Compact Card Dispenser

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● REVISION HISTORY

CHECK	DATE	DESCRIPTION	REV.	PAGE
1	2009. 01. 19	First Edition	A	16
2	2009. 07. 16	Mechanical drawing is modified. Card issuing length is changed.	B	16

C O N T E N T S

1. Overview

All the processes and operations of KHT-21XX are monitored by its intelligent Microprocessor, which makes itself self-recover function from faulty running.

2. Features

2.1. Card thickness dispensable can be adjusted easily.

2.2. RS232C Interface

A. Baud Rate: changeable (9,600 BPS ⟷ 19,200BPS)

B. Can change position of card (one way direction allowed)

C. With self-diagnosis function.

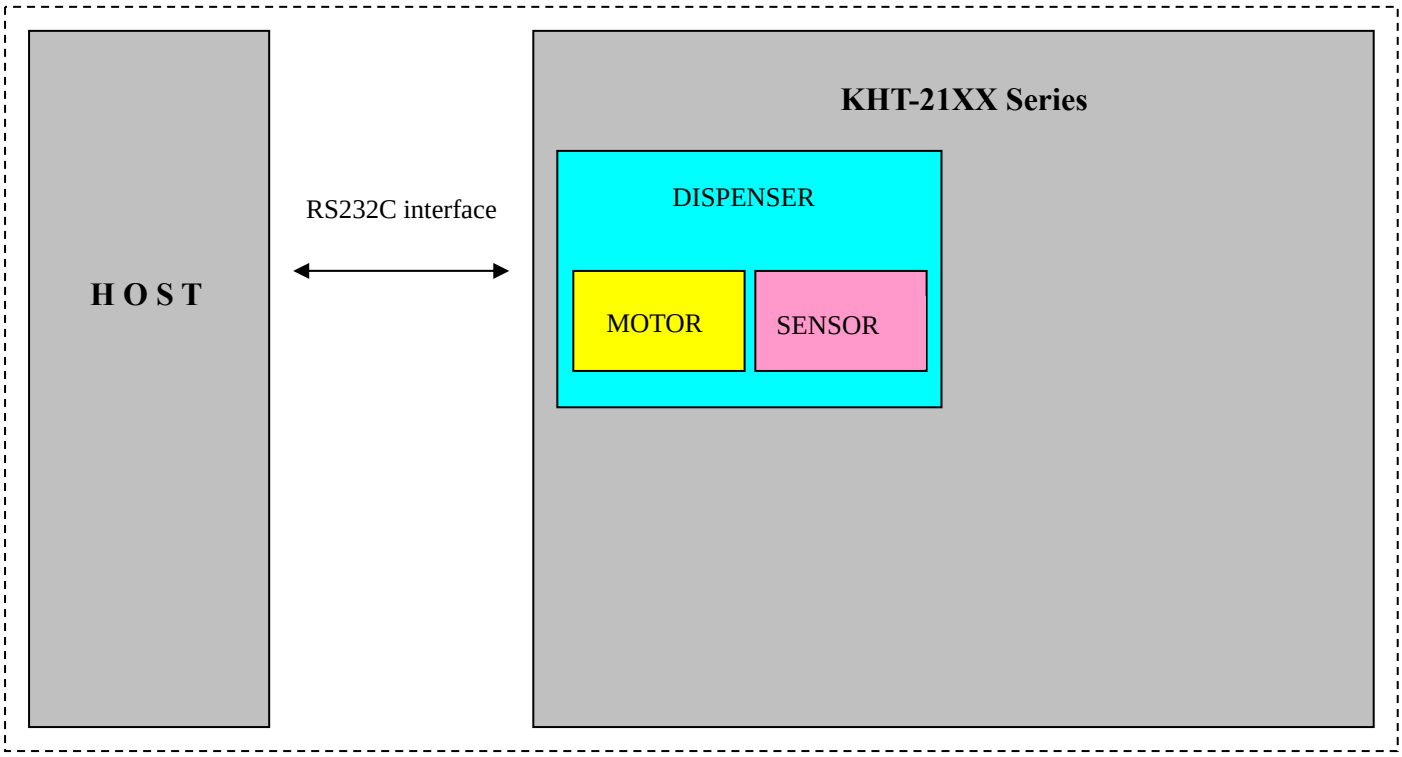
D. Easy to control

2.3. KHT-21XX series are applied and integrated to following products and systems;

- Prepaid card vending machine
- ID card issuing machine
- Parking card vending machine
- Payphone card vending machine
- Automatic card issuing machine
- Ticketing vending machine
- And more

2.4. Intelligent monitoring all the process cards empty and card low level warning function with its own microprocessor

3. System Block Diagram



5. Specifications.

5.1. Model.

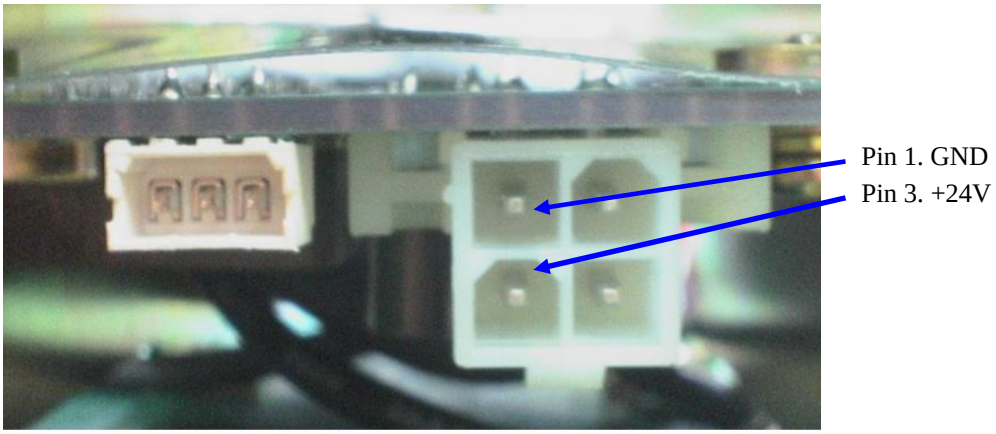
MODEL	KHT-211X	KHT-212X	KHT-213X	KHT-214X
Dimensions (W x L x H) mm	**Refer to Page 9**			
Card Dispensing Time (Sec)	0.8	0.8	0.8	0.8
Max. Card Loading Capacity	100 PCS	200 PCS	300 PCS	500 PCS
	In case of 0.76 mm card			
Card Material	P.V.C			
Max. Card Width, Length	ISO 7810			
Max. Card Thickness	0.76~1.0 mm			
Environmental Requirements	1. Operating Temperature and Humidity: 0~40℃, 0~95% RH 2. Conservation Temperature and Humidity: -20~70℃, 0~95% RH			
Power Consumption	1. DC Motor Driver: Output Current 1.5A per channel. 2. Input voltage: DC 24V Only (DC±5%, Min. 2.5A) 3. Standby: 44 ㎃(+5%).			

K H T – 2 1 X X X

INTERFACE	FUNCTION	TYPE	CAPACITY	THICKNESS	OPTION
T: RS-232C	2: Dispenser	1: Single Stacker	1: 100 PCS 2: 200 PCS 3: 300 PCS 4: 500 PCS	4: 0.76T 5: 0.84T 6: 1.00T	**A**: With Bezel **B**: Without Bezel **C**: With Bezel & DC Power Jack type **D**: Without Bezel & DC Power Jack type

6. DC Power Connector

6.1. Connector number: J6

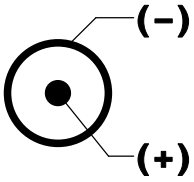


Pin NO.	Signal Name	Direction
1	GND	Input
2	Not use	
3	+24V	
4	Not use	

6.2. Connector number: J7 (Option)

-DC Power Jack

Pin NO.	Signal Name	Direction
1	GND	Input
2	GND	
3	DC +24V	



7. Interface

7.1 RS232C type model

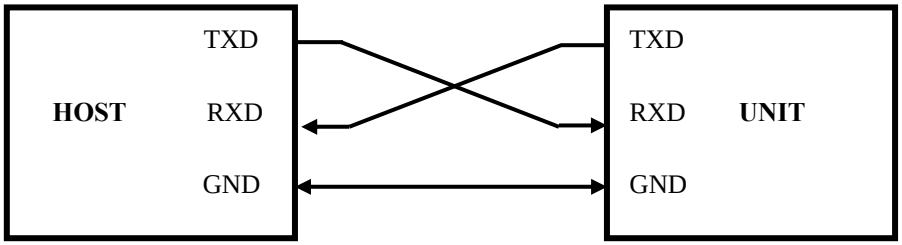
. Interface connector:

When use the KHT-2100'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



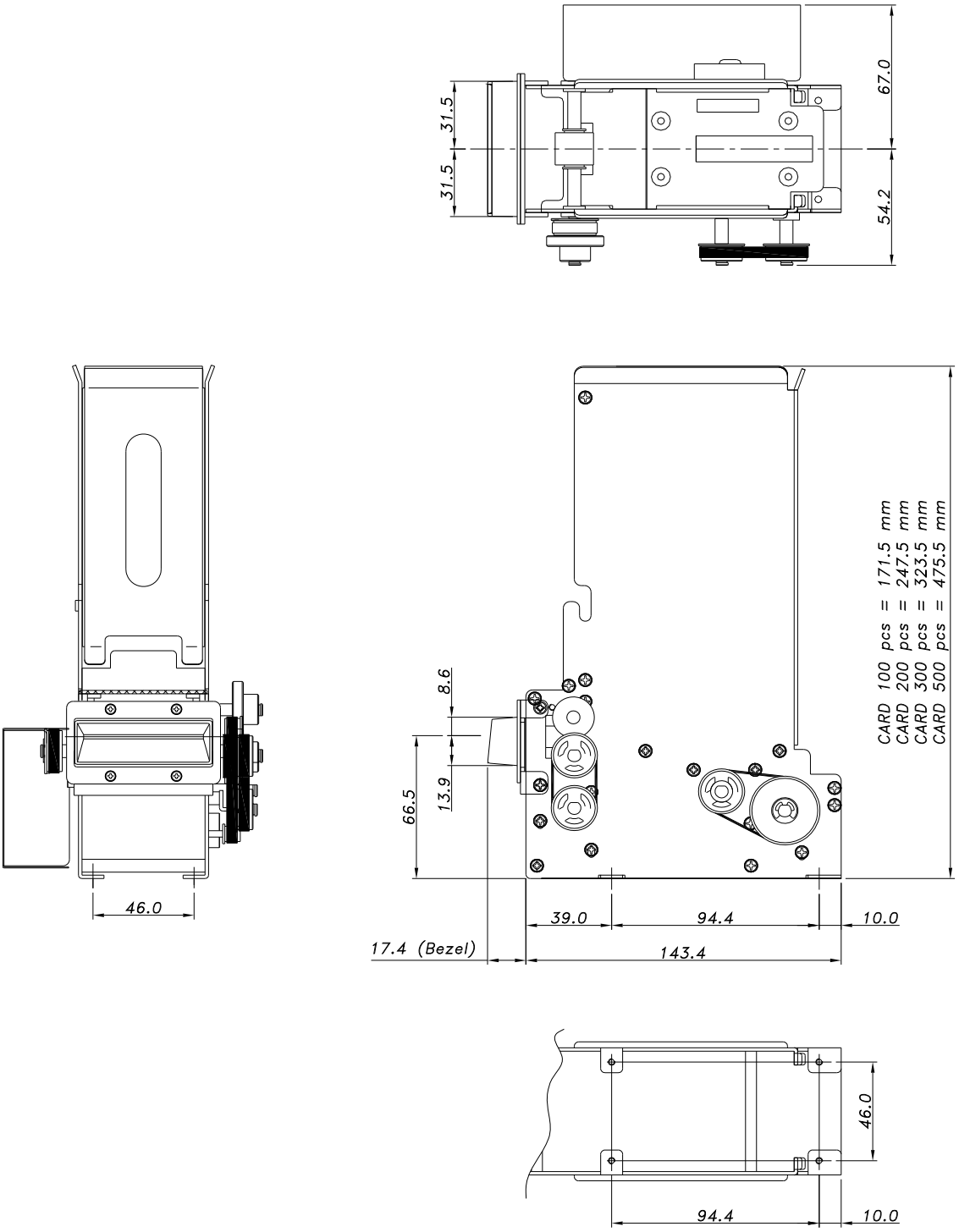
Pin No.	Index	Remark
1	RXD	Receive
2	TXD	Transmit
3	GND	S.G

. Communication Method

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

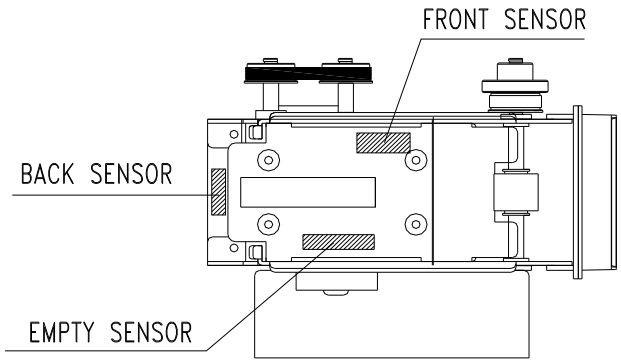
.

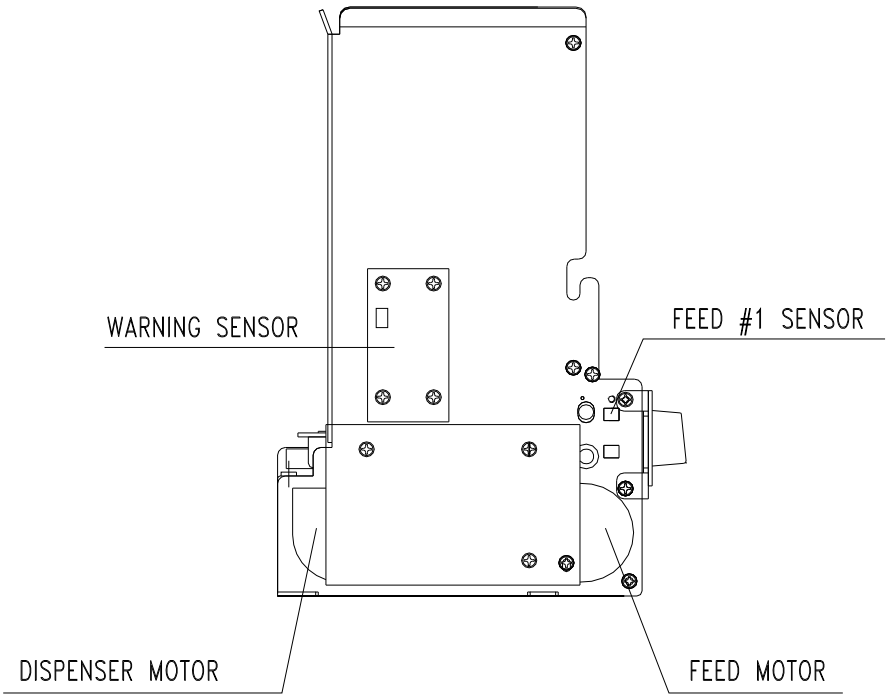
8. Technical Drawing



<Sensor & Motor locations>

Connector No.	Remark
J3	Feed1 Sensor
J4	-
J5	-
J8	Empty Sensor
J13	Back Sensor
J14	Front Sensor
J9	Warning Sensor
J11	Feed Motor
J2	Dispenser Motor





9. RS232C Interface

9.1. Control Characters

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

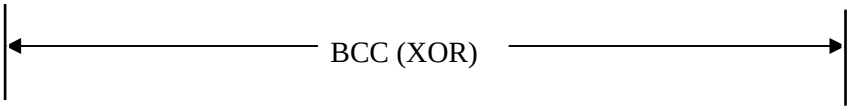
9.2. Frame Format

Command structure

STX	Command	ETX	BCC

Response structure

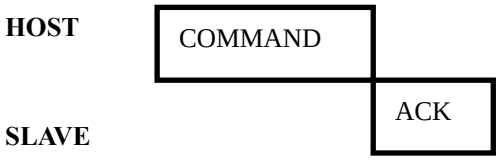
STX	Status	ETX	BCC



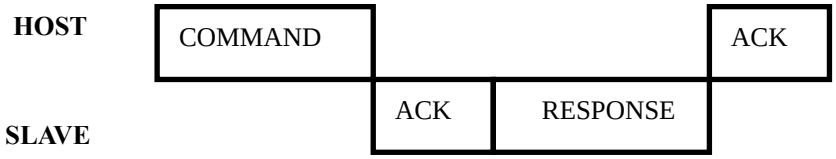
BCC = STX ^ Status ^ ETX

9.3. Communication Protocol Sequence

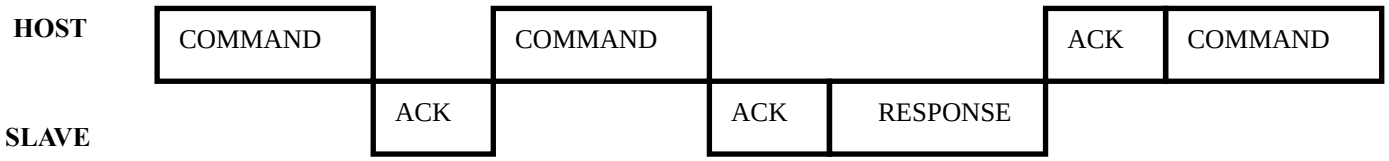
CASE 1)



CASE 2) Request Command (0x31)

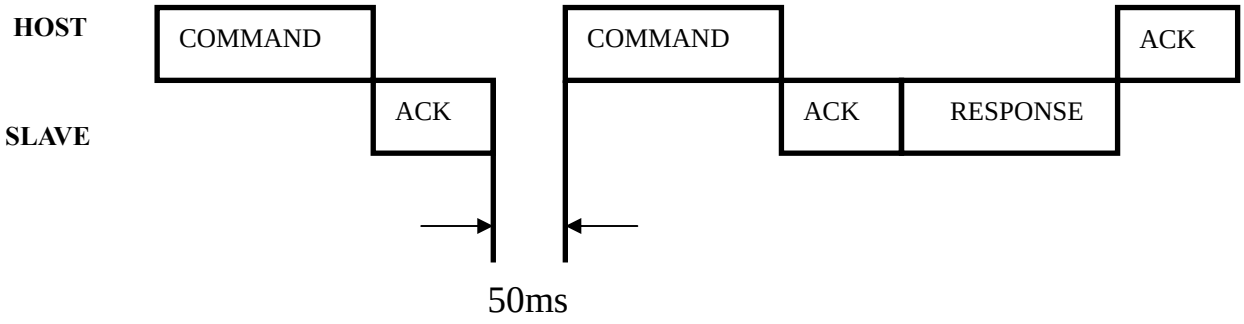


CASE 2-1)



CASE 2-2)

CASE 2-3)



Cf.) To change Baud Rate, send command 50ms after receiving ACK.

10.1. Command Sets List

Item	Command	Description	Note
Clear	0x30	Error Clear	
Request	0x31	Status Request	
Issue	0x40	Issue	
Issuing Length Set	0xF0	Card Drop(Default)	
	0xF1	Card Issuing Length Setting	Ref.) Page.16
	0xF2		
	0xF3		
	0xF4		
Rom Version	0x60	Rom Version	
Baud Rate Set	0x50	9600 BPS Setting	Default
	0x51	19200 BPS Setting	

10.2. Command Details

10.2.1. Clear

: Clear Motor Jam bit of Status Request Command Response

☞ Command Packet

STX	Command(0x30)	ETX	BCC

10.2.2. Status Request

: Host's Request for status of dispenser

☞ Command Packet

STX	Command(0x31)	ETX	BCC

☞ Response Packet

STX	Status	ETX	BCC

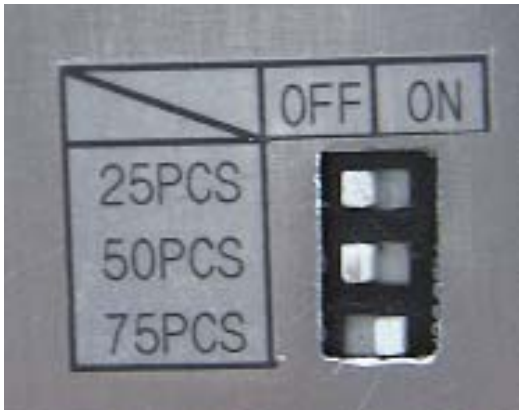
☞ Status Data Format (Status) – Ref.) Page.14

7	**6**	**5**	**4**	**3**	**2**	**1**	**0**
1	0	0	0	0	0	0	0

Data	Status 1	Remark
0x80	Good	Normal
0xC0	Busy	Ready
0xA0	Back Sensor Detection	-
0x90	Motor Fail or Card JAM	-
0x88	Front Sensor Detection	-
0x84	Finish Sensor	Finish Sensor detect Card
0x82	Warning Sensor	Warning Sensor detect Card
0x81	Card Empty	Dispenser Card Empty

Stacker Status	Detail
'Stacker Good'	Good.
'Card Warning'	A few Card in the stacker
'Stacker Empty'	No cards in the stacker

-Warning Sensor Setting



Set Value	25pcs	50pcs	75pcs
Set to 25pcs cards	ON	OFF	OFF
Set to 50pcs cards	OFF	ON	OFF
Set to 75pcs cards	OFF	OFF	ON

10.2.3. Issue

: Dispense the card. And completely eject it from the feeder module.

☞ Command Packet

STX	Command(0x40)	ETX	BCC

10.2.4. Baud Rate Set

: Baud Rate Setting (After ACK receive, next Command should be transmitted after 50ms)

Case)

☞ Command Packet (9600BPS)

STX	Command(0x50)	ETX	BCC

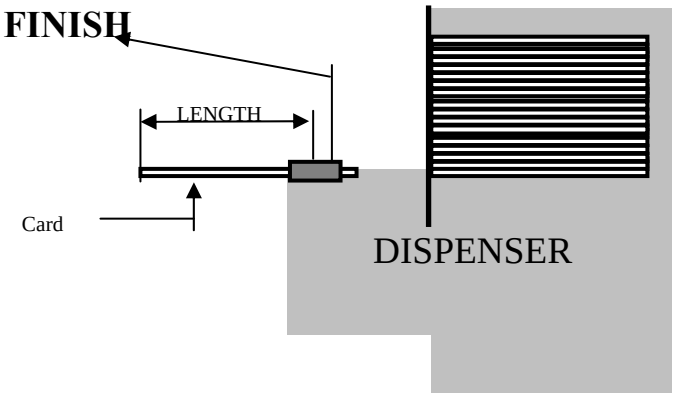
10.2.5. Status of the card jam and the way to deal with the card jam

- Dispenser Jam

: Can't use all command except Status Request commands

(All jam is canceled and you can use these command, if Clear command is executed.)

10.2.6. Card Issuing Length Set. Commands (Ref. Page.13)



Commands fix card length before dispensing a card.

- This is reserved as a fixed command and will be in operation until before power-off.
- If this command is not used, 0xF0 is set to be Default.
- To change this command while in operation, send a command after operation stops.
- This command is operable from 0xF0 to 0xF4.

. 0xF0: Card Drop (Default).
. 0xF1: When issued, a card stops 3 mm away from finish sensor.
. 0xF2: When issued, a card stops 36mm away from finish sensor. (-5 ㎜, + 1.5 ㎜)
. 0xF3: When issued, a card stops 54mm away from finish sensor. (-8 ㎜, + 1.5 ㎜)
. 0xF4: When issued, a card stops 64mm away from finish sensor. (-10 ㎜, + 1.5 ㎜)