

KDR-9600 SERIES MANUAL INSERTION TYPE CARD READER



GLOBAL LIGHT[®]
OEM Division

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Hybrid reader with Motor Operational Locking System

This manual insertion reader has an electronic locking/unlocking function by motor operation with auto unlocking function in power failure.

This units feature low power consumption comparing to solenoid locking system.

- **Power Supply:** DC5V±5%
- **Power Consumption:** Max.12mA per track (Except IC & Motor) Max.100mA (Motor)
- **Lifetime (Magnetic Head):** 300,000 cycle
- **IC Contact:** Min. 500,000 contacts
- **Card Feeding Speed:** 12~90cm/sec
- Optional bezel is available

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	IC Reader
KDR-9600	70.0 x 115.2 x 29.5						R/W	IC & Mag. Reader
KDR-9610				R			R/W	IC & Mag. Reader
KDR-9620					R		R/W	IC & Mag. Reader
KDR-9630						R	R/W	IC & Mag. Reader
KDR-9650				R	R		R/W	IC & Mag. Reader
KDR-9660					R	R	R/W	IC & Mag. Reader
KDR-9680				R	R	R	R/W	IC & Mag. Reader

* Option

OPTION NO. A	Option				
	BEZEL	SHUTTER	IC-8PINS	IC-16PINS	MAG ONLY
0	O	O	O	X	X
1	O	X	O	X	X
2	O	O	X	O	X
3	O	X	X	O	X
4	X	O	O	X	X
5	X	X	O	X	X
6	X	O	X	O	X
7	O	O	X	X	O
8	O	X	X	X	O
9	X	X	O	WITHOUT MECHANISM	

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 back-out.(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 °C ~ 50 °C, 5 ~ 90% RH
- 4.2 Conservation Temperature and Humidity: -20 °C ~ 70 °C, less than 95% RH
- 4.3 Vibration: Amplitude 2mm 2G, 10~50Hz/min X,Y,Z direction
- 4.4 Shock Resistance: Up to 30 G, 11 msec

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 Vpp
 - 5.7.3 Stand-by: Less than 15 Vpp
 - 5.7.4 Mag. Reader: Less than 25 Vpp (Single track)
 Less than 35 Vpp (Double track)
 Less than 45 Vpp (Triple track)
 - 5.7.5 Motor: Less than 400 Vpp (at +5V DC)
- 5.8 IC Contact Resistance: 0.5 Ω (Max.)
- 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
- 5.12 Life-time (Option): HEAD - Min. 800,000 pass.
 LONG LIFE HEAD - Min. 1,000,000 pass. (Option)
 IC CARD CONTACT - Min. 700,000 pass.

6. Signal Interface

PIN NO.	SIGNAL NAME			REMARK
	IC ONLY (KDR-9600)	SINGLE TRK (KDR- 9610, 20, 30)	DUAL & TRIPLE TRK (KDR-9650, 9660 & 9680)	
1	IC - VCC	IC - VCC	IC - VCC	
2	IC - RST	IC - RST	IC - RST	IC-VCC: Power Supply (IC)
3	IC - CLK	IC - CLK	IC - CLK	IC-RST: Reset Signal (IC)
4	IC - REF1	IC - REF1	IC - REF1	IC-CLK: Clock Signal (IC)
5	IC - GND	IC - GND	IC - GND	IC-REF: Not Defined (IC)
6	IC-Vpp	IC-Vpp	IC-Vpp	IC-GND: Ground (IC)
7	IC - I/O	IC - I/O	IC - I/O	IC-VPP: Programming Power Supply (IC)
8	IC - REF2	IC - REF2	IC - REF2	IC-I/O: Serial Data Input/Output (IC)
9	PH3*	PH3*	PH3*	PH1: Detect Card Front
10	PH1*	PH1*	PH1*	PH2: Detect Card Latch
11	VCC	VCC	VCC	PH3: Detect Card Status
12	MOS*	MOS*	MOS*	MOS: Card lock/unlock Signal
13	GND	GND	GND	RDT: Read Data Signal
14	N/C	N/C	N/C	RCL: Read Clock Signal
15	N/C	RDT*1,2,3	RDT*1,3	CLS: Card Load Signal
16	N/C	RCL*1,2,3	RCL*1,3	
17	GND	GND	GND	1: ISO -
18	PH2*	PH2*	PH2*	2: ISO -
19	N/C	N/C	N/C	3: ISO -
20	N/C	CLS*1,2,3	CLS*1,3	
21	-	-	RDT*2	"" means active "LOW"
22	-	-	RCL*2	"-" means not used
23	-	-	CLS*2	N/C: not connected
24	-	-	RDT*3	
25	-	-	RCL*3	
26	-	-	CLS*3	
Connector	HIF3FB-20PA-2.54DS	HIF3FB-20PA-2.54DS	HIF3FB-26PA-2.54DS	

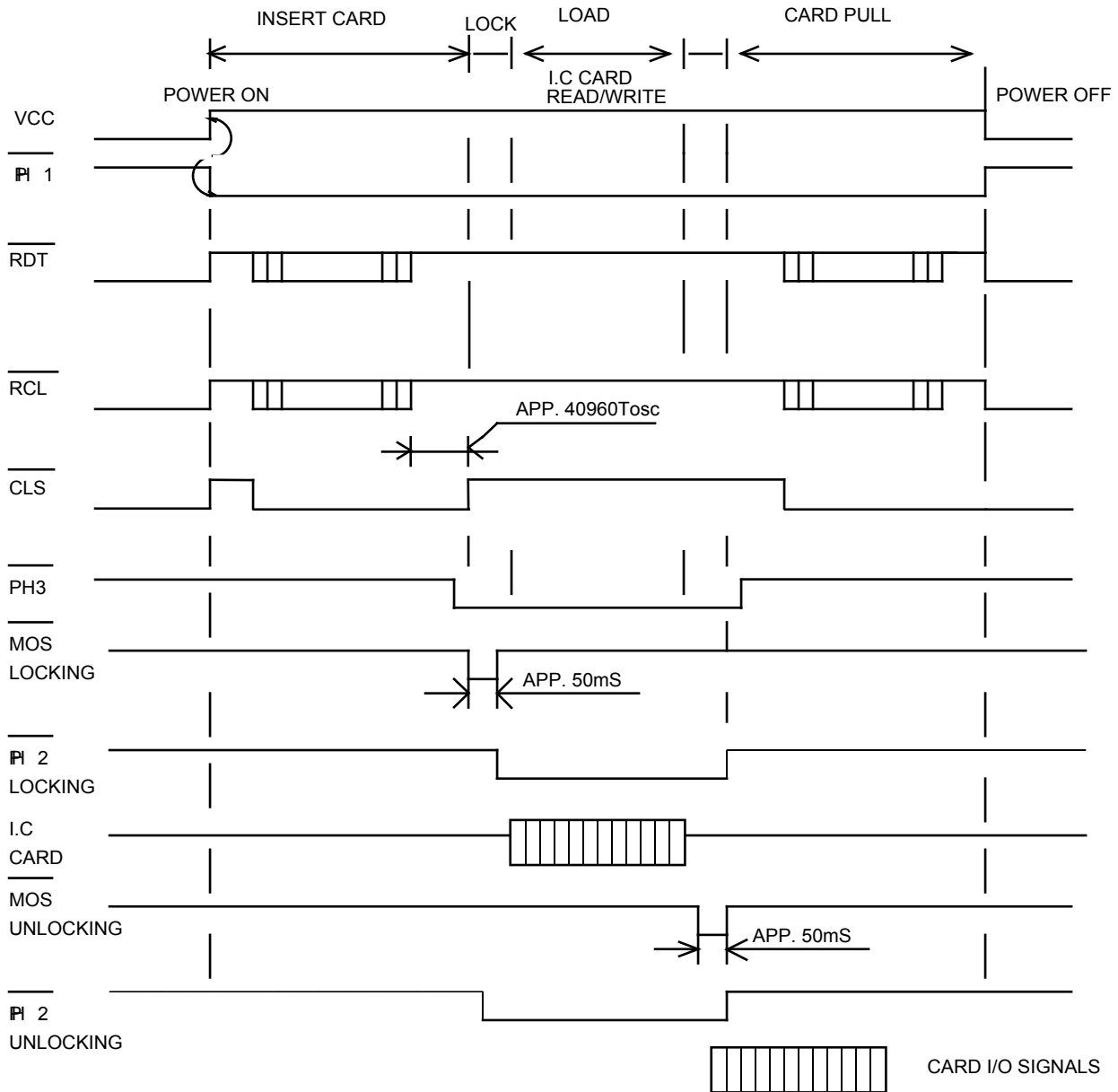
Connector vendor: HIROSE KOREA,

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

7. Output Voltage Levels

- 1. High Level:** 2.4V min (IOH = 0.4mA)
- 2. Low Level:** 0.8V max (IOL = 8.0 mA)

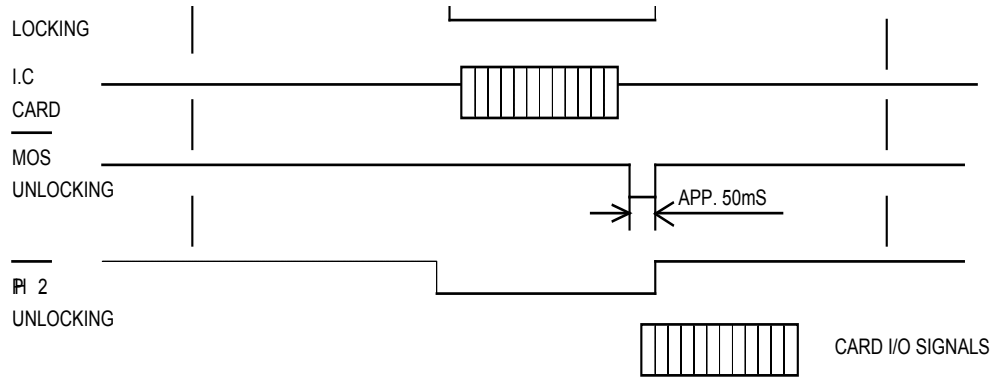
8. Timing Chart



NOTE:

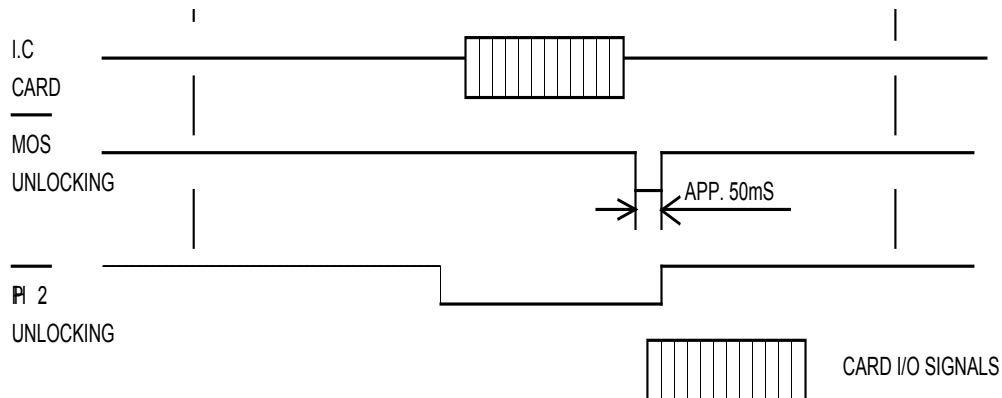
- 1. IC ONLY MODEL EXCEPT RCL, RDT, CLS SIGNALS.**
- 2. Mag. ONLY MODEL EXCEPT IC CARD SIGNAL.**

Detail Timing (RCL)



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

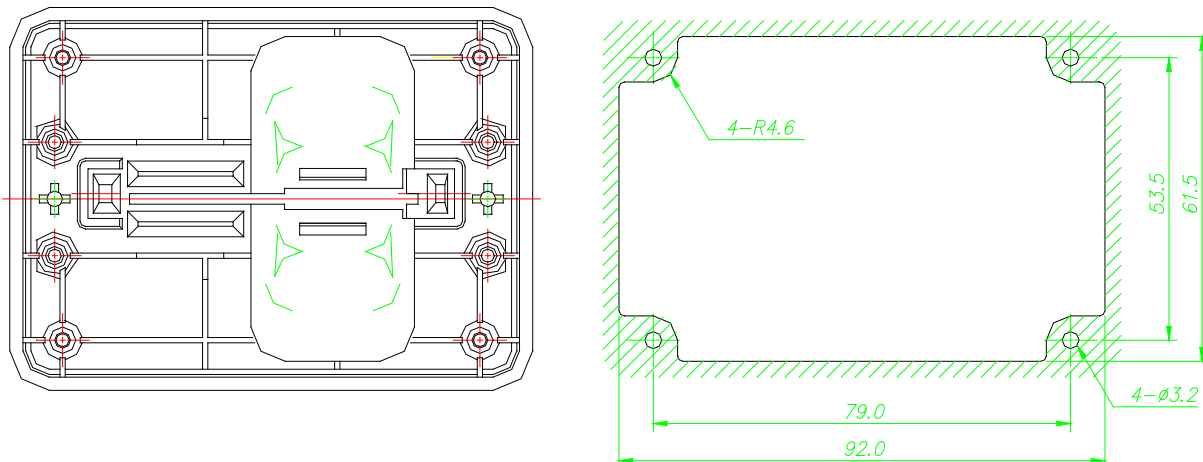
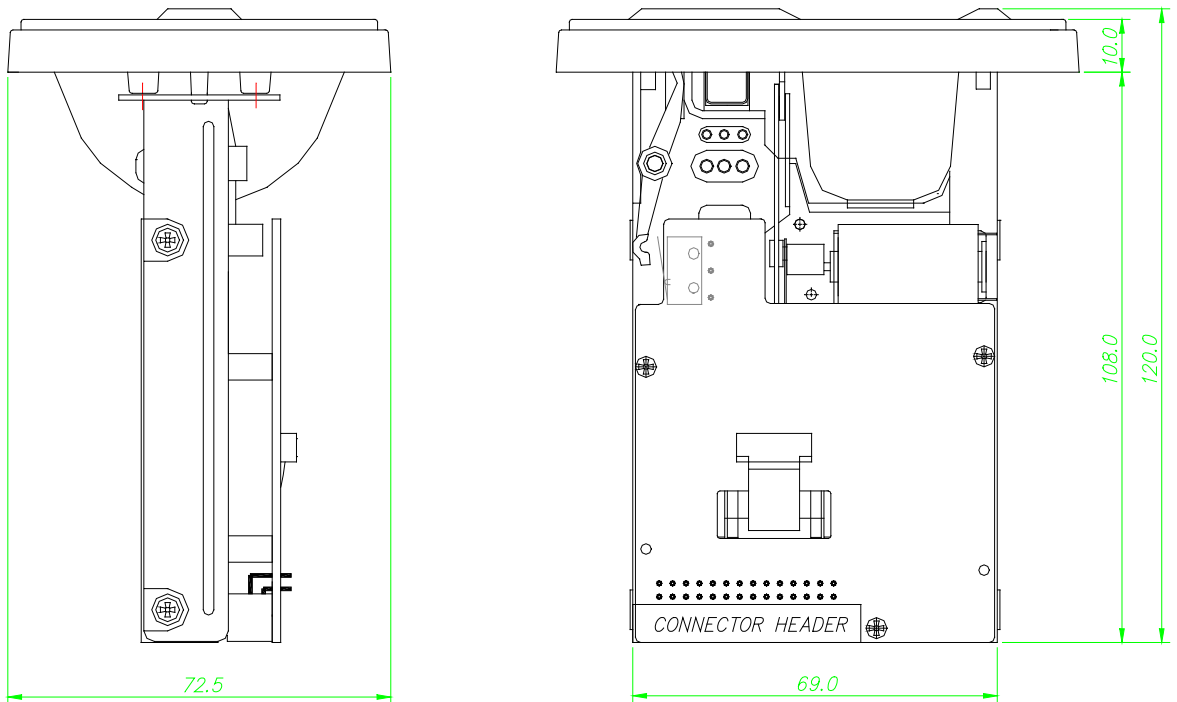
CLS generation (SELECT input voltage is low)



9. Notes for Better Operation

1. The card should be inserted in the specified direction.
2. Cards which meet standards should be used.
3. Cards should not be dirty, scratched or deformed.
4. Cards should not be placed near magnets or damp.
5. Standard condition is temperature at $20\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ and humidity at 35% ~ 60% RH
6. Can be changed to improve by function & quantity without prior notice.

10. Outline Dimensions (With Bezel)



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