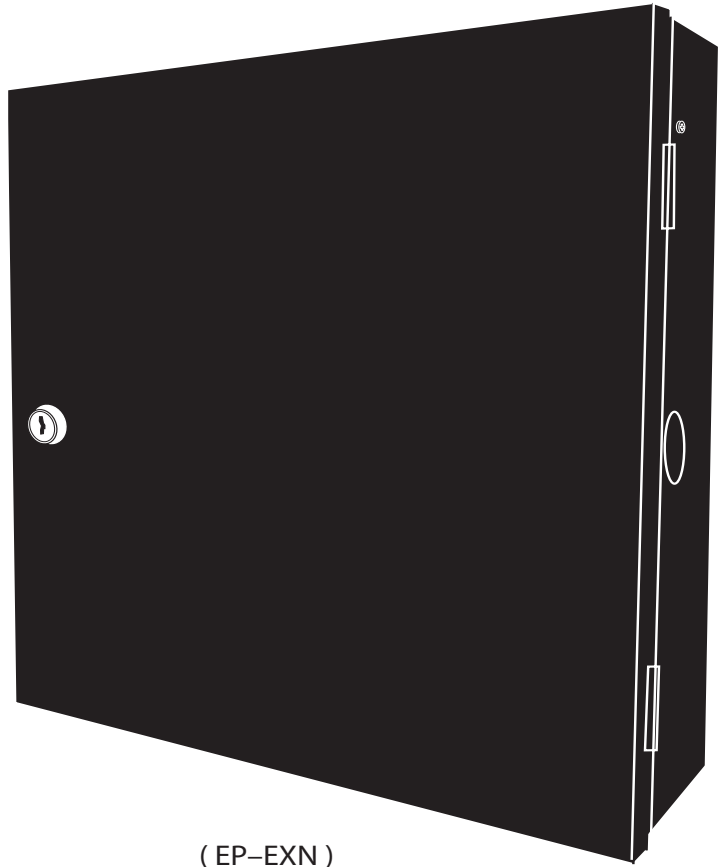


EP-EXN

Entry Pro Series Access Control System



(EP-EXN)

Installation Instructions

(P/N: 720-200104)

NORTEK
SECURITY & CONTROL
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www.nortekcontrol.com

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Introduction

The EXN Access Control System is designed for use as an access control device for gated communities, parking garages, office buildings, apartments, dormitories, hotels/motels, commercial buildings and recreational facilities.

Housed in a locked, rugged stainless steel faced enclosure, the cabinet is secured with a mechanical “tamper” switch.

The four relay outputs can be programmed to control electric door strikes, magnetic locks, door & gate operators, or barrier gates.

Complete access control event logging, access time restriction, access location restriction, and administration functions are also available to manage the installation.

The EXN is network ready. Multiple units can be interconnected through a LAN connection. The EXN can be used in mixed networks with other compatible access control products, including the EP-402, EP-436 and EP-736.

Two inputs are available for connection of 26, 30, or 31-bit Wiegand devices (card readers, etc.). Each reader input supports connecting an “in” reader and an “out” reader.

Operation

The EXN can be used with remote receivers, card readers, and exterior keypads can be used with the system.

Block coded MegaCode® transmitters can be used to gain access through an optional radio receiver. Each transmitter can be individually suspended or re-activated.

The system’s event log records system activity for future reference.

Programming and Cardholder Maintenance

System programing and maintenance can be performed locally or remotely with via a network LAN connection to the system.

Throughout this manual, multiple-unit networks are referenced. Depending on the programming method used, networks can contain the following model units:

NETWORK MODEL OPTIONS	
EP-402 / EP-436	4.3” LCD Screen with Keypad
EP-736	7” LCD Touch Screen with Keypad
EXN	Stand-alone Access Node no Screen or Keypad

Hardware Features

- **FOUR FORM “C” (NO & NC) RELAYS**
Each relay has 5-amp @ 24-volt rating
- **TWO DOOR SWITCH MONITOR (DSM) INPUTS**
For sensing access controlled door position to detect door-ajar condition and for activating auxiliary output alarm features
- **TWO REQUEST-TO-EXIT (REX) INPUTS**
Activates access device for exiting using a hardwired switch
- **TWO AUXILIARY INPUTS**
Activates auxiliary relay outputs
- **TWO WIEGAND INPUTS**
Two Wiegand format card reader inputs for connection to external Wiegand devices
- **POWER FAILURE MONITOR**
If the optional Power Distribution Module is installed, the AC power input is monitored and power outages are recorded in the event log

Software Highlights

- **COMPUTER PROGRAMMABLE**
No dedicated programmer required, program with a computer and a modem
- **LARGE TRANSMITTER CAPACITY**
Up to 45,600 block coded and 20,000 individually enrolled transmitters can be used for gaining access
- **TRANSMITTER FACILITY CODE SUPPORT**
Identifies wireless transmitters by installation
- **LARGE CARD CAPACITY**
Up to 45,600 block coded and 20,000 individually enrolled cards can be used for gaining access
- **FOUR INDEPENDENT RELAY CHANNELS**
Each output's action is programmable
- **PROGRAMMABLE TIME SCHEDULED RELAY ACTIVATION**
Activation for up to four time periods for each of the 31 system time zones
- **PROGRAMMABLE TIME ZONE ACCESS VALIDATION**
Validation during four time periods for each of the 31 system time zones
- **PROGRAMMABLE VALIDATION DAYS**
Select days of the week access is allowed
- **PROGRAMMABLE HOLIDAY DAYS**
Select up to 24 expiring & 24 non-expiring holidays for access restriction
- **EVENT LOG**
Stores up to 20,000 system events in memory for record keeping
- **DELETED CARDHOLDER DATABASE**
System logs deleted cardholders for future identification
- **TIMED OR TRUE ANTI-PASSBACK**
Options to temporarily disable a cardholder's credentials after access for a preset time or depending on the cardholder's access direction

Feature Overview

Relay Outputs

Four 5-amp dry contact Form-C SPDT relay outputs are provided to activate access devices, such as door strikes, magnetic locks, automatic doors, barrier gates, and automatic sliding gates. The relay outputs can also be used as specialty outputs for alarm contact shunting and alarm activation.

Request-to-Exit (REX) Inputs

Each door lock relay channel has a request-to-exit input. These inputs are supplied for hardwire activation of the access devices. Typically a request-to-exit input is wired to a pushbutton inside of the access controlled area. When a person desires to exit, pressing the pushbutton will activate the output relay channel and trigger the access device. A loop detector for automatic gate operation can be connected to a request-to-exit input.

Door Switch Monitor (DSM) Inputs

The door switch monitor inputs connect to door switches that monitor whether the controlled door is open or closed.

Wiegand Reader Support

The two Wiegand inputs (READER “A” & READER “B”) can connect to a large variety of 26, 30, and 31-bit Wiegand output accessories. The Wiegand format is a common standard for access control equipment. A typical application would be to add swipe card or proximity readers to the system.

Removable Programming Memory

The EXN removable SD card memory retains all entry codes, transmitter information, card access, and programming.

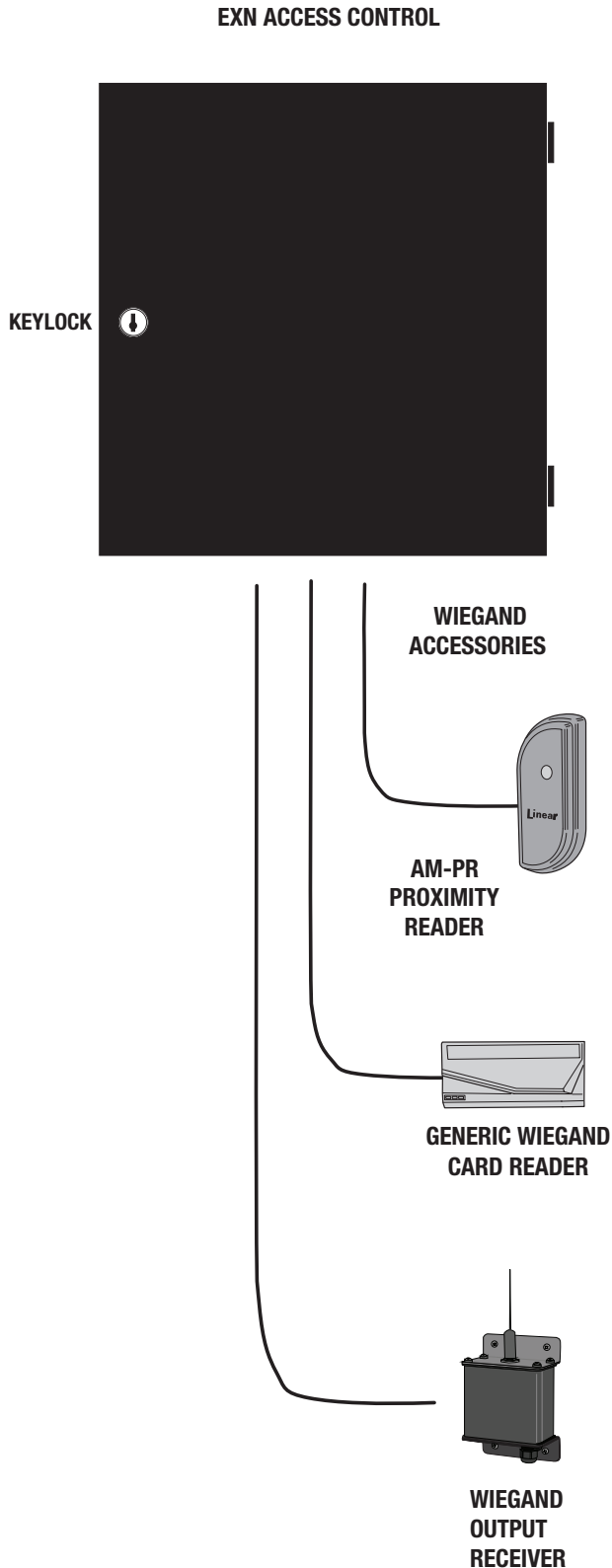
Power Management

The system is powered with a plug-in power supply using the included Power Distribution Module (PDM). If an AC power failure occurs, the Power Distribution Module will notify the system.

Network Support

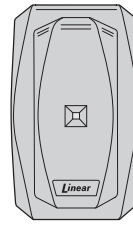
Multiple EP units can be networked together over a LAN connection allowing information sharing between the units. A common event log is retained for all of the networked units. For redundant system backup, a computer connected through the network can store and retrieve the memory data.

Accessory Overview



Wiegand Devices

The two WIEGAND format inputs are available to connect WIEGAND devices. Virtually all 26 through 64 bit WIEGAND output devices from other manufacturers can be used with EN Series units.



2N1 Reader

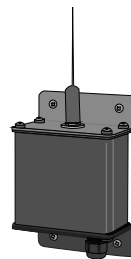
SINGLE-GANG
MOUNTING WITH
ADAPTER PLATE

2N1 Reader

The 2N1 reader is a 125kHz Multi-Protocol Reader with RFID technology. Supports certain HID, AWID & Farpoint 125 kHz proximity protocols. Mullion and Single-Gang (Shown) mounting options.

Compatible Device

The Wiegand Output Receiver (WOR) is compatible with the EXN unit:



WOR

Wiegand Output Receiver (WOR)

The WOR is used as a wireless access control interface for block coded digital transmitters. It receives signals from transmitters, adds a facility code to the data, and sends the information via a 5-wire connection to a Wiegand input commonly available on most access control panels.

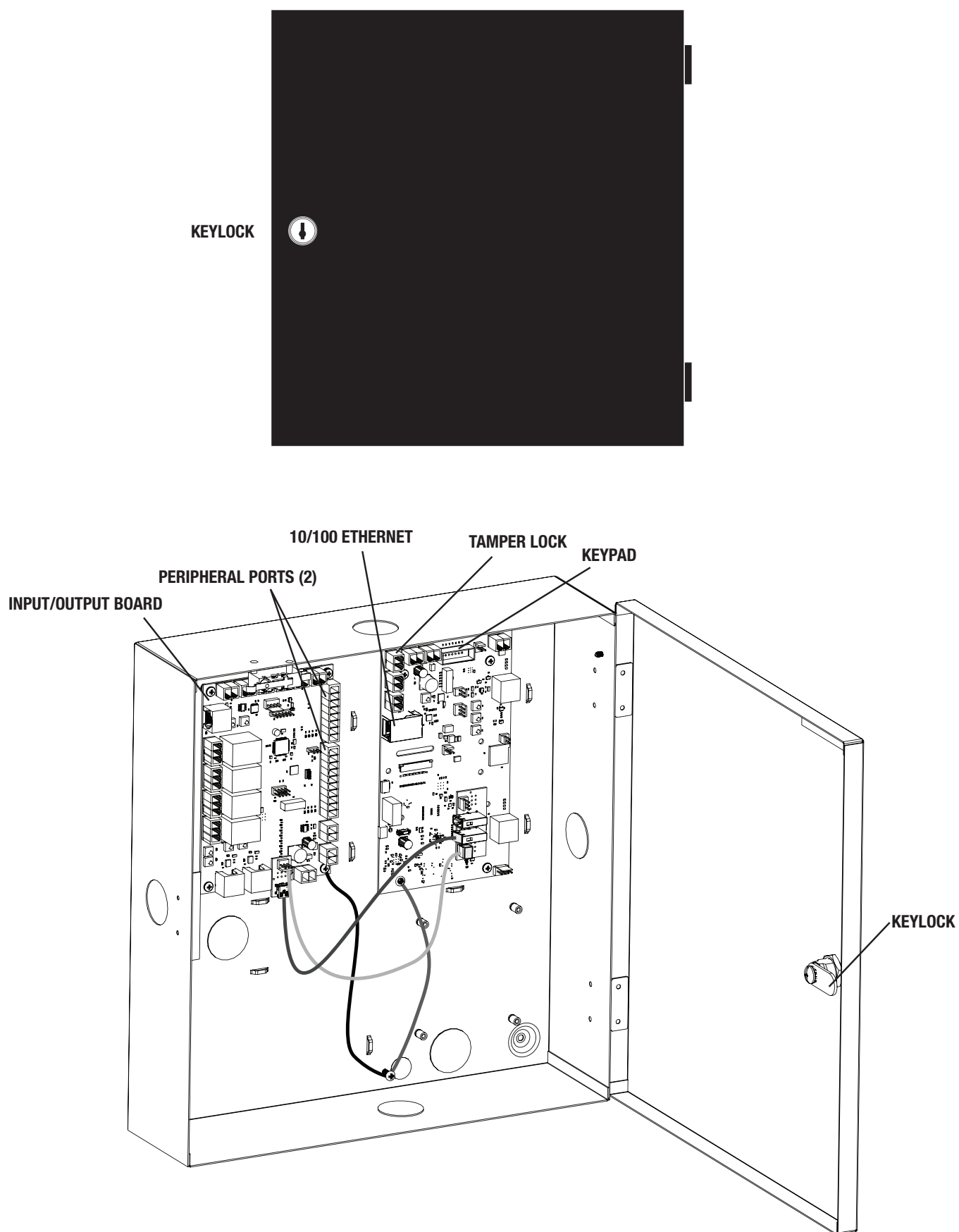
Installation Overview Checklist

The following list outlines the steps required for successfully installing a EXN Access Control System.

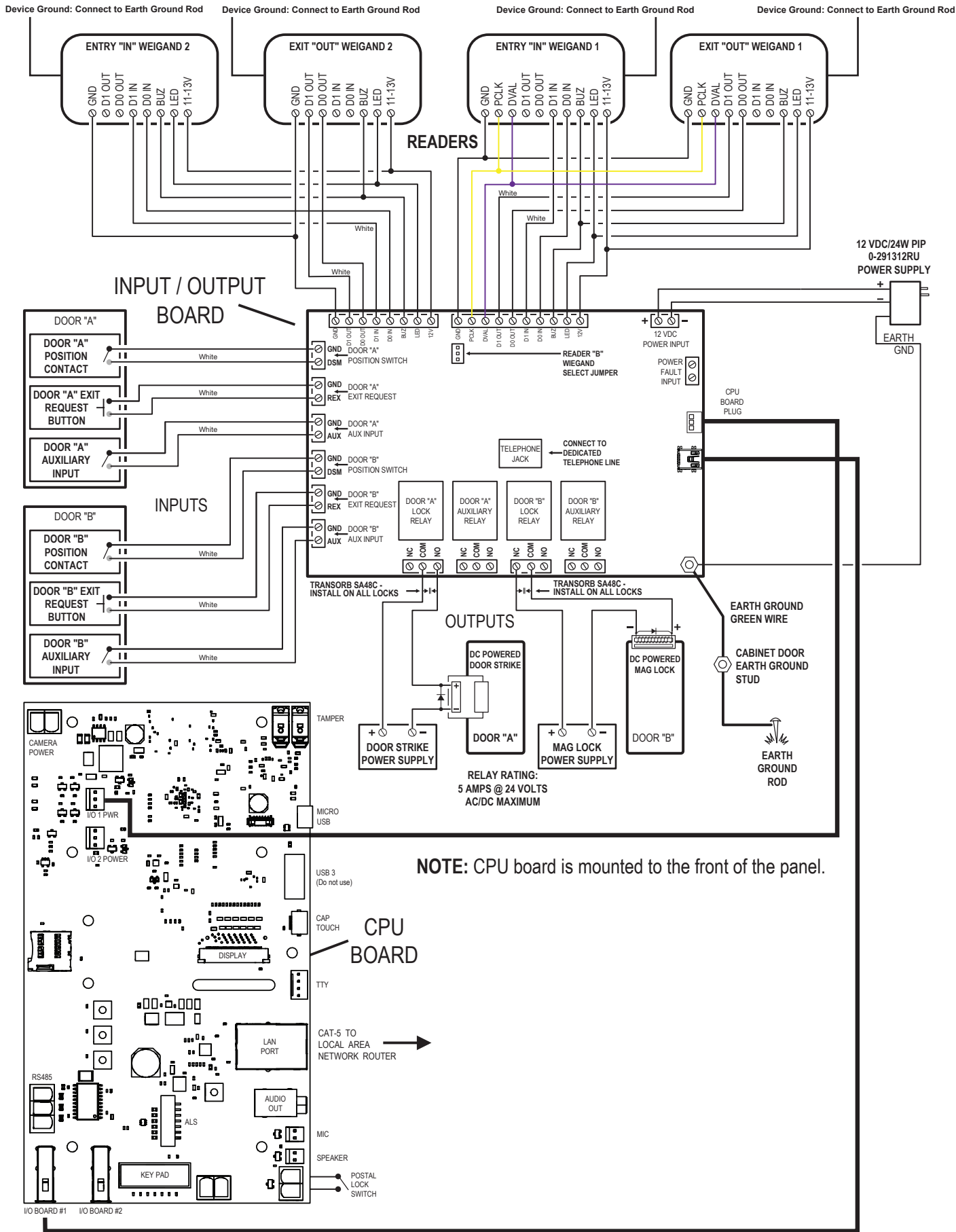
- Mount the enclosure
- Connect the outputs and inputs for the access devices
- Connect power to the system
- Connect a PC to the Ethernet Port to prepare for configuration
- Obtain IP address and other TCP/IP information from network administrator and configure the network settings for the system
- Connect the LAN port to the local area network (if used)

NOTE: Wiring methods shall be in accordance with the National Electrical Code/NPFA 70 and all local codes.

Component Locations



Wiring Diagram



Important Mounting Requirements

The EXN Access Control System can be installed for public or private use. The mounting requirements will vary depending on the installation. Review the following information before beginning the installation.

Mounting Environment

Consider the environmental factors at the desired mounting location. The EXN is designed for indoor installations, however, it is preferable to protect the unit from extreme exposure whenever possible.



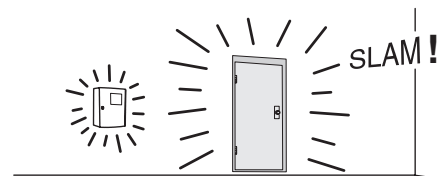
Follow Building Codes

Check all local building codes and ordinances prior to installing the system. Proper installation of the EXN conforming to the local building codes for access control equipment is a regulatory requirement. The EXN installation is an extremely important and integral part of the overall access control system.



Mounting Location

If the EXN is used to control a door or pedestrian gate, locate the unit as near as practical to the entry point. If the unit is mounted on or in a wall adjacent to the entry point, be sure the wall is sturdy. The repeated shock and vibration from a slamming access door or spring-loaded pedestrian gate must be isolated from the EXN. NEVER MOUNT THE UNIT DIRECTLY TO A MOVING DOOR OR GATE!



System Mounting

The EXN cabinet is designed to be mounted directly to a wall or flat surface.

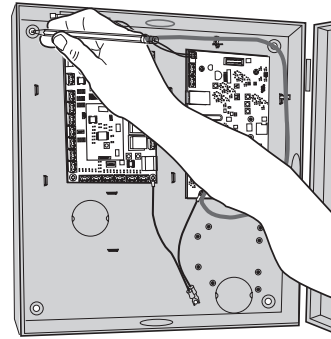
Choose a well lit location near the controlled opening. Wiring access for power, network, earth ground, and control outputs must be available to the mounting location. If the optional remote accessories are used, wiring access for these cables must also be available to the mounting location.

Surface Mounting

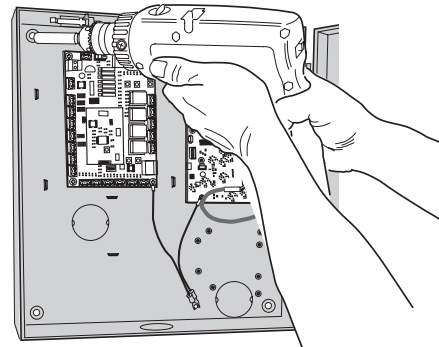
The cabinet can be mounted on a wall or any suitable flat surface. The four 3/8" mounting holes or the four self-drill locations can be used to attach the cabinet to the surface.

1. For wall mounting, hold the cabinet at the approximate mounting location where the display will be about eye level or slightly above. Mark the four mounting hole centers.
2. Drill as required. Use the appropriate fasteners for the mounting surface to secure the cabinet.

SURFACE MOUNTING



- ① MARK THE (4) FOUR MOUNTING HOLES



- ② ATTACH THE CABINET WITH APPROPRIATE HARDWARE FOR THE MOUNTING SURFACE

System Maintenance

Test and Maintenance Operations

Prior to installation, ensure that all inside wiring is secure. Each unit should be checked annually for any loose wire connections.

Impaired Operation

EN series units are designed to operate under adverse environmental conditions. Under normal circumstances, they will function properly regardless of outside conditions. However, EN Series units do not have secondary power sources and cannot function without direct continuous power. If a unit is damaged by natural causes or deliberate vandalism, it may not function properly depending on the level of damage.

System Output Overview

The EXN has two door lock relays and two auxiliary output relays that can be activated in response to reader activity, time schedules, or input conditions.

All relays are Form-C SPDT and provide non-powered dry contacts rated for 5 Amps. Power for the relay loads can come from an external power supply or from an optionally installed Power Distribution Module board.

Output Defaults

All outputs are assigned default features that can be configured as needed. The following table shows the default states for each of the two output types:

OUTPUT	DEFAULT STATE	DEFAULT RESPONSE
DOOR LOCK OUTPUTS	NOT ENERGIZED, SINGLE PULSE	3 SECOND UNLOCK TIME IN RESPONSE TO CORRESPONDING READER ACTIVITY READER #1 INPUT ACTIVATES DOOR RELAY "A" READER #2 INPUT ACTIVATES DOOR RELAY "B"
AUXILIARY OUTPUTS	NOT ENERGIZED, SINGLE PULSE	NO DEFAULT RESPONSE MUST BE CONFIGURED VIA PROGRAMMING.

Recommended Wiring Requirements

The power cable must be the proper gauge for the current load and should not be routed in parallel with other wiring especially high voltage or AC wiring. Refer to the table for wiring recommendations:

TOTAL AMPS	VOLTAGE (AC OR DC)	WIRING GAUGES AND DISTANCE				
		14 AWG	16 AWG	18 AWG	20 AWG	22 AWG
.5 AMPS	12 VOLTS	1500 FEET	1000 FEET	600 FEET	375 FEET	225 FEET
	24 VOLTS	2000 FEET	1200 FEET	750 FEET	450 FEET	300 FEET
1.00 AMPS	12 VOLTS	800 FEET	500 FEET	300 FEET	200 FEET	100 FEET
	24 VOLTS	1000 FEET	600 FEET	400 FEET	200 FEET	150 FEET
2.00 AMPS	12 VOLTS	400 FEET	240 FEET	150 FEET	90 FEET	60 FEET
	24 VOLTS	480 FEET	300 FEET	180 FEET	120 FEET	70 FEET

Relay Output Wiring

Door Lock Relays A & B can be used to control electromechanical access devices on doors. The door will unlock when a user is granted access by the system. The door will remain locked if a user is denied access.

The door lock relay outputs can each be configured to operate in fail-secure or fail-safe modes.

- In fail-secure mode, a door lock relay energizes when access is granted.
- In fail-safe mode, a door lock relay de-energizes when access is granted.

Door or Pedestrian Gate Control with a Door Strike

1. Install a low voltage electric door strike as a locking device for the door or pedestrian gate.
2. Install the power supply or transformer for the locking device. **DO NOT POWER THE EXN FROM THIS POWER SUPPLY.**
3. Connect one wire from the power supply to one wire from the locking device.
4. Route two wires between the locking device and the EXN. Connect one wire to the remaining wire of the locking device. Connect the other wire to the remaining wire of the power supply.
5. Install a protection diode (for DC door strikes) or MOV (for AC door strikes) across the strike to protect the door relay contacts.
6. Connect the wires to the EXN **DOOR LOCK RELAY COM & NO** terminals for fail secure operation or **DOOR LOCK RELAY COM & NC** terminals for fail safe operation.

Door or Pedestrian Gate Control with a Mag Lock

1. Install a low voltage electric magnetic lock as a locking device for the door or pedestrian gate.
2. Install the power supply or transformer for the locking device. **DO NOT POWER THE EXN FROM THIS POWER SUPPLY.**
3. Connect one wire from the power supply to one wire from the locking device.
4. Route two wires between the locking device and the EXN. Connect one wire to the remaining wire of the locking device. Connect the other wire to the remaining wire of the power supply.
5. Install a protection diode (for DC mag locks) or MOV (for AC mag locks) across the mag lock to protect the door relay contacts.
6. Connect the wires to the EXN **DOOR LOCK RELAY COM & NC** terminals for fail secure operation or **DOOR LOCK RELAY COM & NO** terminals for fail safe operation.

NOTE: For fail secure operation with a magnetic lock, the lock's power supply must have battery backup to power the lock during a power failure.

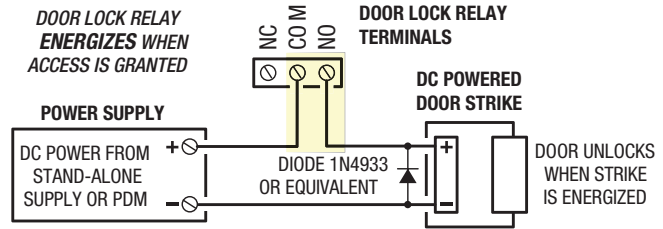
Automatic Gate Operator Control

The Door Lock Relays can be used to activate an automatic gate operator when a user is granted access.

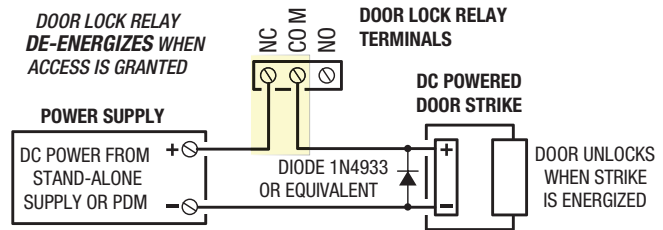
1. Route two wires between the gate and the EXN.
2. Connect the gate operator's **OPEN** terminals to the EXN **DOOR LOCK RELAY COM & NO** terminals.

NOTE: For operator wiring specifics, refer to the gate operator's wiring diagram.

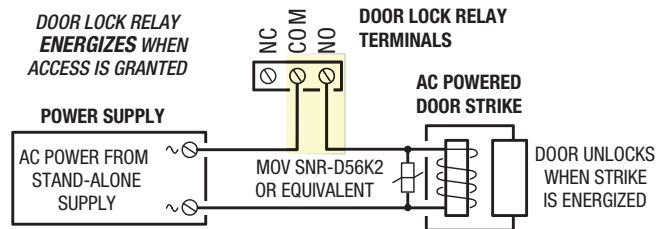
FAIL SECURE WIRING WITH A DC DOOR STRIKE WITHOUT CONTROLLER POWER DOOR STRIKE IS LOCKED



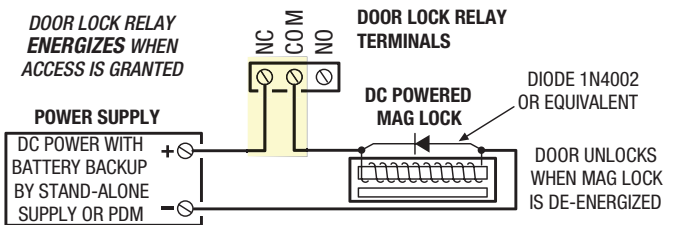
FAIL SAFE WIRING WITH A DC DOOR STRIKE WITHOUT CONTROLLER POWER DOOR STRIKE IS UNLOCKED



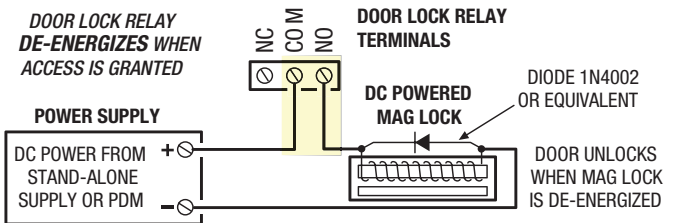
FAIL SECURE WIRING WITH AN AC DOOR STRIKE WITHOUT CONTROLLER POWER DOOR STRIKE IS LOCKED



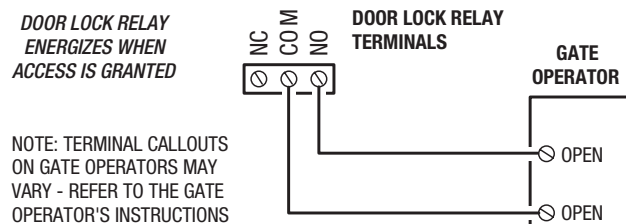
FAIL SECURE WIRING WITH A DC MAG LOCK WITHOUT CONTROLLER POWER MAG LOCK IS LOCKED



FAIL SAFE WIRING WITH A DC MAG LOCK WITHOUT CONTROLLER POWER MAG LOCK IS UNLOCKED



WIRING TO AN AUTOMATIC GATE OPERATOR



System Input Wiring

Systems have the three types of switch inputs used for monitoring door position (DSM), exit requests (REX), and auxiliary requests.

All inputs are assigned default features that can be configured as needed. The following table shows the default states for each of the inputs:

INPUT	DEFAULT STATE
DOOR SWITCH MONITOR (DSM)	NORMALLY OPEN UNSUPERVISED 8 SECOND HELD OPEN TIME
REQUEST TO EXIT (REX)	NORMALLY OPEN MOMENTARY UNSUPERVISED
AUXILIARY INPUTS	NORMALLY OPEN UNSUPERVISED

Input Options

All inputs may be configured for normally open (factory default) or normally closed contacts with supervision or non-supervision. Use 1k ohm resistors for supervision. Refer to the figure for the acceptable wiring configurations.

Door Switch Monitor (DSM) Inputs

The two DSM inputs for Door Lock Relays A & B can connect to a door switch that monitors whether the controlled door is open or closed. Doors are usually monitored with a magnetic contact or mechanical switch to detect forced entry or door ajar conditions.

- To use the door switch monitor feature, install a door switch on the door or pedestrian gate and route two wires from the switch to the EXN.
- Connect the sensing device wires to the associated relay sensing terminal DSM and GND terminals.

Request-to-Exit (REX) Inputs

The two door relay outputs have REX input terminals. Grounding a REX terminal will request activation for the associated relay. Exit request inputs are typically used with push bars, loop sensors, or pushbuttons.

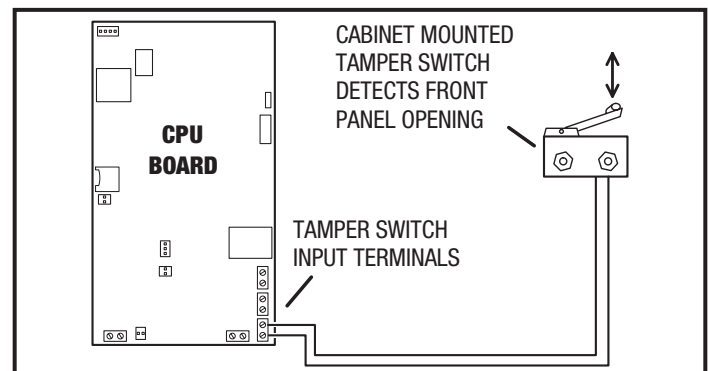
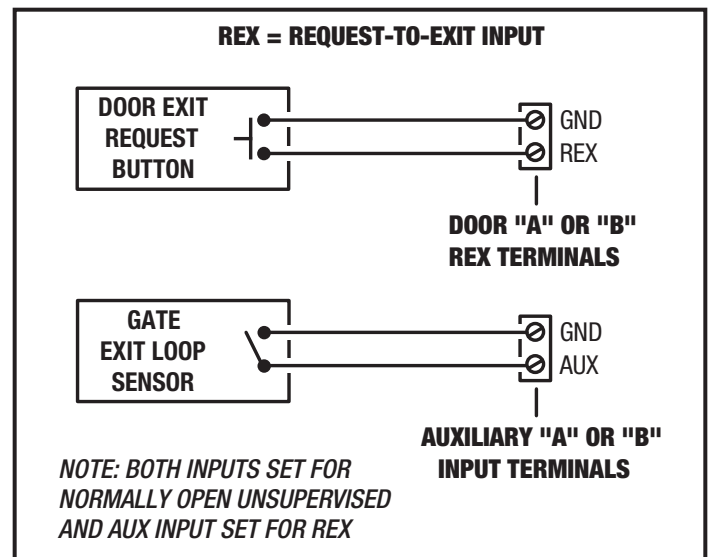
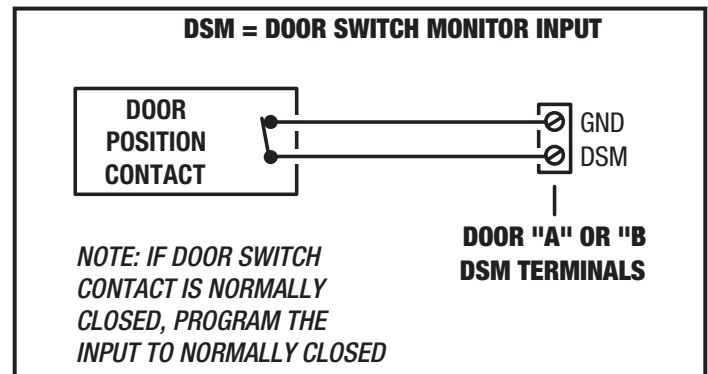
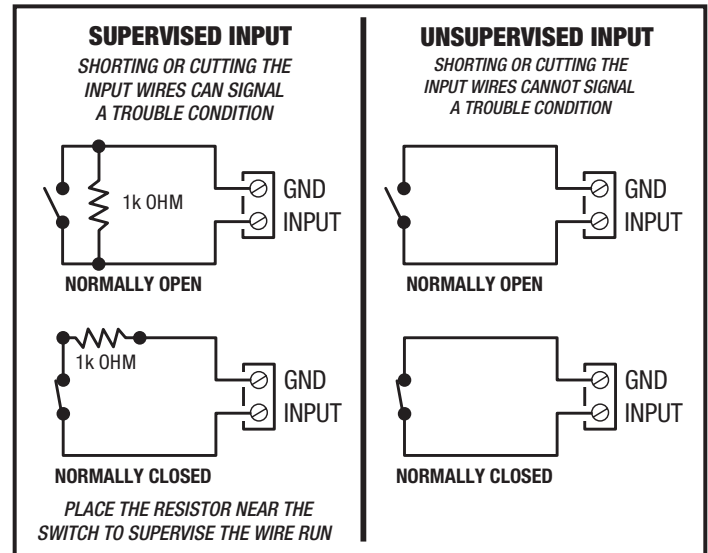
- Install the pushbutton or device to signal an exit request.
- Route two wires from the device to the EXN.
- Connect the device's normally open output to the wires.
- Connect the two wires to the associated relay's request-to-exit REX terminal and GND terminal.

Auxiliary Inputs

The Auxiliary Inputs are general purpose inputs that can be used with a variety of input devices including REX switches, loop sensors, alarm system integration, etc. These inputs can be configured via programming to trigger a defined action such as to activate an auxiliary relay output.

Tamper Protection

A tamper switch is mounted inside the enclosure and connects to terminals on the CPU board. If the cover or enclosure door is opened for any reason the tamper switch will activate, triggering a condition that can be linked to an event action in programming (e.g., send an e-mail or generate an output).



Wiegand Accessories

The two EXN Wiegand inputs (READER #1 & READER #2) can connect to a large variety of 26, 30, and 31-bit Wiegand output accessories. The Wiegand format is a common standard for access control equipment. A typical application would be to add swipe card or proximity readers to the system.

Readers can be installed as primary “in readers” (entry) for each door as well as optional secondary “out readers” (exit).

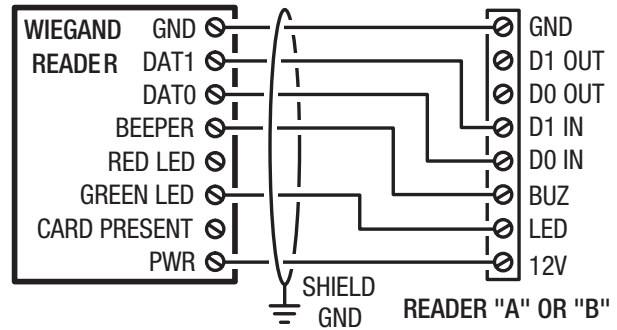
The maximum power available for an individual reader is 750 mA @ 11-13 VDC with a combined maximum of 1.5A for the EXN. Determine the reader's power consumption by referring to the documentation included with the reader. Exceeding the maximum current for individual readers or for the system will damage the protection fuses and void the warranty.

NOTE: When using Wiegand devices for Reader “B”, the Reader “B” select jumper must be set to the Wiegand position (default).

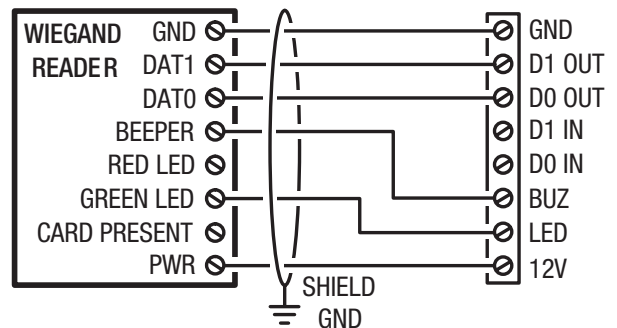
1. Mount and install the Wiegand accessory as described in its installation instructions.
2. Route a cable from the EXN to the accessory.
 - 24 AWG Belden Type 9931 or equivalent for wire runs up to 300’.
 - 20 AWG Weico Type 9405 or equivalent for wire runs up to 500’.
3. Connect the color-coded wires from the reader's wiring harness to the cable.
4. Connect the cable to the appropriate Wiegand **READER** terminal on the EXN (see Wiegand wiring diagram).

IMPORTANT: Reader shields must be properly grounded per the manufacturers installation requirements.

ENTRY "IN READER"



EXIT "OUT READER"



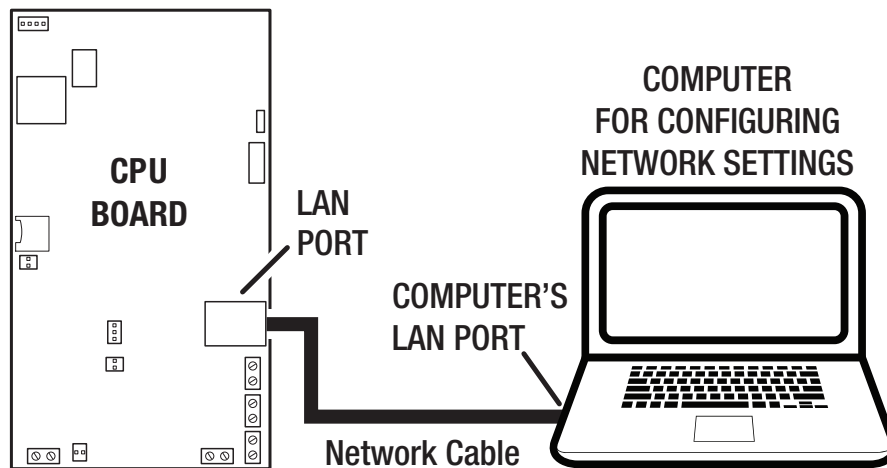
NOTE: ALL CONNECTIONS MAY NOT BE USED DEPENDING ON THE WIEGAND DEVICE

NOTE: REMOVE EXCESS SHIELD EXPOSED SHIELD CAN CAUSE INTERFERENCE OR SHORTS TAPE OFF ANY EXTRA

IP Address Configuration

WARNING: Do Not connect an Ethernet cable from the EP-xxx CPU to the Local Area Network (LAN) before the Initial IP System Configuration has been completed.

The e3 Entry Pro and Access Control system can be a standalone system or part of a larger Access Control network. Regardless of the type of installation the initial IP configuration of the EP is done between a Laptop/PC and the EP unit directly connected to each other not part of the local network.



NOTE: A Telephone Entry or Access Control Systems should always have a static IP Address assigned to them not a DHCP dynamically assigned address.

Consult the appropriate on-site IT administrator to obtain the following information before configuring the EP system:

- IP address: _____
- Subnet Mask: _____
- Gateway: _____
- DNS 1: _____
- DNS 2: _____

Configure IP Network Settings

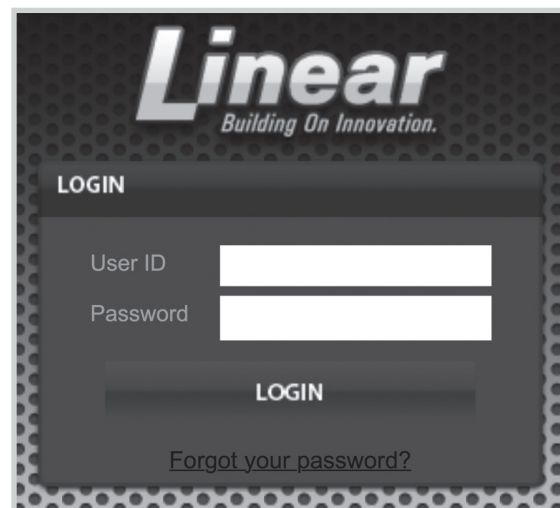
To allow for the system to be recognized on the local network, it is necessary to change the unit's default IP address as follows:

1. Connect your programming computer directly to the LAN port of the EP-xxx unit. A standard CAT5 or better networking cable is used for the direct connection.
2. Assign a static IP address of 192.168.0.149 to the computer. (For instructions on how to change the static IP address of a Windows computer, please visit: <http://technet.microsoft.com/en-us/library/ff710457>)
3. After assigning the static IP address to the computer, open a web browser and enter the default IP address of the unit (Default = 192.168.0.250).
4. The unit presents the login page.

To log on, enter the default user ID and Password:

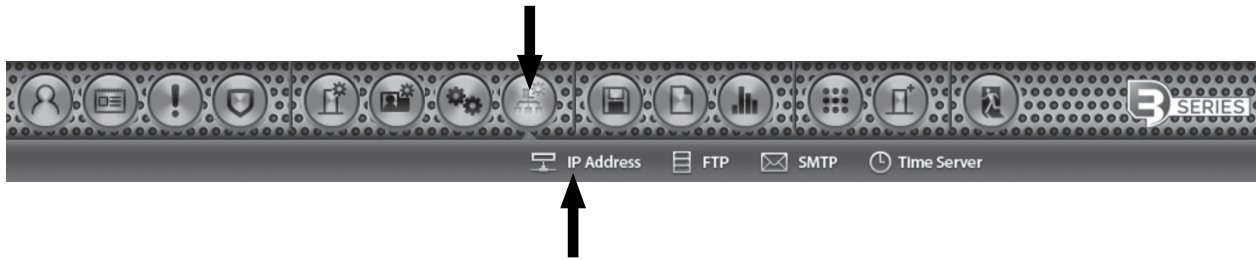
User ID: admin

Password: admin



NOTE: It is highly recommended to change the default Password.

5. Select the Network Setting icon, then the IP Address icon to display the IP settings page.



Network Setting > IP Address Help

Basic	
IP Type *	: Static
IP Address *	: 172.16.121.214
Subnet Mask *	: 255.255.255.128
Gateway *	: 172.16.121.129
DNS Server 1	: 8.8.8.8
DNS Server 2	: 8.8.4.4
HTTP Port	: 80
HTTPS	: On
HTTPS Port	: 443

Edit

Enter the static IP address, Subnet Mask, Gateway and DNS server so that it matches the requirements of the local network provided by the IT administrator.

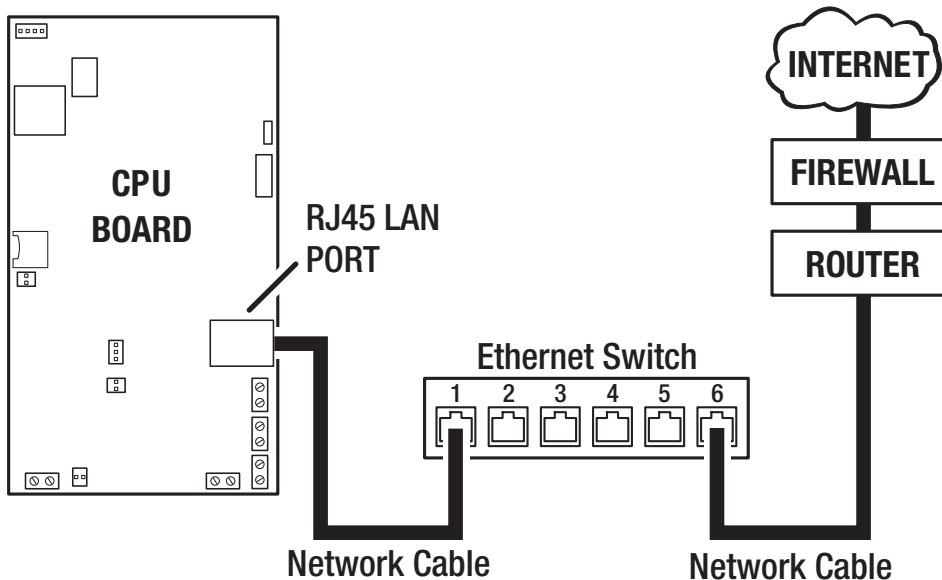
6. Click **Save & Reboot** for the settings to save and take effect. (The reboot will take approximately 2 minutes.)

NOTE: The IP settings will be lost if the unit is powered down without performing Save & Reboot.

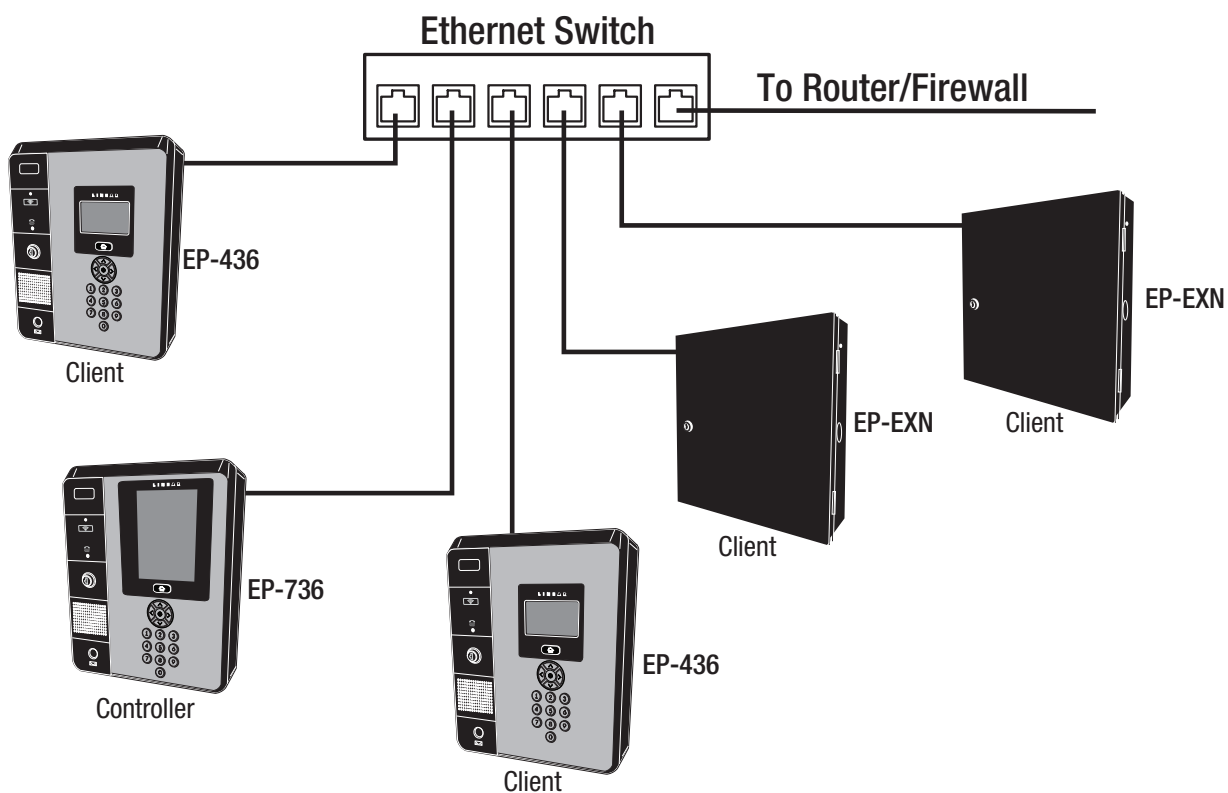
7. Disconnect the programming computer from the unit. The system is now ready for connection to the local network.

CAUTION: The EP is an Access Control system and should be on an isolated or segmented Security network where a protected network security appliance (firewall, etc.) is installed and maintained. This will help prevent unwanted access from the shared company network environment.

8. Connect the networking cable from the Local Area Network to the unit's LAN port. The local computers will then be able to access the system by entering the new static IP address of the unit.



Multi-Unit Installation - Telephone Entry



NOTE: In a multi-unit installation, only one EP unit should be the Controller all others should be clients. Use the License-To-Go procedure to configure the clients units. EP-EXN units come preconfigured as clients.

Power & Ground Wiring

The EXN requires power from a 11-13 volt DC power source.

Power Wiring

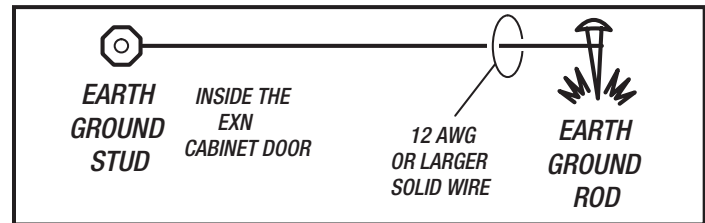
NOTE: DO NOT APPLY POWER UNTIL THE INSTALLATION IS COMPLETE.

1. Route three-conductor cable between the EXN and the 0-291312RU plug-in power supply. To indicate DC polarity, be sure to use cable with multiple wire colors.
 - For power wire runs up to 100 feet, use 18 AWG, THHN 600-volt insulated wire.
 - For power wire runs up to 200 feet, use 16 AWG, THHN 600-volt insulated wire.
2. Connect two wires to the plug-in power supply's + & - terminals.
3. Connect one wire to the plug-in power supply's **EARTH GROUND** terminals.
4. Connect the + & - power wires from the plug-in power supply to + & - **12 VDC INPUT** terminals.
5. Connect the **EARTH GROUND** wire from the plug-in power supply to the EXN cabinet door **EARTH GROUND** stud.
6. When the installation is complete, plug the power supply into a dedicated AC receptacle that is not controlled by a switch.

Earth Grounding Option

For an NEC compliant earth ground, use size 12 gauge solid wire or larger and clamp it to an 8-foot copper ground rod driven into the ground. Locate the ground rod next to the Intersystem Bonding Termination point (Power and Telephone company ground rods) and bond the rods together with a 6 AWG or larger bonding jumper. **Do not disturb the clamps installed by the Power or Telephone Company.**

1. Install the ground rod as described above.
2. Connect the wire from the earth ground to the EXN cabinet door **EARTH GROUND** stud.



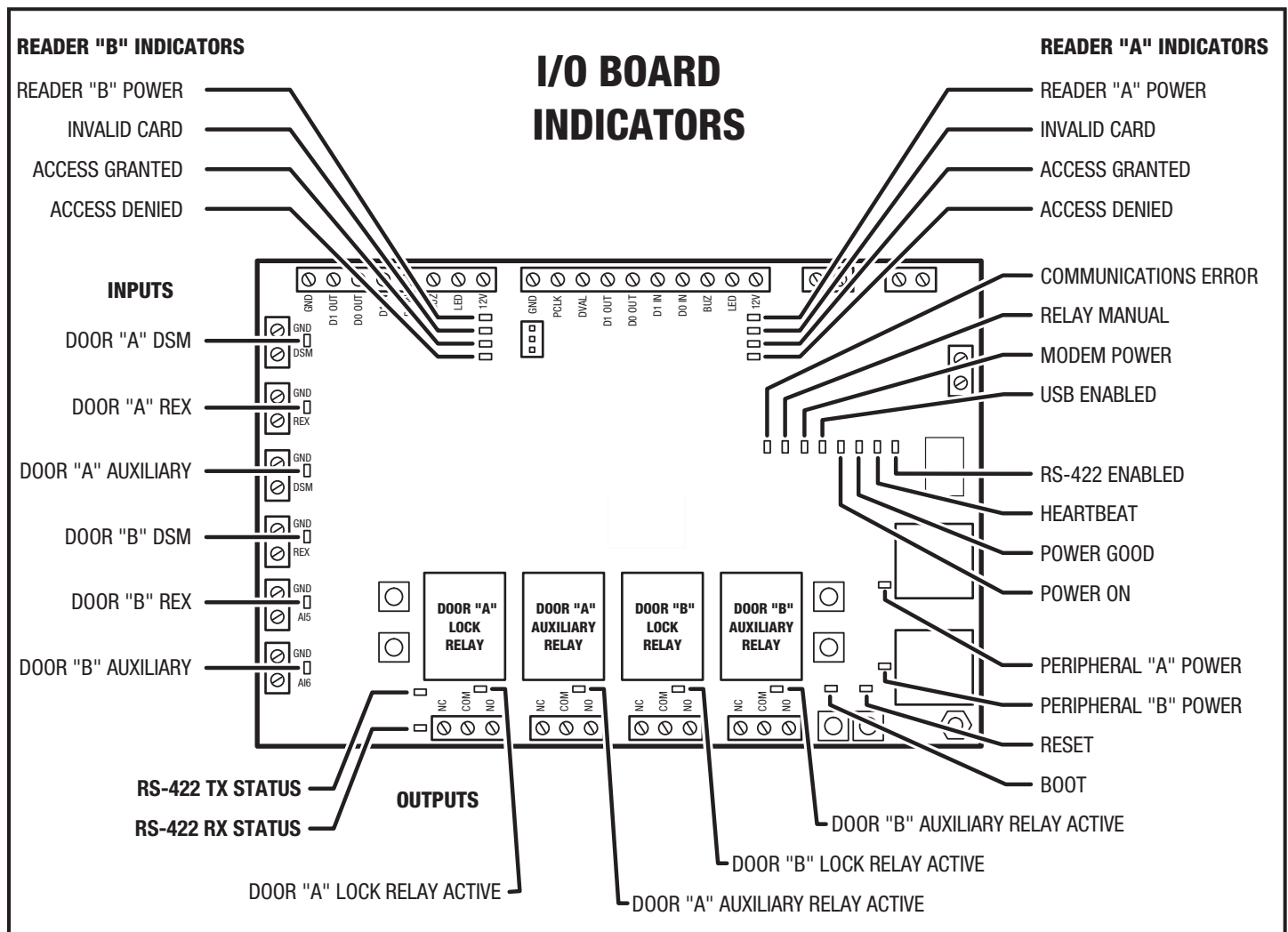
System Diagnostics

LED indicators on the I/O Board and CPU Board are for monitoring the system during operation. When calling for technical assistance, the Technical Services Department may ask the installer to use these indicators to diagnose the system.

I/O Board Indicators

33 LED indicators are on the I/O Board. Refer to the figure for the location of each indicator.

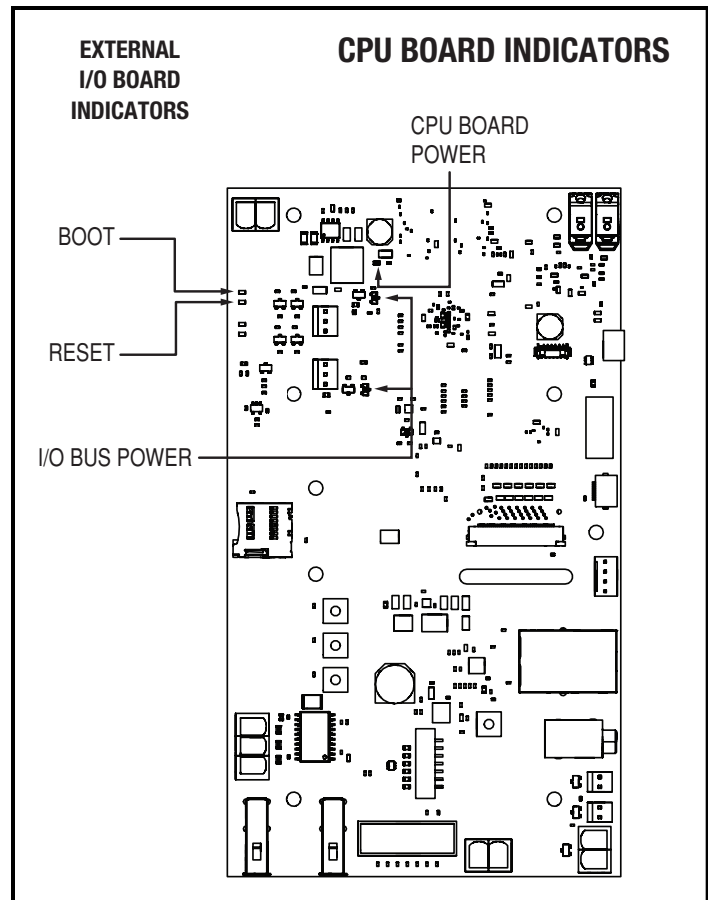
- **READER POWER** lights showing power is being supplied to Reader #1 or Reader #2.
- **INVALID CARD** lights when a credential's data read is not a valid data string.
- **ACCESS GRANTED** lights when a credential has been successfully decoded and the Cardholder has been granted access.
- **ACCESS DENIED** lights when a credential has been successfully decoded and the Cardholder has been denied access.
- **DOOR "A" DSM** lights when Door Relay "A" Door Switch Monitor input is activated.
- **DOOR "A" REX** lights when Door "A" Request-to-Exit input is activated.
- **DOOR "A" AUX** lights when Door "A" auxiliary input is activated.
- **DOOR "B" DSM** lights when Door Relay "B" Door Switch Monitor input is activated.
- **DOOR "B" REX** lights when Door "B" Request-to-Exit input is activated.
- **DOOR "B" AUX** lights when Door "B" auxiliary input is activated.
- **RS-422 TX STATUS** light will blink on any RS422 TX activity.
- **RS-422 RX STATUS** light will blink on any RS422 RX activity.
- **DOOR "A" LOCK RELAY** lights when Door Lock Relay "A" is energized.
- **DOOR "A" AUX RELAY** lights when Door Auxiliary Relay "A" is energized.
- **DOOR "B" LOCK RELAY** lights when Door Lock Relay "B" is energized.
- **DOOR "B" AUX RELAY** lights when Door Auxiliary Relay "B" is energized.
- **COMMUNICATIONS ERROR** lights when there is network error.
- **RELAY MANUAL** lights when a relay has been activated manually.
- **MODEM POWER** lights when the telephone modem has power.
- **USB ENABLED** lights when the USB Port has been enabled.
- **RS-422 ENABLED** lights when RS-422 protocol has been enabled.
- **HEARTBEAT** lights when the system is live and running.
- **POWER GOOD** lights when system power is within specification.
- **POWER ON** lights when the system is receiving power.
- **BOOT** lights during system reboot.
- **RESET** lights during system reboot.
- **PERIPHERAL "A" POWER** lights during Peripheral "A" power.
- **PERIPHERAL "B" POWER** lights during Peripheral "B" power.



CPU Board Indicators

Four LED indicators are on the CPU Board. Refer to the figure for the location of each indicator.

- CPU BOARD POWER lights when power to the CPU board is on.
- BOOT lights during an external I/O board boot sequence.
- RESET lights an external I/O board reset.
- I/O BUS POWER lights when power on the I/O bus is on.



Internal Controls

Several pushbuttons are available in the system to preform resets and restarts, and to manually activate the output relays.

I/O board Pushbuttons

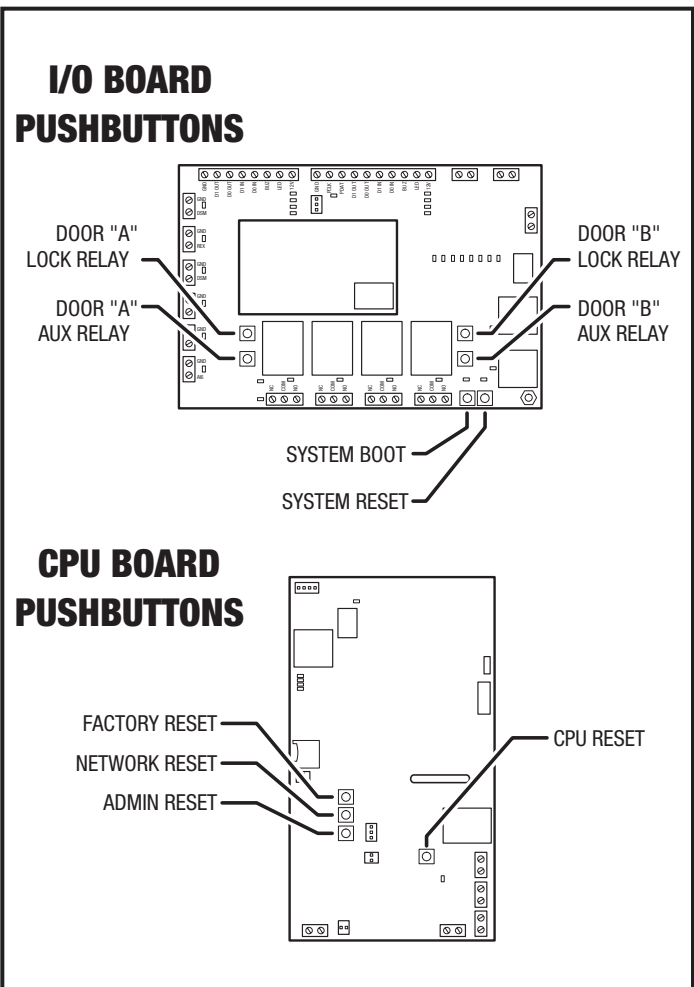
Six pushbuttons are on the I/O Board. Refer to the figure for the location of each pushbutton.

- DOOR "A" LOCK RELAY button manually activates the Door "A" Lock Relay.
- DOOR "A" AUX RELAY button manually activates the Door "A" Auxiliary Relay.
- DOOR "B" LOCK RELAY button manually activates the Door "B" Lock Relay.
- DOOR "B" AUX RELAY button manually activates the Door "B" Auxiliary Relay.
- SYSTEM BOOT button reboots the entire system.
- SYSTEM RESET button reboots the entire system.

CPU board Pushbuttons

Four pushbuttons are on the CPU Board. Refer to the figure for the location of each pushbutton.

- FACTORY RESET button resets the system to the factory defaults. PRESSING FACTORY RESET WILL DELETE ALL PROGRAMMING AND CARDHOLDER INFORMATION.
- NETWORK RESET button resets and restarts the system network.
- ADMIN RESET button resets the unit's admin code.
- CPU RESET button resets and restarts the system CPU.



Specifications

MECHANICAL

Case dimensions: 13" W x 14" H x 3-1/2" D

ELECTRICAL

Voltage: 11-13 Volts DC

Current: 750 mA

Outputs: Four Relays

Form "C" 5 Amps @ 24 Volts maximum

Inputs: Two DSM door position inputs

Two REX exit request inputs

Two AUX auxiliary inputs

Four WIEGAND reader inputs (two IN, two OUT)

Network: LAN or RS-485 network

ENVIRONMENTAL

Temperature: -22°F to 149°F (-30°C to 65°C)

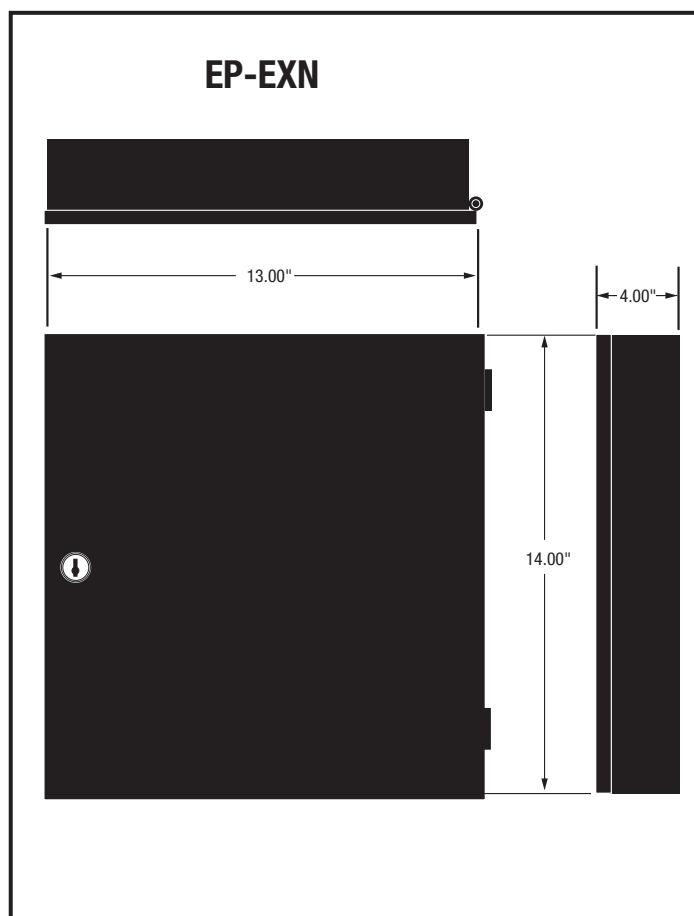
Humidity: 5% to 95% non-condensing

NOTE: EXN is for indoor use only. DO NOT mount outside.

Feature Levels

Destructive Attack	Level I
Ethernet Line Security	Level II
Endurance	Level IV
Standby Power	Level I

Dimension Drawing



Troubleshooting

System completely dead

1. No power from power supply. Check voltage at power supply terminals.
2. Check voltage at I/O Board power terminals.

Entry code will not activate relay

1. Entry code not assigned.
2. Entry code not set up for proper relay.
3. Keypad is in lockout.

Remote Wiegand device does not work

1. Check remote device for power.
2. Assure device is wired correctly.
3. Check the position of the Reader #1 select jumper.

Remote keypad will not activate a relay

1. Entry code is not assigned.
2. Keypad may be in lockout from too many incorrect attempts. Wait one minute for lockout to clear and try again.
3. Remote keypad wiring incorrect.

Transmitter does not activate relay

1. Transmitter button setting programmed to “no relay” (would effect all transmitters).
2. Transmitter not enrolled.
3. Specific transmitter is deactivated in the system.

Limited Warranty

This Nortek Security & Control LLC product is warranted against defects in material and workmanship for twenty-four (24) months. **This warranty extends only to wholesale customers who buy direct from Nortek or through Nortek's normal distribution channels. Nortek Security & Control LLC does not warrant this product to consumers.** Consumers should inquire from their selling dealer as to the nature of the dealer's warranty, if any. There are no obligations or liabilities on the part of Nortek Security & Control LLC for consequential damages arising out of or in connection with use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation, or reinstallation. All implied warranties, including implied warranties for merchantability and implied warranties for fitness, are valid only until the warranty expires. This Nortek Security & Control LLC Warranty is in lieu of all other warranties express or implied.

All products returned for warranty service require a Return Authorization Number (RA#). Contact Nortek Security & Control Returns at 1-855-546-3351 for an RA# and other important details.

FCC Notice

Changes or modifications not expressly described in this manual or approved by the manufacturer could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.