

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Access control system requirements.
- B. Access control units and software.
- C. Access control point peripherals, including readers and keypads.
- D. Accessories.

1.2 RELATED REQUIREMENTS

- A. Section 08 71 00 - Door Hardware: Electrically operated door hardware, for interface with access control system.
- B. Section 26 60 00 - General Conditions for Electrical Work
- C. Section 26 70 00 - Basic Electrical Materials and Methods

1.3 DEFINITIONS

- A. Access Control Cloud Services: Subscription-based hosted application utilizing Software as a Service (SaaS) delivery model in lieu of on-premises servers/software.

1.4 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.
- B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 294 - Access Control System Units; Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other installers to provide suitable door hardware as required for both access control functionality and code compliance.
 - 2. Coordinate the placement of readers with millwork, furniture, equipment, etc. installed under other sections or by others.

3. Coordinate the work with other installers to provide power for equipment at required locations.
4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.6 SUBMITTALS

- A. See Section 01 33 00 - Submittal Procedures, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each system component. Include ratings, configurations, standard wiring diagrams, dimensions, finishes, service condition requirements, and installed features.
- C. Certify that proposed system design and components meet or exceed specified requirements.
- D. Evidence of qualifications for manufacturer.
- E. Evidence of qualifications for installer.
- F. Field quality control test reports.
- G. Maintenance contracts.
- H. Project Record Documents: Record actual locations of system components and installed wiring arrangements and routing.
- I. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.7 QUALITY ASSURANCE

- A. Comply with the following:
 1. NFPA 70.
 2. The requirements of the local authorities having jurisdiction.
 3. Applicable TIA/EIA standards.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience with access control systems of similar size, type, and complexity and providing contract maintenance

service as a regular part of their business; authorized manufacturer's representative.

1.8 FIELD CONDITIONS

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.9 WARRANTY

- A. See Section 01 77 00 - Contract Closeout, for additional warranty requirements.
- B. Provide minimum one year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Access Control Units:
 - 1. Bosch Security Systems: www.boschsecurity.us/#sle.
 - 2. Brivo: www.brivo.com/#sle.
 - 3. Honeywell International, Inc: www.honeywellaccess.com/#sle.
 - 4. Napco Access Pro, a subsidiary of NAPCO Security Technologies, Inc: www.napcoaccesspro.com/#sle.
 - 5. Schneider Electric: www.se.com/#sle.
 - 6. _____.
- B. Access Control Software:
 - 1. As required for manufacturer being utilized. .
- C. Access Control Cloud Services:
 - 1. Provide optional Cloud services to owner for review, include all ongoing costs for cloud based services. .
- D. Readers and Keypads:
 - 1. As required for manufacturer being utilized. .

- A. Provide new access control system consisting of required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for a complete operating system that provides the functional intent indicated.
- B. System Battery Backup: Provide batteries/uninterruptible power supplies (UPS) as required for 90 minutes full operation.
- C. Interface with Other Systems:
 - 1. Provide products compatible with other systems requiring interface with access control system.
 - 2. Interface with electrically operated door hardware as specified in Section 08 71 00.
 - a. Capable of locking/unlocking/releasing controlled doors.
 - 3. Interface with fire alarm system as specified in Section 28 46 00.
- D. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 1. Access Control Units and Readers: Listed and labeled as complying with UL 294.

2.3 ACCESS CONTROL UNITS AND SOFTWARE

- A. Provide access control units and software compatible with readers to be connected.
- B. Unless otherwise indicated, provide software and licenses required for fully operational system.
- C. Access Control Units - Basis of Design: Schneider Electric EcoStruxure Access Expert; www.se.com/#sle.
 - 1. Model AX-SSC Intelligent System Controller; 10/100 Mbps Ethernet, RS-485 module communication, BACnet; manages up to 64 downstream devices with up to 1,024 total readers and I/O points; onboard storage for up to 1.5 million credentials and 50,000 access events with 8 active credential types.
- D. Access Control Cloud Services - Basis of Design: Schneider Electric EcoStruxure Access Expert; www.se.com/#sle.
 - 1. Hosted Software: Support for unlimited card readers, input points, video cameras, intrusion detection points, relay outputs, users, and concurrent

client operators; access via Windows Applet, HTML5 interface, and mobile application; high availability model for business continuity.

2. Access Control: Make access granted/denied decisions, define access levels, set schedules/holidays; input/output linking; area control (two-person control, hard, soft, and timed anti-passback), database partitioning, and schedule/holiday overrides.
3. Intrusion Detection: Arm/disarm code management; limit ability to arm/disarm by area/partition; arm/disarm via authorized card read or double tap; live status monitoring within graphic/floor plans; full control over zones and inputs/outputs.

2.4 ACCESS CONTROL POINT PERIPHERALS

- A. Provide devices compatible with control units and software.
- B. Provide devices suitable for operation under the service conditions at the installed location.
- C. Door Hardware Coordination: Provide required cables between access controller and door hardware for operation of door locks. Coordinate with door hardware for required cables and power supplies and provide as required.
- D. Readers and Keypads:
 1. General Requirements:
 - a. Provide readers compatible with credentials to be used.
 - b. Color: To be selected by Architect from manufacturer's available standard colors.
 - c. Proximity Readers:
 - 1) Utilize 125 kHz RF communication with compatible credentials.
 - d. Bluetooth Low Energy (BLE) Readers:
 - 1) Utilize 2.4 GHz RF communication with compatible mobile devices.
 - e. Type "N" Cable: RS-485 4/C, TBV with system. Provide necessary cable between card reader and head-in controller. Provide minimum 3/4"C between card reader box and accessible ceiling space.

Acceptable to provide free-air cable in concealed locations and within electrical/data room.

- f. Contractor shall coordinate specific requirements of system being proposed with all trades for any necessary installation requirements.

2. Combination Reader:

- a. Credentials Supported: Communicates with Bluetooth Low Energy (BLE) mobile credentials, 13.56 MHz smart cards, 125 kHz proximity cards, and near-field communication (NFC) credentials.

3. Readers and Keypads - Basis of Design: Schneider Electric EcoStruxure Access Expert; www.se.com/#sle.

a. Readers:

- 1) Interface: RS-485 or Wiegand.
- 2) Ratings: IP65, minus 31 to 151 degrees F (minus 35 to 66 degrees C).
- 3) Features: OSDP with Secure Channel Protocol support; clone card detection with Schneider Electric Secured MIFARE.

E. Door Position Switches:

- 1. Magnetic Contacts: Encapsulated reed switch(es) and separate magnet; designed to monitor opened/closed position of doors.

F. Request to Exit Devices:

- 1. Motion Sensors: Passive infrared.

G. Door Locking Devices (Electric Strikes and Magnetic Locks): Comply with Section 08 71 00.

H. Alarm Sounders:

- 1. Minimum Sound Output: 85 db.

2.5 ACCESSORIES

- A. Provide components as indicated or as required for connection of access control system to devices and other systems indicated.
- B. Unless otherwise indicated, credentials to be provided by Contractor.

1. Provide credentials compatible with readers and control units/software to be used.
- C. Provide cables as indicated or as required for connections between system components.
- D. Provide accessory racks/cabinets as indicated or as required for equipment mounting.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that ratings and configurations of system components are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive system components.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to system.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

- A. Install access control system in accordance with NECA 1 (general workmanship).
- B. Install products in accordance with manufacturer's instructions.
- C. Wiring Method: Unless otherwise indicated, use cables (not in conduit).
 1. Use suitable listed cables in wet locations, including underground raceways.
 2. Use suitable listed cables for vertical riser applications.
 3. Use listed plenum rated cables in spaces used for environmental air.
 4. Install wiring in conduit for the following:
 - a. Where required for rough-in.
 - b. Where required by authorities having jurisdiction.
 - c. Where exposed to damage.
 - d. Where installed outside the building.

- e. For exposed connections from outlet boxes to devices.
- f. Vertical runs within wall cavities. .
- 5. Conduit: Comply with Section 26 70 00.
- 6. Conceal cables unless specifically indicated to be exposed.
- 7. Use power transfer hinges complying with Section 08 71 00 for concealed connections to door hardware.
- 8. Route exposed cables parallel or perpendicular to building structural members and surfaces.
- 9. Do not exceed manufacturer's recommended maximum cable length between components.
- D. Provide grounding and bonding in accordance with Section 26 70 00.
- E. Identify system wiring and components in accordance with Section 26 05 53.

3.3 FIELD QUALITY CONTROL

- A. See Section 01 43 20 - AHJ Construction Oversight, for additional requirements.
- B. Prepare and start system in accordance with manufacturer's instructions.
- C. Program system parameters according to requirements of Owner.
- D. Test for proper interface with other systems.
- E. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

3.4 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.5 CLOSEOUT ACTIVITIES

- A. Demonstration: Demonstrate proper operation of system to Owner, and correct deficiencies or make adjustments as directed.
- B. Training: Train Owner's personnel on operation, adjustment, and maintenance of system.

1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
2. Provide minimum of four hours of training.

3.6 PROTECTION

- A. Protect installed system components from subsequent construction operations.

3.7 MAINTENANCE

- A. Provide to Owner, a proposal as an alternate to the base bid, a separate maintenance contract for the service and maintenance of access control system for two years from date of Substantial Completion; Include a complete description of preventive maintenance, systematic examination, adjustment, cleaning, inspection, and testing, with a detailed schedule.
- B. Provide trouble call-back service upon notification by Owner:
 1. Include allowance for call-back service during normal working hours at no extra cost to Owner.
 2. Owner will pay for call-back service outside of normal working hours on an hourly basis, based on actual time spent at site and not including travel time; include hourly rate and definition of normal working hours in maintenance contract.

END OF SECTION