EXN

Access Control System

Installation Instructions
(P/N: 720-100104)
Introduction

The EXN Access Control System is designed for use as a secondary 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, the EN-2A4 / EN-2M4, EN-2A7 / EN-2M7, and EN-2A10 / EN-2M10.

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. One input can be configured for PBUS operation for connection to legacy Linear brand remote access PBUS accessories.

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 programming and maintenance can be performed locally or remotely with via a network LAN connection to the system.
Feature Overview

Relay Outputs
Four 3-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.

PBUS Device Support
The READER “B” port can be configured to connect to Linear brand PBUS accessories (keypads and proximity readers). A typical application for a remote keypad or reader would be to control additional doors or gates.

Removable Programming Memory
The EXN removable 4GB 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 EN-2A4, EN-2A7, EN-2A10, & EXN units can be networked together via an isolated RS-485 network or through 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.
Installation Overview Checklist

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

- Mount the enclosure
- Connect the outputs and inputs for the access devices
- Connect the Wiegand readers and PBUS 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/NEC, NFPA 70 and all local codes.
Component Locations

- Keypad
- Input/Output Board
- Peripheral Ports (2)
- Tamper Lock
- 10/100 Ethernet
- Keypad
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.
2. Mark the four mounting hole centers. Drill as required. Use the appropriate fasteners for the mounting surface to secure the cabinet.

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 3 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:

<table>
<thead>
<tr>
<th>OUTPUT</th>
<th>DEFAULT STATE</th>
<th>DEFAULT RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOOR LOCK OUTPUTS</td>
<td>NOT ENERGIZED, SINGLE PULSE</td>
<td>3 SECOND UNLOCK TIME IN RESPONSE TO CORRESPONDING READER ACTIVITY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>READER #1 INPUT ACTIVATES DOOR RELAY “A”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>READER #2 INPUT ACTIVATES DOOR RELAY “B”</td>
</tr>
<tr>
<td>AUXILIARY OUTPUTS</td>
<td>NOT ENERGIZED, SINGLE PULSE</td>
<td>NO DEFAULT RESPONSE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MUST BE CONFIGURED VIA PROGRAMMING.</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>TOTAL AMPS</th>
<th>VOLTAGE (AC OR DC)</th>
<th>14 AWG</th>
<th>16 AWG</th>
<th>18 AWG</th>
<th>20 AWG</th>
<th>22 AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>.5 AMPS</td>
<td>12 VOLTS</td>
<td>1500 FEET</td>
<td>1000 FEET</td>
<td>600 FEET</td>
<td>375 FEET</td>
<td>225 FEET</td>
</tr>
<tr>
<td></td>
<td>24 VOLTS</td>
<td>2000 FEET</td>
<td>1200 FEET</td>
<td>750 FEET</td>
<td>450 FEET</td>
<td>300 FEET</td>
</tr>
<tr>
<td>1.00 AMPS</td>
<td>12 VOLTS</td>
<td>800 FEET</td>
<td>500 FEET</td>
<td>300 FEET</td>
<td>200 FEET</td>
<td>100 FEET</td>
</tr>
<tr>
<td></td>
<td>24 VOLTS</td>
<td>1000 FEET</td>
<td>600 FEET</td>
<td>400 FEET</td>
<td>200 FEET</td>
<td>150 FEET</td>
</tr>
<tr>
<td>2.00 AMPS</td>
<td>12 VOLTS</td>
<td>400 FEET</td>
<td>240 FEET</td>
<td>150 FEET</td>
<td>90 FEET</td>
<td>60 FEET</td>
</tr>
<tr>
<td></td>
<td>24 VOLTS</td>
<td>480 FEET</td>
<td>300 FEET</td>
<td>180 FEET</td>
<td>120 FEET</td>
<td>70 FEET</td>
</tr>
</tbody>
</table>
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. 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 & NO terminals for fail secure operation or DOOR LOCK RELAY COM & NC 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.

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### Relay Output Wiring Diagrams

**FAIL SECURE WIRING WITH A DC DOOR STRIKE**

**FAIL SAFE WIRING WITH A DC DOOR STRIKE**

**FAIL SECURE WIRING WITH AN AC DOOR STRIKE**

**FAIL SECURE WIRING WITH A DC MAG LOCK**

**FAIL SAFE WIRING WITH A DC MAG LOCK**
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:

<table>
<thead>
<tr>
<th>INPUT</th>
<th>DEFAULT STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOOR SWITCH MONITOR (DSM)</td>
<td>NORMALLY OPEN UNSUPERVISED 8 SECOND HELD OPEN TIME</td>
</tr>
<tr>
<td>REQUEST TO EXIT (REX)</td>
<td>NORMALLY OPEN MOMENTARY UNSUPERVISED</td>
</tr>
<tr>
<td>AUXILIARY INPUTS</td>
<td>NORMALLY OPEN UNSUPERVISED</td>
</tr>
</tbody>
</table>

**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.

1. 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.
2. 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.

1. Install the pushbutton or device to signal an exit request.
2. Route two wires from the device to the EXN.
3. Connect the device’s normally open output to the wires.
4. 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 manufacturer’s installation requirements.

NOTE: All connections may not be used depending on the Wiegand device.

PBUS Accessories

Up to six PBUS accessories (keypads and proximity readers) can be connected to the READER “B” terminals. A typical application for a remote keypad would be to control a second door or gate.

PBUS devices compatible with the EXN are:
- AM-RPR Radio Proximity Receiver
- AM-KP Exterior Keypad
- AM-KPI Interior Keypad
- AM-PR Proximity Receiver

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

NOTE: When using PBUS devices, the Reader “B” select jumper must be set to the PBUS position.

1. Mount and install the accessory as described in its installation instructions.
2. Route 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 READER terminal on the EXN (see PBUS wiring diagram).

IMPORTANT: Reader shields must be properly grounded per the manufacturer’s installation requirements.

NOTE: All connections may not be used depending on the PBUS device.

NOTE: Remove excess shield exposed shield can cause interference or shorts. Tape off any extra.
Network Installation Options and Connections

An access control network allows shared programming and user information between systems. Networks make system programming and facility management much easier in multi-unit installations.

The EN Series Telephone Entry & Access Control System is designed to be compatible with each other when residing in a multi-unit network operating environment.

**IMPORTANT COMPATIBILITY NOTE:** The legacy Linear access control Models AE-1000, AE1000Plus, AE-2000, AE2000Plus, AM3, and AM3Plus are of a different hardware and software design and CANNOT be used in networks mixed with the new generation Models EN-2A4 / EN-2M4, EN-2A7 / EN-2M7, EN-2A10 / EN-2M10 and EXN.

Local Area Network

In installations where there is an existing Local Area Network used for interconnecting various computers and peripherals to the Internet, the EXN LAN PORT is sufficient for connecting the system. The unit will need to be configured with the correct network settings before connecting to the network (see the Preparing for a Local Network section).

If the EXN is going to be connected to a Local Area Network, it must be located in a trusted network environment where a protected network security system (firewall, etc.) is installed and maintained.

Prepare the system for connection to the Local Area Network by running the Cat-5 cable between the EXN and the network router. Wait until further configuration of the system's network settings (see the Preparing for a Local Network section) before actually plugging in the network cable into the LAN PORT of the EXN.

1. Find the location of the Local Area Network router that will serve the EXN system.
2. Select a Cat-5 cable long enough to run from the Local Area Network router to the EXN system enclosure.
3. Route the Cat-5 cable into the EXN enclosure and bring it close to the LAN PORT jack. **DO NOT PLUG THE CABLE IN YET.**

**NOTE:** For ETL installations, the maximum Cat-5 cable length allowed is 30m (98.5 FT).
Ethernet LAN Connection

The EN Series Telephone Entry & Access Control System connects to a controlling LAN via an Ethernet connection on the CPU. Previous Telephone Entry Systems utilized the RS-485 cable connection via a “daisy-chain” to connect multiple units. This type of connection is obsolete and current EN Series units do not require linked type connections to communicate with the LAN.

Ethernet Wiring connection with CPU

1. Mount and install the units for the network.
2. Route Ethernet cable through back of unit.
3. Connect Ethernet cable to the LAN connection point on the CPU.

*NOTE: Do Not connect Ethernet cable to CPU before System is configurated.*
**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.
Configuring for a Local Area Network

The EXN must be located in a trusted network environment where a protected network security system (firewall, etc.) is installed and maintained.

**CAUTION:** The system is exposed to potential risks if installed on a network without proper security precautions. Consult the appropriate on-site IT administrator.

Obtain the following information from your network administrator before configuring the e3 Controller:

- IP address
- Subnet Mask
- Gateway
- DNS 1 and 2

**NOTE:** If a DHCP server is present, IP Addresses are dynamically assigned. A static IP address is strongly recommended for the EXN because a DHCP Server may assign a new IP Address.

Preparing for the Network

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

1. Connect your programming computer directly to the LAN port of the EXN. A standard Cat-5 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 for the computer, open a web browser and enter the IP address of the EXN (Default = 192.168.0.250).
4. The EXN presents the login page. To log on, enter the default user ID and password (admin/admin).
5. Select the Network Setting icon, then the IP Address icon to display the page. Enter the static IP address, Subnet Mask, Gateway and DNS server so that it matches the requirements of the local network. (Refer to the EXN Programming Guide for detailed programming information.)
6. Click Save & Reboot and the system will reboot. (Reboot will take approximately 2 minutes.)
   **NOTE:** The system data will be lost if the EXN is powered down without performing Save & Reboot.
7. Disconnect the programming computer from the EXN. The system is now ready for the local network.
8. Connect the Cat-5 cable from the Local Area Network to the EXN LAN PORT jack. The local computers will then be able to access the system by entering the IP address of the EXN.
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.
- PBUS light will be on when jumper is in PBUS mode.
- 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.
Internal Controls
Several pushbuttons are available in the system to perform 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.

CPU Board Indicators
Six LED indicators are on the CPU Board. Refer to the figure for the location of each indicator.
- RECEIVE DATA lights when data is received from an external I/O board.
- RESET lights an external I/O board reset.
- TRANSMIT DATA lights when data is sent to an external I/O board.
- BOOT lights during an external I/O board boot sequence.
- I/O BUS POWER lights when power on the I/O bus is on.
- NETWORK ACTIVITY & SPEED two LEDs on end of the LAN connector light for network activity and connection speed.
- CPU BOARD POWER lights when power to the CPU board is on.
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” 3 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)
One PBUS input (supports up to six PBUS devices)

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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destructive Attack</td>
<td>Level I</td>
</tr>
<tr>
<td>Ethernet Line Security</td>
<td>Level II</td>
</tr>
<tr>
<td>Endurance</td>
<td>Level IV</td>
</tr>
<tr>
<td>Standby Power</td>
<td>Level I</td>
</tr>
</tbody>
</table>

Dimension Drawing

EXN

Dimensions:
- Width: 13.00”
- Height: 14.00”
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 PBUS device does not work
1. Check remote device address switch setting.
2. Check remote device for power.
3. Assure device is wired correctly.
4. 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.

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.