UPSONIC POWER CSC-A400 Communication Cards User Guide

Contents

UPSONIC POWER CSC-A400 Communication Cards

Product Information

Specifications

- PCBA Size: 146.2*60*1.6 mm
- Connector for Dry contact (EK381V4L)
- RJ45 Connector for RS232
- Gold Finger for UPS Side

Product Usage Instructions

Packing the Card

The package includes a Dry contact Management Card, Screw, RJ45 to DB9 cable (for RS232), User Manual, Safety Cover, and Carton.

Card Details

The card features the following components:

1. PCBA Size: 146.2*60*1.6 mm
2. Connector for Dry contact (EK381V4L)
3. RJ45 Connector for RS232
4. Gold Finger for UPS Side

Interface Specifications

Segment	Dry Contact Segment	PIN NO	Specification/Function	Remark

Dry Contact Function

The Dry contact function allows users to configure output and input signals based on specific segments. Refer to

the user manual for detailed instructions on setting up functions for each segment.

RS232 Cable Wiring
Refer to Figure 3 for the wiring table of the RJ45 to DB9 cable for RS232 connection.

Frequently Asked Questions (FAQ)

- **Q: What should I do if I need to send a UPS On command?**
  A: If you need to send a UPS On command, push down USER SW2 on the AS400 Card.
- **Q: How can I configure the Dry Contact segments for specific functions?**
  A: Refer to the Dry Contact Function section in the user manual for instructions on configuring output signals for different segments.

Getting Started

This chapter explains:

- Packing the card
- Installation Checklist
- Card defaults
- INTERFACE (EK381V4L 14pin & RJ45)
- Cable RJ45 TO DB9 (F)
- INTERFACE (UPS side)
- Dry contact Function
- Configuring the Card Introduction

Packing the Card

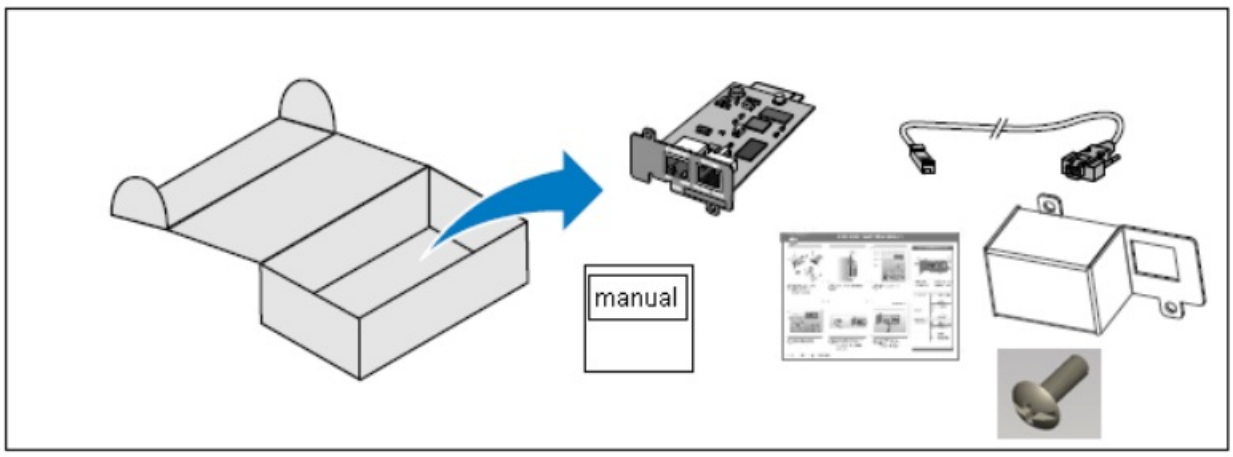


Figure 1. Dry contact Management Card Package Contents

- Dry contact Management Card
- Screw
- RJ45 to DB9 cable (for RS232, P/N 720-60679-00)
- USER MANUAL
- Safety Cover

- Carton

Card Details

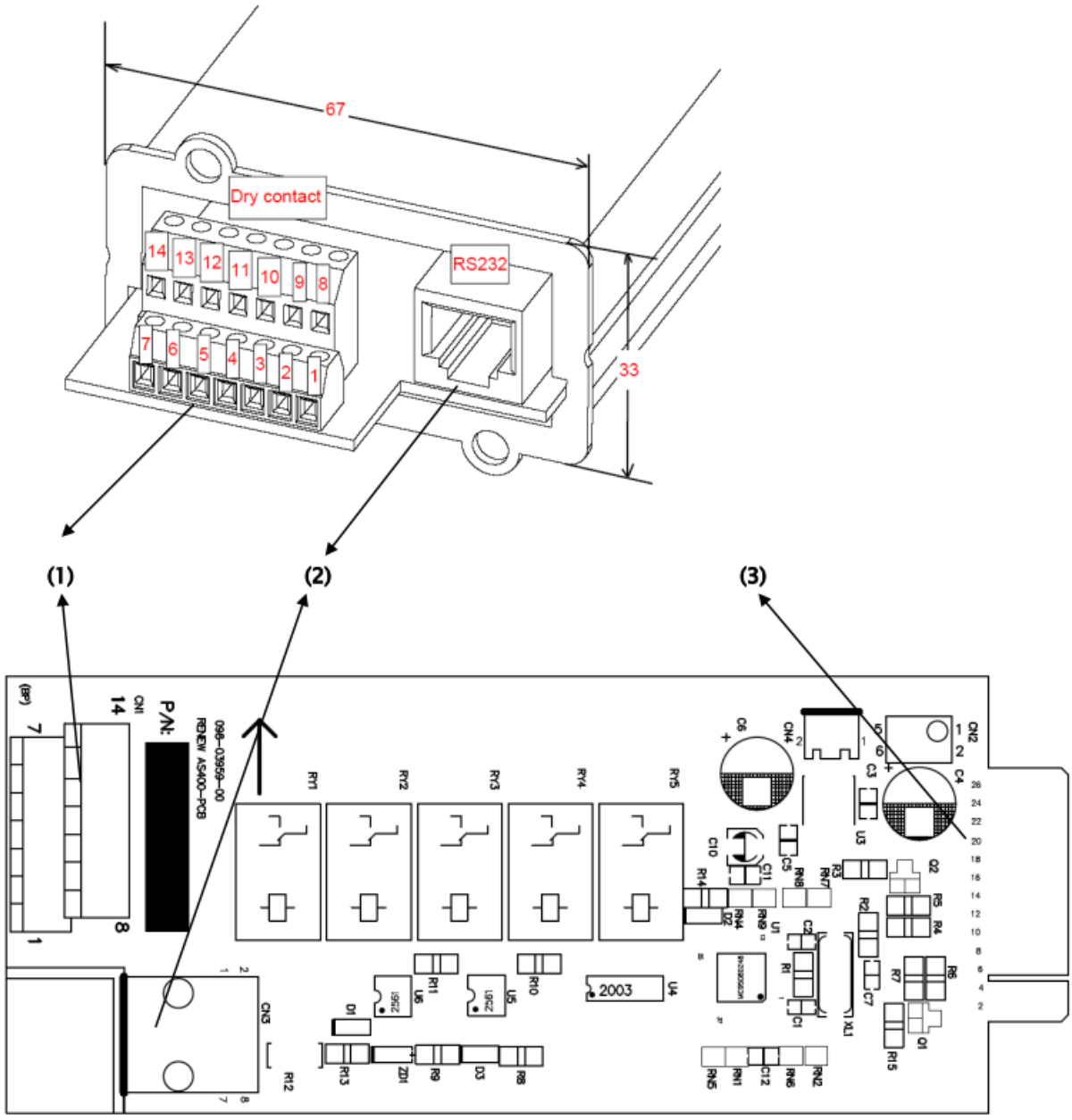


Figure 2. Component distribution

PCBA Size: 146.2*60*1.6 mm

1. EK381V4L Connector for Dry contact
2. RJ45 Connector for RS232
3. Gold Finger for UPS Side

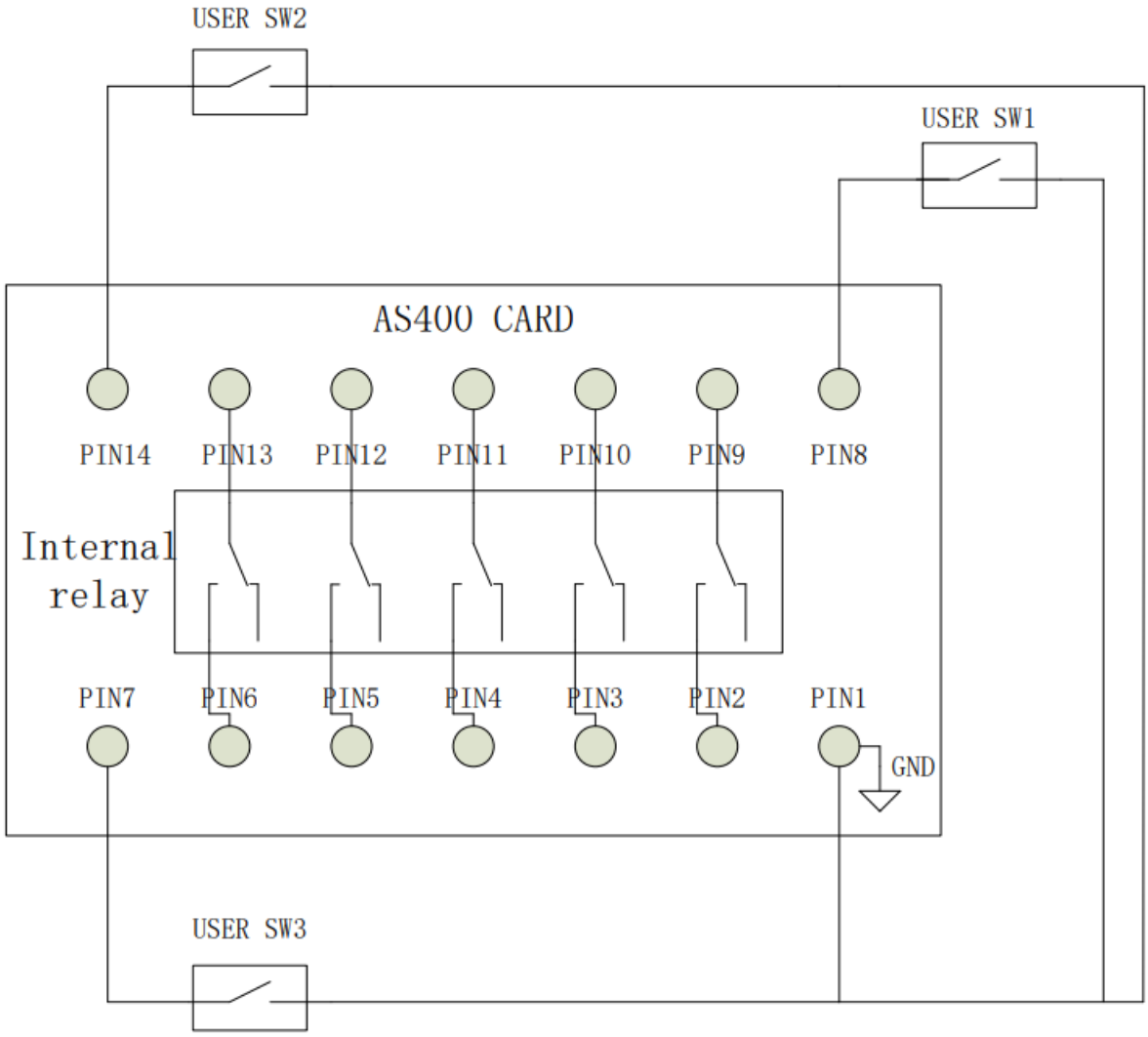
INTERFACE

(EK381V4L 14pin & RJ45)

Segment	PIN NO	Specification/Function	remark
Dry contact			
Segment 1	Pin 9 & Pin 2	240Vac/1A(Max) or 30Vdc/1A(Max)	Output signal , NO or NC
Segment 2	Pin 10 & Pin 3	240Vac/1A(Max) or 30Vdc/1A(Max)	Output signal , NO or NC
Segment 3	Pin 11 & Pin 4	240Vac/1A(Max) or 30Vdc/1A(Max)	Output signal , NO or NC
Segment 4	Pin 12 & Pin 5	240Vac/1A(Max) or 30Vdc/1A(Max)	Output signal , NO or NC
Segment 5	Pin 13 & Pin 6	240Vac/1A(Max) or 30Vdc/1A(Max)	Output signal , NO or NC
Segment 6	Pin 8 & Pin1	NA	Input signal (The external co ntact must be closed between pin8&pin1)
Segment 7	Pin 14 & Pin1	NA	Input signal (The external co ntact must be closed between pin14&pin1)
Segment 8	Pin 7 & Pin1	NA	Input signal (The external co ntact must be closed betwee n pin7&pin1)
RS232 (CABLE RJ45 TO DB9F)			
TXD2 RXD2 GND	RJ45, Pin 3 RJ45, Pin 6 RJ45, Pin 4	12Vdc 3mA (Max) 12Vdc 5mA (Max) GND	Power system GND

 The crossed-out wheeled bin symbol indicates that waste electrical and electronic equipment should not be discarded together with unseparated household waste, but must be collected separately. The product should be handed in for recycling in accordance with the local environmental regulations for waste disposal. By separating waste electrical and electronic equipment , you will help reduce the volume of waste sent for incineration or land-fills and minimize any potential negative impact on human health and environment.

Segment illustration:



Note: Segment 7 (PIN14 & PIN1 / USER SW2) is fixed to UPS On function. Segment 8 (PIN7 & PIN1 / USER SW3) is fixed to UPS Off function. (Refer to Dry contact Function Section at next page of this document) We Suggest User do not push down USER SW2 and SW3 at the same time. If user pushes down USER SW2, AS400 Card will send a UPS On command to UPS. If user pushes down USER SW3, AS400 Card will send a UPS Off command to UPS. If USER SW2 and SW3 pushed down at the same time, AS400 Card will first send UPS On command to UPS, then send UPS Off command to UPS. And the UPS always follow the last command.

CABLE RJ45 TO DB9 (F)

WIRING TABLE

RJ45		DB9
3	----------	2
4	----------	5
6	----------	3

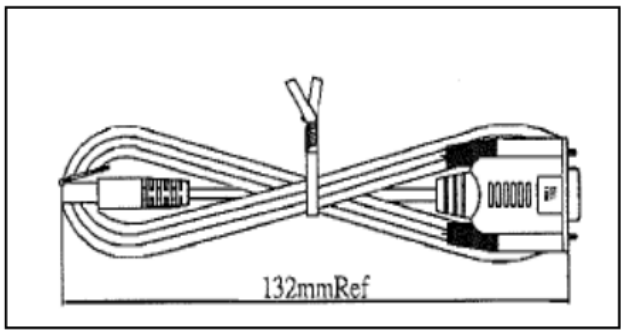


Figure 3. RS232 Cable

INTERFACE (UPS side)

Item	Specification/Function
Pin Assignment – Pin 1 – Pin 2 – Pin 3 – Pin 4 – Pin 5 – Pin 6 – Pin 7 – Pin 8 – Pin 9 – Pin 10 – Pin 11~26	 GND SNMPPOW RXDUPS TXDUPS *UNUSED* *UNUSED* -VCC SNMPSIG GND +VCC RESERVE

Dry contact Function

Output signals (Segment 1~5): User can choose one function for a Segment from below table. *Output signal (Segment 1~5):

Description		
Meaning	“1”	“0”
Utility Fail	Fail	Normal
Battery Low	Battery Low	Normal
General Alarm	Alarm	Normal
Bypass Status (Online UPS) Or AVR Status (Offline/LIA UPS)	Bypass Active Or AVR Active	Not Bypass Status Or Not AVR Status
Summary Alarm	Alarm	Normal
Battery Testing	In test mode	Not test mode
Shutdown Processing	UPS Shutdown	Normal
Over Load Warning	Over Load	Normal

Input signals (Segment 6): User can choose one function for a Segment from below table. *Input signal (Segment 6):

Description		
Meaning	“1”	“0”
Battery mode shutdown	Only Battery mode shutdown	Normal
Any mode shutdown	Shutdown	Normal
Emergency power off	OFF	Normal
Remote On/Off	OFF	ON

Input signals (Segment 7): Segment 7 is fixed to UPS On function. *Input signal (Segment 7):

Description		
Meaning	“1”	“0”
UPS On	ON	Normal

Input signals (Segment 8): Segment 8 is fixed to UPS Off function. *Input signal (Segment 8):

Description		
Meaning	“1”	“0”
UPS Off	OFF	Normal

Configuring the Card Introduction

General
This document specifies the Serial communication protocol of the Dry contact Management Card. The card provided the following features.

1. Get UPS internal information by SCI protocol
2. Bridge communication data between PC and ups
3. Configure five output relay signal
4. Configure one input signal for shutdown ups or remote on/off
5. Configure Dry contact normal open and normal close status
6. Configure Dry contact function definition
7. Configure Dry contact active delay time

Definitions

1. **Common items**
    1. Computer (Software) has Initiative for communicate by this protocol. Computer will send command ended with <cr>. Dry contact Management Card will respond the information of ended with <cr>
    Note: <cr> means ASCII code “Carriage Return” (HEX-code 0D).

2. All the information is provided in ASCII format.
3. Communication start timing

   Dry contact Management Card should be received the command from PC, and send the right response to PC.

2. **Serial Data format**

Dry contact Management Card data will be provided at 2400 baud rate and consist of 1 start bit, 8 data bits, no parity, and 1 stop bit.

BAUD RATE:	2400 band
DATA LENGTH:	8 bits
STOP BIT:	1 bit
PARITY:	NONE

Data format figure:

	Start	b0	b1	b2	b3	b4	b5	b6	b7	Stop

3. **Installing**

1. **Installing the Card**

The Dry contact Management Card can be installed in UPS equipped with a communication bay without turning off the UPS or disconnecting the load.

To install the Dry contact Management Card:

1. Remove the communication bay cover from the UPS. Retain the screws.
2. To prevent electrostatic discharge (ESD), place one hand on a metal surface.
3. Slide the card into the open slot and secure with the screws removed in Step 1

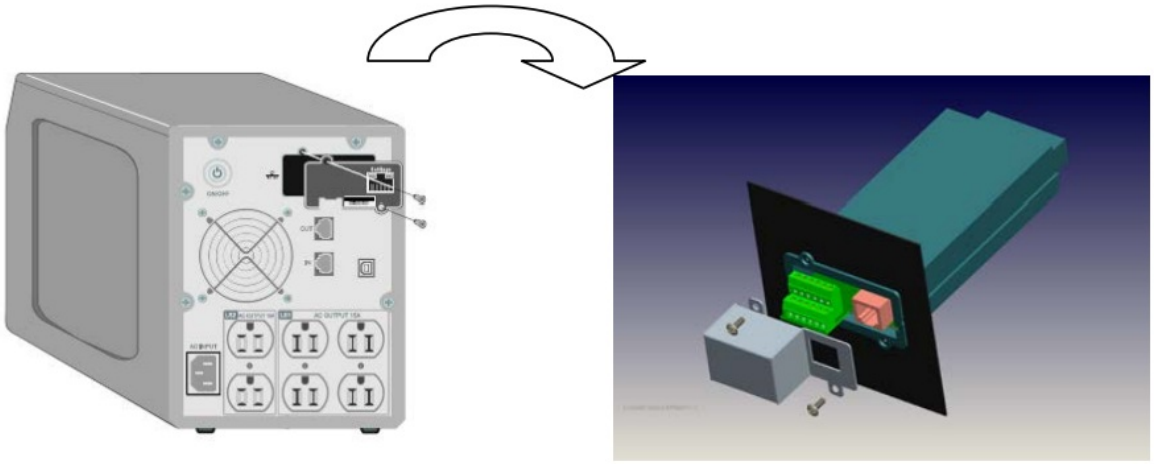


Figure4. Installing the Card

2. **Connecting the Card**

To connect the card to the computer and start the configuration:

1. Plug the RJ-45 end of the supplied serial cable into the Settings port on the card
2. Plug the other end of the serial cable into the serial COM port on the computer.

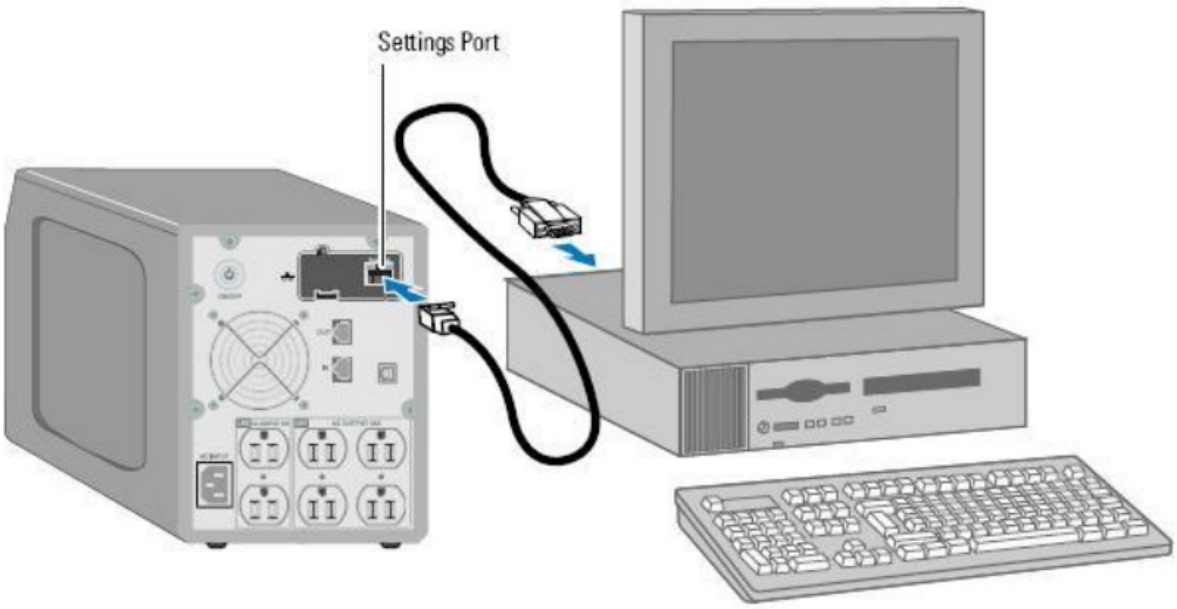
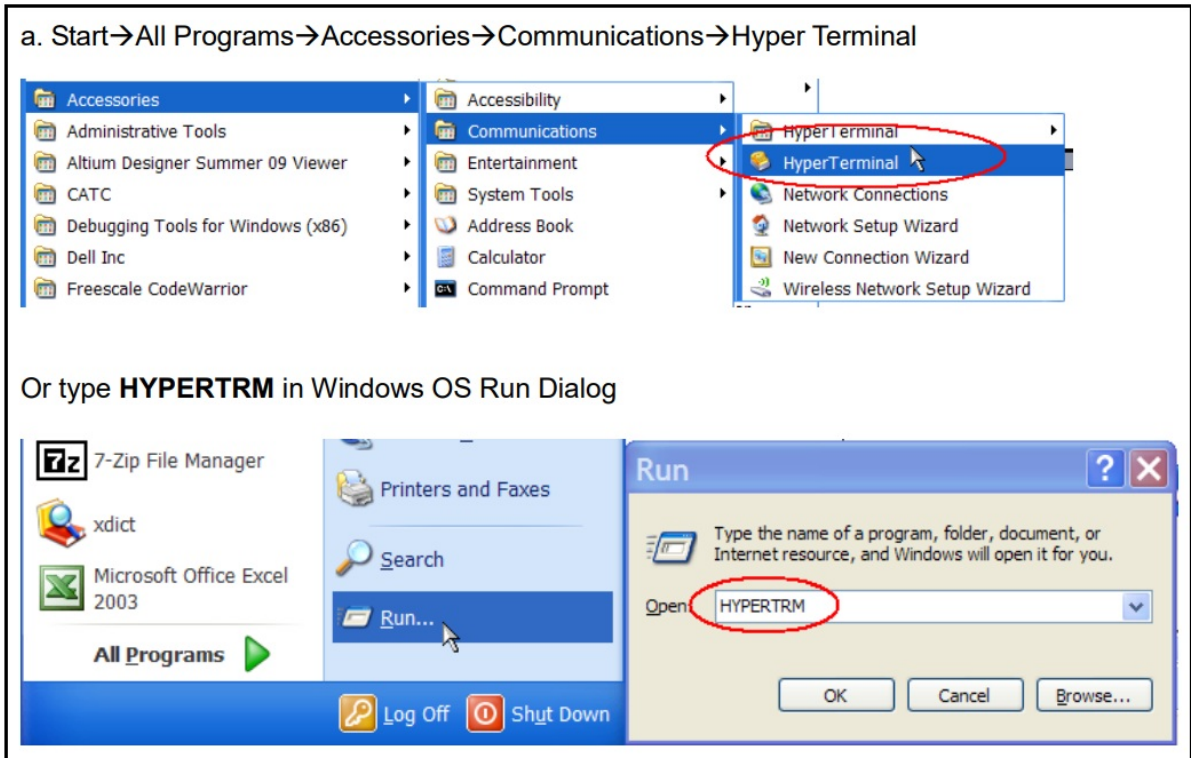


Figure5. Connecting the Card

3. **Configuring the Card**

   To configure the card:

   1. Verify that the serial cable (supplied) is connected to the card's Settings port and the computer's COM port.
   2. Open your terminal emulation program (such as HyperTerminal).



b. Name the new connection

Figure6. Hyper Terminal

3. Select the serial connection (such as COM1).

Figure7. Select the serial connection

4. Set the serial line to 2400 baud, 8 data bits, No parity, 1 stop bit, no flow control.

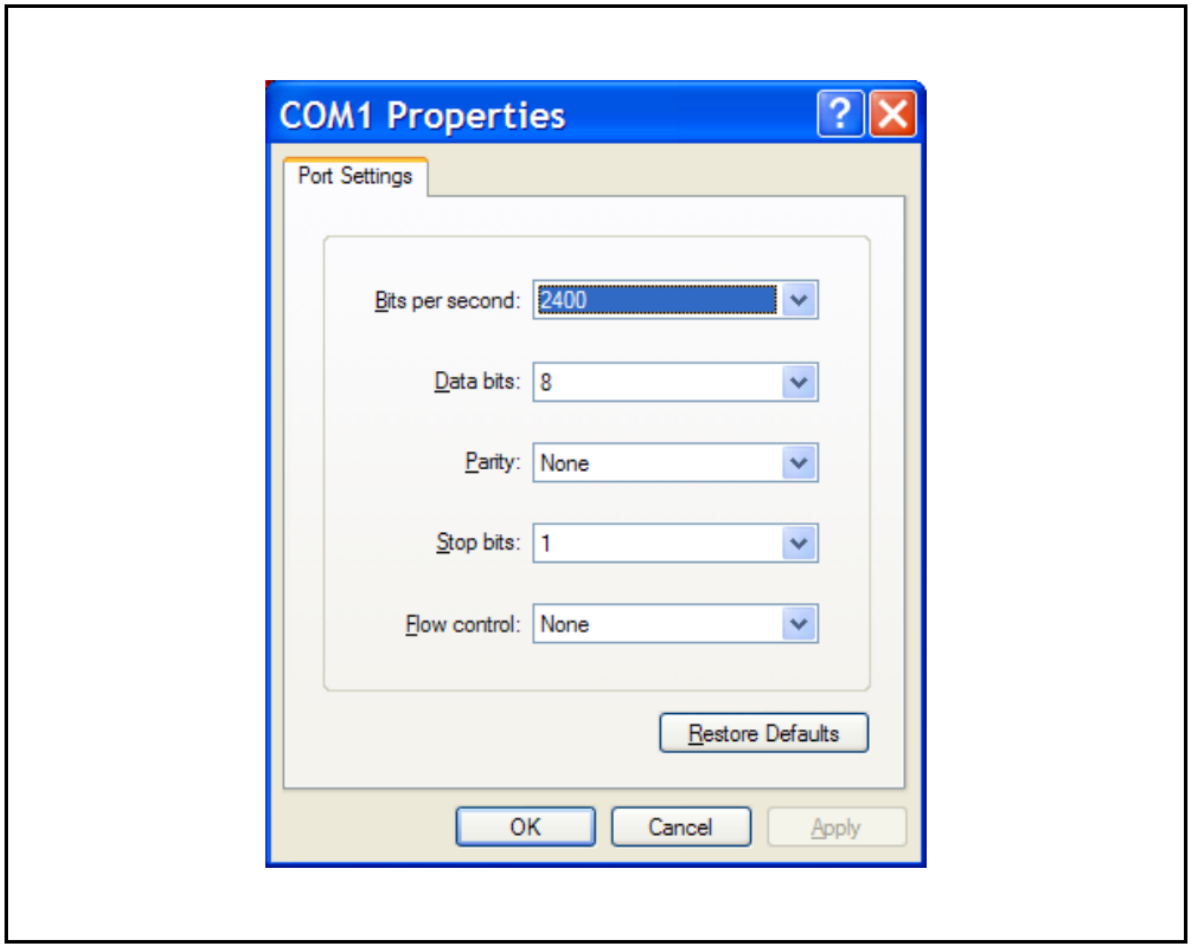


Figure8. Configuring Port Settings

5. Set the Properties→Settings→ASCII Setup.

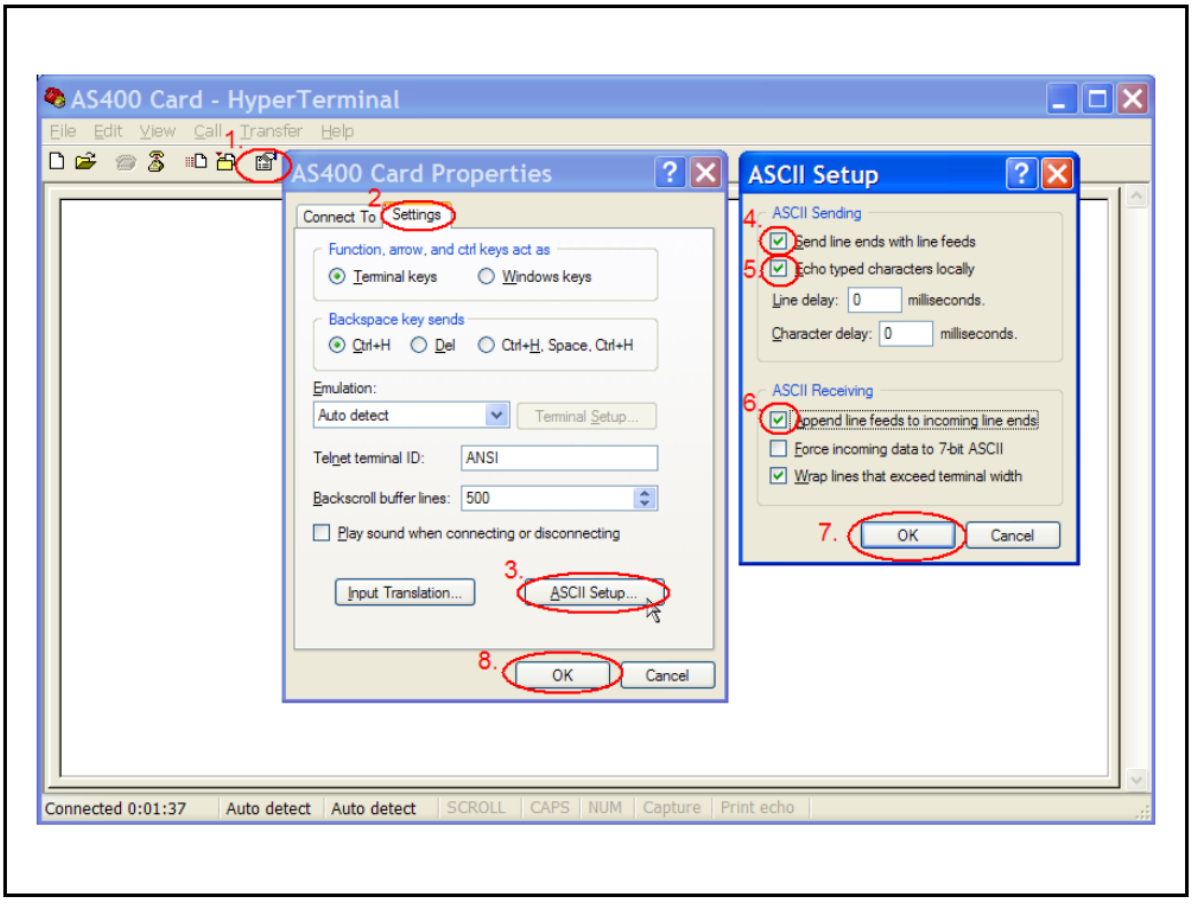


Figure9. Set the Properties

4. **Setting operation menu**

1. Password menu

   Type <ENTER> continuity 3 times, the password menu displays as below

```
Enter Password to Activate Maintenance Menu:
```

Figure10. Password menu

Enter admin. The main menu displays (see Figure 12).

If password incorrect, the menu will prompt enter correct password as below, until type correctly password, the menu will change to main menu

```
Password Error

Please Enter Correct Password:
```

Figure11. Password incorrect menu

2. **Main menu**

   There are six item can be setting or inquire firmware version, user need base on menu number and enter the correct menu

```
--------------------------------------------------------------------------
Dry contact Management Card
--------------------------------------------------------------------------
        1. Function Segment Logic
        2. Output Segment Function Configure
        3. Input Segment Function Configure
        4. Function Segment Active Delay Time
        5. Return to Default Configuration
        6. Firmware Version
        0. Exit
--------------------------------------------------------------------------

Please Enter Number:
```

Figure12. Main menu

Type any list number then will change to 4.3~4.9 menu, if user enter number not include of list, the window will show “Please Enter Correct Number:” string as below, this menu will possible show in any setting menu, if user do not depend on prompt number and enter a wrong number

```
Please Enter Correct Number:
```

Figure13. Un-correct number prompt menu

3. **Function Segment Logic menu**

When main menu Type 1 and press Enter. The menu displays the Segment settings logic and current setting status as below, in this menu type 0 number, the menu will return to Figure12. Main menu.

```
--------------------------------------------------------------------------
Function Segment Logic
--------------------------------------------------------------------------
        1. Segment 1 Logic, Current Setting(Normal Open)
        2. Segment 2 Logic, Current Setting(Normal Open)
        3. Segment 3 Logic, Current Setting(Normal Open)
        4. Segment 4 Logic, Current Setting(Normal Open)
        5. Segment 5 Logic, Current Setting(Normal Open)
        6. Segment 6 Logic, Current Setting(Normal Open)
        7. Segment 7 Logic, Current Setting(Normal Open)
        8. Segment 8 Logic, Current Setting(Normal Open)
        0. Exit
--------------------------------------------------------------------------

Please Enter Number:
```

Figure14. Logic Segment select menu

Segment 1 ~ Segment 5 for output signal logic setting, and Segment 6 ~ Segment 8 for input signal logic setting, user can setting “Normal Open” and “Normal Close” type, the default setting is “Normal Open” When Figure14. Logic Segment select menu Type 1~6 and press Enter. The menu displays Logic select menu as below, in this menu select any list number, the menu will return to Figure14. Logic Segment select menu

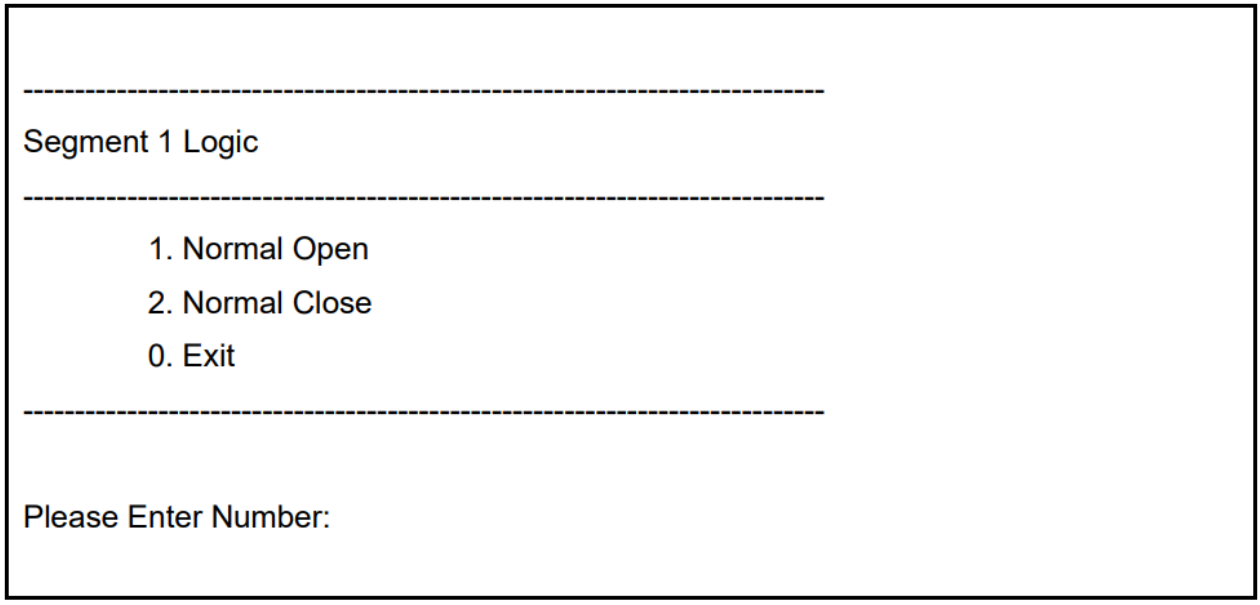


Figure15. Logic select menu

4. **Output Segment Function Configure menu**

When main menu Type 2 and press Enter. The menu displays the Output Segment Function Configure and current setting status as below, in this menu type 0, the menu will return to Figure12. Main menu

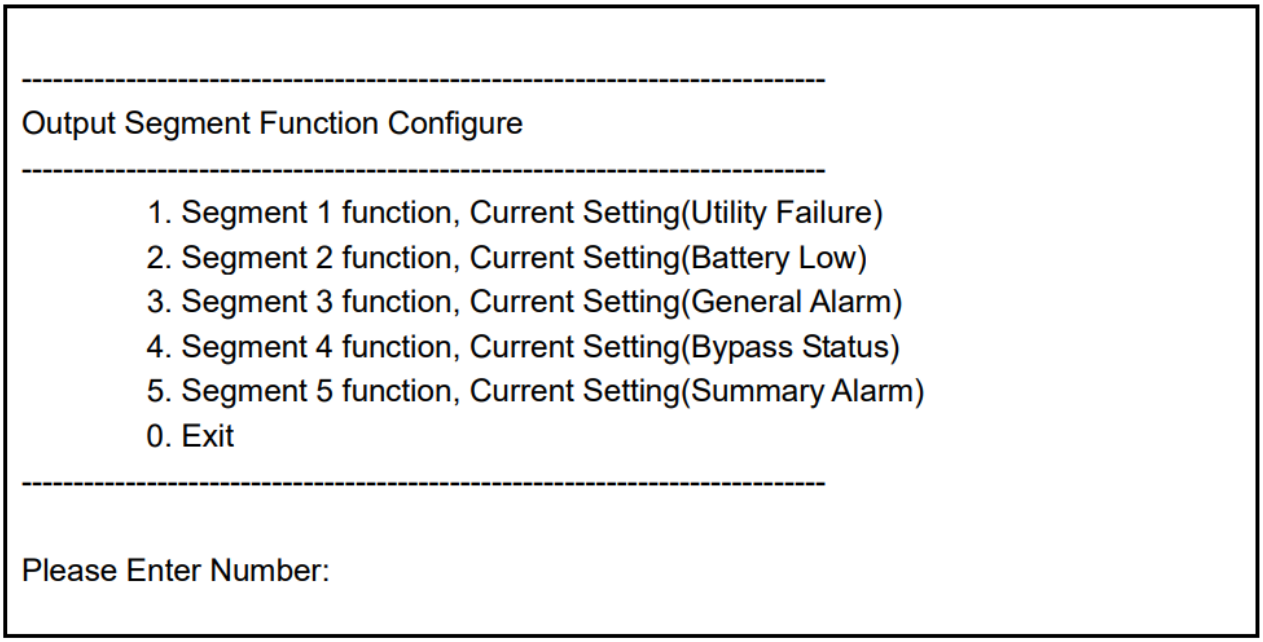


Figure16. Output Segment select menu

1. **Default of each Segment**
    1. Segment 1 function default is Utility Failure
    2. Segment 2 function default is Battery Low
    3. Segment 3 function default is General Alarm
    4. Segment 4 function default is Bypass Status
    5. Segment 5 function default is Summary Alarm

    When Figure16. Output Segment select menu Type 1~5 and press Enter. The menu displays output function select menu as below, in this menu select any list number, the menu will return to Figure16. Output Segment select menu

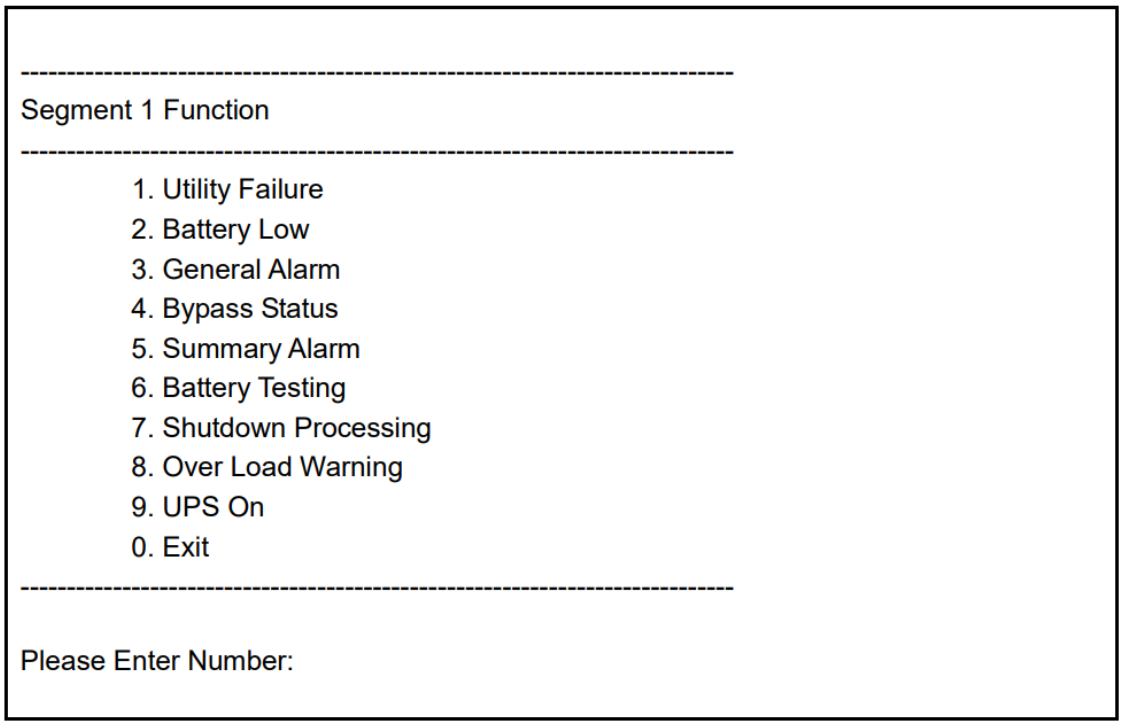


Figure17. Output function select menu

2. **Function description:**
    1. Utility Failure: UPS input mains voltage or frequency out of range
    2. Battery Low: UPS Battery voltage level is low
    3. General Alarm: UPS fail condition
    4. Bypass Status: UPS under Bypass mode
    5. Summary Alarm: Any one of AS400 “Utility Failure”, “General Alarm”, ”Bypass”, “Battery Low”, “Over Load Warning” active will send this signal
    6. Battery Testing: Battery Testing is in progress
    7. Shutdown Processing: UPS doing shutdown after received shutdown command via communication port
    8. Over Load Warning: UPS load over spec definition over load warning level
    9. UPS On: The UPS is powered on and is capable of providing power to the system (whether utility power is available or not).

5. **Input Segment Function Configure menu**

    When main menu Type 3 and press Enter. The menu displays the Input Segment Function Configure and current setting status as below, in this menu type 0, the menu will return to Figure12. Main menu

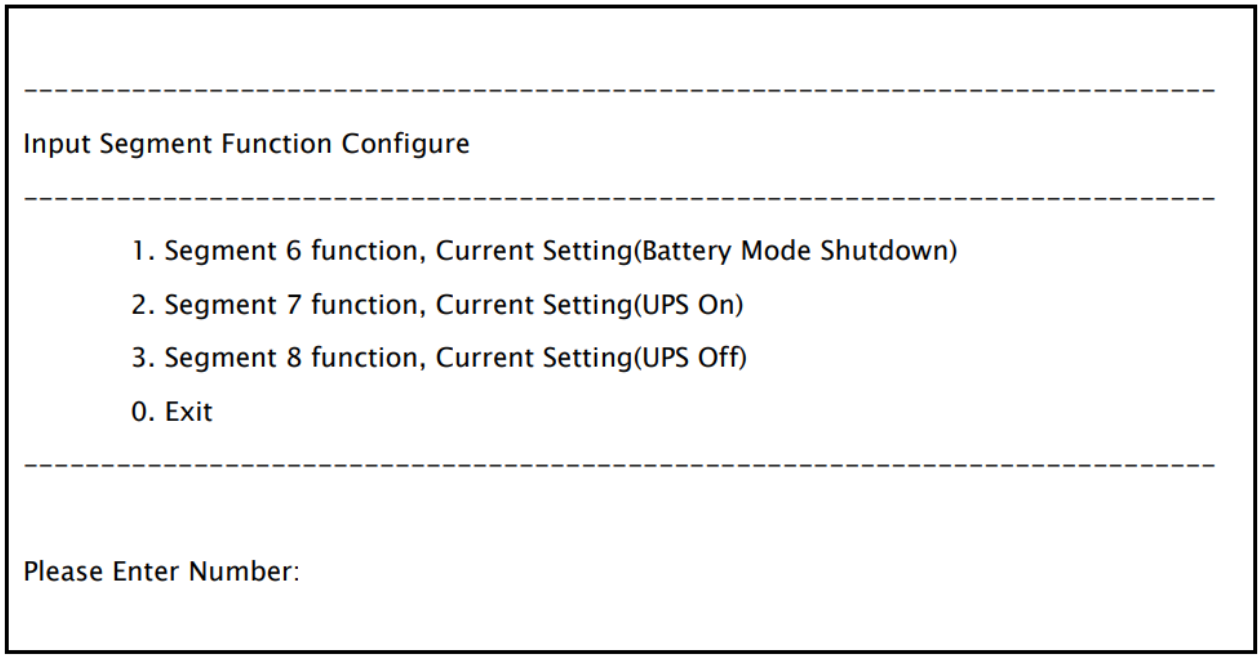


Figure18. Input Segment select menu

Default of each Segment

1. Segment 6 function default is Battery Mode Shutdown
2. Segment 7 function default is UPS On
3. Segment 8 function default is UPS Off

   Segment 6 function can be configured.

   Segment 7 and 8 function is fixed to its default function.

   When Figure18. Input Segment select menu Type 1 and press Enter. The menu displays input function select menu as below, in this menu select any list number, the menu will return to Figure18. Input Segment select menu

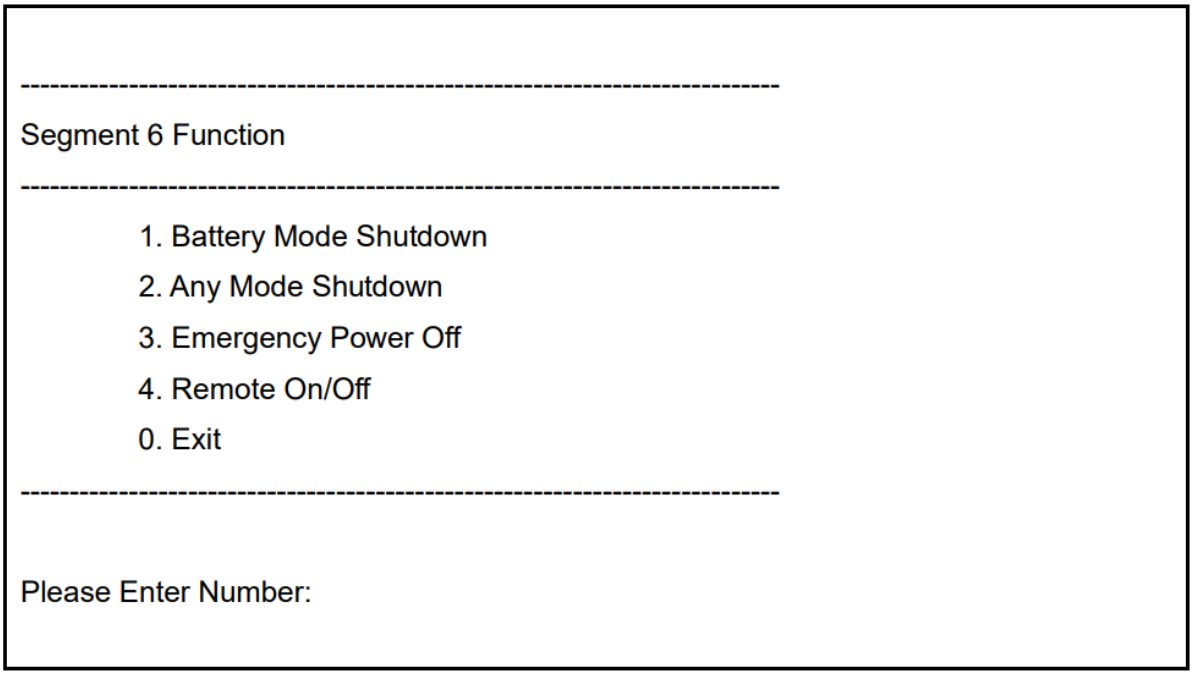


Figure19. Input function select menu

4. **Function description:**
   1. Battery Mode Shutdown: If Signal is active and UPS is under bat mode, UPS will cutoff output
   2. Any Mode Shutdown: If Signal is active and UPS is under any mode, UPS will cutoff output

3. Emergency Power Off: If Signal is active and UPS is under any mode, UPS will cutoff output, give out EPO warning, and pressing any button on UPS LCD panel can not turn on UPS
4. Remote On/Off: If Signal is active (close Pin 8 & Pin1 when Segment 6 is configured to Normal Open; or open Pin 8 & Pin1 when Segment 6 is configured to Normal Close) and UPS is under any mode, UPS will cutoff output.
   If Signal is not active (open Pin 8 & Pin1 when Segment 6 is configured to Normal Open; or close Pin 8 & Pin1 when Segment 6 is configured to Normal Close) and UPS is under any mode, UPS will turn on.
   When Figure18. Input Segment select menu Type 2 or 3 and press Enter, it will reject the number because Segment 7 or 8 function is fixed. User only can type 1 to set Segment 6 function. If user type 0, the menu will return to Figure12. Main menu

```
This Segment Function can not be set.

Please Enter a Number again:
```

Figure20. Segment function can not be set

6. **Function Segment Active Delay Time menu**

When main menu Type 4 and press Enter. The menu displays the Function Segment Active Delay Time and current setting value as below, in this menu type 0, the menu will return to Figure12. Main menu

```
------------------------------------------------------------------------
Function Segment Active Delay Time
------------------------------------------------------------------------
        1. Segment 1 Active Delay Time, Current Setting(Immediately)
        2. Segment 2 Active Delay Time, Current Setting(Immediately)
        3. Segment 3 Active Delay Time, Current Setting(Immediately)
        4. Segment 4 Active Delay Time, Current Setting(Immediately)
        5. Segment 5 Active Delay Time, Current Setting(Immediately)
        6. Segment 6 Active Delay Time, Current Setting(Immediately)
        0. Exit
------------------------------------------------------------------------

Please Enter Number:
```

Figure21. Active delay time Segment select menu

Default of each Segment

Every Segment default is immediately, enter 00 is means immediately Type 00 and press Enter means active Immediately, and type 01 and press Enter means active will delay one second, only type one character and press Enter is illegal command, only press Enter means user do not want to change the

setting parameter and menu will return to Figure21. Active delay time Segment select menu

```
--------------------------------------------------------------------------
Segment 1 Active Delay Time
--------------------------------------------------------------------------
Please Enter Delay Time 00~99, Only Press <ENTER> Means Abort and Exit Current
Setting

Please Enter Delay Time:
```

Figure22. Active delay time menu

7. **Return to Default Configuration menu**

   When main menu Type 5 and press Enter. The menu displays the Return to Default Configuration as below

```
Return to Default(Y/N)?:
```

Figure23. Default confirm menu

Enter Y or y. below menu will display as below, if enter any other character, the only main menu displays (see Figure 12) and not show “Default All Configuration Parameter” string and do not change to default value

```
Default All Configuration Parameter

--------------------------------------------------------------------------
Dry contact Management Card
--------------------------------------------------------------------------
        1. Function Segment Logic
        2. Output Segment Function Configure
        3. Input Segment Function Configure
        4. Function Segment Active Delay Time
        5. Return to Default Configuration
        6. Firmware Version
        0. Exit
--------------------------------------------------------------------------

Please Enter Number:
```

Figure24. Default all configuration parameter success menu

8. **Firmware Version menu**

When main menu Type 6 and press Enter. The menu displays the Firmware Version and development data as below, in this menu type 0, the menu will return to Figure12. Main menu

```
--------------------------------------------------------------------------
Firmware Version
--------------------------------------------------------------------------
        Firmware Version:00.05 2010/06/01
        0. Exit
--------------------------------------------------------------------------

Please Enter Number:
```

Figure25. Firmware version menu

9. **Exit menu**

When main menu Type 0 and press Enter. The menu displays the Exit setting mode information as below

```
--------------------------------------------------------------------------
Exit
--------------------------------------------------------------------------
        1. Exit and Save
        2. Exit and Without Save
        0. Not Exit
--------------------------------------------------------------------------

Please Enter Number:
```

Figure26. Exit and save select menu

1. Type 1 and press Enter means exit setting mode and Save change data, the menu string will as below

```
Exit Setting Mode and Save Data
```

Figure27. Exit and Save menu

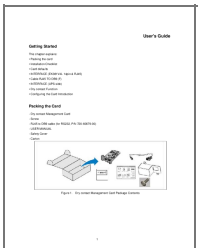
2. Type 2 and press Enter means exit setting mode and without save change data, the menu string will as below

Exit Setting Mode and Without Save Data

Figure28. Exit and Without Save menu

3. Type 0 and press Enter means still stay on setting mode, the menu will return to Figure12. Main menu

Documents / Resources

	UPSONIC POWER CSC-A400 Communication Cards [pdf] User Guide CSC-A400, CSC-A400 Communication Cards, Communication Cards, Cards

References

- User Manual