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# KYX – 1000 Feeding Machine

## REVISION HISTORY

CHECK	DATE	DESCRIPTION	REV	PAGE
1	2003.01		A	7
2	2004.10	BEZEL => SHORT BEZEL	B	
3	2005.12.1	Only DC 24V	C	8
4	2006.06.09	KYX1000 Model Change	D	16
5	2006.11.02	Modified the model name information in the SPEC	E	17

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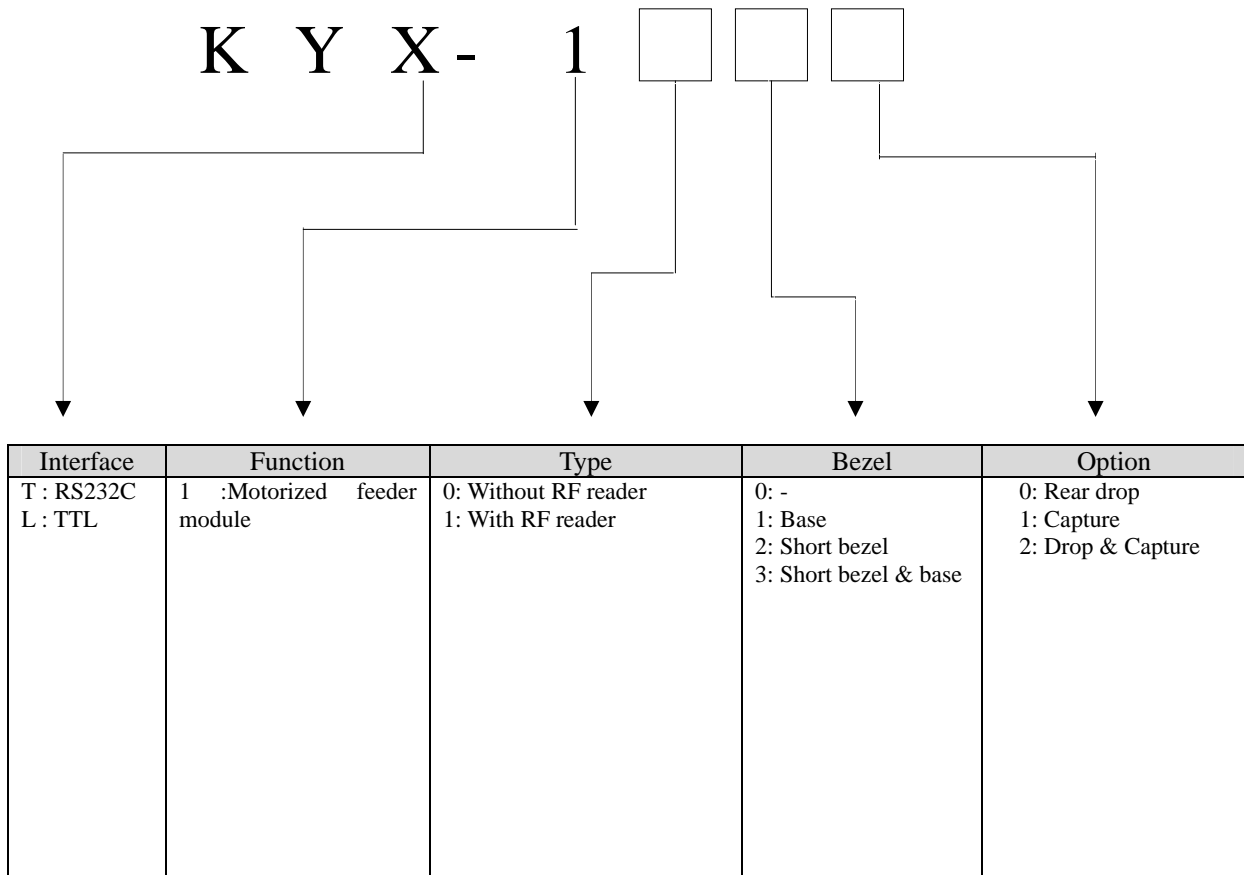
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## MODEL NAME INFORMATION



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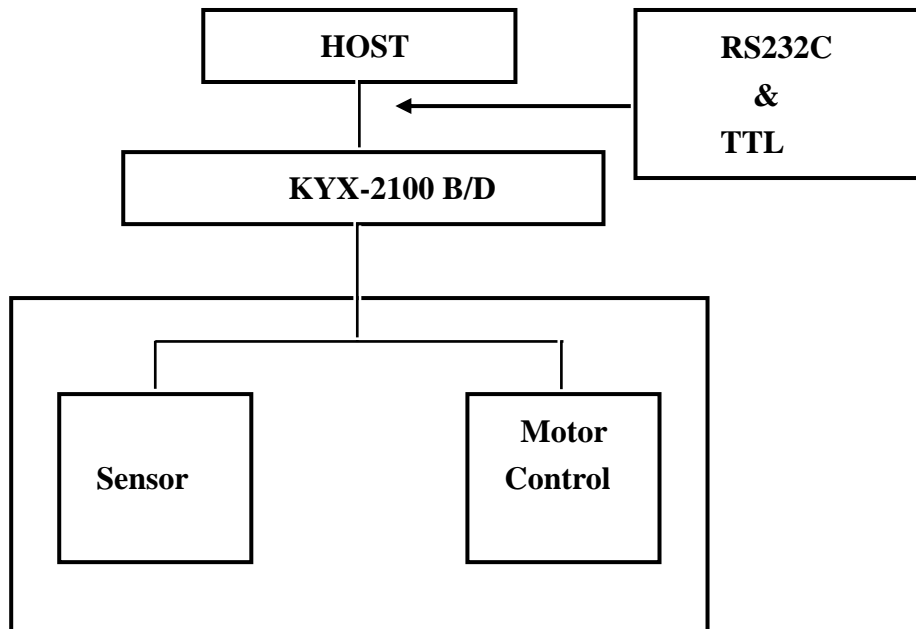
## 1. OVERVIEW

There are 2 types of Interface for KYX-10XX Series, TTL Interface and RS-232C Interface, which can be integrated as User requires .

## 2. Features

1. RS232C Interface
  - A. Baud Rate : changeable(9,600 BPS ↔ 19,200BPS)
  - B. Easy to control
- 2.. TTL Interface
  - A. Can control Motor to change position of card.
  - B. Easy to control

## 3. System Block Diagram



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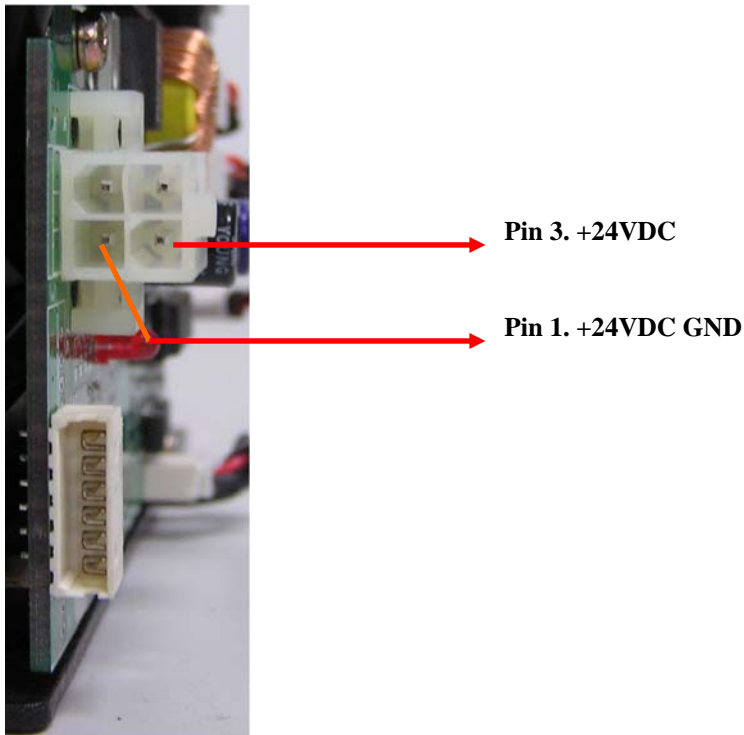
## 4. Specification

### 4.1. DC Power Connector

. Interface connector

- Part Number : 5557-04A, Manufacture : MOLEX

. Connector number : J6



Pin NO	Signal Name	Cable color	Direction
1	+24VDC GND	Black	Input
2	Not use		
3	+24VDC	Yellow	
4	Not use		

. Supply Voltage & Current Consumption

**With Load : DC 24V ( $\pm 5\%$ )– 1500mA**

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## 4.2 Interface

### 4.2.1 RS232C type model

. Interface connector :

Part number : 51004-0310, Manufacture : MOLEX

When use the KYT-10XX's com-cable, connect to twist cable.

When use the user's com-cable, connect to as bellows table

. Connector number : J1

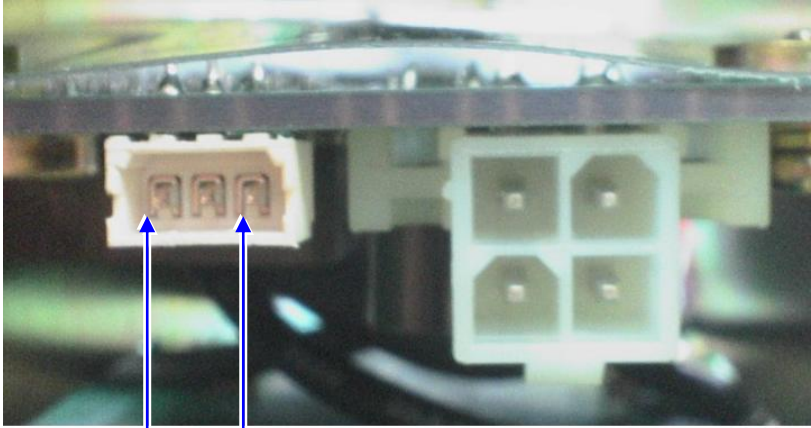
. Connector signal table

Pin No	Signal	KYT-10XX	HOST	Dsub-9	Remark
1	RXD	←		3	Receive data
2	TXD	→		2	Transmit data
3	GND	↔		5	Signal Ground

. Communication Method

- Asynchronous, Half duplex.
- Communication speed : 9600, 19200BPS (Default : 9600BPS)
- Data Length : 8Bits
- Parity : None
- Stop Bit : 1Bit

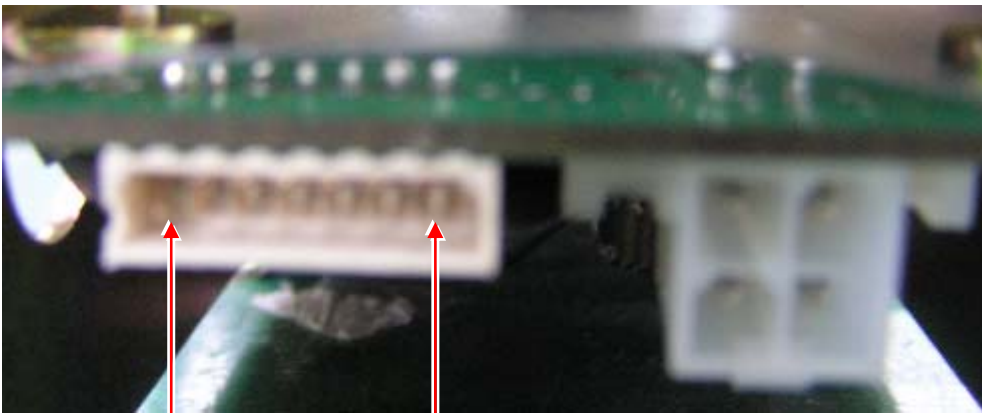
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③      ①

#### 4.2.2. Pin Definition Table (TTL Interface model)

- . Part Number : 53015-0710(MOLEX), Connector number : J7
- . Connect Pin Table (PCB side)



⑦      ①

#### \* TTL Signal(MODEL – KYL10X0)

NO	FUNCTION	DIRECTION	ACTIVE	REMARK
1	MOTOR_ENA	Input	High	
2	MOTOR_A	Input		
3	MOTOR_B	Input		
4	SENSOR #1	Output	High	
5	SENSOR #2	Output	High	
6	Common GND	Input		
7	SENSOR #3	Output	High	

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**\* TTL Signal(MODEL – KYL10X1)**

NO	FUNCTION	DIRECTION	ACTIVE	REMARK
1	MOTOR_ENA	Input	High	
2	MOTOR_A	Input		
3	MOTOR_B	Input		
4	SENSOR #1	Output	High	
5	SENSOR #2	Output	High	
6	Common GND	Input		
7	SENSOR #3	Output	High	
8	RFU	-	-	
9	RFU	-	-	
10	SOL_A	Output	Low	

**.D.C Motor Control Table**

INPUTS			FUNCTION	REMARK
MOTOR_ENA	MOTOR_A	MOTOR_B		
H	L	High	Motor Regular Direction	Ref)“7. TTL Interface”
H	H	Low	Motor Reverse Direction	
H	MOTOR_A = MOTOR_B		Fast Motor Stop	
L	X	X	Feed Running Motor Stop	

H : HIGH

L : LOW

C : Don't Care

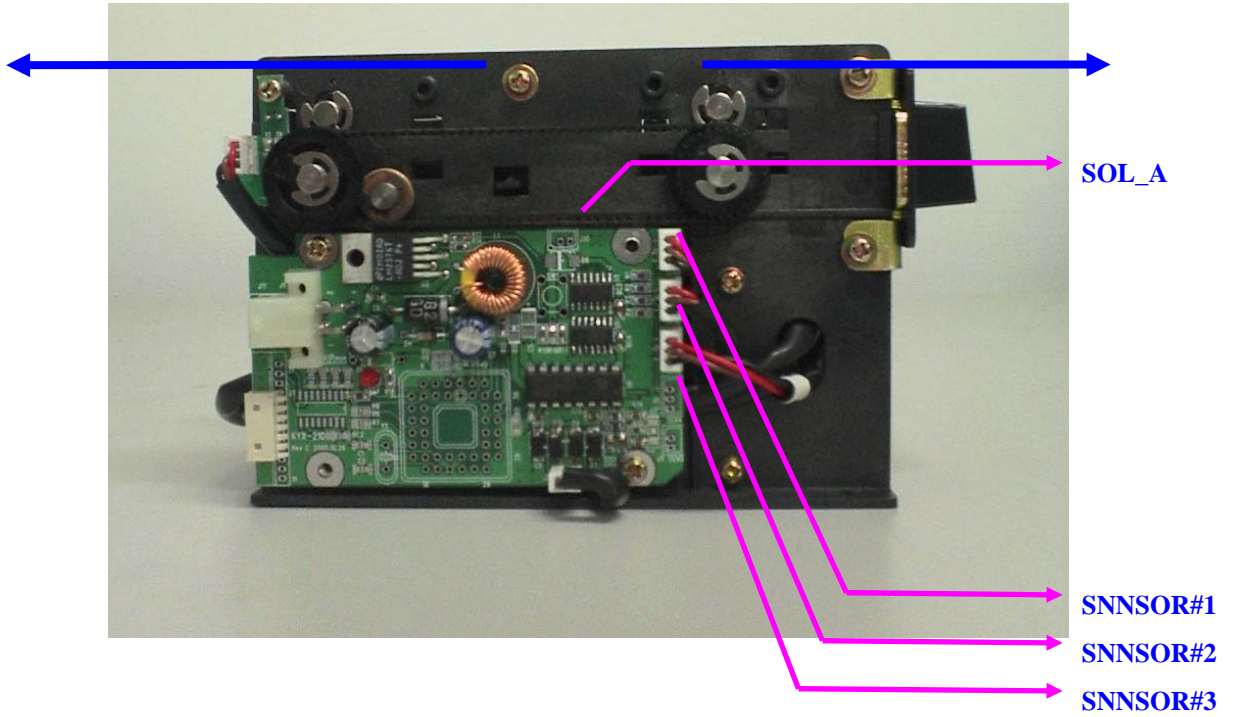


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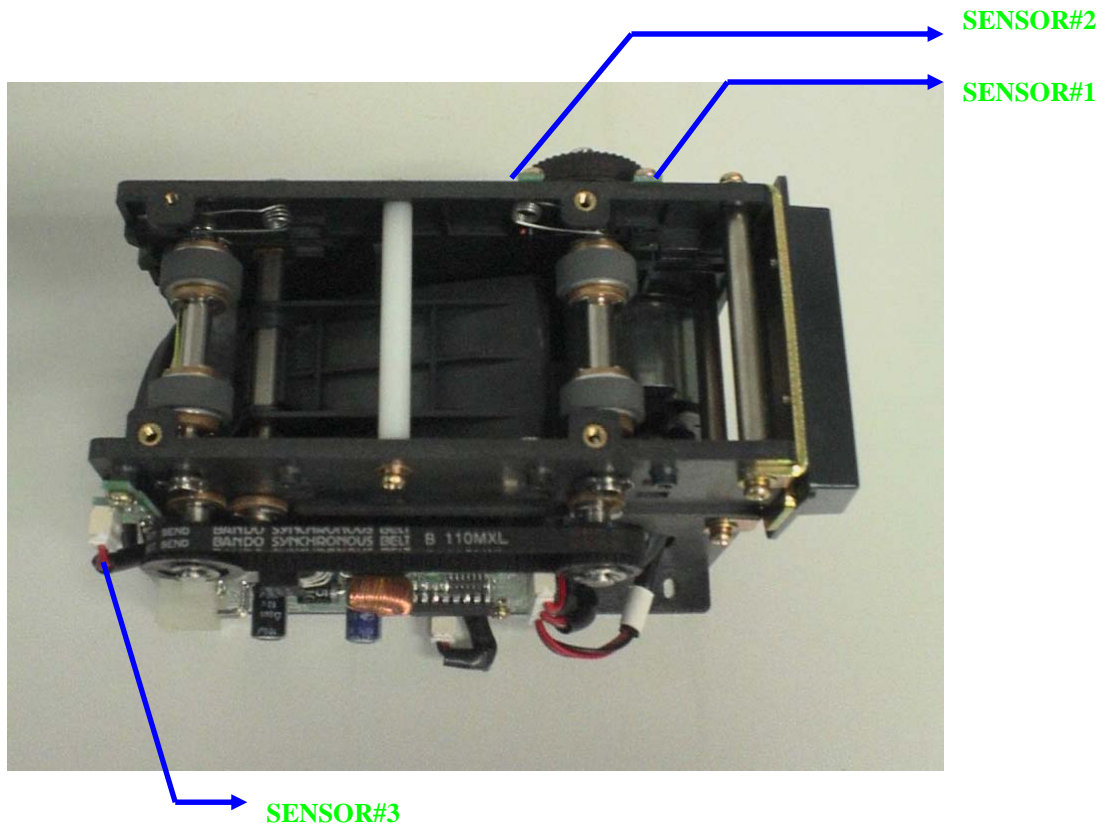
< CARD MOVE >

**Motor Regular Direction**

**Motor Reverse Direction**



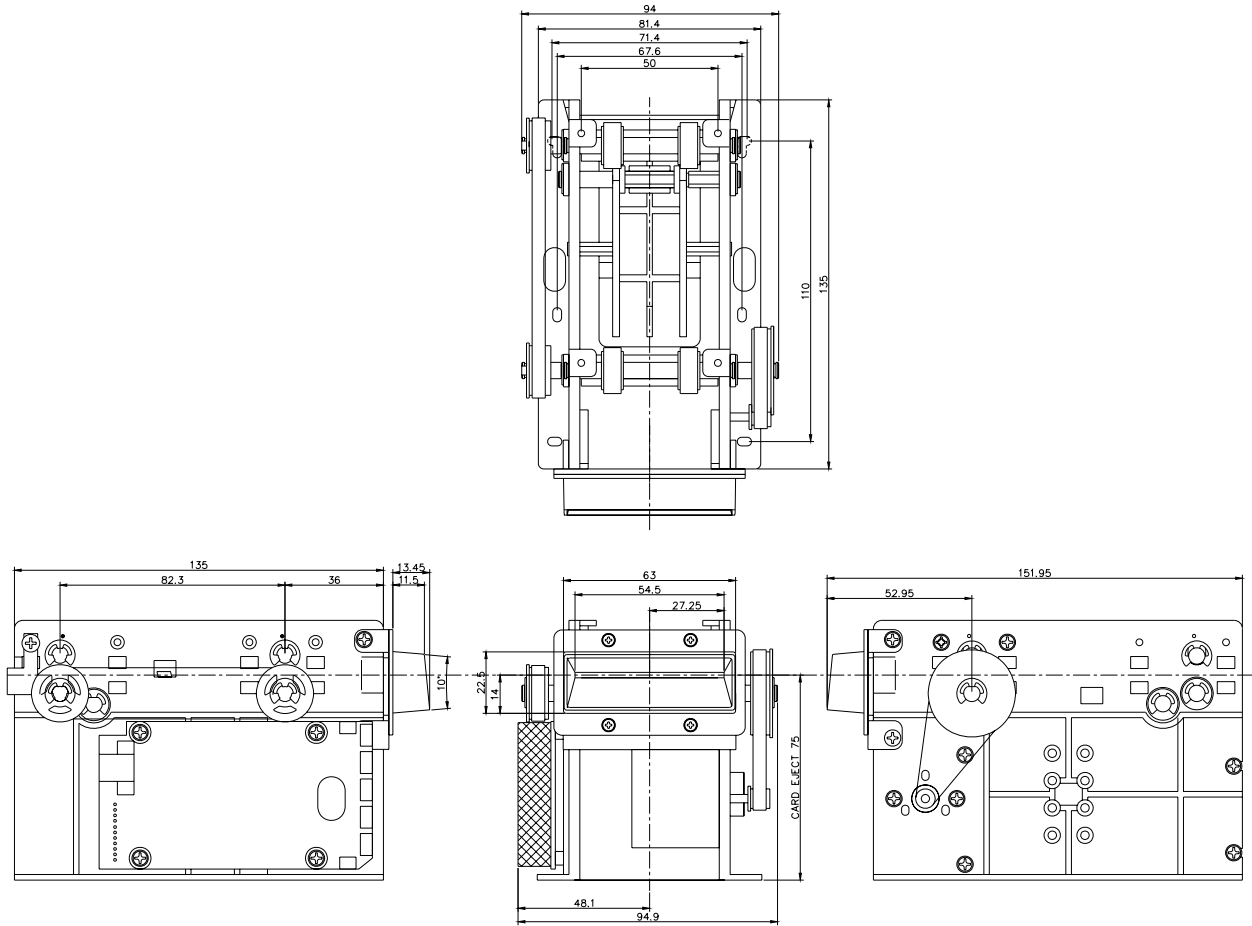
< CARD POSITION >



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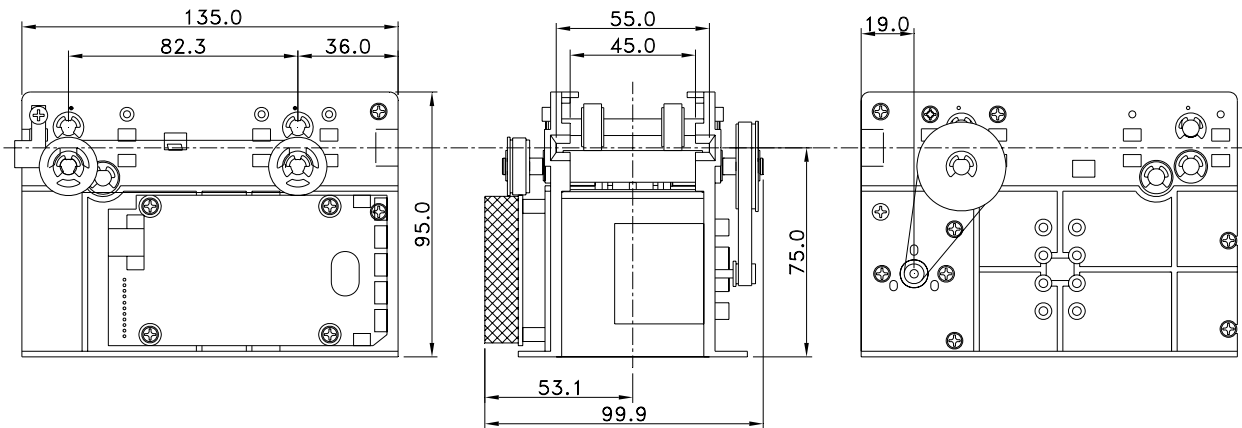
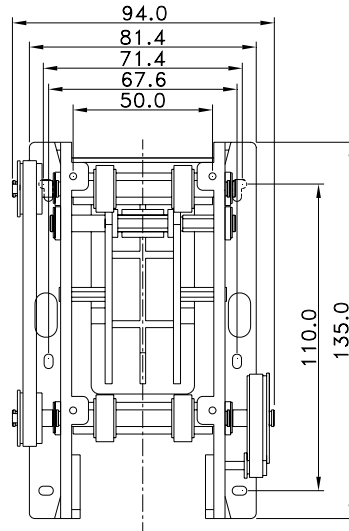
## 5. Technical Drawing

MODEL – KYL1020



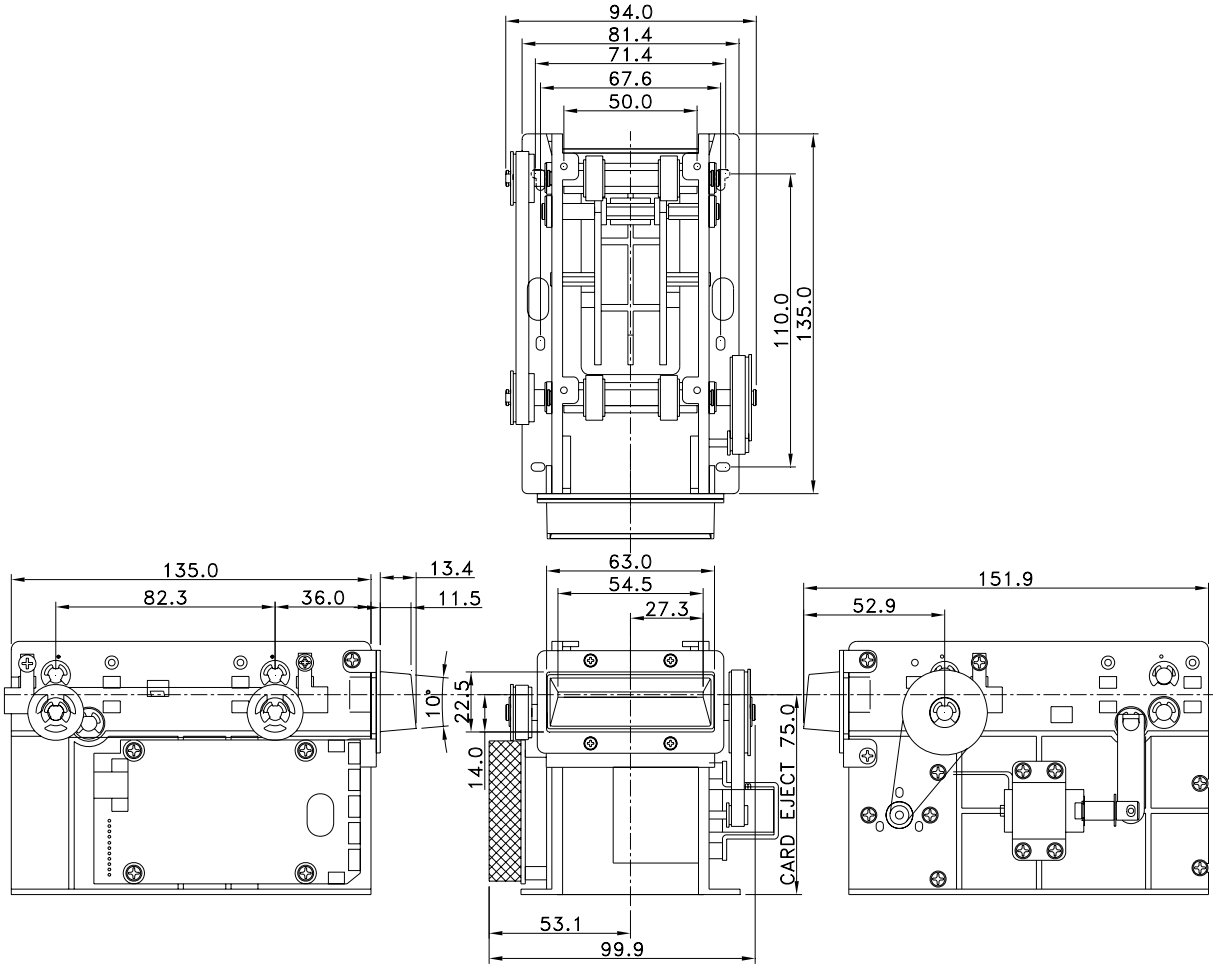
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**MODEL – KYX1000**



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**MODEL – KYX-1021**



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## 6. RS232C Interface

### 6.1. Control Characters

NANE	Hex Value	Description
STX	02	Start of Text
ETX	03	End of Text
EOT	04	End of Transmission
ENQ	05	Enquiry
ACK	06	Positive Acknowledge
NAK	15	Negative Acknowledge
CAN	18	Cancel

### 6.2. Frame Format

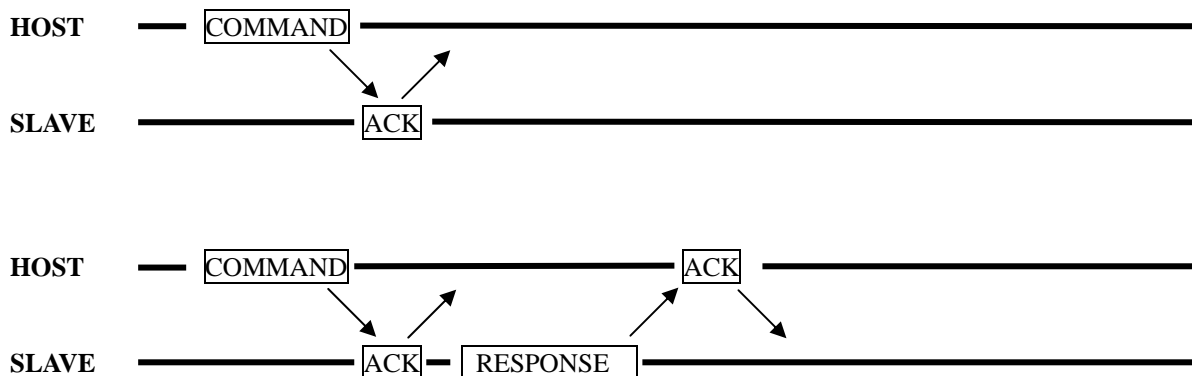
#### 1. Command structure

STX	Command	ETX	BCC
-----	---------	-----	-----

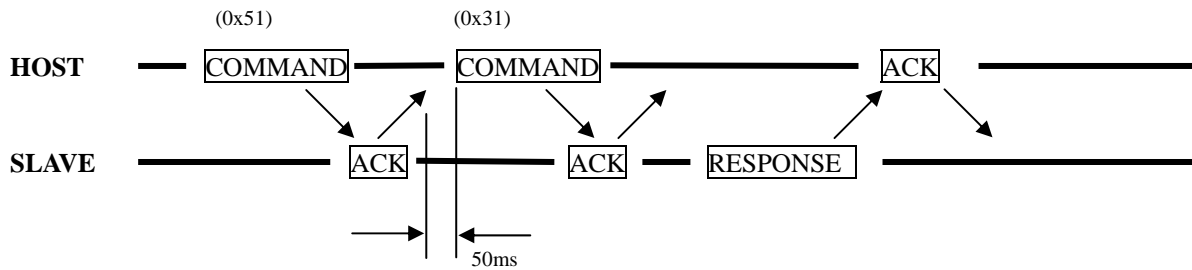
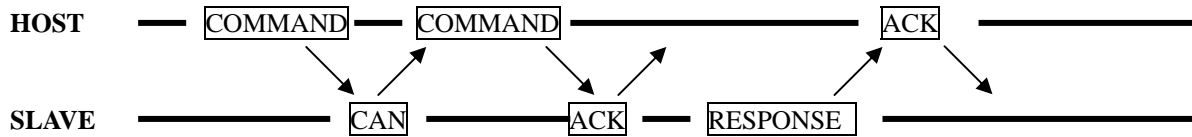
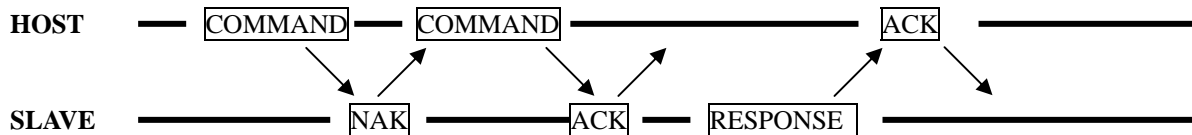
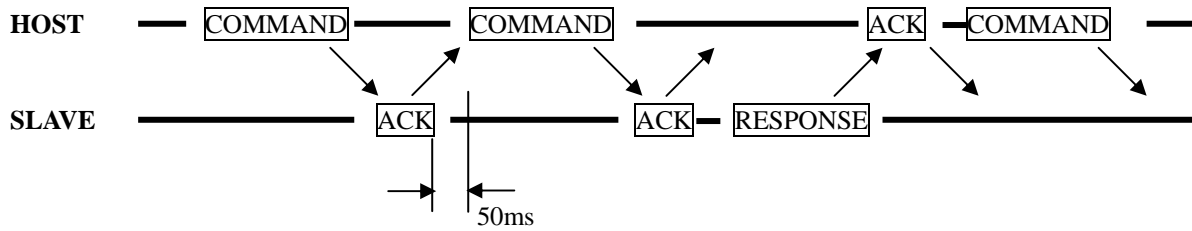
#### 2. Response structure

STX	Status	ETX	BCC
-----	--------	-----	-----

### 6.3. Communication Protocol Sequence



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cf) To change Baud Rate , send command 50mS after receiving ACK .

#### 6.4. Command Sets List

	Command	Description	Note
Clear	0x30	Error Clear	
Request	0x31	Status Request	
Move	0x40	Feed In	
	0x41	Feed Out	
	0x42	Feed Stop	
	0x43	Capture	
Baud Rate Set	0x50	9600 BPS	
	0x51	19200 BPS	

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## 6.5. Command Details

### 6.5.1. Clear(Command : 0x30)

: Initializing Parameters(Initializing Error Bit)

Command Packet

STX	Command	ETX	BCC
-----	---------	-----	-----

### 6.5.2. Status Request(Command : 0x31)

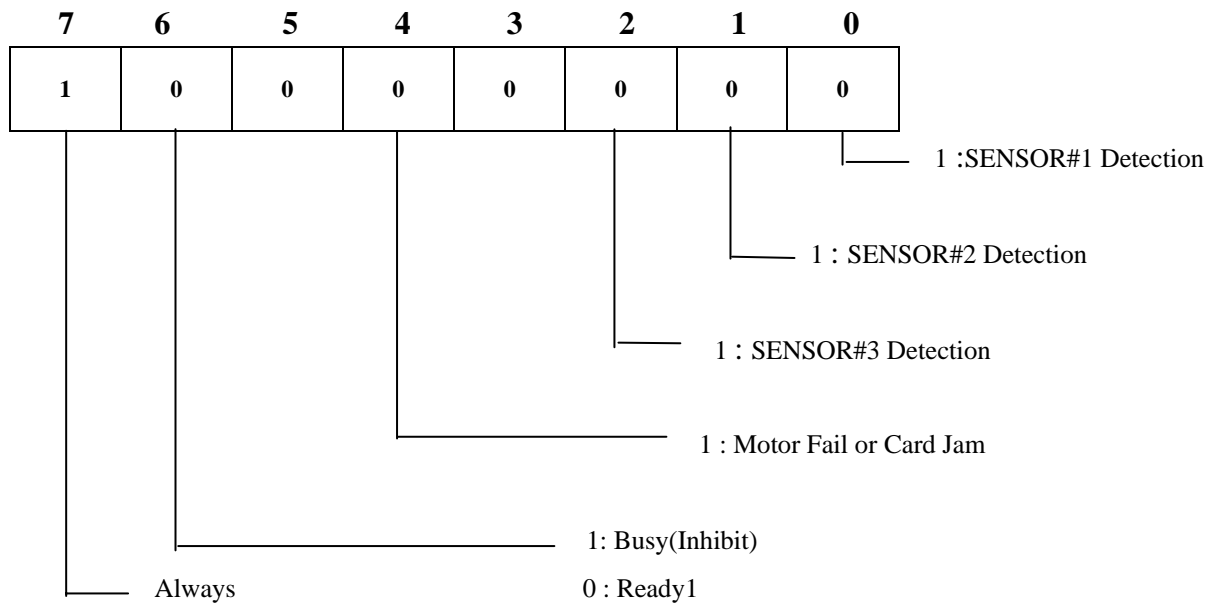
: Host's Request for status of dispenser

Command Packet

STX	Command	ETX	BCC
-----	---------	-----	-----

Response Packet

STX	Status	ETX	BCC
-----	--------	-----	-----



### 6.5.3. Feed In(Command : 0x40)

: Move the Card from SENSOR#1 to SENSOR#3.

Command Packet

STX	Command	ETX	BCC
-----	---------	-----	-----

Ref) If the sensor not detect the card, above command is immediately terminated.

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6.5.4. Feed Out (Command : 0x41)

: Move the Card from SENSOR#3 to SENSOR#1.

Command Packet

STX	Command	ETX	BCC
-----	---------	-----	-----

Ref) If the sensor does not detect the card, above command is immediately terminated.

6.5.5. Feed Stop(Command : 0x42)

: Stop the card at the specified location while moving the card

Command Packet

STX	Command	ETX	BCC
-----	---------	-----	-----

6.5.5. Capture (Command : 0x43)

: The card is captured to the error box

Command Packet

STX	Command	ETX	BCC
-----	---------	-----	-----



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Example 1) TTL Control Example (SENSOR#1 => SENSOR#3)

