

SERIES 6200SA & 6200SE SWIPE MAGNETIC STRIPE CARD READER

Description

The Series 6200 Magnetic Stripe Card Reader is an OEM peripheral with an integral controller and a serial ASCII interface, either TTL-Level ASCII (Type SA) or RS-232C ASCII (Type SE). The unit reads data encoded on the magnetic stripe of standard credit-card size and on badges.

Host control of the Series 6200 Reader is limited to Clear-To-Send, Resend, and Reset. On power-up, the Series 6200 configures itself for a card read in accordance with the fixed operational protocol (as selected below), and upon a card read activates its Request-To-Send line. When the Host (interface mate) grants the Clear-To-Send, the Series 6200 Reader sends the card read data preceded by a transmission header (optional) and followed by an error code (if applicable).

Data Transmission & Error Codes

When the Clear-To-Send is granted, the Series 6200 sends the following string of ASCII characters:

Valid Read:	!T_ d d d d d d d d
Invalid Read:	!T_ d d d * d d * d _ ? e
No Card Read:	!T_ ? #

The transmission header ASCII "!T_" where "_" is a space, is optional, i.e., is specified when ordered as described below. The data string "d d d d d d" is the data read from the encoded track of the magnetic stripe card.

If a parity error is detected in any character read, that character is replaced by the ASCII "*" in the data string.

Any read errors are indicated in the transmission trailer ASCII "_?e", where the "_" is again an ASCII space, and "e" is an error code represented by one of the following ASCII characters:

<u>e</u>	<u>Error Condition</u>
B	Blank card (no flux reversals)
Z	All clocking bits
S	No Start Sentinel
E	No End Sentinel
L	Bad LRC Character
P	Parity error
#	No card read since module Reset

The Start Sentinel, End Sentinel, and LRC Character are not transmitted.

The interface communication format employed is:

1 start bit + ASCII LSB + + ASCII MSB + 2 stop bits

The word length is 7-bit plus a parity bit, and the transmission terminator is an ASCII "CR".

The interface I/O resources are:

Request To Send	- Activated when Reader has card data to transmit
Clear To Send	- Must be granted by Host for transmission
Transmit Data	- Reader data transmission line
Resend Data	- Reader received line (see below)
Card Detect (Option)	- Activated by card at entry OR exit (Specify)
Reset-	Activated by Host to Reset Reader (see below)

The Series 6200 Reader will retransmit its read buffer IF EITHER the ASCII character "T" is transmitted to the Resend Data line by the Host using the above interface communication format, OR the Resend Data line is activated for at least 20 microseconds.

A hard Reset of the Series 6200 Reader, required only if the Reader does not respond to the Host, is accomplished by the Host activating the Reset line for at least 20 microseconds.

Operating Mode

The Series 6200 is supplied with a fixed operating mode determined by the selection of one of each of the following operating parameters:

- Baud Rate: 2400, 4800, 9600, 19200
- Parity Bit: ODD, EVEN, NONE
- Data Direction: Forward, Reverse
- Data Format: ANSI/ISO ALPHA, ANSI/ISO BCD
- Transmission Header: !T_, none (where "_" is an ASCII space)

Interface Connection

The input/output circuits of the Series 6200SA are connected to the Host system by means of an unshrouded 2 x 5 strip-line connector (0.025" square posts) located at the rear of the module and marked "J1." The J1 connector pinouts are shown in the table on the following page for both the Series 6200SA TTL level ASCII version and the Series 6200SE RS-232C ASCII version.

Input power requirements for each version are also given in the table.

IMPORTANT NOTE: NOTE THAT THE "SENSE" OF THE INTERFACE LINES ARE OPPOSITE FOR THE SA TTL-ASCII AND THE SE RS-232C VERSIONS. TAKE CARE TO EMPLOY THE CORRECT SENSE FOR THE VERSION BEING USED.

Table 2. PC-Board Configuration JumpersJUMPER

BAUD RATE	F	G
2400	0	0
4800	X	0
9600	0	X
19200	X	X

PARITY BIT	D	E
EVEN	0	0
ODD	X	0
SPACE	0	X

JUMPER OPTION	A	C	K
DATA DIRECTION FORWARD	0		
DATA DIRECTION REVERSE	X		
DATA FORMAT BCD		0	
DATA FORMAT ALPHA		X	
!T HEADER			0
NO HEADER			X

X = JUMPER INSTALLED
0 = JUMPER NOT INSTALLED

J1 Connector Pinouts for Series 6200SA (2 x 5 strip-line)

<u>Pin #</u>	<u>Series 6200SA TTL-level ASCII</u>	<u>Levels</u>
1	RESET; LO = ON	LO = 0 VDC = 0
2	TRANSMIT DATA	HI = +5 VDC = 1
3	RESEND (RECEIVE) DATA; LO = ON	
4	REQUEST TO SEND; LO = ON	
5	CLEAR TO SEND; LO = ON	
6	CARD DETECT; LO = ON (Optional)	
7	0 VDC	
8	+5 VDC $\pm 10\%$ @ 120ma (typ)	
9	0 VDC	
10	+5 VDC	

J1 Connector Pinouts for Series 6200SE (1 x 11 strip-line)

<u>Pin #</u>	<u>Series 6200SE RS-232C ASCII</u>	<u>Levels</u>
1	RESET; HI = ON	LO = -12 VDC = 1
2	(KEY)	
3	TRANSMIT DATA	HI = +12 VDC = 0
4	RESEND (RECEIVE) DATA; HI = ON	
5	REQUEST TO SEND; HI = ON	
6	CLEAR TO SEND; HI = ON	
7	CARD DETECT; HI = ON (Optional)	
8	+5 VDC $\pm 10\%$ @ 160ma (typ)	
9	0 VDC	
10	N.C.	
11	N.C.	

Specifications**Magnetic Stripe Card**

- Encoding Density 25 to 300 BPI (Specify)
- Encoding Type (F/2F) Aiken Biphase
- Track Locations #1, #2, #3 (ANSI X4.16/ISO 3554)
- Magnetic Specs Per ANSI X4.16/ISO 3554
- Card Thickness 0.010 to 0.035 in
- Permissible Jitter $\pm 30\%$ Max, $\pm 22\%$ @ 80% Max Speed

Card Read Speed

- Read Speed @ 75 BPI 1.69 to 171 IPS
- Read Speed @ 210 BPI 0.60 to 61 IPS

Reliability

- Head Life >1,000,000 Card Passes

Power Module

- Input +5 VDC

Environment

- Operating Temp. 0° to 55° C

Mechanical

- Dimensions 3.1"W x 2.3"H x 8.7"L
- Orientation Any position
- Mounting Counter top