

SECTION 28 10 00
ACCESS CONTROL SYSTEM
SPECIFICATIONS AND INSTALLATION GUIDELINES

PART 1 — GENERAL

1.1 SUMMARY

- A. This specification document contains requirements on the access control system. Full and proper implementation as specified is required. The access control system in question will be a fully electronic and cloud-based system including:
 - a. Access control panels
 - b. Access control readers
 - c. Online and mobile dashboards
 - d. User credentials

1.2 RELATED SPECIFICATIONS

- A. 27 00 00 Communications
 - a. 27 15 00 Communications Horizontal Cabling
- B. 27 20 00 Data Communications
- C. 28 01 00 Operation and Maintenance of Electronic Safety and Security
 - a. 28 01 10 Operation and Maintenance of Access Control
- D. 28 05 00 Common Work Results for Electronic Safety and Security
 - a. 28 05 07.11 Power Sources for Access Control
 - b. 28 05 07.23 Uninterruptible Power Supply
 - c. 28 05 11 Cyber Security Requirements for Electronic Safety and Security
 - d. 28 05 31 Communications Equipment for Electronic Safety and Security
 - e. 28 05 45 Systems Integration and Unified Systems
- E. 28 06 00 Schedules for Electronic Safety and Security
 - a. 28 06 10 Schedules for Access Control
- F. 28 08 00 Commissioning of Electronic Safety and Security
- G. 28 30 00 Security Detection, Alarm, and Monitoring
 - a. 28 33 15 Security Monitoring and Control Software
- H. 28 40 00 Life Safety
 - a. 28 46 00 Fire Detection and Alarm
- I. 28 47 00 Mass Notification
- J. 28 51 00 Information Management & Presentation

1.3 REFERENCES

- A. Abbreviations
 - a. ACS: Access Control System

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- b. LAN: Local Area Network
 - c. REST API: Representational State Transfer Application Programming Interface
 - d. SSO: Single Sign-On
 - e. VPN: Virtual Private Network
- B. Definitions
- a. Kisi Controller Pro: a cloud-based control panel that manages access to a secured area.
 - b. Kisi/online Dashboard: an online dashboard that lets administrators manage users, permissions, groups, door readers, and troubleshoot hardware.
 - c. Credential: a token presented to a reader to gain access to an entry. Encompasses smart cards, fobs, and mobile phones.
 - d. Entrance: a door, gate, or turnstile secured with a reader.
 - e. Entrance State: Determines whether an entrance is locked or unlocked and defines what types of credentials and trigger methods are valid.
 - f. Mobile Credential: an access credential linked to a user's mobile phone with the Kisi app installed.
 - g. Mobile App: a smartphone application used for providing mobile credentials and remote unlock for users. Available on iOS and Android.
 - h. Remote Unlock: a feature that lets users unlock an entry without needing to be in range.
 - i. Tap to Unlock: a functionality that allows users to 'tap' the reader with their phone as they would with a keycard to unlock the reader.
 - j. User: a person defined in the Dashboard with credentials.
- C. Reference Standards
- a. Federal Communications Commission (FCC)
 - i. FCC Part 15 Unlicensed RF Devices EME/EMC
 - b. Underwriters Laboratory
 - i. UL294 Standards for Access Control Systems
 - c. ISO/IEC 14443-3:2011 Identification Cards
 - d. National Fire Protection Association
 - i. NFPA 70 National Electric Code
 - ii. NFPA 101 Life Safety Code
 - e. Institute of Electrical and Electronic Engineers
 - i. IEEE 802.3 Ethernet Standards

1.4 ACCESS CONTROL CONTRACTOR REQUIREMENTS

- A. The access control contractor shall be responsible for coordinating the installation of all building electronic security devices. He/she shall meet the following minimum qualifications:
 - a. Possess all applicable contractor's licenses.
 - b. The access control contractor personnel performing work shall be supervised by a person who has successfully installed similar systems by the same equipment manufacturers at five (5) locations.
- B. All work shall be in accordance with acknowledged industry and professional standards and practices, existing building conditions, and as specified in this document.

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- C. Provide a complete working installation of all devices with all necessary equipment in proper operating condition. Documents do not purport to show or list every item to be provided. When an item not shown or listed is clearly necessary for proper installation and operation of the equipment and systems, provide, install and test/certify the item at no increase to the contract price.
- D. The access control contractor shall maintain a competent supervisor and supporting technical personnel, acceptable to Kisi, during the entire installation. A personnel change of the supervisor during the project shall not be acceptable without prior written approval from client.
- E. The Access Control Contractor shall provide all required cables, cable support materials, conduits, connectors, and mounting hardware (etc.) for a completely functional/operational system.
- F. This Specification contains a combination of prescriptive and performance requirements. The access control contractor is responsible for fully implementing the functions described in the specifications. This will require the security contractor to select system components, integrate system functions, and integrate the various security systems with each other.

1.5 QUALITY ASSURANCE

- A. Where applicable, all equipment supplied by the access control contractor shall be listed by a nationally recognized testing laboratory.
- B. All equipment and accessories to be the product of a manufacturer regularly engaged in its manufacture.
- C. All items shall be of the latest technology; no discontinued models or products are acceptable.
- D. No 'beta test' products will be accepted.
- E. The manufacturer, or their authorized representative, shall confirm that within 100 miles of the Project site there is an established agency which:
 - a. Stocks a full complement of parts.
 - b. Offers service during normal working hours as well as (24/7) emergency service on all equipment to be furnished.
 - c. Will supply parts and service without delay and at reasonable cost, as approved by Kisi.
- F. The Access Control Contractor shall be capable of performing service or maintenance work on the specified or accepted systems. Access Control Contractor shall be factory certified where such certification is available.

1.6 SUBMITTALS

- A. Submittals shall be provided for review and acceptance by client's representative prior to commencement of the work. Specific products have been mandated in the specification. When the specified product is provided by the access control contractor, only the detailed bill of material need be provided.
- B. The access control contractor should not consider the client or Kisi's review of submittals to be exhaustive or complete in every detail. Approval of submittals, including substitutions, indicates only the acceptance of intent to comply with the general framework or method of construction

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and quality as specified. The functional requirements, operations, arrangements, and quantities must comply with the contract documents unless changes are specifically approved. Submittal approval does not relieve the access control contractor of responsibility for errors or omissions in dimensions, details, and sizes or for coordinating items with actual building conditions.

- C. All access control submittals shall be complete and in a similar format for ease of review. Client reserves the right to reject any submittals determined to be incomplete.
- D. Informational Submittals
 - a. Product Data
 - i. Data sheets for all products, excluding those specifically requested in this document.
 - ii. Catalog references for all equipment supplied indicating UL Listings for all products excluding those specifically requested.
 - iii. Installation methods employed by the access control contractor.
 - iv. Rated capacities.
 - v. Operating instructions for all products.
 - vi. Component power requirements for all products.
 - b. Wiring Diagrams and Shop Drawings
 - c. Network Requirements and Settings
- E. Closeout Submittals
 - a. Warranty documentation (specified in next section).
 - b. Test reports on all working parts (specified in the last section of document).
 - c. Installed asset listing.
 - d. Device settings.

1.7 WARRANTY

- A. Installation, equipment, and all parts and labor shall be guaranteed by access control contractor and manufacturer for at least one year from written notification of acceptance by client.
- B. The installing access control contractor shall provide, upon notification of any problem, a field service technician to correct the problem within 24 hours of notification at no cost to client.
- C. At least 60 days prior to expiration of guarantee, contractor shall provide maintenance contract proposals for an additional year of service for each system to client.

PART 2 — PRODUCTS

2.1 MANUFACTURER

- A. Kisi Access Control
 - a. 45 Main Street, Suite 608, Brooklyn NY 11201
Phone: (+1) 646 663 4880
Email: support@getkisi.com
 - b. Products:
 - i. Kisi Cloud Dashboard

- ii. Kisi Reader Pro — smart access reader
- iii. Kisi Controller Pro — access panel

2.2 ACS SPECIFICATIONS

- A. The ACS shall be a comprehensive system with a cloud networked controller panel, wired access readers, and online and mobile dashboards
- B. Cloud-based system — the ACS shall provide a cloud-based system, where data is hosted on the ACS provider's servers, without the need for a dedicated local server
- C. Online dashboard — the ACS shall provide an administrator cloud-based dashboard, which will allow:
 - a. Real-time monitoring of door status
 - b. Real-time monitoring of access controller status
 - c. Real-time monitoring of user status
 - d. Modifying of permissions of groups including administrators per group
 - e. Real-time monitoring of connected components, including contact sensors and request to exit buttons
 - f. Defining door unlock schedules
 - g. Defining location restrictions (geofencing) for unlocks
 - h. Exporting of access events in CSV format to be used for audits and establishing compliance
 - i. Lockdown functionality per door
 - j. Setting up alerts for user behavior
- D. Mobile application — the ACS shall provide Android and iOS versions of a mobile app for users, allowing:
 - a. Tap to Unlock functionality
 - b. In-app unlocks in and out of range
 - c. Link unlock via shared weblink
 - d. Monitoring of authorized doors and controllers ('Places')
- E. Access Control Panel — the ACS shall provide access controllers with the following specifications
 - a. Communications/networking
 - i. Connection to access reader via CAT6 cable into RS 485 ports
 - ii. Connection to locks via low voltage wires (e.g. 18/2 gauge)
 - iii. Connection to dashboard/servers via cloud module
 - iv. Over-the-Air updates of firmware
 - b. Power
 - i. 12 volt DC
 - ii. ACS provider recommends installing an emergency backup battery, in case of an outage
 - c. Capacity
 - i. Up to 4 wired access readers
 - ii. Up to 4 wired door contact sensors

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- iii. Up to 4 wired push to exit buttons
 - iv. One (1) separate RS486 relay for connection to external Wiegand reader or gateway
- F. Access Readers — the ACS shall provide access readers with the following specifications
- a. Communication
 - i. Connection to access controller via WiFi connectivity
 - ii. Communication with credentials via
 - 1. Bluetooth Low Energy protocol
 - 2. RFID NFC standard (13.56 MHz)
 - b. Power
 - i. Power over ethernet (PoE) port or low voltage input
- G. Credentials — the ACS will support the following types of credentials
- a. Kisi mobile credentials (preferred)
 - b. Kisi Link Access
 - c. Kisi Pass
 - d. Standard legacy NFC access cards (including MiFare cards)
 - e. Legacy NFC fobs/tokens
- H. Connected components — the ACS will support integrations with the following external access control components
- a. Door contact sensors
 - b. Push to exit buttons
- I. Software Integrations — ACS shall provide free access to all applicable software integrations for users
- a. Active directory integrations, including Azure AD and Google Directory
 - b. Door scheduling with Google Calendar
 - c. Visitor management with Google Calendar
 - d. Public REST API: ACS shall provide access to API documentation for clients to develop their own integrations via event hooks or other, to support custom automation of access tasks and third-party integrations

PART 3 —EXECUTION

3.1 PRE-INSTALLATION

- A. A thorough survey of all installation sites shall be conducted by the access control contractor. This will include access control panel and reader locations, wiring, number of locations, and additional hardware required.
- B. Clear and detailed results of the site survey will be communicated to the client before the signing of a contract. Any subsequent modifications of hardware requirements or installation costs, if not mutually agreed upon, will be covered by the access control contractor.

3.2 INSTALLATION

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- A. All hardware installation, including access controller and readers, wiring, and additional hardware, shall be performed by a Kisi-authorized and industry-certified installer.
- B. The installer in question shall follow all applicable documented installation procedures, and respect all building, local, state, and federal codes.
- C. The contractor shall coordinate with manufacturer for hardware provisioning and to ensure all hardware devices are online and functioning.

3.3 ACCEPTANCE TESTING

- A. Upon completion of the installation of the security systems, the Access Control Contractor shall submit to the client pre-performance test reports including, but not limited to, the following information:
 - a. A complete list of all equipment installed, including serial numbers of major components.
 - b. Certification that all equipment is properly installed and functional, and conforms with contract specifications.
 - c. Test reports of all new and existing inputs and outputs, devices, and equipment.
 - d. Test technician's name, company, and dates of test
- B. Following review of the pre-performance test report by the client, the access control contractor shall schedule a completion test, which shall include performance tests of each device, switch, control unit, power supply, battery standby unit, access control panel, reader, and all other equipment and material required by the Contract. Tests will only be conducted at completed buildings, and the results will be documented and provided to the client.
- C. At a minimum, the contractor shall perform tests to demonstrate that:
 - a. All systems are free from grounding and open circuits.
 - b. Each alarm-initiating device consistently functions as specified and produces the specified alarm actions.
 - c. An abnormal condition of any circuit or device required to be electrically supervised will result in activating the specified trouble or tamper alarm signal.
 - d. Doors lock and unlock at programmed times and allow access upon activation from a valid card or mobile credential.
 - e. Systems operate properly during and while on emergency generator power.
 - f. All software functions properly as specified, and all equipment is fully programmed (this will be executed in conjunction with access control provider Kisi).

3.4 TRAINING

- A. The contractor shall provide training for office and IT administrators that shall cover system usage, maintenance, and troubleshooting, but shall not extend to training on the admin online dashboard, which shall be provided by the access control provider.
- B. Training shall be offered at client's convenience.
- C. Up to four hours of training shall be provided in two 2-hour sessions, to ensure that all interested parties can attend.

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- D. The manufacturer or contractor shall provide at least two copies of operation and maintenance documentation in the form of manuals, release notes, online portal tooltips, and online resources.

END OF DOCUMENT