www.ictgroup.com.tw

Bill Acceptor

NK77 SERIES

Installation Guide

International Currency Technologies Corp.

Use of Materials Limitations

Contents

1. Introduction

1-1. Overview.....2

1-2. Features.....2

2. Specification.....2

3. Packing List.....3

4. Dimension..... 4

4-1. Security Tooth.....8

4-2. Mounting Kit.....9

5. Installation

5-1. Harness Application..... 10

5-1-1. I/O Circuit 22

5-2. DIP Switch Setting 25

5-3. Software Download and Upgrade 25

5-3-1. USB Pen Drive Firmware Upgrade(NK77F)... 26

6. Maintenance..... 27

7. Troubleshooting..... 28

1. Introduction

1-1. Overview

NK77 series features a high currency verification and recognition with new verification unit to be a new generation bill acceptor.

1-2. Features

- Four way bill insertion acceptable.
- High transaction speed.
- Highlight LED Bezel.
- NK77F support update firmware using a USB flash drive.

2. Specifications

General

Acceptance Rate	96% or greater

Note: The incomplete bills such as extremely dirty, wet, broken or wrinkled ones are excluded.

Bill Insertion	Four way acceptable
Transaction Speed	Approx. 2 seconds to stack
Interface	Pulse, Parallel, RS232, ccTalk(NK77F), MDB
Installation	Indoor

Electrical

Power Source	12V DC (10.8V~13.2V DC)
Power Consumption	Standby : 0.2A, 2.4W Operation: 1.41A, 17W Maximum: 1.5A, 18 W
Operation Environment	Operation Temperature: -10°C~60°C Storage Temperature : -20°C~70°C Humidity: 30%~85%RH (no condensation)

Mechanical

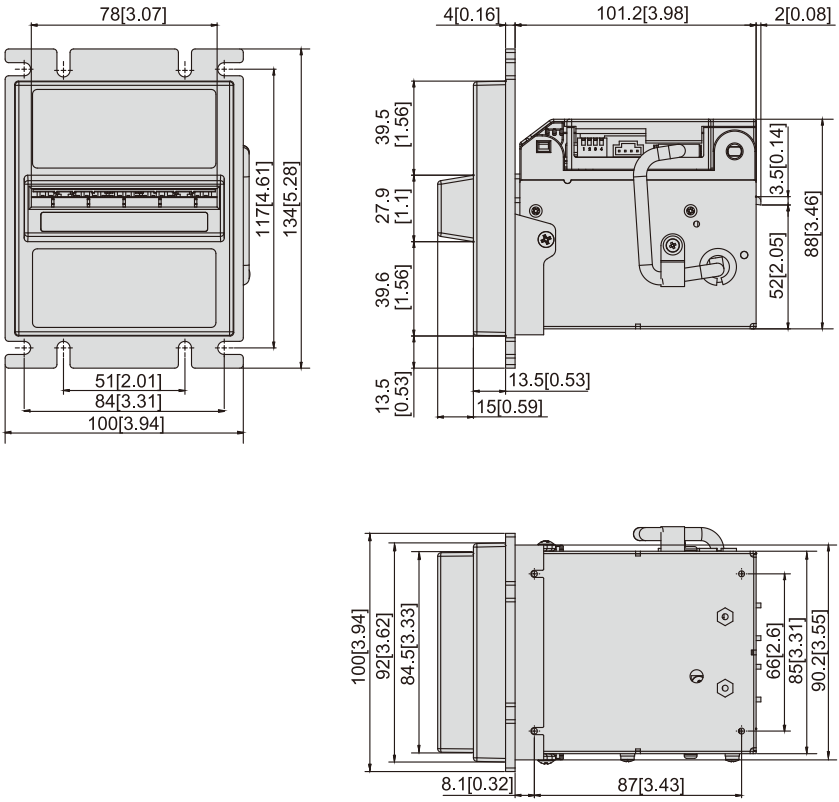
Outline Dimension	Refer to page.4
Weight	Approx. 0.76 kg
Bill Accepted Width	68mm~77mm

3. Packing List

Main	Bill Acceptor
Accessory	Harnesses (Refer to 5-1) Mounting Kit Module NK77 Series Installation Guide NK77 DIP Switch Setting Guide

4. Dimension

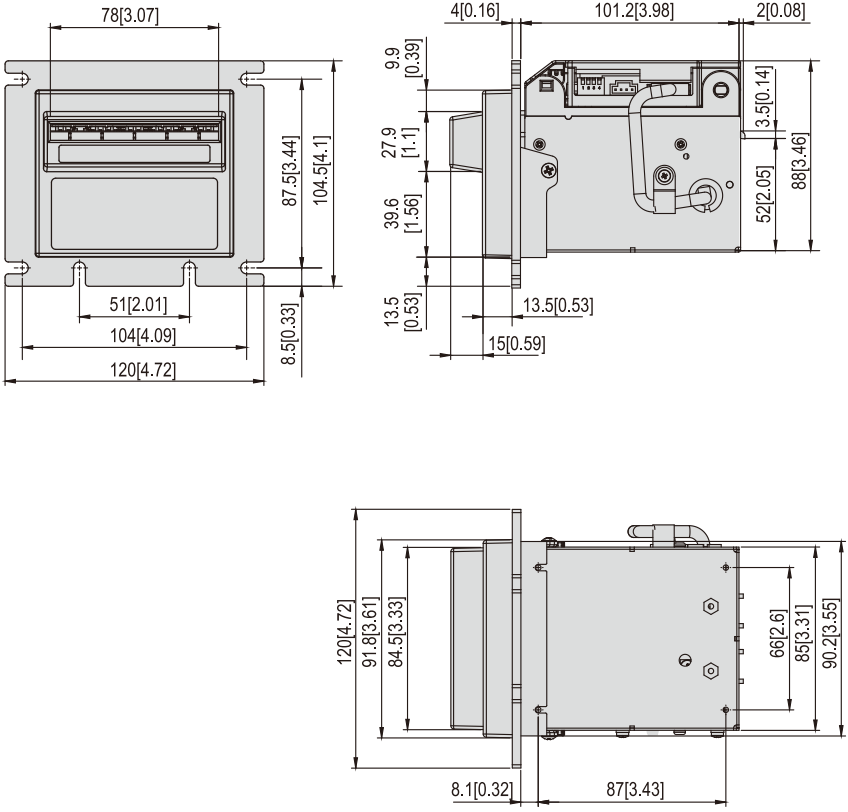
Bezel Part Number: 3RBA-FAC4100X



Unit:mm[inch]

4 FIG.01

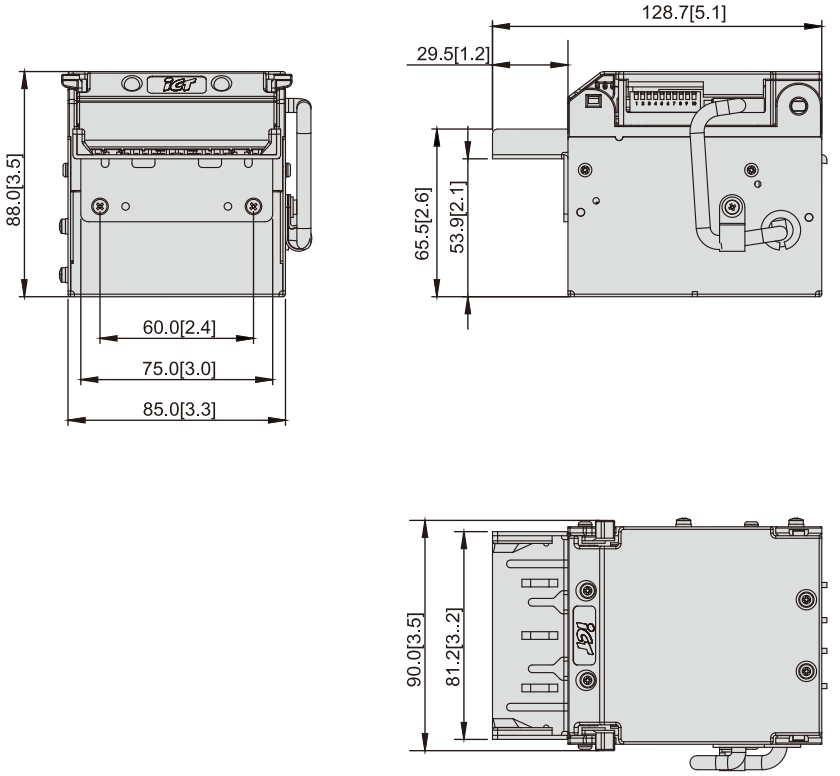
Bezel Part Number: 3ZBA-FAC6200X



Unit:mm[inch]

4 FIG.02

Bezel Part Number: 3RBA-FAC3600X



Unit:mm[inch]

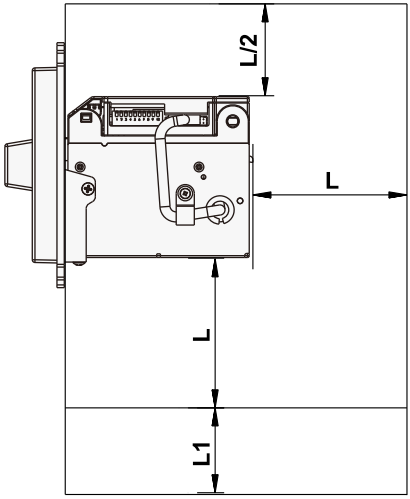
4 FIG.03

To install the bill acceptor on your VMC, please be aware of the dimension as below:

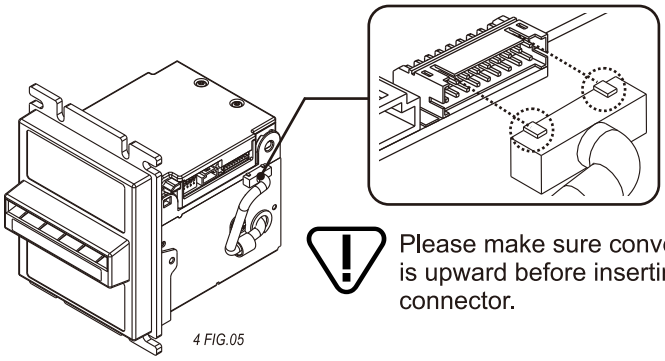
[L] : Longer than the maximum length of accepted bills.

[L1] : Bill box capacity depth.

[L/2] has to be longer than 70mm to open upper base.



4 FIG.04

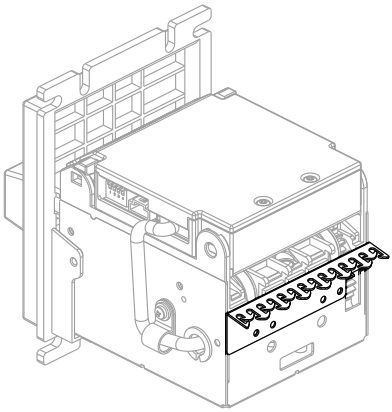


4 FIG.05

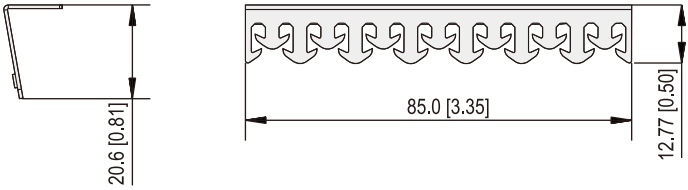
Please make sure convex side is upward before inserting connector.

4-1. Security Tooth

Part Number: C19180-R



4-1 FIG.01



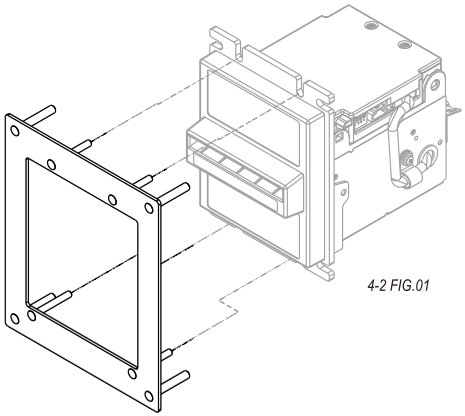
Unit:mm[inch]

4-1 FIG.01-1

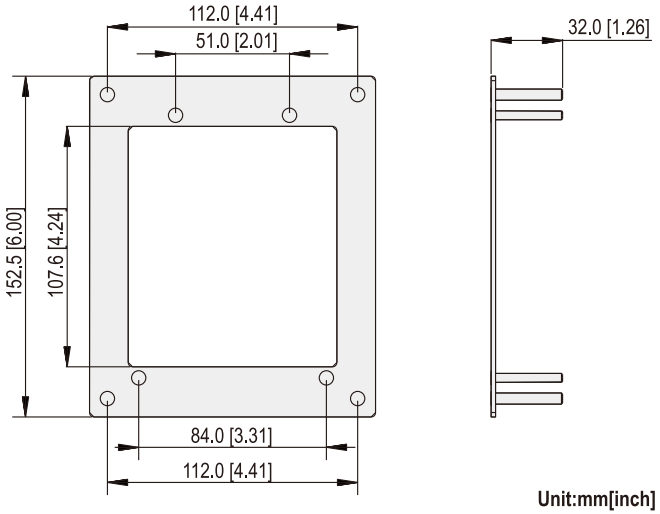
4-2. Mounting Kit

Part Number: C1005X-R

*Only for Bezel(3RBA-FAC4100X)



4-2 FIG.01



Unit:mm[inch]

4-2 FIG.01-1

5. Installation

5-1. Harness Application

5-1 TABLE.01

Interface	Used Voltage	Usage	Harnesses	Page
Pulse	12V DC	Power & *Data Comm.	WEL-RNK05	11
		Extension Wire	CU-R961-1	12
		Power & *Data Comm.	WEL-R0001	14
		Extension Wire	WEL-R0002	15
RS232	12V DC	Power	WEL-RNK05	11
		Extension Wire	CU-R961-1	12
		*Data Comm.	WEL-RNK10-1	13
		Power	WEL-R0001	14
		Extension Wire	WEL-R0002	15
		*Data Comm.	WEL-RNK10-1	13
RS232 (UART) <optional>	12V DC	Power & *Data Comm.	WEL-R0003	16
		Extension Wire	WEL-R0002 (For UART Only)	17
ccTalk <NK77F>	12V DC	Power & *Data Comm.	WEL-RNK7716	18
MDB	12V DC	Power & *Data Comm. (BA↔Plug-in Board) **(Note 2)**	WEL-RTK7708-1	19
	(Note 1) 20V~42.5V DC	Power & *Data Comm.(200cm) (Plug-in Board↔VMC)	WEL-RBG07	20
		Power & *Data Comm.(35cm) (Plug-in Board↔VMC)	WEL-RBG08	21

*Data Comm.=Data Communication

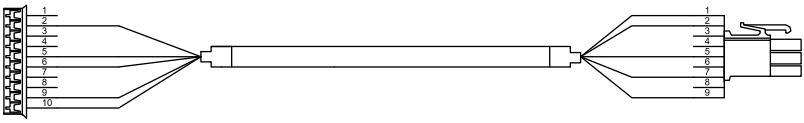
Note:

1. MDB 20V~42.5V DC: VMC Provides +20V~42.5V DC to MDB Plug-in Board to convert into +12VDC, and provides +12VDC to NK77 bill acceptor.
2. MDB Box: 5RBG-AA313NAB(200cm VMC cable).
   5RBG-AA313NAC(35cm VMC cable).

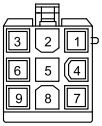
5-1 FIG.01

Interface	Used Voltage	Usage
Pulse	12V DC	Power & *Data Comm.
RS232	12V DC	Power

WEL-RNK05



PIN 2- BLUE.....CREDIT
PIN 5- GREEN.....INHIBIT
PIN 6- YELLOW.....Reserved
PIN 9- RED.....POWER +12V
PIN 10- ORANGE.....POWER GND

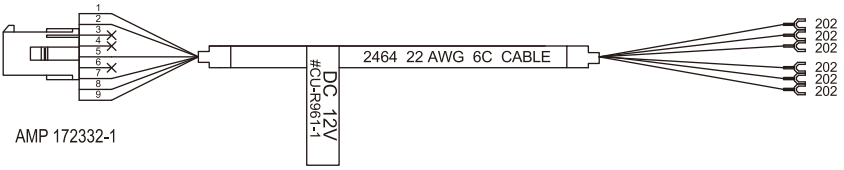


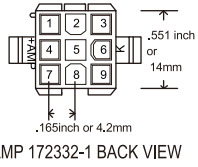
PIN 1- YELLOW.....Reserved
PIN 2- GREEN.....INHIBIT
PIN 5- RED.....POWER +12V
PIN 7- BLUE.....CREDIT
PIN 9- ORANGE.....POWER GND

5-1 FIG.02

Interface	Used Voltage	Usage
Pulse	12V DC	Extension Wire for WEL-RNK05
RS232	12V DC	Extension Wire for WEL-RNK05

CU-R961-1



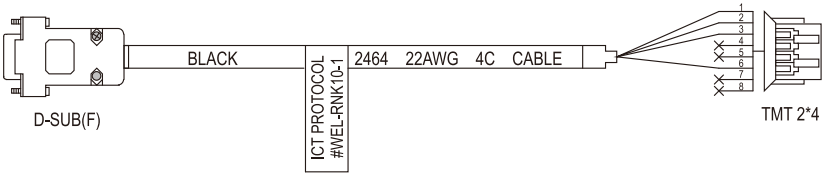


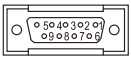
PIN 1- YELLOW.....N/A
PIN 2- GREEN.....INHIBIT-
PIN 5- RED.....+12VDC(POWER-IN)
PIN 7- BLUE.....CREOIT-RELAY-NO
PIN 8- PURPLE.....N/A
PIN 9- ORANGE.....GND(POWER-IN)

5-1 FIG.03

Interface	Used Voltage	Usage
RS232	12V DC	*Data Comm.

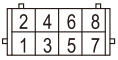
WEL-RNK10-1





D-SUB 9F TOP VIEW

PIN 2- TXD
PIN 3- RXD
PIN 5- GND



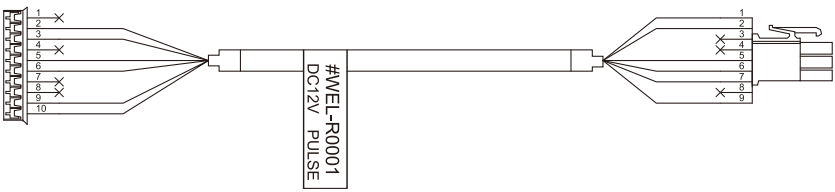
TMT 2*4 BLACK VIEW

PIN 1- BLUE.....Ground
PIN 2- PURPLE.....TX1
PIN 3- BLACK.....RX1
PIN 6- WHITE.....Download VCC

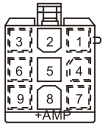
5-1 FIG.04

Interface	Used Voltage	Usage
Pulse	12V DC	Power & *Data Comm.
RS232	12V DC	Power

WEL-R0001



PIN 2- BLUE.....CREDIT
PIN 3- PURPLE.....OUT OF SERVICE
PIN 5- GREEN.....INHIBIT
PIN 6- YELLOW.....NC
PIN 9- RED.....POWER+12V
PIN10- ORANGE.....POWER GND

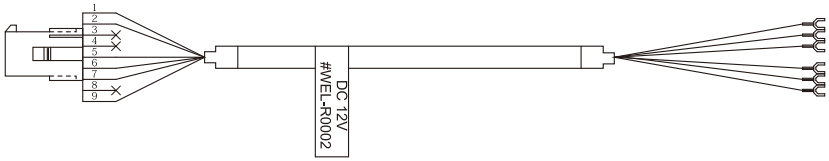


PIN 1- YELLOW.....NC
PIN 2- GREEN.....INHIBIT
PIN 5- RED.....POWER+12V
PIN 6- PURPLE.....OUT OF SERVICE
PIN 7- BLUE.....CREDIT
PIN 9- ORANGE.....POWER GND

5-1 FIG.05

Interface	Used Voltage	Usage
Pulse	12V DC	Extension Wire for WEL-R0001
RS232	12V DC	Extension Wire for WEL-R0001

WEL-R0002



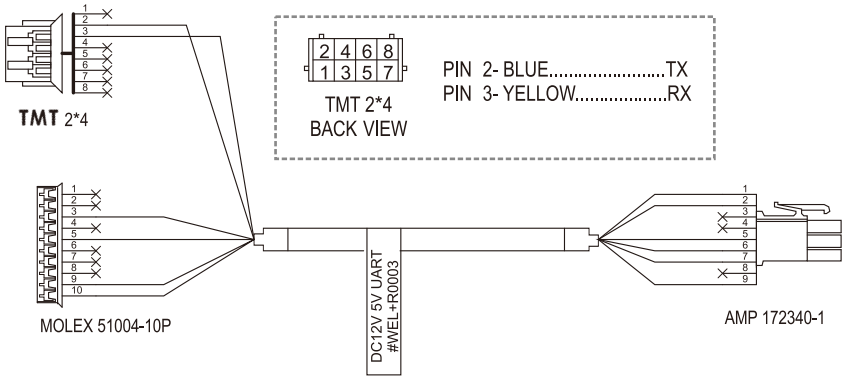
PIN 1- YELLOW.....NC
PIN 2- GREEN.....INHIBIT
PIN 5- RED.....POWER+12V
PIN 6- PURPLE.....OUT OF SERVICE
PIN 7- BLUE.....CREDIT
PIN 9- ORANGE.....POWER GND

YELLOW.....NC
GREEN.....INHIBIT
RED.....POWER+12V
PURPLE.....OUT OF SERVICE
BLUE.....CREDIT
ORANGE.....POWER GND

5-1 FIG.06

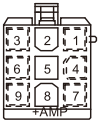
Interface	Used Voltage	Usage
RS232(UART)	12V DC	*Data Comm.

WEL-R0003
<optional>



MOLEX 51004-10P

PIN 3- PURPLE.....NC
PIN 5- GREEN.....NC
PIN 9- RED.....POWER+12V
PIN 10- ORANGE.....POWER GND



PIN 1- YELLOW.....RX
PIN 2- GREEN.....NC
PIN 5- RED.....POWER+12V
PIN 6- PURPLE.....NC
PIN 7- BLUE.....TX
PIN 9- ORANGE.....POWER GND

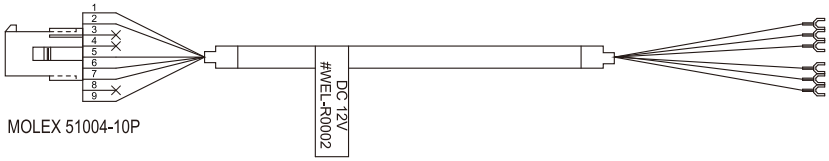
5-1 FIG.07

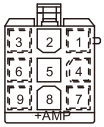
Interface	Used Voltage	Usage
RS232(UART)	12V DC	Extension Wire for WEL-R0003

WEL-R0002

(For RS232 UART only)

<optional>





MOLEX 51004-10P
BACK VIEW

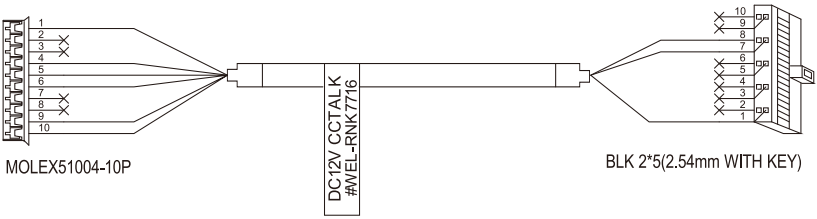
PIN 1- YELLOW.....RX
PIN 2- GREEN.....NC
PIN 5- RED.....POWER+12V
PIN 6- PURPLE.....NC
PIN 7- BLUE.....TX
PIN 9- ORANGE.....POWER GND

YELLOW.....RX
GREEN.....NC
RED.....POWER+12V
PURPLE.....NC
BLUE.....TX
ORANGE.....POWER GND

5-1 FIG.08

Interface	Used Voltage	Usage
ccTalk	12V DC	Power & *Data Comm.

WEL-RNK7716



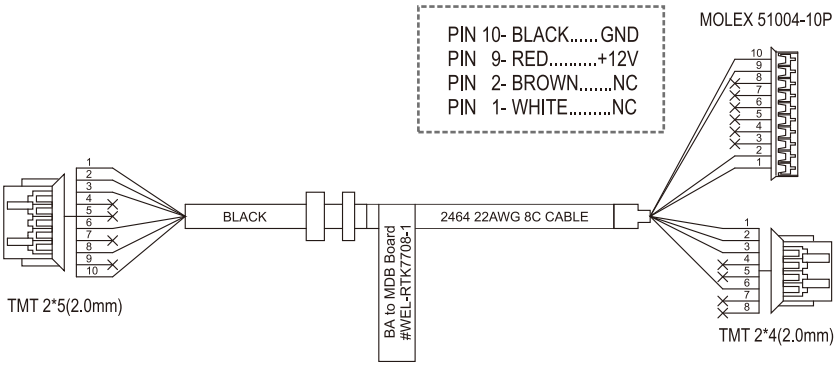
PIN 1- BLUE.....NC
PIN 4- PURPLE.....ccTalk
PIN 5- GREEN.....NC
PIN 6- YELLOW.....NC
PIN 9- RED.....+12-POWER
PIN 10- ORANGE.....GND-POWER

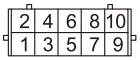
PIN 1- PURPLE.....ccTalk
PIN 7- RED.....+12-POWER
PIN 8- ORANGE.....GND-POWER

5-1 FIG.09

Interface	Used Voltage	Usage
MDB box to Bill Acceptor	12V DC	Power & *Data Comm. (BA↔Plug-in Board)

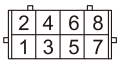
WEL-RTK7708-1





TMT 2*5 BACK VIEW

PIN 1- RED.....+12V
PIN 2- BLACK.....GND
PIN 3- PURPLE.....GND
PIN 6- YELLOW.....VCC
PIN 8- GREEN.....RX
PIN 10- BLUE.....TX



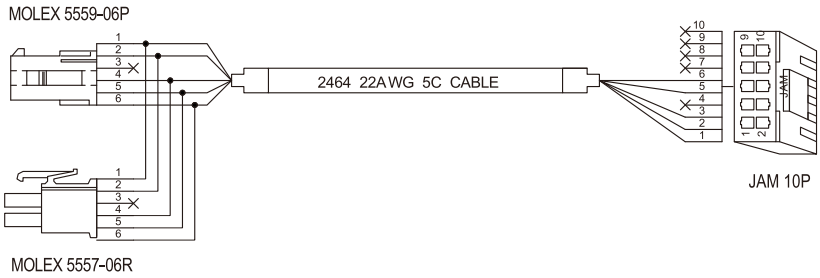
TMT 2*4 BACK VIEW

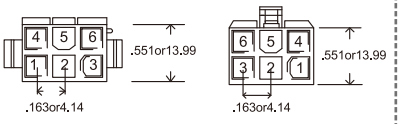
PIN 1- PURPLE.....GND
PIN 2- BLUE.....TX
PIN 3- GREEN.....RX
PIN 6- YELLOW.....VCC

5-1 FIG.10

Interface	Used Voltage	Usage
MDB box to VMC	20V~42.5V DC	Power & *Data Comm. (200cm) (Plug-in Board↔VMC)

WEL-RBG07





MOLEX 5559-06P
BACK VIEW

MOLEX 5557-06R
BACK VIEW

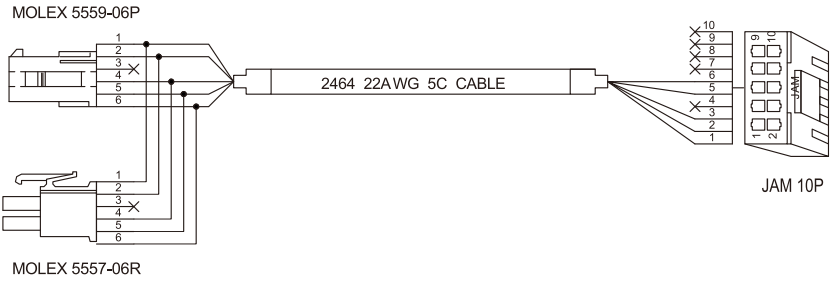
PIN 1- BLUE.....MDB+34VDC
PIN 2- YELLOW.....34VDC RETURN
PIN 4- ORANGE.....MDB_RX
PIN 5- RED.....MDB_TX
PIN 6- GREEN.....MDB_GND

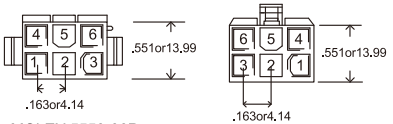
PIN 6- RED.....MDB_TX
PIN 5- GREEN.....MDB_GND
PIN 3- ORANGE.....MDB_RX
PIN 2- BLUE.....MDB+34VDC
PIN 1- YELLOW.....34VDC RETURN

5-1 FIG.11

Interface	Used Voltage	Usage
MDB box to VMC	20V~42.5V DC	Power & *Data Comm. (35cm) (Plug-in Board↔VMC)

WEL-RBG08





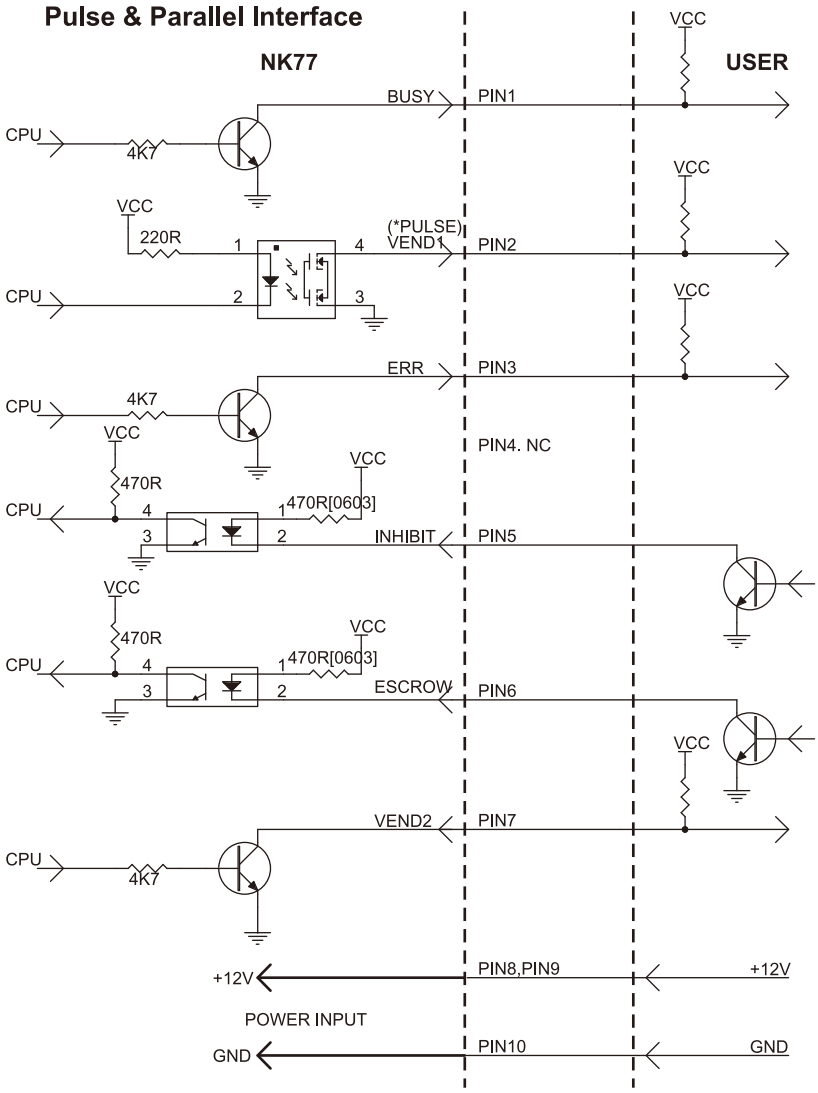
MOLEX 5559-06P
BACK VIEW

MOLEX 5557-06R
BACK VIEW

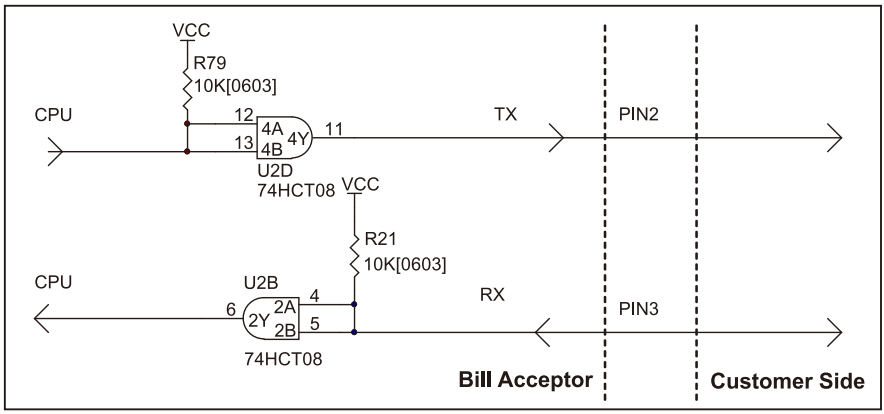
PIN 1- BLUE.....MDB+34VDC
PIN 2- YELLOW.....34VDC RETURN
PIN 4- ORANGE.....MDB_RX
PIN 5- RED.....MDB_TX
PIN 6- GREEN.....MDB_GND

PIN 6- RED.....MDB_TX
PIN 5- GREEN.....MDB_GND
PIN 3- ORANGE.....MDB_RX
PIN 2- BLUE.....MDB+34VDC
PIN 1- YELLOW.....34VDC RETURN

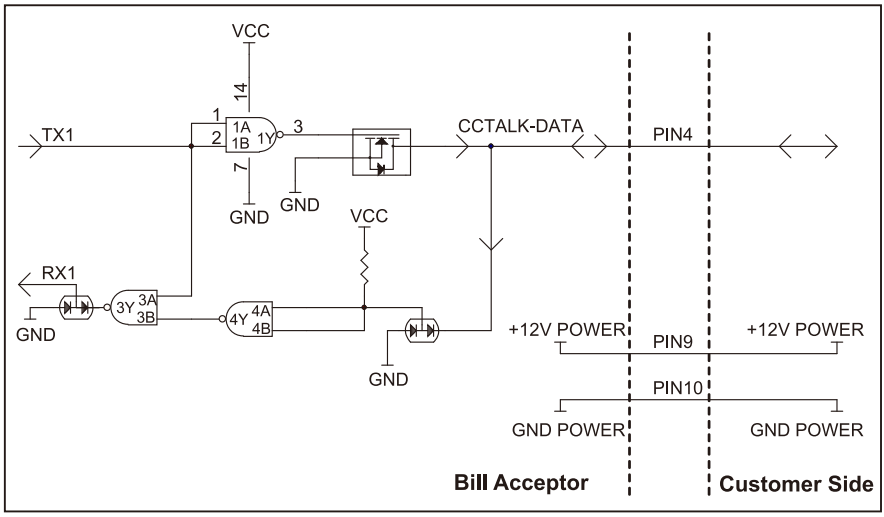
5-1-1. I/O Circuit



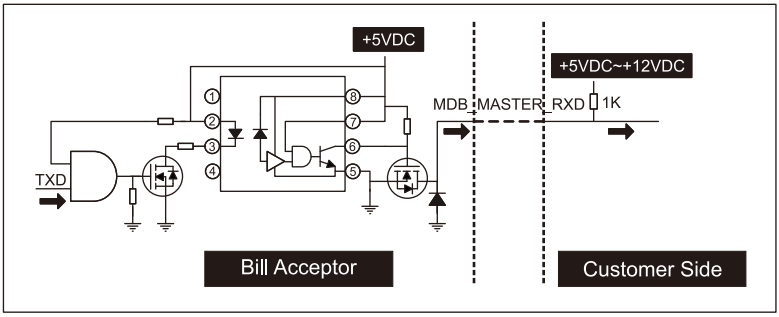
RS232 Interface

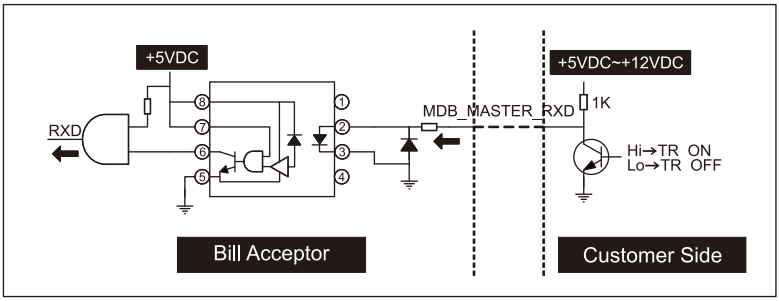


ccTalk Interface(NK77F)



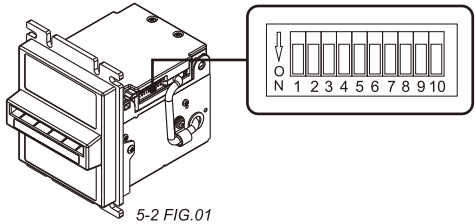
MDB Interface.





5-2. DIP Switch Setting

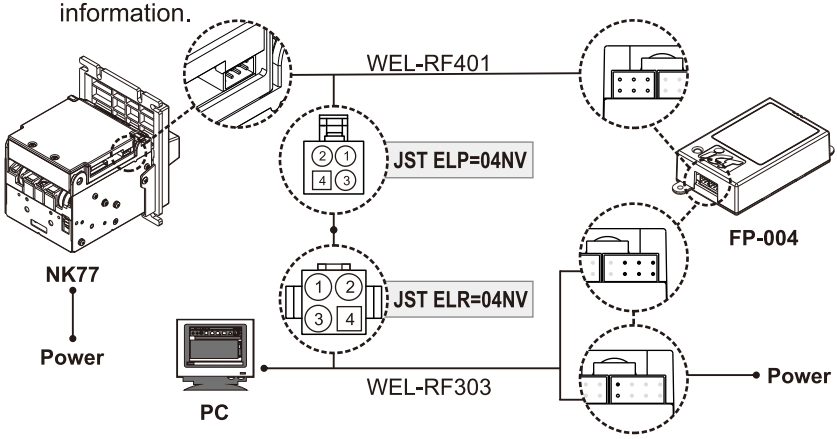
There's a serial DIP switches which is located on the side of NK77. According to different currencies or interfaces which are used by users, DIP switch settings could be varied to fit users' need.
Please refer to "NK77 DIP Switch Setting" Guide in the package for more detail.



5-2 FIG.01

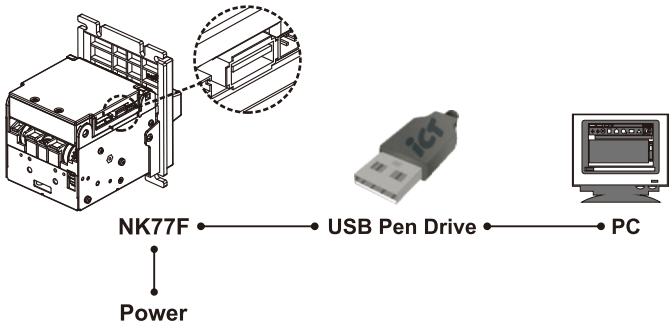
5-3. Software Download and Upgrade

To download and upgrade the software to NK77, the programmer (FP-004) is needed. Please contact ICT to purchase FP-004 and refer to FP-004 user guide for software download and upgrade information.



Power must be applied to Bill Acceptor **after** connecting.

5-3-1. USB Pen Drive Firmware Upgrade(NK77F)



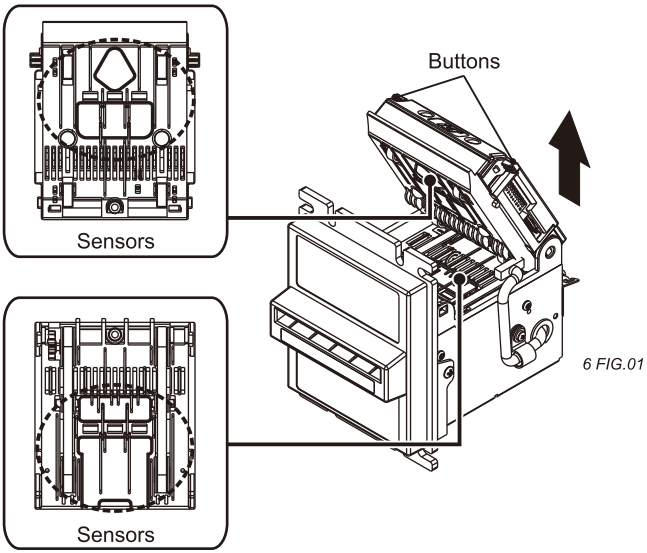
Power must be applied to Bill Acceptor **after** connecting.

6. Maintenance

To make sure the bill acceptor always works smoothly, please clean the internal parts regularly.

To clean the internal parts:

1. Press the buttons on the sides of bill path and lift the unit up.
2. Use a soft, dry cloth or towel to clean the bill path and sensors.



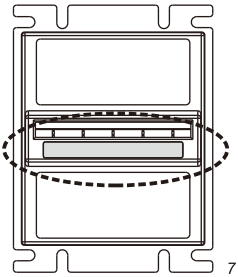
6 FIG.01

Maintenance Notice
(Any improper maintenance will result invalid warranty.)

Recommended	**Mild, non-abrasive, soap water.**
DO NOT USE	**Organic solvent , Alcohol, Volatility liquid.**

7. Troubleshooting

Bezel Part Number:
3RBA-FAC4100X



7 FIG. 01

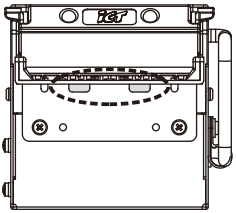
LED

7 TABLE 01

Flashes		Status	Corrective Actions
Red	Green		
N/A	ON	Standby.	N/A
1	1	Bill jammed.	Check bill path and remove the jammed bill.
2	1	BA inhibit.	Check inhibit signal and dip switch setting.
3	N/A	Verification sensor error.	Inspect for foreign objects on sensor and clean.
3	2	Hook sensor error.	
3+4	N/A	Output sensor error.	
4	1	A stringing attempt has detected.	Inspect for foreign objects on bill path and clean.
7	1	Motor error.	

If the error can not be solved after corrective actions or happen again, please contact ICT for technical support.

Bezel Part Number:
3ZBA-FAC6200X



7 FIG. 02

LED

7 TABLE 02

Flashes		Status	Corrective Actions
Red	Green		
N/A	ON	Standby.	N/A
1	1	Bill jammed.	Check bill path and remove the jammed bill.
1	2	BA inhibit.	Check inhibit signal and dip switch setting.
N/A	3	Verification sensor error.	Inspect for foreign objects on sensor and clean.
2	3	Hook sensor error.	
N/A	3+4	Output sensor error.	
1	4	A stringing attempt has detected.	Inspect for foreign objects on bill path and clean.
1	7	Motor error.	

If the error can not be solved after corrective actions or happen again, please contact ICT for technical support.

ICT Taiwan

International Currency Technologies Corporation

No.28, Ln. 15, Sec. 6, Minquan E. Rd., Neihu Dist., Taipei City 114, Taiwan

sales@ictgroup.com.tw (For Sales)

fae@ictgroup.com.tw (For Customer Service)

Website: www.ictgroup.com.tw

V. 11.0 Part Number: H6211J-R