IDENTIV

HIRSCH
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Hirsch Mx Controller
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
- Support for uTrust TS Readers, Hirsch ScramblePad, and MATCH2 reader interfaces
- Onboard MATCH for connecting standard Wiegand readers
- Multi-microprocessor architecture
- Firmware upgrade via Velocity

Identiv's Hirsch Mx Controller is available in 2, 4, and 8-door models, with each door being fully supervised. The modular design and the scalable architecture of the Mx Controller enables an installation to start small and expand as needed, from a single controller system to a larger, multi-site enterprise.

The Mx Controller is fully firmware, function, and communication protocol compatible to Identiv's DIGI*TRAC line of controllers. The Mx Controller is designed to seamlessly integrate with existing systems, so that existing credentials, readers, and user databases can be retained. The Mx Controller is the core of Identiv's physical access control system (PACS), and is designed for use with Identiv's Hirsch Velocity™ Software security management system, uTrust TS Readers, Hirsch ScramblePad®, ScrambleProx®, ScrambleSmartProx®, and secure keypads.

A range of models and expansion options in the Mx and DIGI*TRAC product lines provide a variety of access control, high-security alarm monitoring, relay control outputs, and programmable logic configurations to fit most applications.

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

Mx Modular Controller Features

- Controls 2, 4, or 8 fully supervised doors with entry and optional exit keypads/readers:
  - Field upgradeable from 2 to 4, 2 to 8, or 4 to 8 doors

- Scalable from single controller to networked multi-site installations

- 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 5 expansion boards:
  - Memory (up to 132,000 users)
  - Alarms expansion (max. 4)
  - Relays expansion (max. 5)

- 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

- Multi-drop global I/O using RS485

- Firmware can be updated through Velocity

- Supports a wide variety of readers and credentials

As an access control system, the Mx Controller includes extensive onboard firmware for control sequences as basic as "who goes where and when" to sophisticated functions like the two-person rule, occupancy counting, individual user tagging, door interlocking, and anti-passback. Full functionality is maintained even when Hirsch Velocity is not available (i.e, 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 PIN 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. While the standard Mx Controller has an extensive array of options, there are many custom features that are available through Identiv Global Services. These options range from integration with time and attendance systems to PKI certificate authentication services.

Readers and keypads supported include uTrust TS Readers, Hirsch ScramblePad, ScrambleProx, ScrambleSmartProx, and many other technologies, including magnetic stripe, smart card (i.e., DESFire, MIFARE, PIV, or PIV-I), proximity, bar code, RF, IR, and biometric. Technologies may be combined on the same controller or the same door in many different combinations.

High Security Input Monitoring

Identiv uses very stable digitally processed analog inputs with line supervision for high-security input monitoring. A line supervision module is located at the door contact, alarm sensor, request to exit (RQE/REX), 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. This provides significant advantages over traditional error-prone, environment-sensitive analogue wiring back to controllers.

Relay Control System

Relay outputs on 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 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 or 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. The controller ships with an internal switching power supply. All door relays are socketed and replaceable. All keypad/reader terminals and power circuits are fused and are onboard resettable. Each unit is configured in a heavy duty, NEMA style enclosure, with lock and tamper alarm.

PARAMETER	HIRSCH MX CONTROLLER
Serial Interface Ports	Controller to controller: • RS-485 multi-drop protocol (X*NET2/X*NET3) • Optically isolated port • Up to 4,000 ft (1,200 m) with 22 gauge, 2 pair, stranded, twisted, and shielded Controller to server: • 10/100 Ethernet (TCP/IP) • Encrypted communication
MATCH Protocol	24V DC nominal
Reader Support	ScramblePad/MATCH2: • 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: • Industry standard Wiegand • Keypad/reader port: 8 using Mx device address 1 - 8 • Maximum wiring run: 500 ft (150 m) with 18 gauge, 2 pair, stranded, twisted, overall shield

PARAMETER	HIRSCH MX CONTROLLER
Dial-Up to Remote Host (External SNIB Required)	• Phone numbers: Four with roll over • User-selectable retry attempts • Call-back mode for security • Initiation by alarm, buffer percent full, and/or time
Industry Standard Wiegand Devices	Login to computer, websites, and SaaS services with a digital certificate or OATH-based OTP
Command and Control Module (CCMx)	• Removable and upgradeable • CCM upgrades through Velocity • CCM updates all microprocessors (including onboard MATCH) • Time zones: 150 • Door groups: 128 • Control zones: 256 • Holiday schedules: 4 (366 days x 2 years) • Daylight savings time adjustment
Public Private Key Processor and Secure Digital Key Vault	Global platform compatible and secure storage of key material
Buffers	• Standard: 1,500 events and 1,500 alarms • MEB/CB128 (reduces users by 20%) or MEB/BE: 20,000 events and 2,000 alarms • If buffer is full, oldest information is discarded first
Users	• Standard: 4,000 • MEB/CB128: 132,000
Memory Protection Battery	30 days for code, setups, clock, and buffers
Security	• Enclosure door tamper switch • Key lock
Enclosure	NEMA type with conduit knockouts and removable door
Dimensions	18 x 15.25 x 5.5 in (457 x 387 x 140 mm)
Weight	30 lbs (13.6 kg)
Expansion Boards	6 x 4.25 x 0.75 in (152 x 108 x 19 mm) and 1.0 lb (0.45 kg)
Operating Temperature Range	32° to 140°F (0° to 60°C)
Relative Humidity	0 to 90%, non-condensing
Keypad/Reader Power (8 Terminals)	• 1.0 Amp at 24VDC each, fused and resettable • 2.9 Amp at 24VDC each • Powers ScramblePads and MATCH2
Wiegand Keypad/Reader (8 Terminals)	• 500 mA at 12VDC each, fused and resettable • 2.0 Amp at 12VDc total • Powers standard PACS readers
Power Supply	• Switching • 110 - 240 VAC, 50/60, fused
Standby Batteries	7 AH included
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

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Ordering Information for Mx Controllers

PART NUMBER (PID)	PRODUCT	DESCRIPTION
MX-2	Model Mx-2 controller, for up to 2 doors	Controls 2 Supervised Doors. 4,000 Users. Includes 2 door relays, 2 Alarm Inputs (requires Line Modules), enclosure, power supply, battery, tamper switch, key lock, and integrated SNIB3. Supports Expansion Boards. 110-240 VAC.
MX-4	Model Mx-4 controller, for up to 4 doors	Controls 4 Supervised Doors. 4,000 Users. Includes 4 door relays, 4 Alarm Inputs (requires Line Modules), enclosure, power supply, battery, tamper switch, key lock, and integrated SNIB3. Supports Expansion Boards. 110-240 VAC.
MX-8	Model Mx-8 controller, for up to 8 doors	Controls 8 Supervised Doors. 4,000 Users. Includes 8 door relays, 8 Alarm Inputs (requires Line Modules), enclosure, power supply, battery, tamper switch, key lock, and integrated SNIB2. Supports Expansion Boards. 110-240 VAC.

Ordering Information for Expansion Boards

MODEL	DESCRIPTION	COMMENTS
AEB8	Alarm Expansion Board with 8 Inputs	Adds 8 additional high security alarm inputs. Velocity supports up to 5 boards. Each input requires an appropriate Line Module. Features removable connectors.
REB8	Relay Expansion Board with 8 Relays	Adds additional 2 Amp Form C relays. Up to five (5) REB8s per controller. Status LEDs and removable connectors.
MEB/BE	Memory Expansion Board – Buffer Expansion	Expands standard buffer from 1,500 events and 1,500 alarms to 20,000 events and 2,000 alarms. Protected from data loss during power failures for up to 30 days by controller memory battery.
MEB/CB128	Memory Expansion Board – CODE Expansion of 128,000 with Buffer Option	Expands CODE Memory by 128,000 (from 4,000 to 132,000) credentials. A portion of the Code Memory may be allocated to alarm and event buffers, which will reduce the number of users. Protected from data loss during power failures for up to 30 days by controller memory battery. (Limited Availability. Use MEB/CB64 or MEB/CB128.)
SNIB3	Secure Network Interface Board 3	Networks DIGI*TRAC controller to PC (with Velocity Version 3.6 SP1 or later only) via 10/100/1000 Ethernet (TCP/IP). Optically isolated RS-485 port for multi-drop between SNIB2s at baud rates up to 115K Bps. Supports AES (128 and 256 bit Rijndael) encryption between host PC and Master SNIB3 and between Master SNIB3 and downstream SNIB2 or SNIB3. Master SNIB3 supports integral XBox functionality for globalization. Supports IPv6, DHCP and second network port for future use, FICAM enabled. UL listed.
RREB RS-485	Reader Expansion Board RS-485	Reader Expansion Board (RREB) provides OSDP communication with up to 16 readers across 8 doors for processing PIV/PIV-I/CIV credentials at time of access in compliance with FICAM.