

EZ-ACC

Technical Installation **Guide**



HARTMANN CONTROLS Corp.

Last Updated: Feb 2013

Technical Specifications

DC Input.....12 DC 40VA through certified CLASS 2 CSA/UL Transformer.

Battery Input.....1 battery 12 V, 7Ah, supervised, provides up to 17 hours of operation

Enclosure....21.6cm x 26.0cm x 8.30cm (8.5" x 10.25" x 3.25")

Weight....

Operating Temperature.....From 0 °C to +50° C.

Reader Technology Supported....Wiegand, proximity, biometric, bar code, magnetic, integrated keypad and others

Panel to Panel wiring....1200 meters (4,000 feet) - (Belden 8723)

Panel to Reader Wiring...152 meter (500 feet) – (6 conductor 22 AWG overall shield)

Auxiliary Power....12VDC @ 200mA max

Reader Power....12VDC and 5VDC @ 250mA max each

Inputs....Dry contact closures N/O and N/C

Communications....R422 to USB, TCPIP, 19,200 baud

Network autonomy....Distributed data and processing

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Software Installation

Minimum System Requirements:

- PC Pentium II 333 MHz
 - 512 MB RAM.
 - VGA monitor, 1280 x 800 resolution, 32-bit True Color using small fonts
 - 2-button mouse or tablet.
 - 5 GB hard disk space depending upon system configuration.
- External media source for back up purposes (CD/DVD/Flash Drive/Network Drive)

Insert the DVD into your DVD drive. DVD is equipped with autoplay so it should start on its own. When the main menu comes up choose “EZ-ACC Software Installations”. Once the software installation is complete, you will be returned to the main “install” screen. Install the “USB-101 Driver (2K/XP/Vista/Win7&8)”. Once this is complete, you can exit this screen.



For more information on programming your system, refer to the software guide (on DVD.).

EZ-ACC Network System Specifications

- Supports 1000 cardholders
- Unlimited Site Codes
- Maximum of 16 doors.
- 255 access privileges
- 200 time zones
- 30 Holidays
- Windows 98/XP/Vista/Win7/Win8 (32-bit & 64-bit) support
- Extremely simple installation and configuration
- Full reporting support
- Fully distributed system (field panels contain all information to operate on their own with no connection to P.C.)
- Multiple TCP/IP and USB communication channels

Fire Alarm Connections

NOTE: Access control systems' should not threaten life safety! Please ensure that system installation complies with local and state fire and building codes.

A contact from fire alarm panel must be used to break power to door locks in case of fire or emergency.

Power Requirements

Each Door Controller requires its own transformer. The transformer requirements are a 12volt DC transformer Certified CLASS 2 CSA/UL approved. The recommended stand by battery is 12VDC 7AH. If the AC supply is removed, the backup 12 volt gel type of 7 Amp/hour battery (if fully charged) will support normal operation for up to 17 hours. An internal battery verification will cut the battery power if the battery voltage level falls below 9.5 volt. **Note: The control unit will not start on battery alone, AC power is required.**

Each board is designed to supply power to the Readers, the REX's and to charge the backup battery only. Locks must be powered from a separate power supply. Each board is also designed with an auto reset Poly fuse. If fuse is tripped, disconnect all power for 30 seconds allowing fuse to cool off, and then reapply the power.

Warning: **These poly fuses in no way should be replaced or bypassed to prevent electrical injury or fire.** Each board has power LED indicators to show both 5V and 12VDC presence.

Cable Requirements

Interface	Maximum Distance	Cable Type	Code
USB / TCPIP Communication Module to Panels	4000' (1230m) (6' min.)	2-pair twisted, fully shielded 22GA..	Belden 8723 or equivalent*
Readers to Panel	500' (152m)	6 Conductor stranded, 22 GA color-coded insulated, 100% overall shielded. (Not Twisted)	Belden 9942 or equivalent
Door Strikes / Magnetic Locks to Panel	500' (152m)	2 Conductor 18GA.**	Belden 9740 or equivalent**
Request to Exit Devices / Door Contacts	500' (152m)	2 Conductor 22GA.**	Belden 8740 or equivalent**

** - Unless otherwise specified by manufacturer

* - Use of Cat5/5e/6 cable may be considered an optional replacement cable however there have been reported instances of loss of communication and panel restarts in environments with higher than normal EMF

Internal wiring must be routed in a manner that prevents:

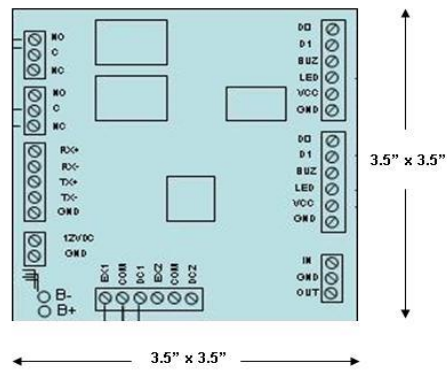
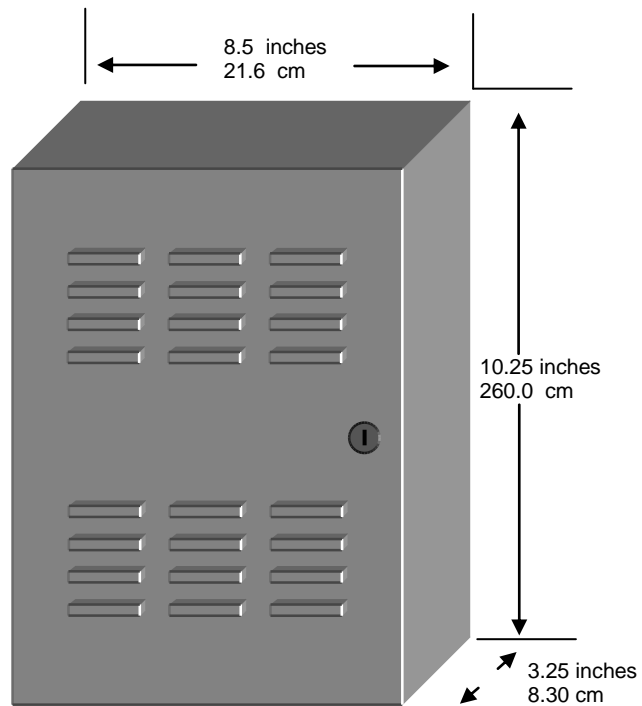
- i) Excessive strain on wire and on terminal connections**
- ii) Loosening of terminal connections**
- iii) Damage to conductor insulation**

Panel Installation Requirements

Qualified and licensed personnel are required for the installation and wiring of the access control system or the warranty will be void.

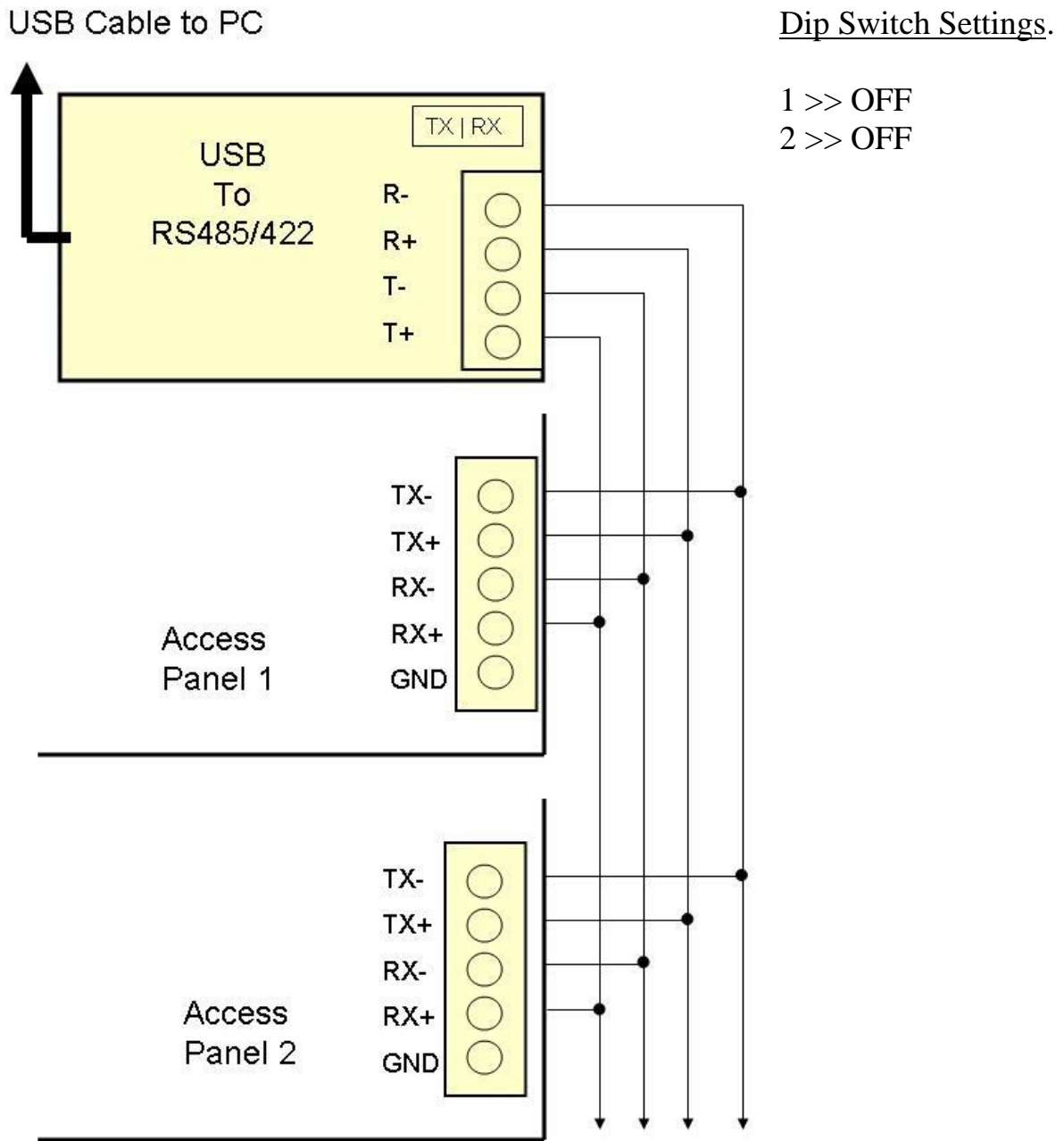
The controller cabinet has been designed to be mounted on a wall without any additional enclosures. The cabinet is large enough to accommodate the battery backup and the necessary wiring connections for most applications. EMT (electrical metallic tubing) conduit knockouts are provided in 2.2 cm (7/8") on the cabinet. The cabinet should be mounted indoors, in a secure location providing normal temperature and humidity levels, leaving 23 cm (8") clear space around all sides and a minimum of 33 cm (13") clear space in front of the cabinet. The location should be easily accessible for servicing the equipment. Controllers must be located at a minimum distance of 2 meters (6 feet) from any high voltage equipment or wiring and from electrical equipment susceptible of generating electrical interference, at a minimum distance of 1 meter (3 feet) from telephone equipment or lines, and at a minimum of 8 meters (25 feet) from any transmitting equipment.

Metal Can and Board Dimensions



Drawing 1.0

EZ-ACC Bus Connections Using HC-USB-422 Converter



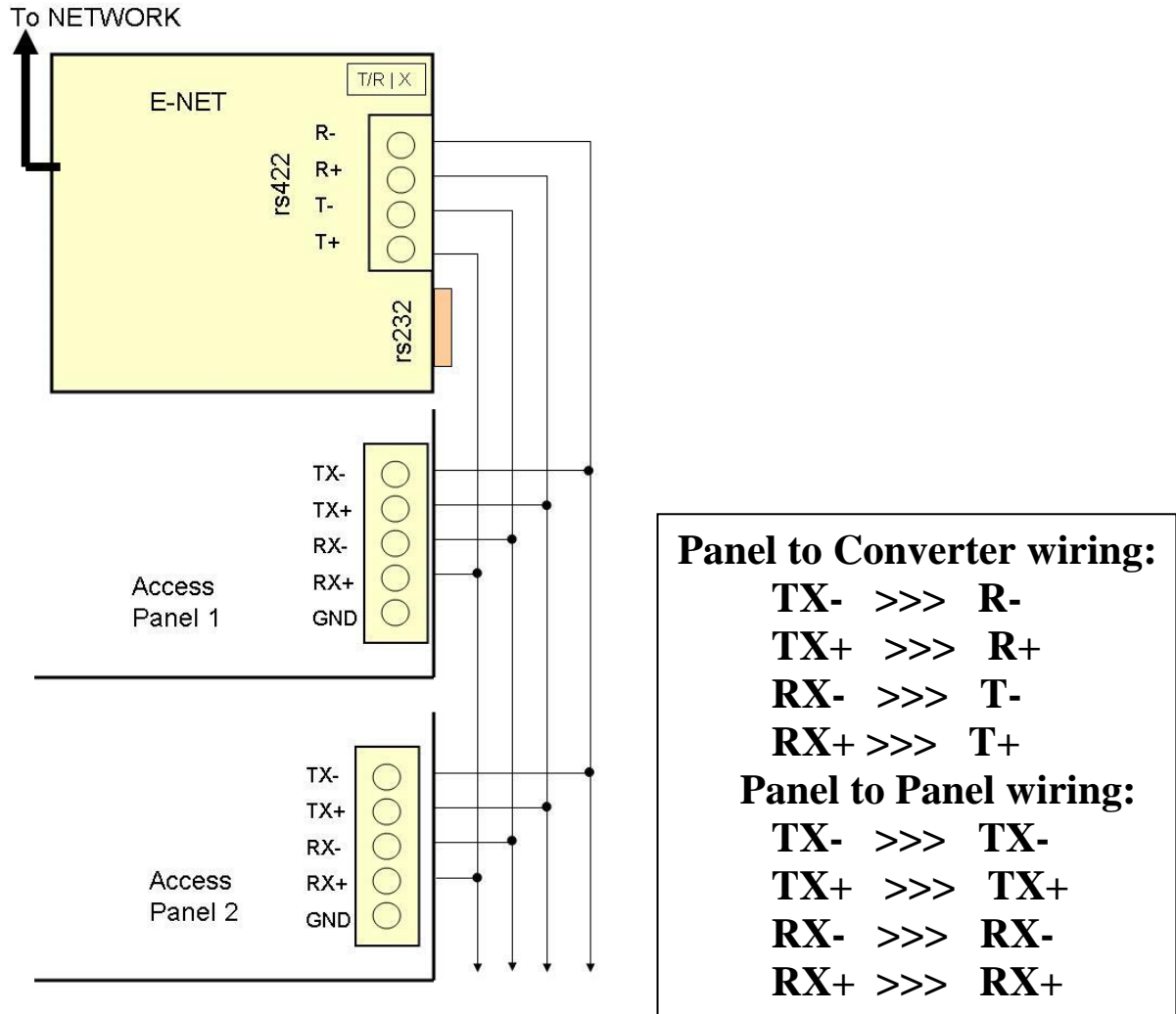
TO INSTALL USB DRIVER:

USB Driver is on DVD or via web download. Simply install the driver and plug into an available port. Once installed go to windows device manager and record what com port the device has been installed as. Then start EZ-ACC and set the communication channel to match that com port.

**RX-/RX+ SAME TWISTED PAIR
TX-/TX+ SAME TWISTED PAIR**

**For extremely noisy environments
such as factories use shielded
twisted pair.**

EZ-ACC Bus Connections Using HC-TCPIP Converter



TCP/IP Configuration using eNet (P-232-X)

Direct connect your setup PC using a non-crossover network cable between eNet and PC and plug in power.

- Open your browser, in the URL field, type the IP address of the converter directly and press ENTER (default IP Address is 192.168.0.100, default Subnet mask is 255.255.255.0).
 - The “Parameter Setting” page will be shown (see screenshot below)
For communication with Hartmann panels you will need to change the following settings;
1. Local Port, Socket Mode of Serial I/O Port 2 - Enter an unblocked port # to whatever port you will be programming the channel to on EZ-ACC Software. This is the Port the EZ-ACC software will communicate to the panels on. (port 3001 in this example, TCP Server)
 2. Baudrate of Serial I/O Port 2 - Set to 19200,
 3. Parity is N, Data Bit is 8, Stop Bit is 1
 4. Interface of Serial I/O Port 2 - must be set to RS422
 5. Force Off-line Time - Set to 1
 6. Auto Reset - set to 1

Save these changes and verify accepted then log back in to change IP address, Subnet mask and Gateway to values for client network if applicable.

NOTE: If the settings don't take effect after you update, please repeat the above steps, updating after each step!

The image shows two screenshots from a web interface. The top screenshot is titled "Serial To Ethernet Converter" and "Parameter setting". It contains a table of configuration options:

IP address	192.168.0.100
Subnet mask	255.255.255.0
Gateway IP	0.0.0.0
Link Modes	Auto detect
DHCP Client	Disable
Auto Reset (No data input)	1 (1 ~ 255 Minute)
Device Name	Serial_TCPIP
Login password	

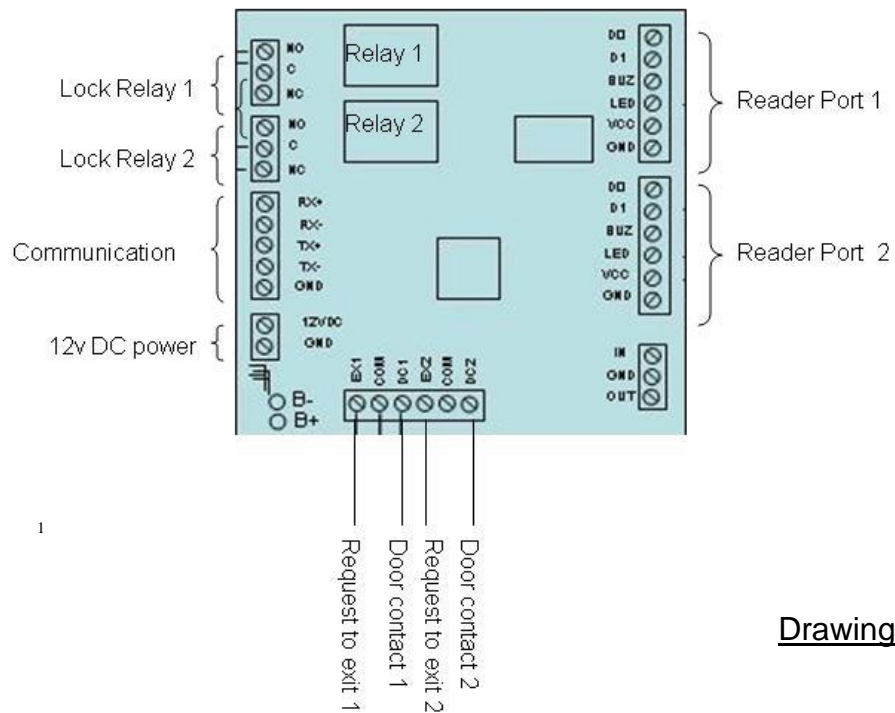
The bottom screenshot is titled "Serial I/O Port 2" and shows configuration options for a specific port:

Local port, Socket mode	3001	TCP Server	
Remote IP, Port (TCP Client/UDP)	0.0.0.0	0	
Interface	RS422		
Baudrate	19200		
Parity, Data bit, Stop bit	None	8	1
Force off-line time (No data input)	1	(1 ~ 255 Minute)	
Packet collect time	Tx 0	Rx 0	(mSec)

NOTE: if you reset the eNet device, the IP address will default to 192.168.0.100, subnet (255.255.255.0)

EZ-ACC 2 Door Controller Specifications

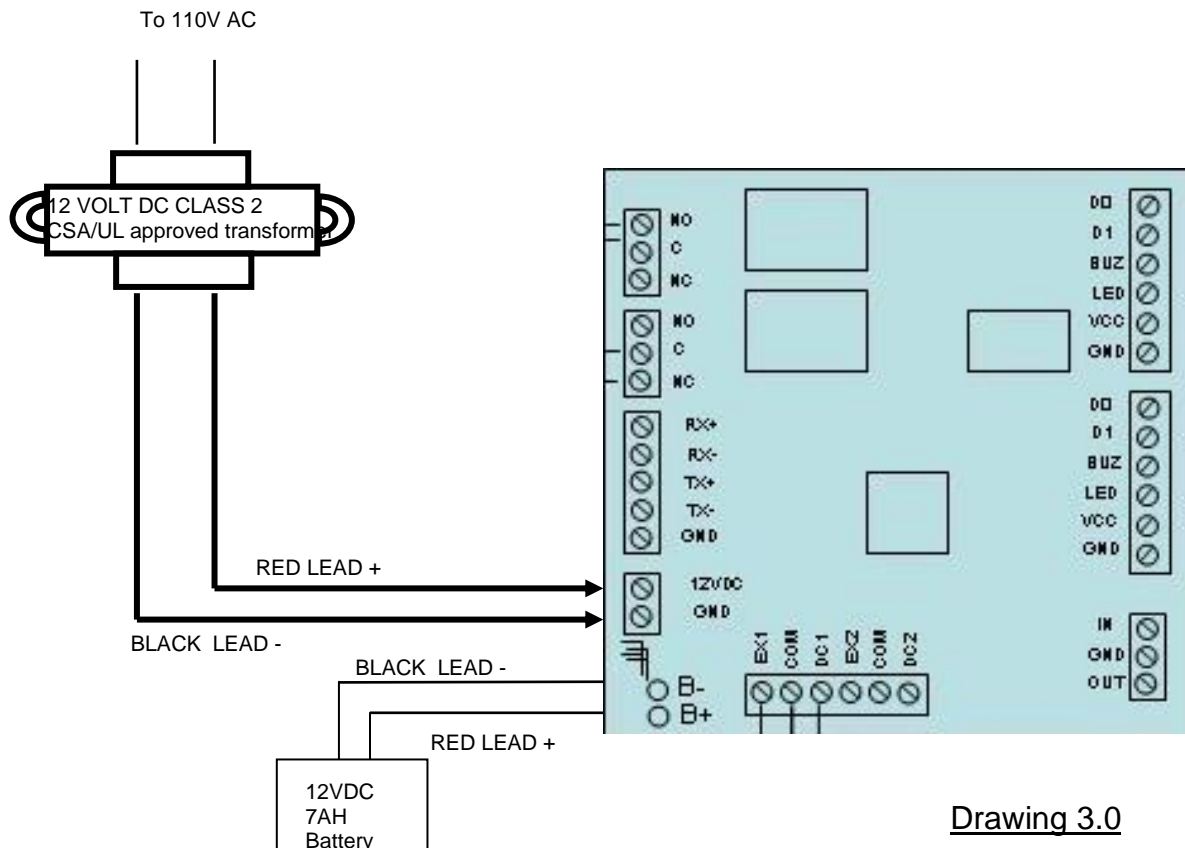
- Supports 2 card readers (12VDC & 5VDC max 250mA each)
- Power Requirements: 12 volt DC transformer Certified CLASS 2 CSA/UL.
- Battery back up Circuitry, Recommended Stand By battery 12VDC 7.0Ah
- Supports Hartmann high security 40-bit Wiegand and most other formats
- 1000 users on board storage
- 2000 event on board storage
- 2 lock/control Relays, dedicated 1 for each reader port.
- 2 Exit button and 2 Door contact inputs
- Relays are Form C contact rated at 10A 125VAC (max 6A Load)
- On board LED's indicate communications, Active Relays, AC, as well as the state of the inputs.
- RS-485 communication at 19,200 bps, 8 Data bits, No Parity, 1 Stop Bit, No Flow Control



Drawing 2.0

Wiring Power for all Controllers

A 12 volt DC transformer Certified CLASS 2 CSA/UL approved transformer is required to power the panel. The connection to the mains supply must be made as per the local authority's rules and regulations. The power supply must be **permanently connected, fail safe, with double or reinforced insulation between primary and secondary circuits**. In EU countries it must meet the applicable requirements of the Low Voltage Directive and protected as per the EN60950 Standard Requirements. In all other countries, it must be of an approved type acceptable to the local authorities. The transformer must be located within 30 feet of the panel and can only power one panel. A Ground must be connected to a cold water pipe or a good earth ground.



Drawing 3.0

CAUTION: The EZ-ACC panel is polarity sensitive, make sure positive and negative wires are connected correctly

If the DC supply is removed, the backup 12 volt gel type of 7 Amp/hour Battery (if fully charged) will support normal operation for up to 17 hours.

Battery output is fully fused to protect against short circuit.

It is highly recommended to test the controllers by performing the following tests:

1) Bi/annual test for battery:

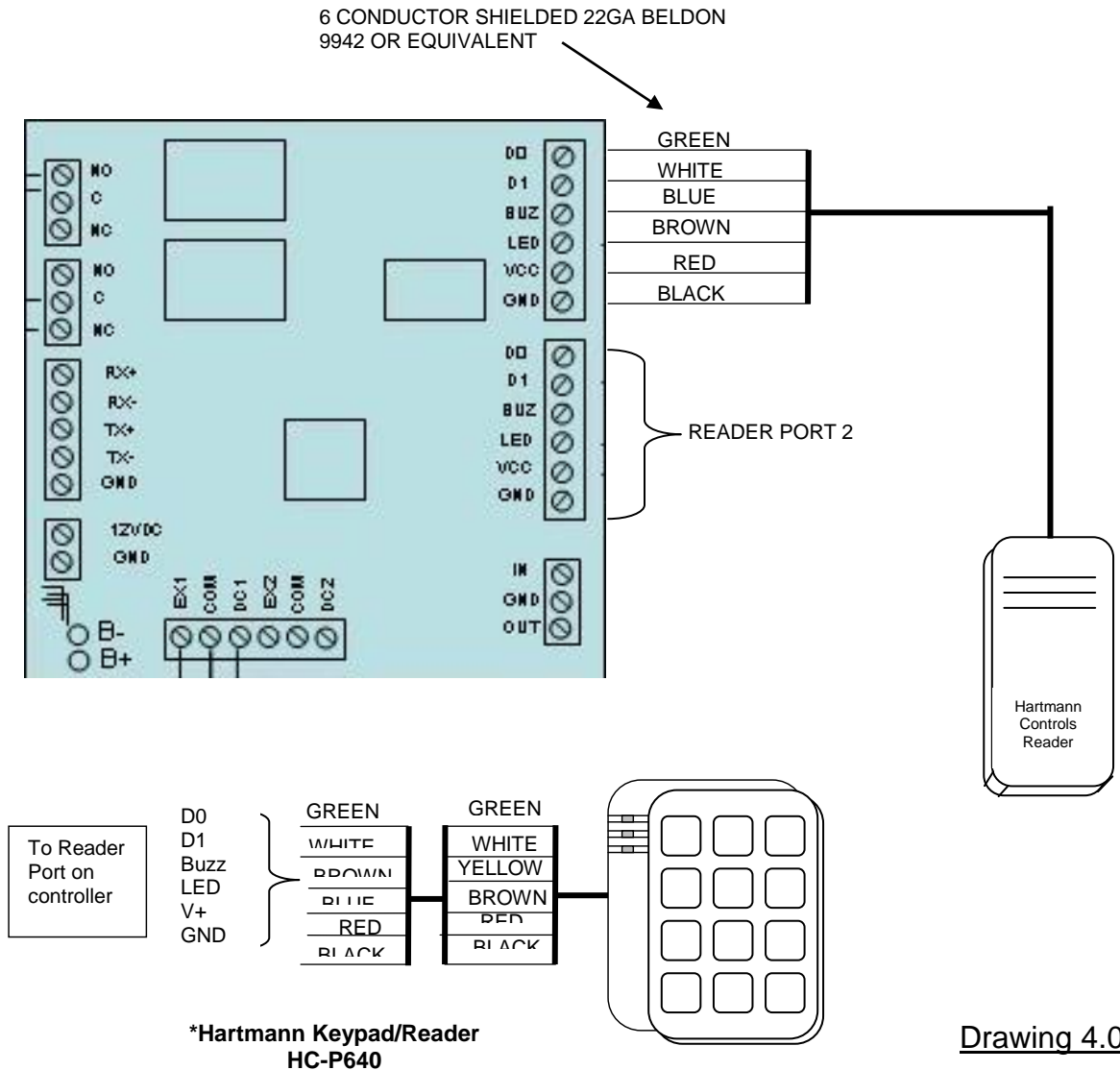
Remove DC power from the controller and connect the battery to the controller for one hour. This test will ensure that if a power failure occurs, the battery will be able to support normal operations. This test should be performed twice a year. Once the test has been performed successfully, reconnect DC power to the controller.

Wiring Reader

Standard UL listed Wiegand type format readers (26, 32, 34, 36, 40 Bit) are supported by controllers. They are connected as shown below.

The panel provides 12volt DC output for the reader's maximum of 250mA. The drain wire of the shielded cable must be connected to a good ground at the panel and **NOT** at the reader. The maximum reader distance from the panel is 500 feet.

Each reader is connected identically, as shown below.



Drawing 4.0



It is very important to ensure proper grounding configuration of the reader is utilized. Attach the shield/drain wire of the reader line and connect it directly to the GND pin for that particular reader port. Do not attach the shield/drain wire ground at the reader end also as this would create a redundant and ineffective grounding loop. It is not recommended to attach any ground or shield wires to the Hartmann panel enclosure as the preferred choice is to leave our system floating. However, in extremely noisy (electrical noise) environments, you can join the reader shield/drain leads together and run a separate wire to a good earth ground outside of the panel (ie: cold water pipe). In this case, leave the panel floating.

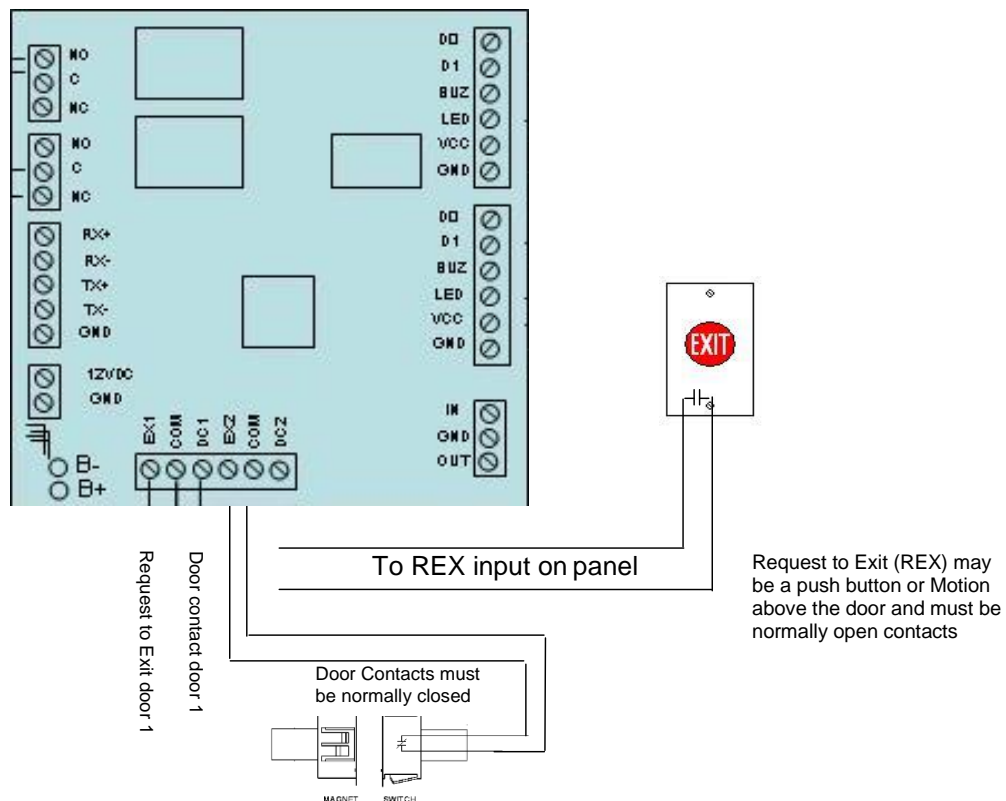
Why Install Door Contacts and Request to Exit Devices?

Access control systems are designed to “control access” into areas that are a security concern. In order to do this effectively you must have the ability not only to control when or if an individual is allowed through a door, but whether or not a person is propping the door open after the fact, forcing a door open or if it is someone leaving from the inside legitimately. In order to do this each door requires a door contact to monitor the status of the door and request to exit device to determine when someone is leaving the area legally. With Hartmann Controls you also have the added feature of not only getting an access granted when an individual uses their card, but also the system tells you whether they went through the door or not. This also holds true for the use of the request to exit device as well.

Wiring Exit Buttons and Door Contacts to The System

Exit button or REX motion detector must be a normally open dry contact.

Each exit device is connected exactly as shown below. Exit devices will unlock the door for the programmed amount of time, and will reset the held open timer. Door contact must be a normally closed dry contact. Each door contact and Request to exit device is connected exactly as shown below.

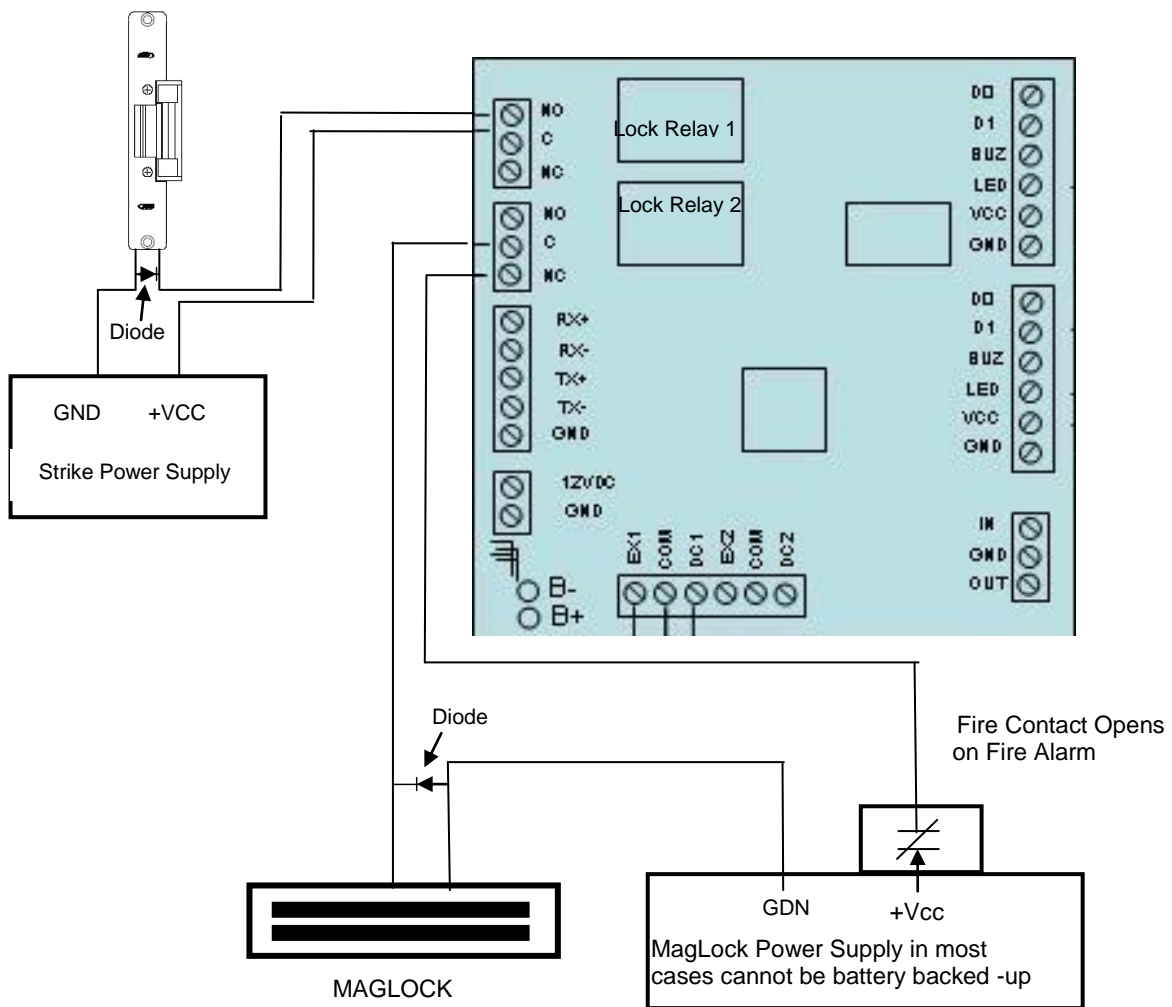


Drawing 5.0

Wiring Door Locks

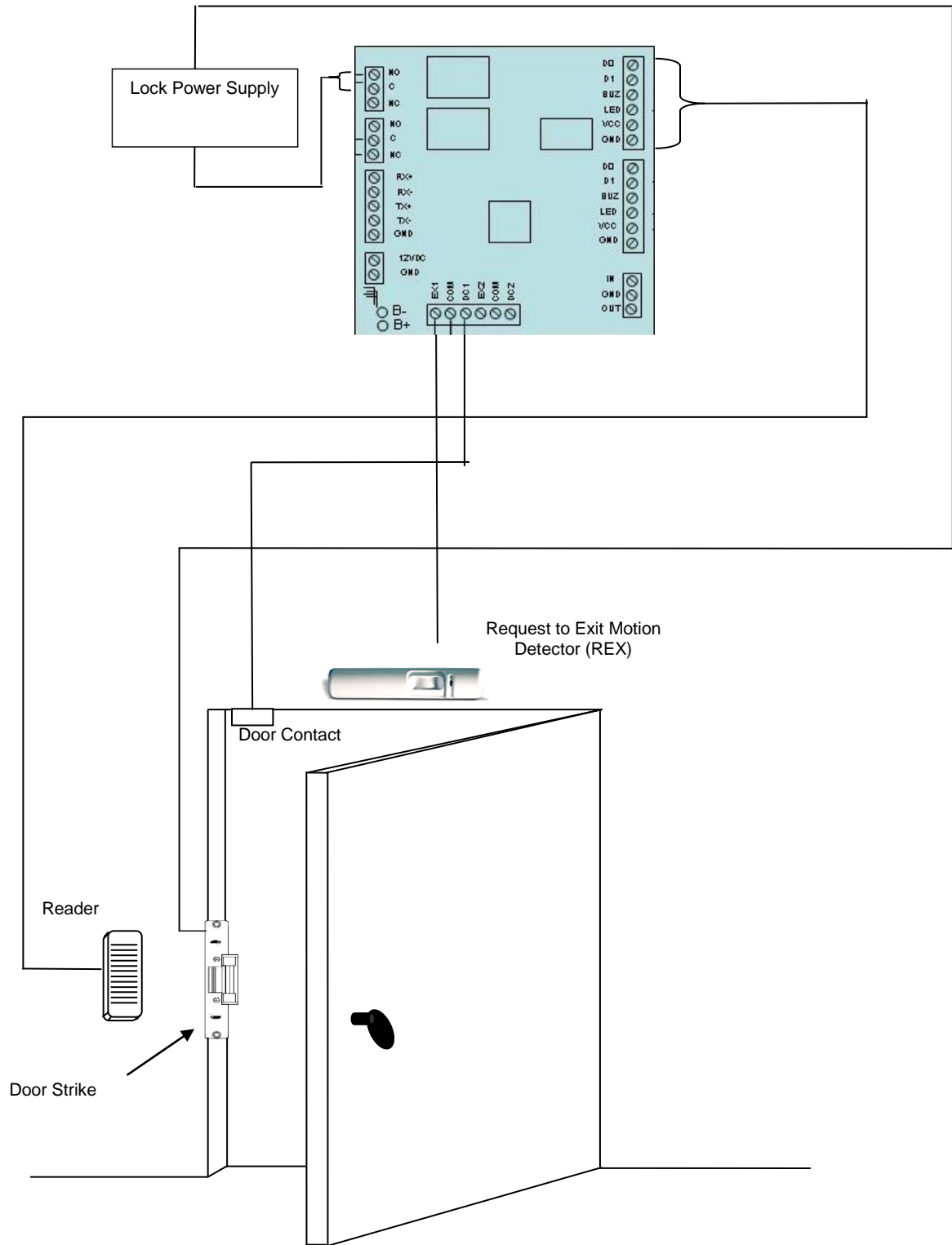
Locks must be powered by a separate external power supply. The relays on board are a form “C” type relay with a common, normally closed and normally open contact, giving you the ability to use “Fail Safe” or “Fail Secure” type locks. The LED indicators beside each relay turn on when that relay is energized. **It is imperative that you research and adhere to any local laws that may apply to the installation and wiring of any electric type lock being installed.** In most cases any site that has maglocks must have an operating fire system. The power for the locks must be wired through an alarm output on the fire system so it interrupts power to the locks when a fire alarm is tripped. To ensure proper protection of the circuit board you must install the diodes provided **at the locks.**

Typical Wiring for a Maglock or Strike



Drawing 6.0

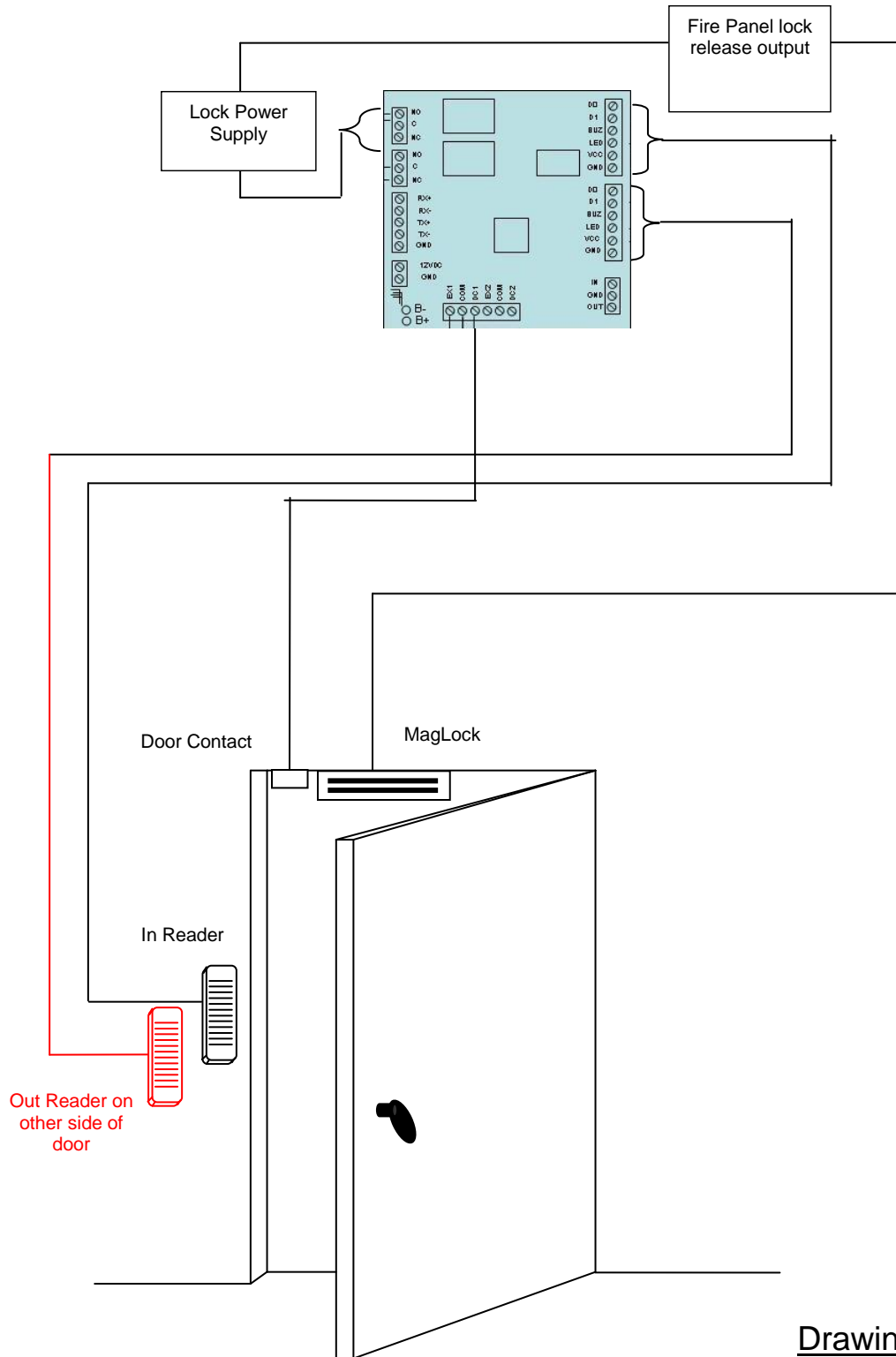
One Reader Door Typical



Drawing 7.0

Two Reader Door Typical

When there are 2 readers on a door, the panel must be configured as Reader 1 and 2.
Connect the lock, door contact and exit button if required.



Drawing 8.0

Firmware Flash update procedure for EZ-ACC

To flash update the firmware for the EZ-ACC panel, download the properly addressed HEX file from the Hartmann Controls website, and/or if sent via email, save the file to the workstation and record the location.



Flashing of an EZ-ACC panel requires communication via a USB to RS-485-422 Converter (you cannot flash using a Serial to Ethernet eNet device).

Identify via the EZ-ACC software (Configure Communication Channels in Technician Setup) or from the Windows Device Manager, the COM port assigned to the USB communication device.

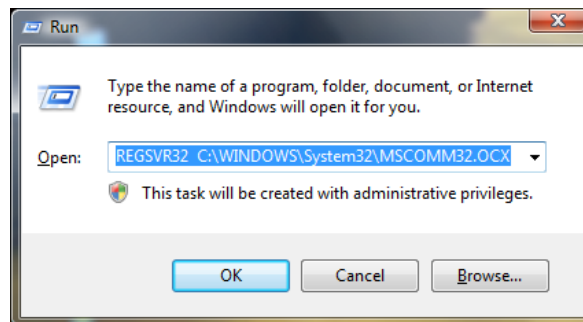
Make sure the EZ-ACC application is not running and it is recommended that **no other EZ-ACC panels are attached** to the communication bus. Also, temporarily remove the panel header blocks for peripherals such as readers, locks, exit buttons and door contacts and then follow the steps outlined below;

Ensure the EZ-ACC panel is powered and that a communication cable from the USB Converter to the panel is connected correctly (R's to T's and T's to R's and minimum length of Cat5 cable should be 6 feet). Disconnect any battery backup if so attached.

Using Windows File Explorer or via My Computer, browse to the following directory and file and double-click on the executable file:

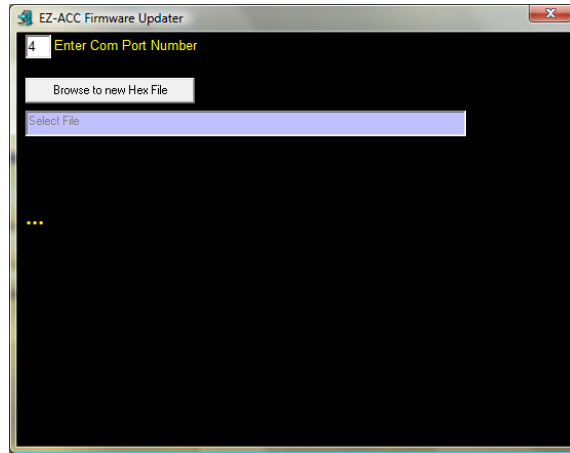
"C:\Program Files\EasyAcc\EZ-ACC – Flashloader.exe"

If the application does not load and you receive an error message about MSCOMM32 file not registered or installed, you must acquire a copy of MSCOMM32.OCX (via Hartmann website or other operating system) and place it into the "C:\Windows\System32\" directory and then use the REGSVR32 command from the Run dialogue to register the file into the systems registry.



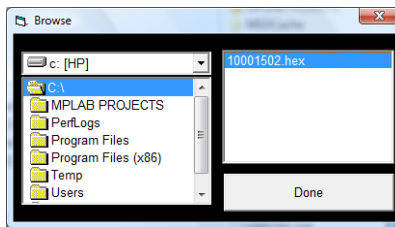
The EZ-ACC FlashLoader application and MSCOMM32.OCX file are not compatible on 64-bit Windows operating systems such as Vista 64-bit and Windows7 64-bit. Flashing a new HEX file to an EZ-ACC panel can be accomplished on Windows XP, Vista 32-bit and Windows7 32-bit operating systems only.

With the MSCOMM32.OCX file installed and registered, you can then rerun the EZ-ACC – FlashLoader.exe program. The following window will open.

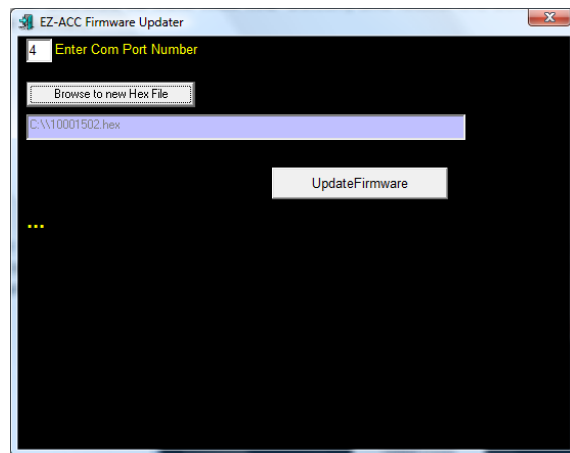


Enter the COM port identified earlier.

Now click on the '**Browse to new Hex file**' button, and locate the downloaded/saved HEX file. Click the Done button.

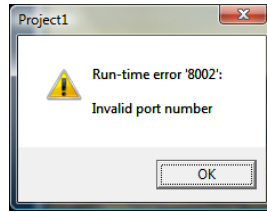


This file name will be the same as the original 8-digit panel address for the panel currently being flashed. If instructed by Hartmann Technical Support, you may use an alternative addressed HEX file but must ensure the panel address is changed in the EZ-ACC software).

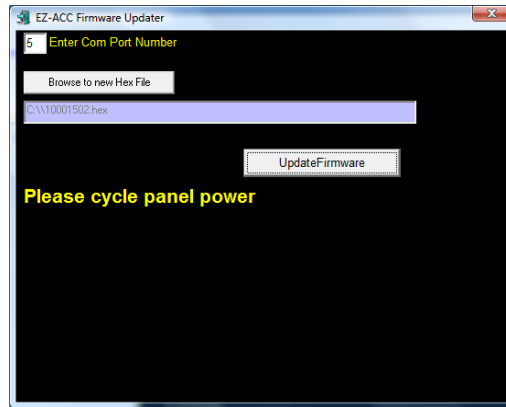


Now click the '**UpdateFirmware**' button.

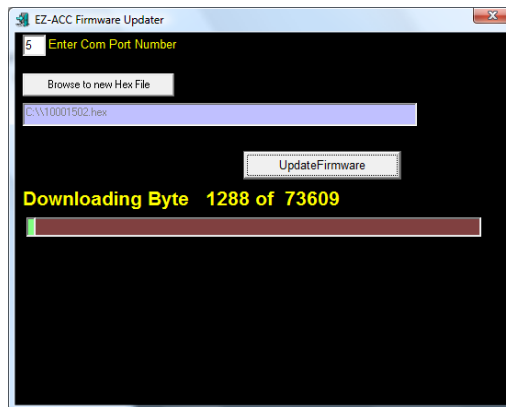
If the wrong COM port number is selected, you will get the following error message and the application will close.



If the COM port is correct, you will now be prompted to power cycle the EZ-ACC panel by removing the 12VDC power connector from the panel. Leave disconnected for approximately 5 seconds and re-attach the power.



Within a few seconds, a status bar will appear indicating data is being updated to the panel (as shown below).



The complete flash process can take between 5 and 10 minutes to complete. When the flash is finished, the EZ-ACC FlashLoader program will close.

The EZ-ACC application can now be opened. Verify communication to the panel (and edit panel address if required) then click on Update Panels and perform a Full Download.

If you encounter any problems, perform the process again from the beginning. If you are still encountering issues, contact Hartmann Controls Technical Support at 1-877-411-0101 for further assistance.

NOTES:
