D2212

Control Panel

Architectural & Engineering Specifications

Security Systems

BOSCH

D2212

GENERAL

1.0 GENERAL

1.1 SCOPE OF WORK

1.1.1 Introduction

The system shall be the standard product of one manufacturer, and the manufacturer shall have been in business manufacturing similar products for at least 5 years.

1.2 GENERAL CONDITIONS

1.2.1 After-Sales Support

The Contractor shall be a factory-authorized and trained dealer of the system and shall be factory-trained and certified to maintain/repair the system after system acceptance.

1.2.2 Quality assurance

All equipment, systems, and materials furnished and installed shall be installed in accordance with the applicable standards of:

1.   National codes: NEC, NFPA, UBC

2.   Approvals and listings: UL

3.   Local Authorities Having Jurisdiction

1.2.3 Warranty

All components, parts, and assemblies supplied by the Manufacturer and installed by the Contractor shall be warranted against defects in material and workmanship for a period of at least 36 months (parts and labor), commencing upon date of acceptance by Owner. Warranty service shall be provided by a qualified factory-trained service representative.

2.0 PRODUCTS

2.1 SYSTEM DESCRIPTION

The Digital Alarm Communicator System (DACS) specified herein shall include a Digital Alarm Communicator Transmitter (DACT), test timer, battery charging / voltage supervision circuitry, powered two-wire smoke detector compatibility, diagnostics displays, lightning / EMI protection circuits, and the associated optional modules and components for a complete DACS system.

The DACT firmware shall support programmable "software" features as detailed in section 2.2 *System Features/Capability Summary*. The following describes the general functional requirements of the DACS system:

A. The DACS shall support the connection and reporting of intrusion and residential fire detection devices.

B. The DACS shall provide identification, annunciation, and communication of alarmed detectors by point.

C. The DACS shall be "modularly" expandable using hard-wired modules, wireless receivers or via input points connected to a keypad. Wireless input points shall be programmed via a "learn mode" and not be addressed via mechanical means.

D. The DACS shall have electrically-supervised detection loops and power supplies (mains and battery(s)). This supervision shall be programmable for the purposes of reporting this information to the DACR. The battery supervision must include missing-battery supervision. The mains supervision reporting must be able to be suppressed until another signal is sent to the DACR (tag along reporting).

E. The DACS shall be capable of reporting and communicating alarm or trouble event data by reporting to one (1) or two (2) off-site remote Digital Alarm Communicator Receivers (DACR) via dial-up analog telephone lines. Pulse or Dual-Tone Multi-Frequency (DTMF) dialing option is required.

F. The DACS shall be capable of sending (manually or automatically) test and status reports to remote DACRs. Automatic tests shall be capable of being sent daily, weekly or once each 28 days. Automatic test times shall be capable of being set as an offset of up to 24 hours from the current time. Automatic test reports shall be capable of being deferred by one test interval if any other report is transmitted in the current interval.

G. The DACS shall be programmable locally or remotely. Programming shall be accomplished via a portable programmer or a computer with a remote programmer and diagnostic software package. An on-site user must be able to initiate remote programming while on-line with the servicing location. The remote programming device must provide a compare feature and allow for downloading either the stored program or the (un)modified program copied from the panel.

The number of system programmers shall be severely restricted via the use of program locking features and passwords. Passcode protection in excess of 16 million combinations is required. The panel must allow the local programming option to be disabled and must provide a method to program a panel, while no one is home, when the panel shares a line with an answering machine.

H. The DACS shall annunciate alarm, trouble, service reminders, and other relevant system status messages in English text at the keypad. Point description text is to be 16 custom characters per point.

I. The DACS shall be capable of executing diagnostics and testing functions locally or remotely.

J. The DACS shall be capable of activating 2 relays for auxiliary functions. Each relay output shall be capable of operating as an "AND" or an "OR" for two of the functions.

2.2 SYSTEM FEATURE/CAPABILITY SUMMARY

The following indicates system software/hardware capabilities, capacities, and formats:

A. **Number of Loops/Sensors:** 24 separately-identifiable points, of which 8 are on-board loops and up to 24 are off-board addressable points / zones connected to 8 point hardwire interface modules , 8 point RF interface, 16 point RF interface or 4 input point keypads.

B. **Programming Point Functionality:** Each point in the system shall provide for the following matrix of selectable type of response in the system.

Type	Response	Options
1. Disabled	1. No Alarm Response	1. No Point Options
2. Fire	2. Reports	2. Trouble on Open
3. Fire Alarm with Verification	3. Alarm Report Delay	3. Trouble on Short
4. Buzz on Fault	4. Swinger Bypass	4. Trouble on Open or Short
5. 24 Hour, Visible	5. Alarm Output	5. Double Knock
6. 24 Hour, Invisible		6. Cross Point
7. Controlled, ALL, Delay		7. Partner Point
8. Controlled, ALL, No Delay		
9. Controlled, PART, Delay		
10. Controlled, PART, No Delay		
11. Keyswitch		
12. Extended Delay, ALL		
13. Extended Delay, PART		

C. **Number of Keypads:** Eight (8), each capable of displaying custom English text on liquid crystal displays and sounding different patterns of audible alarm for different events, shall be required.

D. **Number of User Passcodes:** Up to 8 different passcodes shall be required. Passcodes shall be three (3) to six (6) digits. Passcodes shall be assigned one of three (3) different authority levels to carry out functions such as changing passcodes from the keypad, activating one-time passcodes and changing watch tone responses. These passcodes shall also be required for performing various system functions such as disarming the system, transmitting a duress code, and silencing sounders.

E. **Communication Formats:** The Modem II format shall be utilized for optimum system performance. The DACT shall report to a Commercial Central Station using a Bosch Security Systems D6500 Alarm Receiver that supports the Modem II communication format. One such advantage is point identification information transmission to DACRs (Alarms, Troubles and Restorals by point). Others include actual point number; point text; actual user number; by-passed points; relay activation; and opening/closing reports by user.

F. **Testing, Diagnostic, and Programming Facilities:** Automatic test reports and remote system access for diagnostics, and programming shall also be supported via a remote central station computer utilizing the RAM II software.

G. **Reports:** Reports to DACRs at commercial central stations as a result of system supervision shall include alarm, trouble, missing modules, restoral, system status, AC failure and low battery. The DACS shall also transmit test reports once every 24 hours, 7 days, or 28 days. CPU failure shall be annunciated locally.

H. **"Phone Routing":** The DACS shall have the capability of communicating with up to two (2) different DACRs (phone numbers), Each Phone Number can be up to 19 digits long. The DACS reports shall be classified into eleven (11) sub-categories or "report groups." Each DACR shall be designated as a primary or duplicate destination for each report group. The transmission of events, allows the reporting of different types of information to different remote DACRs. The report groups shall be as follows:

1. Fire Alarm
2. Non-Fire Alarm
3. Point Trouble
4. Restorals
5. Closing reports
6. Opening reports
7. Cancel reports
8. System trouble reports.
9. System restoral reports
10. Duress
11. Test

I. **Number of Programmable of Relay Output Modules:** Two relays (Form C) are to be provided via individual or dual relay module for a total of two relays per DACS. These multi-purpose modules are programmable and shall be used to implement auxiliary functions (manually or automatically). The following functions can be executed:

1.	Alarm (selected Points)	13.	User Reset (3 key)
2.	Alarm Memory (selected Points)	14.	AC Failure
3.	Point Trouble (selected Points)	15.	Battery Trouble
4.	Follow Point (selected Points)	16.	Communication Fail.
5.	Watch Tone (selected Points)	17.	Communicating
6.	A, B, C Key Steady (selected Points)	18.	Ground Start.
7.	A, B, C Key Pulsed (selected Points).	19.	Entry and Exit Delay
8.	A, B, C Key Momentary (selected Points)	20.	Extended Delay
9.	Off with passcode (10 seconds).	21.	Pulsed Output
10.	Follow Alarm Output	22.	Two Second Output
11.	All ON	23.	RF Keypad "Light" Key
12.	Part ON	24.	RF Keypad "Special" Key

J. **Number and Alarm Output Selections:** Two different types of alarm output selections shall be supported by the DACS: Steady, Pulsed.

K. **Miscellaneous Features:** Programmable Swinger count (1, 2, 3 or 4), Momentary Keyswitch on/off operation, Interconnection to proximity door access system with 199 users providing automatic disarming on entry.

L. **DACS Power Ratings:** The DACS shall provide 0.350 amps of auxiliary power and 1.5 amps of alarm power, both rated at 12VDC. Additional auxiliary power shall be provided by adding battery/charger modules up to a maximum of 2 amps.

M. **DACS Fault Detection:** The DACS shall check the point sensor loops once every 500 milliseconds. The point response time is fixed at 2 scans (1,000 milliseconds).

N. **User-Programmable Features:** The DACS shall provide a "user-friendly" interface for operating the system to the operational criteria of the application.

A service passcode can be assigned to the servicing agent allowing him limited access to system functions. User-programmable / activated functions include:

1. **Arming the system:** All, All Instant, Part, Part Instant, watch mode, and arming the system with a duress passcode.
2. **Disarming the system:** All and disarming with a duress passcode.
3. **Viewing system status:** Faulted points, event memory, bypassed points, and point status.
4. **Implementation functions:** Bypass a point, unbypass a point, reset sensors, silence bell, activating relays, initiating the remote programming function locally to allow programming the system from a remote location.
5. **Testing the system:** Local Walk test, Service Walk test, send report to remote DACR to check the telephone link.
6. Change system parameters, passcodes, watch modes and watch points.
7. Transmitting special alerts and activating audible and visible signals.
8. Keypad will include electronic "manual" in the form of on-line text help displays.

PRODUCTS

2.3   SYSTEM INTERFACE REQUIREMENTS

A.   **Grounding:** The Contractor shall properly earth ground the DACS.

B.   **Primary power:** The Contractor shall provide a dedicated 120 VAC power circuit to the DACS system. This circuit shall be connected to the emergency power system. The 120 VAC is stepped down to 16.5 VAC to power the DACS panel using a class two, plug-in transformer. This power circuit shall be properly rated to continuously power all points and functions indefinitely in full alarm condition.

C.   **Primary power supervision:** When the primary power source fails, the system can be configured to report an "AC Fail" message to a commercial central station. The creation of this message is suppressed if the AC Failure is less than 60 seconds. The message can be programmed to "tag-along" with another message transmitted to the central station. The system will always display a loss of primary power on the keypad and may be configured to provide additional audible warning.

D.   **Secondary power (standby battery):** The Contractor shall provide adequate battery power as defined by the relevant application criteria, (UL 985 and 865 for alarm installations or NFPA 72 chapters for fire applications). Appropriate battery chargers shall be provided consistent with the battery backup capacity.

E.   **Secondary power supervision:** When the secondary power source experiences an 85% depletion of its standby capacity, the system can be configured to report a "Low Battery " message to a commercial central station. The system will always display a low battery condition on the keypad and may be configured to provide additional audible warning.

F.   **Wiring:** The contractor shall provide cables consistent with the manufacturer's recommendations. The following general guideline shall be followed for wiring installation: Wiring shall be appropriately color-coded with permanent wire markers.

G.   **EMI / Lightning Protection:** The DACS system shall be protected from EMI and lightning surges.

H.   **Telephone interface:** This interface shall conform with FCC rules part 15 and 68.

I.   **Auxiliary function control interfaces:** Auxiliary functions such as activating bells, strobes, or lights shall be accomplished using the optional relay modules. These auxiliary interfaces shall be electrically isolated to avoid inter-system interference or damages.

J.   **Non-Volatile Backup:** Functional criteria programmed into system memory shall be backed up non-volatile. Additionally, the number of system programmers shall be severely restricted via the use of program locking features and passwords.

3.0 EXECUTION

3.1 PROGRAMMING

Programming of the system shall include the following tasks:

A. Programming system configuration parameters (hardware and software, zone/circuit numbers, communication parameters).

B. Programming operational parameters such as opening/closing reports, system response text (custom English) displays of events, activation of relays that drive auxiliary devices, and identifying types of zones/loops.

C. Programming passcodes according to the authorities and functions defined by the owner.

D. Other system programming tasks required by the owner. These additional programming requirements shall be coordinated between the owner and the contractor.

END OF SPECIFICATIONS

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