

SECTION 28 10 00

ELECTRONIC ACCESS CONTROL SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

- A. Contractor shall be responsible for providing and installing a complete and fully operational system.
- B. Furnish all labor, materials, tools, equipment, door hardware, and services.
- C. Architect shall provide the Division 087100 specification consultant a complete door schedule for both new and existing openings identifying door numbers prior to the development of construction documents.
- D. DPS shall provide the Architect a security map of all device locations and technical specifications prior to development of Construction Documents. Architect to forward the security map to specification consultants for Section 087100 and Division 28 sections for developing hardware sets. Architect shall not alter technical specifications for Division 087100 and Division 28 sections, device locations or electrified hardware sets without approval of DPS. If Architect alters or allows such document changes without DPS written approval the Architect assumes all liability and/or cost associating with document and hardware changes.
- E. Prior to Construction Documents the Architect shall develop a map indicating door numbers and hardware sets for electrified hardware to be known as the Electronic Access Control – Intrusion map on a unique page for review by DPS.
- F. Electrical System Roughing-in: Coordinate layout and installation of electrified door hardware.
- G. Intent of Access Control specification
 - a) The following specification shall be considered a guide only, and the Contractor is cautioned to refer to general conditions, special conditions, and the preamble of this section. It shall be the Contractor's responsibility to furnish systems and equipment, in accordance with DPS directives and needs.
 - b) Where items aren't definitely or correctly specified and are required for completion of the Work, a written statement of such omission, error, or other discrepancy shall be sent to the Architect, prior to date specified for receipt of bids for clarification by addendum; or, furnish such items in the type and quality established by this specification, and appropriate to the service intended.
 - c) Adjustments to the Contract Sum will not be allowed for omissions not clarified prior to bid opening.

1.02 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies:
 - 1. Furnish security equipment to comply with the requirements of laws, codes, ordinances, and regulations of the governmental authorities having jurisdiction where such requirements exceed the requirements of the Specifications.
 - 2. Furnish security equipment to comply with the requirements of American National Standards for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People (ICC/ANSI A117.1), the governmental authority having jurisdiction and to comply with Americans with Disabilities Act.
- B. Pre-Installation Conference: Prior to installation arrange conference between supplier, and all Division 08 contractors, electrical contractor, General Contractor, Architect and necessary personal from DPS to review materials, procedures, and coordinating related work.

1.03 COORDINATION

- A. Coordinate work of this Section with other directly affected Sections as well as Electrical Engineer, Electrical Contractor, and General Contractor for location of conduit and .and electrical boxes.
- B. See Section 087100 Door Hardware for operational description and locations of electrified door hardware. Coordinate with automatic operators as required by DPS.
- C. Conduit and raceways as needed for electrical hardware items. Fire/life-safety system interfacing. Point-to-point wiring diagrams plus riser diagrams to related trades.
- D. Contractor shall obtain from General Contractor or DPS any areas of asbestos within the School of which they are working.
- E. Obtain, read and comply with General Conditions and applicable sub-sections of the contract specifications. Where a discrepancy may exist between any applicable sub-section and directions as contained herein, this section shall govern.

1.04 GENERAL CONDITIONS

- A. In accordance with Section 28 05 00, Security System General Requirements

1.05 APPLICABLE PUBLICATIONS

- A. In accordance with Section 28 05 00, Security System General Requirements

1.06 SHOP DRAWINGS & EQUIPMENT SUBMITTAL

- A. In accordance with Section 28 05 00, Security System General Requirements

1.07 OPERATING AND MAINTENANCE MANUALS

- A. In accordance with Section 28 05 00, Security System General Requirements.

1.08 SERVICE AND MAINTENANCE

- A. In accordance with Section 28 05 00, Security System General Requirements

1.09 TRAINING

- A. In accordance with Section 28 05 00, Security System General Requirements

1.010 WARRANTY

- A. In accordance with Section 28 05 00, Security System General Requirements

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Access Control System Hardware/Firmware/Software:
 - 1. Open Options, Inc. DNAFusion Security Management System

2.02 MATERIALS, GENERAL

- A. Power: All access control equipment shall operate on PoE (IEEE Compliant 802.af). Any special power treatment required, such as filtering or spike elimination that may be required for proper operation and protection of the system shall be provided as part of the system.
- B. Hardware: Provide a distributed access control system as required for a complete operating system as described herein and as shown on the Drawings.

2.03 SYSTEM PROGRAMMING

- A. DPS DoTS shall provide all system programming.

2.04 SYSTEM COMPONENTS

- A. Software and Server Package
 - 1. Software shall be provided by DPS. Additional user licenses may be needed, provided by contractor.
- B. Server shall be provided by DPS.
- ~~C. Door Hardware – Reference Division 087100~~
- D. Hardware
 - 1. All the hardware shall be provided with enclosures, which have hinged doors.
 - 2. Reader Controller
 - a) The reader controllers shall be independently programmed, intelligent devices, which shall be able to make decisions at the local level. The system shall provide reader controllers at 16 reader capacity or more.
 - i. 16 door controller: Mercury Platform EP1501 or Open Options DCONTROLLER.
 - b) Each reader in the system shall have a dedicated reader interface: Mercury Platform, 1-door controller MR51e or Open Options NSC-100.
 - 3. Panel Enclosure
 - i. LifeSafety Power E5M, or,
 - ii. Security Technologies, Inc. STI-EM08073.5
 - 4. Card Reader
 - a) HiD Smart Card Reader/Mullion iClass SE R10, 900NNNNEK2037P
 - b) HiD Smart Card Reader/Wall iClass SE R40E, 920NNNNEK2037P
 - c) HiD Smart Card Reader/Keypad iClass SE R40 (Elevator User), 921NTNNEK0000
 - 5. Request to Exit (REX) Devices
 - a) The REX shall be a dual technology device with Passive Infrared (PIR) and Range-Controlled Radar (RCR) motion detector.
 - b) Provide GE/Interlogix RCR-REX-W
 - 6. Credentials:
 - a) Key Card: HiD Smart Cards iClass SE, Part# 3050PGGMN, FORMAT H10302, Quantity 300. Programming of Key Card by DPS.
 - b) Proximity Key FOB: HiD iClass SE, Quantity 100. Part # 3250PNNMN, Format H10302, Programming of Fob's by DPS.
- E. Cables
 - a) Provide cabling per manufacturer's recommendations and code requirements for riser rated, plenum, and non-plenum cable types.
 - b) UTP data cabling will be provided, installed, terminated and tested by the Division 27 structured cabling contractor.

- c) UTP patch cables will be provided and installed by the contractor in the IDF and at the door.
- d) Provide 6-conductor 22awg shielded cable from door controller to card reader.
- e) Provide 4-conductor 22awg shielded cable from door controller to door contact(s).
- f) Provide 2-conductor 22awg cable from single door controller to door contact switch and request to exit device.
- g) Provide a minimum of a 2-conductor 18awg cable from single door controller or power supply to electric strike, latch or panic. The contractor shall size the cable as required for the distance and inrush current load as required.

PART 3 - EXECUTION

3.01 GENERAL

3.02 In accordance with Section 28 05 00, Access Control General Requirements. Site Verification of Conditions

3.03 PREPARATION

- A. Door and Frame Manufacturer(s) shall prepare doors and frames for electronic hardware furnished by Division 087000 Hardware.
- B. General Contractor or Electrical Contractor to furnish any inserts required for building into concrete, masonry, and other work, to support and attach work of this section. Furnish in ample time to comply with schedule of work into which inserts are built.
- C. Verify that power and outlets are in correct locations.
- D. Verify that doors and frames have been prepared for items specified in section 087100 Door Hardware.
- E. Verify that building structure is properly prepared for mounting, attachment and support of equipment.
- F. Prior to installation of systems components and devices, verify all required preparations have been properly performed and that substrates are acceptable for installation.
- G. Report in writing to the Architect any prevailing conditions that will adversely affect satisfactory execution of Work in this Section.

3.04 INSTALLATION OF SYSTEM

- A. Install work in accordance with manufacturer's recommendations, instructions and final Shop Drawings marked as approved.
- B. Wherever cutting and fitting are required to install hardware on surfaces which are to be painted or finished by others, coordinate removal, storage, and reinstallation or application of surface protections with finishing work specified in other Sections. Do not install surface-mounted items until finishes have been completed on the substrate.
- C. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as required for proper installation and operation.

- D. For card readers that are located in equipment traffic areas, and that are exposed to damage due to collision or impact from manually moved carts, carriers, or other equipment used by DPS, provide protective bollards, railings, coverings etc. to ensure that all card readers installed are properly protected from such damage.
- E. Hardware item, and each door assembly to ensure proper operation and function. Lubricate moving parts with lubrication type recommended by manufacturer.
 - 1. Replace units, which cannot be adjusted and lubricated to operate freely and smoothly.
 - 2. Hardware damaged by improper installation or adjustment methods to be repaired or replaced to Owner's satisfaction.

3.05 FINAL PROCEDURES

Perform final procedures in accordance with section 28 05 00, access control general requirements.

PART 4.0 – EQUIPMENT SCHEDULE

27 13 00 - Access Control System (ACS)			
DESCRIPTION	MFG.	Part Number	Special Rqmt
IP-BASED INTELLIGENT DOOR CONTROLLER	OPEN OPTIONS	SSP-D1	One required each site.
	MERCURY	EP1501	
IP-BASED NETWORK SUB-CONTROLLER	OPEN OPTIONS	NSC-100	All other doors.
	MERCURY	MR51E	
ACCESS CONTROL/POWER ENCLOSURE	LIFESAFETY POWER	E5M	
ICLASS R10 MULLION-MOUNT READER	HID	900NNNNEK2037P	
ICLASS RK40 KEYPAD READER	HID	921NTNNEK00000	Elevator use.
ELECTRIC STRIKE, CONTINUOUS DUTY, SURFACE MOUNT	RCI	162	
HEAT REDUCER FOR CONTINUOUS DUTY STRIKES	RCI	ICEPK	
SS 1-GANG BOX, W/5/8" CENTERED KO	MULBERRY	97951	For HID R10
1-GANG WEATHERPROOF OUTDOOR GASKET	MULBERRY	30671	
ELECTRIC STRIKE	DORMA	ES62	
ELECTRIC AUDIBLE BUZZER	HES	2006M	
ELECTRIC STRIKE, FOR CYLINDRICAL LOCKSETS	HES	1006C	
PAC III FOR HES 1006C	HES	2005M3	
DOOR CONTROL BOARD	PRECISION	CM150-08	
POWER SUPPLY W/1 CONTROL BOARD	PRECISION	ELR151	
2100 SERIES ELECTRIC LOCK RETROFIT KIT	PRECISION	ELRK3	
DOOR/FRAME POWER TRANSFER	PRECISION	EPT-5	
LATCH GUARD	PRECISION	1625	
ARMORED DOOR CORD, 18"X1/2" W/4-CONDUTOR WIRE	IR-SCHLAGE	798C-18	
ARMORED DOOR CORD, 12"X1/2" - LESS WIRE	IR-SCHLAGE	798-18	
REQUEST TO EXIT	GE/INTERLOGIX	RCR-REX-W	
HEAVYWEIGHT 4 WIRE POWER HINGE	COMMAND ACCESS	CMAETH4W5.0X5.0-626 (CH-BB68)	
DUAL VOLTAGE POWER SUPPLY	LIFETIME SERIES PRO	FPX200A/100-A8D8E2	
MAIN CONTROL POWER SUPPLY/CHARGER	ALTRONIX	AL400ULX	
MAIN CONTROL REPLACEMENT POWER SUPPLY/CHARGER BOARD	ALTRONIX	AL400ULXB	
ELECTRIC STRIKE POWER SUPPLY REPLACEMENT BOARD	ALTRONIX	AL400ULB	
PoE POWER INJECTOR-30W	AXIS	5014-204	
PoE POWER INJECTOR-15W	AXIS	0226-004	
WIFI WEATHER PROOF POWER BOX	SONY	PBU1	

28 10 00 - Access Control System (ACS)			
DESCRIPTION	MFG.	Part Number	Note:
IP-Based Intelligent Door Controller	Open Options	SSP-D1	One required each site
	Mercury	EP1501	
IP-Based Network Sub-Controller	Open Options	NSC-100	All other doors
	Mercury	MR51E	
Access Control/Power Enclosure	Lifesafety Power	E5M	
Access Control/Power Enclosure	STI	STI-EM08073.5	
I-Class R10 Mullion Mount Reader	HID	900NNNNEK2037P	
I-Class R40E Wall Mount Reader	HID	920NNNNEK2037P	
I-Class RK40 Keypad Reader	HID	921NTNNEK00000	Elevator use
Electric Strike, Latch Monitor	RCI	0162-LM	Surface Mount
Electric Strike, Latch Monitor	HES	1006C-LBM	Cylindrical Locks
Heat Reducer	RCI	ICEPK	
PAC III for HES 1006C	HES	2005M3	
Door Contact	Interlogix	1076D-G	
Electric Mullion Wire Assembly	Von Duprin	105987-00	Male Connector
Electric Mullion Wire Assembly	Von Duprin	105988-00	Female Connector
Electric Mullion Shim Plate	Von Duprin	971313	For Female Connector
Request to Exit	GE/Interlogix	RCR-REX-W	

PART 5.0 – DRAWINGS

A. 28 10 00-1 Electric Strike Diagram

B. 28 10 00-2 Card Access Wiring Diagram

END OF SECTION 28 10 00