



CVEdge 160 IP-based Door Controller

With Edge AI Video Analytics and
Built-in Web Management



Fingerprint
Authentication



RFID



QR code
(static)



TCP/IP



Wi-Fi



AI Video Analytics



Product Overview

The CVEdge 160 by ZKTeco is an AI-powered access control controller with video analytics. It provides enhanced access control management and delivers greater security and convenience.

The CVEdge 160 supports multiple authentication methods, including fingerprint authentication, RFID, QR code (static) and password verification. These authentication methods can be configured in various combinations to meet diverse risk profiles.

When CVEdge 160 is paired with ZKTeco's DE10 door expansion units, it can manage a maximum of 16 doors, allowing for scalable door control. Alternatively, the CVEdge 160 provides primary-secondary mode, connecting as many as 15 secondary CVEdge 160 units, making it ideal for campuses, banks, hospitals, and retail warehouses.

More importantly, CVEdge 160 stands out due to its video analytics functionality, including object detection, line-crossing detection and intrusion alarm. The CVEdge 160 can connect up to four IP cameras to monitor entrances from different angles and coordinate video analytics with access control for unified monitoring and event review. For instance, the area-intrusion alarm can be linked to access event to prevent tailgating, ensuring that only one person passes per valid credential. The CVEdge 160 also supports a 3.5-inch surveillance-grade HDD for local recording. Each alert event can trigger video capture for forensic review. Video structured search helps operators quickly locate relevant event footage.

CVEdge 160 provides flexible connectivity for easy setup and unified management. Its on-board web console enables direct login from PC or mobile web browsers, even via device's Wi-Fi AP mode, so that you can manage devices, configure personnel management, access control and video analytics management, plus perform online firmware upgrade with no external server required.

Core Capabilities

• Scalable Door Management:

Manage up to 16 doors by expanding with DE10 door expansion units (up to 15). Or by switching to primary-secondary mode and connecting up to 15 CVEdge 160 secondary controllers.

• On-board Web Console for Local & Remote Access:

Features an on-board web server supporting PCs, mobile phones and tablets browser for device administration, personnel management, access control, video analytics configuration, and firmware updates via Ethernet or Wi-Fi AP mode-no external server required.

• Multiple Authentication Methods and Expanded Capacities:

- Fingerprint authentication up to Supports 10,000 fingerprint templates (optional upgrade to 20,000).
- RFID authentication: up to 5,000 card users (optional upgrade to 100,000).
- QR code (static): up to 5,000 (Optional: 100,000)
- Transactions capacity: 300,000 records.

• Connectivity for Unified Management:

- Provides RS485 for long-distance, multi-drop reader networks. TCP/IP uplink for connection to host PCs / platforms, enabling unified management and remote maintenance.
- Support RS485 readers for RFID card and password authentications. Wiegand input via WR485 (RS485 to Wiegand) adapter, compatible with W26 / W34 / W66 formats (Coming soon).

• Video Analytics for Greater Access Control Capabilities:

Each CVEdge 160 supports up to four IP cameras locally. When CVEdge 160 is switched to primary-secondary mode, scalable to 64 camera channels across 15 secondary CVEdge 160 units to monitor its local doors. Its video analytics include absence detection, line-crossing counting, object detection, area detection, and tripwire detection. Area-intrusion alarms integrated with access control: enforces single-person entry per valid credential. Alarm events trigger local recording with structured search for rapid footage retrieval.

• Elevated Capacity and Data Security:

Supports 10,000 fingerprint templates (optional upgrade to 20,000), 5,000 card users (optional upgrade to 100,000) and 5,000 static QR codes (optional upgrade to 100,000). Each user can enroll up to two fingerprints: one for normal access and one for duress. Deploys the AES 256-bit algorithm encryption to protect data storage. And also secures communication between web clients through HTTPS / TLS1.2 encryption.

• Versatile Connectivity:

Supports wired TCP/IP for PC access. It also supports Wi-Fi AP mode that turns CVEdge 160 into a local hotspot, connect your mobile devices to auto-launch the login page for instant on-site access.

• Comprehensive Alarm System Integration:

The controller features one onboard auxiliary alarm input and supports seamless expansion through its RS485 interface. Add EX0808 I/O expansion boards-each provides 8 additional inputs-with support for up to 8 boards, scaling to 64 auxiliary inputs total. This scalable design lets you integrate a wide range of alarm sensors to handle diverse alarm types and evolving site requirements. The integrated AI video algorithms use computer vision for multi-type intelligent detection and alerting.

• Advance Access Control Functions:

Equipped with a suite of standard access control functions including a built-in web server, support for up to 14-digit User IDs, customizable access levels and groups, holiday scheduling, anti-passback, anti-tailgating, and multiple verification methods.

Specifications

Model	CVEdge 160
Operation System	Linux
Hardware	CPU: Quad Core with max. clock rate 1.5GHz RAM: 2GB eMMC: 16GB Compute Power: 4 Tops
Authentication method	Fingerprint / RFID / QR code (static) / Password
Access Point Capacity	Onboard Access Point: 1 Scalable Door Control Points: up to 16 via ZKTeco's DE10 door unit OR via Primary-Secondary mode
Type of Reader Supported	RS-485: ZKTeco RS-485 Protocol / OSDP (Version 2.1.7) Wiegand: 26 / 34 / 66-bit (via WR485) (Coming Soon)
IO Expansion Board Capacity	8pcs EX0808 (RS-485 connection)
User Capacity	5,000(Optional: 100,000)
Card Capacity	5,000 (1: N) (Standard) Optional: 100,000 (1:N)
Fingerprint Template Capacity	10,000 (1: N) (Standard) Optional: 20,000 (1:N)
Facial Template Capacity	N/A
QR Code Capacity	5,000 (Static QR Code) ; Optional: 100,000
Transaction Capacity	300,000
Fingerprint Authentication Speed	less than 0.5sec (Fingerprint)
Fingerprint Authentication Algorithms	ZKFingerprint Algorithm V13.0 (Default) / V10.0
False Acceptance Rate (FAR) %	FAR 0.0001% (Fingerprint)

False Rejection Rate (FRR) %	FRR 0.01% (Fingerprint)
Number of Inputs	1* Exit Button, 1* Door Status, 1 * AUX Inputs,1*Tamper,1* Fire Alarm; or 64 (with 8pcs of EX0808 IO expansion board)
Number of Outputs	1* Form C Relay for Lock, 1* Form C Relay for Aux Output,1* Audio output; or 64 (with 8pcs of EX0808 IO expansion board)
Max. Card Number Length	16 digits
QR Code	Standard QR code (Static)
Communication	TCP/IP * 1 RS-485: ZKTeco RS-485 / OSDP (Optional) * 2 USB 3.0: Type A (USB Drive Only) * 1 SATA: (3.5" SATA HDD, up to 20TB) * 1 Wi-Fi: IEEE 802.11 b/n/g @ 2.4 GHz ; AP mode Aux Inputs * 1, Aux Outputs * 1, Electric Lock * 1, Door Sensor * 1, Exit Button * 1, Alarm * 1, Tamper * 1, Audio out * 1;
Standard Functions	Webserver, Up to 14-digit User ID, Access Levels, Access Groups, Holidays, Anti-passback, Anti-tailgating, Linkage, Global Linkage, Multiple Authentication Methods, Power Detection, LED Status Output, Primary-Secondary Mode.
Access Control Interface	RS-485 (RS-485 Card Reader / Fingerprint Reader / QR code Reader); Wiegand (Card Reader) (Coming soon)

Intelligent Video Analytics (IVA)

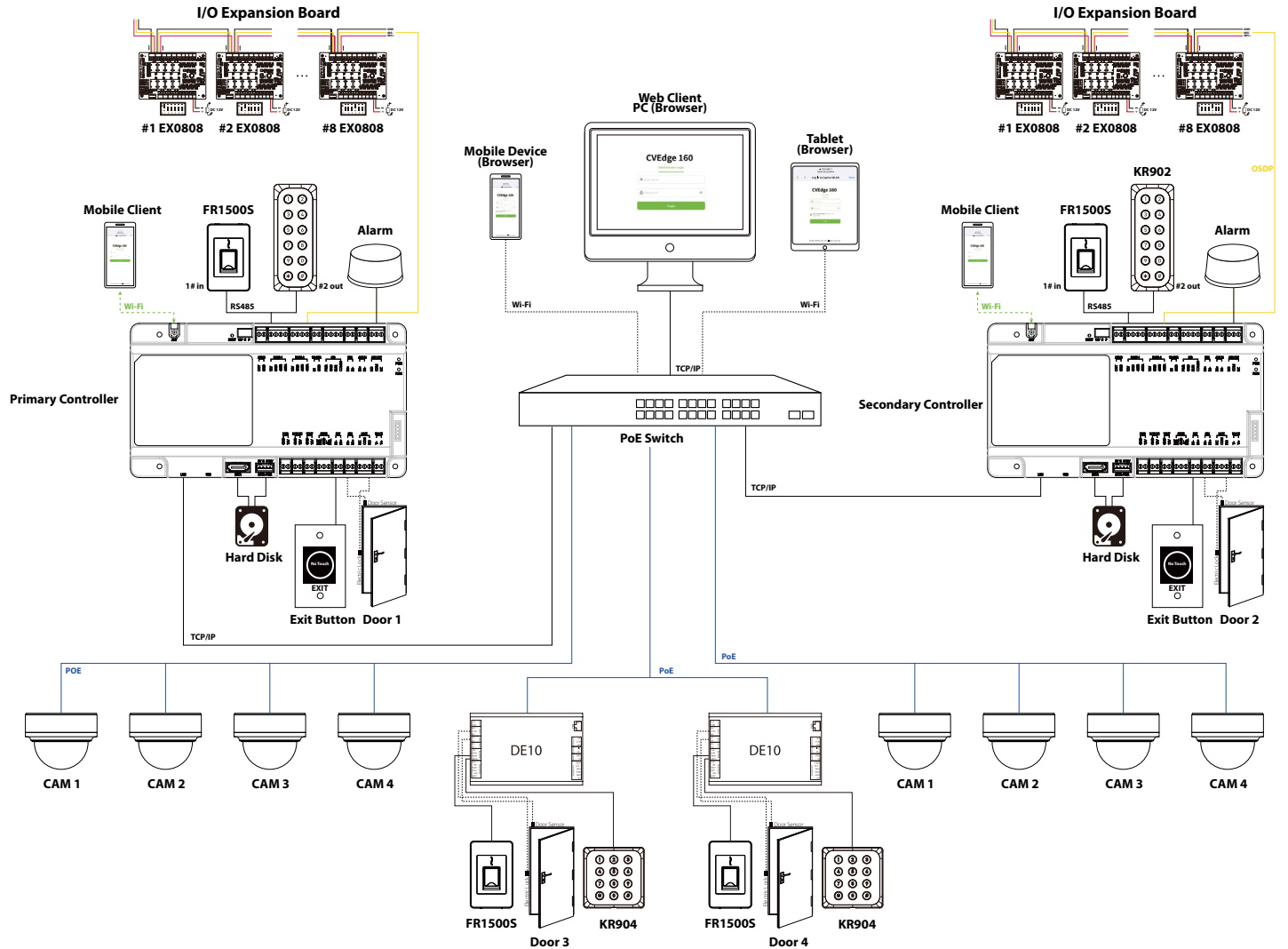
Audio and video	Video Channel: 4 Decoding Format: H.264/H.265; Split Screen: 4; Decoding Capacity: 4; Synchronized Playback Channels: 4; Maximum video resolution: 8MP/5MP/3MP/1080P/960P/720P/D1/VGA/V4CIF/DCIF/2CIF/ CIF/OCIF
Absent Detection (Standard)	Absent detection, Detects employee absence from designated stations. Configurable: zone occupancy count, motion sensing, time threshold. Alarm triggered when absence duration exceeded.
Cross-line Count (Standard)	Cross line statistics(target counting). Configurable detection lines within zones count targets crossing in/out. Supports flow statistics alarm (triggers when count reaches threshold within statistical interval) and cumulative statistics alarm (triggers when total count reaches threshold over defined period). Countable targets: person, motor vehicle, non-motor vehicle.
Object Detection (Standard)	Supports missing object detection, abandoned object detection, and object removal / abandonment detection.
Area Detection (Standard)	Monitors zone entry, exit, entry/exit, loitering, and intrusion (persistent alarm on zone breach).
Tripwire Detection (Standard)	Triggers when persons, motor vehicles, or non-motor vehicles cross designated lines.
Anti-Tailgating (Standard)	Validates single-person entry during access authentication. Video intrusion detection counts individuals in the verification zone-door unlocks only when exactly one person is detected. Door remains locked if count exceeds one or no person is detected.
Video Structured Search (Coming soon)	Fast recorded video search based on customizable criteria by person attributes (gender, age, clothing color, eyewear, mask, headwear) or vehicle attributes (licence plate number, licence color, vehicle type/color).
Optional Detection	Spark & Smoke Detection, Safety Hat Detection, Bear Detection, Pose Detection (Hands-up Duress mode), Pose Detection 3D(Fall Detection).

General

Power Supply	DC 12V 5A
Operating Temperature	-10°C to 55°C (Without Hard Disk) 0°C to 45°C (With Hard Disk)
Operating Humidity	10% to 90% RH (Non-condensing)
Dimensions	200mm*111mm* 32mm (L*W*H)
Gross Weight	0.55 Kg

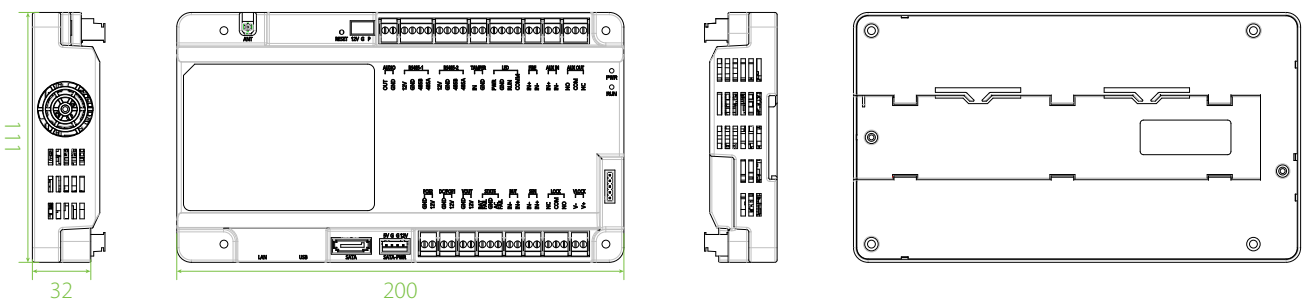
Net Weight	0.35 Kg
Ingress Protection	N/A
Supported Software	On-board web console
Installation	Supported DIN35 Rail / Wall mount /Metal Enclosure (Optional)
Enclosure (Optional)	Size: 242mm*197mm*72mm (L*W*H) Material: SPCC steel Net Weight: 2.12 kg (without hard disk)
Certifications	ISO14001, ISO9001, CE, FCC, Equivalent to RoHS
Factory ID	AC02-CB41H-42

Configuration

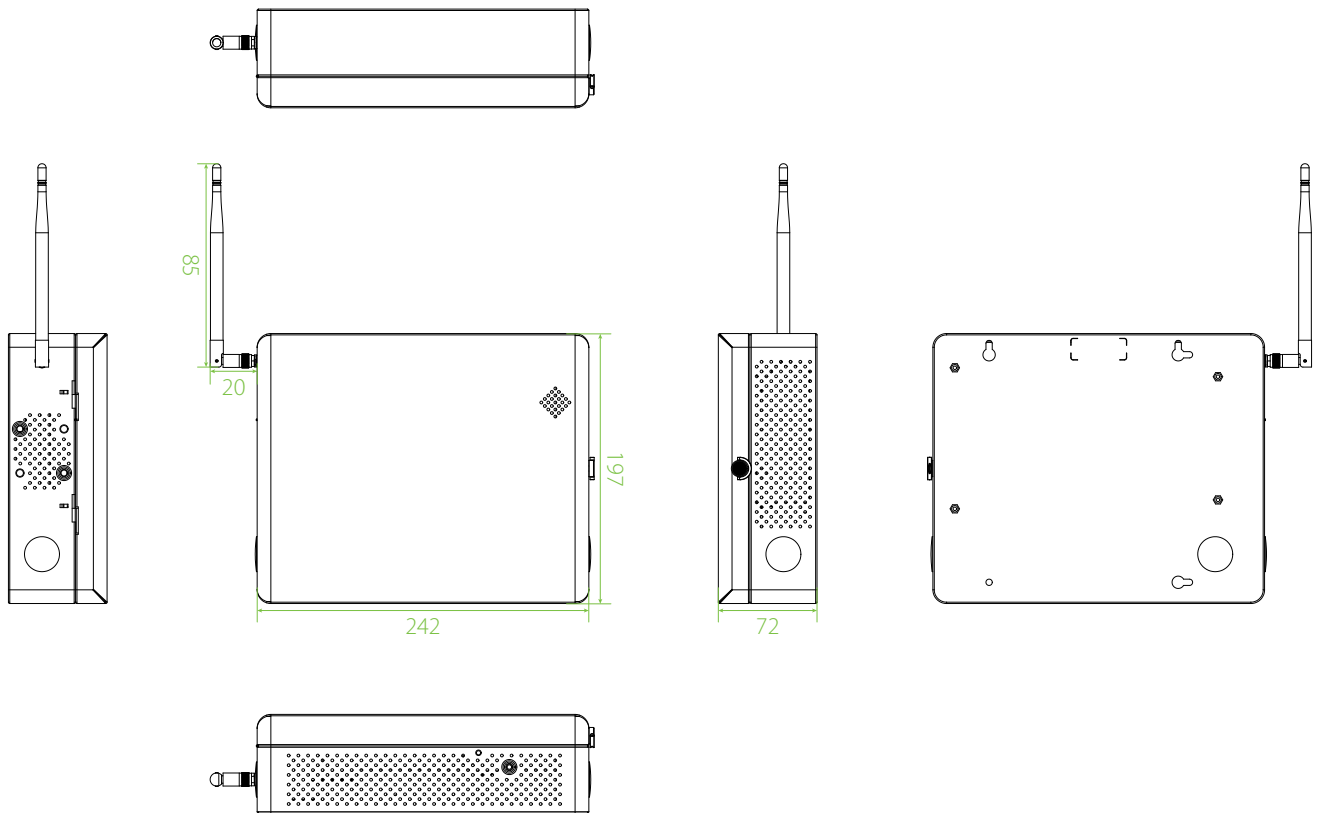


Dimensions (mm)

CVEdge160



CVEdge160 Enclosure



CVEdge 160 Package List



CVEdge 160 Enclosure

+



CVEdge 160

+



Hard Disk(Optional)

