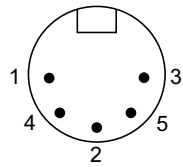


Female DIN 5-pin



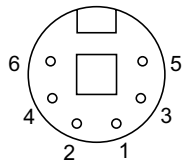
Male DIN 5-pin

Male Mini DIN 6-pin

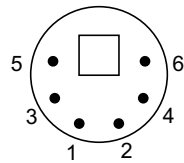
Pin No.	1	2	3	4	5	6
Function	PC-DAT	NC	GND	VCC	PC-CLK	NC

Female Mini DIN 6-pin

Pin No.	1	2	3	4	5	6
Function	KB-DAT	NC	GND	VCC	KB-CLK	NC



Female Mini-DIN 6-pin



Male Mini-DIN 6-pin

Note: Custom pinouts are available upon request.

2) Character Set for Track 2 and Track 3:

Character Set	0	1	2	3	4	5	6	7	8	9	:	;	=	>
ASCII Code (Hexadecimal Code)	30	31	32	33	34	35	36	37	38	39	3A	3B	3D	3E
Record Character	0	1	2	3	4	5	6	7	8	9	A	B	D	E
Read-out Character	0	1	2	3	4	5	6	7	8	9	:	;	=	>

9. Pin Out

Optional Interface Cable

Female DSUB 9-pin Connector

Pin No.	1	2	3	5
Function	+5V	TXD	RXD	GND

Standard Interface Cable

Female DSUB 9-pin Connector

Pin No.	2	3	5
Function	TXD	RXD	GND

Male DIN 5-pin Connector

Pin No.	1	2	3	4	5
Function	PC-CLK	PC-DAT	NC	GND	VCC

Female DIN 5-pin Connector

Pin No.	1	2	3	4	5
Function	KB-CLK	KB-DAT	NC	GND	VCC

8. Record Format & Character Set

MSE-630T Series magnetic stripe encoder automatically discriminates the following five record formats:

Record Format	Start Characters	Write Characters	Stop Characters	Comment
Format 1	B	See character set	F	ISO Standard Format
Format 2	B	See character set	C	
Format 3	D	See character set	F	
Format 4	BA	See character set	F	
Format 5	BA	See character set	C	IBM Format

- The body of the data package is enclosed by a pair of header STX(02H) and trailer ETX(03H). Each track uses a different start sentinel - "%(25H)" for track 1, ";(3BH)" for track 2, and "+(2BH)" for track 3. All three tracks use the same end sentinel "? (3FH)".
- BCC** stands for block check character which is the NOR sum of the entire data package including ETX(03H) but excluding STX(02H).
- In response to a read command, the encoder appends the start and end sentinels to their corresponding track then returns the complete data package to the host computer. In case of any failure, a negative acknowledgement "NAK(15H)" is sent back instead.
 - Prior to sending a write command down to the encoder, the host computer adds the start and end sentinels to their corresponding track to construct a complete data package. The encoder performs a read immediately after a write. If the data it reads matches the data it writes, then the original data package is returned back to the host computer as an acknowledgement of a successful write. Otherwise, a negative acknowledgement "NAK(15H)" is sent back instead.

1) Character Set for Track 1:

Character	SP	!	"	#	\$	%	&	'	()	*	+	,	-	.	/
ASCII Code	20H	21H	22H	23H	24H	25H	26H	27H	28H	29H	2AH	2BH	2CH	2DH	2EH	2FH

Character	0	1	2	3	4	5	6	7	8	9	:	;	=	>
ASCII Code	30H	31H	32H	33H	34H	35H	36H	37H	38H	39H	3AH	3BH	3DH	3EH

Character	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
ASCII Code	40H	41H	42H	43H	44H	45H	46H	47H	48H	49H	4AH	4BH	4CH	4DH	4EH	4FH

Character	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	-
ASCII Code	50H	51H	52H	53H	54H	55H	56H	57H	58H	59H	5AH	5BH	5CH	5DH	5EH	5FH

7. Command Set

6.3 Cleaning Guide Slot

1. Wrap a cleaning card with a piece of gauze.
2. Place the cleaning card right next to the magnetic head/wheel and move it outwards to clean the edge section of the slot. **Do not touch the magnetic head.**
3. Move the cleaning card slowly in between the two pairs of the magnetic head/wheel to clean the middle section of the slot.
4. Do not leave any fibers in the slot or on the magnetic head.

Function	Command Code	Format of Response	Remark
Reset	DEL (7FH)	----	
Liaison	ESC (1BH)	ACK (06H)	
Read	R (52H) n n: Track Combination 31H T1 32H T2 33H T1&T2 34H T3 36H T2&T3 37H T1&T2&T3	Successful Return: STX%1st track data?; 2nd track data?+3rd track data? ETX[BCC] (02H25H 1 st track data 3FH3BH 2 nd track data 3FH2BH 3 rd track data 3FH03H[BCC]) Error: NAK (15H)	
Write	W (57H) STXW%1st track data?; 2 nd track data?+3rd track data?ETX[BCC] (02H57H25H 1 st track data 3FH3BH 2 nd track data 3FH2BH 3 rd track data 3FH03H[BCC])	Successful Return: STX%1st track data?; 2nd track data?+3rd track data?ETX[BCC] (02H25H 1 st track data 3FH3BH 2 nd track data 3FH2BH 3 rd track data 3FH03H[BCC]) Error:NAK(15H)	

Notes:

- 1) **MSE-630T** Series magnetic stripe encoder communicates with the host computer via exchange of data packages formatted as below:

STX% 1st track data?; 2nd track data?+ 3rd track data? ETX[BCC]

- d) Choose the saved ".ewf" file from the pulldown menu right next to the "SetBatch" button.
- e) Click on the "Write" button.
- f) Swipe the card or passbook when prompted.

Please note the following when creating a text file for file encode:

- The input data must comply with ISO 7810, 7811-1,2,3,4,5 standards or IBM format for passbook.
- Each record must follow the format "%1st data?;2^d data?+3rd data?".
- Do not separate track data into multiple lines by inserting the "Enter" key.
- It is not necessary to include the start sentinel (the first character) and the end sentinel (the last character) to represent an empty track. For instance, ";2222222222222222?" is a valid representation of a track 2-only record.
- The file extension must be ".txt".

6. Maintenance

Regular maintenance helps prolong the life of the encoder and ensure reliable operations. Listed below are step-by-step maintenance procedures.

6.1 Cleaning Magnetic Head

Clean the magnetic head prior to use and when the encoder frequently flags usage errors under normal circumstances.

- 1 . Place the cotton stripe of a dry cleaning card as close to the magnetic head as possible and swipe it through the guide slot for 5 to10 times.
2. In case of a very dirty magnetic head, first moisten the cotton stripe with cleaning solution or alcohol then swipe the cleaning card through the guide slot for several times. Proceed with dry cleaning for 2 to 3 times.

6.2 Cleaning Wheel of Encoder

- 1 . Moisten the cotton stripe of a cleaning card with cleaning solution or alcohol.
2. Place the moistened cotton stripe of a cleaning card as close to the wheel as possible and swipe it through the guide slot for about 10 times.
3. Proceed with dry cleaning for 2 or 3 times.

- d) Input data according to ISO 7810, 7811-1,2,3,4,5 standards or IBM format for passbook.
- e) Enter a file name at the "Batch File Name" box and click on "Go". A ".cwt" file will automatically be created to store all the input data.
- f) Select the saved ".cwt" file from the pulldown menu right next to the "SetBatch" button.
- g) Click on the "Write" button.
- h) Swipe the card or passbook when prompted.

5.4.3 "Duplicate Encode" enables the user to encode multiple magnetic stripe cards or passbooks with the same set of data.

- a) Run "project.exe", (Figure 5.4.1.a).
- b) Click on the "SetBatch" button.
- c) Choose "Duplicate" from the pulldown menu (Figure 5.4.3).



Figure 5.4.3

- d) Input data according to ISO 7810, 7811-1,2,3,4,5 standards or IBM format for passbook.
- e) Enter the number of duplicates to create.
- f) Enter a file name at the "Batch File Name" box and click on "Go". A ".dwt" file will automatically be created to store all the input data.
- g) Choose the saved ".dwt" file from the pulldown menu right next to the "SetBatch" button..
- h) Click on the "Write" button.
- i) Swipe the card or passbook when prompted.

5.4.4 "File Encode" enables the user to encode multiple magnetic stripe cards or passbooks with an existing file previously created by other encoding utilities or by a text editor such as Windows Notepad.

- a) Run "project.exe" (Figure 5.4.1.a).
- b) Click on the "SetBatch" button.
- c) Choose "File" from the pulldown menu then open a valid .txt file (Figure 5.4.4). A ".ewt" file will automatically be created to store all the input data transferred from the .txt file.



Figure 5.4.4

5.4 Encoding Options

The encoder comes with a utility application named "project.exe". Copy the executable file from the diskette to the hard disk prior to running. The utility supports four encoding modes:

- Single Encode
- Incremental Encode
- Duplicate Encode
- File Encode

5.4.1 "Single Encode" enables the user to encode a magnetic stripe card or a passbook one at a time.

a) Run "project.exe" (Figure 5.4.1.a).



Figure 5.4.1.a

b) Input data according to ISO 7810, 7811-1,2,3,5 standards or IBM format for passbook.



Figure 5.4.1.b

c) Click on the "Write" button.
d) Swipe the card or passbook when prompted.

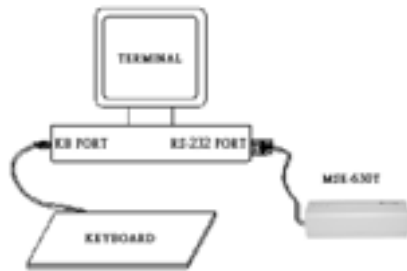
5.4.2 "Incremental Encode" enables the user to encode multiple magnetic stripe cards or passbooks with incremental numbers.

a) Run "project.exe" (Figure 5.4.1.a).
b) Click on the "SetBatch" button.
c) Choose "Incremental" from the pulldown menu (Figure 5.4.2).



Figure 5.4.2

B. Terminal Installation with Optional RS-232C Cable



The optional RS-232C cable draws the DC +5V power from the serial port on the terminal. One free pin on the female DSUB9 connector is reserved for power supply.

Listed below are the step-by-step installation procedures:

1. Shut down the terminal first.
2. Connect the female DSUB9 to the serial port on the terminal.
3. Power on the terminal and verify successful installation:
 - All three LEDs (red, yellow, and green) turn on simultaneously for a couple of seconds and only the green LED stays on.
 - The encoder beeps momentarily (refer to 5.1 Power On Self Test).

5. Operation

5.1 Power-On Self Test

The encoder performs a self test when powered up. The red, yellow and green LEDs light up all at once for approximately two seconds and only the green LED remains on upon completion of a successful test. The encoder also beeps momentarily to signal its ready state. Otherwise, the red LED stays on to indicate an initialization failure.

5.2 Read Operation

Upon successful pass of the power-on self test, the encoder is ready to read. Operator should swipe a magnetic stripe card or a passbook through the guide slot from right to left at a steady speed (10~120cm/sec). In response to the swipe motion, the green and yellow LEDs start to flash simultaneously. In case of a successful read, the green LED turns on and the encoder beeps only once. Otherwise, the red LED comes on and the encoder beeps three times to signal an error.

5.3 Write Operation

The yellow LED turns on initially upon receipt of a write command. Operator should swipe a magnetic stripe card or a passbook through the guide slot from right to left at a steady speed (10~120cm/sec). In response to the swipe motion, the yellow LED starts to flash. In case of a successful write, the yellow LED goes out, the green LED comes on, and the encoder beeps only once. Otherwise, the red LED comes on and the encoder beeps three times to signal an error.

3. Configuration



MSE-630T draws the DC +5V power either from the keyboard port on a PC (standard configuration) or from the serial port on a terminal (optional configuration).

1. Keyboard Wedge End
2. RS-232 Serial End
3. LEDs

STANDARD PACKAGE

- 1) Main unit with keyboard wedge cable (RS-232C serial cable optional)
- 2) Windows-based encoding utility on one 3.5" diskette
- 3) User's manual

4. Installation

A. PC Installation with Standard Keyboard Wedge Cable



The standard keyboard wedge cable draws the DC +5V power from the keyboard port on the PC. It has three (3) ends:

- Male MiniDIN6 or DIN5 Connector
- Female MiniDIN6 or DIN5 Connector
- Female DSUB9 Connector

Listed below are the step-by-step installation procedures:

1. Shut down the PC first.
2. Disconnect the keyboard from the PC.
3. Connect the male MiniDIN6 (or DIN5) to the keyboard port on the PC.
4. Reconnect the keyboard to the female MiniDIN6 (or DIN5).
5. Connect the female DSUB9 to the serial port on the PC.
6. Power on the PC and verify successful installation:

- All three LEDs (red, yellow, and green) turn on simultaneously for a couple of seconds and only the green LED stays on.
- The encoder beeps momentarily (refer to 5.1 Power-On Self Test)

1. Introduction

MSE-630T Series magnetic stripe encoder is intended for use with a personal computer or a terminal via the RS-232 serial connectivity. It reads/writes data from/to a magnetic stripe card or a passbook. Key features include:

- Manual swipe operation
- Power-on self test
- Auto-discriminates five (5) record formats
- Dual status indicators - LEDs and beeper
- Operates on various media including transparent ones
- Durable metal housing for heavy-duty usage

MSE-630T reads/writes ISO 7810, 7811-1,2,3,4,5 compliant data from/to tracks 1, 2, and 3 on a magnetic stripe card. It can also be configured to read/write IBM format on a passbook.

2. General Specifications

2.1 Environment Requirements

Operating Temperature : 0° C ~ 40° C
Operating Humidity : Less than 90% RH

2.2 Storage Requirements

Storage Temperature : -20° C ~ 70° C
Storage Humidity : Less than 95% RH

2.3 Physical Characteristics

Dimension : 214mm x 64mm x 63mm
(WxDxH)
Weight : 1.35kgs

2.4 Power Requirements : DC+5V 280mA

2.5 Durability : Approx. 500,000 passes

2.6 Record Density : 1st track 210BPI
2nd track 75 BPI
3rd track 210BPI

2.7 Number of Record Characters

: 1st track 76
2nd track 37
3rd track 104

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User's Manual

Magnetic Stripe Reader/Writer

MSE-630T Series

