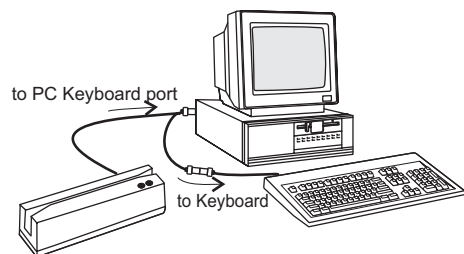


## 6. INSTALLATION STEPS

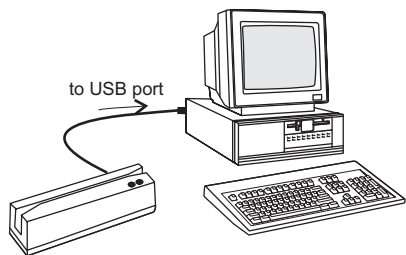
### 1. For Keyboard Wedge Reader

- 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.



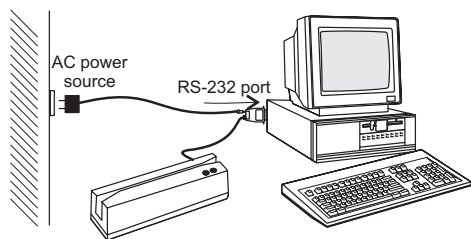
### 2. For USB Reader

- Step 1 To make sure the Windows USB utility is available in your computer.
- Step 2 Connect the MSR's USB cable to the USB port on the computer, the Green LED will be lit to indicate the MSR is ready for operation.



### 3. For RS-232 Serial Reader

- 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.



#### • 5V-DC power-jack (on the RS-232 cable-end):



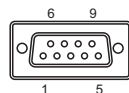
To be connected with 5V-DC power adapter.  
(Inner pin is positive)

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

#### • RS-232 connector:

D-Sub 9 pin Female

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



## 7. NORMAL OUTPUT DATA FORMAT

### 1. Single Track:

SS	Card Data	ES	←
----	-----------	----	---

### 2. Dual Track:

SS	Track 1 or 3 Data	ES	
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 can be set by Left-SW-7
  - 4) Selectable setting for SS, ES and ←

# User's Manual

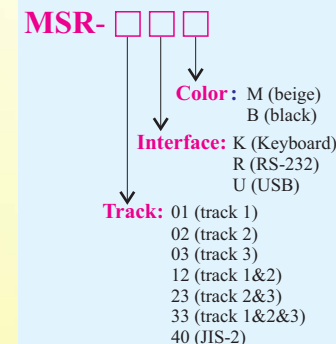
MAGNETIC STRIPE CARD READER

## Decoded MSR Series



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Custom Designed Card Readers are available.

## 1. INTRODUCTION

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

## 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 tracks decoding available.
- 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 power-retrieve cable is bundled to the Serial Reader.
- Power up diagnostics.
- Good read confirmation by beep sounds.
- Full one year limited warranty.
- Magnetic Head Life: 300,000 passes minimum, 1,000,000 passes version is available upon request.

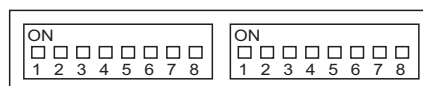
## 3. SPECIFICATIONS

- Decoding 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: 158mm(L) x 43mm(W) x 44mm(H).
- Weight: 170g.
- Cable length: 1.5 meters
- Interface: keyboard, RS-232 or USB.

## 4. LED INDICATORS

- 1) **Green LED:** Power on indicator.
- 2) **Red LED:** Good read indicator.

## 5. SWITCH SETTINGS



Left-SW Block

Right-SW Block

### A. Default Settings:

Switch	Left-SW Block								Right-SW Block							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Models																
MSR-KB/USB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MSR-RS-232	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0

ON : 1 OFF : 0

\* After altering the switch setting, you should turn on the power again.

### B. Left-SW Block:

#### 1.) Track Data Output Selection:

	Track Any	Track 1	Track 2	Track 3	Track 1&2	Track 2&3	Track 1&2&3
SW-1	OFF	ON	OFF	ON	OFF	ON	OFF
SW-2	OFF	OFF	ON	ON	OFF	OFF	ON
SW-3	OFF	OFF	OFF	OFF	ON	ON	ON

#### 2.) Language and JIS-2 & ALT Mode setting:

	U.S.	Germany	Spanish	France	Italy	Swedish	JIS-2	ALT
SW-4	OFF	ON	OFF	ON	OFF	ON	OFF	ON
SW-5	OFF	OFF	ON	ON	OFF	OFF	ON	ON
SW-6	OFF	OFF	OFF	OFF	ON	ON	ON	ON

#### 3.) Keyboard/USB Type "Carriage Return" Selection:

	CR Enable	CR Disable
SW-7	OFF	ON

#### 4.) Sending SS/ES Selection for KB/USB and RS-232:

	Send	Non-Send
SW-8	OFF	ON

### C. Right-SW Block:

#### 1.) KB/USB and RS-232 Wedge Device Selection:

	KB	RS-232
SW-1	OFF	ON

#### 2.) RS-232 Baud Rate Selection:

	1200	2400	4800	9600
SW-2	OFF	ON	OFF	ON
SW-3	OFF	OFF	ON	ON

### 3.) RS-232 Data-bit and Parity Selection:

	Data bit: 7 Parity: Odd	Data bit: 7 Parity: Even	Data bit: 8 Parity: Even	Data bit: 8 Parity: None
SW-4	OFF	ON	OFF	ON
SW-5	OFF	OFF	ON	ON

### 4.) RS-232 Send CR/LF:

	Send CR	Send CR/LF
SW-6	ON	OFF

### 5.) 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-7	ON	OFF

### 6.) Inter-character Delay for MSR-KB Series and Special Output Data Format for MSR-RS-232 Series

#### a. For MSR-KB/USB Series:

	10 ms	3 ms
SW-8	ON	OFF

#### b. For MSR-RS-232 Series:

	Special	Normal
SW-8	ON	OFF

### Special Output Data Format:

#### \* Single Track:

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

#### \* Dual Track:

STX	Track 1 or Track 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)hex  
 ETX: End Text (03)hex  
 DLE: Data Link Escape (10)hex  
 Data = <SS><Card Data><ES>  
 Please check <SS>and<ES>in Normal Output Data Format section