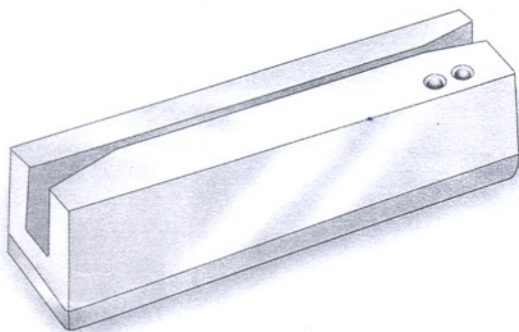


# Decoded MSR Series

MAGNETIC STRIPE CARD READER

## User's Manual



MSR-530

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# 1. INTRODUCTION

Welcome to the Magnetic Stripe Card Reader. The card reader is designed with keyboard emulator output or RS-232 serial interface. The user's manual provides detailed information about the card reader, include: key features, installation procedure, specifications, switch settings, and output data format, etc.

When designing the reader, we try our best to include all of the most useful features and functions. But in some cases you may find specific needs that differ from our standard products, please contact with us. Custom-designed readers are always welcomed. Information in the manual has been carefully checked for accuracy, however, no guarantee is given as to the correctness of the contents. The information contained in this manual is subject to change without notice.

Product names used herein are for identification purposes only and may be the trademarks or registered trademarks of their respective companies.

## 2. FEATURES

- Read data encoded on magnetic stripe cards that meet ISO standards.
- Bi-directional card swipe and read capability.
- Software and hardware modification is not required.
- Single, dual and triple decoding.
- Switch selectable carriage return, sending start/end byte, and track-2 account number.
- Keyboard types and languages are selectable by DIP-Switchs in Keyboard Wedge Reader. RS-232 parameters are also selectable in Serial Reader.
- Power is supplied by the computer to operate the Keyboard Wedge Reader, one DC adapter is bundled to the Serial Reader.
- Power up diagnostics.
- Card read confirmation by beep sounds.
- Full one year limited warranty.
- Magnetic Head Life: 300,000 passes minimum, 1,000,000 passes version can be requested.

### **3. MODELS**

#### **1. Keyboard Wedge Readers**

##### **Single Track Models:**

MSR-401      Track 1

MSR-402      Track 2

MSR-403      Track 3

##### **Dual Track Models:**

MSR-412      Track 1&2

MSR-423      Track 2&3

##### **Triple Track Model:**

MSR-430      Track 1&2&3

#### **2. Serial Readers**

##### **Single Track Models:**

MSR-501      Track 1

MSR-502      Track 2

MSR-503      Track 3

##### **Dual Track Models:**

MSR-512      Track 1&2

MSR-523      Track 2&3

##### **Triple Track Model:**

MSR-530      Track 1&2&3

#### **3. Customer Designed Card Reader are available upon request.**



## 4. BASIC CONFIGURATIONS

### 1. The Keyboard Wedge Reader, MSR-400 Series:

- 1) Green LED on the cover:  
Power on and good read indicator, it will be lit when power is applied and indicated that the reader is ready to read data.
- 2) Red LED on the cover:  
Good read indicator, it will be illuminated when the data is read successfully.
- 3) Keyboard input cable (with Female connector):  
To be connected with the keyboard cable.
- 4) Reader output cable (with Male connector):  
To be connected with the keyboard port on the computer.

### 2. The Serial Reader, MSR-500 Series:

- 1) Green LED:  
Power on and good read indicator.
- 2) Red LED:  
Good read indicator
- 3) Reader output cable:  
To be connected with the RS-232 serial port on the computer.
- 4) 5V-DC power-jack (on the cable-end):

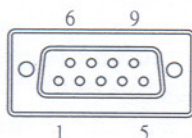


To be connected with  
5V-DC power adapter.  
(Inner pin is positive)

Note: 9V-DC power input model should request to supplier.

- 5) RS-232 connector:  
D-Sub 9 pin Female

Pin	2	3	5	9
Wire	Red	White	Yellow	Black
Function	TX		GND	VCC



- 6) Please contact your supplier if you prefer to have another type of pin assignments and power adapter.

## 5. SWITCH SETTINGS

<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">ON</div> <div style="display: flex; gap: 5px;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </div> </div> <div style="display: flex; justify-content: space-around; font-size: small;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div>	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">ON</div> <div style="display: flex; gap: 5px;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </div> </div> <div style="display: flex; justify-content: space-around; font-size: small;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div>
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Left-SW Block

Right-SW Block

### A. Left-SW Block:

#### 1) Device Setting:

	PC/AT	PC/XT
SW-1	OFF	ON

OPTION: PS/2, Mac., or IBM 3196/3197/3476/3477.

Please request your supplier for option device

#### 2) Language Setting:

	U.S.	German	Spanish	Italian
SW-2	OFF	ON	OFF	ON
SW-3	OFF	OFF	ON	ON

OPTION: Swiss, Norwegian, Swedish, U.K., French.

Please request your supplier for option language.

#### 3) Track Data Output Selection:

	Single Track	For Dual Track					Triple Track
		Track 2 Last	Track 2 First	Track 1 Only	Track 2 Only	Track 3 Only	
SW-4	OFF	ON	OFF	ON	OFF	ON	ON
SW-5	OFF	OFF	ON	ON	OFF	OFF	ON
SW-6	OFF	OFF	OFF	OFF	ON	ON	ON



4) Keyboard Type "Carriage Return"  
Selection:

	CR Enable	CR Disable
SW-7	ON	OFF

CR: Carriage Return

5) Sending SS/ES Selection

	Non-Send	Send
SW-8	OFF	ON

SS: Start Sentinel

ES: End Sentinel

(Please refer to page 14, Output Data Format)

**B. Right-SW Block:**

1) RS-232 Baud Rate Selection:

	1200	2400	4800	9600
SW-1	OFF	ON	OFF	ON
SW-2	OFF	OFF	ON	ON

2) RS-232 Data Length and Parity Selection:  
(Stop Bit=1)

	Length:7 Parity: Even	Length:7 Parity: Odd	Length:8 Parity: None	Length:8 Parity: Even
SW-3	OFF	ON	OFF	ON
SW-4	OFF	OFF	ON	ON

### 3) Intercharacter Delay for MSR-400 Series and Special Output Data Format for MSR-500 Series

- a. For MSR-400 Series (Right-SW Block SW-7 should be set "OFF")

	10ms	3ms
SW-5	ON	OFF

- b. For MSR-500 Series (Right-SW Block SW-7 should be set "ON" and Left-SW Block SW-8 should be set "ON")

	Special	As page 14
SW-5	ON	OFF

#### Special Output Data Format:

##### \*Single Track:

STX	Data	Checksum of Data	ETX
-----	------	------------------	-----

##### \*Dual Track:

STX	Track 1 or Tack 3 Data	Checksum of Data	DLE
STX	Track 2 Data	Checksum of Data	ETX

##### \*Triple Track:

STX	Track 1 Data	Checksum of Data	DLE
STX	Track 2 Data	Checksum of Data	DLE
STX	Track 3 Data	Checksum of Data	ETX

Note: \*STX: Start Text (02)<sub>...</sub>

EXT: End Text (03)<sub>...</sub>

DEL: Data Link Escape (10)<sub>...</sub>

\*Data= <SS> <Card Data> <ES>

Please check <SS> and <ES> in page 14

4) Terminator For Serial Wedge Setting (Left-SW Block SW-7 should be set "ON")

	Send CR	Send CR, LF
SW-6	ON	OFF

CR: Carriage Return, LF: Line Feed

5) Wedge Type Selection

	Keyboard Emulation	Serial Wedge
SW-7	OFF	ON

6) Track 2 Account Number Only

If selected, the reader will send out the message before the first separator character("=") and discard the following message.

	Enable	Disable
SW-8	ON	OFF

### C. Default Settings:

ON: 1    OFF: 0

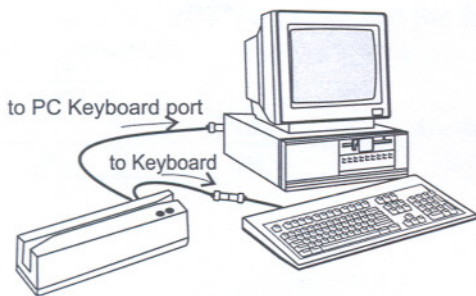
Models \ Switch	Left-SW Block								Right-SW Block							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
MSR-401, 402, 403	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
MSR-412, 423	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
MSR-430	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0
MSR-501, 502, 503	0	0	0	0	0	0	1	1	1	1	0	1	0	0	1	0
MSR-512, 523	0	0	0	1	0	0	1	1	1	1	0	1	0	0	1	0
MSR-530	0	0	0	1	1	1	1	1	1	1	0	1	0	0	1	0

## 6. INSTALLATION STEPS

### 1. For Keyboard Wedge Reader

(MSR -400 Series)

- Step 1 Turn the computer system power off, and unplug the keyboard cable.
- Step 2 Connect the keyboard cable into the short-cable of the Reader.
- Step 3 Connect the long-cable of the Reader into the keyboard input socket on the computer system.
- Step 4 Turn the computer system power on, then you can hear a beep sound for confirming the reader's self-test, and Green LED will be lit to indicate that the Reader is ready for reading.

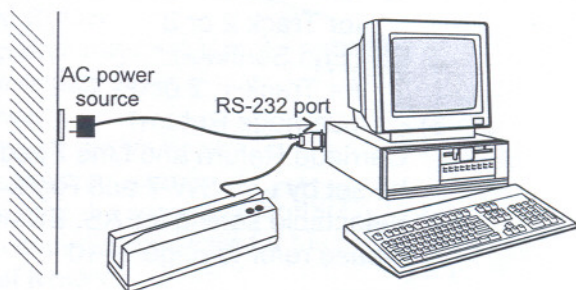




## 2. For RS-232 Serial Reader

(MSR -500 Series)

- Step 1 Turn the computer system power off.
- Step 2 Connect the Reader's cable to the RS-232 port on the computer system.
- Step 3 Connect the DC power adapter to the power-jack on the cable-end of the Reader, then plug the adapter into AC socket. You can hear a beep sound for confirming the Reader's self-test, and Green LED will be lit to indicate that the Reader is ready for reading.
- Step 4 Turn the system power on, and run your application software, include one driver utility, to get the data from the serial port which connects with the Reader.



## 7. OUTPUT DATA FORMAT

### 1. Single Track:

SS	Card Data	ES	←
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### 2. Dual Track:

SS	Track 1 or 3 Data	ES
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SS	Track 2 Data	ES	←
----	--------------	----	---

### 3. Triple Track:

SS	Track 1 Data	ES
----	--------------	----

SS	Track 2 Data	ES
----	--------------	----

SS	Track 3 Data	ES	←
----	--------------	----	---

Notes: 1) SS (Start Sentinel):

% for Track 1

; for Track 2 or 3

2) ES (End Sentinel):

? for Track 1, 2 or 3

3) ← (Carriage Return):

Carriage Return and Line Feed can be set by Left-SW-7 and Right-SW-6

4) Selectable setting for SS, ES and ←, please refer to page 7~10

## 8. SPECIFICATIONS

- Recording Method: Two-frequency coherent phase (F2F) compatible with ISO standard.
- Swipe Speed: 5 to 60 inch/sec.
- Power consumption: 80 mA(max.) at 5V-DC.
- Operating Temperature: 0~50 C.
- Humidity: 10%~90% relative.
- Magnetic Head Life: 300,000 passes minimum.
- Dimensions: 158mmL x 43mmW x 44mmH.
- Weight: 170mg.
- Cable length:
  - Keyboard Wedge Reader  
Reader to Keyboard: 0.3m  
Reader to Computer: 1.5m
  - Serial Reader  
Reader to Computer: 1.5m
- Power Requirements:
  - Keyboard Wedge Reader  
Support by the computer through keyboard port.
  - Serial Reader  
DC power adapter.(5V or 9V optional)
- Switch setting: Refer to page 7~11
- Interface:
  - Keyboard Wedge Reader  
5 pin din connector for AT/XT,  
6 pin mini-din connector for PS/2.  
4 pin mini-din connector for Mac.
  - Serial Reader
  - Serial Reader  
9 pin D-sub Female connector.