

AHDU Series IP-Based Biometric Door Unit

- Ultimate Authentication Performance
- PoE and 3rd Party Integration
- Threat Levels and Port Failover
- Advanced Access Control Functions
- Supervised and Programmable Inputs



Key Features

Ultimate authentication performance

Supports up to 400,000 (1:N) RFID card / mobile credential, 400,000 (1:1) & 50,000 (1:N) fingerprint, 100,000 (1:1) & 5,000 (1:N) facial, 5,000 (1:N) & 10,000 (1:1) palm authentication in one single controller.

PoE

Power-over-Ethernet (PoE) 802.3at/ 9-24VDC from power sourcing equipment (PSE) according to PoE 802.3at / af standards.

Threat Levels

Unlimited threat levels, which are used to instantly adjust users access right during lockdown and lockout.

3rd Party Integration

Supports various reader protocols, including Armatura Explorer series readers, 3rd party biometric readers, along with 3rd party Wiegand and OSDP readers. Armatura One provides RESTful based API for 3rd Party software Integration.

Advanced Access Control Functions

The controller supports advanced access control functions such as multi-frequency RFID card support, multi-biometric authentication support, mobile credential support, anti-passback, multi-level authentication and cross panel linkage (global linkage).

Port Failover (TCP/IP coming soon) & Redundancy

The AHDU controller series has dual ethernet ports. If the primary communication port fails, it will then switch to the secondary port automatically (the controller supports separate network configurations for both ports). 100Base-TX Ethernet data transfer is included on the AHDU controller. 100Base-TX communication between the AHDU security core allows users to take full advantage of high-speed network technology.

The AHDU controller series has 3 RS-485 ports on the board, which support redundancy function dedicated on ports 2 & 3. If one of the RS-485 connections experiences problems, the other port will activate automatically to avoid disconnection.

Supervised Inputs

The AHDU controller series is equipped with 4-state supervised inputs, which gradually avoids open or short circuit attacks. The AHDU controller can detect abnormal changes as low as 5% Ohms in the circuits and filter out all possible attacks.

REX inputs and dedicated fire alarm inputs are independently managed by isolated microchips to ensure these inputs can work normally under various extreme and catastrophic situations, even if the motherboard isn't functioning properly.

Dual System Rom Protection Design

To offer the best operation stability, durability, and safety and tackle different kinds of situations, such as an improper upgrade, cyber attack, and malware infections that completely render the ROM to inoperable status. Armatura's controllers are built with a dual ROM design, one of the ROMs acts as a primary ROM for the system startup, and the second layer ROM acts as a "Recover" ROM. When the primary ROM happens to fail or malfunction, the second layer ROM will automatically take over on your next controller board startup.

Scalable

Supports up to 384 inputs (when using AHEB-0216 IO expansion board) through OSDP V2.2 connection between boards. The AHDU can also act as an edge device under the AHSC-1000 security core, which supports cascading to manage up to 128 doors under single AHSC-1000 controller.

Innovative MQTT based communication protocol.

MQTT is a lightweight messaging protocol designed for IoT devices and its characteristics make it a perfect solution for intelligent security systems. This enables the controller to communicate with more edge devices (Door Unit, reader, sensor, etc.) under the same network environment.

Advanced Communication

The serverless design enables the controller to operate independently.

Peer-to-peer cross-controller linkage through the AHSC-1000 security core allows communication between controllers and can be active while the Armatura One server is unavailable. All the preset linkages / global linkage can operate normally.

With the onboard webserver design, the controller can be configured and programmed through the Armatura Connect mobile app and web browser through TCP/IP connection. The simple diagnostics can also be done by the built-in monitor and keypad on the controller.

Cyber Security

Advanced Encryption Standard (AES) 256-bit algorithm for communication with Explorer series readers and I/O expansion boards through TCP/IP; AES 128 bit encryption to the readers and I/O expansion boards through OSDP V2.2 over RS-485.

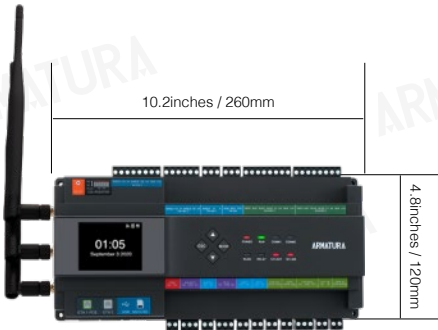
AES128 / TLS 1.2 (with AES256) communication between Armatura One server and edge devices.

Communications between the Armatura One server and web-client are protected by HTTPS / TLS1.2 (AES256) or above

Enhanced cybersecurity level is provided by an additional crypto chip (Certified EAL6+ standard), providing dedicated storage and cryptographic functionality for the AHSC-1000 controller.

Supports IP/Mac address filtering functions, and VLAN isolation to enhance cybersecurity standard.

Dimensions of AHDU



AHDU-1160



AHDU-1260



AHDU-1460

| General Information | | | |
|--------------------------------|--|---|---|
| | AHDU-1160 | AHDU-1260 (Coming Soon) | AHDU-1460 |
| Primary Power | PoE 802.3at/af / 9 - 24 VDC \pm 20%, 550 mA maximum (reader current not included) | | |
| Primary Host Communication | Ethernet: 100Base-TX 256bit AES* symmetric encryption for Controller to Server and Inter-Controller communications | | |
| Secondary Host Communication | BLE 5.2 | | |
| Third Host Communication | Wi-Fi IEEE 802.11ac 5GHz , or 2.4GHz/5GHz IEEE 802.11n 256bit AES* symmetric encryption for Controller to Server and Inter-Controller communications | | |
| Ethernet network connection | Port 1: Ethernet: 100Base-TX Port 2: Ethernet: 100Base-TX (Configurable for Port Failover) | | |
| RS-485 connection | Port 1: Armatura RS-485 / OSDP V2.2 Port 2: Armatura RS-485 / OSDP V2.2 Port 3: Armatura RS-485 / OSDP V2.2 (Configurable for Port Redundancy dedicated on port 2 & 3) | | |
| Number of Ports | 2*TCP/IP 3*RS-485 2*Wiegand | 2*TCP/IP 3*RS-485 4*Wiegand | 2*TCP/IP 3*RS-485 4*Wiegand |
| Inputs | 4-state supervision, resistor values (5% tolerance), Normally open contact: use 1.2k, 2.2k, 4.7k or 10k/ Normally closed contact: use 1.2k, 2.2k, 4.7k or 10k/ Dedicated Panel Tamper IO Input* Dedicated Microchip Control Fire Alarm IO Input & REX Input for catastrophic situation | | |
| Outputs | 1 relay, 1* Form-C with dry contacts | 2 relay, 2* Form-C with dry contacts | 4 relay, 4* Form-C with dry contacts |
| Normally Open Contact Rating | 5A @ 30Vdc resistive | | |
| Normally Closed Contact Rating | 5A @ 30Vdc resistive | | |
| On-Board Monitor | Size: 2.4", Resolution: 320*240, TFT Monitor Quickly view status of board, connected doors and for configuration information display | | |

| | | | |
|---------------------------------|---|--|--|
| On-Board Webserver | Webserver for System Configuration and Management Dashboard for Controller Status Monitoring, Device Connection Status Monitoring & Configuration, Performance Status, server Primary Controller Setting, Network Status Monitoring & Setting, IP Access Filter, SSL / TLS Certificates Setting, Access Log Export, Controller Reset, Debug Status Monitoring, Operation Log Monitoring, User Management, Date & Time Setting, Daylight Saving Time Setting, NTP server Setting, General Status, Controller Information | | |
| RFID Card Capacity | 400,000 (1:N) / 800,000 (1:1) | | |
| Maximum RFID Card Number Length | Supports up to 512bits card number length | | |
| Mobile Credential Capacity | 400,000 (1:N) (Bluetooth) 400,000 (1:N) (NFC) 400,000 (1:N) (Dynamic QR Code) | | |
| Fingerprint Capacity | 50,000 (1:N) / 100,000 (1:1) | | |
| Face Capacity | 5,000 (1:N) / 100,000 (1:1) | | |
| Palm Capacity | 3,000 (1:N) / 5,000 (1:1) | | |
| Transaction Buffer | 300,000 Events | | |
| Access Level | 100,000 Levels | | |
| On-Board Access Point Control | 1 Access point on board | 2 access point on board | 4 access point on board |
| On-Board Reader Support | 3 (OSDP over RS-485) or 1 (Wiegand) with on-board IO | 3 (OSDP over RS-485) or 2 (Wiegand) with on-board IO | 3 (OSDP over RS-485) or 4 (Wiegand) with on-board IO |
| Maximum Access Points | 1 | 2 | 4 |
| Maximum Readers | 2 | 4 | 8 |
| Maximum Inputs | 384 (using Armatura AHEB-1602) | | |
| Maximum Outputs | 385 (using Armatura AHEB-0216) | | |
| Maximum IO Board | 24pcs (3*High Speed RS-485 communication) | | |

RFID / Biometrics Reader Interface

| | |
|-------------------------|---|
| Input Voltage | 12 -24 Vdc +/- 10% regulated, 500 mA maximum each reader |
| Maximum Input Current | 12 - 24 Vdc +/- 10% regulated, 500 mA maximum each reader |
| RS-485 Protocol | AES-128, OSDP Secure Channel |
| OSDP Mode | 9600-115200 bps, OSDP V2.2, asynchronous, half-duplex, 1 start bit, 8 data bits, and 1 stop bit. 3rd Party reader: support OSDP V2.2 or above |
| Wiegand | Read: support up to 128 bits / Write: Support 26 / 34 / 37 bit, and other customised card formats |
| Tamper Input (Wiegand) | TTL levels, high > 3 V, low < 0.5 V, 5 mA source/sink maximum |
| Buzzer Output (Wiegand) | TTL levels, high > 3 V, low < 0.5 V, 5 mA source/sink maximum |
| LED Output (Wiegand) | TTL levels, high > 3 V, low < 0.5 V, 5 mA source/sink maximum |
| Data Inputs | RS-485, OSDP and Wiegand standards supported. Maximum RS-485 /OSDP cable length: 3937ft. (1200m) Maximum Wiegand cable length: 328ft (100m) |

| IO Expansion Board Interface | | | |
|------------------------------|--|------------|------------|
| | AH DU-1160 | AH DU-1260 | AH DU-1460 |
| RS-485 Protocol | AES-128, OSDP V2 Secure Channel | | |
| OSDP Mode | 9600-115200 bps, OSDP V2.2, asynchronous, half-duplex, 1 start bit, 8 data bits, and 1 stop bit. Maximum cable length: 2,000 ft. (609.6m) | | |
| Data Inputs | OSDP and Wiegand standards supported. Maximum cable length: 500 ft. (152m) | | |

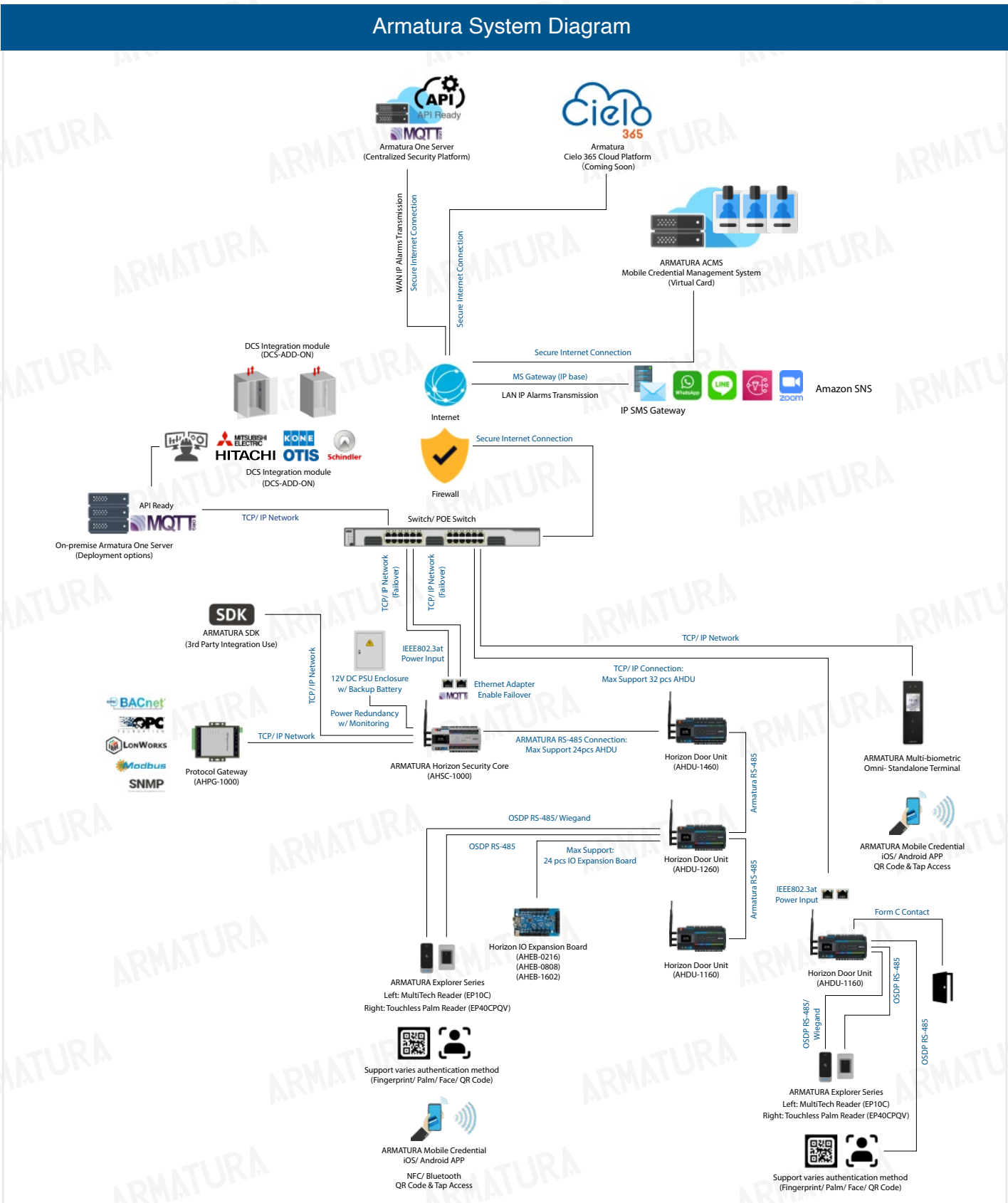
| Cable Requirement | | | |
|------------------------|--|------------|------------|
| | AH DU-1160 | AH DU-1260 | AH DU-1460 |
| Power & Relays | One twisted pair, 18 to 16 AWG | | |
| Ethernet | CAT-5, minimum 330 ft. (100m) | | |
| Ethernet Failover Port | CAT-5, minimum 330 ft. (100m) | | |
| RS-485 Reader Port | 9600-115200 bps, asynchronous, half-duplex, 1 start bit, 8 data bits, and 1 stop bit. One twisted pair with drain wire and shield, 120 ohm resistance, 22-18 AWG, Maximum cable length: 3937ft (1200m) | | |
| RS-485 I/O Device Port | 9600-115200 bps, asynchronous, half-duplex, 1 start bit, 8 data bits, and 1 stop bit. One twisted pair with drain wire and shield, 120 ohm resistance, 22-18 AWG, Maximum cable length: 3937ft (1200m) | | |
| RS-485 Failover Port | 9600-115200 bps, asynchronous, half-duplex, 1 start bit, 8 data bits, and 1 stop bit. One twisted pair with drain wire and shield, 120 ohm resistance, 22-18 AWG, Maximum cable length: 3937ft (1200m) | | |
| Wiegand Port | 20 AWG shielded Wiegand wire, 328ft. (100m) | | |

| Mechanical | | | |
|-------------------|---|-------------|-------------|
| | AH DU-1160 | AH DU-1260 | AH DU-1460 |
| Dimensions | 4.8" W x 10.2" L x 2.5" H (122 x 260 x 62.5mm) | | |
| Weight | 30oz (830g) | 30oz (830g) | 30oz (830g) |
| DIN Rail Mounting | Supported DIN35 Rail Compatible with UTA89 Din Rail Adapter for screwing on switchgear (Sold Separately) Wall mount | | |
| Housing Material | ABS-PC UL-94 V2 | | |

| Environmental | | | |
|-----------------------|---|------------|------------|
| | AH DU-1160 | AH DU-1260 | AH DU-1460 |
| Operating Temperature | -22°F ~ 158°F (-30°C~70°C), Operating & Storage | | |
| Operating Humidity | 0-95% RHNC | | |
| Certification(s)* | CE, FCC, UL, RoHS, UL294 | | |
| Security Rating | Secure Data Storage in EAL 5+ Certified Crypto Chip | | |

| Software Interface | | | |
|----------------------|---|-----------|-----------|
| | AHDU-1160 | AHDU-1260 | AHDU-1460 |
| TCP/IP Mode | Ethernet: 100Base-TX | | |
| TCP/IP Protocol | NTP, SNMP V2 /V3, 802.1X, VLAN, SSH, MQTT, IPv4, IPv6, DNS, DDNS | | |
| TCP/IP Encryption | Complies with TLS1.2, AES-256 end to end secure communication channel | | |
| TCP/IP Communication | Spada Protocol over MQTT | | |
| Supported Software | Armatura One Security System | | |

Armatura System Diagram



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