HandPunch 3000/4000
Installation Manual

HandPunch 3000/4000 Installation Manual

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HandPunch Technology
The HandPunch uses the size and the shape of the human hand to verify a person's identity. It does not read fingerprints or the palm. To use the system, the enrolled user enters an ID number via a keypad, or by presentation of a card. The system prompts for the hand to be placed on the measuring surface, and once the hand is in place, it records the shape the hand in three dimensions with a CCD (chip) camera. A microprocessor extracts over ninety measurements and compares them to a previously stored template. Upon successful ID verification, the terminal records the time, date, user ID number and collected time and attendance data for collection by a host computer. Depending on the setup, the HandPunch terminal can also unlock a door or send card data to an access control system.

HandPunch General Description
The HandPunch 3000 and 4000 are the latest in Recognition Systems' line of Hand Geometry Time and Attendance Terminals. The HandPunch provides proof-positive employee identification combined with the sophisticated operating features one expects in a modern Time and Attendance Terminal. Because of this unique combination of capabilities, the HandPunch provides the most accurate Time and Attendance data collection terminal available. Important features of the HandPunch are:

Two Data Management Keys
User Time Restrictions
Supervisor Override at the Clock
      Add Punch
      Add Bulk Hours-or Dollars
      Review Punches
Department Transfers
Explicit Punch Menu
Transaction Buffer (FIFO) 5,187 event capacity HP3000, 8190 capacity HP-4000**.**
ID Number Input
     Keypad or external card reader, HP-3000 & 4000. Integral card reader HP-4000.
Bell Schedules
Door Controls and monitoring
Programmable Daylight Savings Switchover
Programmable Clock and Date Formats

Installation:

Installation is a seven step process:
- Determine where each HandPunch reader terminal will be installed.
- Install the wall plate.
- Install wiring within the walls of the facility.
- Mount the HandPunch terminal to the wall plate.
- Connect power and communications wiring.
- Set communication parameters at the HandPunch terminal.
- Connect the computer to the network.

Hand reader placement
The reader should be in a convenient location near the employee entrance where it is not exposed to water, chemicals, or direct sunlight. The platen should be 40 inches (102 cm) from the floor.
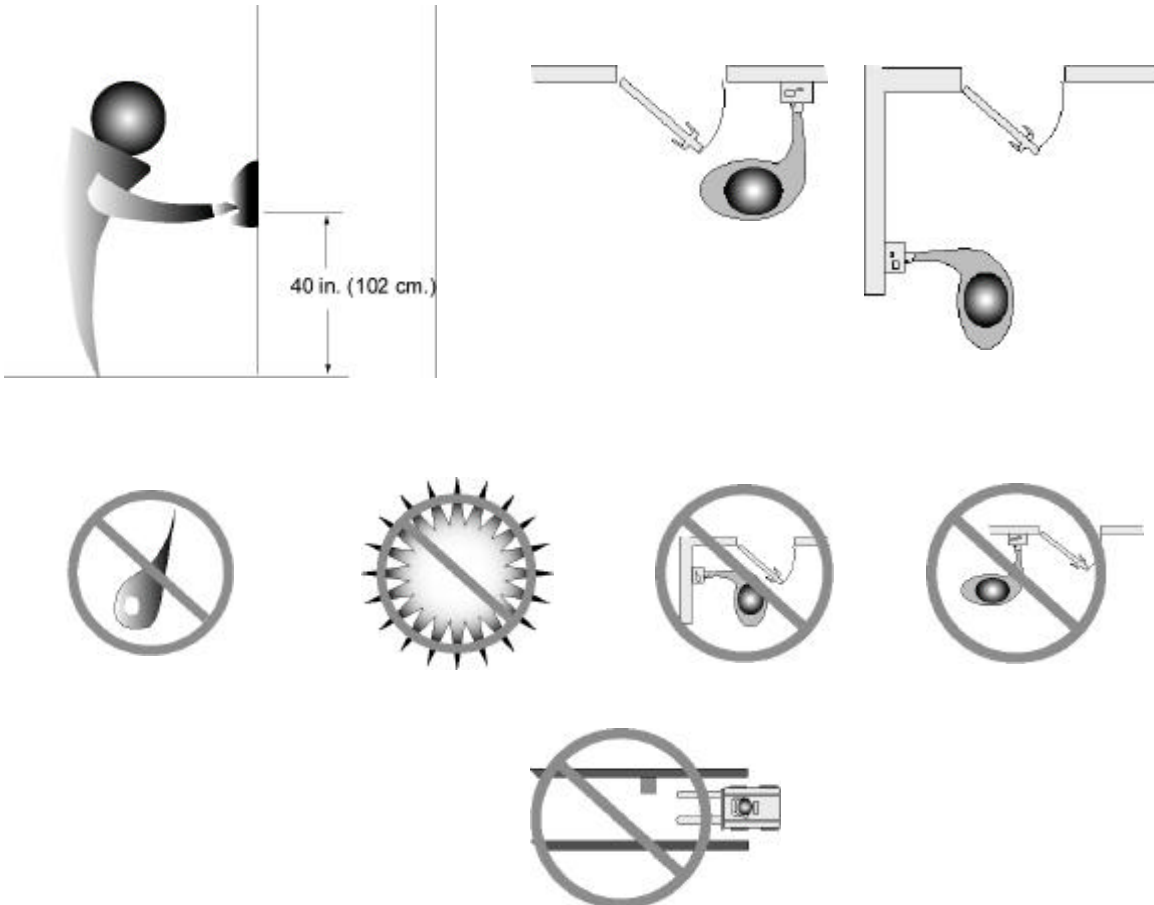
Wiring overview:

Power: A 120VAC duplex outlet should be within 5 feet of the hand reader. The supplied RSI plug-in power supply has a 6 feet (182 cm) long cable.

Communications: Each direct connect HandPunch unit requires a network jack. A HandPunch with internal modem requires telephone jack. A modem unit connected to additional HandPunch terminals requires both a network connection and a telephone jack These RJ-11 jacks are to be installed on or in the wall behind the reader. Locate the wiring and jack locations using the paper template included with this manual. Each HandPunch terminal comes with a short **silver** cable to connect the terminal to the network jack. Modem units include a **black** modem cable to connect the terminal to a telephone jack.

The network requires two twisted pairs, 22 AWG. minimum. It connects between network jacks installed at each reader "daisy-chain" fashion. Belden No. 82723 cable is recommended. **Do not wire HandPunch terminals in a "star" network.**

When the HandPunch terminals are directly connected to the computer, communication is via a shielded 4 wire (Full Duplex) RS-485 multidrop configuration. This data link may extend up to 4,000 feet, and up to 31 hand readers can be connected to it in addition to the host.

When a modem is used, up to 30 HandPunch terminals can be connected to it. The interconnection between the modem unit and the other HandPunch terminals is via shielded 4 wire (Full Duplex) RS-485 multidrop configuration. The total cable distance can not exceed 4000 feet in length.

At the Host computer: A network jack must be installed within 6 feet (182 cm) of the host computer. The network jack is a standard RJ-11 type of the same kind used in standard telephone installations. A data converter (RSI No. DC-101P) is required to communicate with RS 485 networked hand readers. On side of the DC-101P is plugged into the RS 232 serial communication port on the computer. The other side is connected to a network jack via the supplied cable The DC-101P comes with an eight foot (182 cm) cable with RJ-11 plugs on each end.
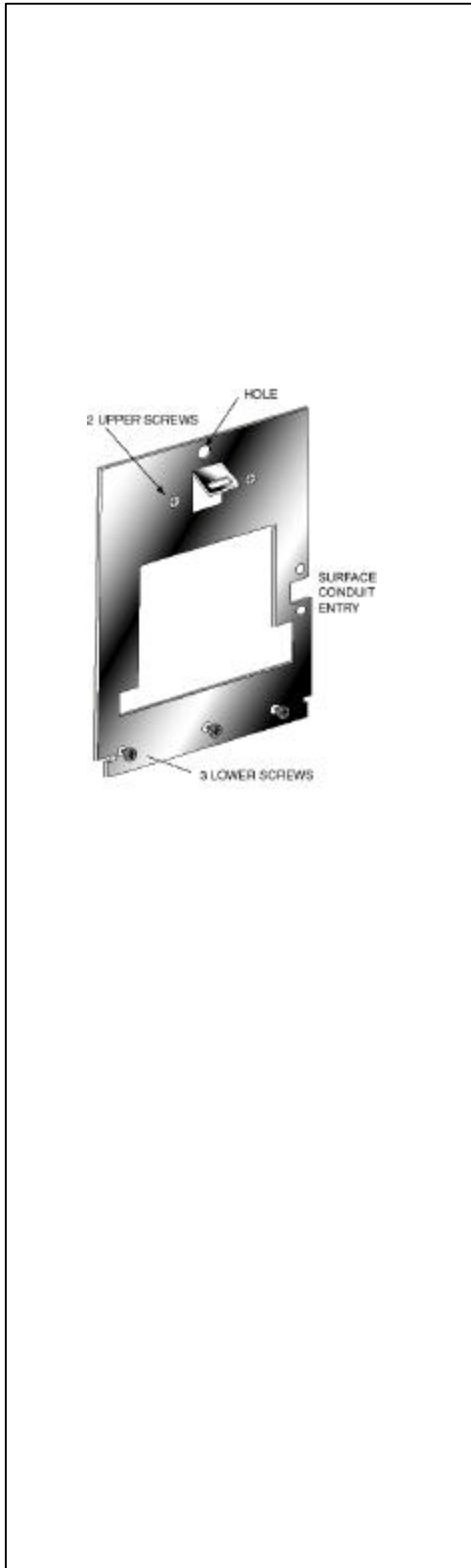
Mounting the Wall Plate

Remove the wall plate from the packing carton. Protect the hand reader terminal from dust and debris during the wall plate installation.

• Measure and mark a point 48-1/2 in. (123 cm.) to the finished floor.

• For hollow walls, drive a small nail into the wall at the mark and hang the wall plate from the hole located near the top. Check to assure the wall plate is level. Secure it with tape if necessary

• For solid walls, place the hole at the mark, level the wall plate and secure the plate with tape.

• Using the wall plate as a template, mark the locations of the two holes near the top and three holes at the bottom.

• Remove the wall plate from the wall and install the mounting hardware

Mounting Hardware
Hollow walls:

Use the provided hardware to mount the wall plate. The auger style fasteners are for the two upper mounting locations. The molly bolts are for the three lower mounting locations. Drill a ¼" hole at each of the lower locations and install the molly bolts. Completely remove the screws from each of the molly bolts and set aside. Install the auger fasteners into the upper locations (do not install the screws)

Concrete walls:

Expansion bolts should be used for concrete walls. Drill ¼ in. diameter hole ¼ in deeper than the anchor length for all five mounting holes and insert anchors.

Note: For surface conduit installations, prepare two additional holes for the conduit clamp and insert anchors.

Place the wall plate on the wall and screw into place.
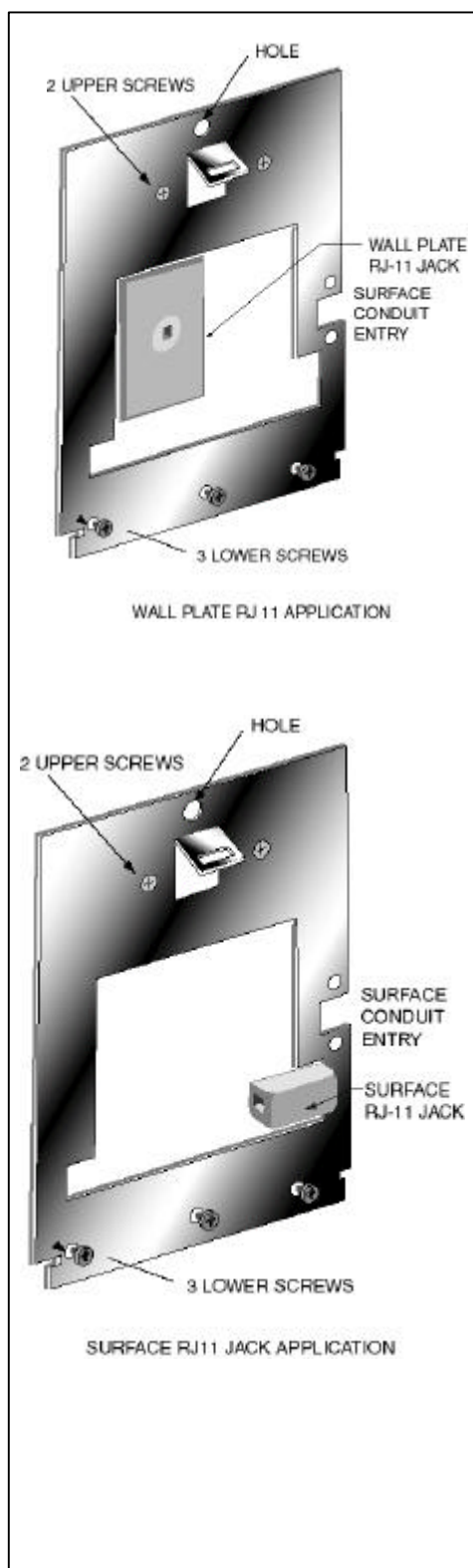
Wiring and network jack locations

Wiring for the terminal may be brought to it through the open area in the center of the wall plate for hollow walls or through the conduit opening on the right side of the terminal. See drawing on page 22.

Network wiring
For network wiring, an RJ 11 is required at each unit. A short cable supplied with the unit makes the final connection from the jack to the terminal. A wall plate type RJ 11 jack is recommended for hollow walls, but a surface wall jack can also be used. The surface mount type must be used for solid wall applications. Positioning of the surface mount jack is critical so that it will not interfere with locking the terminal into place. Use the pictures to the left to locate the jack.

Network wiring between the jacks must be completed in accordance with the appropriate network wiring diagram in the back of this manual. Network wiring must be in a "daisy chain" fashion only. **Do not wire in a "Star" configuration.**

The diagram on page 16 is for a hard-wired connection to the host computer. The diagram on page 17 is for a network using a modem for connection to the host computer.

In multiple unit networks, mark the jack of the last terminal on the network "EOL" for end of line. The terminal at the end of the line requires the setting of dip switches to terminate the network.

Power
Route the power cable from the RSI power supply to the HandPunch terminal through the open area in the center of the wall plate for concealed wiring or through the conduit opening on the right side for surface wiring. The duplex wall outlet to plug the power supply into should not be further away than 5 feet from the terminal. If located further than 5 feet, you can use an alternative power supply or wiring attached to a connector (provided). 18 AWG wire is recommended for this situation.

Additional Wiring

HandPunch can control external devices:

Bell
Door Lock
Request for Exit Switch
Door Switch
Auxiliary Devices
Printer

Wiring for these devices should enter the reader through the opening in the center of the wall plate or through conduit opening at the right side of the terminal. See the descriptions and wiring diagram on pages 19 and 20.

Conduit Wiring
The use of conduit is suggested to protect wiring on solid wall applications. The terminal accepts ½' FLEXIBLE conduit. Solid conduit should not be used to enter the terminal.

Route ½ in. conduit to stop between the two conduit clamp holes. A conduit clamp (not supplied) will hold the conduit in place. All wiring should be routed through the conduit. Power connection to the terminal can be made via stripped and tinned wiring. 18 AWG wire is recommended for this situation.

For all but the network wiring, plan on an additional 18 inches of wire to extend beyond the end of the conduit to allow for the final connection to the terminal. Network wiring will terminate into an RJ 11 surface wall mount jack located as previously described.

Power connection
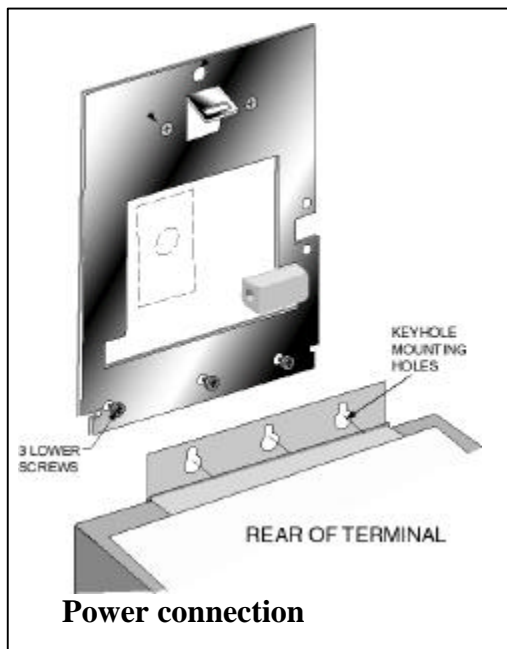
Mounting the unit to the wall
- Loosen the three bottom mounting screws so about ¼ inch of the threads are showing. Remove the terminal from the carton and hang it on the three screws at the bottom of the wall plate. Tighten all screws. Protect the terminal from debris and damage while completing the installation.

Wiring Connections
Network connections
Using the supplied silver RJ 11 cable, connect one end into the network jack and the other end into the network RJ 11 jack at the back of the terminal.
For modem units, connect the black RJ 11 cable to the telephone jack and the other to the modem jack at the back of the unit.

Ensure that the power supply is NOT plugged into a power source before making the power connection at the terminal. Plug the barrel connector from the power supply into the power connection jack at the back of the terminal

Note: If using stripped and tinned wire connections, connect the power wiring into the gray terminal strip located directly in front of the barrel connector at the back of the reader. Polarity is unimportant.

Other wiring connections
Make final wiring connections per the instructions that follow this section. Refer to the chart below for terminal strip and jack locations. Typical systems wiring diagrams are located in the back of this manual.
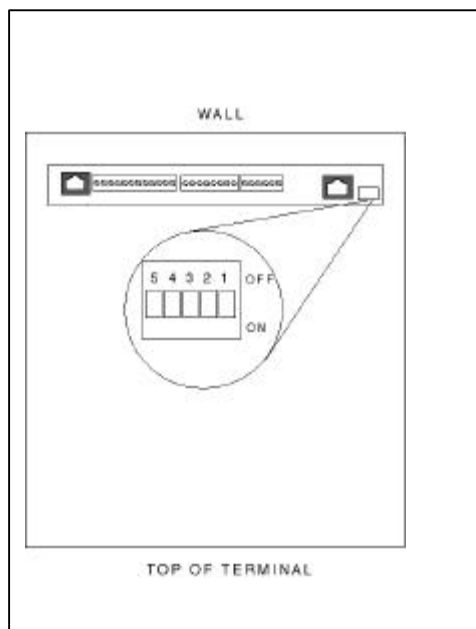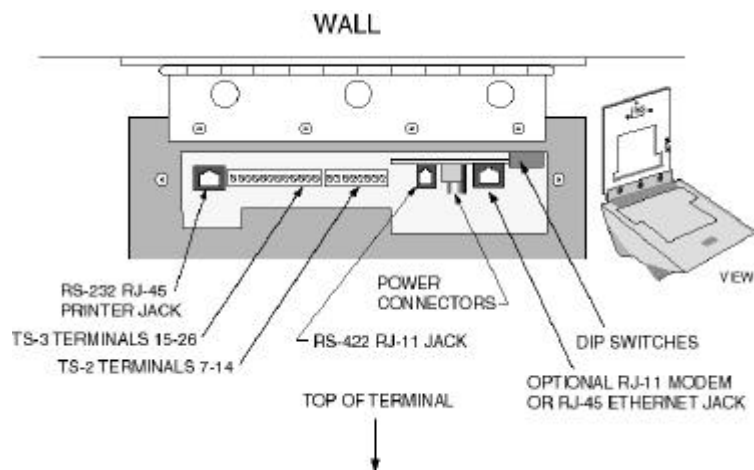
Setting the dip switches for the EOL (end of line) terminal.

In a networked system, the dip switches should be set for proper network communications. The last reader in the network should have a jack marked EOL for the "end of the line". **Set dip switches 1 AND 2 on the unit at the end of the line to the ON position. Dip switch 3 should always be in the OFF position.**

Dip switch settings on modem units:
Set dip switches 1 and 2 on modem units to "ON."

Power up

The terminal is ready to be powered up. It is best to apply power before locking the reader in its normal operating position.

Plug the power supply into its duplex outlet. After a few seconds, the LCD will display

```
ENTER ID
(TIME)  (DATE)
```

Swing the terminal upward and lock in place with the key provided.

If the display does not show ENTER ID, recheck your power connections.

LOCK

Hand reader setup

Command Mode Overview

The Command Mode is broken down into five different groups of commands. Access to each group is controlled by an individual password. The commands contained in each of the groups are shown in the chart below.

COMMAND MODE STRUCTURE

SPECIAL DEFAULT PASSWORD 5	ENROLLMENT DEFAULT PASSWORD 4	MANAGEMENT DEFAULT PASSWORD 3	SETUP DEFAULT PASSWORD 2	SERVICE DEFAULT PASSWORD 1
SPECIAL ENROLL	ADD EMPLOYEE	SUP OVERRIDE (REVIEW, ADD PUNCH, BULK OR DOLLARS)	SET LANGUAGE	CALIBRATE
	ADD SUPERVISOR	LIST EMPLOYEES	SET DATE FORMAT	STATUS DISPLAY
	REMOVE EMPLOYEE	SET EMPLOYEE DATA	SET TIME & DATE	
		RESTRICTIONS	SET ADDRESS	
			SET ID LENGTH	
			SET SERIAL	

This table depicts the structure of all of the commands which are available in the HandPunch. This section of the manual will describe those commands to set up and use the hand reader. The numbers directly above each of the command groups are the factory set passwords to access each group.

Passwords

When the unit is shipped from the factory, the passwords are all set according to the table below. Access to the various Command Mode commands is controlled by passwords. Each command group has a password as shown in the chart below. Once a system has been installed, you can change the passwords from the host computer. Assigning groups the same password allows access to two or more groups. The passwords can be up to10 digits in length.

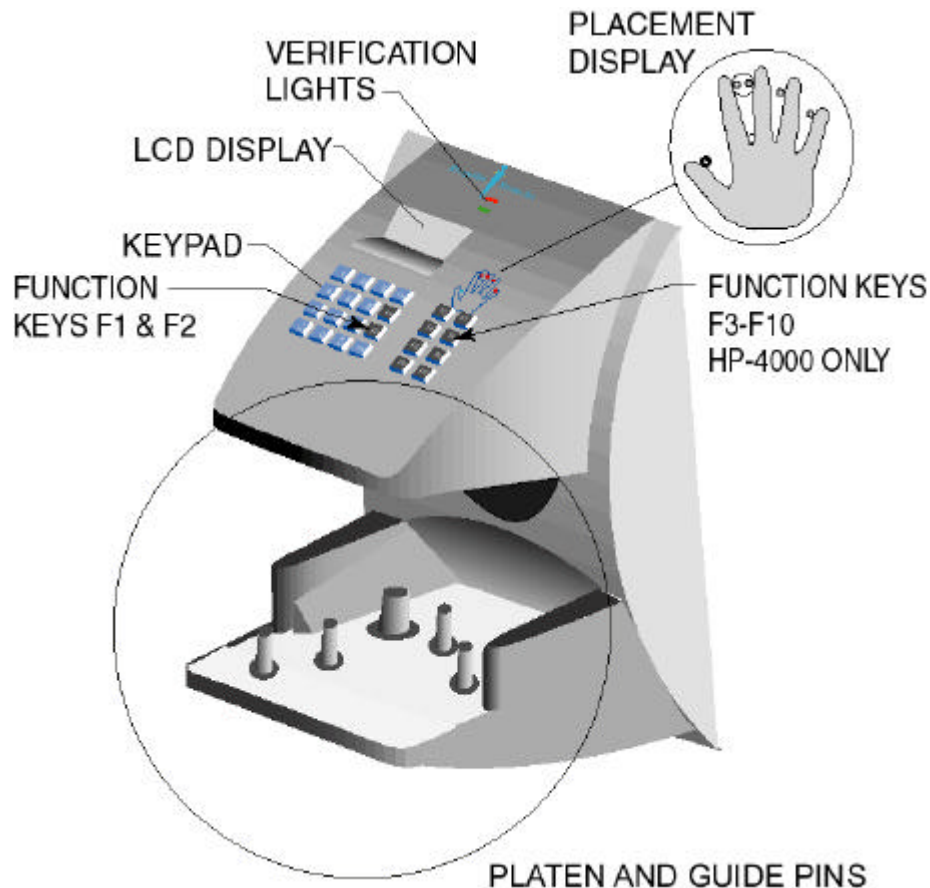|	
SPECIAL GROUP	5
ENROLLMENT GROUP	4
MANAGEMENT GROUP	3
SETUP GROUP	2
SERVICE GROUP	1

Entering and Exiting the Command Mode

If no users are enrolled on the system, press CLEAR and ENTER at the same time. The LCD will display ENTER PASSWORD. If there are enrolled users, the LCD panel will display ENTER ID *:. You must enter your ID followed by # and verify identity by placing your hand on the platen. When the LCD panel displays ENTER PASSWORD, press the numerical password of the command group you want to access followed by #. If the display returns to ENTER ID, you are not authorized to enter the command mode. If you still cannot enter the command group, it may be necessary to erase the user memory by opening the reader with a key and reset the memory with the internal dip switches as shown on page 9. Once the Command Mode has been entered, the display will show one command at a time in the top line. Shown in the second line will be the prompt:

<div align="center">

* NO   YES #

</div>

Pressing the # (yes) key will select the displayed command. Prompts will then appear as appropriate for the selected command.

Pressing the * (no) key will cause the next command in turn to be displayed. Repeatedly pressing the * key will bring the display back to the first displayed command.

When the *NO YES# prompt is shown on the display, pressing any number will exit the Command Mode and return control to the Identity Verification Mode. The "**ENTER ID**" display will reappear.

```
┌─────────────────────────────┐
│                             │
│                             │
│                             │
│                             │
│                             │
│                             │
│   ┌─────────────────────┐   │
│   │    SET LANGUAGE     │   │
│   │  * NO        YES #  │   │
│   └─────────────────────┘   │
│   ┌─────────────────────┐   │
│   │   SET DATE FORMAT   │   │
│   │  * NO        YES #  │   │
│   └─────────────────────┘   │
│                             │
│   ┌─────────────────────┐   │
│   │  SET TIME AND DATE  │   │
│   │  * NO        YES #  │   │
│   └─────────────────────┘   │
│   ┌─────────────────────┐   │
│   │    SET ADDRESS      │   │
│   │  * NO        YES #  │   │
│   └─────────────────────┘   │
│                             │
│                             │
│   ┌─────────────────────┐   │
│   │   SET ID LENGTH     │   │
│   │  * NO        YES #  │   │
│   └─────────────────────┘   │
│                             │
│                             │
│                             │
│   ┌─────────────────────┐   │
│   │    SET SERIAL       │   │
│   │  * NO        YES #  │   │
│   └─────────────────────┘   │
│                             │
└─────────────────────────────┘
```

Setup at the Reader

The following is a list of typical set up items needed before enrolling users. The detail for each menu follows this overview.

Note: It is not necessary to leave the command mode after each item is set as shown in the detailed descriptions.

- Set Language
- Set Date Format

The first two items in the setup menu allow the reader to be "localized" for a variety of countries.

- Set Time and Date

Typically, units receive the time and date from the host computer.

- Set Address

In a network, each reader needs a unique reader address for proper communications.

- Set ID Length

Setting the ID length can reduce the number of keystrokes needed to enter the ID number by eliminating the use of the # or ENTER key to complete ID number entry. The ID length is typically set at the host computer

- Set Serial

Set the network communication baud rate The default is 9600 bps.

Set language

The default language is English. The alternate language choice is Spanish.

Press # to leave the English language (default).

Press * to select SPANISH.

ENTER ID
(TIME)   (DATE)

CLEAR + ENTER

ENTER PASSWORD

SET LANGUAGE
* NO   YES #

#

ENGLISH
*NO/#YES ?:

leave default

* go to Spanish (#)

SET LANGUAGE
* NO   YES #

* to next menu
5 to exit

Set date format
The U.S. format MM/DD/YY is default.

> AVAILABLE DATE
> FORMATS
>
> mm/dd/yy
> dd-MMM-yy
> dd-mm-yy
> dd/mm/yy
> mm-dd-yy
> MMM dd, yy
> ddMMMyyyy

Press # to leave U.S. format

Set time and date
Set the time in 24 hour format.
Set the year in two digit format.
For example, the year 2001 will be "01."

Note: The time and date is normally set at the host computer and downloaded to the reader.

SET DATE FORMAT
* NO   YES #

#

mm/dd/yy
* NO   YES #

* scroll

select

SET DATE FORMAT
* NO   YES #

5 exit or

* next menu

SET TIME & DATE
* NO   YES #

#

MONTH MM?

enter month (MM) #

DAY DD?

enter day (DD)   #

YEAR YY?

enter year (YY)   #

HOUR HH?

enter hour (hh)
(24 hour format) #

MINUTE MM?

enter minute (mm)

SET TIME & DATE
* NO   YES #

5 to exit

* go to set address
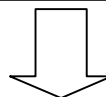
Set address
The address identifies the reader to the host computer. Each reader must at a site have a unique address.

SET ADDRESS
* NO   YES #   #

RDR ADD IS 1
NEW?:   enter an address from 2 to 255   #

SET ADDRESS
* NO   YES #   # to change
5 to exit
* to set ID length

Set the ID Length (typically set at host computer)

Use this menu if ID numbers are the same length. When entering ID numbers shorter than the set ID length, users must follow the number with # or the ENTER key.

SET ID LENGTH
** * NO   YES #**   #

LENGTH IS 11
**   NEW?**   enter new ID length #

SET ID LENGTH
** * NO   YES #**   # to change
5 to exit
* to set serial

Set Serial
Set the serial ports (RS-485/422 and RS-232) baud rates to match the rates of other hand readers, a host computer or a printer. 9600 baud is suitable for most applications.

SET SERIAL
* NO   YES #   *

Set RS-485-422?
* NO   YES #   * to leave default (9600)
# to change

An RS-232 to RS485/RS-422 data converter(RSI Model DC-101P) is required for hand readers to communicate with a host computer.

9600 baud
* NO   YES #   # to leave default and go to RS-232
* (SELECT) #

SET RS-232?
* NO   YES #   * to skip
# to set

Hard wired reader networks communicate over RS-485/422 wiring. The RS 232 settings are only required if using a printer or using the RS 232 to communicate with the host computer

9600 baud
* NO   YES #   * to view, # to select

USE RS-232 FOR
0-PRINTER 1-HOST   select, #

Note: Hand readers with the optional Ethernet adapter will request an IP address and gateway in "dotted decimal" format. If the gateway is not used, enter 0.0.0.0 in its place.

SET SERIAL
* NO   YES #   * to first menu
# to change
5 to exit

Computer connection to the network

1. Connect the RSI DC-101P data converter into the serial port of the host computer.
2. Connect the data converter to the first network jack using the silver cable supplied by Recognition Systems, Inc.
3. Plug the data converter power supply into a 120VAC duplex outlet.
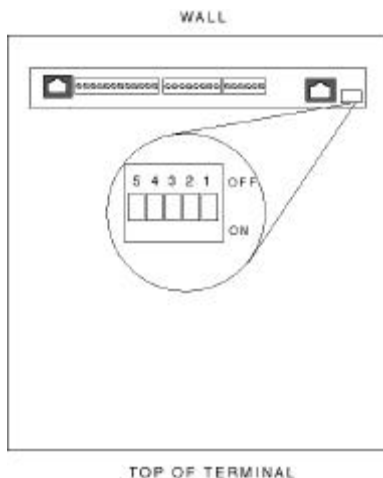
Memory Reset

It is sometimes necessary to reset the hand reader's memory. There are two types of memory resets on the HandPunch.

Set up reset
Total Reset

Setup reset

To erase the setup information to factory default without erasing the user database or transactions, move dip switch 4 to ON, remove power and then reapply it. Move the dip switch back to the OFF position.
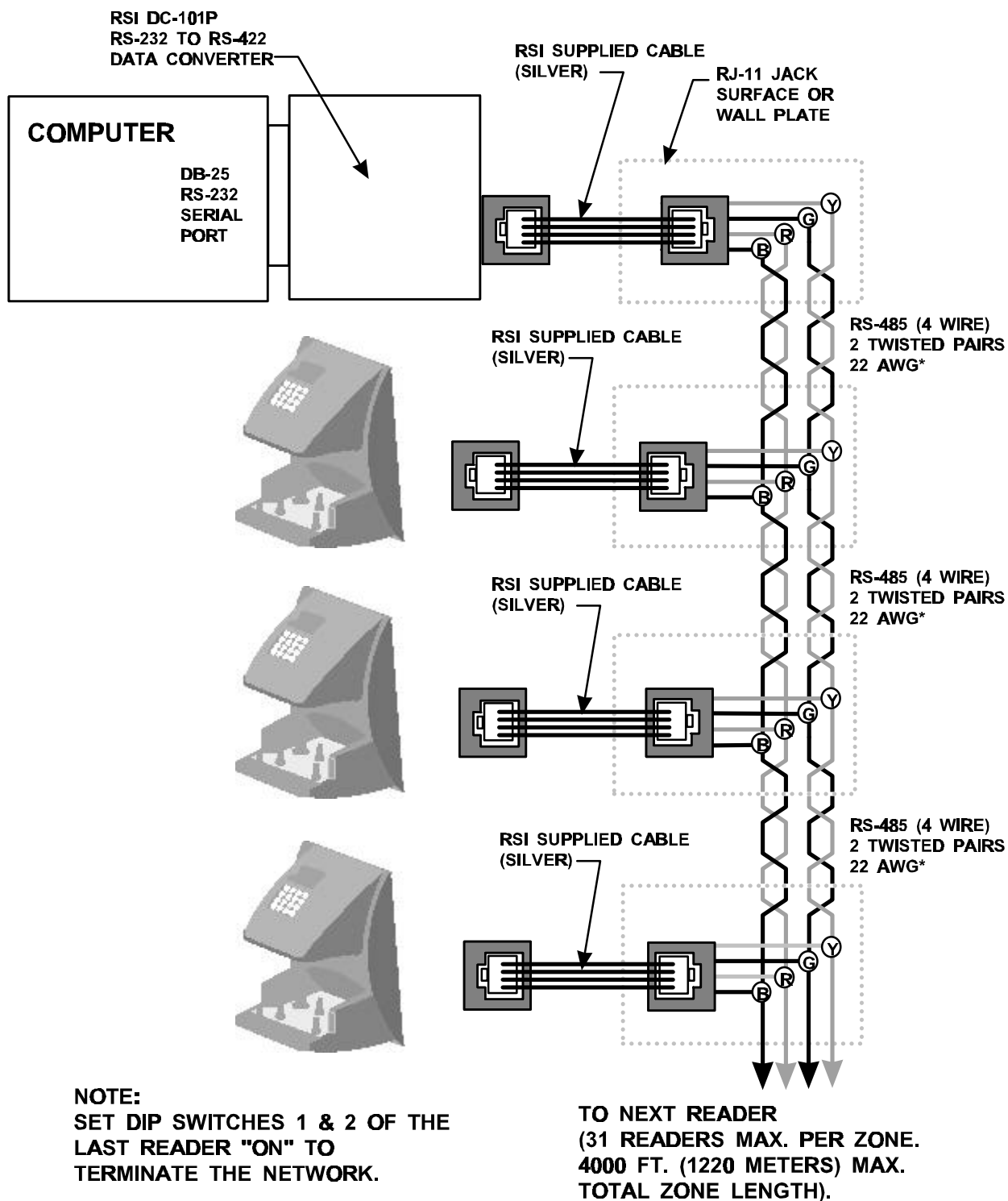
Total Reset

To erase the user memory, tranactions, and reset the setup information to factory default, move both dip switches 4 and 5 to ON, remove power and then reapply it. Move both dip switches back to the OFF position.

Important! If you reset the memory, be sure switches 4 & 5 are "off" before putting the terminal in service.
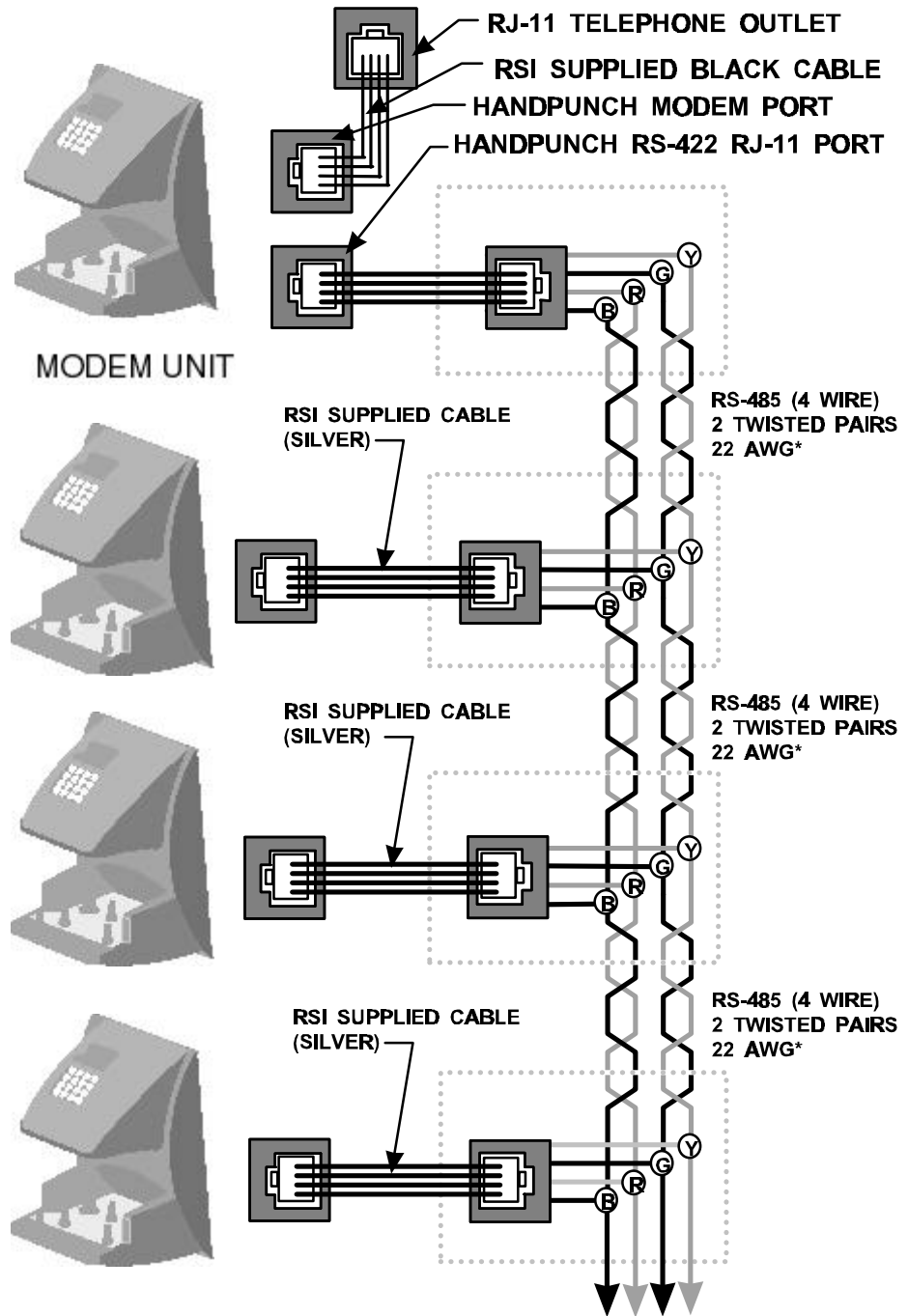
Enrollment:

Enrollment is the process that records a description of the hand (template) and stores it with the enrollee's ID number. The first person enrolled should be the system administrator. He or she will have access to all command mode menus. Once a person is enrolled, only that person can enter the command mode. Go to the HandPunch 3000 Operations Manual for enrollment and operations procedures.

RSI DC-101P
RS-232 TO RS-422
DATA CONVERTER

RSI SUPPLIED CABLE
(SILVER)

RJ-11 JACK
SURFACE OR
WALL PLATE

COMPUTER

DB-25
RS-232
SERIAL
PORT

RS-485 (4 WIRE)
2 TWISTED PAIRS
22 AWG*

RSI SUPPLIED CABLE
(SILVER)

RS-485 (4 WIRE)
2 TWISTED PAIRS
22 AWG*

RSI SUPPLIED CABLE
(SILVER)

RS-485 (4 WIRE)
2 TWISTED PAIRS
22 AWG*

RSI SUPPLIED CABLE
(SILVER)

NOTE:
SET DIP SWITCHES 1 & 2 OF THE
LAST READER "ON" TO
TERMINATE THE NETWORK.

TO NEXT READER
(31 READERS MAX. PER ZONE.
4000 FT. (1220 METERS) MAX.
TOTAL ZONE LENGTH).

*RECOMMENDED CABLE BELDEN # 82723

HANDPUNCH 3000/400 RS-485 (4 WIRE) NETWORK TO HOST COMPUTER

RJ-11 TELEPHONE OUTLET

RSI SUPPLIED BLACK CABLE

HANDPUNCH MODEM PORT

HANDPUNCH RS-422 RJ-11 PORT

MODEM UNIT

RSI SUPPLIED CABLE
(SILVER)

RS-485 (4 WIRE)
2 TWISTED PAIRS
22 AWG*

RSI SUPPLIED CABLE
(SILVER)

RS-485 (4 WIRE)
2 TWISTED PAIRS
22 AWG*

RSI SUPPLIED CABLE
(SILVER)

RS-485 (4 WIRE)
2 TWISTED PAIRS
22 AWG*

NOTE:
SET DIP SWITCHES 1 & 2 OF THE
MODEM AND THE LAST READER
"ON" TO TERMINATE THE
NETWORK.

TO NEXT READER
(31 READERS MAX. PER ZONE.
4000 FT. (1220 METERS) MAX.
TOTAL ZONE LENGTH).

*RECOMMENDED CABLE BELDEN # 82723

HandPunch 3000/4000 RS-485 (4 WIRE) MODEM/NETWORK DIAGRAM

Terminal Connections Overview
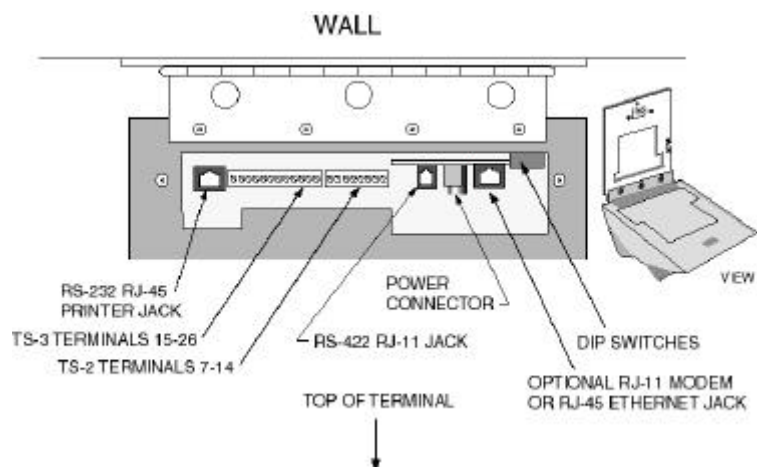
Terminal Strip Chart

TERMINAL STRIP 2		TERMINAL STRIP 3	
7	REQUEST TO EXIT	15	+5VDC @ 400 MA MAX. OUTPUT FOR EXT. CARD READER
8	GROUND	16	CARD READER D0/DATA INPUT
9	DOOR MONITOR SWITCH INPUT (N.C. STANDBY,)	17	CARD READER D1/CLOCK INPUT
10	GROUND	18	CARD READER GROUND
11	AUXILIARY INPUT 1	19	LOCK OUTPUT / DATA 1
12	GROUND	20	GROUND
13	AUXILIARY INPUT 2	21	AUXILIARY OUTPUT/ DATA 0
14	GROUND	22	GROUND
		23	AUXILIARY OUTPUT 1
		24	GROUND
		25	AUXLIARY OUTPUT 2
		26	GROUND

Additional Wiring

Output wiring notes:
The HandPunch allows the use of an external DC power supply to operate other controls or relays. The power supply can be of a different voltage than that used to power the terminal. The lock, bell and auxiliary outputs switch to ground when activated. Therefore, one pole of a control relay connects to PLUS on the power supply, and the other connects to the output terminal (switched minus) on the hand reader. The negative pole on the external power supply must connect to a negative terminal (ground) on the hand reader to complete the circuit. The current draw of the relay or external device must not exceed 0.1 amperes. See the wiring diagram on page 24.

Lock Wiring
The lock control output of the HandPunch switches to ground upon verification (unless programmed to send card data to a third party access control). The output is limited to 0.1 amperes therefore, a lock control relay must be used. See lock wiring diagram on page 24.

 Request to Exit Switch Wiring
A "request to exit switch" on secure side of a controlled door will actuate the lock output. When the request to exit switch is pressed, the door unlocks for the specified time. The request to exit switch must be a momentary contact normally open switch rated greater than 0.5 Milliamperes 5 Volt DC circuit. See lock and bell wiring diagram on page 24.
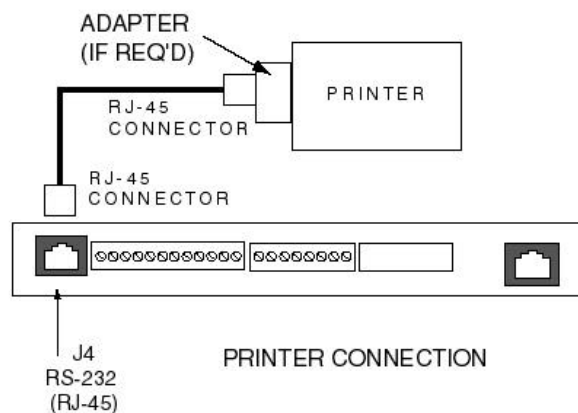
Bell Wiring
The bell control circuit switches direct current to ground when actuated. The bell must receive its power from an external power supply through the contacts of a bell control relay. See the lock and bell wiring diagram on page 24.
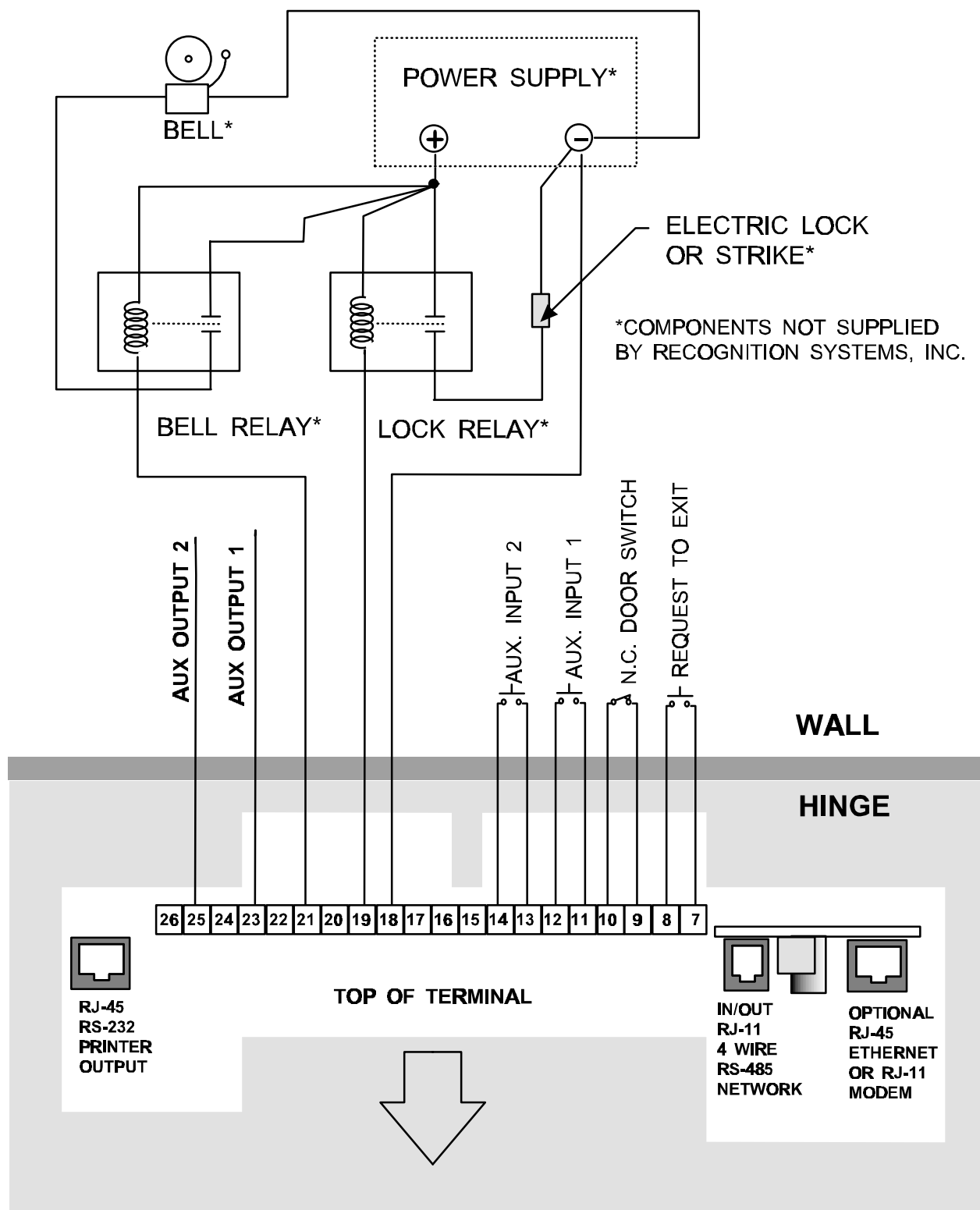
Auxiliary devices
The terminal contains two additional auxiliary outputs. These circuits can be used to control a doorbell or other external device. See wiring diagram on page 24.
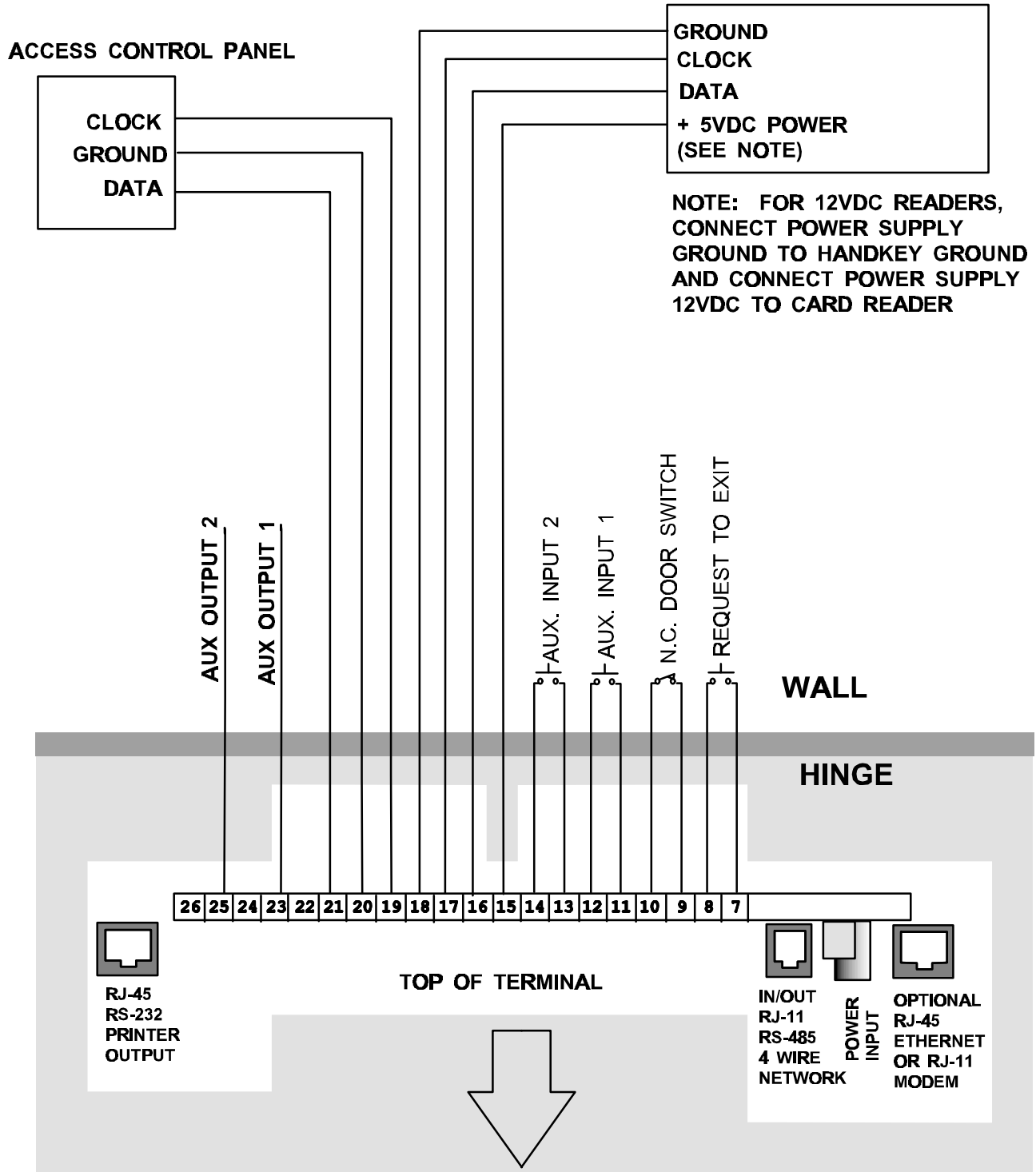
Printer output:
A serial printer can be connected to the HandPunch terminal to print punches as they occur. Connect the printer to the RS-232 RJ-45 jack per the diagram below.
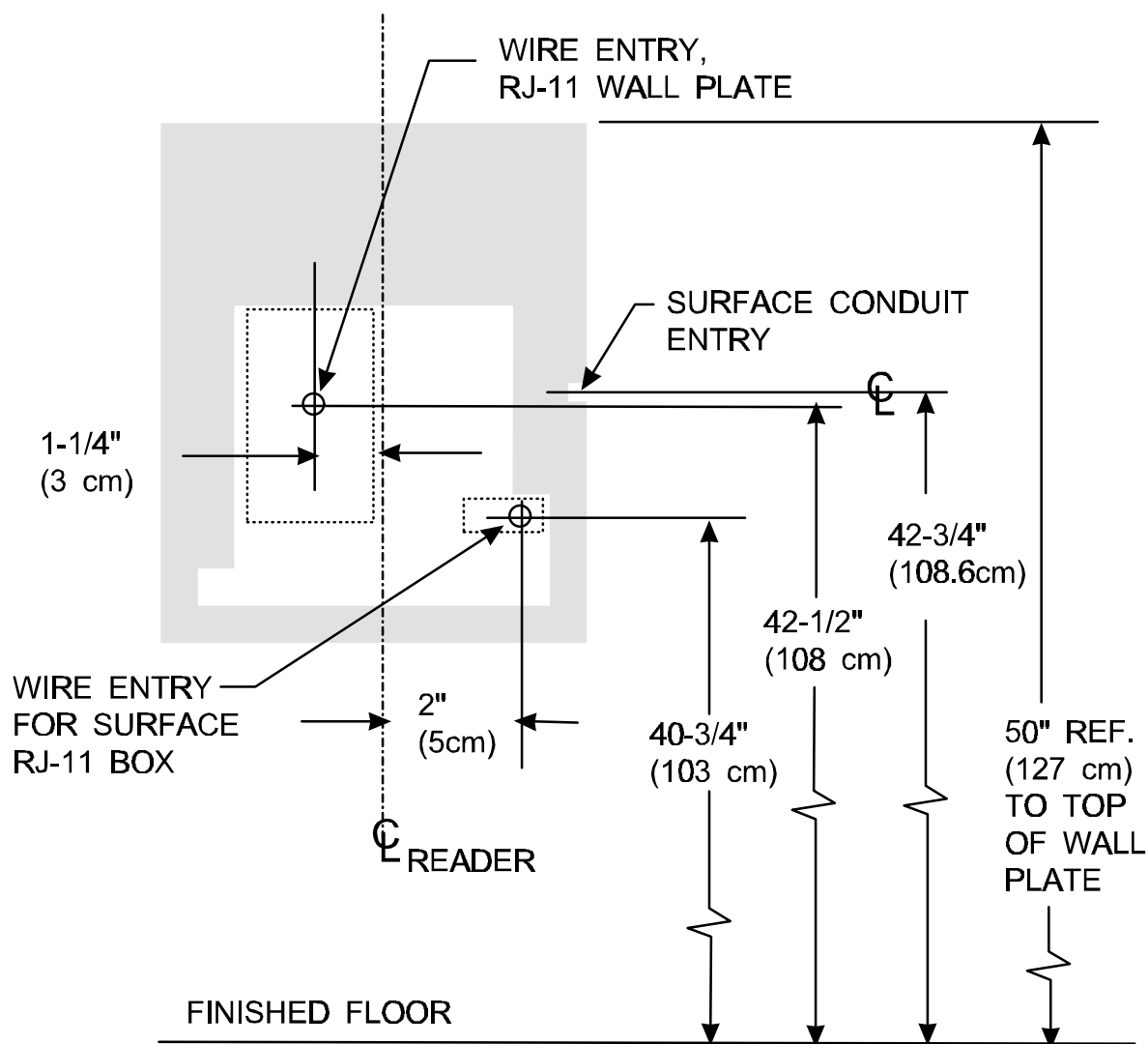
**TYPICAL LOCK AND BELL APPLICATION
WIRING DIAGRAM**

ABA TRACK 2
MAGNETIC STRIPE CARD READER

ACCESS CONTROL PANEL

GROUND
CLOCK
DATA
+ 5VDC POWER
(SEE NOTE)

CLOCK
GROUND
DATA

NOTE: FOR 12VDC READERS,
CONNECT POWER SUPPLY
GROUND TO HANDKEY GROUND
AND CONNECT POWER SUPPLY
12VDC TO CARD READER

AUX OUTPUT 2

AUX OUTPUT 1

AUX. INPUT 2

AUX. INPUT 1

N.C. DOOR SWITCH

REQUEST TO EXIT

WALL

HINGE

| 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 |

TOP OF TERMINAL

RJ-45
RS-232
PRINTER
OUTPUT

IN/OUT
RJ-11
RS-485
4 WIRE
NETWORK

POWER
INPUT

OPTIONAL
RJ-45
ETHERNET
OR RJ-11
MODEM

HP-3000/400 WITH EXTERNAL MAGNETIC STRIPE READER

HP-3000/4000 COMMUNICATIONS WIRING LOCATIONS

Specifications:

Size:	8.85 in. (22.3 cm) wide
	11.65 in. (29.6 cm) high
	8.55 in. (21.7 cm) deep
Power:	12-24VDC or 12-24 VAC ∿ 50-60 Hz, 7 watts
Weight:	6 lbs. (2.7 kg)
Operating temperature:	40 to 110 F. (5 – 40 C)
Relative humidity:	95% max. non-condensing
Verification time:	1 second or less
Memory retention:	5 years via a standard internal lithium battery
Transaction buffer:	HP3000, 5187 Transactions HP4000, 3498 Transactions
ID number length:	1 to 10 digits
Baud rate:	300 – 28.8K bps
Communications:	RS-232, RS 485-4 wire (RS-422)
User capacity:	512 Users expandable to 32,512 (HP-3000), 3498 (HP-4000)
Function keys:	3000, 2 user definable 4000, 10 user definable
Card reader input:	3000, External (specify) 4000, Integral 3/9 Barcode
Card format output:	3000/4000 Specify
Lock output:	Lock output sinks to ground, 100 mA max.
Bell output:	Bell output sinks to ground, 100 mA max.
Alarm monitoring:	Tamper, door switch
Event monitoring:	Invalid ID, TZ Violation, ID refused, try again, power failure.
HP3000 Time zones:	Global, 2 fixed and 60 programmable, total 62 definable at host
HP4000 time schedules:	3 definable time schedules per employee
Auxiliary inputs:	2 Open collector, switch to ground to actuate
Auxiliary outputs:	2, user definable, open collector (switches to ground)
U.S. Power supply:	2-1/4"W x 3-1/4 H x 2" D, 117VAC input 13.8 VDC output
Optional back-up battery:	4 AH, (2 hours operational)

Recommended European Power Supply:

Ault Inc.
7300 Boone Ave. North
Minneapolis, MN 55428 USA
612-493-1900
Email: info@ault.com

recyclable
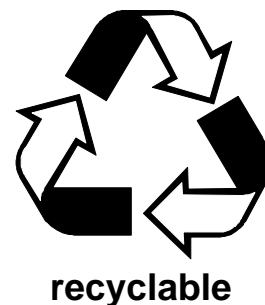
LIMITED WARRANTY

Recognition Systems, Inc. (the "Company") warrants to the original user the products manufactured by the Company (the "Product") to be free of defects in material and workmanship for a period of one year from the date of purchase by such user or 15 months from the date of shipment from the factory, whichever is sooner, provided:

1. The Company has been notified within such period by return of any alleged defective product, free and clear of all liens and encumbrances, to the Company or its authorized dealer, transportation prepaid; and

2. The Product has not been abused, misused or improperly maintained and/or repaired during such period; and

3. Such defect has not been caused by ordinary wear and tear; and

4. Such defect is not the result of voltage surges/brownouts, lightning, water damage/flooding, fire, explosion, earthquakes, tornadoes, acts of aggression/war or similar phenomenon; and

5. Accessories used as integral to the Product have been approved by the Company.

The company shall, at its option, either repair or replace, free of charge, the Product found, upon the Company's inspection, to be so defective, or if agreed upon, refund the purchase price, less a reasonable allowance for depreciation, in exchange for the Product.

THE COMPANY MAKES NO OTHER WARRANTY AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE DURATION OF THE EXPRESSED WARRANTY PERIOD AS SET FORTH ABOVE.

THE COMPANY'S MAXIMUM LIABILITY THEREUNDER IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT, IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL OR SPECIAL DAMAGES OF ANY NATURE ARISING FROM THE SAME OR THE USE OF THE PRODUCT.

Recognition Systems reserves the right to make changes in the design of any of its products without incurring any obligation to make the same change on units previously purchased.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency

energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numerique de la classe A respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

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