

**GUANGDONG YIBENYUAN POWER SUPPLY EQUIPMENT CO., LTD**  
**GUANGZHOU IDEALPLUSING INFORMATION TECHNOLOGY CO.,LTD**

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 Factory #1 ADD: 7/F, Block A, Cabo Tec. park, North of HuaFa Road, Gongming, Guangming new Dis. ,SZ,China.

**YBY-ATDA28.5-200 28.5VDC 200A Ground Power Unit-IDEALPLUSING**

**I. PRODUCT INTRODUCTION**

1. YBY-APSA-28.5 Series is designed to give continuous high-quality DC power.
2. This continuous high power model is ideal for crew training, aircraft servicing in workshops, on the ramp, or in the field, diagnostic work, pre-flight checks, charging the onboard battery, or for continuous powering of equipment during operations, without draining the onboard aircraft batteries.
3. The safety features include Over Voltage, Overload, and Internal Thermal, Short Circuit protection. The power modules conform to EMC standards for noise emissions and immunity

**II. PERFORMANCE CHARACTERISTICS**

1. Robust metal cabinet housing
2. Compact size
3. Fixed or Mobile are available
4. Low ripple content  $\leq 150\text{mV}$  (RMS)
5. Self diagnose and alarm
6. Complete protection

**III. DATASHEET**

Model Specification		YBY-ATDA28.5-200
Input	Standard	Single-phase two-wire + ground
	Voltage / Frequency	AC 220V $\pm$ 10% 400Hz $\pm$ 5%
Output	Power	5700W
	Rated voltage	28.5VDC
	Voltage regulation range	5.00V-32.00VDC
	Current	200.0A
	Restricted Flow Range	0-200.0A
Net weight and gross weight		65/95KG
Source voltage effect/load effect		$\leq 0.5\%$ FS
DC voltage ripple		$\leq 0.5\%$ FS (Vrms)
Output voltage display		4-digits LCD, resolution 0.01V
Output current display		Maximum allowable error: $\leq \pm 0.5\%$ FS (Note: FS means full scale)
		4-digits LCD, resolution 0.1A
Insulation resistance		Maximum allowable error: $\leq 0.5\%$ FS (10% above rated value)
		Input to housing and output: $\geq 20\text{M}$ (DC 1000V)
Electrical strength resistance		Input to housing and output: AC 1500V/min, Leakage current < 20mA
Overall machine efficiency		$\geq 85\%$
Automatic protection function		Automatic protection in case of output overvoltage,
Communication Interface		Communication RS485, modbus rtu protocol

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Ambient temperature	Temperature: -10°C -45°C, relative humidity 10-95% (25°C
Dimension/Weight	Trailer type (including cable hanger): width 650 height 800 (with universal wheels) depth 600
Remarks	Input with male 400hz socket GPU plug, 5m cable included Positive and negative copper cable for output

**IV.REFERENCE PICTURE**

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**V. LCD INDICATOR**

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**V. POWER SUPPLY MODBUS COMMUNICATION PROTOCOL**

This protocol adopts Modbus protocol RTU mode, which can be easily connected with various forms of configuration software.

**1. COMMUNICATION INTERFACE DEFINITION AND PARAMETER SETTING.**

Connector Type	9 PINS male	
Interface definitions	Standrad RS485 Interface definitions	
Baud rate	9600bps	
Byte format: one start bit, eight data bits, no parity, one stop bit, command interval recommended to be greater than 200mS		

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Equipment address: 100

**2. FRAME FORMAT**

**2.1 Read device register contents (function code 0x03)**

**2.1.1 Format of the frames sent by the host computer.**

NO	CODE	Sample	State
1	Machine address	0x64	0x64 means device address 100
2	0x03	0x03	Read register function code
3	Start register address high byte	0x00	Register start address
4	Start register address low byte	0x00	
5	Number of registers high byte	0x00	Number of registers
6	Number of registers low byte	0x01	
7	CRC16 checksum low byte	0x8D	CRC check data
8	CRC16 checksum high byte	0xFF	

**2.1.2 FORMAT OF FRAMES SENT BACK BY THE DEVICE**

NO	CODE	STATE
1	Machine address	Machine address 100 i.e. 0x64
2	0x03	Function code
3	Number of bytes in the return data	
4	First register data	
....	.....	
	Nth register data	
M+4	CRC16 checksum low byte	CRC checksum data
M+5	CRC16 checksum high byte	

**2.2 Set device register content (function code 0x06)**

**2.1.1 Writing data into individual device registers, frame format sent by the host computer:**

NO	CODE	SAMPLE	STATE
1	Machine address	0x64	0x64 i.e. device address 100
2	0x06	0x06	Write register function code
3	Register address high byte	0x00	Register start address
4	Register address low byte	0x0D	
5	Write data high byte	0x04	Data

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6	Write data low byte	0x4C	CRC checksum data
7	CRC16 checksum low byte	0x12	
8	CRC16 checksum high byte	0xC9	

2.1.2 Device loopback (write succeeded):

**If the write is correct, the device sends back the same data, i.e. the original command, and the device accepts it for execution.**

### 3. DEVICE DATA REGISTER ADDRESS

#### 3.1 Data register address

NO	Parameter name	DATA TYPE	UNIT	ACCESS RULES	Register	STATE
1	Power supply working status	UINT		R	0x0000	Power supply operating
2	Output voltage	UINT	0.01V	R	0x0001	Power supply output parameters query
3	Output current	UINT	0.1A	R	0x0002	
4	Setting voltage	UINT	0.01V	R/W	0x0003	Power Supply Setting Parameters
5	Setting current	UINT	0.1A	R/W	0x0004	
6	Control commands	UINT		W	0x0005	Power supply control
7	Current protection values	UINT	0.1A	R/W	0x0006	Current protection
				R	0x0000	

Description:

All parameters are unsigned double-byte words with data placed as follows: high high byte, low low byte  
 The access rules are R: for read only, W: for write only, R/W: for read and write.

### 3.2. DESCRIPTION OF PARAMETERS

#### 3.2.1 Description of power supply operating status data.

Status Data	Status State	Status Data	Status Description
0x0000	Standby state	0x0005	Short-Circuit Alarm
0x0001	Start-up, non-constant voltage non-constant current	0x0006	Over-heating Alarm
0x0002	Constant voltage	0x0007	Over-load Alarm
0x0003	Constant current	Other reservations	

#### 3.2. 2 output voltage

The read parameter value represents the voltage value output by the current device, and the unit is 0.01V  
 For example, the read data is 0x012c, i.e. decimal 300, indicating that the current output voltage is 3.00v

#### 3.2. 3 output current

The read parameter value represents the current value output by the current device, and the unit of current

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value is 0.1A,

For example, the read data is 0x00d0, i.e. decimal 208, indicating that the current output current is 20.8a

### 3.2. 4 set voltage

The setting voltage unit is 0.01V, and the setting voltage parameters are readable and writable, that is, the setting voltage can be changed or the setting voltage of the current device can be read out

For example, to set the voltage of 30V, write 0x0bb8 in the register address 0x03.

### 3.2. 5 set current

Set the current unit as 0.1A, and set the current parameter as readable and writable, that is, the set current can be changed or read out

For example, to set the voltage 100A, write 0x03e8 in the register address 0x04.

### 3.2.2 CONTROL COMMANDS

Control command data	Description of control commands
0x0000	Control the device to stop the output
0x0001	Control device start output
0x0002	Control device stop output
Others	Reserved

Description.

The device can execute the 0x0000 command i.e. the device stop output command in any condition;

The device can only execute the 0x0001 command, i.e. the device start output command, in the standby state;

The power mode can only be switched in the standby state;