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PER100

SPEC,NO.:MCR-9160

SPECIFICATIONS
FOR
MAGNETIC CARD READER
Manual Slide type

Z U - M 1 1 2 1 □ 1

OCT. 1991

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1. INTRODUCTION

This specification describes about manual slide type magnetic card reader, featuring small size, light weight and high performance which enable to read card data encoded by following ISO2 standard.

2. PRODUCT NAME

- 2. 1 Product Name : Manual slide type magnetic card reader
- 2. 2 Model No. :

1 2 3 4 5 6 7 8 9 10
Z U — M 1 1 2 1 1

Magnetic head specification(S:standard)
(L:Long life)

3. FUNCTION

- 3. 1 Card operation :One way (Refer to appearance)
- 3. 2 Read/Write :Read only

4. EQUIPMENT SPECIFICATION

- 4. 1 Out dimension :90mm(L) × 25mm(W) × 24mm(H)
- 4. 2 Weight :Approximately 25g
- 4. 3 Supplied voltage
 - (1) Supplied voltage :+5VDC ± 10% / Lipple(Less than50mVp-p)
 - (2) Current consumption :TYP. 3mA, MAX. 6mA
 - (3) Maximum applied voltage :+7VDC
- 4. 4 Connector :Molex-Japan Co.,Ltd.53261-0690(Refer to 7.5)
- 4. 5 Environment requirement :At indoor

5. BASIC FEATURES

- 5. 1 Card operating speed : 8~150 cm/sec
- 5. 2 Magnetic head
 - (1) Numbers of channel : 1
 - (2) Core width : 1.5mm
 - (3) Core material : Permalloy(S:Standard)
 Sendust (L:Long life)

6. CARD STANDARD

6. 1 Card standard

Card Standard	ISO
	Track 2nd
Recording density	75 BPI
Recording capacity	40 Characters (5bit code)
Recording method	FM

Track 2nd... ISO 2 (ABA) : American Bankers Association Standard

6. 2 Location of tracks

ISO (1 Track) ISO 7810, ISO 7811

Coercive force(Hc): 300 ~ 3000(Oe)

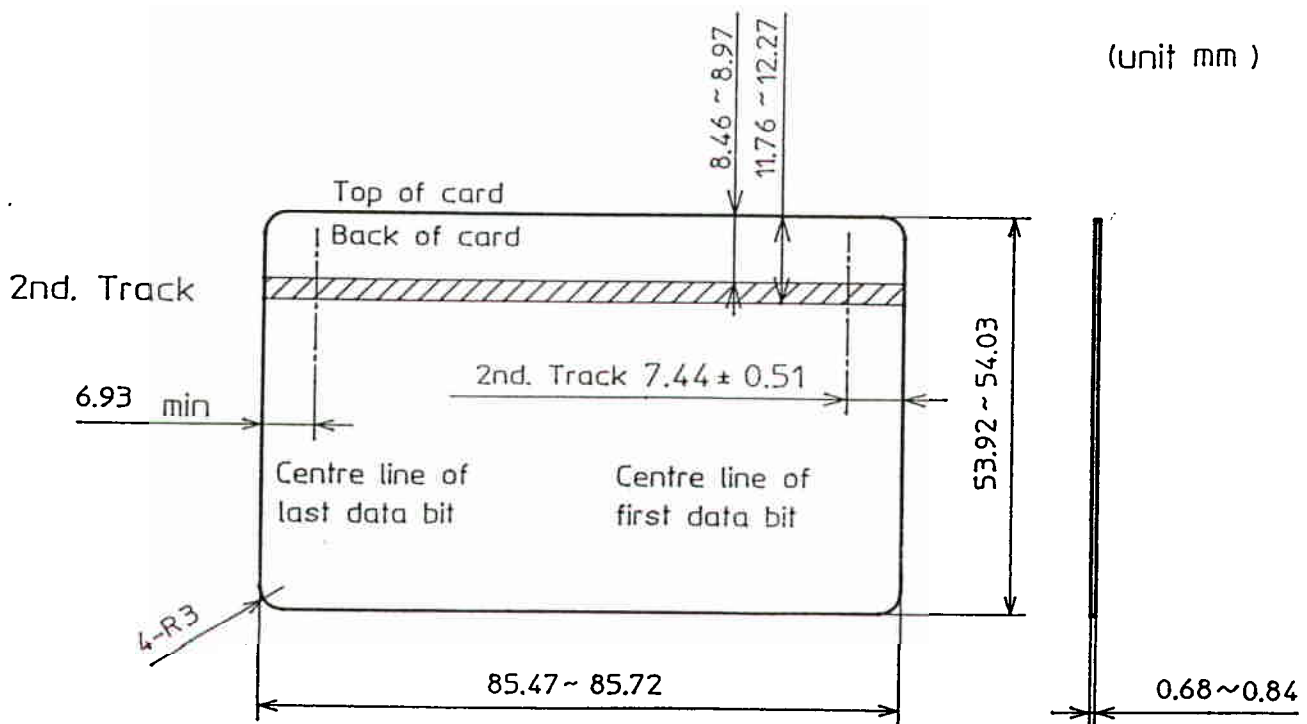


Fig.6.2 Location of tracks

7. CIRCUIT CONSTRUCTION

7. 1 Block diagram

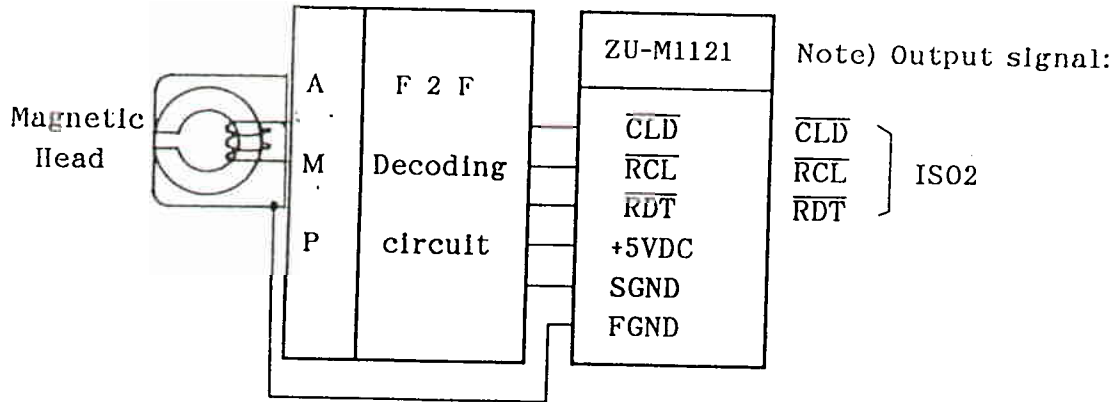


Fig 7.1 Block diagram

7. 2 Interface requirement

- (1) Signal Level : CMOS level
- (2) Signal Logic : Low active
- (3) Connection condition

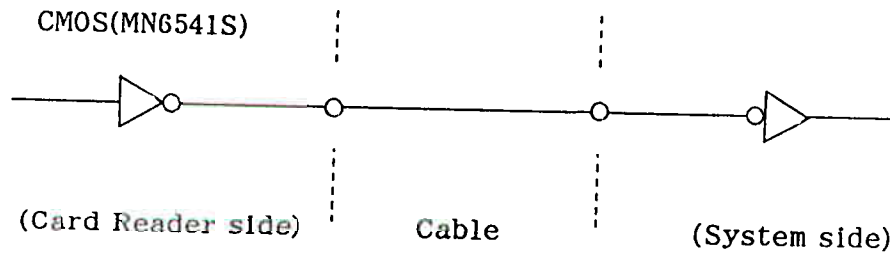


Fig 7.2 Connection of output circuit

(4) Output voltage

Table 7.2 Output voltage

	Min(V)	Max(V)	Conditions
H level "0"	4.0	Vcc	$I_{OH} = -1.0\text{mA}$
L level "1"	-	0.4	$I_{OL} = 4.0\text{mA}$

1 2 . 3 Cautions

- (1) Use specified card.(ISO)
Use the card with the coercive force of 300~3000 Oe for ISO.
- (2) Store the card carefully so as not to soil, injure or deform it.
In particular, deposit of solid matter on the magnetic stripe surface may result in a trouble.
- (3) To prevent wear of the magnetic head, clean the head by periodically passing a cleaning card.
For example, in a clean office room, pass the cleaning card about once a week. If the magnetic head is heavily stained, clean the head by soaking the felt part of the cleaning card in alcohol properly.
- (4) When installing the card reader, avoid dusty, hot or damp place, or near magnetic field or object generating inductive noise (printer, LED display unit, CRT, etc.).
Do not use in a place exposed to direct sunlight.
- (5) When storing, pay attention to dust, heat, humidity and other environmental conditions.
- (6) Do not touch the printed circuit board with bare hand.
Note particularly static electricity.
- (7) Do not touch the flexible printed circuit board with hands.
- (8) Do not supply power from other outlet than connector.
Pay special attention to the polarity of power source and wrong connection of connector.
- (9) Check the noise, static electricity, etc., with the card reader being incorporated in the equipment.

7. 3 Explanation of input/output signal

Input/output signals are \overline{CLD} , \overline{RCL} , \overline{RDT} , SGND, FGND and effective operation Mode for each of these signals shall be " L" level for all.

- (1) \overline{CLD} (CARD LOAD) : The \overline{CLD} line will be Low when a Magnetic Card is running in the Magnetic Card Reader.
The \overline{CLD} line will be High when the Card is stopped or not present in the Card reader.
- (2) \overline{RCL} (READ CLOCK): This is used to sample the data line by it's falling edges.
The time relationship of the clock with respect to the order signals is shown in Figure 7.4.
- (3) \overline{RDT} (READ DATA) : At the moment \overline{RCL} change from High to Low; \overline{RDT} is " 1" when the \overline{RDT} line is Low , and \overline{RDT} is " 0" when the \overline{RDT} line is High.
- (4) S G N D : Signal GND
- (5) F G N D : Frame GND

7. 4 Output signal timing chart

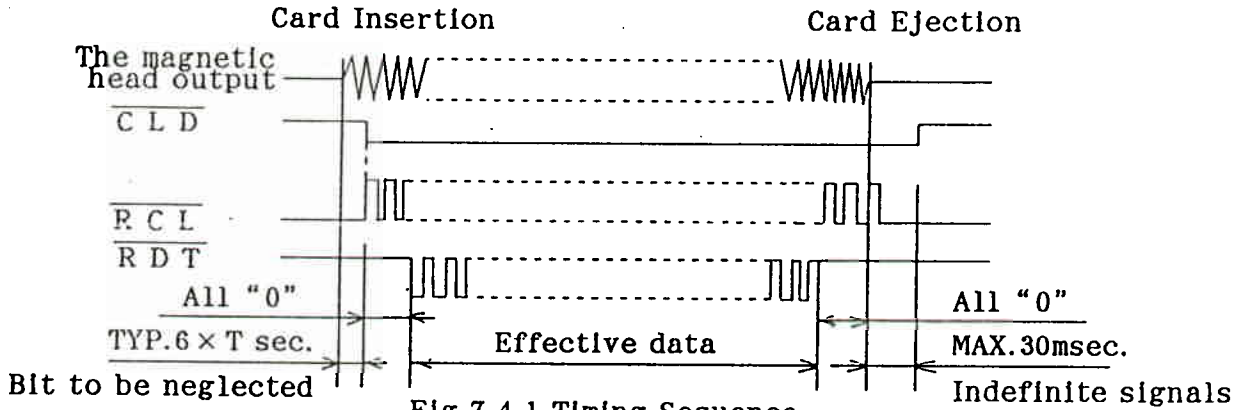


Fig 7.4.1 Timing Sequence

\overline{RCL} & \overline{RDT} Detail timing chart

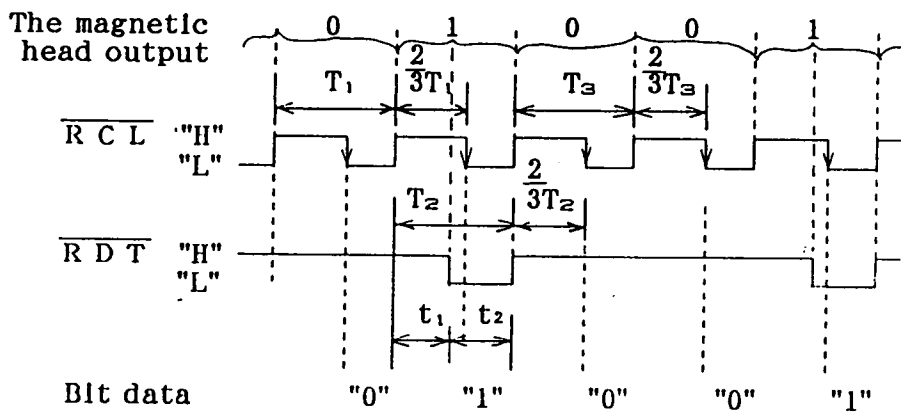


Fig 7.4.2 Timing Sequence (Detail)

When the jitter of the magnetic head output is 0%, the following equation is satisfied.

$$T = T_1 = T_2 = T_3$$

$$t_1 = t_2$$

$$T \text{ (sec)} = \frac{2.54 \text{ cm/inch}}{\text{Recording density (BPI)}} \cdot \frac{1}{\text{Card speed (cm/sec)}}$$

7. 5 Terminal No. of connector
- (1) Maker : Molex-Japan Co.,Ltd.
 - (2) Model No. Connector 53261-0690 (Connect for PC. Board)
 - Housing 51021-0600
 - Terminal 50079-8000
 - (3) Pin No. & Signal Name

ZU-M1121 (Card reader side)

Connector Pin No.	Signal Name
1	FGND
2	SGND
3	+5VDC
4	$\overline{\text{RDT}}$
5	$\overline{\text{RCL}}$
6	$\overline{\text{CLD}}$

Note) : Make sure to use the connection cable of less than 300mm length for the card reader.

8. ENVIRONMENTAL CHARACTERISTICS

- 8. 1 Operating Temperature Range : -20 ~ 60°C
- 8. 2 Operating Humidity Range : 10 ~ 90%RH (No condensation allowed)
- 8. 3 Storage Temperature Range : -30 ~ 70°C
- 8. 4 Storage Humidity Range : 10 ~ 95%RH (No condensation allowed)
 - *Place the card reader in the standard environment (temperature: 20 ± 5°C, humidity: 35 to 60%RH). Leave it for 12 hours, and measure the functions. Make sure no abnormality is found.
- 8. 5 Vibration : Vibration sweep 10 ~ 50 Hz/mm
X, Y, Z directions
- 8. 6 Shock durability : 30G
- 8. 7 Others : Make sure the source of noise that may deteriorate the characteristics of the card reader is not present around the card reader.

1. APPEARANCE
ZU-M1121*1

