TITAN X SERIES CHARGERS SPECIFICATION

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TITAN
PORTABLE CHARGER

Product Parameters

LI-ION BATTERY CHARGER
STC-9130LC 1300W

Company Information

KUNSHAN ST ELECTRONICS CO., LTD
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Titan x series designed and built by st charger
(Date:Sept 2025)

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1.ST Charger Titan X Series Industrial Battery Charger

Scope

This manual applies to the ST Charger Titan X Series industrial battery chargers.

Important Notice

Before operating or using any Titan X Series battery charger, please read and fully understand this manual. It contains important safety instructions, operating procedures, and installation guidelines.

User Guidance

- Always read this manual carefully before using your ST Charger.
- Keep this manual in a safe place for future reference.
- For technical support, please contact the vehicle or equipment manufacturer/dealer, as the charger version provided with your application may require specific operating instructions.

Safety Information

Warning

Only use this charger with a charging algorithm that matches the specific battery type and capacity. Incorrect use may cause personal injury or equipment damage. Lead acid batteries may release explosive hydrogen gas during normal charging—keep sparks, open flames, and smoking materials away from the batteries. For lithium-ion batteries, a properly integrated battery management system (BMS) is required. The BMS must protect all battery cells from unsafe voltage, current, temperature, and state of charge under all operating conditions. Do not use the charger in enclosed spaces or block ventilation. Never charge frozen or non-rechargeable batteries. Always follow the safety instructions provided by the battery manufacturer.

Danger

Risk of electric shock. Connect the Titan X series charger only to a properly installed and grounded AC outlet according to local codes. Do not use grounding adapters or modify the plug. Avoid contact with uninsulated parts of the output connector or battery terminals. Always disconnect AC power before connecting or disconnecting the battery. Do not open, disassemble, or use the charger if it has a damaged AC cord, DC cable, or has been dropped or impacted. All repairs must be performed by the manufacturer or qualified personnel. This charger is not for use by persons (including children) with reduced physical, sensory, or mental abilities, or lack of experience with electrical systems or battery charging, unless supervised or instructed by someone responsible for their safety. Children must be supervised to prevent playing with the charger.

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Safe operating instructions

The charger may become hot while in use.Please use protective gloves when handling the charger for safety.

• For safety, the unit will automatically lower its output power if the internal temperature exceeds predefined limits or if the AC input voltage drops below acceptable levels.

• In the event of a power outage, the charger will automatically resume operation once power is restored, without causing harm to the user or damage to the batteries.

• Disconnect the charger from both AC and DC sources before cleaning, relocating, or performing any maintenance. There are no user-serviceable parts inside. Do not attempt to remove the cover due to the risk of electric shock.

• Do not expose the charger to oil, excessive dust, mud, or direct water spray during vehicle or equipment cleaning.

• Inspect all connectors between the charger and the battery regularly for signs of corrosion or contamination, as these may lead to overheating and potential fire hazards.

• If the detachable AC input cord set or the DC output cable is damaged, discontinue use until the cords are replaced with ones that are certified for your region and application.

• When used with a sealed AC cord set, the charger meets IP66 standards, ensuring it is dust-tight and resistant to strong water jets. If an unsealed connector is used, regularly check the plug and connector to make sure contacts remain clean and dry.

EMC declaration

This device may generate, use, and emit radio frequency energy. If it is not installed or operated according to the provided instructions, it could cause harmful interference to radio communications. There is no assurance, however, that interference will not occur in a specific installation. Should this device cause interference to radio or television reception—which can be verified by switching the unit off and on—the user is advised to attempt one or more of the following corrective actions: reorient or reposition the receiving antenna; increase the distance between the device and the receiver; connect the device to an outlet on a circuit different from the one used by the receiver; seek assistance from the dealer or a qualified radio/TV technician.

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2.INPUT CHARACTERISTICS

NO.	Item	Condition specification	Specifications
2.1	Rated input voltage	Alternating current	100 V ac - 240V ac
2.2	Range of input voltage	Continuous	100 V ac - 240V ac
2.3	Range of input frequency	Continuous	47Hz - 63Hz
2.4	Efficiency	Vin 220 V ac / 1 out 20 A	≥ 94%
		Vin 110 V ac / 1 out 20 A	≥ 93%
2.5	No load power	Vin 220 V ac / 1 out 0 A	≤ 10W
2.6	No load current	Vin 220 V ac / 1 out 0 A	≤ 200mA
2.7	power factor	Vin 220 V ac / 1 out 20 A	≥ 0.9

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3. OUTPUT & CHARGING INDICATOR FUNCTION

NO.	Item	Condition specification	Specifications
3.1	Rated output voltage		52V
3.2	Output current		20A ± 2A
3.3	Output range of ceiling voltage		58.8V±0.2V
3.4	Output voltage ripple and noise	Connect a 104 ceramic capacitor and a 10UF electrolytic capacitor parallel to the output side band set the oscilloscope bandwidth 20MHZ.	≤ 520mVp-p
3.5	Charging characteristies	Charging Current under different voltages	1)0V-28V±1V,0A; 2)28V±1V-42V±1V,1.5A±0.2A; 3)42V±1V-58V±1V,20A±2A; 4)58V±1V-58.8V±0.2V,20A--0A
3.6	Max voltage to keep constant-current charge	Charging current decreases when battery voltage reaches a specific voltage	1)0V-28V±1V,0A; 2)28V±1V-42V±1V,1.5A±0.2A; 3)42V±1V-58V±1V,20A±2A; 4)58V±1V-58.8V±0.2V,20A--0A
3.7	Constant-current charge	When the battery voltage is between the constant charging voltage point and the lowest starting charging voltage, the charger maintains constant current charging	20A±2A
3.8	LED light----red light turn green light	When the red light turns green, it means full.	1A±0.1A
3.9	LED status display	Full charge is indicated as 50%, 90%, or 100% depending on the selected mode. — Polarity Reverse Protection — Short Circuit Protection — Timing Protection — Over Current Protection — Over Voltage Protection — Over Temperature Protection	

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4.PROTECTION

NO.	Item	Condition specification	Specifications
4.1	Over current protection	When the output current exceeds 22A, the charger will turnoff the output and return to normal charging after the fault is removed.	No damage
4.2	Short circuit protection	When the output terminal of the charger is short-circuited, the charger has no output, and the input is less than 10W, the normal charging will be restored after the fault is removed.	No damage
4.3	Reversed connection protection	The charger will shut off automatically when the battery polarities are reversed to prevent the charger and battery from being damaged.	No damage
4.4	Over voltage protection	The charger will shut off automatically or limit the output voltage in a certain value,when the output of charger is over-voltage(>60V).	Shut of for limit the output voltage
4.5	Prevent back flow protection	When the battery is fully charged and the charger is unplugged, the power of battery won 't flow backward as it is still connected with the charger.	Battery current injection less than 1mA.

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NO.	Item	Condition specification	Specifications
4.6	Timing protection	1h±10 minutes	Pre-charge timing: When the battery voltage is greater than26V±IV, start timing, if the battery voltage is still less than39V±1V after 1h±10min, stop charging, red light blinks.
		10 h±1h	Constant current timing: When the battery voltage is greater than 39V ±1V, start timing, and after10h±1h,if the current is still greater than0.3A±0.1A, stop charging,red light blinks.
		4 h±30 minutes	Constant voltage timing: When the battery voltage is above 58V, and charging current is below 2A, start time, after 4h±0.5h,if the charging current is still above 300mA±100mA, then stop charging, red light blinks.
4.7	Over-temperature protection		When charger inside temperature above 78±3°C, stop charging, red light blinks; when temperature is below 67±3°C, resume 2Acurrent.
4.8	Re-charge function		When battery is fully charged, the charger will keep working because of the battery self-consumption, which may hurt the battery. To increase the battery life, our charger will detect the battery voltage, only when the voltage drop below 58V then the charger will work again.

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5.INPUT CHARACTERISTICS

NO.	Item	Condition specification	Specifications
5.1	Dielectric strength (voltage resistance)	When the short circuit between input and output is good, the voltage of 3.75KVac is added to input and output for 1 minute. After testing, the function of the product is normal and the leakage current is less than 5mA.	No fire, arc, etc.
5.2	Insulation impedance	Apply a 500VDC voltage between the input and output for 1 minute, ensuring that the product functions without any abnormalities.	≥ 20M Ω
5.3	Leakage current	240VAC, 50HZ	≤ 0.75mA
5.4	Conduction and radiation requirements	Vin 100Vac-240Vac / Iout 2A	EN 55014-1:2017 EN 55014-1:2006+A1+A2 EN 55014-2:2015 FCC part15 B
5.5	Safety Requirements	CB , CE, RCM, UKCA, UL, FCC	UL62368 EN60335 EN55014
5.6	Cooling method	Hidden fan	
5.7	Temperature	Working temperature	0°C—40°C
		Storage temperature	-40°C—55°C
5.8	Humidity	Working humidity	20%—85%
		Storage humidity	10%—95%
5.9	Temperature rise	With full load,the unit surface under typical temperature 25° C	≤ 45°C

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6.MECHANICAL CHARACTER

NO.	Item	Condition specification	Specifications
6.1	Size of shell		W250*L130*H70mm
6.2	Input of AC Cord		EU/US regulations three-plug tail power line L:2M OD:8.5mm 3*16AMG(red、black、white)
6.3	Output of DC Cord		
6.4	Insertion force of AC Cord		
6.5	Drop Test	Charger dropping test on 6 sides at 1M above the board	No damage to charger
6.6	Colour	Shell	Black
		Input line/ output line	Black

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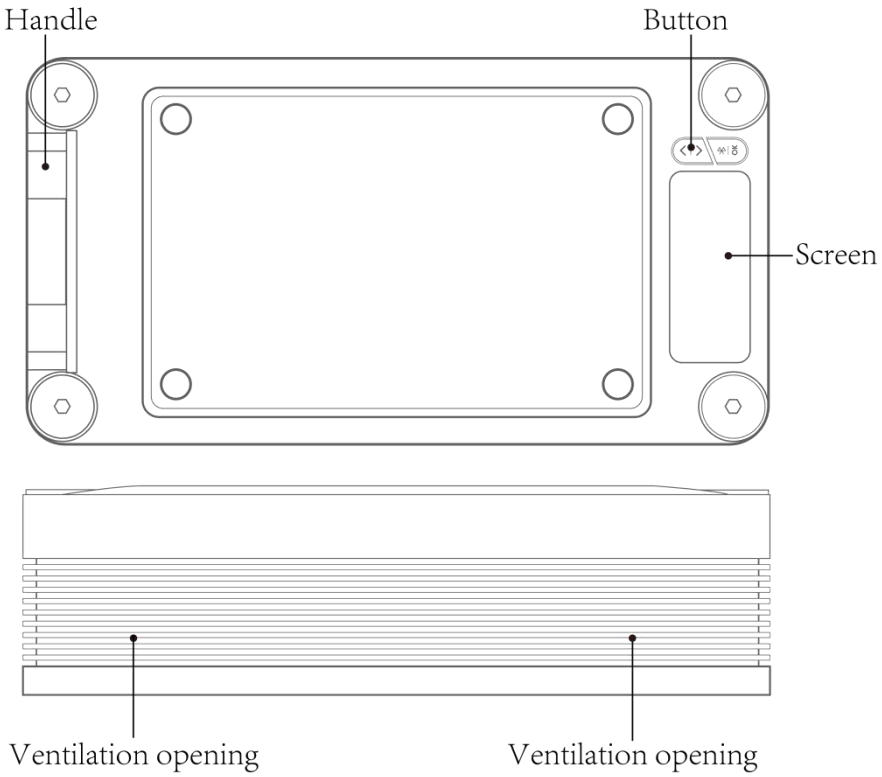
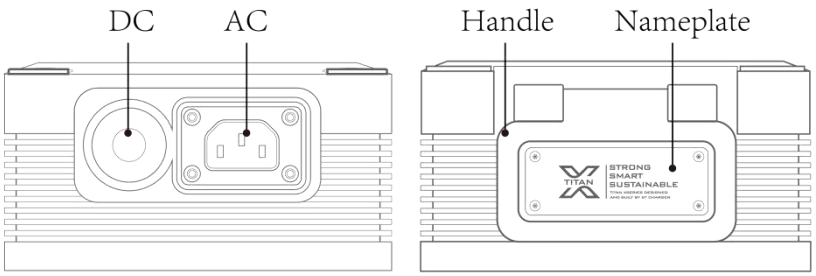
7.FUNCTION INTRODUCTION

Function Introduction





Button / Action	Status	Screen Display
Power On (AC Only, DC Not Connected)	AC powered only	Breathing mode（White）
AC / DC Connected	Detecting battery	Battery: XX%
Mode (press to cycle)	Selecting mode	50% / 90% / 100% (changes with each press)
OK (press to confirm)	Start charging	Time / Progress / Mode
	Fully charged	Green
	Fault	Red
OK (Press and hold 5s)	Activating Bluetooth	Bluetooth icon ON

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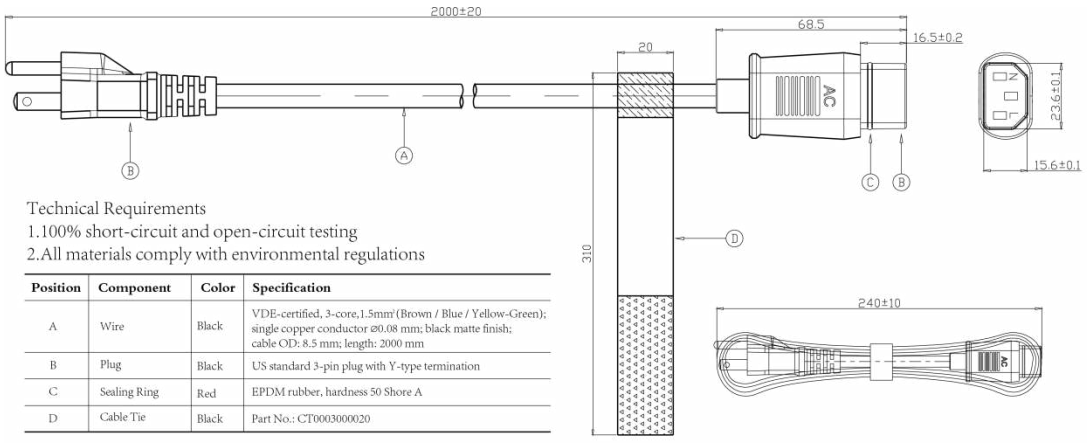
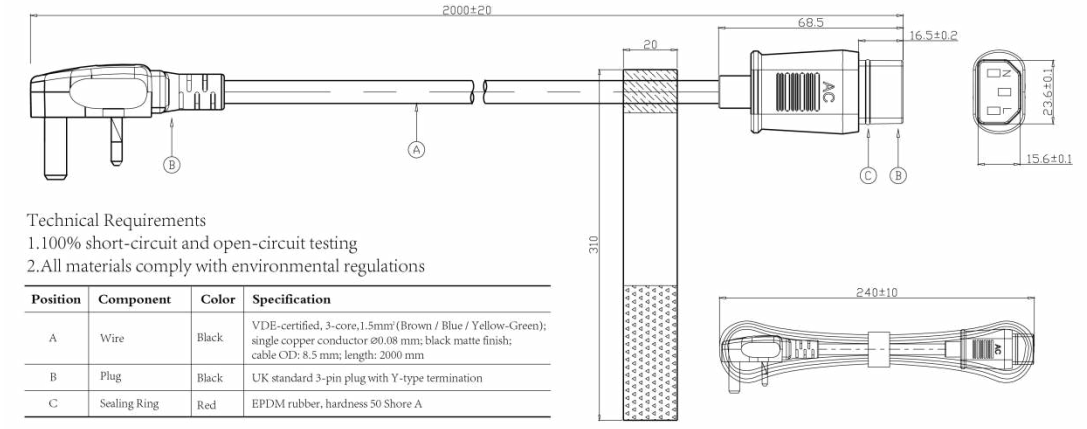
8.IN PUT OF ACCORD



Technical Requirements
1.100% short-circuit and open-circuit testing
2.All materials comply with environmental regulations

Position	Component	Color	Specification
A	Wire	Black	VDE-certified, 3-core,1.5mm²(Brown / Blue / Yellow-Green); single copper conductor Ø0.08 mm; black matte finish; cable OD: 8.5 mm; length: 2000 mm
B	Plug	Black	US standard 3-pin plug with Y-type termination
C	Sealing Ring	Red	EPDM rubber, hardness 50 Shore A
D	Cable Tie	Black	Part No.: CT0003000020



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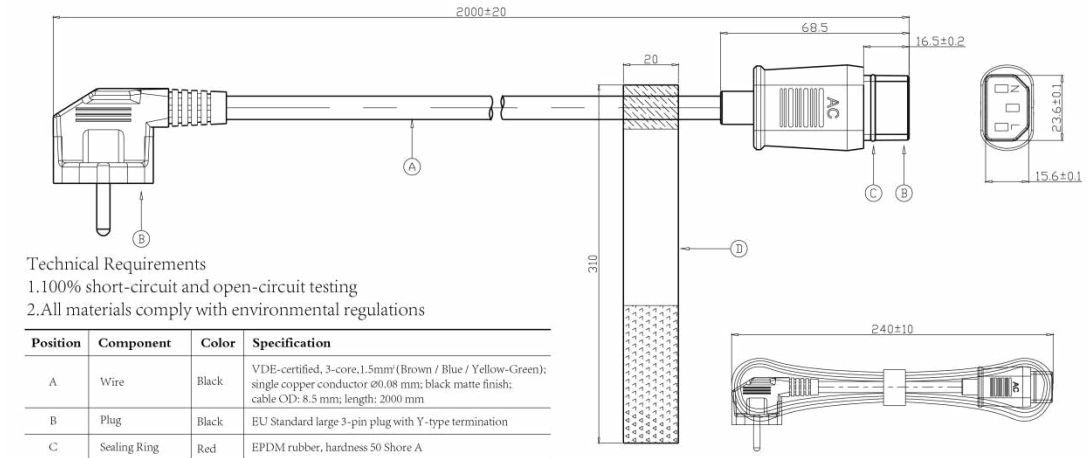
B	Plug	Black	UK standard 3-pin plug with Y-type termination
C	Sealing Ring	Red	EPDM rubber, hardness 50 Shore A



Technical Requirements
1.100% short-circuit and open-circuit testing
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Position	Component	Color	Specification
A	Wire	Black	VDE-certified, 3-core,1.5mm²(Brown / Blue / Yellow-Green); single copper conductor Ø0.08 mm; black matte finish; cable OD: 8.5 mm; length: 2000 mm
B	Plug	Black	EU Standard large 3-pin plug with Y-type termination
C	Sealing Ring	Red	EPDM rubber, hardness 50 Shore A
D	Cable Tie	Black	Part No.: CT0003000020

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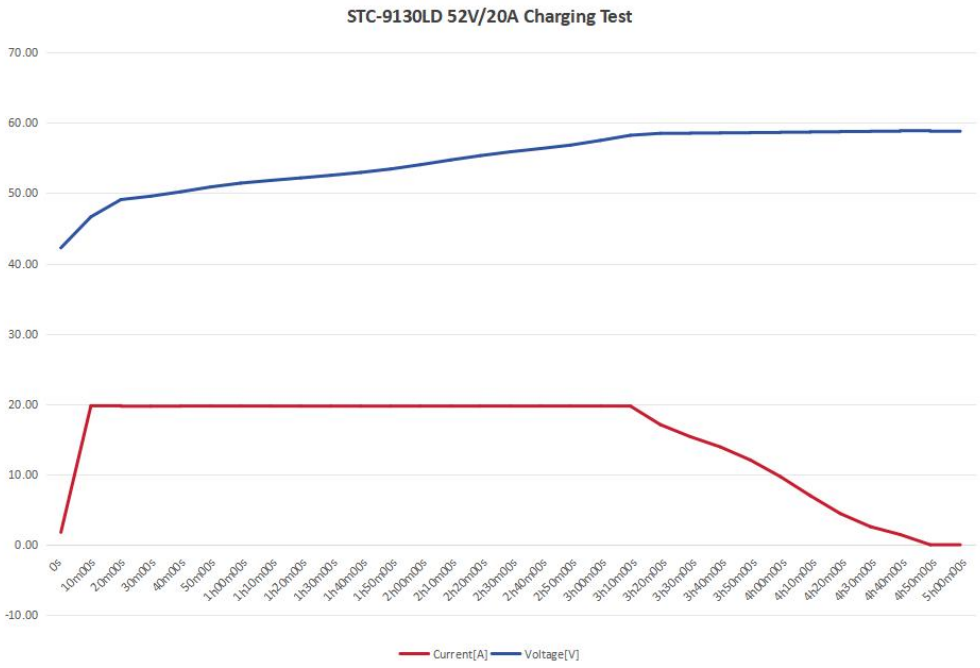
9. CHARGER CURVE



10. PHOTO OF PRODUCT

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11.SMART LI-ION CHARGER INSTRUCTION

11.1 CHARACTERISTIC
Suitable for 100V-240V Voltage
Precise protection of battery over voltage
Use resonance switch,low loss,low noise
Effective prevention of battery damage caused by connection
Short circuit protection: avoid damage to charger, effectively protect battery.
11.2 SCOPE OF USE
Applicable only to l4 series 4.2Vlithium-ion batteries
11.3 FAULT HANDLING
Unable to charge:
a. Check whether the AC cord is in good connection with the power supply or not
b. Check whether the charger is in good connection with the battery or not
If all the above maybe excluded, please send it to the factory for repair, not self-repair.
Battery Activation Failed:
a. Check whether the battery is in good condition or not
If all the above maybe excluded, please send it to the factory for repair, not self-repair.
High voltage inside. To prevent the risk of electric shock, do not attempt to open or repair the charger yourself. If you experience any issues, please contact your dealer or service center
Do not charge non-rechargeable batteries!

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