

1. Frame format definition

SD	DA	SA	CMD	TYPE	LEN	DATA	FCRC	
Frame start	Destination address	Source address	Command byte	type	length	data	Checkout 2 Byte	
2Bytes	1Byte	1Byte	1Bytes	1Bytes	1Byte	Variable length	HByte	LByte
(0xA5,0x5A)					Only data		DA--DATA	

Frame start: For the protection of the communication frame, with two bytes, 0xA5, 0x5A.

Destination address: Defined as the communication address of the acceptance side, ranging from 0x00~0xF9 (0~249). There is 250 device addresses in total to choose from. Address 250 is broadcast address; address 251 is main device address (in the master-slave network). Other addresses are retains for system use.

Source address: Defined as a communication address of the transmission side, ranging from 0x00~0xF9 (0~249). There is 250 device addresses in total to choose from. Address 250 is broadcast address; address 251 is main device address (in the master-slave network). Other addresses are retains for system use.

Command byte: used to identify the functions of the communication frame. Command word consists of a byte, which can achieve 256(0-255) commands. Refer to section 2 for detailed definitions.

Type: used to define frame type. The high bit 0 defines the request frame, while the high bit 1 defines the response frame and low 7 bits are reserved for others uses.

Length: length is defined as the length of the packet, length is 0 means no data.

DATA: Variable length but it is better to limit at 255 bytes or less.

Checkout code: The checkout code is the checkout code for CRC-16 of DA---DATA. Multinomial is $x^{16}+x^{15}+x^2+1$, and initial is 0x0000. When sending frame data, calculate CRC-16 check code of the DA---DATA field. Put the two-byte check code after the data, the high byte of the CRC-16 check code in the head and low byte in the end. Calculate the received check code the data field of the DA---DATA, a calculation result of 0x0000 is correct.

Note: The whole frame must be sent continuously. Before frame transition finish, if there is a break time over 1.5 characters, the accepting/receiving device will refresh the uncompleted frame and assume that the next byte is the start field of the next frame.

2. Command byte

All commands with parameter put parameter to data field for transition. Commands without parameter have a length of 0.

For response to all commands, use the first byte of the response frame field to indicate the performance result of the command. 0 means command successful return, while other non 0 commands mean error code. For the response frame with returned data, the data transition is after the performance result.

Standard response frame format:

SD	DA	SA	CMD	TYPE	LEN	DATA	FCS
0xA5, 0x5A	Destination address	Source address	command	0x80	0x01	Result (0x00 or other)	Check code

Instruction form

command	function	Carry parameter	Response	Command explain and sample
---------	----------	-----------------	----------	----------------------------

0x20	Set the current output voltage	Set voltage (HEX)	standard	Carry parameter of hex voltage value (2 bytes). Voltage unit is 10mV. Example : set the current output voltage at18.85V: $18.85V = 1885 * 10(mv) = 0x075D(hex) * 10(mv)$ Command stream: A5 5A 00 FB 20 80 02 07 5D FB 3D
0x21	Set the current output current	Set current (HEX)	standard	Carry parameter of hex current value (2 bytes). Current, unit is 1mA. Example: set limit current at 3A: $3A = 3000(mA) = 0x0BB8(mA)$ Command stream: A5 5A 00 FB 21 80 02 0B B8 B9 8A
0x22	Set over voltage point	The maximum voltage (HEX)	standard	Carry parameter of hex voltage value e (2 bytes). Voltage unit is 10mV. Example: set the maximum output voltage at 32.5V: $32.5V = 3250 * 10 (mV) = 0x0CB2 * 10 (mV)$ Command stream: A5 5A 00 FB 22 80 02 0C B2 6F 85
0x23	Set over current point	The maximum current (HEX)	standard	Carry parameter of hex current value (2 bytes). Current unit is 1mA. Example: set limit current is 3.1A: $3.1A = 3100(mA) = 0x0C1C(mA)$ Command stream: A5 5A 00 FB 23 80 02 0C 1C 91 F0
0x24	Set power output status (on/off)	Output status (HEX)	standard	Carry parameter of hex value(1 bytes), indicating output status 0x01: turn on the output; 0x00 : turn off the output. Example: set output off: Command stream: A5 5A 00 FB 24 80 01 01 36 5C
0x25	Set the communication address of the power supply (addr)	communication address (HEX)	standard	Carry parameter of hex value (1 bytes), indicating device address: Example: set power address as16: $16 = 0x10(HEX)$ Command stream: A5 5A 00 FB 25 80 01 10 42 F8
0x26	Set the operate mode of the power supply(panel/remote)	Control mode (HEX)	standard	Carry parameter of hex value(1 bytes), indicating the operate mode of the device: 0x01 : local; 0x00 : remote; Example: set the output for remote control: Command stream: A5 5A 00 FB 26 80 01 00 CB 15

0x27	Read the current work status of the power supply	no	The current work status	<p>Command stream: A5 5A 00 FB 27 80 00 99 9C</p> <p>Example: return Command stream: A5 5A FB 00 27 00 02 00 83 C4 5C</p> <p>Return value meaning: Bit7:</p> <p>0 = CC limit current output 1 = CV constant voltage output</p> <p>Bit6:Bit2: keep un-use</p> <p>Bit1:Bit0: 00 = fan close 01 = low fan speed 10 = medium fan speed 11 = high fan speed</p>
0x28	Read the real measure value of the voltage/current	no	Return the real measure value of the voltage/current	<p>Read the real measure value of the voltage/current Instruction stream: A5 5A 00 FB 28 80 00 B5 AD</p> <p>Example: Return Command stream: A5 5A FB 00 28 00 05 00 0B 88 09 C4 49 36</p> <p>0x0B88 = 2952 * 10mV = 29.52V 0x09C4 = 2500mA = 2.5A</p>
<p>Remarks:</p> <ol style="list-style-type: none"> Above example communication address is assumed to be: Request frame: destination address: 0x00 source address: 0xFB Response address: destination address: 0xFB source address: 0x00 Keep all of no use instruction Device factory default address is 0x00 Communication baud rate: 38400bps 				