



# Model 450 Encoder User's Manual

## Introduction

The Model 450 Encoder will encode high-coercivity magnetic stripe cards with the EMPI or ANSI/ABA format. The EMPI Job Code is fixed at the factory. The encoder is controlled from a PC computer via the serial port. The encoder can encode the data on track I or track II selectable by a switch on the encoder.

The following items are supplied with the encoder:

- Encoder mechanism
- Cable from encoder to PC (25-pin)
- Adapter for 9-pin serial port
- Software diskettes
- User's Manual

If any of these items are missing, contact Dorado by HID Customer Service at (510) 429-8000.

## Installing the Software

The software is provided on both a 5-1/4" and a 3-1/2" disk. Each disk contains a single file called ENCODER.COM. Copy all the programs from either diskette to a directory on your computer.

First, create a directory to hold the encoder programs named ENCODER and copy all programs. Type the following:

```
cd: \                (move to root directory)
md \encoder         (make directory named ENCODER)
cd: encoder       (select ENCODER directory)
copy a:*. *c:       (copies from 'A' drive to 'C' drive into ENCODER directory)
```

Keep the original disks in a safe place.

## Connecting the Encoder to the PC

The encoder connects to the PC serial port using the supplied cable. The male end of the cable (with pins) attaches to the back of the encoder. The female end (with holes) attaches to the PC. If you have an AT computer with a 9-pin serial port, use the supplied adapter between the cable and your computer. THE ENCODER SHOULD BE CONNECTED AND TURNED ON BEFORE RUNNING THE ENCODER PROGRAM

## Running the Software

Make sure the encoder is turned on and connected to a serial port on the PC. If the encoder is connected to the COM1 serial port, from the ENCODER directory type the following:

```
cd: encoder       (select ENCODER directory)
hit the ENTER key
encoder           (program name to be ran)★
hit the ENTER key
RUN              (starts the program)
hit the ENTER key
```

★NOTE: If you are using serial port COM2, type ENCODER/COM2

When the program starts, it displays the program name, version number and copyright notice. Then the program displays the main menu.

You will see a summary of the job codes that are active. The display includes the job names and comparison numbers in 8 and 16 bit format for these jobs. Supply these 8 and 16 bit comparison numbers to the installer for use during access panel installation.

When prompted, enter the four digit job code number. If your encoder is connected to port COM2 then follow the 4 digit job code entry with /COM2. For example:

```
Encoder on COM1,   enter 1234
Encoder on COM2,   enter 1234 /COM2
```

## **Main Menu**

The main menu has six choices:

1. Encode EMPI Cards
2. Read EMPI Cards
3. Encode ANSI Cards
4. Read ANSI Cards
5. Display Status
6. Exit to DOS

To select a choice, press the corresponding key. Choice 6 ends the program and returns you to DOS.

## **Encoding EMPI Cards**

NOTE: Make sure you have selected the desired track for encoding. The toggle switch on the front of the encoder selects between track I and track II.

The coding screen contains two windows. The top window shows the last few cards that have been encoded. The bottom window contains the prompts that will lead you through the coding process.

1. You will be asked for a starting card number. Enter a number between 1 and 65535. This is the number to be encoded on the card. The Job Code is fixed at the factory and cannot be changed.
2. You will then be asked if you want to code cards sequentially. If you press "Y" the encoder will automatically increment the card number for each card you encode. If you press "N" you will be asked for a new card number for each card you encode.
3. The card number is displayed and you are prompted to insert a card into the encoder. The card should be inserted with the stripe down and towards the back of the encoder. There are two switches at the back of the encoder slot. The card must be inserted all the way into the slot before these switches are closed.

If you have inserted the card and the reading process does not start, pull the card out 1/2 inch and push it back in all the way.

4. After the card has been inserted, the coding operation begins. You will hear the motor inside the encoder and the message "Encoding..." will be displayed.
5. When the coding operation is complete, the motor stops and the message "Remove card" is displayed.
6. Remove the card from the encoder. If the card is coded correctly, the card number will be displayed in the top window. If you do not remove the card within 20 seconds, you will get a time-out error and the program will return to the main menu. If there was an error while encoding the card, an error message is displayed in the top window. You will be prompted to insert the card again. The card number will not be incremented.
7. After successfully encoding a card, you will be prompted for the next card number if you did not select sequential encoding. You will then be prompted to insert the next card. If you press the <esc> key the program will return to the main menu.

## **Reading EMPI Cards**

NOTE: Make sure you have selected the desired track for reading. The toggle switch on the front of the encoder selects between track I and track II.

The reading screen contains two windows. The top window shows the last few cards that have been read. The bottom window contains the prompts that will lead you through the reading process.

1. The first prompt is to insert a card into the encoder. The card should be inserted with the stripe down and towards the back of the encoder. There are two switches at the back of the encoder slot. The card must be inserted all the way into the slot before these switches are closed.

If you have inserted the card and the reading process does not start, pull the card out 1/2 inch and push it back in all the way.

2. After the card has been inserted, the reading operation begins. You will hear the motor inside the encoder and the message "Reading" will be displayed.
3. When the reading operation is complete, the motor stops and the message "Remove card" is displayed.

4. Remove the card from the encoder. If the card is read correctly, the card number will be displayed in the top window. If you do not remove the card within 20 seconds, you will get a time-out error and the program will return to the main menu.

Two types of errors can occur: The encoder cannot read the data from the card or the card has the wrong Job Code. In either case a corresponding error message is displayed.

5. You will then be prompted to insert the next card. If you press the <esc> key the program will return to the main menu.

### **Encoding ANSI/ABA Cards**

Any of the encoding programs will code ANSI cards. Therefore, select any of the EMPI job codes from the first selection menu and select #3 from the next menu.

NOTE: Make sure you have selected the desired track for encoding. The toggle switch on the front of the encoder selects between track I and track II.

The coding screen contains two windows. The top window shows the last few cards that have been encoded. The bottom window contains the prompts that will lead you through the coding process.

1. You will be asked for a starting card number. Enter a number of up to 37 digits. Use the '-' key to enter a field separator. This is the number to be encoded on the card.

For specialized applications, you can also enter the hex digits A to E. Do not enter these digits unless you are sure your application requires them.

2. You will then be asked if you want to code cards sequentially. If you press "Y" the encoder will automatically increment the card number for each card you encode. If you press "N" you will be asked for a new card number for each card you encode.
3. If you selected sequential encoding, you will be asked to indicate the last digit of the incrementing field. Use the cursor keys to position the arrow under the last digit and press the enter key.

For example, if you digits 5 to 8 were the incrementing field, you would position the arrow as follows:

120400016302  
                  ^

4. The card number is displayed and you are prompted to insert a card into the encoder. The card should be inserted with the stripe down and towards the back of the encoder. There are two switches at the back of the encoder slot. The card must be inserted all the way into the slot before these switches are closed.

If you have inserted the card and the reading process does not start, pull the card out 1/2 inch and push it back in all the way.

5. After the card has been inserted, the coding operation begins. You will hear the motor inside the encoder and the message "Encoding..." will be displayed.
6. When the coding operation is complete, the motor stops and the message "Remove card" is displayed.
7. Remove the card from the encoder. If the card is coded correctly, the card number will be displayed in the top window. If you do not remove the card within 20 seconds, you will get a time-out error and the program will return to the main menu.

If there was an error while encoding the card, an error message is displayed in the top window. You will be prompted to insert the card again. The card number will not be incremented.

8. After successfully encoding a card, you will be prompted for the next card number if you did not select sequential encoding. You will then be prompted to insert the next card. If you press the <esc> key the program will return to the main menu.

## **Reading ANSI/ABA Cards**

NOTE: Make sure you have selected the desired track for reading. The toggle switch on the front of the encoder selects between track I and track II.

The reading screen contains two windows. The top window shows the last few cards that have been read. The bottom window contains the prompts that will lead you through the reading process.

1. The first prompt is to insert a card into the encoder. The card should be inserted with the stripe down and towards the back of the encoder. There are two switches at the back of the encoder slot. The card must be inserted all the way into the slot before these switches are closed.

If you have inserted the card and the reading process does not start, pull the card out 1/2 inch and push it back in all the way.

2. After the card has been inserted, the reading operation begins. You will hear the motor inside the encoder and the message "Reading" will be displayed.
3. When the reading operation is complete, the motor stops and the message "Remove card" is displayed.
4. Remove the card from the encoder. If the card is read correctly, the card number will be displayed in the top window. If you do not remove the card within 20 seconds, you will get a time-out error and the program will return to the main menu.
5. You will then be prompted to insert the next card. If you press the <esc> key the program will return to the main menu.

## **Display Status**

The status display function shows the current status of the encoder. The following information is displayed:

1. If the encoder is connected, the firmware version is displayed. This number may be needed if you call for technical support. If the encoder is not connected, an off-line message is displayed.
2. The current port setting is displayed. This will either be COM1 or COM2. The port address and IRQ number are as follows:

Port=COM1 Addr=3F8 Irq=4  
Port=COM2 Addr=2F8 Irq=3

These settings are the standard PC serial ports. If you are having problems communicating with the encoder, check to make sure your serial port is set to the correct address and IRQ number.

3. The Job Code is displayed. This is fixed at the factory and cannot be changed.

## **Indicator Lights**

There are four indicator lights on the encoder. The READY light is on when the encoder is powered up and ready for commands from the PC. The IN PROCESS light is on during a reading or coding operation. The OK and ERROR lights are not used in this application.

## **Communication Errors**

Communication errors are detected at two places in the program.

1. When you first select the reading or coding functions, communication is established between the PC and the encoder. If this fails, an error message is displayed. The three major causes of problems are:
  - The encoder is not turned on.
  - The cable is not connected to either the PC or the encoder.
  - The cable is connected to the wrong serial port.

After you have corrected the problem, press any key to try again or press <esc> to return to the main menu.

2. Communication fails during operation. If this happens, the current operation is aborted and an error message is displayed. Remove the card from the encoder and press any key to return to the main menu. The most common cause is not removing the card from the encoder within 20 seconds.

NOTE: You must remove the card before selecting any of the options from the main menu. If you do not, you will get a communication error. Remove the card and retry the operation.

If you still need help, keep in mind that Dorado by HID always welcomes request for technical help and assistance, so please call us at 949 598-1600.