Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

SECTION 28 13 00
ACCESS CONTROL

PART 1 GENERAL

1.1   SUMMARY

A. Section Includes: Server hardware and software, client software, security access devices, access control, relay control, elevator control, credential creation and credential holder database and management, Digital Video Integration, Basic Burglary Alarm Integration

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI *MasterFormat* and specifier's practice.

B. Related Sections:

1.   Section [08 11 00 - Metal Doors and Frames] [_____].

2.   Section [08 14 00 - Wood Doors] [_____].

3.   Section [08 41 13 – Aluminum Framed Entrances and Store fronts] [_____]

4.   Section [08 71 00 - Door Hardware] [_____].

5.   Section [14 20 00 - Elevators] [_____].

6.   Section [21 09 00 – Instrumentation and Control for Fire-Suppression Systems] [_____]

7.   Section [25 15 00 - Integrated Automation Software] [_____].

8.   Section [26 05 00 - Common Work Results for Electrical] [_____].

9.   Section [26 05 19 - Low-Voltage Electrical Power Conductors and Cables] [_____].

10. Section [27 10 00 - Structured Cabling] [_____].

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Section 01 42 19 - Reference Standards may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section. Retain only those reference standards to be used within the text of this Section. Add and delete as required for specific project.

1.2   REFERENCES

A. Institute of Electrical and Electronics Engineers (IEEE):

1.   IEEE 1100 Recommended Practice for Powering and Grounding Electronic Equipment.

B. National Fire Protection Association (NFPA):

1.   NFPA 70 2005 National Electrical Code.

2.   NFPA 72 National Fire Alarm Code.

3.   NFPA 80 Fire Doors and Windows, 2007 Edition.

4.   NFPA 101 Life Safety Code, 2009 Edition.

C. Underwriters Laboratories, Inc. (UL):

1.   UL 294 Access Control System Units - Revision 2.

2.   UL 1778 Uninterruptible Power Supply Equipment.

D. International Organization for Standardization (ISO):

1.   ISO 7816 Smart Card Standard.

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

1.3 SYSTEM DESCRIPTION

A. Design Requirements: Provide products and systems that have been manufactured, fabricated and installed to the following criteria:

1. Comply with IEEE 1100.

2. Comply with NFPA 70.

3. Comply with NFPA 72.

4. Comply with NFPA 80.

5. Comply with NFPA 101.

6. Comply with UL 294.

7. Access Control Management System: PRO-ACC Enterprise Electronic Access Control System.

   a.   Compliance: UL 294.

   b.   System Capabilities:

      1)   Stand-alone or networked.

      2)   Control access to a maximum of 4000 doors.

      3)   Control elevator access up to 64 floors per Cab (4000 Cabs max.).

      4)   Control a maximum of 10,240 alarm input points (input /output).

      5)   Manage and control access for up to 65,000 credentials.

      6)   Global Linking (relay control).

      7)   Multiple remote sites.

      8)   Alarm monitoring with text and graphics based annunciation.

      9)   Photo ID badging. Photo call-up.

      10)   Readers, inputs and outputs expandable and/or modifiable.

      11)   Single software program controlled.

      12)   Multiple languages supported, English, French, and Spanish.

      13)   Active Graphical Maps

      14)   32 Programmable Holidays

      15)   Multi-site Management utility

      16)   Client Software capable of unlimited number of users (max 10 users connected simultaneously).

      17)   Anti-pass back, timed Anti-pass back and Global Anti-pass back.

      18)   Muster Reporting

      19)   Time and Attendance calculator

      20)   Full integration and customization of all system components.

      21)   Online reconfiguration through system programming without hardware changes.

   c.   Access Control Functions:

      1)   Validation of Credential based on Time of Day, Day of Week and Holiday scheduling.

      2)   Simultaneous controlled access with various reader technologies;

   Proximity, Biometrics, Mag stripe, Barcode

      3)   Automatic or manual retrieval of cardholder photographs.

      4)   First person in capability.

      5)   Access validation based on positive verification of Credential, PIN, or Credential/PIN combination.

      6)   Differentiates between valid credential presentation only, and valid credential presentation followed by entry (when using door position switch).

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     d.   Passwords:

          1)   Assignable.

          2)   Unlimited number of System Administrators.

          3)   Levels of System Administrators are definable per Administrator.

          4)   Administrator actions/capabilities range from basic system monitoring to control of all system functions.

     e.   System Programming:

          1)   User-friendly Windows environment utilizing menu bar, tool bar, point and click, drag and drop format.

          2)   MENU driven programming, including online "Documentation," and "Help" information.

          3)   Ability to Block Load large quantities of cards in one simple step.

          4)   Ability to import user information in a CSV file format.

     f.   Alarm Point Monitoring:

          1)   Ability to monitor a maximum of 10,240 alarm points

          2)   Alarm information displayed in text format on event description screen, and on graphic floor plan.

          3)   CCTV camera switching capabilities associated with alarm point, via RS232 communication.

          4)   DVR image switching capabilities associated with alarm point, via IP communication.

          5)   Manual and automatic activation or deactivation of alarm point monitoring by time of day and day of week.

          6)   Capability of E-Mailing alarm events, up to three recipients.

     g.   System integration:

   1)   CCTV Matrix controls (via RS232).

   2)   DVR Integration with Openeye, Bosch, Toshiba, Samsung, Honeywell, and PCOpen.

   3)   Alarm system integration.

     h.   Communication:

   1)   Supports TCP/IP, USB, and Dial-up Communication

   2)   Ability to communicate to remote locations via LAN through a router (static address required), utilizing remote desktop service, and remote site manager for Dial-up sites.

   3)   Support of up to 100 channels of communication.

     i.   Controller Components:

   1)   Fully Distributed-Processing concepts.

   2)   Downloading of operating parameters capable to field panel, providing full operating functions independent of other system components.

     j.   Compatibility: Existing LAN/WAN connecting buildings, dedicated security Ethernet network.

   B. System Minimum Requirements:

Specifier Note: The computer specifications are the minimum standards for a basic system. When a system includes a large number of clients, controllers, and/or users, additional server power is strongly recommended. Central Processing Unit Computer:

   1. Microsoft compatible Windows 98/ME/2000/XP/Vista/Windows7/Server 2003/Server 2008.

   2. PC Pentium 200MHz or better.

   3. 256 MB RAM

   4. VGA monitor (best viewed in 1024x768 pixels and 24 bit true color, using small fonts).

   5. 5GB hard drive space required, depending upon system configuration.

   6. Mouse or tablet

7. CDRW, for backup purposes.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Section 01 33 00 - Submittal Procedures.

1.4 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Section [01 33 00 - Submittal Procedures] [_____].

B. Product Data: Submit product data for specified products, _____ copies

C. Manufacturer's Instructions: Manufacturer's Technical installation guide, and Manufacturer's Software Guide, _____copies.

D. Drawings: Submit shop drawings detailing installation procedures, including layout, dimensions and support placement, ____ copies.

Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article. Retain or delete as applicable.

E. Closeout Submittals: Submit the following:

1. Warranty: Warranty documents.

2. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Section [01 78 00 - Closeout Submittals] [_____]. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

1.5 QUALITY ASSURANCE

A. Qualifications:

1. Installer: Experienced in performing work of this section, and having specialized knowledge in installation of systems similar to that required for this project. **Installer must be a manufacturer trained and authorized PRO-ACC installer, providing termination, commissioning and end-user training (technical and/or administrative) services as required.**

2. Manufacturer: Capable of providing field service representation during construction, and approving installation and application method, as well as providing termination, commissioning and end user training (technical and/or administrative) services as required.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Section 01 41 00 - Regulatory Requirements. Repetitive statements should be avoided.

B. Regulatory Requirements: In accordance with Section [01 41 00 - Regulatory Requirements] [_____].

1. IEEE 1100.

2. NFPA 70.

3. NFPA 72.

4. NFPA 80.

5. NFPA 101.

6. UL 294.

C. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with [Section 01 31 19 - Project Meetings].

1.6 DELIVERY, STORAGE & HANDLING

A. General: Comply with Section [01 61 00 - Common Product Requirements].

B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Storage and Protection: Store materials indoors, protected from exposure to harmful weather conditions and at a temperature between 10 and 30 degrees Celsius, and between 10% and 90% relative humidity, non-condensing. Product boxes not to be stacked more than 3 high, and are not to have anything stacked on top or directly beside the product that could possibly cause damage based on weight, moisture, corrosive content etc.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 01 Closeout Submittals (Warranty) Section.

1.7 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions. Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

B. Manufacturer's Warranty: Hartmann Controls warrants all PRO-ACC Controllers manufactured by Hartmann are free from defects in material and workmanship. However this warranty **does not** cover non-manufactured peripheral products sold by Hartmann. Peripheral products are covered by the manufacturer's warranty of the particular peripheral device.

C. Warranty Period: Hartmann Controls PRO-ACC Controllers carry a 5 (five) year pro-rated warranty from date of substantial completion. Hartmann Controls Corp will repair or replace defective equipment upon return to its facility, if they find that the warranty was breached in any way, Hartmann Controls Corp will not warrant any damage that occurred during shipping or handling, or damage caused by a repair or an attempt to repair by any person other than those authorized by Hartmann Controls. This warranty covers normal industrial use and does not cover defects or damage to any product which, in the sole opinion of Hartmann Controls Corp has been subject to improper installation, unauthorized modification, misuse, neglect, abuse, or abnormal operating conditions, improper storage, or which has been attributable to acts of God such as lighting. Installation, which is not in accordance with the installation instructions, published by Hartmann Controls, will void the warranty. This warranty does not cover defects or damage caused by a product, which is not approved by Hartmann Controls Corp and is connected to a PRO-ACC system.

The said warranty only applies to the original purchaser and is and shall be in lieu of any and all other warranties.
** *Please note this does not include shipping, which will be supplied by the customer.*

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.1 ELECTRONIC ACCESS CONTROL MANAGEMENT SYSTEM

A. Manufacturer: HARTMANN CONTROLS CORPORATION

    1. Contact: PHONE 877-411-0101, FAX 705-792-5632. www.hartmann-controls.com

B. System Components:

    1. 2-Door Controller : HC-PRO2

        a. Supports 2 readers

        b. Power input: 12-16VAC, 40VA Transformer Certified Class 2 CSA/UL.

        c. Battery input: One 12VDC, 7AH gel type.

        d. Processor: 8-Bit processor, to reduce power consumption (Green Feature).

        e. Storage: 65,000 users, 2,000 events (onboard).

        f. Terminals: Quick disconnect terminal headers.

        g. Reader Communications: Wiegand Data1/Data0.

        h. Auxiliary Power: 12VDC @ 200mA max. (Used to power motion devices, Piezo's, etc**.) Not to be used to power Magnetic locks or Electric strikes**. A separate power supply must be used to power Electrified hardware.

        i. Reader power: Optional 5VDC or 12VDC @ 250mA max. per port (field selectable via jumper).

        j. Relay Outputs: Four 10 Amp/120VAC Form C (Maximum 6 Amp Load) (Two lock relays and two programmable auxiliary relays).

        k. Reader Formats: Magnetic stripe, Biometric, Bar code, and Wiegand 40, 37, 36, 35, 32 & 26 bit.

        l. Inputs: 5 Dry contact inputs (N.O. for exit devices and monitor points with Request-to exit switching incorporated; N.C. for door contacts, or custom configurable).

        m. Communications: On board RS422 @ 19,200 baud rate using compression algorithm and data encryption, (8 data bits, no parity, one stop bit).

n. LED Indicator: 1 AC power indicator, 2 DC indicators, 4 input indicators, 4 output indicators and 1 communication status.

o. Operating Temperature: 0 degrees Celsius to 50 degrees Celsius.

p. Operating Humidity: 10% to 90% relative humidity, non-condensing.

q. Expandable modular design.

r. PCB Dimensions: 23.2cm X 20cm (9.125" X 8.0").

s. Enclosure Dimensions: 28.6cm (W) X 38.75cm (H) X 7.7cm (D) (11.25" X 15.25" X 3").

t. Enclosure Color: Blue.

u. Compliance: Panel is ETL Listed conforms to UL 294 Certified to CSA-C22.2 no.205.

2. 4-Door Controller: HC-PRO4

a. Supports 4 readers

b. Power input: 12-16VAC, 40VA Transformer Certified Class 2 CSA/UL.

c. Battery input: One 12VDC, 7AH gel type.

d. Processor: 8-Bit processor, to reduce power consumption (Green Feature).

e. Storage: 65,000 users, 2,000 events (on board).

f. Terminals: Quick disconnect terminal headers.

g. Reader Communications: Wiegand Data1/Data0.

h. Auxiliary Power: 12VDC @ 200mA max. (Used to power motion devices, Piezo's, etc**.) Not to be used to power Magnetic locks or Electric strikes**. A separate power supply must be used to power Electrified hardware.

i. Reader power: Optional 5VDC or 12VDC @ 250mA max. per port (field selectable via jumper).

j. Relay Outputs: Eight 10 Amp/120VAC Form C (Maximum 6 Amp Load) (Four lock relays and four programmable auxiliary relays).

k. Reader Formats: Magnetic stripe, Biometric, Bar code, and Wiegand 40, 37, 36, 35, 32 & 26 bit.

l. Inputs: 9 Dry contact inputs (N.O. for exit devices and monitor points with Request-to exit switching incorporated; N.C for door contacts or custom configurable).

m. Communications: On board RS422 @ 19,200 baud rate using compression algorithm and data encryption, (8 data bits, no parity, one stop bit).

n. LED Indicator: 1 AC power indicator, 2 DC indicators, 8 input indicators, 8 output indicators and 1 communication status.

o. Operating Temperature: 0 degrees Celsius to 50 degrees Celsius.

p. Operating Humidity: 10% to 90% relative humidity, non-condensing.

q. Expandable modular design.

r. PCB Dimensions: 23.2cm X 20cm (9.125" X 8.0")

s. Enclosure Dimensions: 28.6cm (W) X 38.75cm (H) X 7.7cm (D) (11.25" X 15.25" X 3").

t. Enclosure Color: Blue.

u. Compliance: Panel is ETL Listed conforms to UL 294 Certified to CSA-C22.2 no.205.

3. 8-Floor Elevator Cab Controller (Expandable to 64 Floors per Cab): HC-PROEC8

    a. Supports 1 reader

    b. Power input: 12-16VAC, 40VA Transformer Certified Class 2 CSA/UL.

    c. Battery input: One 12VDC, 7AH gel type.

    d. Processor: 8-Bit processor, to reduce power consumption (Green Feature).

    e. Storage: 65,000 users, 2,000 events (on board).

    f. Terminals: Quick disconnect terminal headers.

    g. Reader Communications: Wiegand Data1/Data0.

    h. Auxiliary Power: 12VDC @ 200mA max. (Used to power motion devices, Piezo's, etc.)

    i. Reader power: Optional 5VDC or 12VDC @ 250mA max. per port (field selectable via jumper).

    j. Floor Relay Outputs: Eight 10 Amp/120VAC Form C (Maximum 6 Amp Load).

    k. Reader Formats: Magnetic stripe, Biometric, Bar code, and Wiegand 40, 37, 36, 35, 32 & 26 bit.

    l. Communications: On board RS422 @ 19,200 baud rate using compression algorithm and data encryption, (8 data bits, no parity, one stop bit).

    m. LED Indicator: 1 AC power indicator, 2 DC indicators, 8 output indicators and 1 communication status.

    n. Operating Temperature: 0 degrees Celsius to 50 degrees Celsius.

    o. Operating Humidity: 10% to 90% relative humidity, non-condensing.

    p. Expandable modular design.

    q. PCB Dimensions: 23.2cm X 20cm (9.125" X 8.0").

    r. Enclosure Dimensions: 28.6cm (W) X 38.75cm (H) X 7.7cm (D) (11.25" X 15.25" X 3").

    s. Enclosure Color: Blue.

    t. Compliance: Panel is ETL Listed conforms to UL 294 Certified to CSA-C22.2 no.205.

4. 8-Floor Elevator Cab Expander Controller: HC-PROECE8

    a. Power input: 12-16VAC, 40VA Transformer Certified Class 2 CSA/UL.

    b. Battery input: One 12VDC, 7AH gel type.

    c. Processor: 8-Bit processor, to reduce power consumption (Green Feature).

    d. Storage: 65,000 users, 2,000 events (on board).

    e. Terminals: Quick disconnect terminal headers.

    f. Reader Communications: Wiegand Data1/Data0.

    g. Auxiliary Power: 12VDC @ 200mA max. (Used to power motion devices, Piezo's, etc.)

    h. Reader power: Optional 5VDC or 12VDC @ 250mA max. per port (field selectable via jumper).

    i. Floor Relay Outputs: Eight 10 Amp/120VAC Form C (Maximum 6 Amp Load).

    j. Reader Formats: Magnetic stripe, Biometric, Bar code, and Wiegand 40, 37, 36, 35, 32 & 26 bit.

    k. Communications: On board RS422 @ 19,200 baud rate using compression algorithm and data encryption, (8 data bits, no parity, one stop bit).

    l. LED Indicator: 1 AC power indicator, 2 DC indicators, 8 output indicators and 1 communication status.

    m. Operating Temperature: 0 degrees Celsius to 50 degrees Celsius.

    n. Operating Humidity: 10% to 90% relative humidity, non-condensing.

    o. Expandable modular design.

    p. PCB Dimensions: 23.2cm X 20cm (9.125" X 8.0")

    q. Enclosure Dimensions: 28.6cm (W) X 38.75cm (H) X 7.7cm (D) (11.25" X 15.25" X 3").

    r. Enclosure Color: Blue.

    s. Compliance: Panel is ETL Listed conforms to UL 294 Certified to CSA-C22.2 no.205.

5. Input/Output Controller - 8 Inputs, 8 Outputs: HC-PROSIOC8

      a. Power input: 12-16VAC, 40VA Transformer Certified Class 2 CSA/UL.

      b. Battery input: One 12VDC, 7AH gel type.

      c. Processor: 8-Bit processor, to reduce power consumption (Green Feature).

      d. Auxiliary Power: 12VDC @ 200mA max. (Used to power motion devices, Piezo's, etc.)

      e. Terminals: Quick disconnect terminal headers.

      f. Relay Outputs: Eight 10 Amp/120VAC Form C (Maximum 6 Amp Load).

      g. Inputs: 9 Dry contact inputs (Normally Closed for monitoring purposes).

      h. Communications: On board RS422 @ 19,200 baud rate using compression algorithm and data encryption,　(8 data bits, no parity, one stop bit).

  i. LED Indicator: 1 AC power indicator, 2 DC indicators, 8 input indicators, 8 output indicators and 1 communication status.

  j. Operating Temperature: 0 degrees Celsius to 50 degrees Celsius.

  k. Operating Humidity: 10% to 90% relative humidity, non-condensing.

  l. Expandable modular design.

  m. PCB Dimensions: 23.2cm X 20cm (9.125" X 8.0").

  n. Enclosure Dimensions: 28.6cm (W) X 38.75cm (H) X 7.7cm (D) (11.25" X 15.25" X 3").

  o. Enclosure Color: Blue.

  p. Compliance: Panel is ETL Listed conforms to UL 294 Certified to CSA-C22.2 no.205.

6. Communication Converters:

  1) USB to 485/422 – HC-USB-422:

    a. LED Indicators: 1 Power, 1 Transmit, 1 Receive.

    b. Terminals: Quick disconnect terminal, USB port

    c. Communication: Capable of communicating to panels via Cat 5/5e cable or Belden 8723 or equivalent with a maximum of 32 multi-drop points, at a maximum distance of 4,000 ft (under ideal conditions).

    d. Warranty: 1 year, Limited (as per manufacturer)

  2) TCP/IP to 485/422 – HC-TCPIP:

    a. LED Indicators: 1 Power, 1 Data, 1 LAN, and 1 SYS.

    b. Terminals: Quick disconnect terminals.

    c. Power Requirement: 9-12VDC.

    d. Communication: Capable of communicating to panels via Cat 5/5e cable or Belden 8723 or equivalent with a maximum of 32 multi-drop points, at a maximum distance of 4000 ft (under ideal conditions).

    e. Warranty: 1 year, Limited (as per manufacturer

7. Multi- Mount Mullion/Single Gang Proximity Access Reader HC-PROX3:

  a. Dimensions: Mullion - 4.5 x 1.6 x 0.75 inches (114 x 38 x 19 mm);
Single Gang – 5.8 x 2.9 x 0.8 inches (147 x 74 x 20 mm).

  b. Weight: 3 oz. (85 g)

  c. Design: Fully potted tamper-resistant epoxy core; Weatherproof.

  d. Characteristics: High reliability; consistent read range characteristics; low power consumption

  e. Color: Black.

  f. Features: Multicolor LED indicator-Red, Green, Amber, and Off.

  g. Mounting: Mullion or Single Gang using removable back plate; can be mounted directly to metal.

  h. Cable Distance: Up to 500 ft (152 m)

  i. Communication Format: High-security 40-bit Wiegand (HID, AWID, FarPointe compatible).

  j. Read Range: Up to6 inches (152 mm) depending on credential.

    k. Operating Temperature: -40 to +65 degrees Celsius.

    l. Power Supply: Linear supply recommended, 5-14 VDC

    m. Current Draw: 5mA minimum, 45mA typical, 80mA peak.

    n. Compatible Credentials: HC-PSC1, HC-PSK3, HC-PSI4

    o. Compliance: CSA, UL, FCC, CE, C-Tick.

    p. Warranty: Limited Lifetime (as per manufacturer).

8. Mullion Mount Proximity Access Reader HC-P300:

    a. Dimensions: 3.2 x 1.7 x 0.7 inches (80 x 43 x 17 mm).

    b. Weight: 3 oz. (85 g)

    c. Design: Fully potted tamper-resistant epoxy core; Weatherproof.

    d. Characteristics: High reliability; consistent read range characteristics; low power consumption

    e. Colors: Black and off-White faceplates.

    f. LED's: Four-State Standard (Red, Green, Amber, and Off)

    g. Audio Tone: Standard Piezo Beeper

    h. Mounting: Can be mounted directly to metal.

    i. Cable Distance: Up to 500 ft (152 m)

    j. Communication Format: High-security 40-bit Wiegand (AWID and HID available)

    k. Read Range: Up to 6 inches (152 mm) depending on credential.

    l. Operating Temperature: -40 to +65 degrees Celsius.

    m. Power Supply: Linear supply recommended, 5-14 VDC

    n. Current Draw: 5mA minimum, 45mA typical, 80mA peak.

    o. Compatible Credentials: HC-PSC1, HC-PSK3, HC-PSI4

    p. Compliance: CSA, UL, FCC, CE, C-Tick.

    q. Warranty: Limited Lifetime (as per manufacturer).

9. Mullion Mount Correctional Facility Proximity Access Reader HC-P403:

    a. Dimensions: 5.25 x 2 x 1 inches (133.4 x 51 x 25.4 mm).

    b. Weight: 6.4 oz. (181.4 g)

    c. Design: Vandal-resistant solid block polycarbonate with fully potted tamper-resistant epoxy proximity core; Weatherproof.

    d. Characteristics: High reliability; consistent read range characteristics; low power consumption

    e. Colors: Black.

    f. LED's: Four-State Standard (Red, Green, Amber, and Off)

    g. Audio Tone: External Piezo Beeper

    h. Mounting: Can be mounted directly to metal or plastic flat surfaces.

    i. Cable Distance: Up to 500 ft (152 m)

    j. Communication format: High-security 40-bit Wiegand (AWID and HID available)

    k. Read Range: Up to 6 inches (152 mm) depending on credential.

    l. Operating Temperature: -40 to +65 degrees Celsius.

    m. Power Supply: Linear supply recommended, 5-14 VDC

    n. Current Draw: 5mA minimum, 45mA typical, 80mA peak.

    o. IP Rating: IP67

    p. Compatible Credentials: HC-PSC1, HC-PSK3, HC-PSI4

    q. Compliance: FCC, CE, C-Tick, IC.

    r. Warranty: Limited Lifetime (as per manufacturer)

10. Single Gang Mount Correctional Facility Proximity Access Reader HC-P405:

    a. Dimensions: 4.5 x 2.75 x 1 inches (118.4 x 127 x 25.4 mm).

    b. Weight: 8 oz. (227 g)

    c. Design: Vandal-resistant solid block polycarbonate with fully potted tamper-resistant epoxy proximity core; Weatherproof.

    d. Characteristics: High reliability; consistent read range characteristics; low power consumption

    e. Colors: Black.

    f. LED's: Four-State Standard (Red, Green, Amber, and Off)

    g. Audio Tone: External Piezo Beeper

    h. Mounting: Can be mounted directly to metal or plastic flat surfaces.

    i. Cable Distance: Up to 500 ft (152 m)

    j. Communication format: High-security 40-bit Wiegand (AWID and HID available)

    k. Read Range: Up to 6 inches (152 mm) depending on credential.

    l. Operating Temperature: -40 to +65 degrees Celsius.

    m. Power Supply: Linear supply recommended, 5-14 VDC

    n. Current Draw: 5mA minimum, 45mA typical, 80mA peak.

    o. IP Rating: IP67

    p. Compatible Credentials: HC-PSC1, HC-PSK3, HC-PSI4

    q. Compliance: FCC, CE, C-Tick, IC.

    r. Warranty: Limited Lifetime (as per manufacturer)

11. Mullion Mount Vandal Resistant Proximity Access Reader HC-P453:

    a. Dimensions: 5.25 x 2 x 1 inches (133 x 51 x 25.4 mm).

    b. Weight: 24 oz. (680 g)

    c. Design: Vandal-resistant UL 752 listed for bulletproof integrity, fully potted tamper-resistant epoxy core shipped with tamper-proof screws; Weatherproof.

    d. Characteristics: High reliability; consistent read range characteristics; low power consumption

    e. Colors: Stainless Steel and Fiber-Tex.

    f. LED's: Four-State Standard (Red, Green, Amber, and Off)

    g. Audio Tone: External Piezo Beeper

    h. Mounting: Can be mounted directly to metal door or window frame or flat surfaces.

    i. Cable Distance: Up to 500 ft (152 m)

    j. Communication format: High-security 40-bit Wiegand (AWID and HID available)

    k. Read Range: Up to 1.5 inches (38 mm).

    l. Operating Temperature: -40 to +65 degrees Celsius.

    m. Power Supply: Linear supply recommended, 5-14 VDC

    n. Current Draw: 5mA minimum, 45mA typical, 80mA peak.

    o. IP Rating: IP67

    p. Compatible Credentials: HC-PSC1, HC-PSK3, HC-PSI4

    q. Compliance: FCC, CE, C-Tick, IC.

    r. Warranty: Limited Lifetime (as per manufacturer)

12. Single Gang Mount Vandal Resistant Proximity Access Reader HC-P455:

    a. Dimensions: 4.5 x 3 x 1 inches (114 x 76 x 25.4 mm).

    b. Weight: 38.4 oz. (1088 g)

    c. Design: Vandal-resistant UL 752 listed for bulletproof integrity, fully potted tamper-resistant epoxy core shipped with tamper-proof screws; Weatherproof.

    d. Characteristics: High reliability; consistent read range characteristics; low power consumption

e.   Colors: Stainless Steel and Fiber-Tex.

   f.   LED's: Four-State Standard (Red, Green, Amber, and Off)

   g.   Audio Tone: External Piezo Beeper

   h.   Mounting: Can be mounted directly to metal door or window frame or flat surfaces.

   i.   Cable Distance: Up to 500 ft (152 m)

   j.   Communication format: High-security 40-bit Wiegand (AWID and HID available)

   k.   Read Range: Up to 1.5 inches (38 mm).

   l.   Operating Temperature: -40 to +65 degrees Celsius.

   m.   Power Supply: Linear supply recommended, 5-14 VDC

   n.   Current Draw: 5mA minimum, 45mA typical, 80mA peak.

   o.   IP Rating: IP67

   p.   Compatible Credentials: HC-PSC1, HC-PSK3, HC-PSI4

   q.   Compliance: FCC, CE, C-Tick, IC.

   r.   Warranty: Limited Lifetime (as per manufacturer)

13.   Single Gang Mount Proximity Access Reader HC-P500:

   a.   Dimensions: 4.6 x 3 x 0.4 inches (116 x 77 x 10 mm).

   b.   Weight: 4 oz. (113 g)

   c.   Design: Fully potted tamper-resistant epoxy core; Weatherproof.

   d.   Characteristics: High reliability; consistent read range characteristics; low power consumption

   e.   Colors: Black and off-White faceplates.

   f.   LED's: Four-State Standard (Red, Green, Amber, and Off)

   g.   Audio Tone: Standard Piezo Beeper

   h.   Mounting: Can be mounted directly to metal.

   i.   Cable Distance: Up to 500 ft (152 m)

   j.   Communication format: High-security 40-bit Wiegand (AWID and HID available)

   k.   Read Range: Up to 8 inches (203 mm) depending on credential.

   l.   Operating Temperature: -40 to +65 degrees Celsius.

   m.   Power Supply: Linear supply recommended, 5-14 VDC

   n.   Current Draw: 5mA minimum, 45mA typical, 80mA peak.

   o.   Compatible Credentials: HC-PSC1, HC-PSK3, HC-PSI4

   p.   Compliance: CSA, UL, FCC, CE, C-Tick.

   q.   Warranty: Limited Lifetime (as per manufacturer).

14.   Keypad/Proximity Access Reader HC-P640:

   a.   Dimensions: 4.6 x 3 x 0.7 inches (116 x 77 x 18 mm).

   b.   Weight: 4 oz. (113 g)

   c.   Design: Fully potted tamper-resistant epoxy core; Weatherproof.

   d.   Characteristics: High reliability; consistent read range characteristics; low power consumption

   e.   Keypad: Alpha-numeric with raised pip on 5-key, blue backlighting, tactile feedback

   f.   Colors: Black and off-White faceplates.

   g.   LED's: Four-State Standard (Red, Green, Amber, and Off)

   h.   Audio Tone: Standard Piezo Beeper

   i.   Mounting: Can be mounted directly to metal.

   j.   Cable Distance: Up to 500 ft (152 m)

   k.   Keypad Formats: 8-bit burst and 26-bit wiegand

   l.   Communication format: High-security 40-bit Wiegand (AWID and HID available)

m. Read Range: Up to 6 inches (152 mm) depending on credential.

n. Operating Temperature: -40 to +65 degrees Celsius.

o. Power Supply: Linear supply recommended, 5-14 VDC

p. Current Draw: 5mA minimum, 45mA typical, 80mA peak.

q. Compatible Credentials: HC-PSC1, HC-PSK3, HC-PSI4

r. Compliance: FCC, CE, C-Tick.

s. Warranty: Limited Lifetime (as per manufacturer).

15. Medium Range Single Gang Access Reader HC-P710:

a. Dimensions: 8.5 x 6 x 0.4 inches (216 x 152 x 10 mm).

b. Weight: 22.4 oz. (635 g)

c. Design: Fully potted tamper-resistant epoxy core; Weatherproof.

d. Characteristics: High reliability; consistent read range characteristics; low power consumption

e. Colors: Black.

f. LED's: Four-State Standard (Red, Green, Amber, and Off)

g. Audio Tone: Standard Piezo Beeper

h. Mounting: Can be mounted directly to metal or plastic flat surface.

i. Cable Distance: Up to 500 ft (152 m)

j. Communication format: High-security 40-bit Wiegand (AWID and HID available)

k. Read Range: Up to 15 inches (381 mm) depending on credential.

l. Operating Temperature: -40 to +65 degrees Celsius.

m. Power Supply: Linear supply recommended, 5-14 VDC

n. Current Draw: 200mA typical, 600mA peak.

o. IP Rating: IP65

p. Compatible Credentials: HC-PSC1, HC-PSK3, HC-PSI4

q. Compliance: FCC, CE, C-Tick, IC.

r. Warranty: Limited Lifetime (as per manufacturer).

16. Long Range Single Gang Access Reader HC-P900:

a. Dimensions: 10.5 x 10.5 x 2 inches (267 x 267 x 51 mm).

b. Weight: 20.4 oz. (578 g)

c. Design: Fully potted tamper-resistant epoxy core; Weatherproof.

d. Characteristics: High reliability; consistent read range characteristics; low power consumption

e. Colors: Black.

f. LED's: Four-State Standard (Red, Green, Amber, and Off)

g. Audio Tone: Standard Piezo Beeper

h. Mounting: Can be mounted directly to metal or plastic flat surface; single or double gang boxes.

i. Cable Distance: Up to 500 ft (152 m)

j. Communication format: High-security 40-bit Wiegand (AWID and HID available)

k. Read Range: Up to 20 inches (508 mm) depending on credential.

l. Operating Temperature: -40 to +65 degrees Celsius.

m. Power Supply: Linear supply recommended, 5-14 VDC

n. Current Draw: 200mA typical, 600mA peak.

o. IP Rating: IP65

p. Compatible Credentials: HC-PSC1, HC-PSK3, HC-PSI4

q. Compliance: FCC, CE, C-Tick, IC.

r. Warranty: Limited Lifetime (as per manufacturer).

17. Standard Light Proximity Card HC-PSC1:
    a. Size: 3.4 x 2.2 x 0.06 inches (86 x 55 x 1.5 mm).
    b. Weight: 0.3 oz (9 g)
    c. Operation: Passive RFID (no battery)
    d. Frequency: 125 kHz excitation
    e. Durable ABS plastic with beveled edges.
    f. Colour: Off-white
    g. Imaging: Use PVC-9 Glossy Adhesive Overlay for colour dye sublimation printing of images and text
    h. Communication Format: High-security 40-bit Wiegand.
    i. Markings: Site code, card number and format printed on front in small black text
    j. Operating Temperature: -40 to +65 degrees Celsius.
    k. Slot Punch: Vertical
    l. Compliance: CSA, UL, FCC, CE, C-Tick.
    m. Warranty: Limited Lifetime warranty as per Manufacturer.

18. Graphic Quality Proximity Card HC-PSI4:
    a. Size: 3.38 x 2.12 x 0.046 inches (86 x 54 x 1.17 mm).
    b. Weight: 0.3 oz (9 g)
    c. Operation: Passive RFID (no battery)
    d. Frequency: 125 kHz excitation
    e. Glossy PVC finish both sides
    f. Colour: White
    g. Imaging: Appropriate for direct color dye sublimation printing of images and text.
    h. Communication Format: High-security 40-bit Wiegand.
    i. Markings: Site code, card number and format printed on front in small black text.
    j. Operating Temperature: -40 to +65 degrees Celsius.
    k. Slot Punch: Vertical and Horizontal indicators
    l. Compliance: CSA, UL, FCC, CE, C-Tick.
    m. Warranty: Limited Lifetime warranty as per Manufacturer.

19. Proximity Key Ring Tag HC-PSK3:
    a. Dimensions: 1.5 x 1.2 x 0.15 inches (36 x 29 x 3.8 mm).
    b. Weight: 0.16 oz (4.5 g)
    c. Operation: Passive RFID (no battery)
    d. Frequency: 125 kHz excitation
    e. ABS with reinforced brass eyelet for chain or key ring
    f. Colour: Light Grey
    g. Communication Format: High-security 40-bit Wiegand.
    h. Markings: Site code, card number and format printed on front in small black text.
    i. Operating Temperature: -40 to +65 degrees Celsius.
    j. Compliance: CSA, UL, FCC, CE, C-Tick.
    k. Warranty: Limited Lifetime warranty as per Manufacturer.

20. Long Range Wireless RF Receiver HC-WRR-42:
    a. Dimensions: 6.3 x 3.3 x 2.3 inches (160 x 86.4 x 58.4 mm).
    b. Weight: 9.3 oz (289 g)

    c.   Design: IP66/NEMA4 compliant plastic enclosure (Dust & Moisture Resistant)

    d.   Secure Transmission: Rolling code + Encryption

    e.   Colors: Off White

    f.   LED's: Multicolor LED (switchable to off) indicating Transmitter read status

    g.   Mounting: Wall-single gang box, or non-metallic flat surfaces.

    h.   Transmit Frequency: 433 MHz

    i.   Communication Format: High-security 40-bit and 26-bit standard wiegand

    j.   Current Draw: 80mA typical.

    k.   Read Range: Installer adjustable, up to 150 feet (46 m).

    l.   Channels: 2 channels, A or B; installer selectable

    m.   Operating Temperature: -40 to +65 degrees Celsius.

    n.   Current Draw: 80mA typical.

    o.   Compliance: FCC, IC, CE, C-Tick.

    p.   Warranty: Limited 1 year (as per manufacturer).

21.   Combination Two-Button Wireless RF Transmitter and Proximity Credential HC-WRT2+A:

    a.   Dimensions: 2.5 x 1.45 x 0.56 inches (57.2 x 37 x 14.2 mm).

    b.   Weight: 0.7 oz (20 g)

    c.   Design: Black polycarbonate enclosure with 2 ABS keys

    d.   Secure Transmission: Rolling code + Encryption

    e.   Colors: Black with grey keys

    f.   LED's: Integrated red LED indicating button press and battery strength

    g.   Transmit Frequency: 433 MHz (active)

    h.   Embedded Proximity Frequency: 125 kHz excitation (passive RFID)

    i.   Communication Format: High-security 40-bit wiegand

    j.   Markings: Site code, card number and format printed on decal on back side

    k.   Read Range: 1. Button press up to 150ft (46 m) with HC-WRR-42 Receiver

                            2. Proximity presentation up to 2 inches (51mm)

    l.   Operating Temperature: -25 to +50 degrees Celsius.

    m.   Battery: Single replaceable CR2032, 3.3V Lithium (rated for 450,000 button presses)

    n.   Compliance: FCC, IC, CE, C-Tick.

    o.   Warranty: Limited 1 year (as per manufacturer).

22.   Combination Four Button Wireless RF Transmitter and Proximity Credential HC-WRT4+A:

    a.   Dimensions: 2.5 x 1.45 x 0.56 inches (57.2 x 37 x 14.2 mm).

    b.   Weight: 0.7 oz (20 g)

    c.   Design: Black polycarbonate enclosure with 4 ABS keys

    d.   Secure Transmission: Rolling code + Encryption

    e.   Colors: Black with grey keys

    f.   LED's: Integrated red LED indicating button press and battery strength

    g.   Transmit Frequency: 433 MHz (active)

    h.   Embedded Proximity Frequency: 125 kHz excitation (passive RFID)

    i.   Communication Format: High-security 40-bit wiegand

    j.   Markings: Site code, card number and format printed on decal on back side

    k.   Read Range: 1. Button press up to 150ft (46 m) with HC-WRR-42 Receiver

                            2. Proximity presentation up to 2 inches (51mm)

    l.   Operating Temperature: -25 to +50 degrees Celsius.

m.   Battery: Single replaceable CR2032, 3.3V Lithium (rated for 450,000 button presses)

n.   Compliance: FCC, IC, CE, C-Tick.

o.   Warranty: Limited 1 year (as per manufacturer).

2.2   SOFTWARE FEATURES AND FUNCTIONS

Specifier Note: The access control software modules consist of many functions and they need to be specified here. These software modules are required to activate the system component functions. A software license is **NOT** required to activate these software features and functions.

A. Access Control:

    1. Administrator Management: An Administrator's privilege determines which functions can be accessed. Functions that cannot be accessed will be grayed out. The following items are available:

        a.   Login name

        b.   Login Password

        c.   User type

        d.   System Setup

        e.   Active Graphical Map Setup

        f.   Hardware Setup

        g.   Serial/CCTV Setup

        h.   Door Access Privilege Setup

        i.   Elevator Access Privilege Setup

        j.   DVR Integration Setup

        k.   Backup Utility

        l.   Auxiliary Relay Activation Group Setup

        m.   Holiday Schedule Setup

        n.   Override Doors, Panels, Auxiliary Relays, Inputs, Outputs, And Elevators

        o.   Update Panels

        p.   Report view and Generation

        q.   Remote Site Management

        r.   DVR Viewing

        s.   Device Status

        t.   Door Control

        u.   Cardholder Information

        v.   Limited View of Cardholder information

        w.   Pin numbers Visible (High Security Pin/Proximity Feature)

    2. Available Administrator Options:

        a.   Allow unlimited amount of Administrator defined, customizable operator types and passwords.

        b.   Log all Operator activities, including date, time and action.

B. Credential/Cardholder Management:

    1. Provide Cardholder management screen with 16 customizable detailed information fields for cardholders, complete with comments section (255 character)

    2. Simple cardholder enrollment, with all available cardholder options available on one screen.

    3. Provide automatic broadcast, to all communicating panels on the system, of any/all changes to cardholder information upon saving.

    4. Ability to track individuals via different color text on event description screen.

5. Ability to view a list of all cardholders

6. Capability of finding a specific card holder based on specified search criteria.

7. Provide the ability to assign a photographic image for each Cardholder.

8. Ability to assign access privileges for Doors, Elevators and Auxiliary relay activation.

C. Access Privilege Groups:

1. Ability to create 255 administrator definable/customizable access privileges.

2. Ability to apply any combination of door/time zone.

3. Apply to Cardholders to restrict/allow movement through identified doors, at specific times, including holiday schedule.

D. Time Zone Management:

1. Ability to create 200 administrator definable/customizable time zones (2 per day) with a 7 day week and holidays.

2. Allow application of weekly time zones to Access Privilege group to only allow access during certain times, including holiday period with name, description and start and end time for each door.

3. Allow application of weekly time zones to Auxiliary relay and input/output programming, for activation and deactivation of applicable auxiliary relay, or input/output.

E. Door Management to Allow:

1. Specific door and reader naming and description (maximum of 4,000 doors/readers).

2. Ability to apply a time zone to control when a specific door is to unlock/lock.

3. Monitor door held open alarms and door forced open alarms.

4. Additional functions, including lock release time and door held open time.

5. Ability to manually lock, unlock, pulse, or resume the Time Zone associated with a specific, or all doors.

6. Ability to choose the desired wiegand format from the list of available formats.

F. Elevator control:

1. Ability to manage up to 64 floors per elevator cab.

2. Ability to manage a maximum of 4,000 elevator cabs.

3. Ability to apply a Time Zone to control when a specific floor is to be in Public/Secure mode.

4. The ability to manually set floors to public, secure or resume the Time Zone of a specific floor.

5. Ability to choose the desired wiegand format from the list of available formats.

G. Auxiliary Relay Control:

1. Ability to apply one of five features to any Auxiliary relay on any door control panel.

   a) Door Event: Making the Auxiliary relay this feature is applied to, activate on a Forced open, Held open or an Invalid card read, and de-activate either on the closure of the door, or timed (configurable).

   b) Time Zone: Controlling the Auxiliary relay to activate and de-activate based on the Time zone applied, with a maximum of two "activate', "deactivate" times.

   c) Card Shunt: Allows the Auxiliary relay to activate upon the valid presentation of a credential that has been assigned the authority to activate this feature, and de-activates on the closure of the door or timed (configurable). (this feature is employed to active devices such as automatic door openers, interior/exterior lighting, but can be applied to activate any type of device required on a valid card presentation)

   d) Alarm Interface: Allows the Auxiliary relay to activated/de-activated on three consecutive valid presentations of a credential that has been assigned the authority to active this feature. This feature can be utilized to arm any generic alarm system that has a key switch input and an arm/disarm status output, or utilized as a local lockdown function.

      I. When utilized as an alarm interface, the auxiliary relay is to be wired into the key switch input of the alarm panel, and an arm/disarm status output from the alarm system must be wired to the EI input of the door controller panel. Once programmed, a valid card with the authority to activate this feature, presented at the reader three consecutive times will initiate the alarm system to begin arming, at which point, all the doors will lock down, regardless of the door time schedule applied to them, and

the readers on the system will flash between red and green consistently to signify the active status of the alarm. To disarm the alarm, present a valid card with the authority to activate this feature, three consecutive times at the reader.

    II. When utilized as a lock down feature, the auxiliary relay is to be wired into the EI input of the door controller panel. . Once programmed, a valid card with the authority to activate this feature, presented at the reader three consecutive times will initiate all doors to lock down, regardless of the door time schedule applied to them, and the readers on the system will flash between red and green consistently to signify the active status of the auxiliary relay. To deactivate this feature, present a valid card with the authority to activate this feature, three consecutive times at the reader.

e) Input Point: Allows the auxiliary relay to be activated by any input on the same panel.

H. Global Linking (relay control):

1. Ability to manipulate any door, output or auxiliary relay, or any programmed input on any panel in the system, based on a door forced open, door held open, or door closed.

2. Ability to manipulate any door, output or auxiliary relay, or any programmed input on any panel in the system based on a valid or invalid presentation of a specific credential n the system.

3. Ability to manipulate any door, output or auxiliary relay, or any programmed input on any panel in the system based on a valid or invalid presentation of any card at any specific reader on the system.

4. Ability to manipulate any door, output or auxiliary relay, or any programmed input on any panel in the system based on an active or de-active state of any specific programmed input in the system.

5. Ability to manipulate several Relays simultaneously on any panel in the system, based on the same specific (on time) action.

6. Ability to add an unlimited amount of commands on the Global Linking action table.

I. Area Management to allow:

1. Labeling: Ability to name areas.

2. Timed Anti-Pass back: Ability to control re-entry into an area, at a specific door, based on a definable time value.

3. Global Anti-Pass back: Ability to control re-entry into any area, at any/all doors based on valid exit presentation or definable time value.

4. Reset: Allow the ability to reset the Anti-Pass back on a 'per door', or 'all door' basis.

J. Hardware Management: To Allow:

1. Definition of channels that provide communications between controllers and software.

2. Ability to view the list of communication channels, their live status and the panel addresses being polled, directly from the channel status section in the control console.

3. Ability to view a list of doors in the system and their live status, directly from the graphical tree in the device status section of the main control console.

4. Ability to operate doors from an override list to either, Lock, Unlock, Pulse, or Resume the time zone.

5. Ability to bring up an override window for immediate door control by left clicking on the door in the graphical tree or on an active graphical map.

6. Ability to view the alarm input points directly from the graphical tree in the control console.

7. Option for channel dial-up, for modem communications between server and controller with ability to set primary number, connect, update, and disconnect, with status of each modem on system.

K. Alarm Management:

1. Ability to display alarm events with date and time, source and description on the event description screen of the control console.

2. Permit event type alarm messages, such as access denied, door forced open, and door held open.

3. Ability to view Active Graphical Map with live door and alarm point display.

4. Ability to view live door and alarm point display on the graphical tree in the device status section of the control console.

5. Ability to manage door alarms by audible, or silent alarm reporting to event description screen of the control console, with the ability to require alarm acknowledgement.

6. Ability to allow manual alarm acknowledgement.

7. Ability to automatically stream live video from DVR Camera to view area in alarm.

8. Ability to send CCTV interface commands on alarm condition.

9. Ability to e-mail alarm messages up to 3 recipients.

L. Report Management: System to Allow:

1. Generation of Reports to Include the Following Reports Capabilities:

   a. List of all Credential Holders.

   b. List single Credential Holder via selectable formula and sort criteria based on the 16 customizable data fields.

   c. List of all system Administrators, as well as their privilege.

   d. List of all Doors and associated details, panel address it is associated with, including lock timers.

   e. List of all Access Privilege Groups and associated readers and time profiles.

   f. List of user activity at all Readers, or a specific Reader.

   g. List of user activity at a specific Reader with date filtering capability.

   h. List of all or specific Credential holder activity, with date filtering capability.

   i. List all Chronological Events.

   j. List all administration activity, including date and time stamp and actions performed.

   k. List of Who's In, based on in out readers (Muster report).

   l. List of calculated "Time In" for all or specific Credential holder based on start/end dates

   (Time and Attendance Calculator).

   m. Report of events between specific dates.

   n. List of holiday profiles and associated holiday periods.

   o. Custom report creation available through Hartmann Controls Corp.

M. Data Management: System to Allow:

1. Availability of manual back up reminder.

2. Availability of fully automatic, scheduled backup of the database to any administrator defined location.

3. CSV and MS Access (MDB) import facilities for importing external cardholder information.

N. Software Registration Management:

1. Software registration directly through the manufacturer.

O. Photographic Badge Design: To Include:

1. Functional card design tool with intuitive drag-and-drop format for badge design layout, full badge viewing.

2. Ability to work with ID color card printers to produce single- or double-sided cards in a variety of file formats, including BMP, JPG, supported for background or photographic images.

3. Allowance for selecting cardholder information based on any of the 16 customizable information fields.

4. Ability to link card to database data and include links to any of the customizable card holder fields, including date of birth, titles, initials, first or last name, and photograph.

5. Ability to import Cardholder photographs or images from files.

P. Hardware Management: To Allow:

1. Definition of channels that provide communications between controllers and software.

2. Ability to view the list of communication channels, their live status and the panel addresses being polled, directly from the channel status section in the control console.

3. Ability to view a list of doors in the system and their live status, directly from the graphical tree in the device status

section of the main control console.

4. Ability to operate doors from an override list to either, Lock, Unlock, Pulse, or Resume the time zone.

5. Ability to bring up an override window for immediate door control by left clicking on the door in the graphical tree or on an active map,

6. Ability to view the alarm input points directly from the main control console.

7. Option for channel dial-up, for modem communications between server and controller with ability to set primary number, connect, update, and disconnect, with status of each modem on system.

Q. Contextual Help File:

1. Offer contextual help file by pressing F1 key or clicking on the help icon on the toolbar with standard help commands available.

103 PRODUCT SUBSTITUTIONS

A.   Substitutions: No substitutions permitted.

PART 3 EXECUTION

101 MANUFACTURER'S INSTRUCTIONS

Specifier Note: Article below is an addition to the CSI *Section Format*; please revise to suit project requirements and specifier's practice.

A. Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions and product carton installation instructions.

102 EXAMINATION

A.   Site Verification of Conditions:

1. Verify that substrate conditions, which have either been previously installed under other sections, or that existing site conditions, are acceptable for product installation in accordance with manufacturer's instructions.

2. Verify that building doors, frames, walls, wire runs, related items and conditions are ready to receive work of this Section.

103 PROTECTION

A.   Other Trades: Protect installed work of other trades.

104 PREPARATION

A.   Project Planning Forms:

3. Manufacturer Forms: Obtain and complete project planning forms from manufacturer of surveillance system; customize forms to be project specific.

4. Final Setup: Review, adjust and prepare final documents to establish system software setup.

B. Record Setup Data:

1. Record server and workstations setup data.

2. Record controller address, features and access requirements for each location.

3. Propose start and stop times for Time Zones, including holidays; match up for Door Schedule.

4. Set up Access Privilege groups, Elevator Privilege groups, Auxiliary Relay Activation group, linking; list inputs and outputs for each Controller.

C. Electrical Preparation:

1. Ensure dedicated 120 VAC power circuits, conduit, raceways, back boxes, j-boxes, fittings, hardware and earth

grounds supplied as necessary to provide complete working system.

    2. Ensure power supplies associated with electrified door hardware is installed.

    3. Ensure conduit for cable protection within walls, back boxes, door jambs, stubbed above drop ceilings, within closed ceilings, where exposed, and penetrating walls and ceilings, have been provided.

    4. Ensure back box installations in masonry have been completed.

    5. Ensure patching and painting items related to conduit, raceways, j-boxes, fittings hardware and earth grounds conduit and conduit installations has been done.

    6. Ensure cabling for alarm systems is installed and completed.

D. Elevators:

Specifier Note: Installation of equipment and wiring to the elevator to be coordinated with the elevator.

    1. Coordinate installation of wiring, card readers and relay's to cab(s).

    2. Coordinate installation of wiring and equipment for elevator control, life safety to cab(s).

    3. Coordinate testing and commissioning of elevator system after installation of equipment.

Specifier Note: Installation of equipment and wiring for information services to be coordinated with the IT personnel.

E. Information Services:

    1. Ensure that dedicated phone lines and phone equipment have been provided and completed.

    2. Ensure that network drops are being installed and installation coordinated with the work of this section.

    3. Ensure coordination of Server and Client software installations with IT personnel.

    4. Ensure coordination of IT personnel prior to configuration and installation of Ethernet converters.

Specifier Note: Installation of equipment and wiring for the fire alarm panel to be coordinated with the fire contractor.

F. Fire Alarm:

    1. Ensure coordination of installation, including wiring and equipment for the fire alarm panel to interface with access control alarm monitoring system, is undertaken.

105INSTALLATION

    A. Comply with:

        2. IEEE 1100.

        3. NFPA 70.

        4. NFPA 72.

        5. NFPA 80.

        6. NFPA 101.

        7. UL 294.

    G. Installation:

        1. Install surface mounted units to finished substrates.

        2. Set units level, plumb and true to line and location.

        3. Comply with positioning requirements for disabled accessibility.

        4. Provide 120 VAC power circuits, conduit, raceways, back boxes, j-boxes, fittings, hardware and earth grounds as required to provide electrical requirements for access control systems.

    H. Cabling:

Specifier Note: Select the cabling system appropriate to the installation. Delete paragraphs that are not applicable.

        1. Raceway and Cable Tray: Install wiring in raceway and cable tray, except:

            a. Within consoles, cabinets, desks and counters.

        b.   In accessible ceiling spaces.

        c.   In gypsum board partitions where unenclosed wiring method may be used.

    2. Conduit: Install wiring in conduit, except:

        a.   Within consoles, cabinets, desks and counters.

    3. J-Hooks: Install wiring in j-hooks and associated wire hardware.

    4. Conceal [Raceway and cable tray] [Conduit] [J-hooks and cables] except in unfinished spaces.

    5. Use NRTL-listed plenum cable in environmental airspaces, including plenum ceilings.

    6. Install cables without damaging conductors, shield or jacket.

    7. Use only Manufacturer recommended wiring,

    8. Basic elevation drawings available from manufacturer upon request.

    9. Advanced elevation, riser and point to point diagrams available from manufacturer for an additional fee, based on the complexity of the project, and the level of integration required with other systems.

  I. Grounding:

    1. Comply with IEEE 1100.

Specifier Note: To eliminate shock hazard and to minimize ground loops, common-mode returns, noise pick-up, cross-talk and other impairments, use the following.

    2. Ground cable shields, drain conductors and equipment.

    3. Bond shields and drain conductors to ground at only one point.

  J. System Software:

    1. Develop, install and test software and databases for complete and proper operation of systems involved.

    2. Register all Software within 30 days of onsite installation.

106FIELD QUALITY CONTROL

Specifier Note: Use the following Articles only when manufacturer's field services are desired to verify the quality of the installed components. Establish the number and duration of periodic site visits required by Manufacturer and specify below. Consult Manufacturer for services required. Delete if field services are not required.

  A. Written Reports: Have manufacturer of products supplied under this Section review Work involved in handling, installation/application, protection and cleaning of its product[s], and submit written reports in acceptable format to verify compliance of Work with Contract.

  K. Manufacturer's Field Services: Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

  L. Schedule site visits to review Work at stages listed:

    1. After delivery and storage of products, and when preparatory Work on which Work of this Section depends is complete, but before installation begins.

    2. Throughout progress of Work.

    3. [Twice] [_____] during progress of Work at [25%] [_____] and [60%] [_____] complete.

    4. Upon completion of Work, after cleaning is carried out.

  M.Obtain reports within [Five] [_____] days of review and submit.

107TESTING & VERIFICATION

  A. Perform tests recommended and required by manufacturer to verify required performance of all products manufactured and /or supplied by Hartmann Controls Corp.

1. Complete system diagnostics and operation verification.

2. Prepare specific plan for system testing, start-up and demonstration.

3. Develop acceptance test concept and specifics.

4. Test each circuit and component of each system. System components with battery back-up to operated on battery power for not less than [10] percent of calculated battery operating time. Provide special equipment and software if testing requires special or dedicated equipment.

5. Operational Test: Demonstrate product capability and compliance with requirements.

6. Remove and replace malfunctioning devices and circuits and retest.

7. Complete installation and start-up checks in accordance with manufacturer's written instructions.

8. Maintain strict security during installation of equipment and software. Secure rooms housing the Server software and workstations.

108 DEMONSTRATION

A. Training Program:

9. Provide training to Owner's personnel to adjust, operate and maintain access system.

10. Two week prior to the start of the program, submit proposed dates for training.

11. Develop separate training modules consisting of at least, but not limited to 1 hour per group, based on the level of knowledge required by the specific group.

12. Provide group specific operator manuals covering all areas of hardware/software required.

13. Groups:

    a. Computer system administration personnel tasked with managing and maintaining databases and updating and maintaining software.

    b. Operators tasked with preparing and imputing credentials to staff/users.

    c. Operators tasked with configuring hardware and or software features and functions.

    d. Security personnel.

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109 COMPLETION & CLEANUP

A. Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION