PURSUIT OF PERFECTION

iDU series

DC POWER SUPPLY

A1.0

TBB Power CO.,ltd.
www.tbbpower.com






WARNING : FIRE HAZARD
SUITABLE FOR MOUNTING ON CONCRETE OR OTHER
NON- COMBUS TIBLE SURFACE ONLY

CAUTION : THE DC AND AC BREAKER MUST HAVE BEEN
TURNED OFF BEFORE SERVICING
MADE IN CHINA

MADE IN CHINA

Disclaimer

Unless specially agreed in writing, TBB Power Co.,Ltd

- Take no warranty as to the accuracy, sufficiency of suitability of any technical or other information provided in this manual or other documentation.
- Assumes no responsibility or liability for loss or damage, whether direct, indirect, consequential or incidental, which might arise out of the use of such information.
- TBB offer standard warranty with its products, taking no responsibility for direct or indirect loss due to equipment failure.

About this Manual

This manual describes our product features and provides procedure of installations. This manual is for anyone intending to install our equipment.

General Instruction

Thanks for choosing our products and this manual were suitable for iDU series.

This chapter contains important safety and operation instructions. Read and keep this User Guide well for later reference.

DC power supply needs to be installed by professionals and please pay attention to the following points prior to installation:

- Please check the voltage of battery is same to the nominal input voltage of this charger.
- While connecting wires, please secure the connection and avoid short cut between positive terminal and negative terminal of battery, which will cause damage of battery.
- DC power supply will have high voltage inside. Only authorized electrician can open the case.
- Please check if voltage of battery is same to the nominal DC input voltage of this unit.

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1. General Safety Instruction

1.1 Safety Instruction

As dangerous voltage and high temperature exist within the charge controller, only qualified and authorized maintenance personnel are permitted to open and repair it.

This manual contains information concerning the installation and operation of the charge controller. All relevant parts of the manual should be read prior to commencing the installation. Please follow the local stipulation meantime.

Any operation against safety requirement or against design, manufacture, safety standard, and are out of the manufacturer warranty.

1.2 General Precaution

1.2.1 Do not expose to rain, snow or liquids of any type， it is designed for indoor use.
1.2.2 To avoid fire and electric shock, make sure all cables selected with right gauge and being connected well. Smaller diameter and broken cable are not allowed to use.
1.2.3 Please do not put any inflammable goods near to charge controller.
1.2.4 Never place unit directly above batteries, gases from a battery will corrode and damage the charge controller.
1.2.5 Do not place battery over charge controller

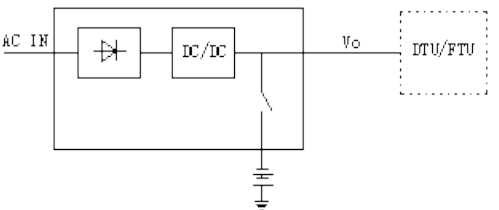
1.3 Precaution regarding battery operation

1.3.1 Use plenty of fresh water to clean in case battery acid contacts skin, clothing, or eyes and consult with doctor as soon as possible.
1.3.2 The battery may generate flammable gas during charging. NEVER smoke or allow a spark or flame in vicinity of a battery.
1.3.3 Do not put the metal tool on the battery, spark and short circuit might lead to explosion.
1.3.4 REMOVE all personal metal items such as rings, bracelets, necklaces, and watches while working with batteries. Batteries can cause short-circuit current high enough to make metal melt, and could cause severe burns.

2. Introduction

iDU is a DC UPS integrating multiple functions into one unit, including a smart battery charger, battery monitor and the load management. The built-in professional adaptive charging algorithm with automatic temperature charging makes it suitable for composing a power backup system for various outdoor equipments, such as DAS, RF and FTU etc.

2.1 Schematic Diagram

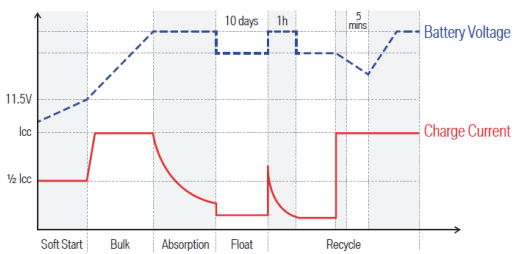


- When AC grid is available, iDU offers 3 steps' smart charging to the battery. At the same time, it offers the power supply to the load.
- When AC grid is not available, battery offers the energy to the loads. iDU alarms via dry contact.
- When battery discharged until the low voltage protection level, iDU cut off the output of battery and alarms via dry contact.
- When the battery in the floating state for a long time, in order to avoid plate passivation, the module will automatically periodically activation process, at the same time also provide remote manual activation interface and local activation key, convenient for the user to control the active state.

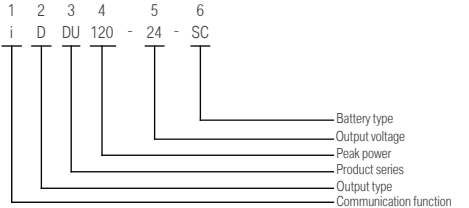
Features:

- Power factor correction.
- Professional temperature compensated battery charging control.
- Working temperature: -40℃-70℃.
- Low power consumption.
- Self- cooling design.
- IP55 design.
- System data monitor via RS484 communication.
  - Real-time power supply data.
  - Real-time alarm data.
  - Real-time battery data, including battery voltage and discharging current.
- Complete protection.
  - Over voltage.
  - Over current.
  - Over temperature.
  - Short circuit.

2.2 Charging Curve

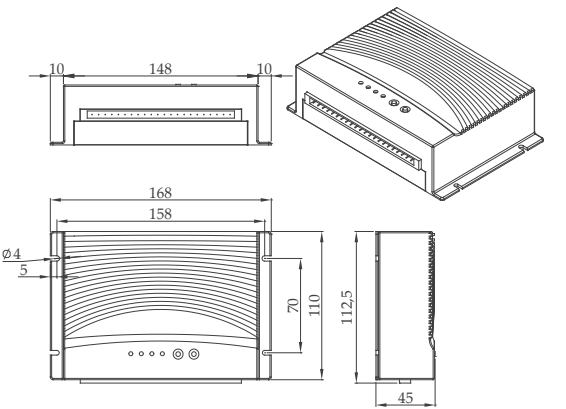


2.3 Mode Name



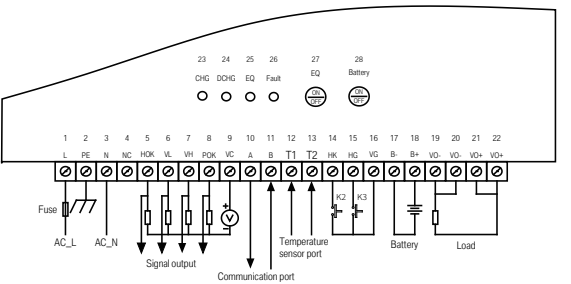
No.	Value	Description
1	i	"i" means with RS484 communication.
2	N/A	One output
	D	Two outputs
3	DU	Product series
4	120	Peak power 120W
	300	Peak power 300W
	500	Peak power 500W
5	12	Output voltage: 12V
	24	Output voltage: 24V
	48	Output voltage: 48V
6	N/A	For lead acid battery
	SC	For super capacitor
	LPE	For Lithium battery

3.Structure



4.Operation

4.1 Wiring diagram



4.2 Port definitions

No.	Label	Description
1	L	Live line of AC input
2	PE	Earth line of AC input
3	N	Neutral line of AC input
4	NC	Reserved
5	HOK	Dry contacts
6	VL	
7	VH	
8	POK	
9	VC	
10	A	RS485 port
11	B	
12	T1	Temperature sensor port
13	T2	
14	HK	Battery equilization interface
15	HG	
16	VG	
17	B-	Battery-
18	B+	Battery+
19	VO-	DC outputs
20	VO-	
21	VO+	
22	VO+	

4.3 Buttons and LED indicator

No.	Label	Color	Color	Description
23	CHG	Green	ON	Fully charge or ac power supply separately
			Flashing	Charging
24	DCHG	Green	ON	Discharged
25	EQ	Yellow	ON	Equilization
26	Fault	Red	ON	Fault
			Flashing	Battery low voltage、Reverse、Over temp

No.	Label	Color	Description
27	EQ	Long press the button more than one second	Start/End Equalization
28	Battery	Long press the button more than one second	Open/Close battery connection

5.Specification

Model		iDU500-12	iDU500-24	iDU500-48
Output voltage (V)		14.4	28.8	57.6
Output current (A)	Nominal current	8	3.5	2
	Peak current (15S)	20	20	10
Nominal Input Voltage		165-265VAC，50/60HZ		
Charging curve		3 steps smart charging		
Temperature compensation		Automatic temperature compensation		
Absorption voltage (V)		14.4	28.8	57.6
Floating voltage (V)		13.5	27	54
Charging current (A)		3	1.5	1
Equilization		Automatic/Manual		
Efficiency		90%		
Ripple noise		≤500mVp-p		
Voltage precision		≤2%		
Cooling		no fans		
Working temperature		-40℃~+70℃: full load at 60℃ and derating 60% at 70℃		
Communication		RS485		
Dry contact		AC grid fault, Battery low voltage, unit fault and Battery equilization		
Battery low voltage protection (VDC)		11	22	44
Battery EQ voltage protection (VDC)		11.5	23	46
Protection				
Output short circuit		Unit cut down the outputs,restart automatically when the issue disappears		
Battery connection reverse polarity		No output		
Charger over temperature		Derate the output		
Battery over temperature		Stop charging		
Certification				
LVD		EN60335-1,EN60335-2-29		
EMC		EN55014-1,EN55014-2,EN61000-3-2,EN61000-3-3		
Structure				
Outcase		Aluminum		
Dimension		1kgs		
168x110x45		168x110x45	168x110x45	168x110x45
IP protection		1kgs	1kgs	1kgs
Mounting		Wall mount		
Isulation safety				
Isulation resistance		≥50M		
Dimension		2.5KV/1min/5mA		

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