

# 山特 UPS RS232 通讯协议

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## Hardware :

BAUD RATE ..... : 2400 bps  
DATA LENGTH ..... : 8 bits  
STOP BIT ..... : 1 bits  
PARITY ..... : NONE

### A. COMMUNICATION PROTOCOL:

#### ( 1 ) Status Inquiry :

##### **Computer : Q<cr>**

UPS: UPS status data stream ,such as MMM.MNNN.NPPP.PQQQRR.RS.SSTT.TU<cr>

UPS status data stream :

(a) Start byte : (

(b) I/P voltage : MMM.M

M is an integer number ranging from 0 to 9.

The unit is Volt.

(c) I/P fault voltage : NNN.N

N is an integer number ranging from 0 to 9.

The unit is Volt.

**\*\* For ON LINE UPS \*\***

Its purpose is to identify a short duration utility fail which cause ON line UPS to go to Battery mode. If this occurs input voltage will appear normal at query prior to fail and will still appear normal at next query. The I/P fault voltage will hold utility fail voltage till next query. After query, the I/P voltage will be same as I/P voltage until next utility fail occurs.

(d) O/P voltage : PPP.P

P is an integer number ranging from 0 to 9.

The unit is Volt.

(e) O/P load : QQQ

For Off-line UPS:

QQQ is a percent of maximum VA, not an absolute value.

For On-line UPS:

QQQ is maximum of W% or VA%.

VA% is a percent of maximum VA.

W% is a percent of maximum real power.

(f) I/P frequency : RR.R

R is an integer number ranging from 0 to 9.

The unit is HZ.

(g) Battery voltage: SS.S or S.SS

S is an integer number ranging from 0 to 9.

For on-line units battery voltage/cell is provided in the form S.SS .For standby units actual battery voltage is provided in the form SS.S .UPS type in UPS status will determine which reading was obtained.

(h) Temperature : TT.T

T is an integer number ranging from 0 to 9.

The unit is degree of centigrade.

(i) UPS Status : <U>

<U> is one byte of binary information such as

<b7b6b5b4b3b2b1b0>.

Where <bn> is a binary number "0" or "1".

UPS status :

Bit	Remarks
7	1 : Utility Fail ( Immediate )
6	1 : Battery Low
5	1 : Bypass/Boost Active
4	1 : UPS Failed
3	1 : UPS Type is Standby (0 is On-line)
2	1 : Test in Progress
1	1 : Shutdown Active
0	Reserved (always 0)

(j) Stop Byte: <cr>

Example : Computer : Q<cr>

UPS: (208.4140.0208.403459.92.0535.0U<cr>

Let U is 00110000

Means : I/P voltage is 208.4V.

I/P fault voltage is 140.0V.

O/P voltage is 208.4V.

O/P load is 34 %.

I/P frequency is 59.9 HZ.

Battery voltage is 2.05V.

Temperature is 35.0 degrees of centigrade.

UPS type is on-line , UPS failed, Bypass active , and Shutdown not active .

## (2) Status Inquiry :

### Computer : Q1<cr>

UPS: UPS status data stream ,such as (MMM.M NNN.N PPP.P QQQ RRR.R S.SS TT.T  
b7b6b5b4b3b2b1b0<cr>

The binary code is modified to 8 bytes ASCII code for avoiding the binary code confused with ASCII control code. Between each data stream add one space for the data separation.

Example :

Computer : Q1<cr>

UPS: (208.4 140.0 208.4 034 59.9 2.05 35.0 00110000<cr>

Means : I/P voltage is 208.4V.

I/P fault voltage is 140.0V.

O/P voltage is 208.4V.

O/P load is 34 % .

I/P frequency is 59.9 HZ.

Battery voltage is 2.05V.

Temperature is 35.0 degrees of centigrade.

UPS type is on-line , UPS failed, Bypass active , and Shutdown not active .

## Shut Down Command :

Computer : S<n><cr>

UPS: Shut UPS output off in <n> minutes.

(a) The UPS output will be off in <n> minutes, evenif the utility is present.

(b) But if the battery under occur before <n> minutes, the output is turned off immediately.

(c) After UPS shut down, the controller of UPS monitors the utility. If the utility is there, the UPS will waiting for 10 seconds and connect the utility to output.

(d) <n> is a number ranging from .2,.3,....,01,02,... to 10.

For example : S.3<cr> --- shut output off in (.3) minutes