uniVerse®

CICP2100S

One Door (Wall Mounted Enclosure)

Access Control Panel

Installation and Service Manual

Continental Access
A Napco Security Group Company

A NAPCO SECURITY GROUP COMPANY

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www.cicaccess.com

Publicly traded on NASDAQ Symbol: NSSC

WI2321LF 4/19

FCC WARNING

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

NOTE

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

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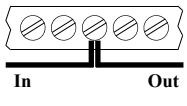
A NAPCO SECURITY TECHNOLOGIES COMPANY

IMPORTANT WIRING METHODS

For single-conductor terminal blocks (like the type shown at left), to terminate more than one conductor to a terminal, use the wiring methods shown at right:



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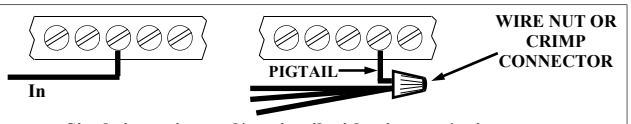
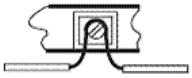


Correct -- Single incoming and/or pigtail with wire nut / crimp connectors

For "barrier" type terminal blocks (like the type shown at left), to terminate two conductors to a terminal, use the wiring methods shown at right:



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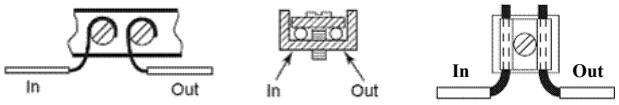
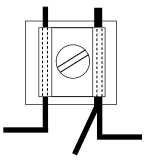


Correct -- Separate incoming and outgoing conductors

To terminate more than two conductors or conductors of different wire sizes to a terminal, use the "pigtail" type wiring method as shown at right. Use insulated wire for the pigtail, and firmly secure the conductors to the pigtail using an appropriate wire nut or crimp connector for the number and gauge of conductors used.



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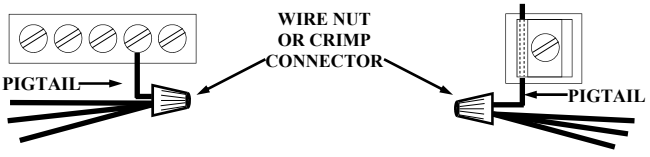


Correct -- Use pigtail and wire nut / crimp connector

THE INSTALLATION AND SERVICE OF THIS PRODUCT MUST BE PERFORMED BY QUALIFIED SERVICE PERSONNEL AND SHOULD CONFORM TO ALL LOCAL CODES

CAUTION
ATTENTION
VORSICHT

RISK OF ELECTRIC SHOCK

DO NOT OPEN

RISQUE DE CHOC ÉLECTRIQUE
NE PAS OUVRIR

GEFAHR EINES ELEKTRISCHEN SCHLAGS NICHT ÖFFNEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK

DO NOT REMOVE COVERS (OR BACK).

NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

ATTENTION: POUR REDUIRE LE RISQUE DE CHOC ÉLECTRIQUE NE PAS RETIRER LES COUVERTURES (OU L'ARRIÈRE).

AUCUNE PIÈCE UTILISATEUR À L'INTÉRIEUR CONFIER L'ENTRETIEN DE PERSONNEL ALIFIÉ

VORSICHT: UM DIE GEFAHR EINES ELEKTRISCHEN SCHLAGS ZU VERMEIDEN ENTFERNEN SIE KEINE ABDECKUNGEN (ODER RÜCKSEITE). KEINE BENUTZER-SERVICEBARE TEILE INNERHALB WERDEN, WENN DAS QUALIFIZIERTE SERVICEPERSONAL WARTET

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Le symbole éclair avec une flèche dans un triangle équilatéral, est destiné à alerter l'utilisateur de la présence de non isolée "tension dangereuse" dans l'enceinte du produit qui peut être d'une ampleur suffisante pour constituer un risque de choc électrique pour les personnes.

Der Blitz mit dem Pfeilspitzen-Symbol in einem gleichseitigen Dreieck soll den Benutzer darauf hinweisen, dass sich keine unisolierte "gefährliche Spannung" innerhalb des Produktgehäuses befindet, die ausreichend groß ist, um die Gefahr eines elektrischen Schlags für Personen darzustellen.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Le point d'exclamation dans un triangle équilatéral est destiné à alerter l'utilisateur de la présence d'instructions dans la documentation accompagnant le produit d'exploitation et de maintenance (entretien).

Das Ausrufezeichen in einem gleichseitigen Dreieck soll den Benutzer auf wichtige Bedienungs- und Wartungsanweisungen in der dem Produkt beiliegenden Literatur hinweisen.

WARNING

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

UNPACKING AND INSPECTION

Unpack carefully. This is an electronic product and should be handled as such. Compare the items received with the packing list with your order.

BE SURE TO SAVE THE SHIPPING CARTONS AND INSERT PIECES. THEY ARE THE SAFEST MATERIAL IN WHICH TO MAKE FUTURE SHIPMENTS OF THE PRODUCT.

WARNING

To reduce the risk of fire or shock hazard, do not expose this product to rain or moisture.

ATTENTION

Pour réduire le risque d'incendie ou de choc électrique, ne pas exposer ce produit à la pluie ou à l'humidité.

WARNUNG

Um das Risiko von Brand- oder Stromschlaggefahr zu verringern, darf dieses Produkt weder Regen noch Feuchtigkeit ausgesetzt werden.

MAINTENANCE

User maintenance of this unit is limited to external cleaning and inspection.

ENTRETIEN

l'entretien de l'utilisateur de cet appareil se limite au nettoyage et l'inspection externe.

INSTANDHALTUNG

Die Bedienung dieses Gerätes ist auf externe Reinigung und Inspektion beschränkt.

TABLE OF CONTENTS

UNIVERSE® DESCRIPTION

The uniVerse® is a fully programmable, self contained, one door/two reader POE access control panel that offers users flexibility and simplicity. Operating as a stand-alone unit or within a network, each uniVerse® makes independent access control decisions.

The uniVerse® accepts Wiegand, RS-485, Magnetic Stripe, Proximity card readers, and Wiegand-Format Keypads to control the access functions for one access point (entrance/ exit). All inter-connected devices must be UL or ETL Listed. Contact Continental Instruments with questions regarding the support or compatibility of any specific readers and keypads.

At the Input Connectors, four supervised inputs are provided for a door contact sensor, door bypass switch, or related detection accessories. Two onboard Form-C relays support door locking mechanisms or door alarm shunt.

The standard uniVerse® features a user-programmable, onboard database that supports a maximum of 200,000 card holders with the onboard 4 MB memory.

Note: Card Capacities can vary due to changes in Firmware, Badge Length and Panel Configuration (Transaction buffer size, Time Schedule Blocks, and Access Groups). Maximum Card Count can be verified by checking the Communication Driver (Max. Card Count column).

The uniVerse® requires an external UL or ETL Listed Access Control Regulated Power Supply rated at +12VDC, minimum 1A or a POE power source. An optional 4 hour battery backup should be provided in the USA and a mandatory 30 minute battery backup is required in Canada.

In addition, a replaceable lithium battery protects the onboard database and programmed operating instructions from loss of power for a period of 4 weeks. In the event of a total failure of the Regulated DC power supply or power supplied by Ethernet, the uniVerse® would immediately be ready for full operating capability once a source of operating power is reestablished.

A maximum of fourteen uniVerse® access control panels may be networked together using the RS-485 high speed Repeat mode. The ability to mix Accelaterms or Accelerators into the network require that the controller operates at a minimum of 115,200 baud. The default baud rate of the uniVerse® is 921.6Kbps. If a Turbo Superterm or Superterm control panel is included in the network, it must be equipped with the Continental Accelerator Board (CICP18ACCBD) for higher baud rates. **Note that the Continental *Super Two, Smarterm*, *Miniterm*, and *Microterm* control panels are not supported and should <u>not</u> be included in this network**.

Each uniVerse® may communicate with its own Ethernet connection or the first uniVerse® can communicate by Ethernet and all other panels can communicate via RS485 communications on a high speed Repeater Network. In this configuration, the first uniVerse® can be configured as a bridge between a Host Computer Ethernet connection and downstream uniVerse's® on the high-speed RS-485 Repeater Network.

A single host computer may be used to manage and program one uniVerse® or a fully developed network of uniVerse® controllers, saving equipment and installation costs, database entry/deletion procedures, and monitoring individual access usage.

Changes or upgrades to the uniVerse® operating software are readily downloadable from the host computer to either one specific uniVerse® or an entire network of Access Control panels, eliminating the need to physically change the EPROM chip inside the unit. The operating software is securely stored in the processor's FLASH memory, and therefore power interruptions have no effect. Using a typical modern server, upgrades to the operating software to a panel can be accomplished.

IMPORTANT SAFETY INFORMATION

The uniVerse® has been evaluated by ETL as a Stand-Alone Access Control System (Burglary and Fire Alarm features have not been evaluated by ETL). The PC connection provides convenient setup and monitoring of the system, but all decision-making for a Cardholder's Authorizations at a particular time and place are made by the Access Control Panel.

Disruptions to the communication with the PC, or to the operation of the PC itself will not result in impaired operation of the Access Control System.

The uniVerse® Access Control panel is to be installed in a secured area.

In some localities, the Access Control System Reader, Door Lock Circuits and other signal wiring may use UL Type CM or UL Type CL2 foil-shielded multi-conductor and multi-pair cable. Where the AHJ's (Authorities Having Jurisdiction) require Plenum-Rated Cabling, UL Type CL2P cabling may be acceptable. **Note:** The Universe has been evaluated to UL294 Classification Level 1.

Replace the lithium backup battery on the Main Board with a Rayovac "CR2032" coin cell. **Use of another battery may present a risk of fire or explosion**.

The CICP2100S must be mounted on a wall.

Fault-Tolerance, Fault Isolation, and Conditions that may result in impaired operation

As described above, a faulted computer or communication link with the computer will not impact the ongoing access management of the Access Control Panel. Furthermore, the transactions occurring during the equipment outage will be recorded in the Access Control Panel, then forwarded to the computer when the fault is removed.

If the Access Control Panel itself fails due to a long-term power failure or internal fault, the Access Control Software on the host computer will normally detect this failure, signal an alert, and log the time of this event.

Sensing the status of the Door Monitor Contact, the Request to Exit (REX) and the Accessory Alarm Inputs will be impaired by a cut cable or short-circuit in the Signal Circuit Wiring. By installing end-of-line termination resistors, as described in this manual, the Alarm and Signal Circuits may be supervised to detect such faults and indicate the need for a repair.

CONFIGURATION

The uniVerse® provides access control functions for one door with up to two card readers (entry/exit).

Each of the four alarm inputs on the Interface board may be configured as supervised alarms (requiring termination resistors), or standard alarms (requiring plain electrical contacts). The four alarm inputs can be used for a Door Status sensor, Request To Exit (RTE) or accessory alarm points.

COMMUNICATION

10/100Base-T POE Ethernet Interface

This standard feature provides direct wideband Ethernet connection to the Facility Security Network. The Ethernet interface can provide power to the uniVerse® via Power-Over-Ethernet.

Ethernet to Repeat 485 Networks

Setting an option Jumper (JP2) to Repeat mode allows the Host Computer to communicate with up to fourteen UniVerse® controllers on a full-duplex RS-485 Repeater chain through the primary uniVerse® .

Memory

The Base Memory of the uniVerse® carries the Boot and Downloaded Firmware with the Processor's FLASH Memory. Onboard high reliability SRAM provides 4MB for the Cardholder Database and Transaction Buffer.

INSTALLATION

Only qualified service personnel familiar with all local building codes should attempt this installation. Take appropriate safeguards to avoid unintentional operation by employees and maintenance personnel working about the premises.

The installation of each uniVerse® system should be completed and tested on its own before connecting into a network. Any possible wiring or installation problems are magnified many times by the complexity of the network.

Once an individual panel has been tested and found operating satisfactorily, it can then be safely brought into the network.

The uniVerse® must be installed within the protected premise in accordance with the National Electrical Code (NFPA70), local codes, and the authorities having jurisdiction.

The following warnings are designed for the safety of the uniVerse® install/service technician and for the continued proper function of the uniVerse® unit.

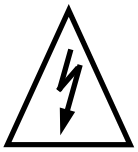
About This Manual

This manual describes the installation of the uniVerse® Access Control Unit and the specific accessories that connect to it.

End-User Periodic Tests and Emergency Planning

The Host Computer Software supervises the Access Control System, reporting failures at an individual panel within seconds of the occurrence. Nevertheless, failures can occur at the Door Sense and Bypass contact monitoring hardware, the individual Card Reader electronics and wiring, or the Electric Door Lock Hardware that will not be detected until the equipment is used. For this reason, please instruct staff at the installation to perform a "walk through" test at every controlled entrance and verify operation of all the monitored contacts at least once per week, especially at sites that are less frequently used. Assist the Security Staff at the installation to devise acceptable alternates to allow entrance and monitoring of access at controlled sites impacted by equipment failures, especially in high-traffic areas.

Provide staff members at the facility with contact information that will help assure the swift correction of equipment outages.

NOTES: **NOTIZEN:**	Notes are included with a procedure informing the installer about related material. Les notes sont incluses dans une procédure informant le programme d'installation sur le matériel connexe. Die Hinweise sind in einem Verfahren enthalten, das den Installateur über das entsprechende Material informiert.
CAUTION **PRUDENCE** **VORSICHT** 	Cautions indicate that a particular process requires special attention. Précautions indiquent qu'un processus particulier nécessite une attention particulière. Vorsichtsmaßnahmen indiquent qu'un processus particulier nécessite une attention particulière.
WARNING **ATTENTION** **WARNUNG** 	Warnings indicate that a particular process exposes the installer to live circuits or that making wrong connections can lead to equipment failure. Mises en garde indiquent qu'un processus particulier expose l'installateur aux circuits sous tension ou que des connexions erronées peut conduire à une défaillance de l'équipement. Warnungen zeigen an, dass ein bestimmtes Verfahren den Installateur zu lebenden Schaltungen freigibt oder dass falsche Verbindungen zu einem Ausfall der Geräte führen können.

CAUTION **PRUDENCE** **VORSICHT** 	Do not place accessory circuit cables in the same conduit sections containing power cables. Ne placez pas les câbles de circuits accessoires dans les mêmes sections de conduit contenant les câbles d'alimentation. Stellen Sie keine zusätzlichen Stromkreiskabel in dieselben Leitungsabschnitte mit Stromkabeln.

Installation Preparation

First, select a mounting location within a secure, limited access area (see Figure 1). Make note of the wall construction type to which the CICP2100S will be installed.

- Ensure adequate space is available for mounting the CICP2100S enclosure on the wall with no interference from wires, pipes, or other obstructions.
- When using POE to power the unit, insure that all unused knockouts or openings are properly sealed.
- Where necessary, plug unused knockouts that have been removed with UL listed knockout plugs.
- Confirm that adequate free space exists on both sides of the uniVerse® cabinet for cabling.
- Proper Installation of the the uniVerse® requires an area of free spacing measuring:

  Height: 5 3/8" (13.65 mm)
  Width: 9" (22.86 mm)
  Depth: 2 1/4" (5.71 mm)

- Determine the directions of the cabling exiting the uniVerse® enclosure. Confirm sufficient access to ceilings and/or walls before fitting the conduit lengths.
- Use all 4 mounting screws to secure uniVerse® to the wall.

  Note: All uniVerse® signal wiring and accessory power circuits are power limited. The use of conduit is optional for these circuits (if accepted by your Authority Having Jurisdiction [AHJ]).

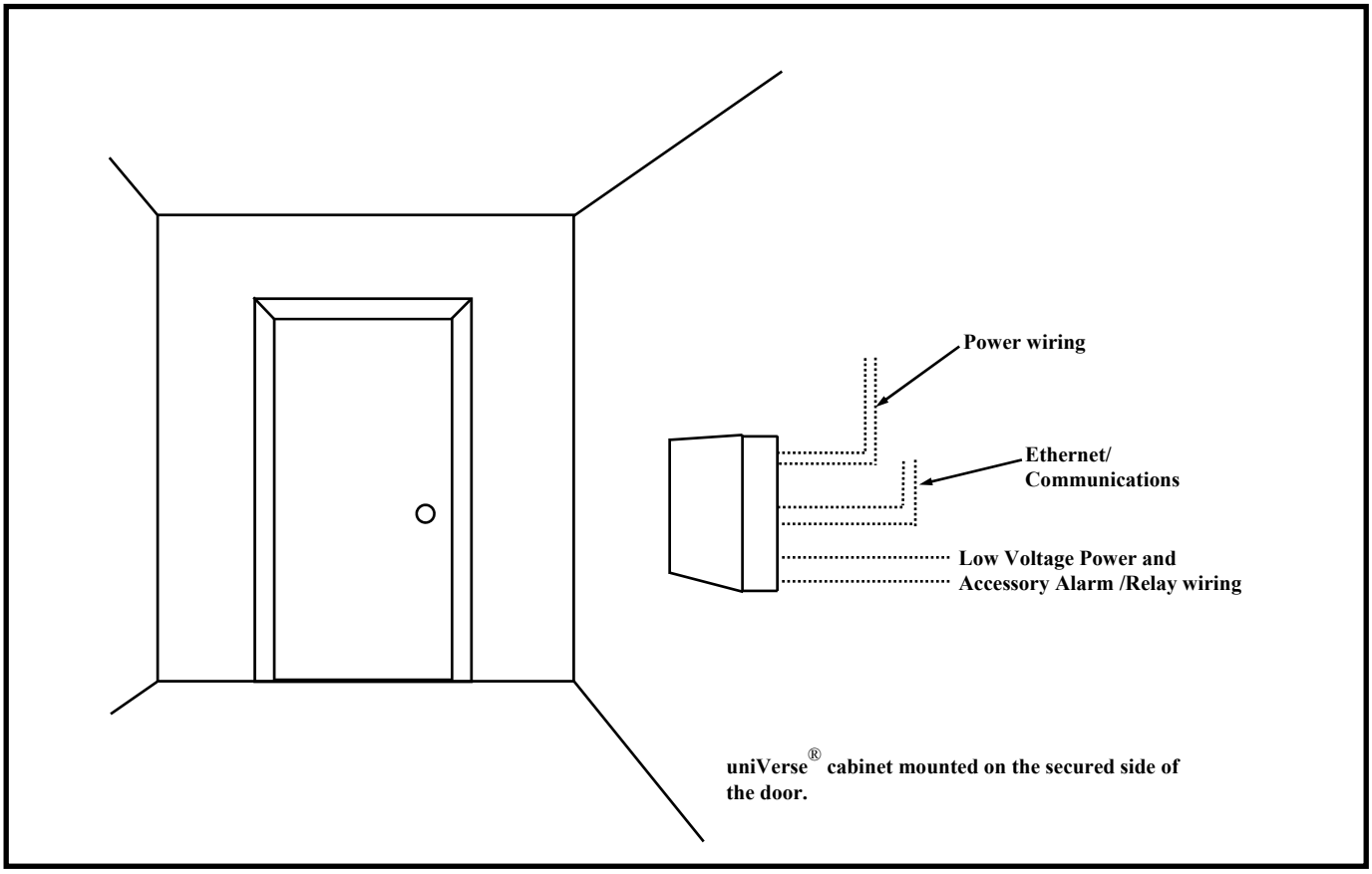


Figure 1 - uniVerse® Installation Location

uniVerse® Cabinet Mounting

Inspect the mounting surface around the proposed installation site. The mounting surface must be capable of supporting 2.3 pounds (1.043Kg) plus any additional weight of the installation hardware.

CAUTION
Use only suitable mounting hardware for the type of wall construction encountered.

1. Determine the uniVerse® cabinet mounting location.
2. Mark the four mounting holes against the mounting surface using the uniVerse® cabinet as a template (Refer to figure 2). Use #8 screws for the mounting screws.

NOTE: Mark the small oval portion of the cabinet screw holes.

3. Place the uniVerse® cabinet out of the way.
4. Drill pilot holes to the required depth and size for the mounting screws.
5. Insert the top two mounting screws into the wall. Leave approximately one quarter of the screw's length protruding from the wall.

NOTE: Do not tighten screws completely at this time.

6. Place the uniVerse® cabinet over the mounting screws.

   Secure the uniVerse cabinet to the mounting surface using the two lower screws, and then tighten the remaining length of the screws.

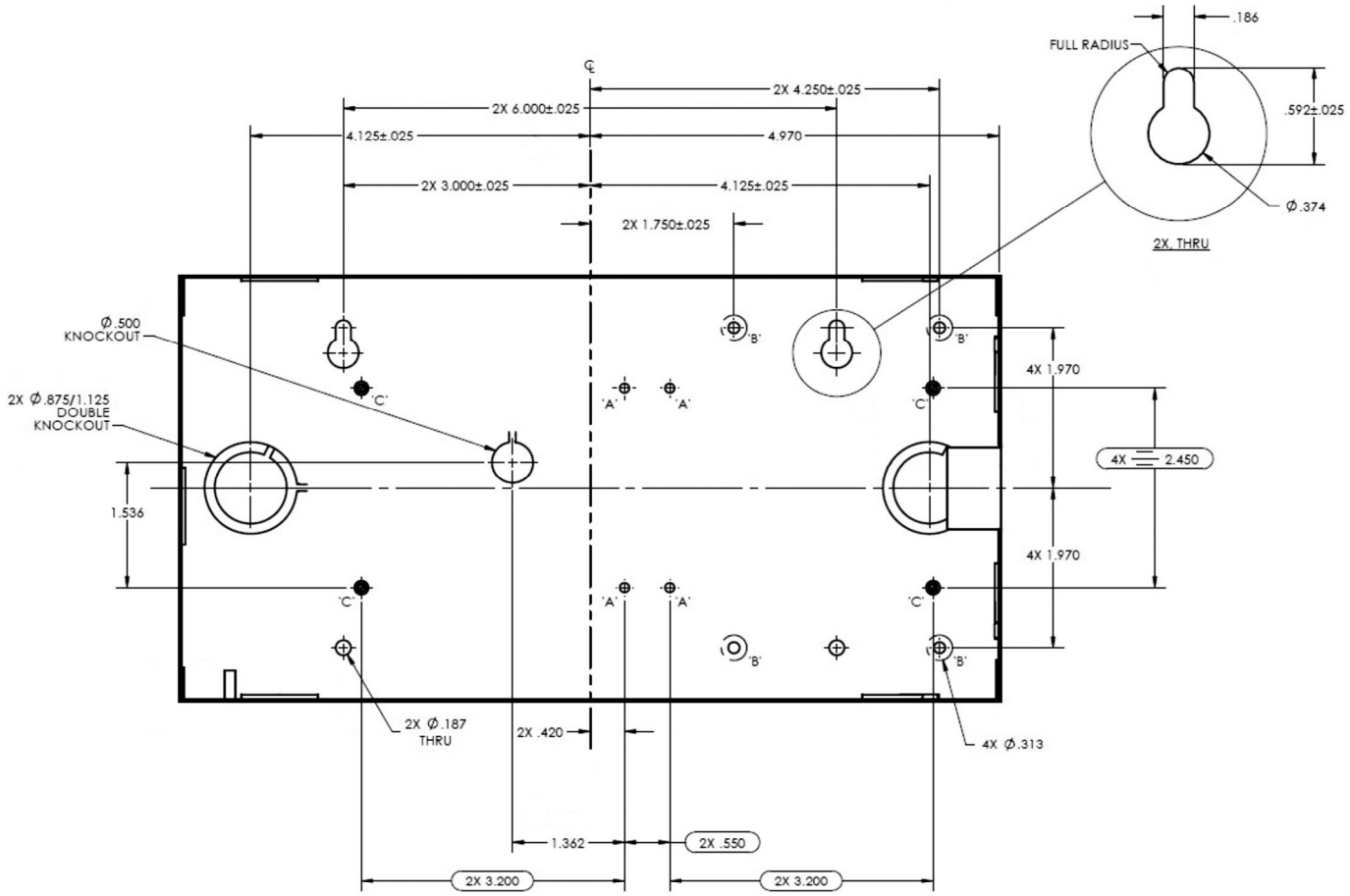


Figure 2 - uniVerse Cabinet Base Dimensions

Cable and Wiring Categories

The wiring and cabling for the uniVerse® are divided into three categories:

Main Power Cables and Wiring

This category contains DC Power Supply wiring provided by an external Regulated DC power supply if Power-Over-Ethernet is not used.

Low-Voltage Power and Accessory Relay Devices

12 or 5 Volt Reader Power, any accessory relay controlled devices connected to the Panel (These are power-limited circuits, and normally do not require a licensed electrician to complete this work). All power-limited wiring to remain away from the circuit boards. **Do not allow power-limited wiring to cross over circuit boards**.

Communication Cables

This category contains all the communication cabling between the uniVerse® and all communication equipment, all alarm circuits, and all card reader devices. (These are power-limited circuits, and normally do not require a licensed electrician to complete this work). All power-limited wiring to remain away from the circuit boards. **Do not allow power-limited wiring to cross over circuit boards**. **Note:** For proper operation of the uniVerse®, route EACH category of cabling in SEPARATE conduit or bundle (i.e., **DO NOT mix alarm and communication cables in the same conduit as relay and power cables**). Plenum-Rated cabling may be required in certain installations. See Important Safety Information, page 6.

Incoming Power Conduit Knockout

The uniVerse® Controller draws approximately 300mA @ 12VDC. The power cabling should be delivered to the uniVerse® through a knockout in the universe cabinet. (see Figure 3).

Note: This system must be installed indoors within the protected premise in accordance with the National Electrical Code (NFPA70), local codes, and the authorities having jurisdiction.

Accessory Conduit Knockouts

All cabling for the uniVerse® is routed through EIA standard knockouts located on the sides of the universe cabinet.

Grounding Accessory Drain and Shield Wires

Ensure electromagnetic compatibility and reliable performance by keeping all accessory drain and cable shield wires as short as possible.

The drain and cable shield wires connect to the Ground Pigtail.

The following procedures assure proper installation of the drain and cable shield wires.

- Carefully remove the cable jacket after the cable enters the uniVerse® cabinet.
- Place the drain wire under the Ground Pigtail. Trim as needed.
- Verify a good connection and tighten to the Ground Pigtail.
- Connect the accessory wires to the appropriate terminal strip on the uniVerse® Interface circuit board.

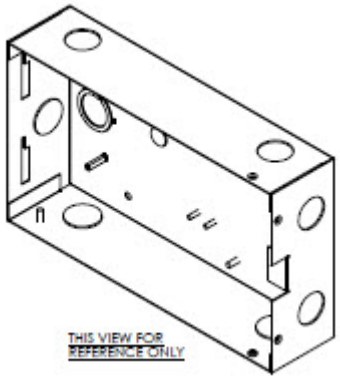


Figure 3 - Cabling Conduit Knockouts

POWER CONNECTIONS

DC Power

If an external DC power source is used, the incoming DC source voltage connects to the PWR IN +12V Input Power Terminal Block located in the lower right of the uniVerse® Interface board.

Courant continu

Si une source externe d'alimentation en courant continu est utilisé, la tension d'entrée de source de courant continu se connecte au PWR IN + 12V Entrée bornier d'alimentation situé en bas à droite de la carte d'interface Universe®

Gleichstrom

Wenn eine externe Gleichstromquelle verwendet wird, verbindet sich die eingehende Gleichspannungsquelle mit dem PWR IN + 12V Eingangsklemmenblock, der sich rechts unten auf der uniVerse® Interface-Platine befindet.

First, secure the Black "Common" wire to the PWR COM terminal. Then secure the Red "+12VDC" wire to the PWR IN +12V terminal and lastly secure the Drain wire to the "Drain" terminal.

Note: Use of a dedicated, Regulated DC power source results in optimal performance with minimum interference.

Table 1 lists the incoming DC source voltage connections to the DC Input Power Terminal Block.

Table 1 - DC Input Power Terminal Block Connections

Incoming DC	Wire Color	DC Input Terminal Block
POS (+12VDC 1A Minimum)	RED	PWR IN 12VDC
NEG (COM)	BLACK	PWR COM
DRAIN	UNSHIELDED	⏚

Note: Recommended but not limited to wire (Part # BELDEN 9364)

DC Power Source Grounding

WARNING

Verify that the DC source voltage is switched off at the external DC Power Source before proceeding with connections.

Mise à la terre source d'alimentation CC

ATTENTION

Vérifiez que la tension de source de courant continu est mis hors tension à l'extérieur DC Source d'alimentation avant de procéder à des connexions.

Gleichstromquelle Erdung

WARNUNG

Vergewissern Sie sich, dass die DC-Spannungsversorgung an der externen DC-Stromquelle ausgeschaltet ist, bevor Sie mit den Anschlüssen fortfahren.

Power-Over-Ethernet

The uniVerse® can also be powered by a Power-Over-Ethernet power source. The POE power source must be capable of providing 12 Watts. This includes the use of a POE switch or a midspan POE injector.

Battery Backup

Where required, use a UL or CSA listed UPS with sufficient runtime (ie. 30 minutes in Canada).

uniVerse® Interface Board Wiring Diagram

The uniVerse® Interface board (see Figure 4) provides wiring terminal strips for external access control devices (card readers, keypads, alarms, communications, relay connections, etc.).

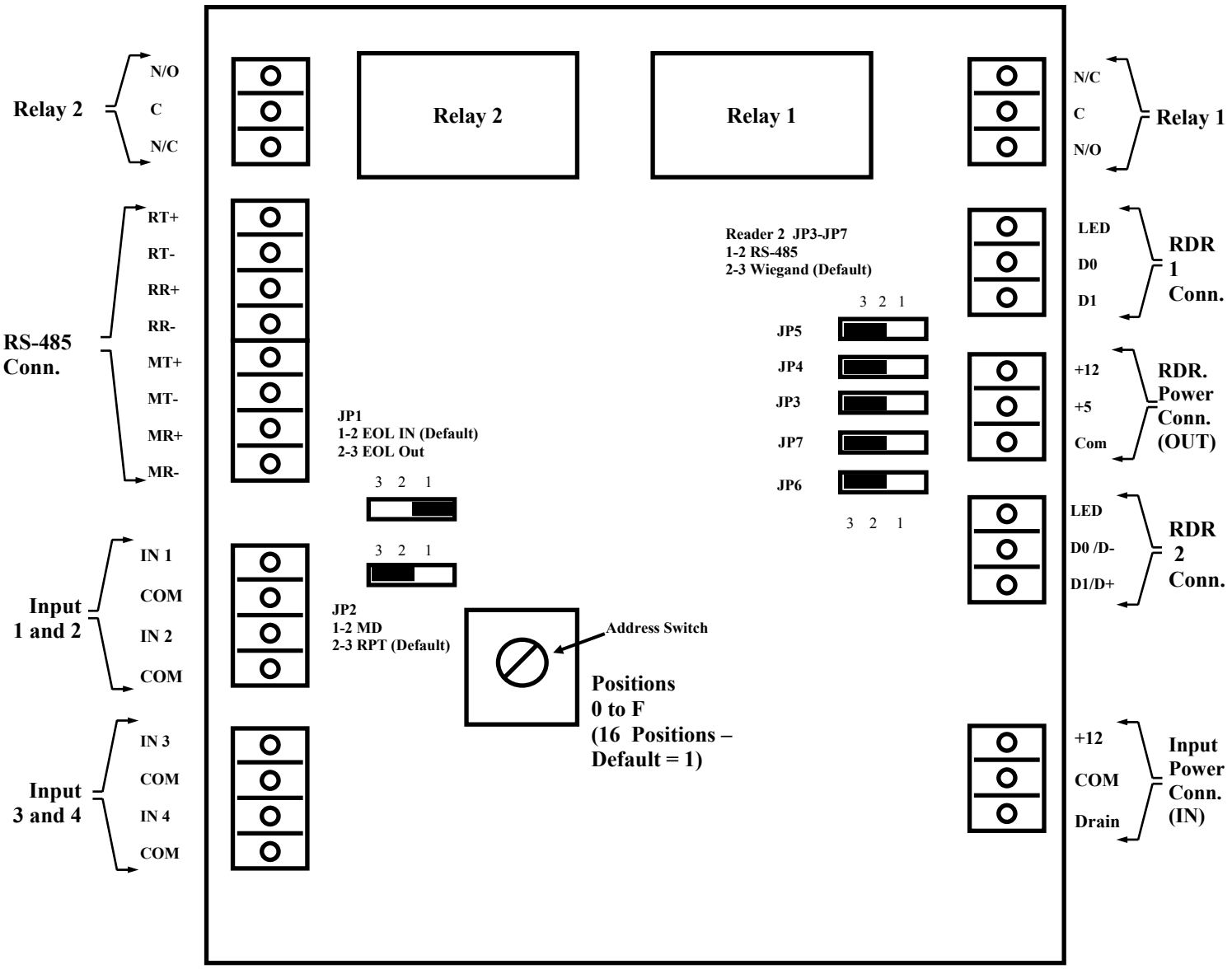


Figure 4 - uniVerse® Interface Board Wiring Diagram

DOOR CONNECTIONS

Inputs from Card Readers, Keypad/Card Readers and Door Alarms connect to the uniVerse® via the terminal strips on both sides of the uniVerse® Interface circuit board.

Reader 1 Wiegand / Proximity Reader Connections

Table 2 below lists the connections between the RDR1, RDR2 and RDR PWR terminal strips and the Wiegand/Proximity Readers.

* Proximity Readers are normally powered by +12VDC.

Table 2 - RDR 1 Connection Table for Wiegand/Proximity Readers

Reader and Pwr Terminal Strips Pin	Function	Wire Color
RDR PWR	+5VDC/+12VDC	Red *
RDR PWR COM	Ground	Black
LED	LED	Brown
D0	Data-0	Green
D1	Data-1	White

* +12VDC and +5VDC power is provided by a separate connector on the right side of the Interface board for reader power.

Wiegand/Proximity Reader Cable Requirements

Wiegand/Proximity Readers require a 5-conductor cable between the uniVerse® and the particular unit (see Figure 5). **Do not use twisted pair cable.**

Note: Readers may have a maximum current draw of 350mA each.

Table 3 - RDR 1 Cable Requirements for Wiegand/Proximity Readers

Unit	Distance (maximum)	Wire Gauge
Wiegand Reader	500ft/153m	22AWG Shielded w/drain
Proximity Reader**	500ft/153m	22AWG Shielded w/drain
**500ft/153m maximum for un-buffered Wiegand units.		

Table 3 lists the cable gauge-vs.-length requirements for proper operation of the uniVerse® and a Wiegand/Proximity Reader.

CAUTION

Keep all drain and cable shield wires between the uniVerse® and any Wiegand/Proximity Readers short. Connect drain and cable shield wires to the Ground Pigtail. DO NOT ground drain wires and cable shields at any other point.

PRUDENCE

Conservez tous les fils de drain et le câble entre le blindage Universe® et tous les lecteurs Wiegand / Proximity courts. Connecter les fils de drain et de blindage du câble à la terre Pigtail. NE PAS moulu fils de drain et les blindages des câbles à tout autre point.

VORSICHT

Halten Sie alle Drain- und Kabelschirmdrähte zwischen dem uniVerse® und allen Wiegand / Proximity Readern kurz. Die Abschirm- und Kabelabschirmdrähte an die Erdanschlussleitung anschließen. Die Drain - Drähte und Kabelschirme NICHT an einer anderen Stelle abziehen.

Keypad Connection

Wiegand-Output Card and Keypad Readers -

The preferred connection for "Card and Keypad" installations is the use of a UL Listed Wiegand – Output Reader/Keypad such as the HID 5355AGK00 or 5355ABK00. These products eliminate the cost of additional wiring, and require no addition Interface Equipment. Compatible equipment produce the following codes for Keypad entries:

Table 4 - Codes for Keypad Entries

0 = 0000	4 = 0100	8 = 1000
1 = 0001	5 = 0101	9 = 0101
2 = 0010	6 = 0110	* = 1010
3 = 0011	7 = 0111	# = 1011

Note: Wiegand-output Keypads may simply be connected to the Card Reader inputs for "Keypad Only" connections.

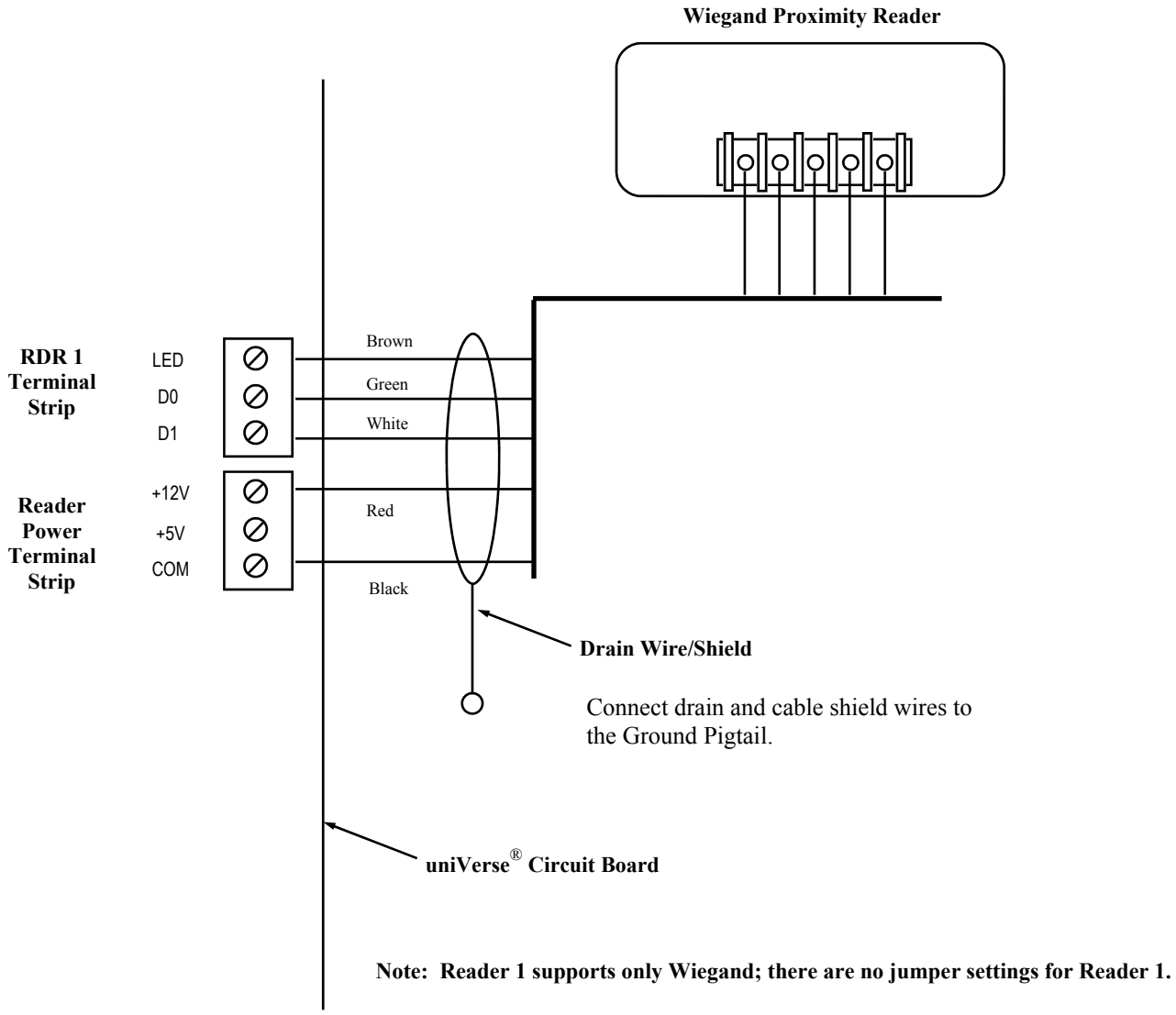


Figure 5 - Wiegand/Proximity Reader 1 Connection to uniVerse® Board

Reader 2 Wiegand / Proximity Reader Connections

The uniVerse® provides the ability to use Reader 2 as a Wiegand or a RS-485 (2-wire) Reader. This option is only available on the RDR 2 port. Table 5 below lists the connections between the RDR2 and RDR PWR terminal strips while using a Wiegand Proximity Reader.

Table 5 - RDR 2 Connection Table for Wiegand/Proximity Readers

RDR 2 Terminal Strip Pin	Function	Wire Color
RDR PWR	+5VDC/+12VDC	Red *
RDR PWR COM	Ground	Black
LED	LED	Brown
D0	Data-0	Green
D1	Data-1	White

* +12VDC and +5VDC power is provided by a separate connector on the right side of the Interface circuit board for reader power.

* Proximity Readers are normally powered by +12VDC.

Reader 2 Mode Jumper Settings (JP3-JP7)

There are a total of 5 jumpers that must be configured to select the reader 2 mode. Table 6 contains the jumper settings for Wiegand mode.

Table 6 — RDR 2 Jumper settings for Wiegand Mode

Jumper	2-3	1-2
JP3	IN	OUT
JP4	IN	OUT
JP5	IN	OUT
JP6	IN	OUT
JP7	IN	OUT

Wiegand/Proximity Reader Cable Requirements

Wiegand Readers require a 5-conductor cable between the uniVerse® and the Wiegand Reader (see Figure 6). **Do not use twisted pair cable.**

Note: Readers may have a maximum current draw of 350mA each.

Table 7 lists the cable gauge-vs.-length requirements for proper operation of the uniVerse® and a Wiegand/Proximity Reade

Table 7 - Cable Requirements for Wiegand/Proximity Readers

Unit	Distance (maximum)	Wire Gauge
Wiegand Reader	500ft/153m	22AWG Shielded w/drain

**500ft/153m maximum for RS-485 Readers.

CAUTION

Keep all drain and cable shield wires between the uniVerse® and any Wiegand/Proximity Readers short. Connect drain and cable shield wires to the Ground Pigtail. DO NOT ground drain wires and cable shields at any other point.

PRUDENCE

Conservez tous les fils de drain et le câble entre le blindage Universe® et tous les lecteurs Wiegand / Proximity courts. Connecter les fils de drain et de blindage du câble à la terre Pigtail. NE PAS moulu fils de drain et les blindages des câbles à tout autre point.

VORSICHT

Halten Sie alle Drain- und Kabelschirmdrähte zwischen dem uniVerse® und allen Wiegand / Proximity Readern kurz. Die Abschirm- und Kabelabschirmdrähte an die Erdanschlussleitung anschließen. Die Drain - Drähte und Kabelschirme NICHT an einer anderen Stelle abziehen.

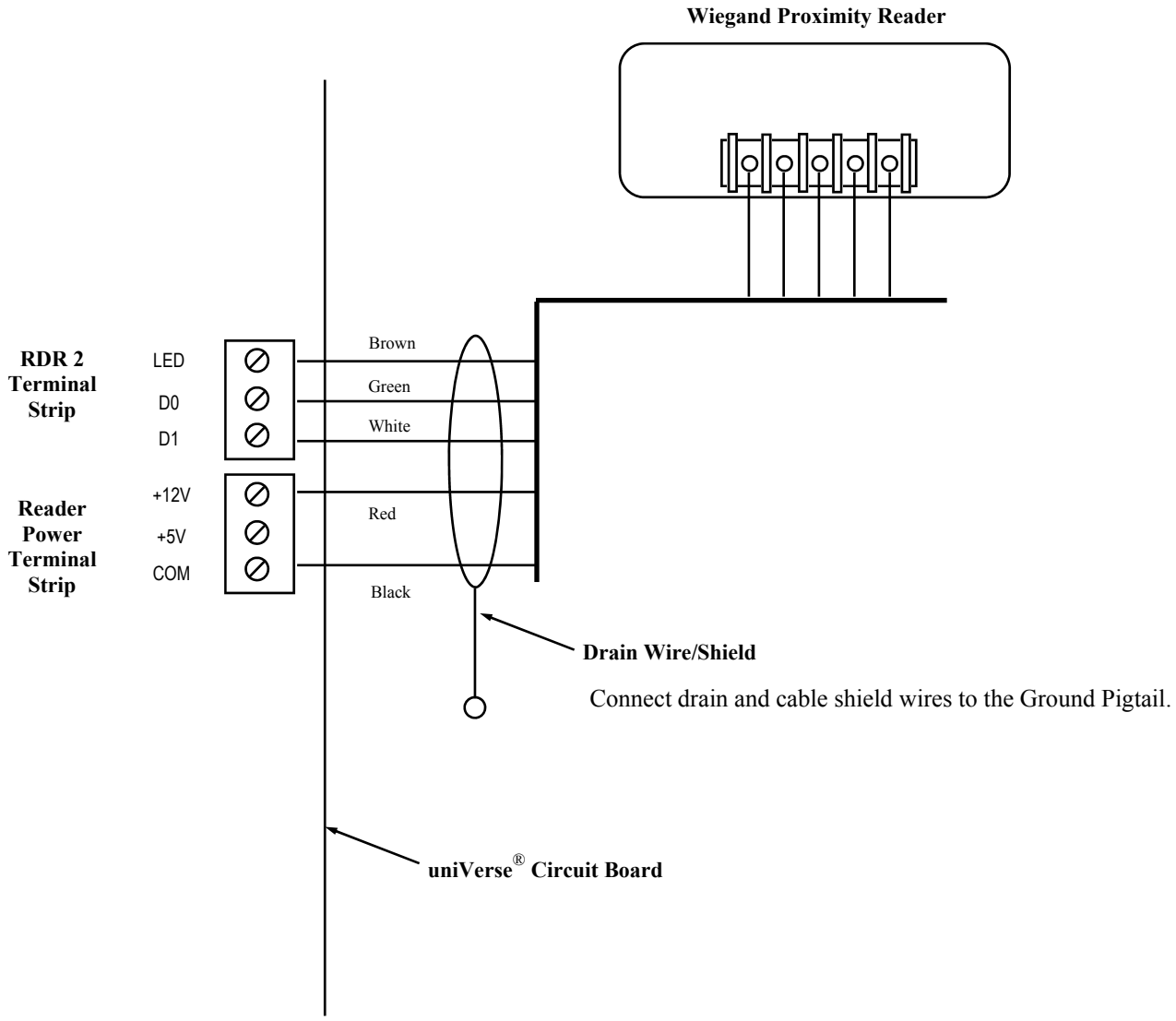


Figure 6 - Wiegand/Proximity Reader 2 Connection to uniVerse® Board

Reader 2 RS-485 (2-Wire) Connections

The uniVerse® provides the ability to use Reader 2 as a RS-485 (2 wire) Proximity Reader. This option is only available on the RDR 2 port. Table 8 below lists the connections between the RDR2 and RDR PWR terminal strips while using a RS-485 (2-Wire) Reader.

Table 8 - Connection Table for RS-485 (2-Wire) Readers

RDR 2 Terminal Strip Pin	Function	Wire Color
RDR PWR	+5VDC/+12VDC	Red *
RDR PWR COM	Ground	Black
LED	LED	Brown
D0	D -	Green
D1	D +	White

* +12VDC and +5VDC power is provided by a separate connector on the right side of the Interface circuit board for reader power.

* Proximity Readers are normally powered by +12VDC.

Reader 2 Mode Jumper Settings (JP3-JP7)

There are a total of 5 jumpers that must be configured to select the reader 2 mode for RS-485 (2-Wire). Table 9 contains the jumper settings for RS-485 (2-Wire) mode.

Table 9 —RDR 2 Jumper settings for RS-485 (2-Wire) Mode

Jumper	2-3	1-2
JP3	OUT	IN
JP4	OUT	IN
JP5	OUT	IN
JP6	OUT	IN
JP7	OUT	IN

RS-485 (2-Wire) Cable Requirements

RS-485 (2-Wire) Readers require a 5-conductor cable between the uniVerse® and the RS-485 (2-Wire) Reader (see Figure 7). There should be one twisted pair for the RS-485 data lines.

Note: Readers may have a maximum current draw of 350mA each.

Table 10 - Cable Requirements for RS-485 (2-Wire) Readers

Unit	Distance (maximum)	Wire Gauge
RS-485 Reader	500ft/153m	22AWG Shielded w/ drain
**500ft/153m maximum for RS-485 Readers.		

Table 10 lists the cable gauge-vs.-length requirements for proper operation of the uniVerse® and a RS-485 (2-Wire) Reader.

CAUTION

Keep all drain and cable shield wires between the uniVerse® and any RS-485 (2-Wire) Readers short. Connect drain and cable shield wires to the Ground Pigtail. DO NOT ground drain wires and cable shields at any other point.

PRUDENCE

Conservez tous les fils de drain et le câble entre le blindage Universe® et tous les lecteurs Wiegand / Proximity courts. Connecter les fils de drain et de blindage du câble à la terre Pigtail. NE PAS moulu fils de drain et les blindages des câbles à tout autre point.

VORSICHT

Halten Sie alle Drain- und Kabelschirmdrähte zwischen dem uniVerse® und allen Wiegand / Proximity Readern kurz. Die Abschirm- und Kabelabschirmdrähte an die Erdanschlussleitung anschließen. Die Drain - Drähte und Kabelschirme NICHT an einer anderen Stelle abziehen.

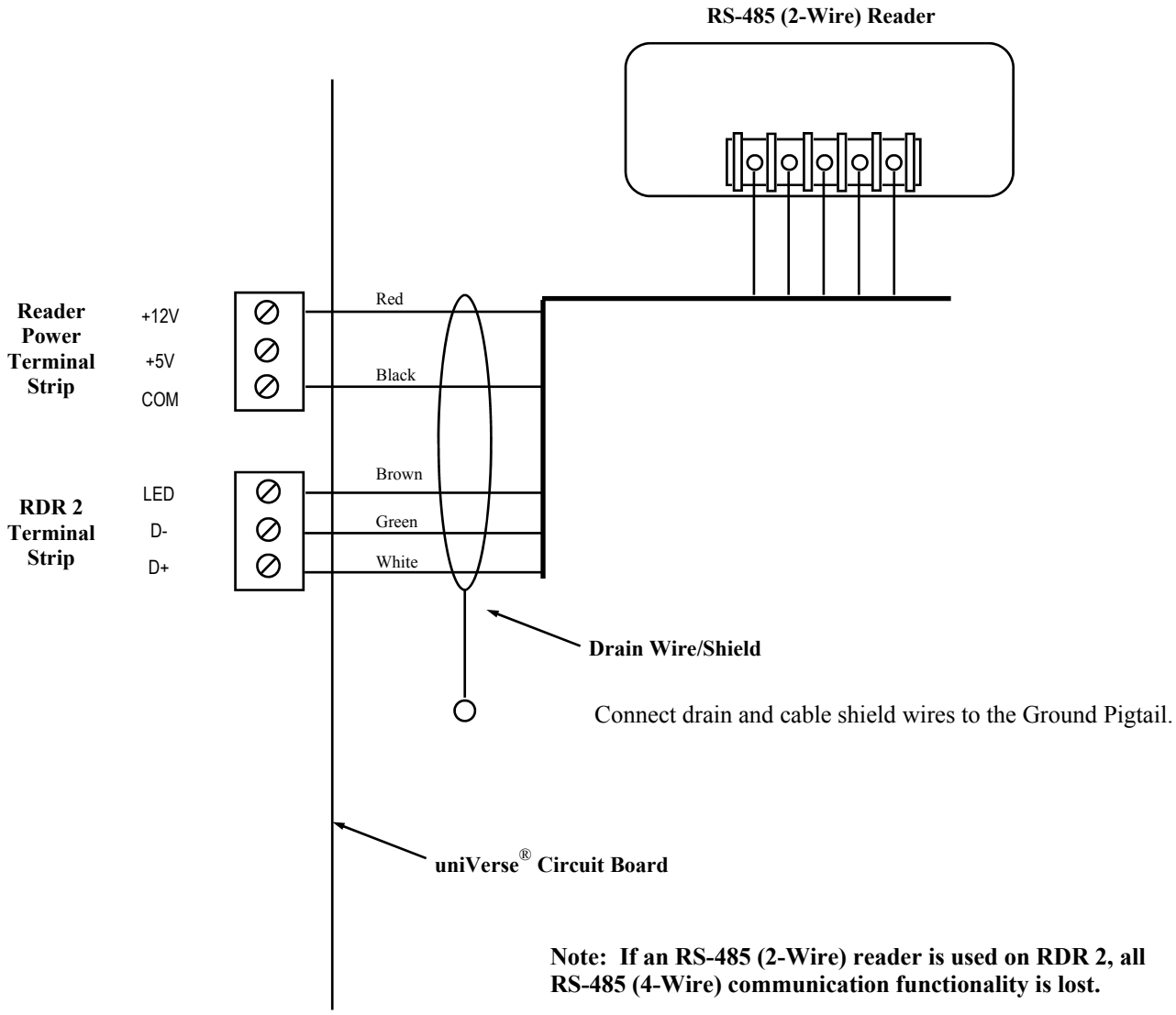


Figure 7 - RS-485 (2-Wire) Reader Connection to uniVerse® Board

Magnetic Stripe Reader Connection

Magnetic Stripe Readers connect to RDR 1 or RDR 2 terminal strips (see Figure 8). **Note:** Magnetic Stripe readers are normally powered by 5VDC, and must use the separate 5VDC Accessory Power Connections provided. Table 11 lists the connections between the RDR1 and RDR2 terminal strips and the Magnetic Stripe Reader.

Table 11 - Connection Table for Magnetic Stripe Reader

RDRx Terminal Strip Pin	Function
(Not used, see Note)	+5VDC (Red)
(Not used, see Note)	Ground (Black)
LED (Brown)	LED[1] (Yellow)
D1 (White)	Data-1/DAT (Blue)
D0 (Green)	Data-0/CLK (Green)

Note 1: If the Magnetic Stripe Reader does not feature an LED indicator, 4-conductor cable may be used.

Magnetic Stripe Reader Cable Requirements

Magnetic Stripe Readers require a 5-conductor cable between the uniVerse® and the particular unit (see Figure 8). **Do not use twisted pair cable.**

Table 12 lists the cable gauge-vs.-length requirements for proper operation of the uniVerse® and Magnetic Stripe Readers.

Table 12 - Cable Requirements for Magnetic Stripe Reader

Unit	Distance	Wire Gauge
Magnetic Stripe Reader	(maximum) 500ft/153m	22AWG Shielded w/drain

CAUTION

Keep all drain wires between the uniVerse® and Magnetic Stripe Readers short. Connect drain wires to the Ground Pigtail. DO NOT ground drain wires and cable shields at any other point.

PRUDENCE

Conservez tous les fils de drain entre le Universe® et lecteurs de bandes magnétiques court. Connecter les fils de drain et de blindage du câble à la terre Pigtail. NE PAS moulu fils de drain et les blindages des câbles à tout autre point.

VORSICHT

Halten Sie alle Drain-Drähte zwischen den uniVerse® und den Magnetstreifenlesern kurz. Die Drain - Drähte an die Masseanschlussleitung anschließen. Die Drain - Drähte und Kabelschirme NICHT an einer anderen Stelle abziehen.

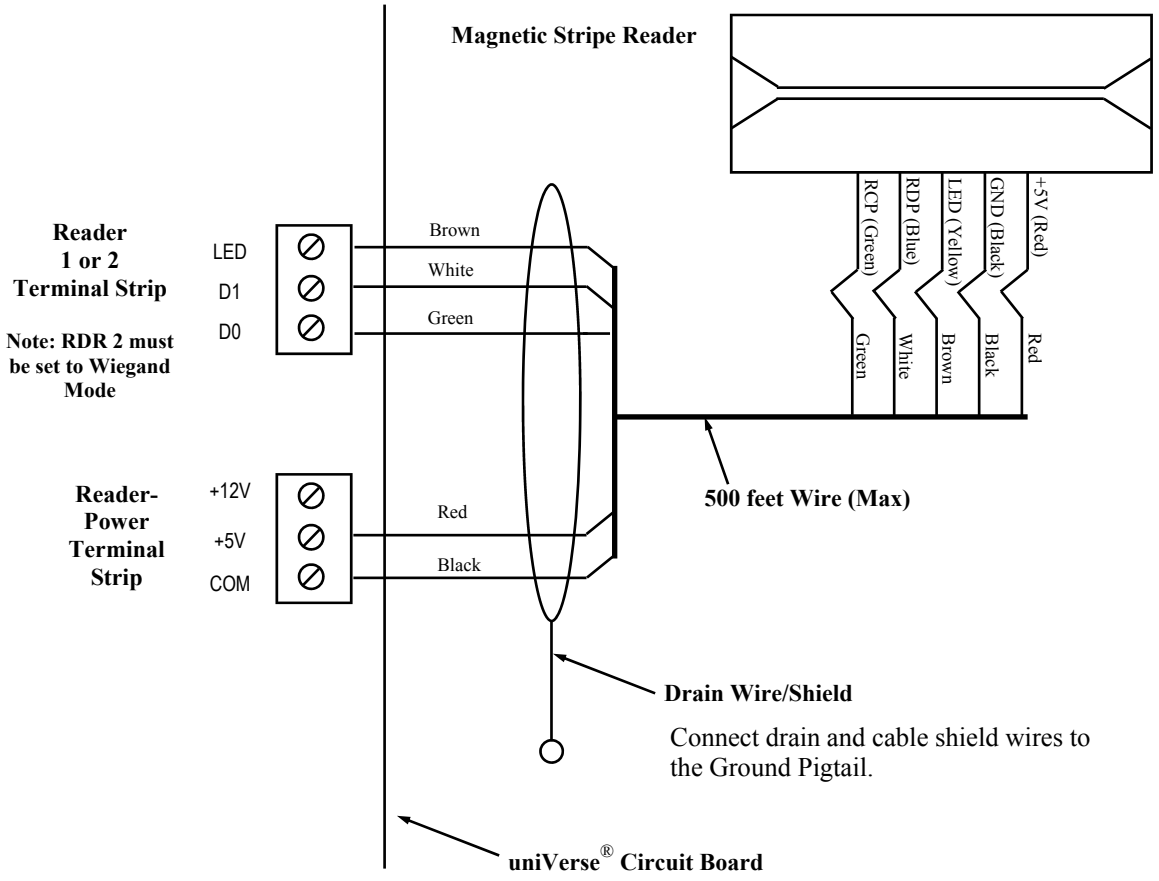


Figure 8 - Magnetic Stripe Reader Connection to uniVerse® Board

Door Status Sensor Connection

Door Status sensors connect to the uniVerse® through any one of the four inputs. By default, Input 1 is used (see figure 9).

Table 13 lists the connections between the Input 1 terminal strips and the Door Status sensor.

Table 13 - Connection Table for Door Sensor Input		
Input Terminal Strip Pins	**Signal**	**Door Status Sensor Function**
IN 1	Alarm	Positive
IN 1 COM	Return	Negative

Door Status Sensor Cable Requirements

Door Status sensors require a 22AWG, 2-conductor, stranded, shielded, cable with drain wire between the uniVerse® and the particular unit (see Figure 9). Table 14 lists the cable gauge-vs. -length requirements for proper operation of the uniVerse® and the Door Status sensor.

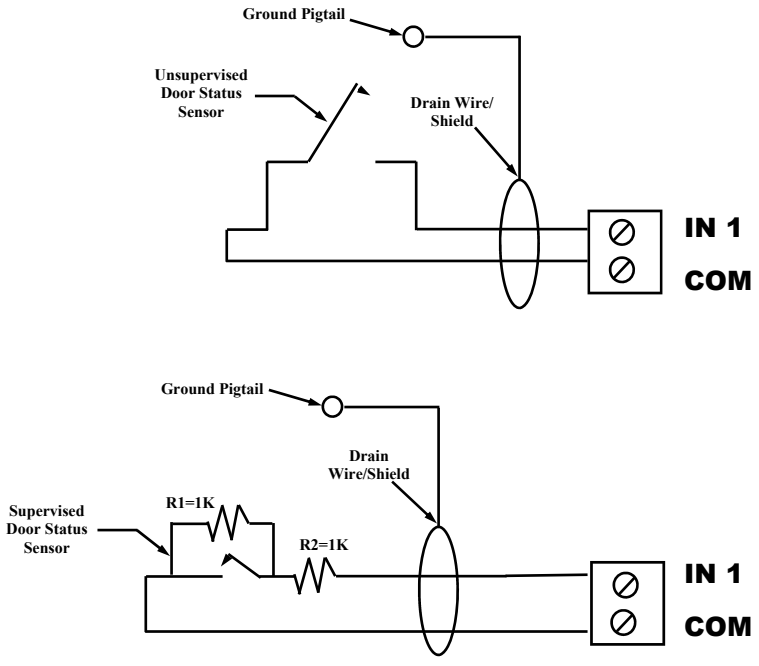
Table 14 - Cable Requirements for Door Status Sensor		
Unit	**Distance**	**Wire Gauge**
Door Status Sensor	500ft/153m	22AWG Shielded w/drain

The Door Status sensor is normally used to turn off the lock after the door is opened. It also senses if the door was forced open (triggers a Door Forced Alert at the Host Computer at the central station).

CAUTION
Keep all drain wires short. Connect drain wires to the Ground Pigtail. DO NOT ground drain wires and cable shields at any other point.

PRUDENCE
Conservez tous les fils de drain court. Connecter les fils de drain à la masse Pigtail. NE PAS moulu fils de drain et les blindages des câbles à tout autre point.

VORSICHT
Halten Sie alle Drain Drähte kurz. Die Drain - Drähte an die Masseanschlussleitung anschließen. Die Drain - Drähte und Kabelschirme NICHT an einer anderen Stelle abziehen.



uniVerse® Circuit Board

Figure 9 - Door Status Sensor to uniVerse® Input Connections. Plain (Unsupervised) Contacts, and Supervised Contacts

Request-to-Exit (Bypass) Sensor Connection

Request-to-Exit sensors (also known as Bypass sensors) work in conjunction with Door Status Sensors to provide complete facility entry and exit control. The Request-to-Exit sensor connects to the uniVerse® through any one of the four uniVerse® Input terminal strips. By default, Input 2 is used (see Figure 10).

Table 15 lists the connections between the Input 2 terminal strips and the Door Status sensor

Table 15 - Connection Table for Request-to-Exit Sensor		
Input 2 Terminal Strip Pin #	Signal	Request-to-Exit Sensor Function
IN 2	Alarm	Positive
COM	Return	Negative

Request-to-Exit Sensor Cable Requirements

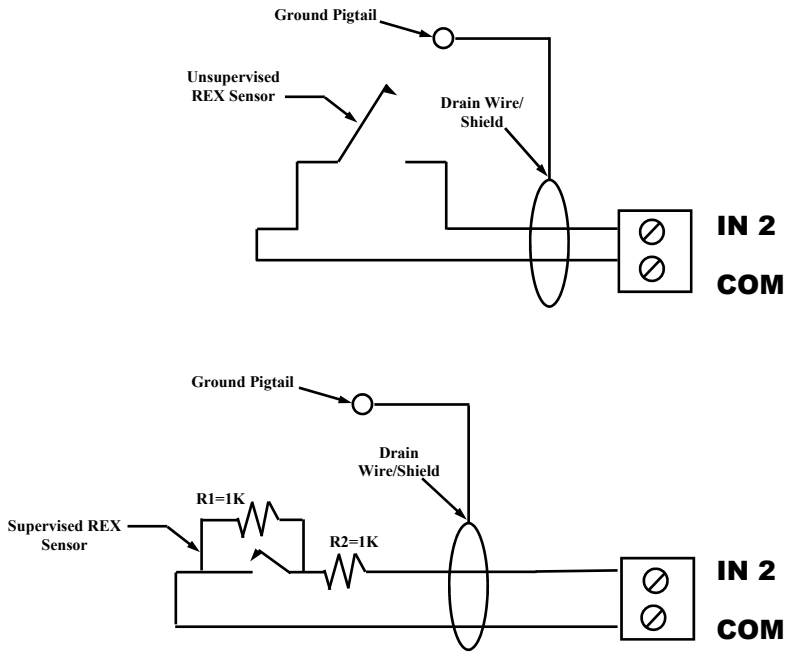
Request-to-Exit sensors require a 22AWG, 2-conductor, stranded, shielded, cable with drain wire between the uniVerse® and the particular unit (see Figure 10).

Table 16 lists the cable gauge-vs.-length requirements for proper operation of the uniVerse® and the Request-to-Exit sensor.

Table 16 - Cable Requirements for Request-to-Exit Sensor		
Unit	Distance	Wire Gauge
Request-to-Exit Sensor	(maximum) 500ft/153m	22AWG Shielded w/drain

CAUTION
Keep all drain wires short. Connect drain wires to the Ground Pigtail. DO NOT ground drain wires and cable shields at any other point.

PRUDENCE
Conservez tous les fils de drain court. Connecter les fils de drain à la masse Pigtail. NE PAS moulu fils de drain et les blindages des câbles à tout autre point.



uniVerse® Circuit Board

Figure 10 - Request-to-Exit Sensor to uniVerse® Connections. Plain (Unsupervised) Contacts, and Supervised Contacts

ACCESSORY ALARM CONNECTIONS

Four accessory supervised alarm inputs are located on the IN 1, IN 2, IN 3 and IN 4 Accessory ALARM terminal strips located on the bottom left corner of the uniVerse® Interface circuit board (see Figure 11). These alarm inputs may be used for dry contact type inputs (unsupervised) or supervised alarms.

Supervised Alarms

Supervised alarms provide monitoring of alarm inputs for fault conditions. Two additional alarm states may be detected by installing two-1K Ohm) resistors near the alarm contacts.
In addition to the standard Normal and Abnormal alarm conditions, the supervised alarms report Line Open and Line Short conditions.

- A Line **Open** condition is the result of a cut wire.
- A Line **Short** condition is the result of a short in the alarm wiring.

These fault conditions may be the result of tampering, and indicate the system cannot correctly detect the state of the alarm contacts.

Configuring an Alarm in the Supervised Condition

1. Use two 1K Ohm, 1/4W, ±5% carbon film resistors per alarm.
2. Install R1 in parallel with the alarm contacts (see Figure 10).
3. Install R2 in series with the alarm input conductor.

Note: For maximum protection, install the resistors close to the alarm contacts and embed them in epoxy.

Alarm Cable Requirements

Connecting alarm sensors to the uniVerse® board requires 22 AWG, stranded, shielded, cables with drain wires.

CAUTION
Keep all drain wires short. Connect drain wires to the Ground Pigtail. DO NOT ground drain wires and cable shields at any other point.

PRUDENCE
Conservez tous les fils de drain court. Connecter les fils de drain à la masse Pigtail. NE PAS moulu fils de drain et les blindages des câbles à tout autre point.

VORSICHT
Halten Sie alle Drain Drähte kurz. Die Drain - Drähte an die Masseanschlussleitung anschließen. Die Drain - Drähte und Kabelschirme NICHT an einer anderen Stelle abziehen.

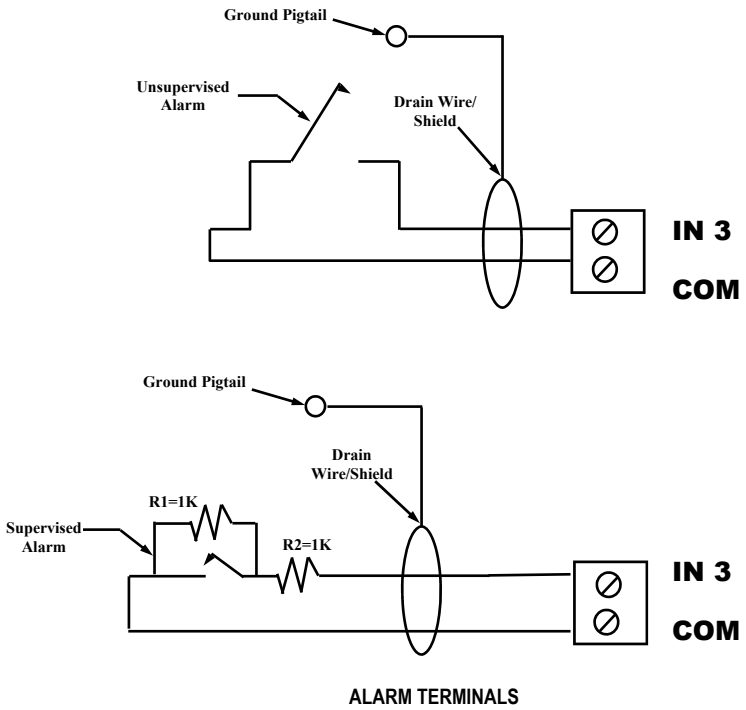


Figure 11 - ALARM Terminals - Unsupervised and Supervised Alarm Connections

RELAY CONNECTIONS

Introduction

The uniVerse® Interface Board provides 2 relays with Normally-Open, Common, and Normally-Closed contact connections from each relay. The 2 relays and their connectors are located on the uniVerse® Interface circuit board. Relay 2 is located on the left side and Relay 1 is located on the right side. These relays are only configurable for "Dry" outputs.

Fail-safe or Fail-secure

Electric Strikes are available as Fail-safe or Fail-secure devices. Emergency planning may require some areas to use Fail-safe installations to assure safe passage of personnel after a prolonged power outage leaves the backup batteries discharged. The disadvantage of a Fail-safe circuit is the continuous drain on the backup battery or power source during a power outage, resulting in less backup time. The popular Electromagnetic (EM) Locks are always Fail-safe.

Fail-safe locks use the Normally-Closed and Common connector pair. When the Access Control Panel logic activates the relay, the circuit is opened, and passage is allowed. Fail-secure locks use the Normally-Open and Common connector pair. When the Access Control Panel logic activates the relay, the circuit is closed, and passage is allowed. Refer to Figure 12 for Lock Power Example.

Console Relay

Note: The uniVerse® controller does not contain a relay # 73 (Console Relay).

Auxiliary Relays

A Relay not configured to control a Door passage may be designated as an Auxiliary Relay and used for a low-voltage control function.

Relay Characteristics

The two relays on the uniVerse® Interface circuit board share the following characteristics: Form-C relay with a contact rating of 3A at 28V AC/DC for connection to Class 2 or power-limited circuits only. MOV Snubber circuits are placed across the contacts to reduce electrical noise. The MOV Snubber circuits limit any noise caused by the strike coil to 56 volts.

Using door strikes with a coil voltage greater than 28VAC/VDC requires using external relays that can be driven by the uniVerse® relays. Likewise, to control currents greater than 2A, external relays must be used.

NOTES: Installing a 56V MOV at the strike coil further reduces possible noise input. Additional MOV's are available from Continental Instruments as part number R783R. Because of this noise, door strike wiring MUST NOT be put in the same conduit with other wiring.

Considerations for Fire Safety

The Access Authorizations controlled by the Panel may be changed to respond to emergency conditions. For example, a Fire Emergency signaled through an Accessory Alarm Input can activate a pre-defined emergency response, such as allowing free access through any or all controlled passages.

In a worst-case scenario, when the Access Control Panel is damaged during the fire emergency several Fail-safe Locks may be unconditionally opened by an open-circuit from the FACP (see examples).

Lock Power Examples

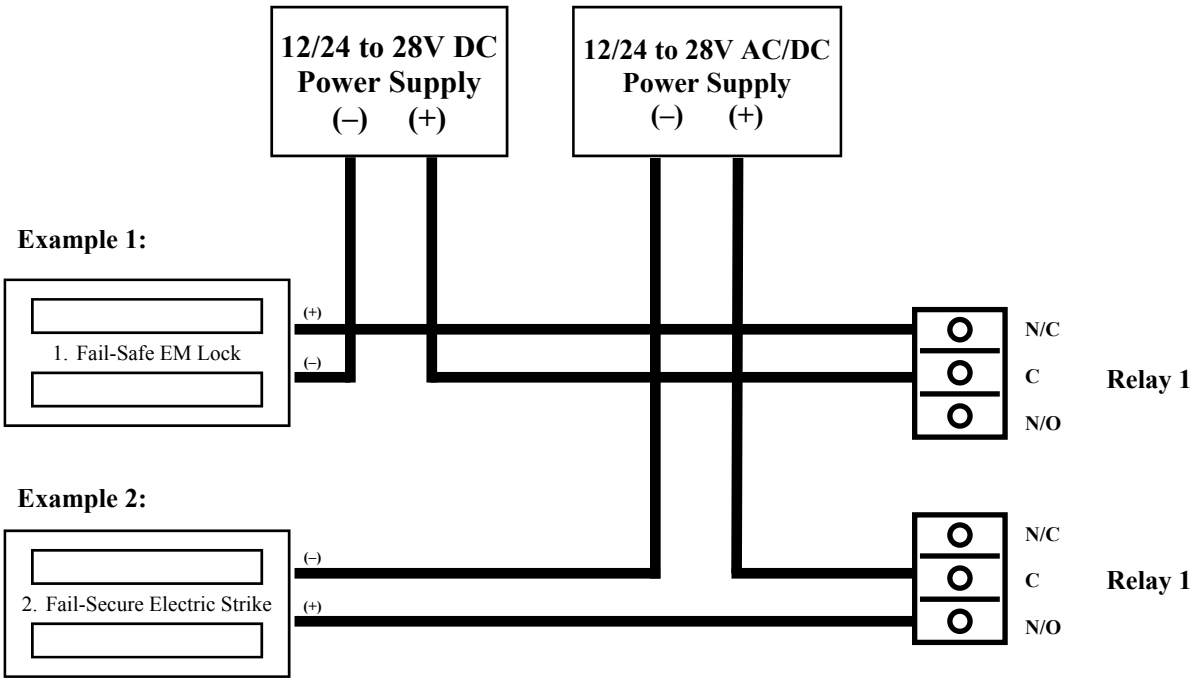


Figure 12 - Lock Power Examples

Note: If the lock is powered by the +12 VDC accessory power output on the uniVerse® Interface circuit board, ***take extreme caution*** not to exceed the maximum allowed current draw of 1 Amp (maximum +12VDC current draw for whole unit).

Example 1: A ***fail-safe*** electro-mechanical (EM) lock powered by an external limited 12/24 to 28 VDC source. If the external limited DC power supply loses power, the electro-mechanical (EM) lock will open. This is considered "Fail Safe".

Example 2: A ***fail-secure*** electric strike powered by a 12V or 24 to 28V, AC or DC power source. If the external AC or DC power source loses power, the electric strike will lock. This is considered "Fail Secure".

Networking

The uniVerse® can be networked with a maximum of 13 other uniVerse® controllers (14 total). In addition to the 14 UniVerse® controllers, additional Continental Access controllers (Accelaterm and Superterm/Turbo Superterm with Accelerators) can be added. The quantity of uniVerse® panels on one repeater network is limited by the address switch in the uniVerse® .

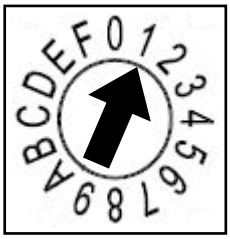
RS485 Repeater Network Cable Requirements

Networking multiple uniVerse® controllers requires 4-conductor cable (2-two wire twisted pair), stranded, 22AWG, with shielding, and drain wire.

For REPEAT network configurations, cable length between EACH uniVerse® is restricted to a maximum length of 500 feet (150m).

Network Address Settings

Operating the uniVerse® with a host computer, in a network, requires that each uniVerse® have an individual, unique address other than "0" or "F" (see Figure 13).



Example of Address 1 setting.

Figure 13 - 16 Position Address Switch

The Rotary Switch should be set with a small screwdriver. There is a click detent for each number. The valid panel address range is "1" to "E". (Address "0" is used for a zero reset and address "F" is used for a Forced Firmware download).

See page 37.

Communication Wiring

The Ethernet Port normally requires plenum-spec Shielded or unshielded CAT5, CAT5e, CAT6 or CAT6a cable. Maximum length allowed in the IEEE 802.3 specification is 100 meters (328 feet).

Functions of the RS485 Data Pair Connections

T+ T-	Differential Transmitter Data
R+ R-	Differential Receive Data

Note: A (+) is always connected to a (+), and a (-) always to a (-). A Transmitter is always connected to a Receiver. *Upstream cables head toward the Server; downstream cables head away from the Server.*

Example – uniVerse® Ethernet to RS485 Repeater Network

ADDRESS = 01* Ethernet *and* RS485 RPT [□□]□ MD	ADDRESS = 02* RS485 Repeater mode RPT [□□]□ MD	ADDRESS = 03* RS485 Repeater mode RPT [□□]□ MD	ADDRESS = 04* RS485 Repeater mode RPT [□□]□ MD	ADDRESS = 05* RS485 Repeater mode RPT [□□]□ MD
OUT MT+ MT- MR+ MR-	MR+ MR- IN MT+ MT-			
	OUT RT+ RT- RR+ RR-	MR+ MR- IN MT+ MT-		
		OUT RT+ RT- RR+ RR-	MR+ MR- IN MT+ MT-	
			OUT RT+ RT- RR+ RR-	MR+ MR- IN MT+ MT-

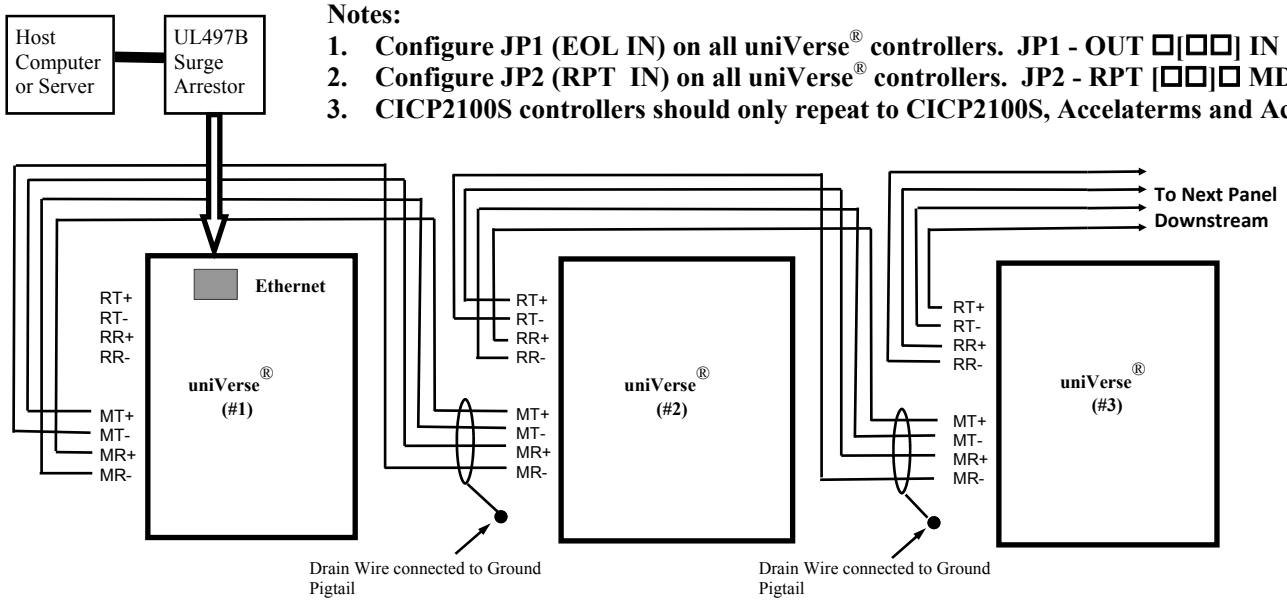


Figure 14 - uniVerse® Ethernet to RS485 Repeater Network

UL294A compliant installation requires UL497B-Listed Surge arrestors be installed on all data lines connected to Computer Accessory Equipment. On the downstream side, Ground Loop currents are limited by the low-capacitance, high-voltage disc capacitor. This connection assures compatibility with nearby Radio-Frequency equipment. "Ethernet Only" installations may use third-party isolated USB to 485 Convertors connected to the Upstream side of the first uniVerse® panel. Contact Continental Tech Support for latest data.

***Note:** Address of the uniVerse® are not required to be consecutive, only that the first uniVerse® be address one.

Functions of the RS485 Data Pair Connections

T+ T-	Differential Transmitter Data
R+ R-	Differential Receive Data

Note: A (+) is always connected to a (+), and a (-) always to a (-). A Transmitter is always connected to a Receiver. *Upstream cables head toward the Server; downstream cables head away from the Server.*

Example – uniVerse® Ethernet to RS485 Multidrop Network

ADDRESS = 01* Ethernet *and* Multi-drop mode RPT □[□□] MD	ADDRESS = 02* RS485 Multidrop mode RPT □[□□] MD	ADDRESS = 03* RS485 Multidrop mode RPT □[□□] MD	ADDRESS = 04* RS485 Multidrop mode RPT □[□□] MD	ADDRESS = 05* RS485 Multidrop mode RPT □[□□] MD
OUT MT+ MT- MR+ MR-	MR+ MR- IN MT+ MT-			
	OUT MT+ MT- MR+ MR-	MT+ MT- IN MR+ MR-		
		OUT MT+ MT- MR+ MR-	MT+ MT- IN MR+ MR-	
			OUT MT+ MT- MR+ MR-	MT+ MT- IN MR+ MR-

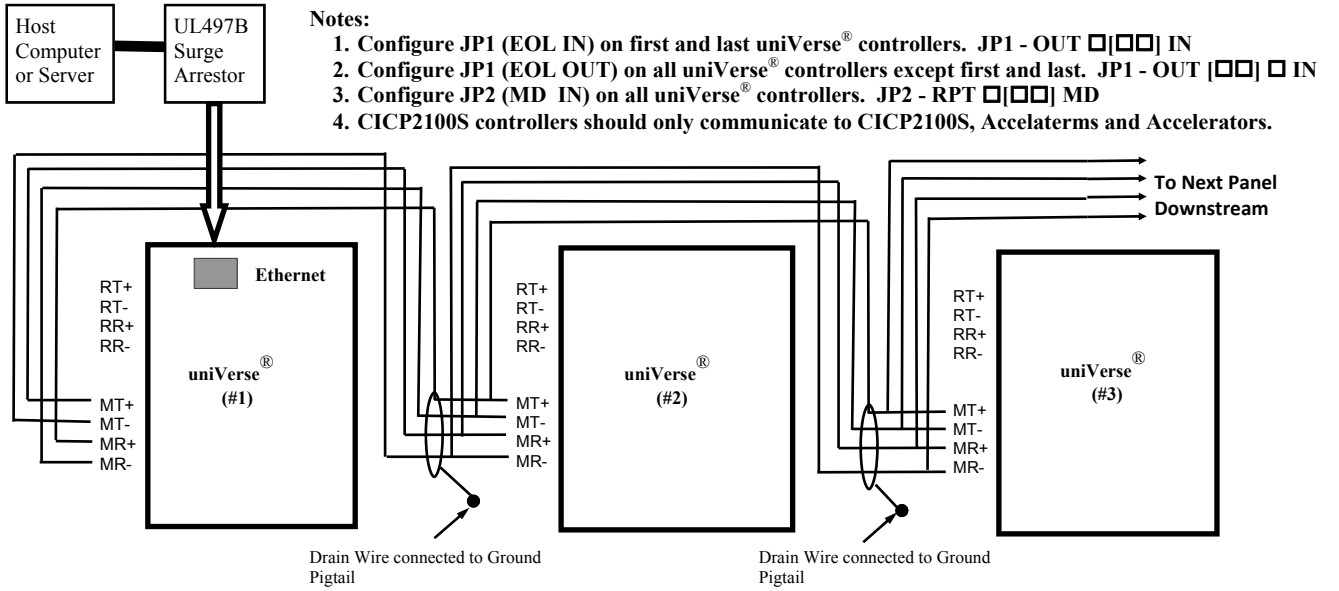


Figure 15 - uniVerse® Ethernet to RS485 Multidrop Network

UL294A compliant installation requires UL497B-Listed Surge arrestors be installed on all data lines connected to Computer Accessory Equipment. On the downstream side, Ground Loop currents are limited by the low-capacitance, high-voltage disc capacitor. This connection assures compatibility with nearby Radio-Frequency equipment. "Ethernet Only" installations may use third-party isolated USB to 485 Convertors connected to the Upstream side of the first uniVerse® panel. Contact Continental Tech Support for latest data.

***Note:** Address of the uniVerse® are not required to be consecutive, only that the first uniVerse® be address one.

LED Diagnostics

The Universe® cabinet door has viewing slots for the Power LED and the five Ethernet LEDs (see figure 16).

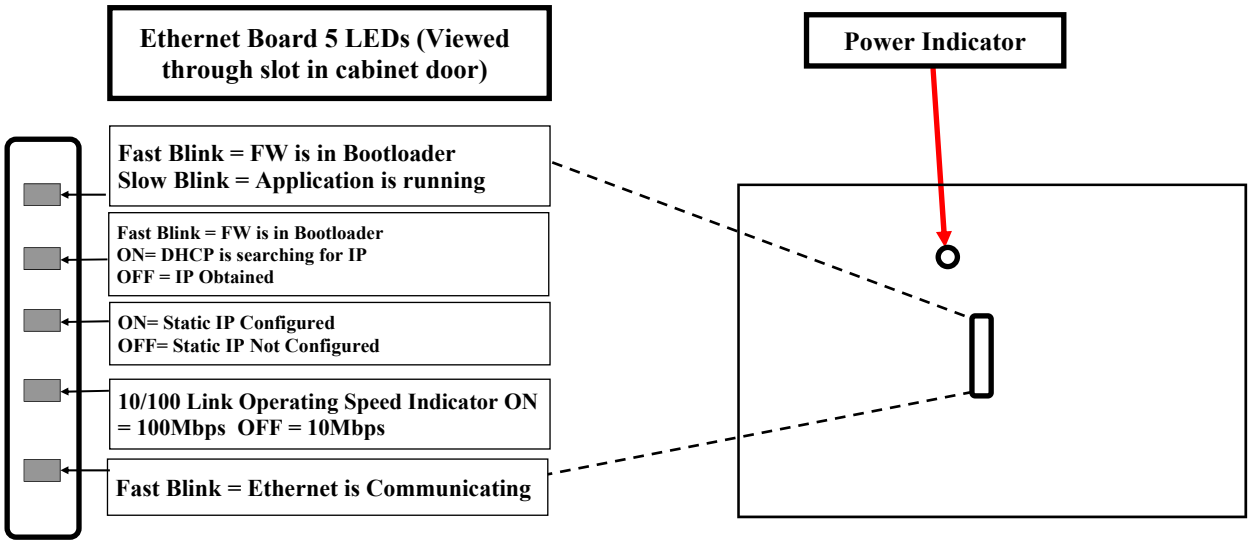
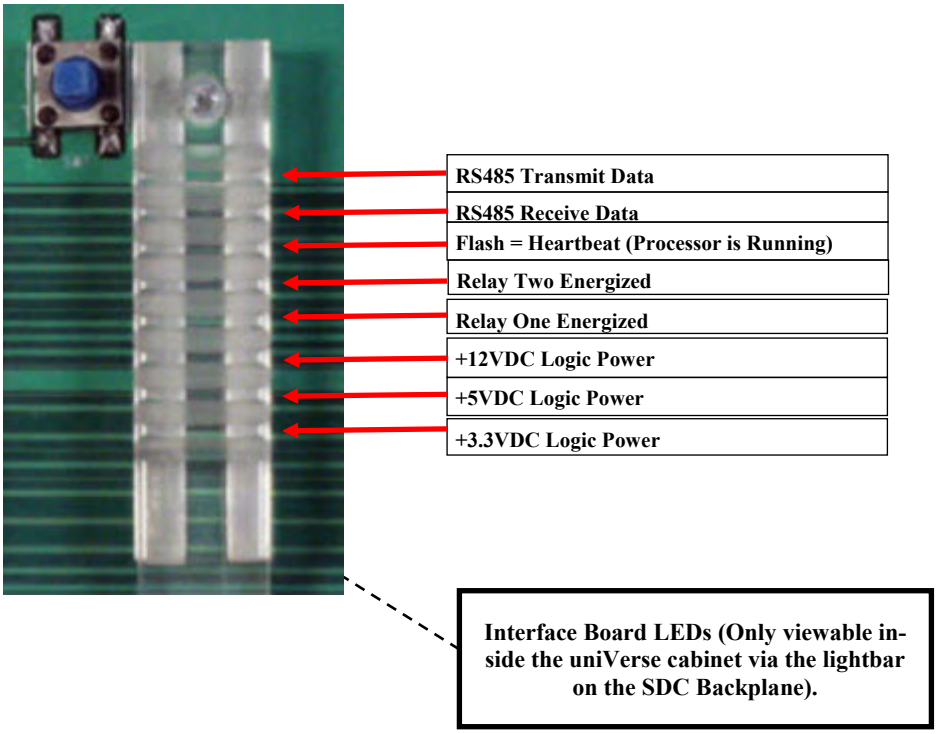


Figure 16 - Front of Cabinet Door



uniVerse® Assembly

The uniVerse® assembly as shown below is a combination of four PCBs (SDC Backplane PCB, Interface PCB, Main PCB and Ethernet PCB) mounted together (see Figure 17). The Pigtail is tied to the Earth ground PEM (see Figure 18). The SDC Backplane PCB contains the reset switch, a male and female connector and a light bar (see Figure 19).

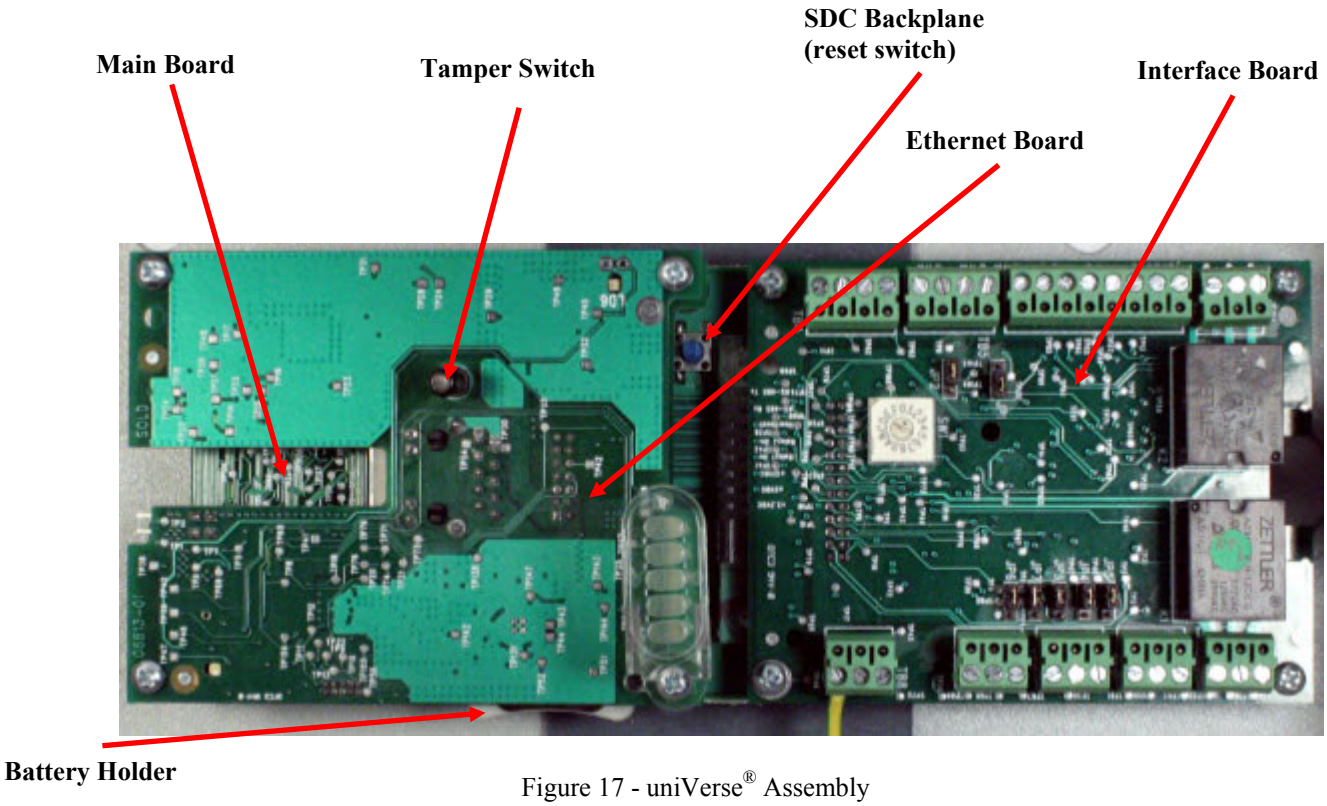


Figure 17 - uniVerse® Assembly

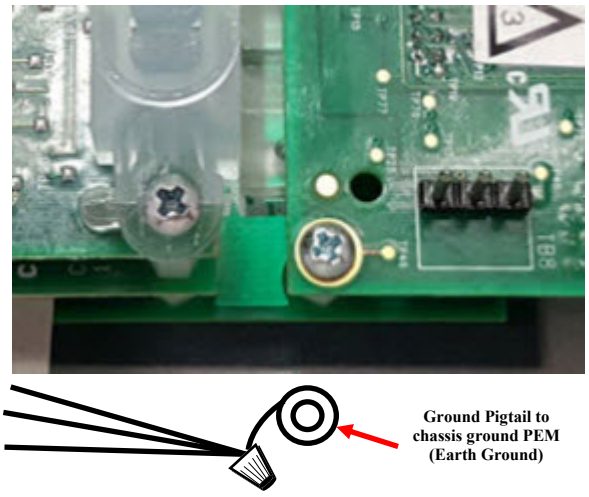


Figure 18- uniVerse® Ground Pigtail

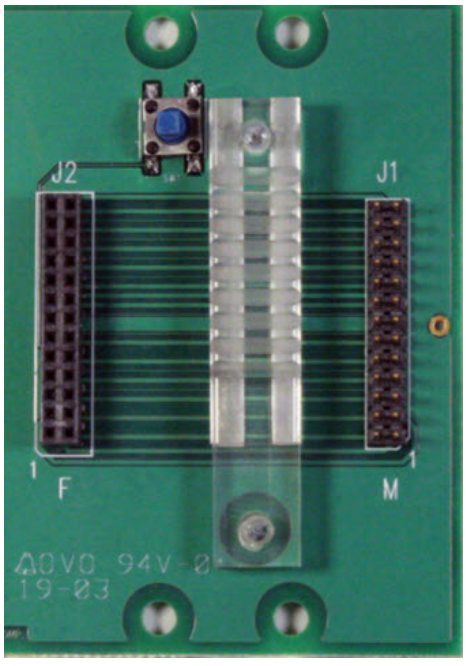


Figure 19 - SDC Backplane PCB

Table 17 - Interface Board LED Functions	
LED	**Function**
LD6	3.3VDC Logic Power
LD8	5VDC Logic Power
LD7	12VDC Logic Power
LD1	Relay One Energized
LD2	Relay Two Energized
LD5	Heartbeat
LD3	RS485 Receive Data
LD4	RS485 Transmit Data

The Interface Board LEDs can be viewed on the SDC Backplane LED lightpipe.

Refer to the label on the Interface board for the LED descriptions and locations.

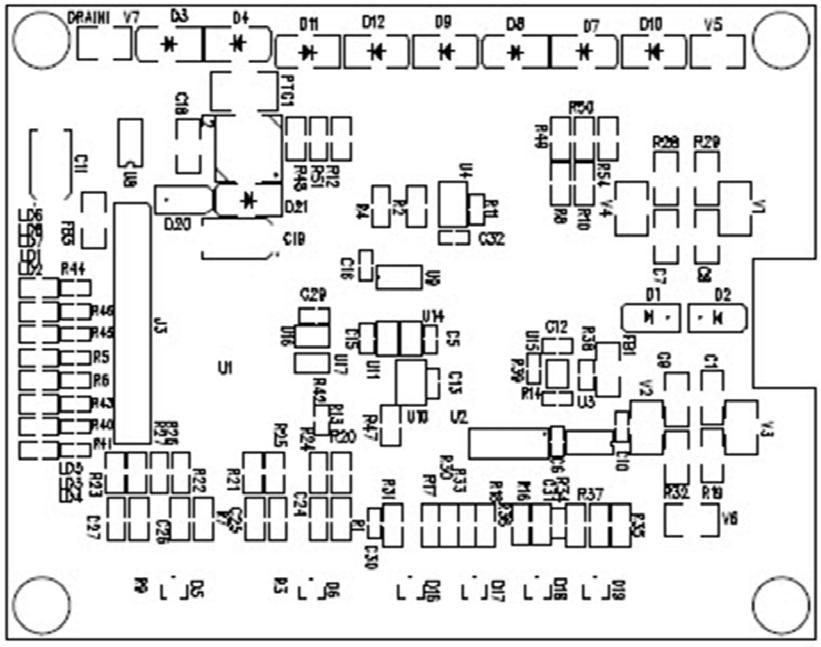


Figure 20 - Interface Board layout (Component Side)

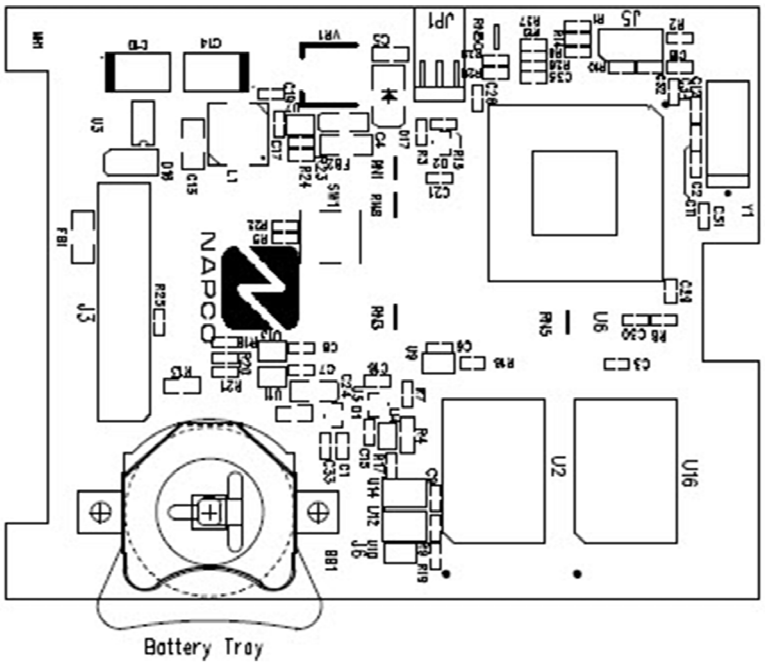


Figure 21 - Main Board layout (Component Side)

Memory Coin Cell Battery

Mémoire Pile Batterie

Insulator Installed: Data Lost (Factory Default)

Isolant Installé: données perdues (Défaut de fabrication)

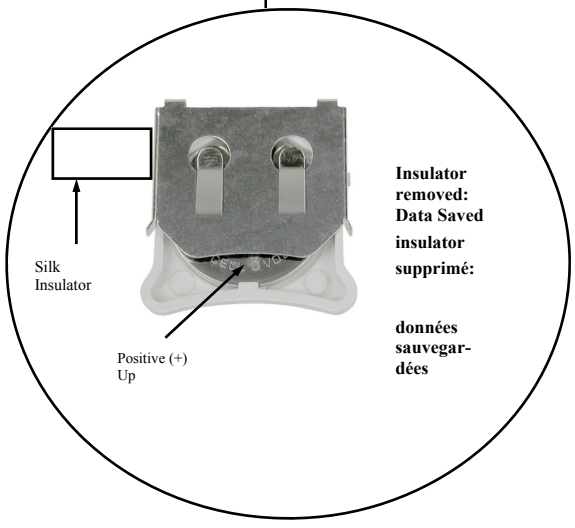


Figure 22 - Memory Coin Battery; Silk Insulator

Table 18 - Ethernet Board LED Light pipe Functions	
LED	**Function**
LD1	Fast Blink = Firmware is in bootloader Slow Blink = Application is running
LD2	Fast Blink = Firmware is in bootloader Solid On = DHCP is searching for IP Off = IP address obtained
LD3	On= Static IP Configured Off = Static IP Not Configured
LD5	10/100 Link Operating Speed Indication ON = 100Mbps OFF = 10Mbps
LD4	Fast Blink = Ethernet is communicating

J3 (Configure for DHCP Request)

The following procedure is used to clear the current IP address information and configure for DHCP (see table 19).

1. Install Jumper J3 (IN).
2. Cycle power to uniVerse®.
3. Remove Jumper J3.
4. The uniVerse® should obtain a new IP address from DHCP.

J5 (Reset Web Utility Username and Password)

The following procedure is used reset the Web utility Username and Password back to the default of "admin" and "admin".

1. Install Jumper J5 (IN).
2. Cycle power to uniVerse® .
3. Remove Jumper J5.
4. The Web Utility Username and Password is reset to "admin" and "admin".

Note: The J3 and J5 jumpers can be easily accessed through the knockout for the Ethernet cable.

Table 19 - Jumper Settings	
Jumper	**Function**
J3	Out = Default IN = Default to DHCP (2 pins closest to ethernet cable slot)
J5	OUT = Default IN = Reset Web Username and Password to "admin" and "admin"

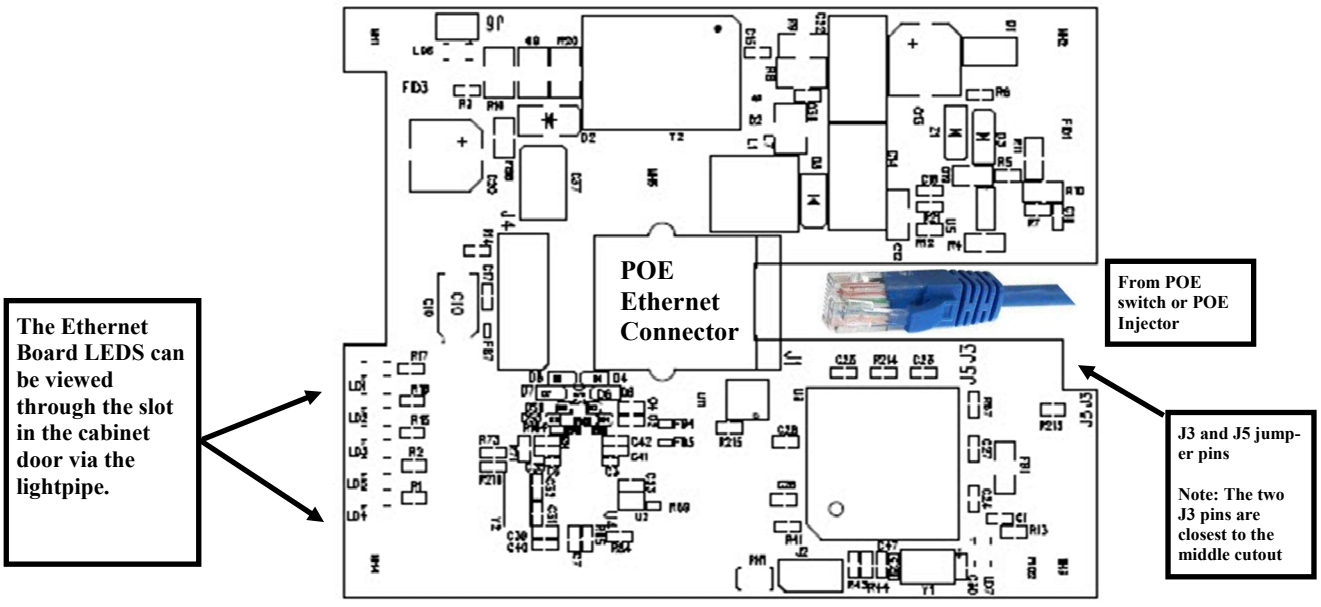


Figure 23 - Ethernet Board layout (Component Side)

OVERCURRENT PROTECTION

External Circuits

The uniVerse® provides 5 VDC and 12VDC accessory power for the badge readers and relays. Equipment requiring 5VDC may receive power from the uniVerse®. Self-resetting PTC devices are used to protect the uniVerse® from excess loads and to minimize risk of fire from external short-circuits. Remember a PTC will not self-reset until the fault is discovered and removed. In some instances, the circuit may need to be interrupted, conveniently done by removing the connector to the affected circuit.

The limits given below are for *each* output circuit, independently protected by a PTC device. This limits the effect of a single fault to the individual circuit.

Table 20 - Current Limits

Type of Output	Current Limit
12V Reader Power Output	700 mA (1 or 2 circuits)
5V Reader Power Output	350 mA (1 or 2 circuits)
LED Output (Sink to Ground)	100mA (1 or 2 Circuits)
Relay Contact Circuit	3.0A for Dry Contacts

Note: Reader and Accessory 12V power draw should not exceed 700 mA.

Transient Protection

Nearby lightning discharges induce high-voltage transients into the field wiring of electronic equipment. The uniVerse® Access Control Panel provides protection from high-voltage transients at all field wiring terminals. This includes all Alarm Inputs, all Reader Connections, all 5V and 12V Accessory power outputs, etc. The normal dielectric isolation of the relay circuits is supplemented by MOV snubbing devices that are active for the dry contact circuits. MOV snubbing devices improve the life of the relay contacts.

Dielectric Isolation

The Ethernet Port meets the IEEE 802.3 Specification Standard for 1500V RMS Dielectric Isolation. Dielectric Isolation is the appropriate technology because both ends of the cable are connected to grounded equipment, and would be subject to very high ground loop currents if the circuits were not isolated.

Note that UL294 states that the connected communication equipment (Ethernet Bridge, Host Computer, or Server) must use signal-line transient protection equipment compliant to UL497B, having a maximum marked rating of 50V. **Note:** Suitably qualified third-party equipment is available from several vendors.

The RS-485 Interface for the uniVerse® also incorporates transient protection, needed because of the long signal wiring supported. But because the connection between EIA/TIA-485 equipment is normally grounded, lightning discharges to ground will cause damaging high ground loop currents if the equipment is not isolated. For this reason, the uniVerse® RS-485 Interface adds high dielectric isolation to the high voltage transient protection.

POWER RATINGS / SPECIFICATIONS

Voltage Input	Current (Minimum)
12VDC	1.0 Amperes

Accessory Power Output	Current (Maximum)
12VDC	700mA
5VDC	350mA

Environmental and Regulatory	Quantity	Comments
Temperature Range Operating Temperature Range Storage		32 - 120°F (0 - 49°C) 32 - 149°F (0 - 65°C)
Relative Humidity		0% to 85% non-condensing
Compliance		UL 294 Access Control (USA) and S319 (Canada) CE Mark (EU)

Configurable from Host	Quantity	Comments
Time Schedules	255	Standard
Access Groups	1000	Standard
Link Programs	64	Standard
Facility Codes	10	Standard
Holidays	5 X 100	Standard
Transaction Buffer	1000	Standard, configurable and expandable

Cables	AWG	Type	Maximum Length
Alarm Inputs	22	Stranded, shielded, w/drain 2-conductor	500 ft. (153m)
Readers: Magnetic Stripe , Wiegand/Proximity and RS-485	22	Stranded, shielded, w/drain 5-conductor (Twisted pair is only used with RS-485)	500 ft. (153m)
Polling Line EIA/TIA-485 (Network)	22	Stranded, shielded, w/drain 2-twisted pair	500 ft. (153m)
Ethernet		Shielded or Unshielded Cat 5, Cat 5e, Cat 6 or Cat 6a cable	328 ft. (100m)
Relay Lock Circuits	18	Stranded, shielded, w/drain	500 ft. (153m)

12 VDC Circuit	AWG
Positive	18-22
Negative	18-22
Ground	18-22

POWER RATINGS / SPECIFICATIONS

Specifications	Quantity	Comments
CardAccess Compatibility		Full function on or off line
Card Capacity	200K 100K	4M Memory / 5-digit Cards 4M Memory / 19-digit Cards
Database RAM	4MB	4M bytes
Card Reader Capacity	One/Two	One or Two Card Readers
Card Reader and Accessory Power	12VDC 5VDC	12VDC, 700mA max 5VDC, 350mA max
Reader Types	One/Two	Wiegand / Proximity, Magnetic Stripe, Prox and PIN and RS-485 (only available on RDR 2 port).
Access Modes		Card Only, Unique PIN only, Card and PIN, Free Access
Reader LED Outputs	One/Two	Active low, one per Reader (50mA limit)
Keypad Capacity	One/Two	Wiegand Format ONLY
Number of Doors	One	One Door with one or two readers (entrance/exit)
Output Relays - Form C	Two	Two relays
Relay Circuit Protection	Two	All relays - Circuit protected
Supervised Alarm Inputs	Four	All inputs are dry contacts only.
Communication with Host and Downstream Panels		Ethernet 10/100Base-T (Host with Ethernet) Full Duplex EIA/TIA-485 (Host or Downstream Panels)
Supported Baud Rates		921.6Kbps, 230.4Kbps, 115.2Kbps, 57.6Kbps
Addressing		One 16 Position Rotary Switch—Positions 0 to F (Default = address 1)
Downloadable Firmware		With fast Server - Loaded to FLASH Memory in 20 seconds or less.
Diagnostic LEDs		Ethernet Board -(5 LEDs) - Viewable through cabinet door Interface Board— (8 LEDs) Power Indicators—(1 LEDs) - Viewable through cabinet door
Memory Battery Backup		1 month nominal at 25°C (field-replaceable by qualified service personnel only)
Backup Power		External Backup Power of 4 hours optional (USA) External Backup Power of 30 minutes required (Canada)
Dimensions (Height x Width x Depth)		**Cabinet:** Height: 5 1/2" (139.7 mm) Width: 10 1/4" (260.35 mm) Depth: 2 1/4" (57.15mm)
Weight		2.3 pounds (1.043Kg)
Tamper Switch	One	Input # 81 (Must configure in software for tamper switch monitoring)

Sub-Assembly	Firmware	Comments
Main Processor	4.xx.xx	

MAINTENANCE

Coin Cell Activation

The database on the Main Board is backed by a Rayovac "CR2032" coin cell installed into a battery holder. This battery holder can be found on the Main PCB.

The uniVerse® is shipped with a silk insulator placed under the battery holder to prevent drain from the cell during warehousing and storage. Dispose of all batteries in accordance with all local environmental and safety requirements. Do not incinerate, etc.

Coin Cell Replacement

The uniVerse® is normally powered on a 24/7 schedule. If the power is to be removed from the unit for more than a few days, **please re-install the silk insulator under the battery holder** to de-activate the coin cell power (a clean paper insulator can be used, if necessary).

If power was removed from an uniVerse® unit for more than four weeks without the cell being de-activated by the silk insulator, please replace the memory coin cell, as follows:

1. Remove the uniVerse® unit and locate the memory coin cell on the main PC Board.
2. Remove the old cell by sliding out the battery holder and pressing backward and downward.
3. Replace the lithium cell only with a Rayovac "CR2032" on the Main PCB. The use of other batteries may present a risk of fire or explosion.
4. When installing the new cell, use clean plastic forceps, or handle the cell by its edge to avoid contaminating the conductive surfaces.
5. The expected life of the lithium cell is ten years. Changing the battery every five years is recommended.

Note: The coin cells are drained only when the main power is lost. These cells ensure that the correct time is set and the database is held for instant availability when power is restored. The correct time and the database will normally be loaded from the Host Server in a small fraction of a minute.

Pièce de rechange

L'uniVerse® est normalement alimenté 24h / 24 et 7j / 7. Si l'alimentation doit être coupée de l'unité pendant plus de quelques jours, veuillez réinstaller l'isolant en soie sous le support de la batterie pour désactiver l'alimentation de la pile bouton (un isolant en papier propre peut être utilisé, si nécessaire).

Si l'alimentation d'uniVerse® a été coupée pendant plus de quatre semaines sans que la cellule soit désactivée par l'isolant en soie, veuillez remplacer la pile bouton à mémoire de la manière suivante:

1. Retirez l'unité Universe® et de localiser la pile bouton de mémoire sur la carte principale PC (carte moyenne).
2. Retirez l'ancienne pile en faisant glisser le support de pile et en appuyant vers l'arrière et vers le bas.
3. Remplacez la pile au lithium uniquement avec un "CR2032" Rayovac sur le circuit imprimé principal. L'utilisation d'autres batteries peut présenter un risque d'incendie ou d'explosion.
4. Lors de l'installation de la nouvelle cellule, utilisez une pince en plastique propres, ou manipuler la cellule par son bord pour éviter de contaminer les surfaces conductrices.
5. La durée de vie prévue de la pile au lithium est de dix ans. Remplacement de la batterie tous les cinq ans est recommandée.

Remarque: Les piles boutons sont drainés uniquement lorsque l'alimentation principale est perdue. Ces cellules veiller à ce que l'heure correcte est réglée et la base de données a lieu pour la disponibilité instantanée lorsque l'alimentation est rétablie. Le temps correct et la base de données seront normalement chargées à partir du serveur hôte dans une petite fraction de minute.

Münzzellersatz

Das uniVerse® wird normalerweise rund um die Uhr betrieben. Wenn das Gerät länger als ein paar Tage von der Stromversorgung getrennt werden soll, installieren Sie den Seidenisolator erneut unter dem Batteriehalter, um die Stromversorgung der Knopfzelle zu deaktivieren (falls erforderlich, kann ein sauberer Papierisolator verwendet werden).

Wenn die Stromversorgung eines uniVerse®-Geräts für mehr als vier Wochen unterbrochen wurde, ohne dass die Zelle durch den Seidenisolator deaktiviert wurde, tauschen Sie die Speichermünzzelle wie folgt aus:

1. Entfernen Sie das uniVerse®-Gerät und suchen Sie die Speicherzelle auf der Hauptplatine (mittlere Karte).

2. Entfernen Sie die alte Zelle, indem Sie nach hinten und unten drücken.

3. Die Lithiumzelle nur mit einem Rayovac "CR2032" auf der Hauptplatine austauschen. Bei Verwendung anderer Batterien besteht Brand - oder Explosionsgefahr.

4. Wenn Sie die neue Zelle installieren, verwenden Sie saubere Kunststoffzangen oder behandeln die Zelle an ihrer Kante, um eine Kontamination der leitfähigen Oberflächen zu vermeiden.

5. Die Lebensdauer der Lithiumzelle beträgt zehn Jahre. Das Wechseln der Batterie alle fünf Jahre wird empfohlen.

Hinweis: Die Münzzellen werden nur entleert, wenn die Hauptstromversorgung unterbrochen wird. Diese Zellen stellen sicher, dass die korrekte Zeit eingestellt ist und die Datenbank für die sofortige Verfügbarkeit gespeichert wird, wenn die Stromversorgung wiederhergestellt wird. Die korrekte Zeit und die Datenbank werden normalerweise in einem Bruchteil einer Minute vom Host-Server geladen.

MAINTENANCE (Continued)

Clear Memory and Force Data Download to Panel

The following procedure is seldom necessary, but the Continental Technical Support Staff may recommend the following procedure as part of troubleshooting:

1. Note current setting of Address switch.
2. Set Address switch to "0".
3. Press and hold the reset (**RST**) button located on the backplane for at least two seconds.
4. Set Address switch to its original setting.

Firmware erases all configuration data from memory. Then requests a Data Download from the PC.

Force Firmware Download to Panel

The following procedure is seldom necessary, but the Continental Technical Support Staff may recommend the following procedure as part of troubleshooting:

1. Note current setting of Address switch.
2. Set Address switch to "F".
3. Press and hold the reset (**RST**) button located on the backplane for at least two seconds.
4. Set Address switch to its original setting.

Firmware goes to bootloader and requests a firmware download from the PC.

WARRANTY / TERMS & CONDITIONS
Standard Terms of Sale

Ordering

Orders for Continental products may be placed by calling Continental's order department or by issuing a purchase order specifying the quantity of Products, the desired delivery date, shipping method, and the location to which product should be shipped. If an order is placed by telephone, it must be confirmed in writing by fax or mail.

If the customer requests a guaranteed ship date or expedited shipping, Continental reserves the right to add to the price, with the customer's approval, expenses which increase the cost of production and delivery, i.e. freight charges, overtime expenses, etc. Continental reserves the right to change any price on this price list and all prices are subject to factory reconfirmation at the time of placing an order.

Sales Assistance

Continental will furnish to customers, reasonable quantities of product-related catalogs and other sales and promotional literature.

Continental will provide customer training, both technical and sales at Continentals facilities in New York. Contact the factory for costs and requirements.

Payment Terms

- Sales terms are Cash on Delivery (COD) unless prior credit arrangements are established.
- If credit arrangements are established with Continental, terms of sale are net 10 days.
- Interest charges shall accrue on all past due accounts at a rate of 1.5% per month (18% APR).
- Continental reserves the right to place a customer on a C.O.D. status in the event that customer's account becomes delinquent or Continental becomes unsure about customer's financial capabilities.
- Continental will charge a Service Fee of $50.00 for any returned check.
- If customer believes an invoice to be in error, customer shall notify Continental of the error within thirty (30) days.
- Continental reserves a security interest in all products sold hereunder, together with all proceeds thereof to secure the performance of the customer's obligations hereunder.
- All orders unless otherwise requested are shipped F.O.B. Amityville, NY.

Cancelled Orders

Special or custom order items that cannot be cancelled with our suppliers are subject to a 100% cancellation charge.

No unauthorized, returned merchandise will be accepted for credit.

Orders returned or canceled are subject to a 25% restocking charge.

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No products will be accepted for return to Continental without prior written authorization (RMA). Unauthorized returns will not be accepted from the carrier by the receiving department. The customer may request a return material authorization (RMA), whether for credit or repair of the product. Continental will either issue an RMA or provide the customer with a written explanation for not issuing the RMA. Except for warranty claims, no returns will be accepted more than 60 days after shipment from Continental. Orders that are accepted for return are subject to a 25% restocking charge. No product will be accepted for return which has been special ordered or custom in nature.

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Return Material Authorization (RMA) numbers are required to be issued by Continental prior to returning any Product for service, repair, credit or exchange. Continental warrants that its Products shall be free from defects in materials and workmanship for a period of one year from date of shipment of the product to

purchaser. The warranty on 3rd party equipment such as terminals, printers, and communications devices shall be 1 year from date of shipment. Remediation of this warranty shall be limited to the repair or replacement of those products which are defective or become defective under normal use. Continental's warranty shall not extend to any product which is found after examination to be defective as a result of misuse, improper storage, incorrect installation, operation or maintenance, alteration, modification or accident.

There are no other warranties which extend beyond this provision. This warranty is in lieu of all other warranties whether express, implied or statutory, including implied warranties of merchantability or fitness for any particular purpose. No representation or warranty of the distributor shall extend the liability or responsibility of the manufacturer beyond the terms of this provision. In no event shall Continental be liable for any costs, loss of profits, loss of use, incidental, consequential or special damages to any person resulting from the use of Continental's products.

The above limited warranty is the only warranty provided by Continental. Continental makes no other warranties or guarantees, whether expressed or implied, including, but not limited to, warranties and/or guarantees of merchantability or fitness for a particular purpose. In no event shall Continental be liable for any indirect, consequential or incidental damages, including those to person and those for lost wages, or other economic loss.

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Continental's sole Liability and the customer's exclusive remedy for damages, shall not exceed the cost of correcting the defect and in no event shall such liability be greater than the purchase price paid by the customer for the defective equipment or software. Under no Circumstances will Continental be liable for direct, indirect or consequential damages of any kind.

General Notices:

In order to assure that Continental's customers receive the most accurate and reliable information possible, Continental at times monitors telephone calls

Information and pricing contained within this document are subject to change without notice.

Continental does not recommend that these products be used as the primary means of monitoring, warning or egress. Primary warning or monitoring systems should always meet local fire and safety code requirements.

This transaction shall be governed and construed in accordance with the laws of the State of New York.

Continental specifically rejects any terms or conditions stated by the customer or contained within purchase documents or correspondence from the customer which are in addition to, conflict with or limit, terms or conditions set forth herein. The customer's execution or other acceptance of this proposal or its acceptance of delivery of all or part of the goods to be delivered hereunder shall constitute customer's acceptance of the terms and conditions herein and shall be deemed to exclude any additional, conflicting or limiting terms stated by customer or contained in customer's purchase documents or correspondence.

Continental Access

A Napco Security Group Company

A NAPCO SECURITY GROUP COMPANY

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