Access Easy Controller can support up to four of these cards. Each card is capable of monitoring eight points of protection. Depending on specific controller configuration, an expansion chassis may be needed to house the 8-Input/Output card board(s).

Question – What is the maximum wire length between 8-Input/Output card board and an alarm sensor?

Answer – When using standard 22-gauge burglar alarm cable, the maximum cable length is 500m.

Question – Can glass break detectors be connected directly to an input on the 8-Input/Output card board?

Answer – No. In most instances, this will not work. The reason is because alarms from many glass break detectors are often of very short duration. The Access Easy Controller circuitry must see the alarm condition exist for 500 ms before it will recognize and respond to the alarm.

Glass break sensors should be wired to a controller, and the controller should provide the connection to Access Easy Controller.

Network Question

Question – How many computers can be connected to the Access Easy Controller at the same time?

Answer – Typically, only one computer is connected to the Access Easy Controller at a time. However, the controller will continue to provide satisfactory performance with two concurrent user sessions running.

Bosch Security Systems recommends that concurrent controller logins be limited to two to provide rapid response to user requests for information. While the controller will handle more than two concurrent logins, the users may notice degradation in the speed with which screen pages are drawn when there are multiple simultaneous logins to the controller.

Question – What is the maximum cable length between the Access Easy Controller and the network hub to which it is connected.

Answer – Since this cable is industry standard category-5 Ethernet cable, the length is limited to 100 metres. Bosch Security Systems recommends that you do not exceed this cable length. If a longer cable run is needed, then Ethernet extenders should be used to increase the distance.

For a UL compliant installation, the following installation guidelines must be followed.

The controller must be installed in the same room as the network jack or hub.

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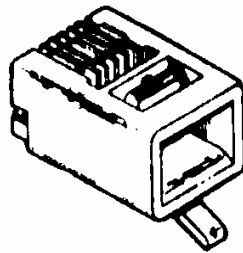
APPENDIX A

RJ45 Cable Assembly Procedure

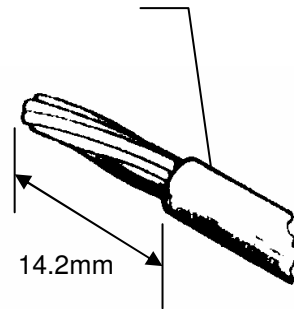
This section shows the proper way of how a cable, the UTP Category 5 cable, is terminated.

The Cable and RJ45 plug

The drawings below show the RJ45 plug, cable type and the recommended jacket insulation to strip off.



Typical Modular Plug Connector
RJ-45



Round Cable
Category 5

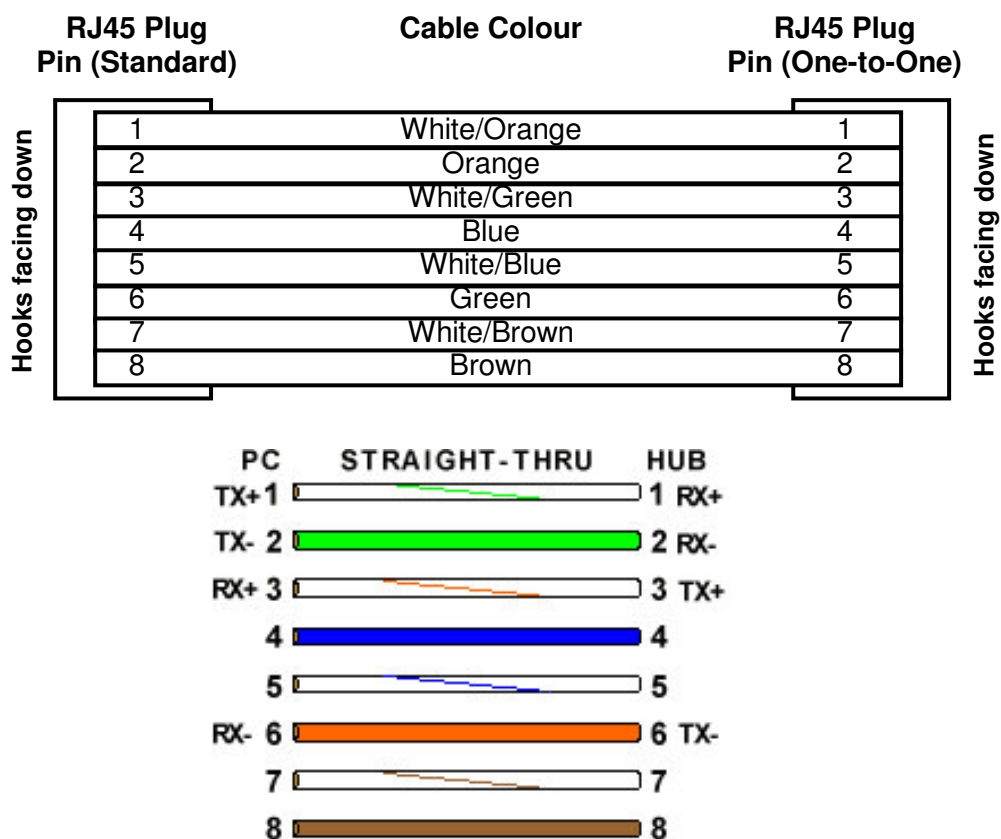
Cutting and Stripping the Cable

Trim and strip the jacket insulation using appropriate commercially available tools such as cutter.

CAUTION: DO NOT cut or remove insulation from individual conductors. This may result in shorted or open terminations within the finished modular plug cable assembly.

Cable Colour Code

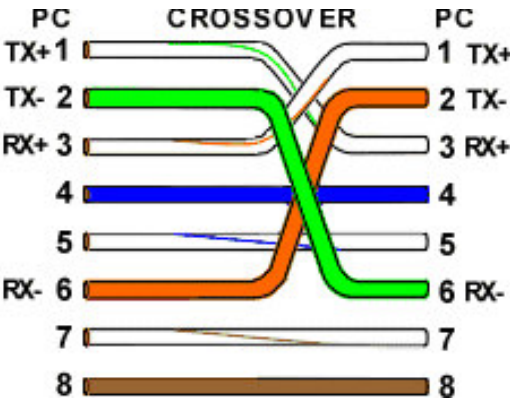
The drawings below provide the standard colour code of the cable for arrangement on the RJ45 plugs.



Drawing

This is a *Straight-Through* connection, which means that pin 1 of the plug on one end is connected to pin 1 of the plug on the other end. Use in connection between devices via a hub.

	RJ45 Plug Pin (Standard)	Cable Colour	RJ45 Plug Pin (Crossed)	
Hooks facing down	1	White/Orange	3	Hooks facing down
	2	Orange	6	
	3	White/Green	1	
	4	Blue	4	
	5	White/Blue	5	
	6	Green	2	
	7	White/Brown	7	
	8	Brown	8	



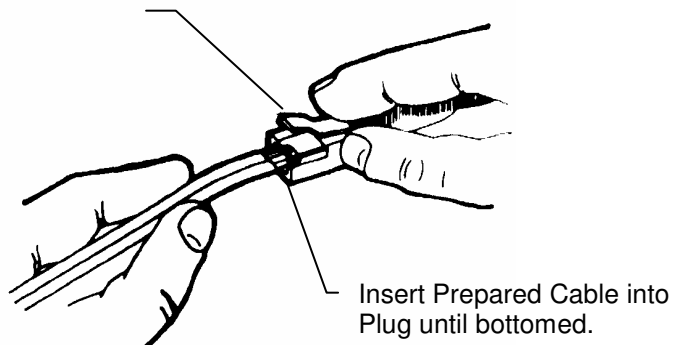
Drawing This arrangement has 2 pairs of conductor for *Transmit* and *Receive* crossed. Use in direct connection between devices, e.g. Access Easy Controller to Central Monitoring Computer.

Procedure to terminate Modular Plug Cable Assembly

Before proceeding, double check to be sure cable and plug are compatible, and that cable polarity is correctly maintained for your specific application.

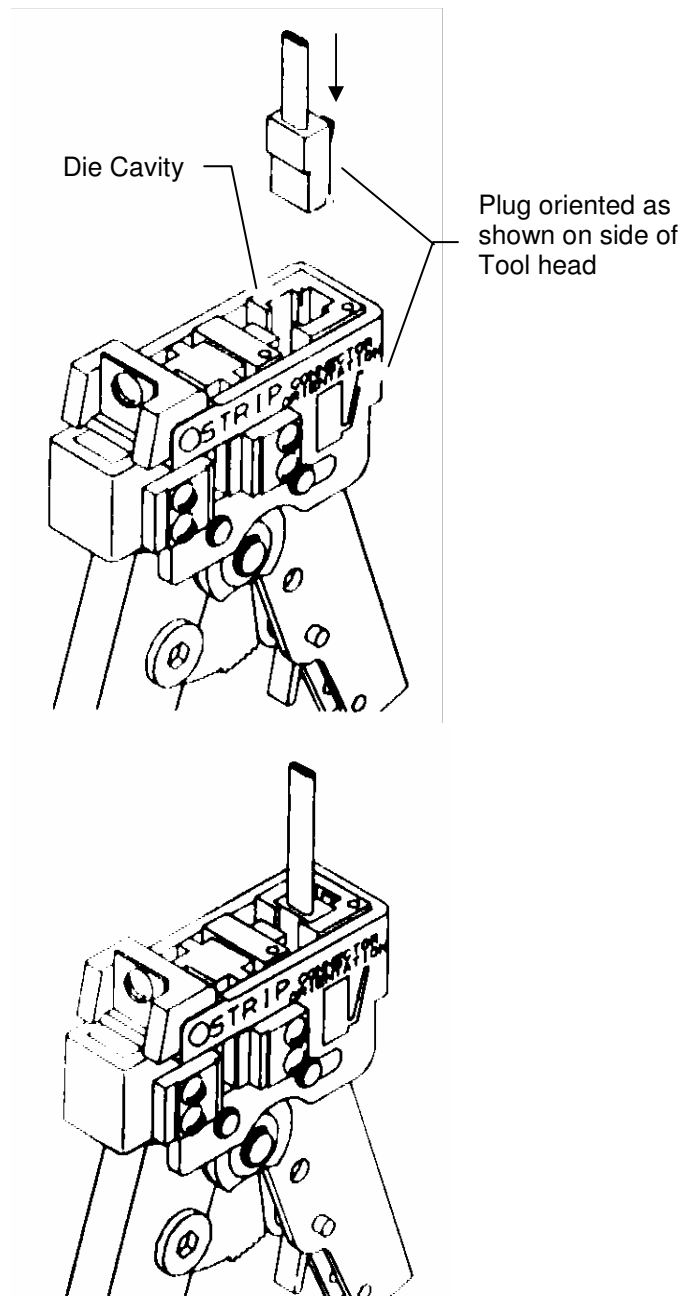
Step 1

- a. Hold plug as shown (locking tab facing UP).
- b. Insert cable into plug until fully bottomed.



Step 2

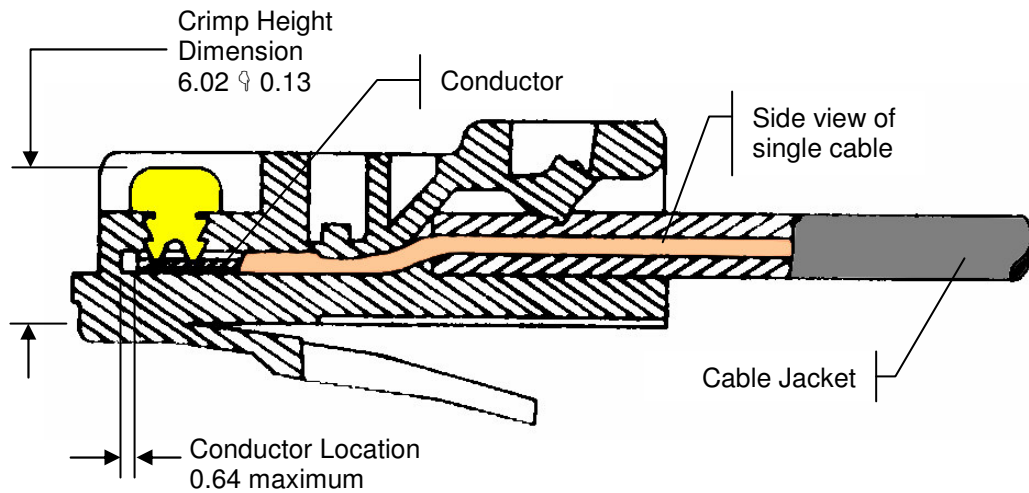
- a. Open tool handles.
- b. Insert plug assembly fully into die cavity.

**Step 3**

- a. Squeeze handles until die bottoms.
- b. Depress locking tab (if applicable) and remove terminated modular plug cable assembly.

When the crimping is completed, do a visual inspection through the plastic housing of the terminated modular plug cable assembly. It should reveal whether the conductors are within acceptable range.

The figure below shows a cutaway of a typical terminated plug and the required location of the conductors.



Cutaway view of Modular Plug Connector.

To be doubly sure of the connectivity between pins of both RJ45 connector assemblies, use a *Cable Tester* to confirm.

APPENDIX B

Selecting A Correct Battery Size

This section provides the *System Installer* a quick and easy way to determine the battery size to use based on the hardware configuration and total current consumption of the whole system.

How to choose the correct battery size for your application

Figuring out the size of a battery necessary to support the load discharge current for a specific amount of time can be tricky. Batteries are rated at maximum efficiency over a 20-hour discharge period. Therefore, a 20AH (Ampere-Hour) battery will provide 1A over a 20-hour period. However, calculating the discharge currents is not as easy as division or multiplication. A 20AH battery that supplies 1A for 20 hours will not provide 2A for 10 hours, but rather, 1.8A for 10 hours, which is equivalent to 18AH.

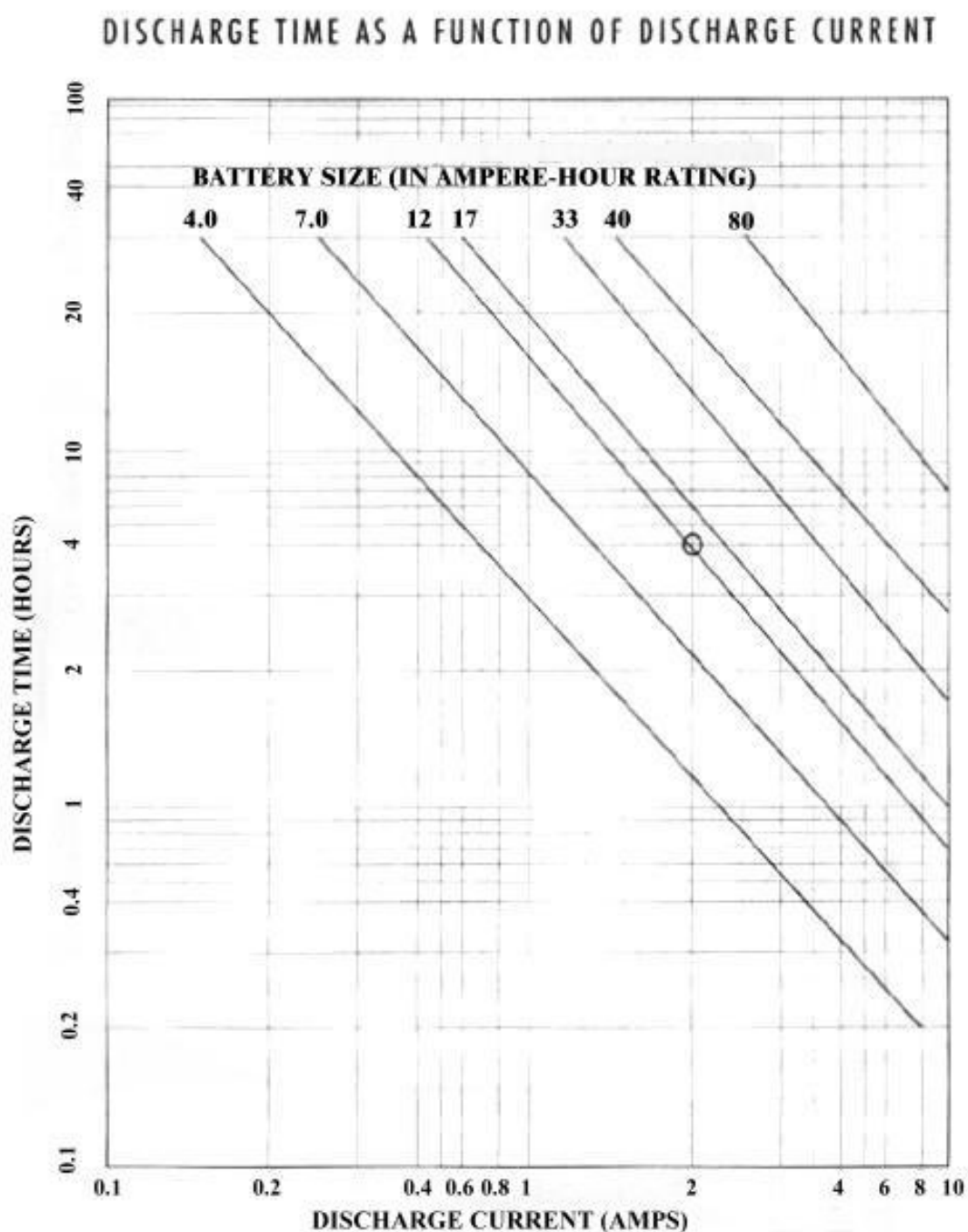
In order to facilitate calculations to determine the correct battery size for chosen discharge currents and discharge times a chart is drawn up (Refer to next page).

To use the chart, simply match the load discharge current requirement (in Amperes) along the bottom of the chart (x-axis) with the desired discharge time (in Hours) on the left (y-axis). At the intersection of the two lines, find the diagonal line immediately above that point, which then represents the minimum battery rating needed (in AH).

The next page provides a simple example with the chart.

Example

Requirement: You need 4 hours of backup for a 2A load. Using the chart, simply find the intersection of the 2A vertical line and the 4 hour horizontal line. Then, find the closest diagonal line that is above this intersection. Follow that diagonal line up to determine the minimum battery size that is required. In this case, a 12AH battery (see circle).



APPENDIX C

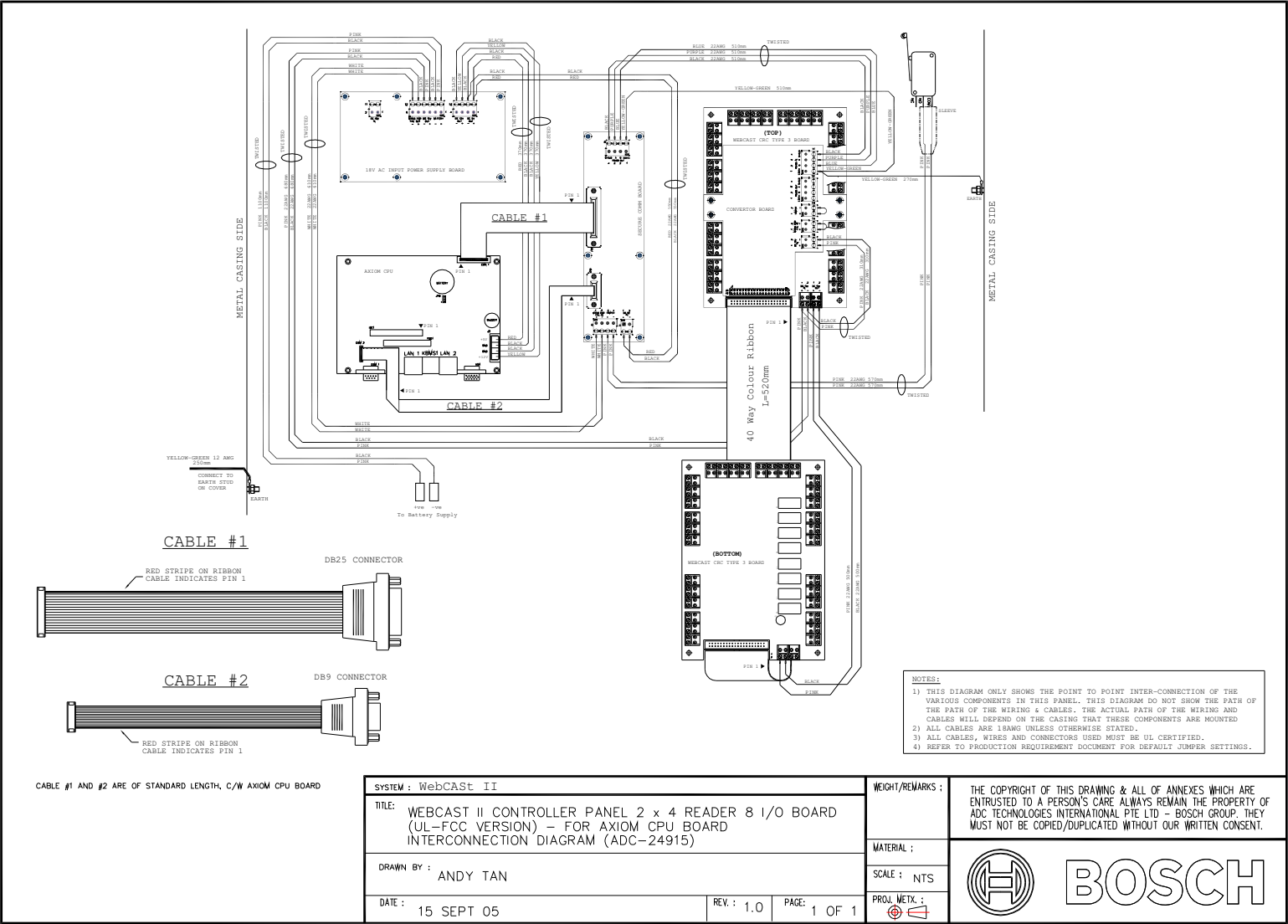
Detail Wiring

This appendix shows the details wiring diagram for the Main Controller Unit for UL and Non UL system. The type of cable specification is tabulated below the drawing for quick reference.

Note : The drawing for the Main Controller only shows the general connection between itself and other Cards. Based on UL requirement, 2 different kinds of CPU Card can be deployed, however, only one type will be used in each Main Controller.

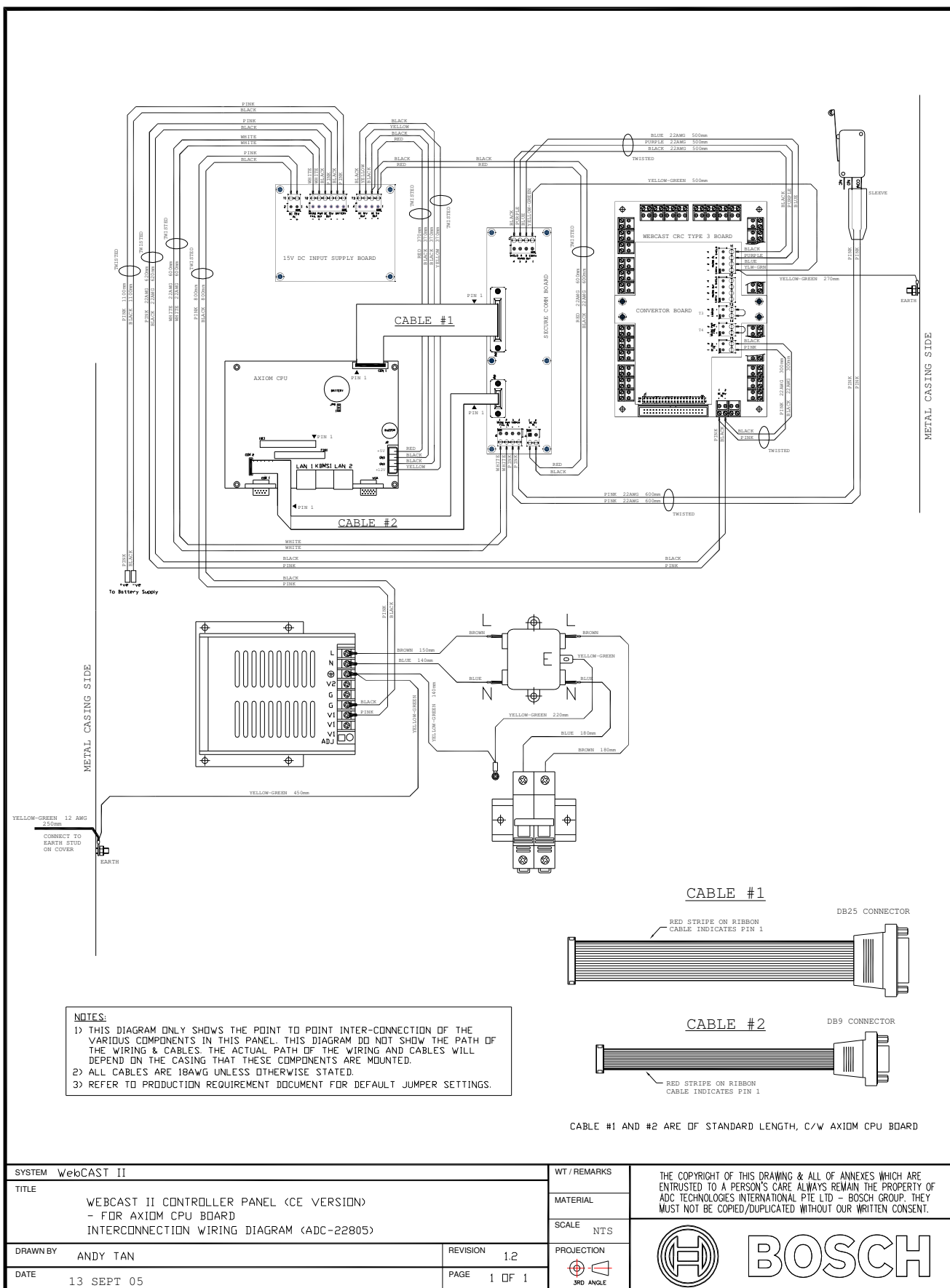
If the Access Control System has 9-Doors or more, the RIE Unit(s) are used with the Main Controller.

Main Controller (for UL Listed System)



Location	Cable Type
RJ45 to CMC, directly or via hub	UTP Cat. 5 Cable
Transformer output to CPU Card (T1)	Belden 9409 – 18AWG, 2-conductor, unshielded
CPU T1 to Reader Boards, Battery and Tamper Switch*	Belden 9409 – 18AWG, 2-conductor, unshielded
CPU Card to Reader Board or I/O Card, Reader Board to Reader Board or I/O Card.	28AWG, 40-Way Ribbon Cable.

Main Controller (for CE Listed System)



Location	Cable Type
AC Input to Circuit Breaker to Line Filter.	3-conductor, 2.5 sq mm PVC insulated.
Line Filter to Power Supply	3-conductor, 2.5 sq mm PVC insulated.
RJ45 to CMC, directly or via hub	UTP Category 5 Cable
Power Supply to CPU Card (T2)	Belden 9409 – 18AWG, 2-conductor, unshielded
CPU T2 to Reader Boards, Battery and Tamper Switch*	Belden 9409 – 18AWG, 2-conductor, unshielded
CPU Card to Reader Board or I/O Card, Reader Board to Reader Board or I/O Card.	28AWG, 40-Way Ribbon Cable.

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APPENDIX D

Blank Configuration Form

The following page provides blank configuration form for Reader Board or I/O Card. The *System Installer* could use them to plan the set up before commencing on the installation. This form will also help the Installer doing the Access Easy Controller programming to assign the correct address to devices in the system.

Access Easy Controller Cards Configuration

Page ____ of ____

4 Reader Board

Jumper Address for - **Reader's Ports :** JP2 : _____ JP3 : _____
I/O Channels : JP1 : _____

Reader Ports	Reader Number / Description (e.g. Reader #1 / Door 1)
T8-1 to T8-6	
T9-1 to T9-6	
T10-1 to T10-6	
T11-1 to T11-6	

Input Channels	Device Connected / Description (e.g. Exit Push Button for Door 1)
T6-1 and T6-2	
T6-3 and T6-4	
T6-5 and T6-6	
T6-7 and T6-8	
T7-1 and T7-2	
T7-3 and T7-4	
T7-5 and T7-6	
T7-7 and T7-8	

Output Channels	Device Connected / Description (e.g. Door Strike for Door 1)
T2-1 to T2-3	
T2-4 to T2-6	
T3-1 to T3-3	
T3-4 to T3-6	
T4-1 to T4-3	
T4-4 to T4-6	
T5-1 to T5-3	
T5-4 to T5-6	

Prepared By : _____

Date : _____

Access Easy Controller Cards Configuration

Page

_____ of _____

Input / Output Card :**Jumper Address for - I/O Channels :** JP1 : _____

Input Channels	Device Connected / Description (e.g. PIR at Warehouse)
T6-1 and T6-2	
T6-3 and T6-4	
T6-5 and T6-6	
T6-7 and T6-8	
T7-1 and T7-2	
T7-3 and T7-4	
T7-5 and T7-6	
T7-7 and T7-8	

Output Channels	Device Connected / Description (e.g. Alarm Status for PIR)
T2-1 to T2-3	
T2-4 to T2-6	
T3-1 to T3-3	
T3-4 to T3-6	
T4-1 to T4-3	
T4-4 to T4-6	
T5-1 to T5-3	
T5-4 to T5-6	

Prepared By : _____

Date _____