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KDR-9600 SERIES

MANUAL INSERTION TYPE HYBRID (IC , MAGNETIC CARD) READER


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A P P R O V A L		

RESP. DEPT.	R & D		ORIGINATOR	LEE SANG YOUNG		
APPROVAL & CONFIRMATUON	DEPT.	Int'l Sales				
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REVISION HISTORY

CHECK	ISSUED PATE	SCRIPTION	TOTAL PAGE
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REVISION	1999.11.22	- NEW IC KD-2420A CHANGE SHEET CHANGE	9
REVISION		- OPERATING/CONSERVATION/ POWER CONSUMPTION CHANGE	9

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1. OVERVIEW

KDR-9600 series is a set of manual insertion type card read/write that provide for access to the IC card conforming to ISO 7816 , CP-8 and also read magnetically encoded data from magnetic stripes conforming to ISO 7811 at option.

2. CONFIGURATION TABLE

MODEL	Dimensions (mm)			ISO STANDARD				Remark
	W	L	H	I (IATA)	II (ABA)	III (MINTS)	IC	
KDR-960A	99.0 x 120.0 x 72.5						R/W	IC Reader
KDR-962A					R		R/W	IC & Mag. Reader
KDR-965A				R	R		R/W	IC & Mag. Reader
KDR-966A					R	R	R/W	IC & Mag. Reader
KDR-968A				R	R	R	R/W	IC & Mag. Reader

* OPTION(A)


OPTION NO.A	OPTION				
	BEZEL	SHUTTER	IC-8PINS	IC-16PINS	MAG ONLY
0	O	O	O	X	X
2	O	O	X	O	X
4	X	O	O	X	X
6	X	O	X	O	X

3. FEATURES

- 3.1. The IC contact has gold-plated pins individually moving up and down for a smooth landing on the IC with uneven surface.
- 3.2. Mag. Head and Chip contacts are located on the opposite side.
- 3.3. Card locking and unlocking system are controlled by motor.
- 3.4. The card can be removed manually at power break-down(option)
- 3.5. It has a hole to drop wrong inserts.(Half card, Coin)
- 3.6. The CP-8 location is available(option)


4. ENVIRONMENTAL REQUIREMENTS

- 4.1. Operating Temperature and Humidity : 0 ~ 50°C , 20 ~ 90% RH
- 4.2. Conservation Temperature and Humidity : -20 ~ 70°C , 0 ~ 95% RH
- 4.3. Vibration : Amplitude 2mm 2G, 10~50Hz/min X,Y,Z direction
- 4.4. Shock Resistance : Up to 30 G, 11msec

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5. SPECIFICATIONS

5.1. Card Standard	: ISO 7811, ISO 7816, CP-8
5.2. Mag. Track No	: I (IATA), II (ABA), III (MINTS)
5.3. Mag. Reading Method	: F2F (FM)
5.4. Mag. Recording Density	: 210 BPI (I, III), 75 BPI (II)
5.5. Mag. Recording Capacity	: I (IATA) - 79 Characters.(data 6 bit + odd parity 1 bit) : II (ABA) - 40 Characters.(data 4 bit + odd parity 1 bit) : III (MINTS) - 107 Characters.(data 4 bit + odd parity 1 bit)
5.6. Card Thickness	: 0.76 ± 0.08 mm
5.7. Power Consumption	
5.7.1. Input voltage	: + 5V DC ± 5%
5.7.2. Ripple	: Less than 50 mVp-p
5.7.3. Stand-by	: Less than 15 mA
5.7.4. Mag. Reader	: Less than 20 mA (Single track) : Less than 25 mA (Double track) : Less than 35 mA (Triple track)
5.7.5. Motor	: Less than 700 mA (at +5V DC)
5.8. IC Contact Resistance	: Less than 0.5 Ω
5.9. Time for motor Operation	: 50 msec (Approx.)
5.10. Operation Locus	: Indoor Only (Option : Outdoor)
5.11. Mag. Card Feeding Speed	: 10 ~ 80 cm/sec (INSERT & BACKWORD READ) ※ TRIPLE TRACK(KDR-9680) BACK WORD READ ONLY
5.12. Life-time	: HEAD - Min. 500,000 Cycles. IC CARD CONTACT - Min. 350,000 Cycles (1 Cycle = 2 Pass)

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6. SIGNAL INTERFACE

PIN NO.	SIGNAL NAME				REMARK
	IC ONLY (KDR-960A)	SINGLE TRK (KDR-962A)	DUAL TRK (KDR-965A,6A)	TRIPLE TRK (KDR-968A)	
1	IC - VCC	IC - VCC	IC - VCC	IC - VCC	
2	IC - RST	IC - RST	IC - RST	IC - RST	. IC-VCC : Power Supply (IC)
3	IC - CLK	IC - CLK	IC - CLK	IC - CLK	. IC-RST : Reset Signal (IC)
4	IC - REF1	IC - REF1	IC - REF1	IC - REF1	. IC-CLK : Clock Signal (IC)
5	IC - GND	IC - GND	IC - GND	IC - GND	. IC-REF : Not Defined (IC)
6	IC- Vpp	IC- Vpp	IC- Vpp	IC- Vpp	. IC-GND : Ground (IC)
7	IC - I/O	IC - I/O	IC - I/O	IC - I/O	. IC-VPP : Programming Power Supply (IC)
8	IC - REF2	IC - REF2	IC - REF2	IC - REF2	. IC-I/O : Serial Data Input/Output (IC)
9	PH3*	PH3*	PH3*	PH3*	. PH1 : Detect Card Front
10	PH1*	PH1*	PH1*	PH1*	. PH2 : Detect Card Latch
11	VCC	VCC	VCC	VCC	. PH3 : Detect Card Status
12	MOS*	MOS*	MOS*	MOS*	. MOS : Card lock/unlock Signal
13	GND	GND	GND	GND	. LED1 : Control LED1(Red)
14	LED1(Red)	LED1(Red)	LED1(Red)	LED1(Red)	. LED2 : Control LED2(Greed)
15	N/C	RDT*1,2,3	RDT*1,3	RDT*1	. RDT : Read Data Signal
16	N/C	RCL*1,2,3	RCL*1,3	RCL*1	. RCL : Read Clock Signal
17	GND	GND	GND	GND	. CLS : Card Load Signal
18	PH2*	PH2*	PH2*	PH2*	
19	LED2(Greed)	LED2(Greed)	LED2(Greed)	LED2(Greed)	. 1 : ISO - I
20	N/C	CLS*1,2,3	CLS*1,3	CLS*1	. 2 : ISO - II
21	-	-	RDT*2	RDT*2	. 3 : ISO - III
22	-	-	RCL*2	RCL*2	
23	-	-	CLS*2	CLS*2	. "*" means active "LOW"
24	-	-	-	RDT*3	. "-" means not used
25	-	-	-	RCL*3	. N/C : not connected
26	-	-	-	CLS*3	. LED1,2 : Option
Connector	HIF3FB-20PA-2.54DS		HIF3FB-26PA-2.54DS		

Connector vendor : HIROSE KOREA , Option connector vendor : AMP (20Pin : 104340-4, 26Pin : 104340-6)

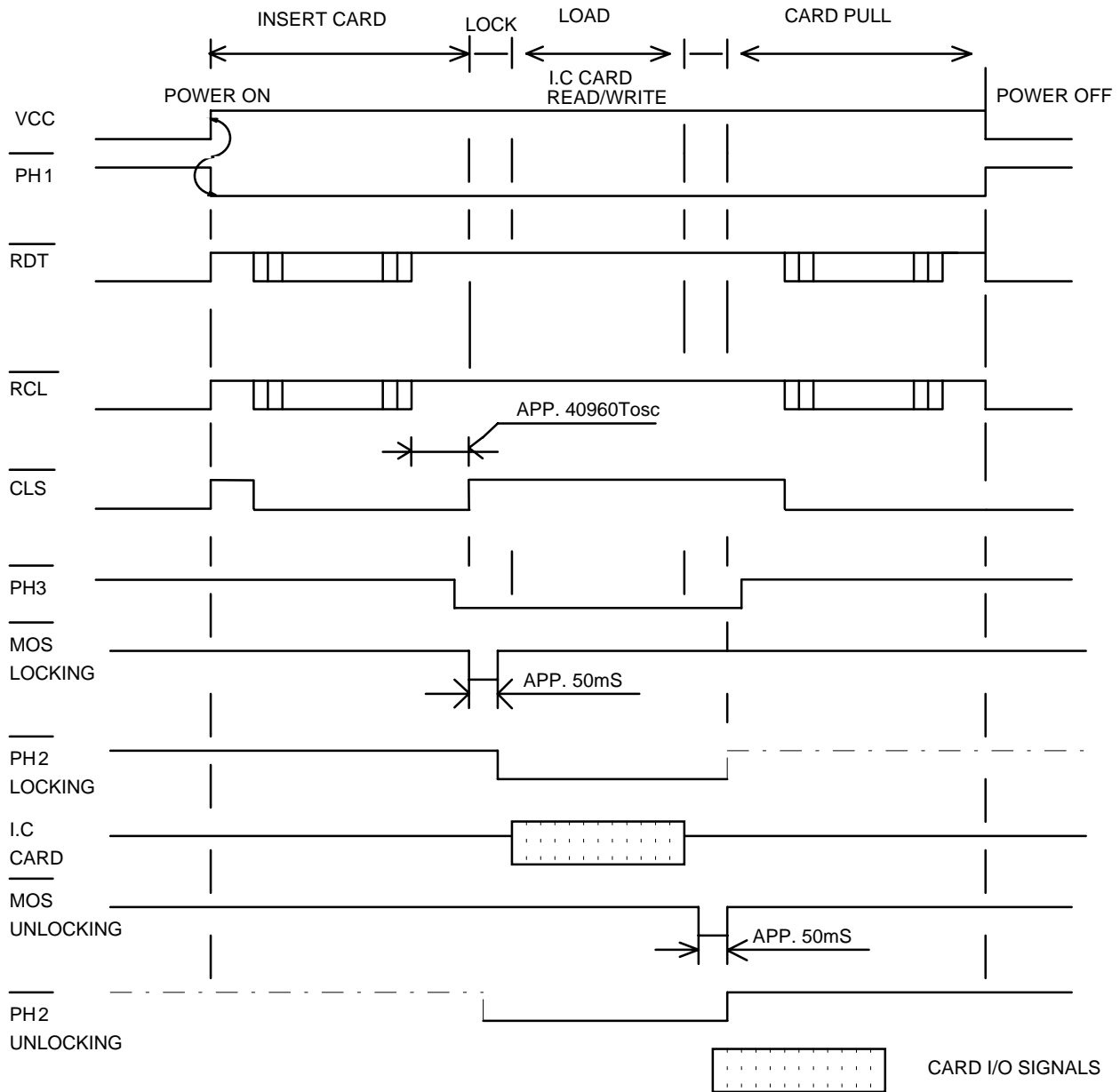
7. OUTPUT VOLTAGE LEVELS

7.1. High Level : 2.4V min (IOH = 0.4mA)

7.2. Low Level : 0.8V max (IOL = 8.0 mA)

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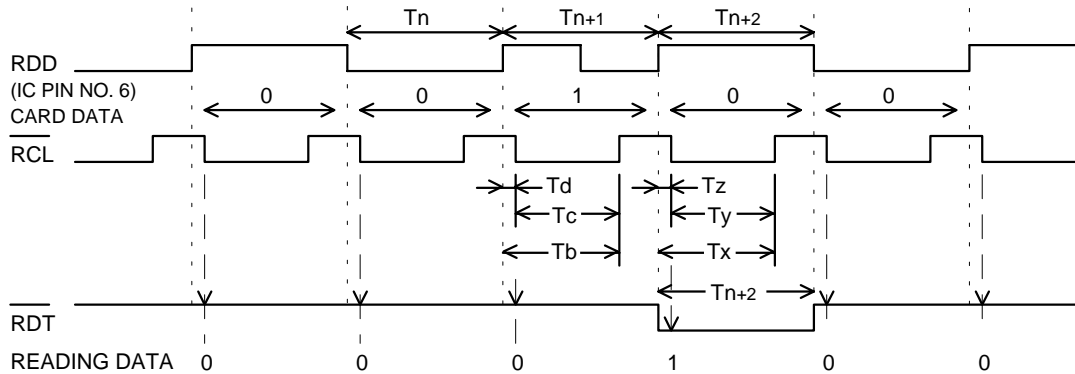
8. TIMING CHART



NOTE 1. IC ONLY MODEL EXCEPT RCL, RDT, CLS SIGNALS.
 2. Mag. ONLY MODEL EXCEPT IC CARD SIGNAL.

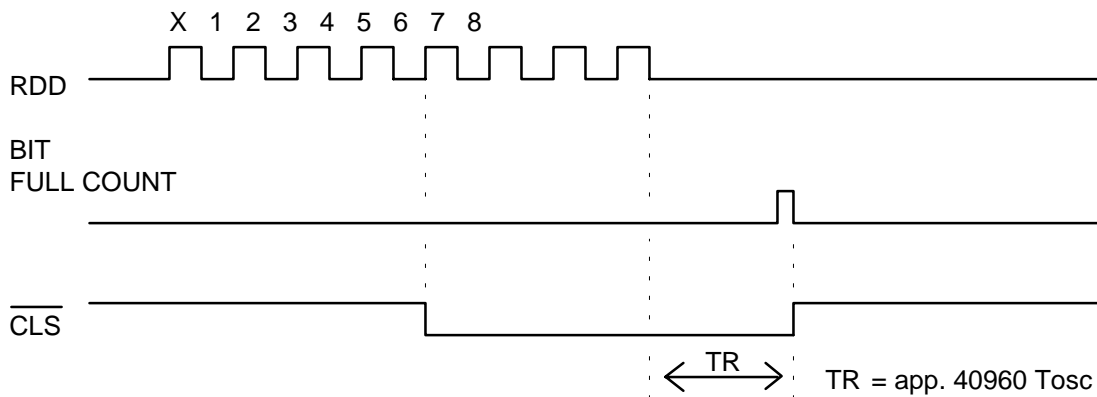
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DETAIL TIMING (RCL)



T_{n+1}		T_{n+2}	
T_d	$16 T_{osc}$	T_z	$16 T_{osc}$
T_c	$(5/7 \times T_n) - T_d$	T_y	$(5/7 \times T_{n+1}) - T_z$
T_b	$5/7 \times T_n$	T_x	$5/7 \times T_{n+1}$

CLS generation (SELECT input voltage is low)



9. NOTES FOR BETTER OPERATION

- 9.1. The card should be inserted in the specified direction.
- 9.2. Cards which meet standards should be used.
- 9.3. Cards should not be dirty, scratched or deformed.
- 9.4. Cards should not be placed near magnets or damp.
- 9.5. Standard condition is temperature at $20^\circ\text{C} \pm 5^\circ\text{C}$ and humidity at 35%~60% RH
- 9.6. Can be changed to improve by function & quantity without prior notice.
- 9.7. Specifications are subject to be changed without prior notice.

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10. OUTLINE DIMENSIONS(WITH BEZEL)

