SECTION 284601 - ELECTRONIC DOOR LOCKING AND MONITORING SYSTEM

This section covers a door locking & monitoring system for nurses stations, arranged for day/night operation (functions of one station transferred to a parallel station so that one station monitors two areas at night). Less elaborate and other modes of operation are available. Consult manufacturer’s catalogs.

1. GENERAL
   * + 1. RELATED WORK SPECIFIED ELSEWHERE
          1. Finish Hardware: Section 087100.
       2. SYSTEM DESCRIPTION
          1. The electronic door locking and monitoring system shall operate as a supervised zoned alarm, lock control and intercom system. The system operation is summarized as follows:

A nurse at each nurses’ security console monitors the status of the locked doors within the secured areas. Each single door and each set of double doors are individual zones.

When a person wishes to enter or leave a secured area, the person must actuate a pushbutton located at the locked door. This causes a zone light to illuminate (green) and an audible signal to sound at the nurses security console monitoring that zone. The audible signal may be silenced by operating a reset switch.

The nurse activates a maintained contact switch to connect the remote intercom speaker and then presses a talk switch to communicate with the person at the door. Releasing the talk switch allows the nurse to listen.

When the person is authorized to pass, the nurse operates a maintained contact switch which activates lock release for that door (both doors of a double door). The alarm circuit for that zone will be disabled. The alarm circuit will rearm approximately 15 seconds after the switch is returned to normal position. The door must be secured before the conclusion of the time delay or the zone shall cause an alarm to be registered.

Each zone is monitored and line supervised. The status of each zone within a secured area is indicated by zone lamps on the nurses’ security console monitoring that area.

When a door is opened without authorization a zone light illuminates (red) and an alarm signal sounds at the nurses’ security console indicating a breech of security. After the zone is resecured, the zone light flashes until the system is reset. The alarm signal may be silenced by operating a reset switch.

Authorized personnel may gain access to any door with the proper keys, however the door must be secured within 15 seconds or the zone shall cause an alarm to be registered.

A nurse at a nurses’ security console may at any time communicate through any remote intercom speakers at the doors monitored by that console for a 2 way conversation.

Two nurses’ security consoles within each building unit (M-1, M-2, etc.) are paralleled for operation by a day nurse and a night nurse (the console in the sleeping quarters is designated for use by a night nurse).

The day nurse at a nurses’ security console may engage in a 2 way conversation with the night nurse at the paralleled nurses’ security consoles. The 2 way conversation may also be initiated by the night nurse.

For night operation, the night nurse maintains security of areas encompassed by the paralleled units. Any functions of the day nurses’ security console are duplicated at the night nurses’ security console. The day nurse switches off the zones on that console, while the night nurse activates these zones on the night nurses’ security console. Paralleling of 2 nurses’ security consoles does not affect the integrity or operation of either console.

Omit subparagraph below if not applicable.

The electronic door locking and monitoring system works in conjunction with the existing fire alarm system to cause all locked doors to fail safe (unlock) upon fire alarm condition.

Supervision of wiring indicates trouble conditions at the nurses security consoles. Trouble conditions are indicated by an audible trouble signal and common trouble indicating lamp (yellow), also the zone lamps flash (green or red) to indicate a trouble condition on that zone. The audible signal may be silenced by operating a reset switch. The visual indication remains until the system is restored to normal condition.

Zone alarm or trouble conditions shall not interfere with the overall operation of the nurses’ security consoles.

Failure of the ac operating power automatically transfers the system to the secondary standby power supply (batteries):

All signaling, communication and supervisory functions of the system are transferred to the secondary power supply.

Use subparagraph below for applications where it is not required to have doors remain locked upon failure of normal power source, coordinate terminology with type of locking devices used.

All system power requirements are transferred to the secondary power supply, except door locking devices.

Use subparagraph below when security must be maintained during failure of normal power source, coordinate terminology with type of locking devices used.

All system power requirements are transferred to the secondary power supply, including door locking devices.

The secondary standby power supply operates the system for a minimum of 24 hours.

Edit number of hours to suit. If the door locking devices are required to be operable on the secondary power supply, then the ampere hour capacity for the batteries must be calculated. Other type batteries may have to be used than those specified in Part 2.

Failure of the ac operating power and secondary standby power supply causes all locked doors to fail safe (unlock).

A key operated switch on console allows the nurse to perform the following system functions:

Test: The console is being checked for proper operation.

Standby: Indication of zone status but all audible signals are disabled.

On: System fully operational.

Off: System non operational.

* + - 1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Waiver of Submittals: The “Waiver of Certain Submittal Requirements” in Section 013300 does not apply to this Section.
         5. Submittals Package: Submit the shop drawings, product data, and quality control submittals specified below at the same time as a package.
         6. Shop Drawings:

Bill of materials.

Composite wiring and/or schematic diagrams of the complete system as proposed to be installed (standard diagrams will not be acceptable).

Total electrical load of the complete system in supervisory and alarm conditions.

Omit subparagraph below if not required.

Interconnection details between new system and existing fire alarm system.

Detailed description of system operation (format similar to SYSTEM DESCRIPTION).

* + - * 1. Product Data:

Catalog sheets, specifications and installation instructions.

Name, address and telephone number of nearest fully equipped service organization.

* + - * 1. Quality Control Submittals:

Company Field Advisor Data: Include:

Name, business address and telephone number of Company Field Advisor secured for the required services.

Certified statement from the Company listing the qualifications of the Company Field Advisor.

Services and each product for which authorization is given by the Company, listed specifically for this project.

Omit subparagraph below if existing system report is not required.

Test Report: Existing fire alarm system test report.

* + - * 1. Contract Closeout Submittals:

Test Report: System acceptance test report.

Certificate: Affidavit, signed by the Company field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.

Operation and Maintenance Data: Deliver 2 copies, covering the installed products, to the Director’s Representative. Include name, address and telephone number of the nearest fully equipped service organization.

* + - 1. QUALITY ASSURANCE
         1. Equipment Qualifications For Products Other Than Those Specified:

At the time of submission provide written notice to the Director of the intent to propose an “or equal” for products other than those specified. Make the “or equal” submission in a timely manner to allow the Director sufficient time to review the proposed product, perform inspections and witness test demonstrations.

If products other than those specified are proposed for use furnish the name, address, and telephone numbers of at least 5 comparable installations that can prove the proposed products have performed satisfactorily for 3 years. Certify in writing that the owners of the 5 comparable installations will allow inspection of their installation by the Director's Representative and the Company Field Advisor.

Make arrangements with the owners of 2 installations (selected by the Director) for inspection of the installations by the Director's Representative. Also obtain the services of the Company Field Advisor for the proposed products to be present. Notify the Director a minimum of 3 weeks prior to the availability of the installations for the inspection, and provide at least one alternative date for each inspection.

Only references from the actual owner or owner’s representative (Security Supervisor, Maintenance Supervisor, etc.) will be accepted. References from dealers, system installers or others, who are not the actual owners of the proposed products, are not acceptable.

Verify the accuracy of all references submitted prior to submission and certify in writing that the accuracy of the information has been confirmed.

The product manufacturer shall have test facilities available that can demonstrate that the proposed products meet the contract requirements.

Make arrangements with the test facility for the Director's Representative to witness test demonstrations. Also obtain the services of the Company Field Advisor for the proposed product to be present at the test facility. Notify the Director a minimum of 3 weeks prior to the availability of the test facility, and provide at least one alternative date for the testing.

Provide written certification from the manufacturer that the proposed products are compatible for use with all other equipment proposed for use for this system and meet all contract requirements.

* + - * 1. Testing Facility: The Company producing the system shall have test facilities available which can demonstrate that the proposed system meets contract requirements.
        2. Company Field Advisor: Secure the services of a Company Field Advisor for a minimum of 16 working hours for the following:

Edit number of hours to suit.

Render advice regarding installation and final adjustment of the system.

Witness final system test and then certify with an affidavit that the system is installed in accordance with the contract documents and is operating properly.

Train facility personnel on the operation and maintenance of the system (minimum of four 1 hour sessions).

Edit number of hours and sessions to suit.

Explain available service programs to facility supervisory personnel for their consideration.

Include paragraph below when system is to be interfaced with existing fire alarm system.

Edit number of hours to suit.

* + - * 1. Company Field Advisor (Existing System Fire Alarm): Secure the services of Company Field Advisor from the company of the existing fire alarm system for a minimum of 8 working hours for the following:

Render advice and witness test of existing fire alarm system.

Render advice on the interconnection of the existing fire alarm system with the electronic door locking and monitoring system.

Witness the final test of the combined systems.

* + - * 1. Service Availability: A fully equipped service organization capable of guaranteeing response time within 24 hours to service calls shall be available to service the completed Work.

1. PRODUCTS
   * + 1. NURSES SECURITY CONSOLES
          1. Von Duprin Inc.’s UL listed PBA-2100 Series Proprietary Burglar Alarm System, having:

Input circuit suitable for operation on 120V ac circuit and 24V dc battery standby.

Desk mounted console.

Accessories to perform the functions summarized in SYSTEM DESCRIPTION.

* + - 1. REMOTE INTERCOM SPEAKERS
         1. Von Duprin Inc.’s IS-741 for surface mounting.
         2. Speakers for communication between paralleled day and night nurses security consoles may be integral within the consoles or remote intercom speakers located adjacent to the consoles.
      2. SECONDARY STANDBY POWER SUPPLY
         1. Sealed, lead-acid gelled electrolyte or maintenance free lead-calcium batteries; Eagle-Picher’s Carefree Magnum, Gates Sealed Rechargeable Batteries 0800, 0810, 0820 (plastic case), Globe’s Gel/Cell GC, or Gould’s Gelyte PB, having:

Ampere-hour capacity to operate the system under conditions specified in SYSTEM DESCRIPTION.

Battery charger with charging characteristics as recommended by battery manufacturer.

Batteries and charger integrally mounted in consoles or separate cabinet mounted as recommended the Company producing the system.

* + - 1. INTERCONNECTION EQUIPMENT
         1. As required to interconnect electronic door locking and monitoring system with existing fire alarm system.

Omit article below if not required.

* + - 1. WIRING
         1. Insulated conductors shall meet requirements of Section 260519 and the following:

Intercom Circuity: Minimum size No. 20 AWG with drain and aluminum shield.

Flexible Wiring Between Terminal Strip Cabinets and Nurses Security Consoles: Minimum size No. 18 AWG for signal circuits and shielded for intercom circuits. Combine all wiring in single cable or harness.

Wiring Between Terminal Strips (Cabinets (Paralleled Units): Minimum No. 14 AWG type RHW, THW, XHHW, THWN or THHN.

Number of conductors and conductor size as recommended by the Company producing the system, except that conductor size shall not be less than previously specified.

* + - 1. TERMINAL STRIP CABINETS
         1. Lockable, vandal resistant, 14 gage steel, surface mounted, size as recommended by the Company producing the system.
         2. Barrier type double screw terminals with identification strips, tags or labels for each wire.
         3. Stencil on cabinet in l/2 inch high white letters “DOOR LOCKING AND MONITORING SYSTEM”.
      2. ZONE LOCATORS
         1. Card holder with aluminum or stainless steel frame, plexiglass front and sheet aluminum card backing plate. Print floor plan graphically on card, showing each zone. More than one card and card holder may be used provided the zones are clearly defined. Minimum size card 8 x 10 inches.
      3. ZONE LABELS
         1. Embossed, self-adhesive tape, minimum 1/4 inch wide, color of tape similar to color of equipment to be labeled (DYMO Labelmaker System).
      4. PROCEDURE SIGN
         1. Card holder for 8 x 10 inches card with aluminum or stainless steel frame, plexiglass front and sheet aluminum card backing plate. For each procedure sign, provide 1 blank card in holder and 5 spare blank cards suitable for typing future security procedures thereon.

1. EXECUTION
   * + 1. PREPARATION
          1. Test of Existing Fire Alarm System:

Prior to installing the new system, test the existing system to ascertain its operating condition.

Prepare a written report for the Director’s Representative indicating the repairs required, if any, to make the existing system function properly.

Repairs to the existing system are not included in the Work unless requested by Order on Contract.

* + - 1. INTERRUPTIONS TO EXISTING FIRE ALARM SYSTEM
         1. Maintain the existing fire alarm system in its present condition to the extent possible while installing new Work.
         2. Prior to making changes or removals relative to the existing system, notify the Director’s Representative and have procedures approved.
         3. Provide signs, instructions and alternate methods for reporting a fire.
      2. INSTALLATION
         1. Install system in accordance with the Company’s printed instructions.
         2. Zone Locators: Install adjacent to each nurses’ security console.
         3. Zone Labels: Install on each remote intercom speaker.
         4. Procedure Sign: Install adjacent to each nurses’ security console.
      3. FIELD QUALITY CONTROL
         1. Preliminary System Test:

Preparation: Have the Company Field Advisor adjust the completed system and then operate it long enough to assure that it is performing properly.

Run a preliminary test for the purpose of:

Determining whether the system is in a suitable condition to conduct an acceptance test.

Checking and adjusting equipment.

Training facility personnel.

* + - * 1. System Acceptance Test:

Preparation: Notify the Director’s Representative at least three working days prior to the test so arrangements can be made to have a Facility Representative witness the test.

Make the following tests:

Test each system function step by step as summarized under SYSTEM DESCRIPTION.

Supply all equipment necessary for system adjustment and testing.

Submit written report of test results signed by Company Field Advisor and the Director’s Representative. Mount a copy of the final report in a plexiglass enclosed frame assembly adjacent to the control panel.

END OF SECTION 284601