

Hirsch Rack-Mount Controllers

High-Security Access Control Integrated with Altronix



With the Mx Controller at its core, the system provides a high-integrity, enterprise-class access control and security management solution.

Hirsch's Rack-Mount Mx Controller is available in 2, 4, and 8-door models, with each door fully supervised, and power supplied to readers, locks, and peripherals. It is a 150W integrated 2U rack-mount power system that incorporates system power, lock power, and various combinations of Hirsch hardware. The 2U enclosures provide mounting for one (1) Mx and three (3) additional expansion boards (AEB8, REB8) and multiple Altronix devices in an access control system capable of controlling eight doors and 16 readers.

Available options include single (24V DC) and a dual voltage operation (12 and 24 VDC), power distribution and control, individual output protection by either fuses or class 2 power limiting, buffered lock control, and remote reporting and test.

Each output is protected against electrical surges caused by lightning or transients on the external wiring and each control output is individually selectable for available DC voltages, and either failsafe or fail secure operation with fire alarm interface.

Network reporting capabilities include operational fault status, power supply output, battery charging voltage, battery charging current, and fire alarm input status. In addition to automated and scheduled status reports, diagnostic servicing and battery load tests can be performed remotely, saving or reducing the cost of on-site servicing.

High-Security Access Control

- Fully supervised 2, 4, and 8-door models
- Integrated network communication
- Designed for use with Hirsch Velocity Software security management system
- Scalable from a single controller to networked, multi-site installations
- Connectivity with up to 8 doors over MATCH, Wiegand, or OSDP
- 12v, 24v, or dual voltage power supply for 8 locks and 8 auxiliary devices
- Network monitoring of power supply and battery operations
- Multi-microprocessor architecture
- Firmware upgrade via Velocity

Altronix Integration

- Eight-door integrated access system with lock and system power
- Mx Controller expansion board configuration options

Mx Controller Features

- Available in 2, 4, or 8 fully supervised door options with entry and exit keypads/readers
- Field upgradeable to control additional doors, up to 8 per unit
- Multi-microprocessor architecture with dedicated crypto-processor
- Integrated network communication with onboard Ethernet IP port
- Dedicated alarm relay outputs
- Integrated hardware encryption with enabled devices
- High-security supervised alarm inputs
- Configurable relay outputs (door or general purpose in Velocity)
- Bay for up to four expansion boards:
 - Alarms expansion
 - Relays expansion
- Match Protocol:
 - ScramblePads and MATCH2 interfaces
 - For extended cable runs
 - For entry/exit reader setup
- Wiegand entry reader connectivity for each door
- Wiegand setup via Velocity
- Global I/O using IP or RS485
- Firmware can be updated through Velocity
- Supports a wide variety of readers and credentials

As an access control system, the Hirsch Mx Controller includes extensive onboard and firmware for control sequences as basic as “who goes where when” to sophisticated functions like two person rule, occupancy counting, individual user tagging, door interlocking, and anti-passback. Full functionality is maintained even when the Velocity security management system is not available, for example during a network outage.

Access may be restricted based on: time of day, day of week, and door. Access may be granted when the user presents the correct code, card, or both. The user may be granted temporary access based on: use count limits, temporary day limits, and absentee rule limits, with auto disable or auto-delete on expiration of temporary users.

Additional functions include unlock/relock, alarm mask/unmask, and lock down/lock down release. The associated door may be monitored for door forced open and door open too long, while providing auto relock control.

The Mx rack-mount includes the Secure Network Interface Board 3 (SNIB3) with enhanced memory storage at 500K credentials, security, TLS, 128-bit, or 256-bit encryption options, and network functionality and capabilities. The SNIB3 is a leading edge communication device that provides IPv6, Gigabit Ethernet, and FIPS 140-2 certified cryptography, including AES 256 bit encryption. These features are foundational for the critical U.S. federal government security standard known as FICAM and enabling OSDP readers and optional OSDP secure channel communications.

Altronix Power Features

- Eight-door integrated access system with lock and system power
- Mx Controller expansion board configuration options
- Rack drawer slide assembly simplifies controller wiring and maintenance
- Comprehensive wire management with tie down points and articulating bracket
- Input 115VAC / 60Hz, 4.2A
- Network Monitoring
 - Network models enable remote servicing and reporting
- Configuration
 - 24VDC single and 24V, 12VDC dual voltage options cover all access functions
 - Power distribution for either direct (D8), relay buffered (C8) lock control or (F8) FAI control
 - Individual output selection for failsafe, failsecure, lock voltage and fire alarm interface
 - High capacity battery charge capability
 - Automotive fuses for ease of service and replaceability
- Fire Alarm Interface
 - Latching or Non-latching | Remote reset capability
 - Normally Open, Normally Closed
 - Voltage or Polarity Reversal Activation
- Comprehensive fault detection and reporting
 - May be connected to Hirsch controller or used standalone
 - Form C contact transfer for AC Loss or brownout
 - Form C contact transfer for abnormal system operation
- Lifetime warranty on rack, power supply and power distribution module.
- Warranty on Hirsch Mx Controller is two years

High-Security Input Monitoring

Hirsch uses very stable digitally processed analog inputs with line supervision for high-security alarm monitoring. A line supervision module is located at the door contact, alarm sensor, request to exit (RQE), or similar device to establish this supervision. Conditions reported include Alarm, Secure, RQE, Mask, Tamper Alarm, Tamper Secure, Short, Open, Noisy, and Input-Out-of-Spec.

Relay Control System

Relay outputs on Hirsch Mx Controllers can be used for electric door locks and strikes, arming/disarming security systems, alarm annunciation, elevator floor control, HVAC control, lighting control, storage locker control, and many other equipment control applications. These relays may be activated by codes (via the ScramblePad family), cards (via the reader), time zones, alarms, or logic sequences linked to other relays. Mx Controllers are also ideal for after-hours tenant override systems. A history of who issued the override command is available for tenant billing or audit trails. The same reader/keypad used for access control can be used for tenant override and remote operator command functions.

Reliability by Design

Mx Controllers are designed for “high availability” as a complete system for global markets. Standby batteries for both memory and system operation are standard. All door relays are socketed. All keypad/ reader terminals and power circuits are fused (onboard resettable).

Hirsch Rack-Mount Mx Controller

| Parameter | Details | |
|--|--|---|
| Communications | | |
| Serial Interface Ports | Controller to controller: <ul style="list-style-type: none"> RS-485 multi-drop protocol (X*NET2) Optically isolated port Up to 4,000 ft (1,200 m) with 22 gauge, 2 pair, stranded, twisted, and shielded | Controller to server: <ul style="list-style-type: none"> 10/100 Ethernet (TCP/IP) Encrypted communication X*NET2 or X*NET3 |
| MATCH Protocol | 24V DC nominal | |
| Onboard Reader Support | ScramblePad/MATCH2: <ul style="list-style-type: none"> Proprietary MATCH protocol Keypad/reader ports: 8 with 16 device addresses (8 entry and 8 exit) Maximum wiring run: 750 ft (230 m) with 22 gauge or 1,800 ft (550 m) with 18 gauge, 2 pair, stranded, twisted, overall shield | Onboard MATCH: <ul style="list-style-type: none"> Industry standard Wiegand Keypad/reader port: 8 using Mx device address 1-8 Maximum wiring run: 500 ft (150 m) with 22 AWG shielded cable |
| RREB | Controller to OSDP reader: <ul style="list-style-type: none"> Buzzer, LED and security assurance control Up to 8 door ports for entry and exit OSDP readers Up to 4,000 ft (1,200 m) with 18 gauge, 2 pair, stranded, twisted, and shielded Optional Secure Channel | |
| Command and Control Module (CCMx) | <ul style="list-style-type: none"> Removable and upgradeable CCM updates all microprocessors (including onboard MATCH) Time zones: 150 | <ul style="list-style-type: none"> Door groups: 128 Control zones: 256 Holiday schedules: 4 (366 days x 2 years) Daylight savings time adjustment |
| Memory | | |
| Buffers | <ul style="list-style-type: none"> Standard: 1,500 events and 1,500 alarms If buffer is full, oldest information is discarded first | |
| Credentials | <ul style="list-style-type: none"> CCMx database up to 4,000 or SNIB3 database up to 500,000 | |
| Memory Protection Battery | 30 days for code, setups, clock, and buffers | |
| Physical | | |
| Trove Dimensions | 33" D x 19" W x 3.5" H (40" Internal Depth with Z Bracket Attached) | |
| Weight | 55 lbs. | |
| Operating Temperature Range | 32° to 140°F (0° to 60°C) | |
| Relative Humidity | 0 to 90%, non-condensing | |
| Electrical | | |
| MATCH Power (2 Terminals) | <ul style="list-style-type: none"> 1.0 Amp at 24VDC each, fused and resettable 2.9 Amp at 24VDC each Powers MATCH2 | |
| Wiegand (2 Terminals) | <ul style="list-style-type: none"> 500 mA at 12VDC each, fused and resettable 2.0 Amp at 12VDC total Powers standard PACS readers | |
| OSDP Reader | <ul style="list-style-type: none"> 500 mA at 12VDC each, fused limited 2.2 Amp max draw per RREB Powers standard OSDP readers | |
| Door Relays | 5 Amp, form C | |
| Alarm Relays | 2 Amp, form C | |
| Listings and Approvals | UL 294: Access Control Systems Units; UL 1076: Proprietary Burglar Alarm Systems | |

Hirsch Rack-Mount Power Specifications

| Name | Options |
|-----------------------------|---|
| Input Power | <ul style="list-style-type: none"> • Input 115 VAC 60 Hz • Thermal overload protection / Short circuit protection |
| Output Power | <ul style="list-style-type: none"> • 24VDC @ 10 Amps • 24VDC @ 10 Amps and 12VDC @ 6 Amps |
| Power Distribution | <ul style="list-style-type: none"> • PDS8 • Eight auxiliary outputs: PDS8 fused at 3A/ea • Linq8ACM • Eight relay control outputs: ACM fused at 2.5A/ea • Fire alarm disconnect for any or all of the 8 outputs • Individually selectable outputs on dual voltage systems |
| Power Supervision | <ul style="list-style-type: none"> • AC input, DC1, and DC2 output • Low battery and battery presence supervision (form C contacts) • AC fail supervision (form C contacts) • System Fault, AC Fault, Ground Fault, Reverse Battery |
| External Indications | AC on master on/off switch |
| Battery Charging | <ul style="list-style-type: none"> • Maximum charge current 2.0 amp Maximum battery capacity 80Ah • Independent built-in charger for sealed lead acid or gel type batteries • Microprocessor dual rate charging 24V battery set • Automatic switchover to standby battery when AC fails • Zero voltage drop when switched over to battery backup • Low Battery Cutoff to Prevent Deep Discharge |
| BTU Rating | EFlow 123BTU/Hr, AL1204UX 123BTU/Hr |

Ordering Information

| Item Number | Description |
|------------------------|--|
| Mx-2-RM24-12-B | Mx-2-S3OB controller in Altronix Trove rack mount enclosure with 115VAC power supply. |
| Mx-2-RM24-12-AT | Mx-2-S3OB controller in Altronix Trove rack mount enclosure with AEB8, REB8 and 115VAC power supply. |
| Mx-4-RM24-12-B | Mx-4-S3OB controller in Altronix Trove rack mount enclosure with 115VAC power supply. |
| Mx-4-RM24-12-AT | Mx-4-S3OB controller in Altronix Trove rack mount enclosure with AEB8, REB8 and 115VAC power supply. |
| Mx-8-RM24-12-B | Mx-8-S3OB controller in Altronix Trove rack mount enclosure with 115VAC power supply. |
| Mx-8-RM24-12-AT | Mx-8-S3OB controller in Altronix Trove rack mount enclosure with AEB8, REB8 and 115VAC power supply. |

Recommended Rack Specifications

| Type | Details |
|---|--|
| 42U Deep Rack Enclosure Server Cabinet | <ul style="list-style-type: none"> • Minimum Internal Depth of 40" • Minimum Internal Width of 19" • Four Vertical Posts • 3/8" Square Holes • Minimum Rolling Capacity of 1500 lbs |