DIGI*TRAC ™
Model 1N 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
- Controls 1 Supervised Door
  – Both Entry & Exit
  – Keypads And/Or Readers
- Miscellaneous Inputs & Outputs
  – 3 Alarm Inputs
  – 3 Alarm/Control Outputs
- Standalone or Networked
  – Microprocessor Based
  – High Security Supervised Alarm Inputs (2% Supervision)
  – Door Relay Outputs
  – General Purpose Relay Outputs
  – 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 or PC

- Downloadable Firmware
  – Flash Memory
- Printer Port
- Multiple Reader Technologies
- Resident Application Library
- UL Listed: 294,
- UL Pending 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.

Access Control System
As an access control system, the DIGI*TRAC controller includes extensive local firmware for control sequences as basic as "who goes where when" to sophisticated functions like 2-person rule, occupancy counting, individual user tagging and anti-passback.

Access may be restricted based on: Time of Day and Day of Week. 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 Re-Lock control.

DIAGNOSTIC LEDS
INPUT TERMINAL BLOCKS
MEMORY BATTERY BACKUP
KEYPAD CIRCUIT FUSE
COMMUNICATION PORTS
KEYPAD TERMINAL BLOCK
HEAVY DUTY DOOR RELAY & LED
ALARM & GENERAL PURPOSE RELAYS & LEDS
PARALLEL PRINTER PORT
MEDECO LOCK
FUSED POWER SUPPLY
COMMAND CONTROL MODULE (CCM)
STANDBY BATTERY
TAMPER SWITCH

Readers supported include ScramblePad, ScrambleProx and, via the MATCH intelligent reader interface, these technologies: Magnetic Stripe, Proximity, Wiegand, Bar Code, Smart Card, RF, IR, and Biometric.
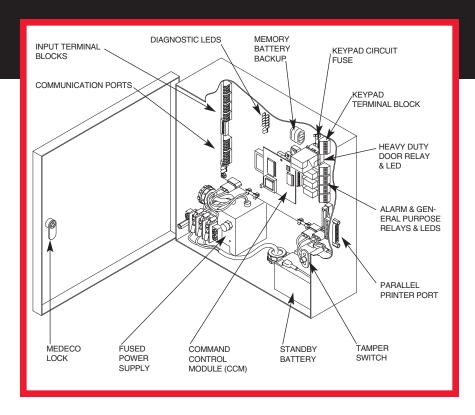
High Security Reader Channel

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 entrance and exit keypads and 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. The same ScramblePad used for access control can be used for tenant override and remote operator command functions.

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

access control can also be used as a password protected programmer's terminal. Programming functions supported include: add & delete user access codes, assign unlock/relock codes, assign alarm codes, and assign elevator control codes.
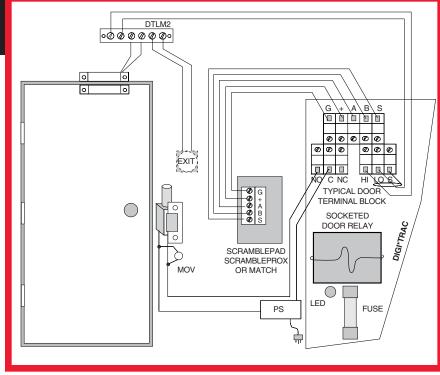
SCRAMBLE*NET™

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 relays are socketed. The Keypad/Reader terminals and power circuits are fused. Each unit is configured in a steel enclosure, with a high security lock and tamper alarm.

DTLM2

G + A B S

EXIT

G
+
A
B
S

NO C NC   HI LO S

TYPICAL DOOR
TERMINAL BLOCK

SOCKETED
DOOR RELAY

DIGI*TRAC

SCRAMBLEPAD
SCRAMBLEPROX
OR MATCH

MOV

PS   LED   FUSE

Typical Controller-to-Door Wiring Diagram

– 125mA @ 24VDC, continuous
– 500mA @ 24VDC, peak
– Powers ScramblePad, ScrambleProx and MATCH
■ Primary and Standby Power:
– 115VAC, 50/60 Hz., fused, with cord and plug
– 230VAC, 50/60 Hz., fused
■ Uninterruptible Power Supply
■ High Security Alarm Inputs:
– 1 door input
– 3 miscellaneous
■ Standby Batteries: 1.3 AH Included
■ Door Relay: 10 Amp, Form C
■ Alarm/Control Relays: 2 Amp, Form C, configurable
■ 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: Steel, with conduit knockouts
■ Dimensions: 12"H x 12"W x 4"D (30.5cm x 30.5cm x 9.8cm)
■ Shipping Weight: 18 lbs (8.17 kg)
■ Operating Temperature Range: 32°F to 140°F (0° to 60°C)
■ Relative Humidity: 0 to 90%, non-condensing

Listings & Approvals
■ UL 294 Access Control Systems Units
■ UL 1076 Proprietary Burglar Alarm Systems, Grade AA Pending
■ CE

Specifications

Communications
■ Serial Interface Ports:
– SCRAMBLE*NET: 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
– RS-232: 50 ft. (15m) @9600 baud
■ Parallel Printer Port: Standard
■ Keypad/Reader Port:16 device address. See Electrical for capacity specifications
– Address 1 for door relay entry. Address 9 for door relay exit. Any address for command & 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
– Oldest discarded first, if full
■ Users: 4000
■ Battery Backup: 30 day for code, setups, clock and buffer

Electrical
■ Keypad/Reader Power: 1 terminal, fused

Systems With Integrity

Ordering Information — Controller

Model #	Description	Comments
M1N	DIGI*TRAC MODEL 1N - 1 Door, Networked - 115VAC	Controls 1 Supervised Door. 4000 Users. Includes 1 SNIB Port (RS-485 & RS-232 terminal blocks), 1 door relay, 3 miscellaneous relays, 4 Alarm Inputs (requires Line Modules), enclosure, power supply, battery, tamper switch, Medeco lock. Does NOT support Expansion Boards, however SNIB function is built onto the mother-board. UL Listed. CE. 115VAC. Not supported by SAM or SNAP2.
M1N-230	DIGI*TRAC MODEL 1N - 1 Door, Networked - 230VAC	Controls 1 Supervised Door. 4000 Users. Includes 1 SNIB Port (RS-485 & RS-232 terminal blocks), 1 door relay, 3 miscellaneous relays, 4 Alarm Inputs (requires Line Modules), enclosure, power supply, battery, tamper switch, Medeco lock. Does NOT support Expansion Boards, however SNIB function is built onto the mother-board. UL Listed. CE. 230VAC. Not supported by SAM or SNAP2.

Ordering Information — Modem

Model #	Description	Comments
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 out port.

Note: The DIGI*TRAC M1N controller does not support expansion boards.