
Revision History

Version	Date	Context
1.0	2004.04.22	Golden release
1.1	2004/12/01	JIS II Tracks Information

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K. Part Number13

A. General Description

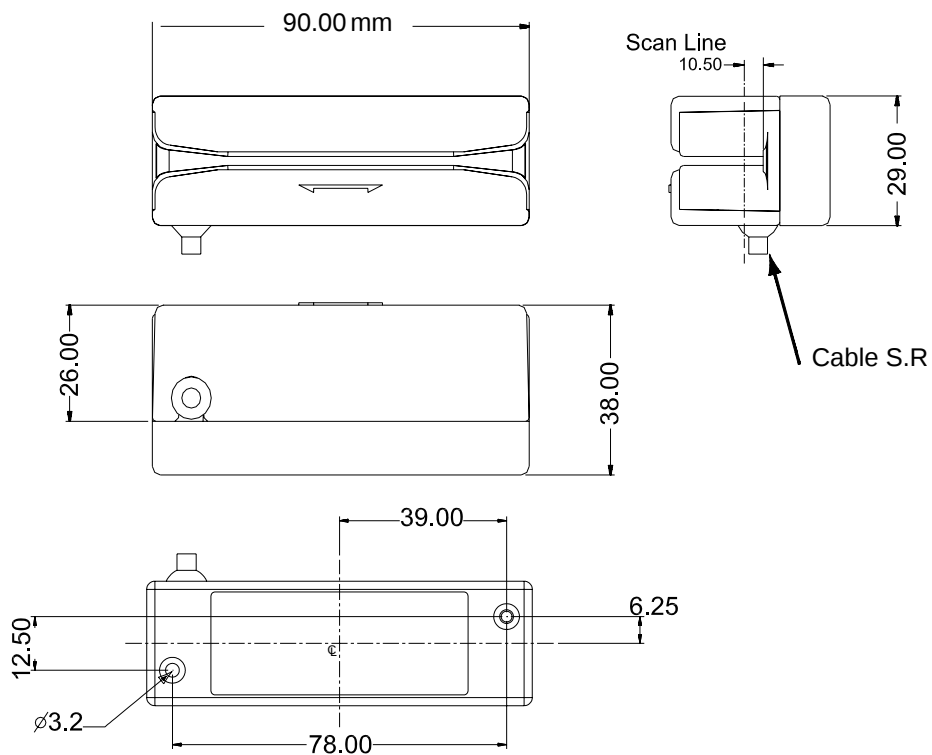
This magnetic stripe reader is well designed and constructed with high quality components. It conforms to ISO 7810-7813 standards and is designed for use in access control, retail and time attendance applications, etc. The TTL output allows the reader to be universally accepted by most decoders. The built-in decoder is an advanced and versatile decoding facility which works with variety of computer interfaces.



B. Physical Characteristics

Weight	
Body Weight	240 g (8.47 oz)
Cover Weight	16 g (0.56 oz)
Cable Weight	Approx. 70 g (2.5 oz)
Material	
PC&ABS	
Cable Length	150 mm (5.91 inch)
Decorder Board Weight	
11 g (0.39 oz)	
Dimension	90.00 mm X 29.00 mm X 38.00 mm

Mechanical drawing



C. Electrical Characteristics

a. Single Track

Interface	TTL	RS232	KB	RS232 TTL Level	USB
Supply Voltage	DC +5V $\pm 5\%$				
Output Voltage (Typ.)	+5V	$\pm 9V$	+5V	+5V	+5V
Output low Voltage (Max.)	-	-	0.4V	0.4V	0.4V
Current Draw					
Power On (Typ.)	10 mA	55 mA	50 mA	55 mA	55 mA
Stand by (Typ.)	10 mA	35 mA	25 mA	30 mA	30 mA
Operation (Typ.)	10 mA	45 mA	45 mA	50 mA	50 mA

b. 2 Tracks

Interface	TTL	RS232	KB	RS232 TTL Level	USB
Supply Voltage	DC +5V $\pm 5\%$				
Output Voltage (Typ.)	+5V	$\pm 9V$	+5V	+5V	+5V
Output low Voltage (Max.)	-	-	0.4V	0.4V	0.4V
Current Draw					
Power On (Typ.)	10 mA	65 mA	55 mA	60 mA	60 mA
Stand by (Typ.)	10 mA	40 mA	25 mA	30 mA	30 mA
Operation (Typ.)	10 mA	55 mA	50 mA	55 mA	55 mA

c. 3 Tracks

Interface	TTL	RS232	KB	RS232 TTL Level	USB
Supply Voltage	DC +5V $\pm 5\%$				
Output Voltage (Typ.)	+5V	$\pm 9V$	+5V	+5V	+5V
Output low Voltage (Max.)	-	-	0.4V	0.4V	0.4V
Current Draw					
Power On (Typ.)	10 mA	70 mA	60 mA	80 mA	65 mA
Stand by (Typ.)	10 mA	40 mA	30 mA	35 mA	35 mA
Operation (Typ.)	10 mA	60 mA	55 mA	65 mA	60 mA

D. Tracks Information

Track	1	2	3	JIS II
Standard	IATA	ABA	THRIFT/MINTS	THRIFT/MINTS
Recording Method	F2F(FM)	F2F(FM)	F2F(FM)	F2F(FM)
Recording Density	210 BPI	75 BPI	210 BPI	
Capacity	79 Characters	40 Characters	107 Characters	79 Characters
	7 Bits/Characters	5 Bits/Characters	5 Bits/Characters	7 Bits/Characters

E. Performance

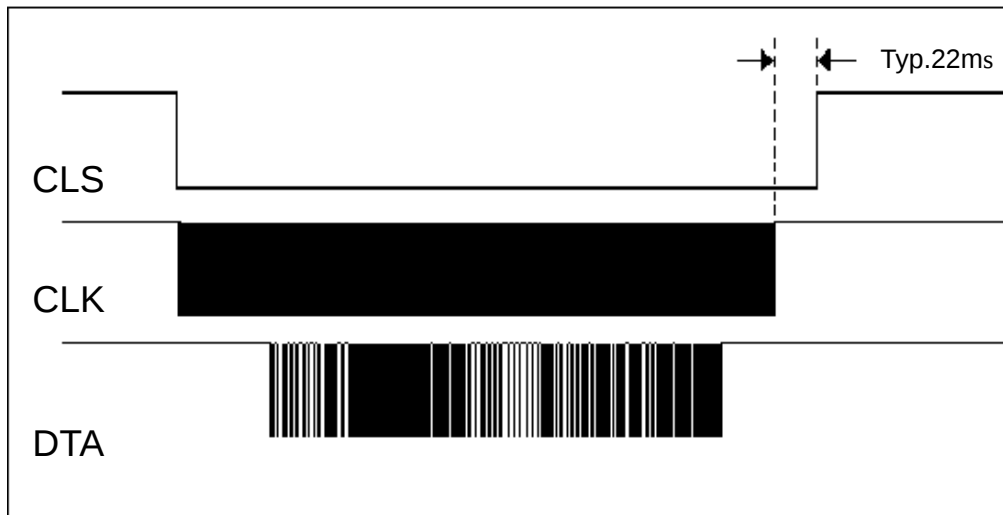
Read/Write	Read
Scan Speed	100 - 1000 mm / sec (3.9 - 39 inch / sec)
Direction	Bi-direction
Life Cycle	Approx. 300,000 passes(1,000,000passes is optional)

F. Environmental

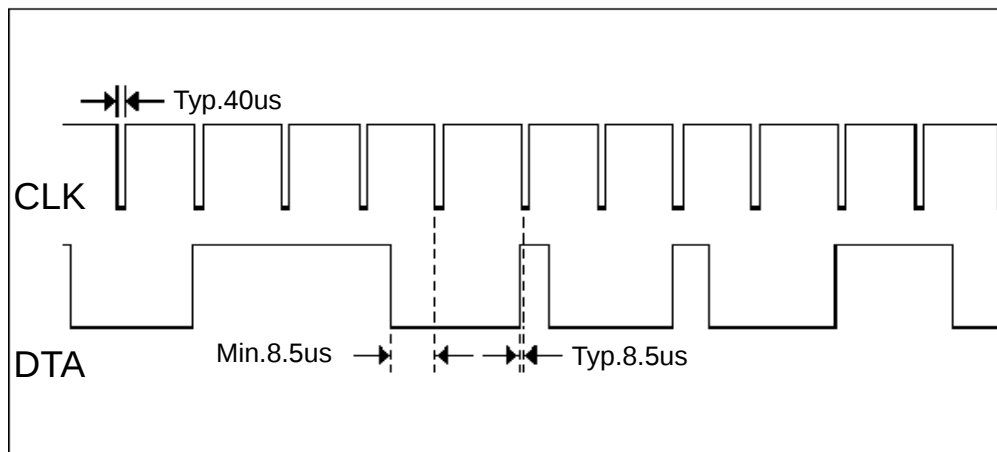
Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)
Storage Temperature	-20 °C to 70 °C (-4 °F to 158 °F)
Relative Humidity	20% to 95% (Non-condensing)

G. TTL-Timing Chart

1. Relationship between CLS, CLK and DTA



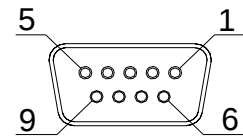
2. Detail relationship between CLK and DTA



H. Pin Assignment

(a) TTL Interface(DB 9 Female)

Pin No.	Function
1	S.O.S.
2	DATA
3	N.C.
4	N.C.
5	TRIGGER
6	P. E.
7	GND
8	N.C.
9	+5V

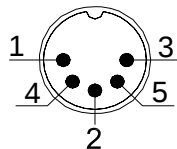


DB 9 Female

(b) PC Keyboard Interface

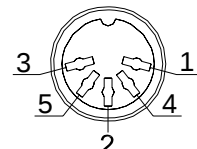
DIN 5 MALE

Pin No.	Function
1	HOST CLK
2	HOST DATA
4	GND
5	Vcc(+5V)



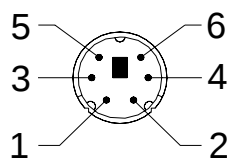
DIN 5 FEMALE

Pin No.	Function
1	KB CLK
2	KB DATA
4	GND
5	Vcc(+5V)



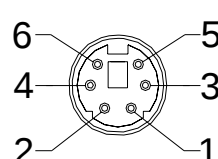
MiniDIN 6 MALE

Pin No.	Function
1	HOST DATA
3	GND
4	Vcc(+5V)
5	HOST CLK



MiniDIN 6 FEMALE

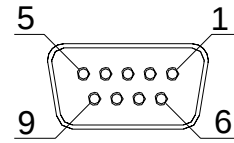
Pin No.	Function
1	KB DATA
3	GND
4	Vcc(+5V)
5	KB CLK



(c)RS-232 Keyboard Interface

DB9 Female with Power Lead

Pin No.	Function
2	TXD
3	RXD
5	GND
7	CTS
8	RTS
Power Lead	Vcc (+5V)

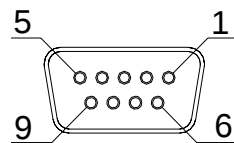


DB 9 Female



DB9 Female without Power Lead

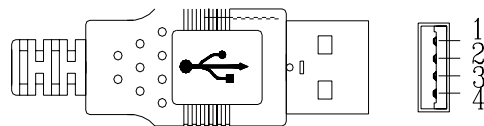
Pin No.	Function
2	TXD
3	RXD
5	GND
7	CTS
8	RTS
9	Vcc (+5V)



DB 9 Female

(d)USB Interface

Pin No.	Function
1	Vcc
2	D-
3	D+
4	GND



USB A TYPE

I. Reliability

Life Time	
Light Source	40,000 hours
MTBF(Calculated)	24,000 hours
Thermal Shock	
High Temp.	60 °C (140 °F)
Low Temp.	-20 °C (-4 °F)
Cycle time	20 minutes for high temp. , 20 minutes for low temp.
Cycles	5 cycles
Cable Bending Test	25,000 times minimum (30 times/min @ 500g/90 °)
Mechanical Shock	40 inch (100 cm) Drop on Concrete Surface