

**SECTION 28 10 00
ACCESS CONTROL EQUIPMENT**

PART 1 GENERAL

1.01 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. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 294 - Access Control System Units; Current Edition, Including All Revisions.
- E. UL 1076 - Proprietary Burglar Alarm Units and Systems; Current Edition, Including All Revisions.

1.02 SECTION INCLUDES

- A. Access control system requirements.
- B. Access control point peripherals, including readers.
- C. Accessories.

1.03 DEFINITIONS

1.04 REFERENCE STANDARDS

- A. [NECA 1](#) - Standard for Good Workmanship in Electrical Construction; 2015.
- B. [NFPA 70](#) - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. [NFPA 101](#) - Life Safety Code; 2015.
- D. [UL 294](#) - Access Control System Units; Current Edition, Including All Revisions.
- E. [UL 1076](#) - Proprietary Burglar Alarm Units and Systems; Current Edition, Including All Revisions.

1.05 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/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Preinstallation Meetings:
 - 1. Conduct meeting with facility representative to review reader and equipment locations.
 - 2. Conduct meeting with facility representative and other related equipment manufacturers to discuss access control system interface requirements.

1.06 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Include plan views indicating locations of system components and proposed size, type, and routing of conduits and/or cables. Include elevations and details of proposed equipment arrangements. Include system interconnection schematic diagrams. Include requirements for interface with other systems.

- C. 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.
- D. Design Data: Standby battery/UPS calculations.
- E. E. Certify that proposed system design and components meet or exceed specified requirements.
- F. F. Evidence of qualifications for manufacturer.
- G. G. Evidence of qualifications for installer.
- H. H. Evidence of qualifications for maintenance contractor (if different entity from installer).
- I. I. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and operation of product.
- J. J. Manufacturer's detailed field testing procedures.
- K. K. Field quality control test reports.
- L. L. Maintenance contracts.
- M. M. Project Record Documents: Record actual locations of system components and installed wiring arrangements and routing.
- N. N. Operation and Maintenance Data: Include detailed information on system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
 - 1. 1. Include contact information for entity that will be providing contract maintenance and trouble call-back service.
- O. O. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.
- P. P. Refer to NYCHA CCTV Turn Over Checklist for additional requirements.

1.07 1.07 QUALITY ASSURANCE

- A. A. Comply with the following:
 - 1. 1. [NFPA 70](#).
 - 2. 2. [NFPA 101](#) (Life Safety Code).
 - 3. 3. The requirements of the local authorities having jurisdiction.
 - 4. 4. Applicable TIA/EIA standards.
 - 5. 5. New York City Building Code.
- B. B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. D. 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. 1. Contract maintenance office located within 100 miles of project site.
- E. E. Maintenance Contractor Qualifications: Same entity as installer.
- F. F. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.
- G. G. Please note: NYCHA reserves the right to update and modify design in accordance with new products and updated design requirements.

1.08 1.08 DELIVERY, STORAGE, AND HANDLING

- A. A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.
- B. B. Store products in manufacturer's unopened packaging, keep dry and protect from damage until ready for installation.

1.09 1.09 FIELD CONDITIONS

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

1.10 1.10 WARRANTY

- A. A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. B. Provide minimum one year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

PART 2 PRODUCTS

2.01 2.01 SECURITY MANAGEMENT CABINET (ACP-"X" AS SHOWN ON FLOOR PLANS AND SINGLE LINE)

- A. A. Basis of Design: Life Safety Power: Mercury 8DR Model #: FPO150-B100 2D8PM8NL4E6M/P8-A or NYCHA approved equal. Cabinet shall include the following or NYCHA approved equal:
 - 1. Power Supply:
 - a. Input 120/230VAC 50/60Hz | 170 Watts (1.42A) Overload and short circuit protection
Over temperature protection Polarized AC power supply disconnect
 - b. Secondary voltage module, 4A/12V and 4A/24V, class 2 power limited
 - 2. Batteries/Battery Charging:
 - a. Independent built-in charger for sealed lead-acid or gel type batteries.
 - b. Microprocessor dual rate charging of 12 or 24V battery sets.
 - c. Automatic switchover to standby battery when AC fails.
 - d. Zero voltage drop when switched over to battery backup.
 - e. Batteries shall be sized for 4-hours of backup, minimum.
 - 3. Access Control Panels:
 - a. Mercury LP1502 – 4 door modules, minimum.
 - b. Access Control 240,000 cardholder capacity, 50,000 transaction buffer, Supports total of 1 RS-485 IO protocols, 255 access levels per cardholder, Cardholder - 19 Digit (64 Bit) User ID with 15 digit PIN MAX, Activation/Deactivation If/Then macro capabilities, Anti-passback support, Nested, area, hard, soft and timed forgiveness, Adjustable cardholder capacity, Supports up to 520 inputs and 516 outputs
 - c. Door Control Natively supports for up to 4 readers and 2 openings. Expands to support up to 64 readers and openings.
 - d. Panel shall be able to be remotely reset.
 - 4. Door Hardware Control Board
 - a. Mercury MR52-3 Serial Input/Output Board
 - b. Primary Power 12-24 Vdc +/- 10%, 550mA maximum
 - c. Host Communication RS-485, 2-wire, 4,000' (twisted pair with shield, Belden 9841)
 - d. Reader Ports 2 Reader Ports
 - e. Card/Keypad Data OSDP, Clock/Data, Data-1/Data-0, RS-485, or F/2F HID
 - f. Reader Power Pass-through or 12 Vdc regulated 300mA each reader LED One-wire bi-color LED or two-wire
 - g. LED Buzzer Only with 'one-wire' LED
 - h. Inputs 8 General Purpose: Programmable circuit type 2 Dedicated: Tamper and Power Monitor
 - i. Output Relays Six Form-C Relays: Normally open contact (NO): 5A @ 30 Vdc resistive Normally closed contact (NC): 3A @ 30 Vdc resistive
 - j. Dimensions 6.0" W x 8.0" L x 1.0" H (152mm W x 203mm L x 25mm H)

- k. Temperature 0-70 °C operational, -55-85 °C storage
 - l. Humidity 5 to 95% RHNC
 - m. Product Compliance UL 294 Recognized, FCC Part 15 Class A, CE Compliant, RoHS (2011/65/EU & 2015/863), EU REACH (1907/2006)
 - n. Panel shall be able to be remotely reset.
5. Enclosure: E6M
 - a. Size: 30.00H x 23.00W x 6.50D in.
 - b. Weight: 47 lbs.
 - c. Painted Steel with removable back plate.
 6. Micro Security Switch
 - a. Switch shall monitor open/close status of cabinet.
 - b. Email and record alarm if cabinet is opened.
- B. 2.02 CARD READER
- C. Basis of Design: P-400 Gibraltar Proximity Card Reader or NYCHA approved equal.
1. Constructed of stainless steel and Fiber-Tex® (((UL 752)) listed for bulletproof integrity) providing the very highest levels of vandal resistance.
 2. HID proximity compatibility (model P-400-H) allowing it to read both HID and Pyramid Series cards and tags.
 3. Size: 5.25 x 2 x 0.75 inches
 4. Input Voltage: +5 to 14 VDC
 5. Current Draw: 90 mA typical
 6. Frequency: 125 KHz excitation
 7. Credential Compatibility: Standard - Pyramid Series Cards and Tags (PSC-1, PSI-4, PSM-2, and PSK-3)
 - a. Optional - HID (ProxCard II, ISOProx II, and ProxTag II) and Pyramid Series Cards and Tags
 8. Certifications: CSA, UL, FCC, CE, C-Tick.

2.02 2.03 ACCESS CONTROL SYSTEM REQUIREMENTS

- A. A. Provide new access control system consisting of required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software integration, system programming, etc. as necessary for a complete operating system that provides the functional intent indicated.
- B. B. System Battery Backup: Provide batteries/uninterruptible power supplies (UPS) as required for 240 minutes full operation.
- C. C. Surge Protection:
 1. 1. Provide surge protection for readers and door strikes/locks.
- D. D. Interface with Other Systems:
 1. 1. Provide products compatible with other systems requiring interface with access control system.
 2. 2. Interface with electrically operated door hardware as specified.
 - a. a. Capable of locking/unlocking/releasing controlled doors.
 - b. b. Capable of receiving input from integral door hardware switches.
 3. 3. Interface with video surveillance system as specified in Section 282000.
 - a. a. Capable of affecting camera/video operation for selected access control system events.
 4. 4. Interface with fire alarm system to unlock upon fire alarm activation.
 - a. a. Capable of affecting access for designated doors for selected fire alarm system events.
- E. E. 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](#).

2.03 2.04 ACCESSORIES

- A. A. Provide components as indicated or as required for connection of access control system to devices and other systems indicated.
- B. B. Unless otherwise indicated, credentials to be provided by Contractor.
 - 1. 1. Provide credentials compatible with readers and control units/software to be used.
 - 2. 2. Credential Type: Keyfob
 - a. a. Products:
 - 1) 1) HID 1346 ProxKey III or NYCHA approved equal
 - b. b. Fob shall be compatible with equipment listed above and with Genetec Security Center 5.10 or newer.
 - c. c. Wiegand 125 kHz Proximity Tag
 - d. d. 125 kHz Proximity Key Fobs
 - e. e. Standard 26-bit format
 - f. f. Pre-punched in with key ring
 - g. g. Minimum lot size of 25.
 - 3. 3. Contractor shall program key fobs to include apartment number, tenant name, and any additional information requested by NYCHA.

PART 3 EXECUTION

3.01 3.01 EXAMINATION

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

3.02 3.02 INSTALLATION

- A. A. Install access control system in accordance with [NECA 1](#) (general workmanship).
- B. B. Install products in accordance with manufacturer's instructions.
- C. C. Wiring Method: Unless otherwise indicated, use cables (not in conduit).
 - 1. 1. Use suitable listed cables in wet locations, including underground raceways.
 - 2. 2. Use suitable listed cables for vertical riser applications.
 - 3. 3. Use listed plenum rated cables in spaces used for environmental air.
 - 4. 4. Install wiring in conduit for the following:
 - a. a. Where required for rough-in.
 - b. b. Where required by authorities having jurisdiction.
 - c. c. Where exposed to damage.
 - d. d. Where installed outside the building.
 - e. e. For exposed connections from outlet boxes to devices.
 - 5. 5. Conduit: Comply with Section 260533.13.
 - 6. 6. Conceal cables unless specifically indicated to be exposed.
 - 7. 7. Use power transfer hinges complying with Section 087100 for concealed connections to door hardware.
 - 8. 8. Cables in the following areas may be exposed, unless otherwise indicated:
 - a. a. Equipment closets.
 - b. b. Within joists in areas with no ceiling.
 - 9. 9. Route exposed cables parallel or perpendicular to building structural members and surfaces.

- 10. 10. Do not exceed manufacturer's recommended maximum cable length between components.
- D. D. Provide grounding and bonding in accordance with Section 260526.
- E. E. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 078400.
- F. F. Identify system wiring and components in accordance with Section 260553.
- G. G. Alarm Programming: Contractor shall be responsible for programming access control alarms as required by NYCHA. All access control alarms shall be included in as-built drawing submittal.
- H. H. For all exterior access control doors, contractor shall be required to integrate exterior video camera, monitoring the access control door, in the video management software. Integration shall record, save, and store video clip of 30 seconds before the door is opened.

3.03 3.03 FIELD QUALITY CONTROL

- A. A. See Section 014000 - Quality Requirements, for additional requirements.
- B. B. Provide services of a manufacturer's authorized representative to observe installation and assist in inspection and testing. Include manufacturer's detailed testing procedures and field reports with submittals.
- C. C. Prepare and start system in accordance with manufacturer's instructions.
- D. D. Program system parameters according to requirements of Owner.
- E. E. Test for proper interface with other systems.
- F. F. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.
- G. G. Submit detailed reports indicating inspection and testing results and corrective actions taken.

3.04 3.04 CLEANING

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

3.05 3.05 CLOSEOUT ACTIVITIES

- A. A. See Section 017800 - Closeout Submittals, for closeout submittals.
 - 1. 1. Access control equipment shop drawings and elevation drawings shall be incorporated into final as-built drawing submission.
 - 2. 2. Contractor shall include all existing access control doors, equipment, and interconnections on final as-built drawings for buildings which have existing access control system and are included in the scope of work.
- B. B. See Section 017900 - Demonstration and Training, for additional requirements.
- C. C. Demonstration: Demonstrate proper operation of system to Owner, and correct deficiencies or make adjustments as directed.
- D. D. Training: Train Owner's personnel on operation, adjustment, and maintenance of system.
 - 1. 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
 - 2. 2. Provide minimum of four hours of training.
 - 3. 3. Instructor: Manufacturer's authorized representative.
 - 4. 4. Location: At project site.
- E. E. Key fob distribution: Contractor shall package and turnover access control key fobs to building management.
 - 1. 1. Key fobs shall be labeled by building, floor, apartment, and packaged per resident.
 - 2. 2. Coordinate key fob turnover with NYCHA OFSS

3.06 3.06 PROTECTION

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

3.07 3.07 MAINTENANCE

- A. A. See Section 017000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.
- B. B. 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.
- C. C. Conduct site visit at least once every three months to perform inspection, testing, and preventive maintenance. Submit report to Owner indicating maintenance performed along with evaluations and recommendations.
- D. D. Provide trouble call-back service upon notification by Owner:
 - 1. 1. Include allowance for call-back service during normal working hours at no extra cost to Owner.
 - 2. 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 28 10 00