

IPS-ATDA990KVA 990KVA 400HZ Frequency Converter-IDEALPLUSING

I. WHO WE ARE?

We have own factories (locate in shenzhen China), and more than 20 cooperation factories, more than 60 workers and 10000 different models with specification of power supply.

It is one of suppliers on integrating , developing, manufacture , sales,engineering design and construction for different kind of power supply.

We strict implement the operation guideline of “Leading Technology, Reliable Quality, Satisfactory Service & Customers First !”.

II. WHAT WE DO?

We supply reliable and innovative Ground Power Units.

Looking for a reliable and innovative Ground Power Unit to supply your aircraft?

No matter which type of Ground Power Unit you are looking for, we have the power to cover your needs.

We have a full range of solid-state, diesel-driven, and battery-powered Ground Power Units from 400 Hz frequency converters to 28 VDC /270 VDC Ground Power Unit or a combination.

Whether you require a power supply for hangar use, for use at aircraft parking positions, or in remote areas, we have the right solution.

We got you covered!

[DC-DC converter (Isolated and non-isolated), voltage from 12vdc to 1000vdc, power from 1-200kw.]

[AC DC power supply, voltage from 0 to 200kv, current from 0-20k amps.]

[DC AC inverter, dc voltage from 12vdc to 2000vdc, and power from 100w to 500kw.]

[AC AC power source, single phase or 3 phases, 10-500hz, power supply from 1kva to 500kva.]

[AC DC Ground Power Unit, from 300 amps to 50000 amps.]

III.INTRODUCTION & APPLICATION

1	The GPU400 series 400Hz intermediate frequency power supply is a power supply that converts 380V/220V 50Hz AC mains power to 400Hz, 115V/200V, 21V/36V AC power via an inverter.
2	This power supply can be used for aircraft power supply and is also suitable for land-based applications. A single power supply can power multiple aircraft simultaneously, and multiple power supplies can also be used in parallel. This power supply can be installed on aprons, hangars, trailers, vehicles, etc., to power aircraft and is an alternative to modular power supplies. Fixed and towed centralized power supply systems for military and hangar applications can be provided according to user needs.
3	Safety features include over-power protection, over-temperature protection, overcharge protection, overcurrent protection, overload protection, overvoltage protection, and short-circuit protection. The power module complies with EMC noise radiation and immunity standards.

IV. 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

V. DATASHEET

Model Specification		IPS-ATDA990KVA
Input	Standard	3-phase
	Voltage	380VAC/400VAC/440VAC (Optional)
	Frequency	50HZ/60HZ/400HZ/Customized (Optional)
	Power Factor	≥ 0.8 (6 pulse rectification, Standard), ≥ 0.9 (12 pulse rectification,
Output	Standard	3-phase
	Voltage	115VAC/220VAC/380VAC/400VAC/450VAC (Optional)
	Frequency	50HZ/60HZ/400HZ/Customized (Optional)
	Current	Base on model
Output Crest Factor		1.414+0.1
Output THD		$\leq 2\%$ (Linear load)
Dynamic Characteristics		Overshoot and recovery time meet GJB572 requirements
Adapt to the Load Range		No type restrictions, but motors and rectifying loads need to be
Output Display Accuracy		Voltage Display: $\pm 1\%$ FS
Capacity		990KVA
Cooling Method		Air Cooling
Efficiency		90%,85%
Type		AC-DC-AC
Ambient temperature		Temperature: $-40 \sim 55^{\circ}\text{C}$, relative humidity 0-90%
Frequency Stability		$\pm 0.01\%$ FS
Voltage Regulation		$\pm 1\%$ FS
Voltage Stability		$\pm 1\%$ FS
Digital Display		VFD digital display
Communication Interface		RS-232/RS-485
Phase Angle		$120^{\circ} + 1^{\circ}$ for balanced load, $120^{\circ} + 2^{\circ}$ for 30% unbalance
Dimension / Weight		Base on model
MTBF		50,000 Hrs
MTTR		<30 mins

VI.REFERENCE PICTURE



VII. LCD INDICATOR

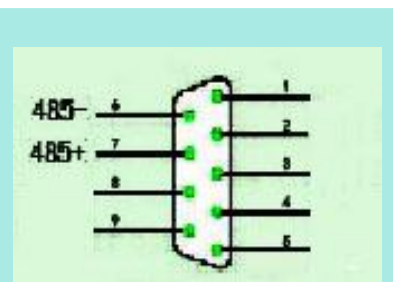


VIII. POWER SUPPLY MODBUS COMMUNICATION PROTOCOL

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	Standard 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	



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	SAMPL	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
6	Write data low byte	0x4C	

7	CRC16 checksum low byte	0x12	CRC checksum data
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	Register	STATE
1	Power supply working	UINT		R	0x0000	Power supply
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 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;

IX. MODEL LIST GROUND POWER UNIT

N O	MODEL	INPUT (VAC)	OUTPUT (VAC)	CAPACITY (AMPS)
1	IPS-ATDA30KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	30KVA
2	IPS-ATDA45KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	45KVA
3	IPS-ATDA50KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	50KVA
4	IPS-ATDA60KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	60KVA
5	IPS-ATDA70KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	70KVA
6	IPS-ATDA90KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	90KVA
7	IPS-ATDA100KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	100KVA
8	IPS-ATDA120KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	120KVA
9	IPS-ATDA150KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	150KVA
10	IPS-ATDA180KVA	3-phase	115VAC/220VAC/380VAC/400VAC/	180KVA

		380VAC/400VAC/440VAC	450VAC	
11	IPS-ATDA210KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	210KVA
12	IPS-ATDA240KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	240KVA
13	IPS-ATDA270KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	270KVA
14	IPS-ATDA300KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	300KVA
15	IPS-ATDA330KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	330KVA
16	IPS-ATDA360KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	360KVA
17	IPS-ATDA390KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	390KVA
18	IPS-ATDA400KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	400KVA
19	IPS-ATDA420KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	420KVA
20	IPS-ATDA480KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	480KVA
21	IPS-ATDA510KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	510KVA
22	IPS-ATDA540KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	540KVA
23	IPS-ATDA570KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	570KVA
24	IPS-ATDA600KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	600KVA
25	IPS-ATDA630KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	630KVA
26	IPS-ATDA660KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	660KVA
27	IPS-ATDA690KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	690KVA
28	IPS-ATDA720KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	720KVA
29	IPS-ATDA750KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	750KVA
30	IPS-ATDA780KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	780KVA
31	IPS-ATDA810KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	810KVA
32	IPS-ATDA840KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	840KVA

33	IPS-ATDA870KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	870KVA
34	IPS-ATDA900KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	900KVA
35	IPS-ATDA930KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	930KVA
36	IPS-ATDA960KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	960KVA
37	IPS-ATDA990KVA	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	990KVA
38	IPS-ATDA1000KV A	3-phase 380VAC/400VAC/440VAC	115VAC/220VAC/380VAC/400VAC/ 450VAC	1000KVA