



# DIGI\*TRAC™ Model 16 Controller

*Hirsch DIGI\*TRAC controllers are “standalone” access control systems that support:*

- ScramblePad® & ScrambleProx® secure keypads
- MATCH™ intelligent reader interfaces
- High security alarm monitoring
- Relay control outputs

*When connected locally by a LAN, or by telephone lines to a Hirsch Host PC or server, DIGI\*TRAC controllers provide a high-integrity enterprise-wide access control and security management solution.*

## Features

- Monitors 16 Fully Supervised Alarm Inputs
- Modular: Uses Expansion Boards
- General Purpose Relay Outputs
  - Via Expansion Boards
- Standalone or Networked
  - Microprocessor Based
  - High Security Supervised Alarm Inputs (2% Supervision)
  - Dedicated Alarm Relay Output
  - Digital Keypad/Reader Channel
- Digital Transmission
  - Long Wiring Runs
  - Multi-drop Connections
  - LAN Interface Options
  - Modem Options
- Encryption Algorithm
  - High Security Transmission
- Local or Remote Programming
  - ScramblePad, ScrambleProx or PC
- Downloadable Firmware
  - Flash Memory
- Printer Port

- Multiple Reader Technologies
- Resident Application Library
- UL Listed: 294, 1076, Grade AA

## Description

All DIGI\*TRAC controllers have the same firmware functionality. A range of models and expansion options provides a variety of access control, high security alarm monitoring, relay control outputs, and programmable logic configurations to fit most applications. Each unit can be a complete standalone system or a distributed controller in a larger, multi-site enterprise system. This modular design and “scalable” architecture allows a system to start small and grow large.

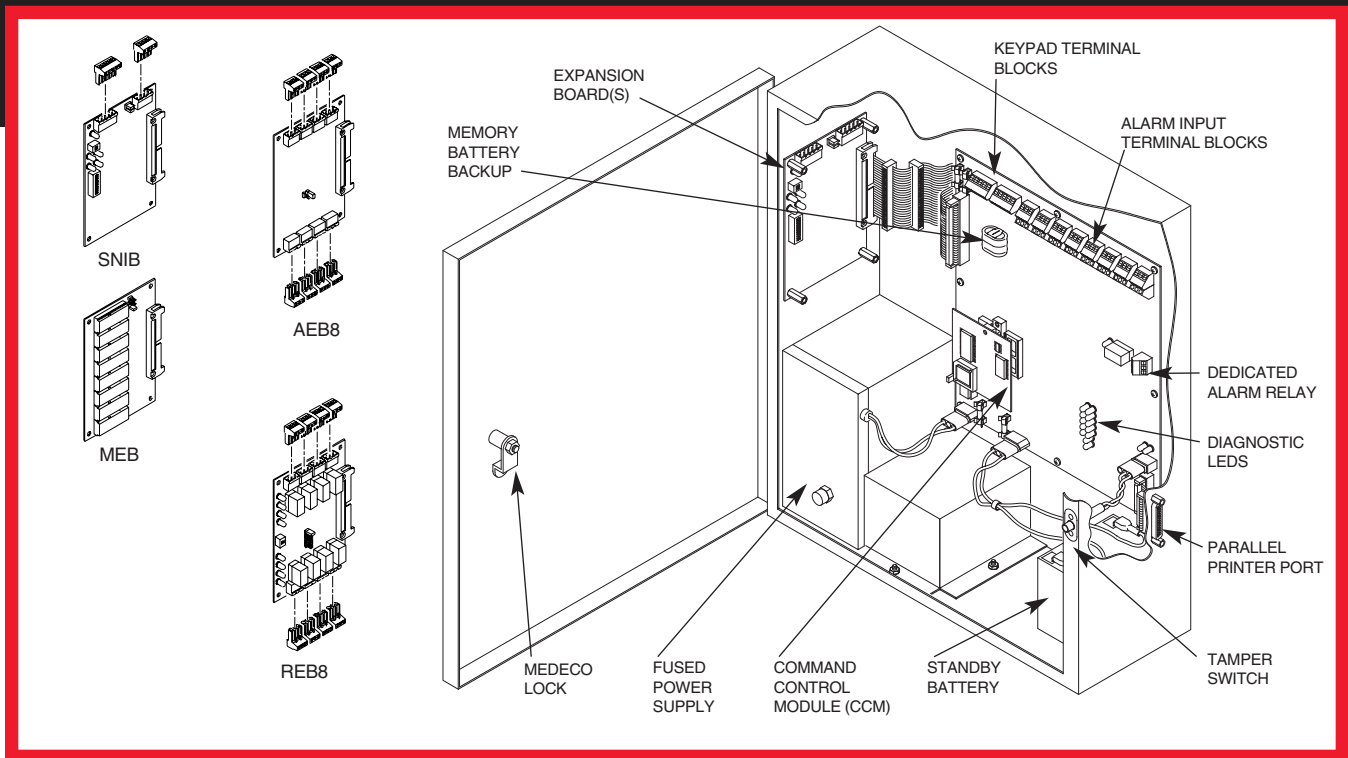
Readers may be used to initiate control actions such as mask alarm inputs, activate a group of equipment control relays, or energize specific elevator call buttons. Readers sup-

ported include ScramblePad, ScrambleProx and, via the MATCH intelligent reader interface, these technologies: Magnetic Stripe, Proximity, Wiegand, Bar Code, Smart Card, RF, IR, and Biometric. Technologies may be combined on the same controller in any combination.

## High Security Reader Channel

The DIGI\*TRAC controller supports electrically isolated terminal blocks that provide communications and power to the ScramblePad, ScrambleProx and MATCH interfaces. The communication path allows multi-drop connections for keypads or dual technology applications.

User codes are digitized for transmission between a Hirsch ScramblePad, ScrambleProx or MATCH and the DIGI\*TRAC controller. Digital transmission allows longer wiring runs



than are normally available with conventional access control reader technologies.

### High Security Alarm Monitoring

Hirsch uses very stable digitally processed analog inputs with 2% line supervision for high security alarm monitoring. A line supervision module (DTLM, MELM, or SBMS) is located at the door contact, alarm sensor, request to exit (RQE), or similar device to establish this supervision.

In lieu of "shunting," which turns off supervision, Hirsch uses "alarm masking" for full-time supervision and reporting of line status — even during hours of authorized access. 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 DIGI\*TRAC 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 ScramblePad), cards (via MATCH and reader), time zones, alarms, or logic sequences linked to other relays.

When used with a ScramblePad, DIGI\*TRAC controllers are ideal for after-hours tenant override systems. A history of who issued the override command is available for tenant billing or audit trails.

### Programmer's Terminal

DIGI\*TRAC controllers can be programmed by either a ScramblePad or a PC using Hirsch Host software. The PC can be local or connected by LAN or modem. A ScramblePad used for a local control can also be used as a programmer's terminal. Programming functions supported include: add & delete user access codes, assign

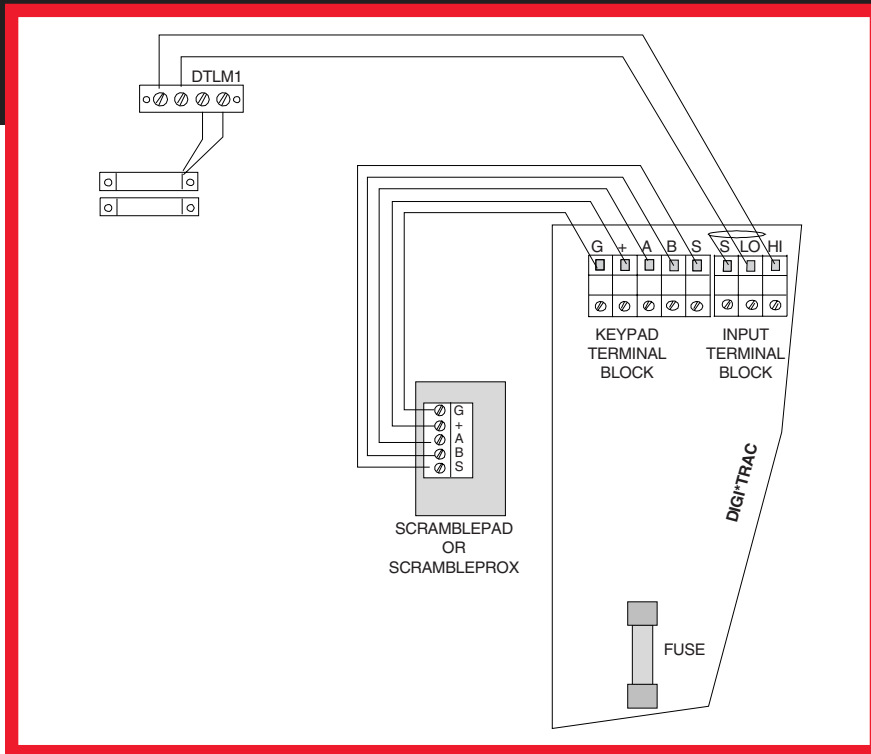
unlock/relock codes, assign alarm codes, and assign elevator control codes.

### SCRAMBLE\*NET

DIGI\*TRAC controllers communicate with a Hirsch Host PC using SCRAMBLE\*NET protocol which uses an encryption algorithm for high security. The SCRAMBLE\*NET command/packet structure is ideal for LAN and hardwired paths, including RS-485 multi-drop and RS-232 via direct connect or dial-up modem.

### Reliability By Design

DIGI\*TRAC Controllers are designed for "high availability" as complete systems solutions for global markets. Standby batteries for both memory and system operation are standard. The controller ships with an internal international power supply. All Keypad/Reader terminals and power circuits are fused. Each unit is configured in a heavy duty, NEMA-style enclosure, with a high security lock and tamper alarm.



Typical Controller-to-Alarm Point Wiring Diagram.

## Specifications

### Communications

- Serial Interface Ports:
  - SCRAMBLE\*NET: Requires SNIB. Encrypted message structure.
  - RS-485 multi-drop or RS-232 protocol
  - Optically isolated serial port
  - Baud Rate: 9600 or 19,200
  - RS-485: 4000 ft. (1220m) with 22 gauge. 2 pair, stranded, twisted, overall shield
  - RS232: 50 ft (15m) @9600 baud
- Parallel Printer Port: Standard
- Keypad/Reader Port: 16 device addresses
  - Any address for command and programming
  - Wiring: 750 ft (160m) with 22 gauge, 1800 ft (550m) with 18 gauge. 2 pair, stranded, twisted, overall shield.

### Firmware

- Command & Control Module (CCM):
  - Removable & Upgradable
  - Time Zones: 150
  - Access Zones: 128
  - Control Zones: 256
  - Holidays: Four 366 Day x 2 years
  - Daylight Savings Time Adjustment

- Dial-Up to Remote Host:
  - Phone Numbers: 4, with roll over
  - User selectable retry attempts
  - Call-back mode for security
  - Initiation by alarm, buffer % full, and/or time

### Memory

- Buffers: 1500 events, 1500 alarms standard
  - 20,000 events, 2,000 alarms with MEB/BE
  - 20,000 events, 2,000 alarms with MEB/CB (reduces users by 20%)
  - Oldest discarded first, if full
- Users: 4000 standard
  - 8000 with MEB/CE16
  - 20,000 with MEB/CE 32
  - 68,000 with MEB/CB64
  - 132,000 with MEB/CB128
- Battery Backup: 30 day for code, setups, clock and buffer

### Electrical

- Keypad/Reader Power: 2 terminals
  - 1.0 Amp @24VDC each, fused
  - 1.15 Amp @24VDC, total
  - Powers ScramblePad, ScrambleProx and MATCH

- Primary and Standby Power:
  - 90-130VAC, 50/60 Hz, fused
  - 180-260VAC, 50/60 Hz, fused
- Uninterruptible Power Supply
- Standby Batteries: 1.3 AH Included
- Control Relays: 2 Amp, Form C (requires REB8)
- Alarm Relays: 2 Amp, Form C
- LEDs:
  - Individual Relay Status
  - Battery (OK, Low, Fail)
  - AC (OK, Fail)
  - System (OK, Fail)
  - Keypad/MATCH (Poll, Response)
  - SCRAMBLE\*NET (Poll, Response)
  - Test Mode
  - Alarm Events in Buffer
  - Box Tamper Alarm

### Physical

- Door Tamper Switch
- Medeco High Security Key Lock
- Enclosure: NEMA type, with conduit knockouts & removable door
- Dimensions: 18”H x 15.25”W x 5.5”D (45.7cm x 38.7cm x 14cm)
- Expansion Boards: 6”H x 4.25” W x .75”D (15.2cm x 10.8cm x 1.9cm)
- Shipping Weight: 30lbs (13.6kg)
- Expansion Boards: 1 lb (.5kg)
- Operating Temperature Range: 32°F to 140°F (0° to 60°C)
- Relative Humidity: 0 to 90%, non-condensing

### Listing & Approvals

- UL 1076 Proprietary Burglar Alarm Systems, Grade AA
- CE

# Systems With Integrity

## Ordering Information — Controller

Model #	Description	Comments
M16N	DIGI*TRAC MODEL 16N - 16 Input	16 Input Controller. 4000 Users. Includes 16 Alarm Inputs (requires Line Modules), enclosure, power supply, battery, tamper switch, Medeco lock and SNIB. Supports Expansion Boards (NO AEB8 with SNAP, SAM, or MOMENTUM). CE. UL Listed. 115VAC.

Note: Add "-230" to model numbers for 230 VAC.

## Ordering Information — Expansion Boards & Modem

Model #	Description	Comments
AEB8	Alarm Expansion Board - 8 Inputs	Adds 8 additional high security alarm inputs. SNAP, SAM and MOMENTUM support up to 2 boards in M2, M8, MSP or M64. Velocity supports up to 4 boards in M2, M8, MSP, M64 and up to 2 boards in M16. Each input requires appropriate Line Module. Features removable connectors. UL Listed. CE.
REB8	Relay Expansion Board - 8 Relays	Adds 8 additional 2 Amp Form C relays to an M2, M8, M16 or MSP-8R. May not be installed in an M64. A total of 5 (4 if networked) REB8 Boards may be installed in all other DIGI*TRAC controllers. Removable connectors & status LEDs. UL Listed. CE.
MEB/BE	Memory Expansion Board - Buffer Expansion	Expands standard buffer from 1500 events and 1500 alarms to 20,000 events and 2,000 alarms with CCM 7.X. Expands standard buffer from 37 events and 37 alarms (700 events and 700 alarms with CE boards) to 20,000 events and 2,000 alarms with CCM 6.6. Protected from data loss during power failures for up to 30 days by controller memory battery. UL Listed. CE.
MEB/CE16	Memory Expansion Board - CODE Expansion 4,000/16,000	Expands CODE Memory from 4,000 to 8,000 on Velocity and MOMENTUM with CCM 7.X. Not recognized by SNAP or SAM with CCM 7.X. Expands CODE Memory from 1,000 to 16,000 maximum with CCM6.X. Protected from data loss during power failures for up to 30 days by controller memory battery. UL Listed. CE.
MEB/CB64	Memory Expansion Board - CODE Expansion of 64,000 with Buffer Option	Expands CODE Memory by 64,000 (from 4,000 to 68,000) with CM 7.X on Velocity and MOMENTUM. Not recognized by CCM 6.6 or earlier. A portion of the Code Memory may be allocated to alarm and event Buffers on Velocity only. Protected from data loss during power failures for up to 30 days by controller memory battery. CE. UL Listed.
MEB/CB128	Memory Expansion Board - CODE Expansion of 128,000 with Buffer Option	Expands CODE Memory by 128,000 (from 4000 to 132,000) with CCM 7.X on Velocity and MOMENTUM. Not recognized by CCM 6.6 or earlier. A portion of the Code Memory may be allocated to alarm and event Buffers on Velocity only. Protected from data loss during power failures for up to 30 days by controller memory battery. CE. UL Listed.
DM9600A-DL	DIGI*TRAC 9600 BAUD MODEM ASSEMBLY (Factory Set: Dial-Up Line)	A miniature 9600 Baud Modem Assembly that can be powered from & installed internally in the M1, M2, M8, M16 or MSP for remote site management via dial-up network. Includes cables, adaptor, & power supply harness. Do not use at Host PC or NET*MUX4 output.

Note: The DIGI\*TRAC M16 Controller can accommodate up to 5 expansion boards. Only one MEB/CE or MEB/CB is supported per controller. A maximum of 2 AEB8 expansion boards are supported in the M16 (only with CCM7.x or later and Velocity).



Specifications are subject to change without notice.

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