

A&E Specification

A2E4, A2E4P 2 Door Expandable Controller

Speco Technologies

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Section 28 00 00	Electronic Safety and Security
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Notes to Security System Specifiers - This A&E specification is written according to Construction Specifications Institute (CSI) 3-Part Format, based on MasterFormat™ (2016 Edition) and The Project Resource Manual – CSI Manual of Practice. CSI MasterFormat 2016 incorporates numerous significant changes affecting electronic safety and security. This document is written to provide flexibility in using either format, although adoption of MasterFormat 2016 is encouraged. All trademarks are properties of their respective owners.

Part 1 General

1.1. Summary of Requirements

A. A2E4, A2E4P 2-Door Expandable Controller (ACS)

1. The A2E4 2-Door Controller allows selective restriction to a place or resource such as a property, building or room to authorized persons and shall be based on who, where and when.
2. The A2E4 shall be expandable to up to 4 doors with the A2M Expansion Board.

1.2. References

A. Abbreviations

3. GUI Graphical User Interface
4. HTTP Hypertext Transfer Protocol
5. HTTPS Secure HTTP
6. IP Internet Protocol
7. PoE Power over Ethernet
8. PPPoE Point-to-Point Protocol over Ethernet
9. QoS Quality of Service
10. TCP Transmission Control Protocol
11. ESD Electrostatic discharge
12. HDD Hard Disk Drive
13. LAN Local Area Network

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|---------|------------------------------|
| 14. WAN | Wide Area Network |
| 15. ACS | Access Control System |
| 16. ACU | Access Control Unit |
| 17. AES | Advanced Encryption Standard |
| 18. LAN | Local Area Network |
| 19. LED | Light-Emitting Diode |
| 20. REX | Request to Exit |
| 21. SSO | Single Sign-On |
| 22. TLS | Transport Layer Security |
| 23. 1FA | Single Factor Authentication |
| 24. 2FA | Two Factor Authentication |

1.3. Certifications, Standards and Ratings

A. Reference Standards

1. Networking
 - a. IEEE – 802.3 Ethernet Standards

1.4. Submittals

A. Product Data

1. Provide manufacturer's datasheets in printed or electronic form.
2. Provide manufacturer's Installation and operating manuals/guides.
3. Provide manufacturer's warranty statement.

1.5. Qualifications

A. Manufacturer

1. Company specializing in manufacturing products at least ten years experience.

B. Supplier

1. Authorized distributor of specified manufacturer with at least 5 years.

C. Installer

1. Authorized installer of specified manufacturer with a least 5 years experience.

1.6. Delivery, Storage and Handling

A. Delivery

1. Deliver materials in original, unopened and undamaged packaging in accordance with manufacturer's instructions.

D. Storage

1. Store and guard materials from environmental and temperature conditions in accordance with manufacturer's instructions.

E. Handling

1. Handle and operate products and systems in accordance with manufacturer's instructions.

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1.7. Warranty

A. Warranty Period

1. Manufacturer shall warranty access control device for a period of [5] years for the repair or replacement of defective equipment.

1.8. Certifications

B. Certification Types

1. UL Listed - 294 Series 7

1.9. Tech Support

A. Support

1. Technical support shall be based in North America.
2. Technical support shall be via email or toll-free phone number.
3. Technical support shall be available weekdays from 6 a.m. to 6 p.m. EST.

Part 2 Product

2.1. Manufacturer

A. Manufacturer

1. Speco Technologies
200 New Highway
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F. Product

1. Access Control Device
2. Models:
 - a. A2E4: 2-Door Expandable Controller, Basic Power
 - b. A2E4P: 2-Door Expandable Controller, Power Package

G. Product Description

1. A2E4 door access controller that can function as a server or client.

2.2. Product Description

A. General

1. All equipment and materials used shall be standard components, regularly manufactured, regularly utilized in the manufacturer's system.
2. All systems and components shall have been thoroughly tested and proven in actual use.
3. All systems and components shall be provided with the availability of a toll free technical support phone number from the manufacturer. The phone number shall

allow for immediate technical assistance for either the dealer/installer or the end user at no charge.

4. All systems and components shall be provided with an explicit manufacturer warranty.

B. Description

1. Access control device shall meet the requirements of business, government and general security surveillance applications.
2. Access control device shall function as part of an automate access control system using credentials, credential readers, electric door locks and other devices.
3. Access control device shall make available an administrative user account for the purpose of administering users and their permission levels.
4. The administrative user shall determine who is allowed to enter or exit, where they are allowed to exit or enter, and when they are allowed to enter or exit.
5. When access is granted, the door shall be unlocked for a predetermined time and transaction shall be recorded.
6. When access is denied, the door shall remain locked and the attempted access shall be recorded.
7. The administrators shall have the ability to run reports on recorded transactions and to review activity for selected dates and times.
8. Access control device shall be available in 1, 2 & 4 door models.
9. Single-door access control device shall be powered by an external power supply.
10. Multiple-door access control device shall include an integrated power supply for the controller and door lock power.
11. Access control device firmware/software shall allow future updates to include new features and enhancements.
12. Access control device shall allow updating of firmware/software remotely via a WAN or LAN connection.
13. Access control device shall implement a licensing framework that allows the locking and unlocking of features, enhancements and various system counters for the purpose of monetizing such features.
14. Access control device shall implement tamper and power fault inputs, in and out readers, request to exit and door position inputs for each door and auxiliary inputs and outputs.
15. Access control device shall connect to a network using an Ethernet RJ45 connector.
16. Access control device shall be configured using the integrated web server and user interface.
17. Access control device shall have the capability of being configured as a server or client device in an access control system which requires the presence of at least one server controller.
18. Multiple access control devices may be configured as client controllers to increase the number of doors, inputs or outputs or control elevators.

19. Whether the access control device functions as a server controller or a client controller is determined by its license key.
20. Access control devices that are configured as client controllers shall be configured via the server controller web interface.
21. Once configured, the access control device shall be capable of functioning independently and shall not be required to be in communication with other server and client controllers on the network.
22. If applicable, access control device shall be configurable via a mobile app.
23. If applicable, access control device shall be configurable via a cloud service.

C. Electrical Specification

1. Power Input 12VDC
2. Power Supply
 - a. A2E4: Controller & Reader Only
 - b. A2E4P: Controller, Reader & 12V and 24V DC for Door Lock
3. Standby Power Consumption
 - a. A2E4: 400mA @ 12V
 - b. A2E4P: 450mA @ 12V
4. Reader Power
 - a. 300 mA @ 12V Max per Reader
 - b. 600 mA @ 12V Max per System
5. Battery Backup
 - a. A2E4: Controller & Reader Only
 - b. A2E4P: Controller, Reader & Door Lock
 - c. Recommended Battery Type (not included): Powersonic PS-1270-FI or Similar 12V, 7AH, Sealed Lead Acid with 0.187 inch terminals

D. Environmental Specification

1. Operating Temperatures 50F to 95F (10C to 35C)
2. Dimension 14.25W x 14.25H x 3.75D in (362 x 362 x 95mm)

E. Mechanical Specification

1. System
 - a. Processor: Quad Core Cortex, 1.5 GHz
 - b. Memory: 1GB DDR3 & 8GB eMMc
 - c. Operating System: Embedded Linux
 - d. User Interface: Google Chrome (recommended), MS Internet Explorer, Apple Safari, Mozilla Firefox
 - e. Transactions: > 45 per second
2. Reader
 - a. Protocol Wiegand

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b. Number of Readers	4 Total, One In & One Out Reader for Each Door
c. Request to REX Input	2 Total, One for Each Door
d. Door Position Input	2 Total, One for Each Door
e. Auxiliary Input	2 Total, General Purpose
f. Tamper Digital Input	Yes, Prewired on Units with Integrated Power
g. Power Fault Digital Input	Yes, Prewired on Units with Integrated Power
h. Door Lock Output	2 Form C Relay, 24V @ 2.0A
i. Auxiliary Output	2 Form C Relay, 24V @ 2.0A

Part 3 Execution

3.1 Examination

- A. Device shall be inspected for physical and cosmetic defects.
- B. Package box shall include device, power supply (if applicable), installation and user guides on disk.

3.2 Preparation

- A. ESD-sensitive parts shall be properly protected against static buildup through the use of static shielding material.
- B. Package box shall contain adequate padding to prevent damage to device and parts during shipping.

3.3 Installation

- A. Device shall be installed in accordance with the manufacturers' installation guide provided.
- B. Device shall be installed by qualified service professionals.
- C. Device shall be installed in accordance with the National Electric Code or applicable local codes.
- D. Device shall be installed in locations which adequately supports the device's environmental and electrical requirements.

3.4 Field Quality Control

- A. Test for proper communication between device and supporting devices.
- B. Test for proper operation of device's system software and related software programs.
- C. Determine and report all problems to the manufacturers' customer service representatives.

3.5 Adjusting

- A. Make all necessary adjustments to the device and supporting devices to ensure the proper operation of the device.
- B. Make all necessary adjustments to the devices to satisfy end-user requirements.

3.6 Demonstration and Training

- A. Perform final inspection to validate and ensure proper functioning of device.