



Engineer's Specifications

The contractor shall provide a complete electronically supervised, battery backed-up intruder alarm system with multiple expansion capabilities.

System Main Panel

The main panel shall have 8 hardwired zones and have a maximum expansion capacity of 16 zones, 40 zones or 128 zones depending on the model required.

All zones shall be fully supervised and programmable. Panel shall be complete with integral power supply and supervised battery charger, auxiliary power for powering security detection devices, programmable switched auxiliary power supply for smoke detectors, integral supervised digital communicator, and 6 programmable outputs: one 3A relay, one 500mA, and four 70mA outputs. The main panel shall include automatic fuses except for the battery fuse.

System Communication Bus

The system shall employ standard non-shielded, 4 conductor wire RS485 bus for powering and communicating with hardwired system expansion modules, detectors and sounders.

The Bus architecture shall be in any combination of "daisy chain", spur or star configuration.

A bus test feature shall be available to check the communication quality between the panel and each module on the Bus. The Bus test validates correct Bus wiring and module communication, saves maintenance time by enables pinpointing intermittent malfunctions or faulty wiring from a remote PC or from the keypad, and allows extending the length of the Bus wiring. The communication quality shall be displayed on the keypad in percentages ranging from 0% to 100% for each of the modules on the bus.

The system shall have an auto-install feature capable of recognizing the connected modules upon power-up, in order to enable rapid and error free configuration and installation.

Addressable Bus Detectors and Sounders

Up to 128 Addressable Bus detectors can be installed on the system communication Bus. 32 Bus detectors can be installed directly on the main panel bus. Bus zone expanders shall enable installing up to 128 Bus detectors, up to 32 detectors on each Bus zone expander.

The Bus detectors shall include remote parameter setting and diagnostic capabilities via the Bus from the keypad or U/D software. Remote control of parameters shall include detection sensitivity, LED on/off and microwave range. Remote diagnostic capability shall include voltage input measurement to the detector and signal and noise level from each PIR and microwave sensor in the detector.

Available Bus detectors shall include:

- An outdoor volumetric detector with 2 PIR channels and 2 microwave channels, Active IP anti-mask and proximity anti-sabotage.
- A high ceiling dual technology detector for installation up to 8.6m (28ft high)
- An industrial detector with 2 PIR and 2 microwave channels

- Commercial dual technology and PIR Quad detectors that include an extra zone input, which allows the addition of a door/window contact or any other relay detector saving on the wiring back to the panel.

External Communication

The system shall include a built-in PSTN dialer and optional IP and GSM/GPRS communication modules. All modules can be installed within the main panel standard enclosure.

IP module

The IP module shall provide the following functionalities:

- Full SSL security layer with 256bit AES encryption, authentication and substitution protection. Cipher key can be changed frequently.
- Compatible with 10BaseT and 100BaseT full duplex
- Simultaneous multichannel communication: event reporting and Upload/download at the same time
- Event message reporting to email addresses
- Supports DHCP
- Supports project integration with 3rd party applications using Modbus or XML protocols
- Fully supervised accessory on the main panel bus
- Installed in the main panel enclosure

GSM/GPRS Module

A GSM/GPRS module shall provide the following functionalities:

- Reporting via GSM, GPRS or SMS channels
- 128bit AES encryption for GPRS and SMS reporting
- SMS and email messages
- SMS operation of the panel, confirmed by return SMS
- Upload/Download support

Central Station Reporting

The system shall support Contact ID and SIA reporting formats and shall be capable of being programmed to call up to 3 telephone numbers. Separate account numbers shall be available for each partition with additional backup accounts. The system shall be programmable for multiple or split reporting, and shall have call saving features. Reporting shall be via any of the PSTN, IP or GSM communication channels.

IP/GSM Receiver

An IP/GSM Receiver software application shall be available for central stations. The software shall transfer the encrypted events received via IP GSM or SMS to existing Monitoring Software applications.

Keypads

The system shall accommodate up to 16 keypads. A touch-screen LCD keypad with blue backlight with or without a proximity reader shall be available.

LCD keypads shall have a display capacity of 32 alphanumeric characters with adjustable contrast. Keys shall be backlit for low light level ease of use. Keypads shall have 4 one-touch buttons that may be programmed for one-touch operation of predefined macro sequence.

The system shall support optional "disabling" of the keypads during arming periods for higher security. In this mode the keypad will be disabled according to a schedule and immediately upon arming, and will be enabled at a scheduled time.

Interactive Voice Module

An optional interactive voice module shall provide remote system control and voice status via any touch-tone or mobile telephone. The voice module shall include a full voice menu guide enabling the user to listen to and select the required. The system shall include a prerecorded word library and allow customized messages for zones, partitions, outputs and common system message. System shall be capable of listen-in and speak-in capability to the premises.

Automation

An optional X-10 expansion module shall be available capable of controlling up to 16 X-10 control devices by event and by schedule. Automation shall be controllable via any keypad or remote touchtone telephone.

Scheduling

The system shall provide for up to 32 weekly time schedules with two intervals per day. All schedules shall be programmable via the LCD keypads and via downloading either locally or remotely.

Hybrid Wireless Expansion

The panel shall be expandable to a maximum of 120 supervised and programmable wireless zones, by adding 8 and/or 16 zone receiver expansion modules. The system shall be capable of hardwired and wireless expansion in any mix that suits the application, up to the maximum expansion capability of the control panel.

Wireless receiver modules shall have an internal antenna for higher security. Frequency generation shall be PLL based for high stability and precision in either 433MHz or 868MHz bands. The system shall include signal jamming indication and transmitter low battery indication. Supervision time of the wireless transmitters shall be programmable.

Noise level, threshold level and transmitter signal level shall all be displayable on the system's keypads, enabling installation and calibration without using a separate signal strength meter. The wireless threshold level shall be automatically calibrated per receiver according to the measured environmental noise level, and shall be adjustable in order to reduce jamming from high incidental environment noise.

The wireless transmitters shall be dipswitch free and have a preprogrammed address (1 out of 16 million codes) that is learned by the system during installation. Wireless transmitters shall be supplied with a long-life lithium battery. The following wireless transmitters shall be available: Universal, magnetic contact and special purpose transmitters, PIR and PIR Pet friendly detectors, outdoor volumetric and beam detectors, 4 button rolling-code and zone keyfobs, panic transmitters, smoke, gas and flood detectors.

User Codes

The system shall provide for up to 99 user codes selectable as either 4 or 6 digits. Each code can be assigned to one of several authority levels and to multiple partitions. A double code

option shall be available that requires 2 users to enter their code in order to disarm the system. For access control an additional 900 access user codes shall be provided.

Partitions

The system shall be programmable for up to 8 fully independent partitions. Each partition shall have its own account code. Keypads shall be assignable to any partition, combination of partitions, or the whole system. Each zone in the system shall be assignable to one or more partitions.

Groups

In each partition the zones shall be assignable to 4 groups enabling 4 levels of quick partial arming in each partition. The keypads shall support 4 level one-touch partial arming.

Supervision

Each zone in the system shall be fully supervised. The system shall be supervised for AC loss. Batteries shall be supervised for low power and be short circuit protected. Additional power supplies shall be supervised for AC loss, low battery, tamper, auxiliary output failure, and loss of sounder loop integrity. Wireless detection devices shall be supervised for presence and low battery. The RS485 bus shall be supervised for low voltage and presence of each defined expansion module and keypad. Digital alarm communicators shall be supervised for phone line trouble and failure to communicate.

False Alarm Prevention

The system shall include the following false alarm prevention features: audible exit delay, arm/disarm bell squawk, audible exit fault, swinger shutdown programmable by zone, transmission delay, pulse count by zone, double knock, soak test by zone, cross zoning, and arming/disarming from outside the protected space using access control. The system shall conform to UK DD243:2000 false alarm prevention requirements.

Programmable Outputs

The system shall have 6 outputs on the main panel and be expandable to a maximum of 70 programmable outputs to operate external devices in response to activities related to alarms, zones, partitions, system events, user actions, and scheduled events.

Integrated Access Control

The system shall support up to 8 dual reader access control modules for a total of 16 readers. Access control modules shall contain non-volatile memory to retain all schedules and programming even if AC and battery power is lost. Each module shall be able to store the most recent 1000 events. The access control module shall be able to support magnetic, proximity, bar code, touch or Wiegand technology readers. Up to 999 users may be accommodated.

Each access control module shall have a "request-to-exit" input, a "door" contact input, a reader input, and a door strike output.

Access control shall allow users to arm/disarm the security system while locking/unlocking the doors from outside the protected space. Access control software shall be an integral part of the main panel software and shall provide the following functions: capacity for 999 cards, up to 16 user groups with different access levels, and up to 25 weekly schedules with 2 intervals per day, and holiday schedules. Access control functions shall be fully programmable through any system keypad and either locally or remotely using the upload/download software.

System Event Buffer

The system shall have the capability to store up to 999 events, including arming, disarming, bypassing, alarms, troubles, restores, and resets. The events may be read from the system's LCD keypad or uploaded via the upload/download software and printed for further analysis.

System Printer

The system shall be capable of supporting parallel printers installed anywhere on the bus. All significant events shall be printed as they occur, including access control events. Each event shall include the date, time, and if applicable, the affected partition and user involved.

System Programming

The system shall be fully programmable via the LCD keypads or the upload/download software. LCD keypad programming shall have a "Menu and tree structure" and not be "Address & Data" based, in order to allow simple programming of the system without continuous reference to the installation manual. Quick shortcuts shall be available to each option of the menu in order to facilitate quicker service phone calls and faster programming and fault diagnosis.

All system programming shall be maintained in a non-volatile memory such that program information is maintained even if all AC and battery power is removed.

Upload/Download Software

The Upload/Download software shall be Windows based with a friendly graphical user interface. The software shall work both locally via a local adaptor to a USB or RS232 port of a PC, or remotely via a telephone line. Full online help shall be available. The software shall enable remote monitoring of system status and shall have several security level and password controlled access. The software shall support shared database capability enabling multiple users to work on the same database via the network. The latest version of the software shall support the complete range of the manufacturer's control panels.

Program Transfer Module

The system shall support a program transfer module which is capable of downloading, uploading and storing the system's programming without power, without the need for a phone line, a PC or any other peripheral device. The program transfer module shall be connected to the main panel via quick plug in connector.

EN Security Grade

The system shall support EN50131 Security Grade 3 or Grade 2 installations.



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