SECTION 275223 **–** NURSE CALL SYSTEM

1. GENERAL
	* + 1. SYSTEM DESCRIPTION
				1. The nurse call system alerts nurses when calls-for-assistance are placed at stations by patients and staff. The system also enables two-way voice communications between master stations (at central nursing stations), patient bedside stations, staff stations, and duty stations.
				2. Master Station:

Each master station is equipped with indicator lamps:

Busy lamp indicates that system is in use.

Incoming call lamp indicates that a new call has been placed on the system.

Station call lamps (one for each staff station, duty station, patient bedside station, and emergency station).

When calls are placed to the master station, a tone sounds, the incoming call lamp, busy lamp, and appropriate station call lamp illuminate. The attendant at the master station presses the automatic answer button:

The station call indicator lamp changes intensity (alternating brilliance).

The tone is silenced.

Calls received at the master station during a conversation with another patient or staff station illuminates the incoming call lamp and the appropriate station call lamp. Once illuminated, each station call lamp remains illuminated until the call from that station is answered.

The attendant at the master station can initiate calls to patient bedside stations, staff stations, duty stations, and other master stations by dialing the number corresponding to that station. Attendant may use the speaker/microphone or the handset for communication with the station called.

Master station may call and monitor numerous stations simultaneously.

When the standby switch in the master station is in listen position, the busy lamp illuminates as a reminder for the attendant at the master station to return the switch to standby position upon conclusion of a conversation.

Pressing a cancel or reset button on patient bedside stations, staff stations, duty stations, and emergency stations automatically extinguishes all illuminated signals in the system associated with the call from that station.

* + - * 1. Patient Bedside Stations:

Calls-for-assistance from patient bedside stations are placed on the system as follows:

Vandal resistant Patient Bedside Stations (Single and Dual): By pressing a button on the station. (Separate button for each patient on dual stations).

Non-Vandal Resistant Patient Bedside Stations: By pressing a button on a call cord connected to the station. (Removing cord from the station also places a call on the system).

When a call is placed from a patient bedside station, a call assurance lamp on the station illuminates to verify that the call was placed on the system. (On dual stations, there is a separate call assurance lamp for each patient).

Calls from patient bedside stations are annunciated on the system as follows, depending upon position of medical status selector switch on station:

Normal Mode:

White lamp illuminates (steady) in corridor light outside of the patient’s room (and in corridor light in main corridor if light outside of the patient’s room is not readily visible from main corridor).

Incoming call lamp and station call lamp associated with the station originating the call illuminate (steady) in each master station.

Slow rate audible tone sounds in each master station and duty station.

Incoming call lamp in each duty station illuminates.

Call assurance lamp, corresponding with patient placing call, illuminates on the patient’s station.

Calls can be acknowledged and automatically reset from master stations and duty stations.

Station can be reset by pushing cancel button at the station.

Personal Attention Mode: Same as normal mode, except that station must be reset at the station originating the call (master station cannot reset patient bedside station).

Emergency Mode:

White lamp flashes in corridor light outside of patient’s room (and in corridor light in main corridor if corridor light outside of the patient’s room is not readily visible from main corridor).

Incoming call lamp in master station illuminates.

Station call lamp, associated with the station originating the call, flashes at a rapid rate in the master station.

Rapid rate tone sounds in each master station and duty station.

Incoming call lamp flashes in each duty station.

Call assurance lamp, corresponding with patient placing call, illuminates on patient station.

Station can be reset only at station originating the call (master station cannot reset patient bedside station).

Patient bedside stations are equipped with a speaker/microphone to allow two-way conversations between bedside station and master station.

A privacy lamp on the patient station illuminates when calls from that station are being answered or monitored.

* + - * 1. Emergency Stations (Lavatory/Emergency and ICU/Emergency):

Calls for assistance from these stations are placed on the system by pressing a pushbutton on the station. Calls are annunciated on the system as follows:

White lamp flashes in corridor light outside of the room where call is placed (and in corridor light in main corridor if light outside of the room is not readily visible from the main corridor).

In each master station, the incoming call lamp illuminates and the station call lamp for the originating station (or associated patient station) flashes.

A rapid rate tone sounds in each master station and duty station.

The incoming call lamp flashes in each duty station.

The call assurance lamp flashes on the station originating the call.

Station can be reset only at station originating the call (master station cannot reset emergency station).

* + - * 1. Staff Stations:

Staff stations are equipped with a call switch, medical status switch, cancel switch, call assurance lamp, privacy lamp, and speaker/microphone which allows two-way communication between the staff station and the master station.

Annunciation of calls to or from the staff station is the same as that described for patient bedside station.

* + - * 1. Duty Stations:

Duty stations are equipped with audible and visual indicators which alert staff when calls-for-assistance are placed on the system as follows:

An incoming call lamp illuminates and a tone sounds as described for each different type of station above.

A switch on the duty station allows the tone to be silenced.

When calls are answered at the master station, a busy lamp illuminates at the duty station.

Duty stations are equipped with a call switch, cancel switch, call assurance lamp, privacy lamp, and speaker/microphone which allows two-way communication between the duty station and master station.

Annunciation of calls to or from the duty station is the same as that described for patient bedside station (in normal mode).

* + - * 1. Failure of the 120V ac primary (main) power supply automatically transfer the system to its secondary (standby) power supply to maintain all system functions for a minimum of 6 minutes.
			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:

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

Construction details of vandal resistant stations.

* + - * 1. Product Data:

Catalog sheets, specifications and installation instructions.

Bill of materials.

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

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.

* + - * 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:

Operation and maintenance data for each product.

Complete point to point wiring diagrams of entire system as installed. Number all conductors and show all terminations and splices. (Numbers shall correspond to numbered tags installed on each conductor.)

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

* + - 1. QUALITY ASSURANCE
				1. Source Quality Control: The Company producing the system shall have test facilities available which can demonstrate that the proposed system meets contract requirements.
				2. 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.

Edit number of hours to suit.

* + - * 1. Company Field Advisor: Secure the services of a Company Field Advisor for a minimum of 36 working hours for the following:

Render advice regarding installation and final adjustment of the system.

Render advice on the suitability of each device for its particular application.

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.

Edit number of sessions and hours to suit.

Train facility personnel on the operation and maintenance of the system (minimum of two 2 hour sessions).

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

* + - * 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. MAINTENANCE

Adjust quantity of spare parts to suit.

* + - * 1. Spare Parts:

50 percent spare of each type fuse.

30 percent spare of each type lamp (except LED type).

5 spare call cords for non-vandal resistant patient bedside stations.

5 spare switch plugs for non-vandal resistant patient bedside stations.

10 percent corridor lights (2 lamp type).

1. PRODUCTS
	* + 1. CENTRAL EQUIPMENT
				1. Dukane Corp.’s 12A885 and 12A886, having:

Station capacity as indicated on drawings.

Dukane Corp.’s Model 17A355A 24 V dc power supply, having:

Power circuits suitable for operation on 120V ac primary (main) power supply.

Battery powered secondary (standby) power supply to operate the system as specified in 1.01 System Description.

Backboxes suitable for surface mounting.

* + - 1. STATIONS
				1. Master Stations: Dukane Corp.’s 4A2031 desk top station.
				2. Patient Bedside Station (Vandal resistant): Dukane Corp.’s Model 4A1280, modified as follows:

3-position key operated medical status switch.

Red privacy lamp.

White call assurance lamp (2 required on dual station).

Momentary cancel and call pushbutton switches.

These switches shall be moisture and damage resistant metal pushbutton assemblies identical to that used on Dukane Corp.’s 9A1860.

2 call pushbuttons required for dual station.

High efficiency compression driver speaker/microphone identical to that used in Dukane Corp.’s 4A1465.

11 gage stainless steel faceplate with speaker grill and vandal resistant hardware assembly similar to that used on Dukane Corp.’s 4A1465, with:

Backbox for flush mounting.

Cutouts as required for lamps and switches.

* + - * 1. Patient Station (Non-vandal resistant): Dukane Corp.’s 4A1280, with:

Dukane Corp.’s 200-352 call-cord (1 for each station).

Dukane Corp.’s 570-130 switch plug (1 for each station).

Dukane Corp.’s 570-131 dummy plug (1 for each station).

* + - * 1. Lavatory/Emergency Station: Dukane Corp.’s J945 Emergency Station, modified as follows:

Call assurance lamp.

Cancel pushbutton switch identical to switch used on Dukane Corp.’s 9A1860.

11 gage stainless steel faceplate with vandal resistant hardware similar to that supplied with Dukane Corp.’s 9A1860.

Dimensions as required.

Cutouts as required for switches and lamps.

Backbox for flush mounting.

Splash-proof enclosure.

* + - * 1. ICU/Emergency Station: Dukane Corp.’s 9A1410, with backbox for flush mounting.
				2. Staff Station (Vandal resistant): Identical to vandal resistant patient bedside station (single call pushbutton and call assurance lamp).
				3. Staff Station (Non-vandal resistant): Dukane Corp.’s 4A1290, with backbox for flush mounting.
				4. Duty Station: Dukane Corp.’s 4A12995, with backbox for flush mounting.
			1. CORRIDOR LIGHTS
				1. Single Corridor Light: Dukane Corp.’s 18A211, with:

White dome lens.

Backbox for surface mounting (ceiling or wall, as required).

* + - * 1. Dual Corridor Light: Dukane Corp.’s 18A212 with:

Two segment dome lens having segment colors as indicated on drawings.

Backbox for surface mounting (ceiling or wall, as required).

* + - * 1. Triple Corridor Light: Dukane Corp.’s Model 18A213 with:

Three segment dome lens having segment colors as indicated on drawings.

Backbox for surface mounting (ceiling or wall, as required).

* + - * 1. Quadruple Corridor Light: Dukane Corp.’s Model 18A214 with:

Four segment dome lens having segment colors as indicated on drawings.

Backbox for surface mounting (ceiling or wall, as required).

* + - 1. WIRING
				1. Conductors: Number of conductors, size and type as recommended by the Company producing the system.
			2. MARKERS AND NAMEPLATES
				1. Markers: Premarked self-adhesive; W.H. Brady Co.’s B940, Thomas and Betts Co.’s E-Z Code WSL self-laminating, Ideal Industries’ Mylar/Cloth wire markers, or Markwick Corp.’s permanent wire markers.
				2. Nameplates: Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inch high.

Phenolic: Two color laminated engravers’ stock, 1/16 inch minimum thickness, machine engraved to expose inner core color (white).

Aluminum: Standard aluminum alloy plate stock, minimum .032 inches thick, engraved areas enamel filled or background enameled with natural aluminum engraved characters.

* + - 1. ACCESSORIES
				1. Include accessories required to perform the functions summarized in SYSTEM DESCRIPTION and indicated on the drawings.
1. EXECUTION
	* + 1. INSTALLATION
				1. Install system in accordance with the Company’s printed instructions unless otherwise indicated.
				2. Labeling:

Use markers to identify conductors at terminal strips, cabinets, and junction boxes (designations shall correspond with point to point wiring diagrams).

Install nameplate with station designation on each station.

* + - 1. 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:

Individually test each station.

Test corridor lights.

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 equipment.

END OF SECTION 275223