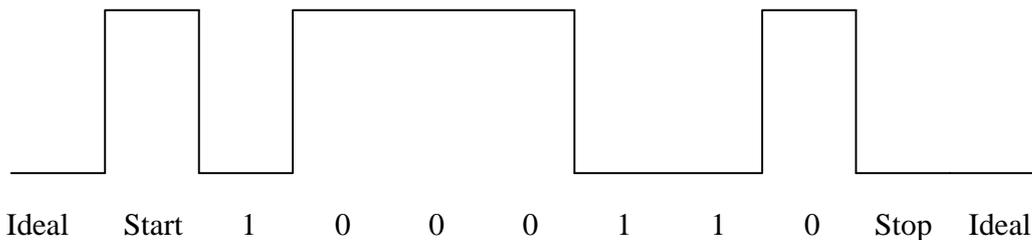


Communication Protocol for Programmable Power Supply

PSP 1405/12010/1803 use following protocol while communicating with PC through RS232 Serial port

Baud rate: 2400 Bits / Second
Port: COM1
Parity: None
Data Length: 8 Bits
Stop Bit: 1

To transmit any byte from the PC there will be one high level state indicating start bit followed by bit pattern of the data byte from LSB to MSB and a Low-level stop bit. For Example to transit 61H(0110001-Binary) the pattern will be as shown below.



This is to be noted that RS232 has negative logic levels. That is Low or negative for 1, High or Positive for 0 and Ideal state is low or negative.

Communication Frame

VSP series communicates in a fixed length frame. Each communication frame has three bytes. The first byte is the command followed by the two data bytes. Frame remains three bytes even if command does not have any data. Command formats are given below.

Command Format

1.Set Voltage: (AAh) (V1) (V2)

This sets output voltage to given value

V1 - Higher byte (Only lower 4 bit will be considered)

V2 - Lower byte

Example: To set Voltage to 40.00 it will be (FA0)H and the command will be AA0FA0H.

2.Set Output Relay ON/OFF: (ABh) (S) (R)

This sets output voltage to given value

S 1: Set Relay to ON
 0: Set Relay to OFF

R Reserved (Keep it to 0h)

Example: To set output relay ON command will be AB0100H

3.Set I_{max}: (ACh) (I1) (I2)

This sets I_{max} to given value

I1 Higher byte (Only lower 4 bit will be considered)

I2 Lower byte

I_{max} can be in the range of 0-500 i.e. 0 –1F4h

Example: To set I_{max} to 5.00 Amp the command will be AC01F4H.

4.Set V_{max}: (ADh) (V1) (0)

This sets V_{max} to given value

V1 Ranges from 0 to 190h representing 0 to 40.0V

Example: To set V_{max} to 40.0V the command will be AD0190H.

5.Read Output voltage: (AEh) (0) (0)

This Command asks Power supply to return the present value of output voltage.

Return: (AEh) (V1)(V2)

V1 Higher byte (Lower 4 bit represents higher nibble of 12 bit output voltage)

V2 Lower byte (Lower 8 bits of 12 bit output voltage)

Example: To read Output Voltage Send the command AE0000H.

Unit will return as AE0FA0H for output voltage of 40.00V i.e. FA0H.

6.Read Output Current: (AFh) (0) (0)

This Command asks Power supply to return the present output current.

Return: (AFh) (I1)(I2)

I1 Higher byte (Lower 4 bit represents higher nibble of 12 bit output Current)

I2 Lower byte (Lower 8 bits of 12 bit output Current)

Example: To read Output Current Send the command AF0000H.

Unit will return AS AF0FFFH for output Current of 5.000Amps i.e. FFFH.

7.Set Keyboard ON/OFF: (B0h) (S) (R)

This command sets Power Supply's Keyboard Lock ON/OFF

S 1: Set Keyboard's lock ON
 0: Set Keyboard's lock OFF

R Reserved (Keep it to 0h)

Example: To set Keyboard Lock - ON send the command to B00100

8.Read Thermal Status: (B1h) (0) (0)

This command asks the Power supply to return the Thermal Status of the Power Supply.

Return: (B1)(S)(0)

S 1 for Thermal Protection ON
 0 for Thermal Protection OFF

Example: To read the thermal status the command will be B100000H. Unit will return B10100H for Thermal protection ON.

9.Read Device ID: (B2h) (0) (0)

This command asks unit to send the device ID

Returns: (B2h)(ID)(Ver)

ID: 1 for PSP 1405
 2 for PSP 12010
 3 for PSP 1803

Ver: Software Version
 0 for Version 0.0
 1 for Version 0.1
 2 for Version 0.2

Will be defined later as software version changes.

Example: To read device ID command will be B20000H. Unit will return B20102 for PSP 1405 with software version 0.2 connected to the computer

Communication Establishment method :

To establish the communication between computer and unit we have a loop in our computer program which requests device ID continuously and when ever it receives the Device ID from unit, computer understands the device Model and handles the data accordingly. This makes sure that both computer and unit are ready to communicate and synchronization is completed.

We have used this method to synchronize and then to lock the keyboard before further communication (since Unit is not intended to accept commands from computer only till it is in computer interface mode. During this time keyboard will not function). When Keyboard is locked by computer the unit will display “Remote Locked” and it will remain in Remote communication till it is not unlocked by the connected computer. Hence it is very important to include the ‘unlocking command’ in the ‘application close procedure’ otherwise unit will not function normal even if communication cable is removed.