



Deyang Rata Technology Co.,Ltd

-Validate your electrical load test
www.cnloadbank.com/www.rata.top



Model : SILV-500L

Key features

- High Accuracy Load Testing
- Side Airflow Design for Flexible Installation
- Industrial-Grade Resistive Elements
- Smart Control System (Local & Remote)
- Comprehensive Safety Protection
- Robust & Customizable Design

Applications

Genset load test

UPS load test

Power grid balancing

Data center server load
simulation

BESS test



Technical Data Sheet

Electrical parameter	
Rated power	500kW
Power factor	1.0
Rated voltage.	400vac
Hz.	50Hz.
Phase & wires	3P4W
Load resolution	1kW
Voltage Tolerance (Short Term Operation)	+5%
Load Element Tolerance	± 3%
Load connection	Copper busbars
Control power	Auxiliry
Control voltage	400Vac

Enclosure structure	
Canopy/ container	Container
Noise level	85±3dB(A)
Size(Width*Depth*Height mm)	1155*1205*1120
Air direction	Horizontal
Quantity of fans	1
Air volume(m³/kW/hour)	70
Portability	Castors*4
IP grade of control chamber	55
IP grade of complete enclosure	54

Protections	
Fans overload protection	
Fans low air volume protection	
Thermal emergency cut-out	
Control circuit MCCB	
Local/ Remote control mode inter-lock	
Emergency Stop	

Load bank control	
Temperature	-20 °C to +50°C
Latitude	≦2000 m.a.s.l
Load swithing	3 Pole contactor
Digital meter	V/A/kW/Hz/Pf.
Connection interface	RJ45
Type of communication	Modbus TCP
Local control	HMI touch screen
Remote control	PC based software

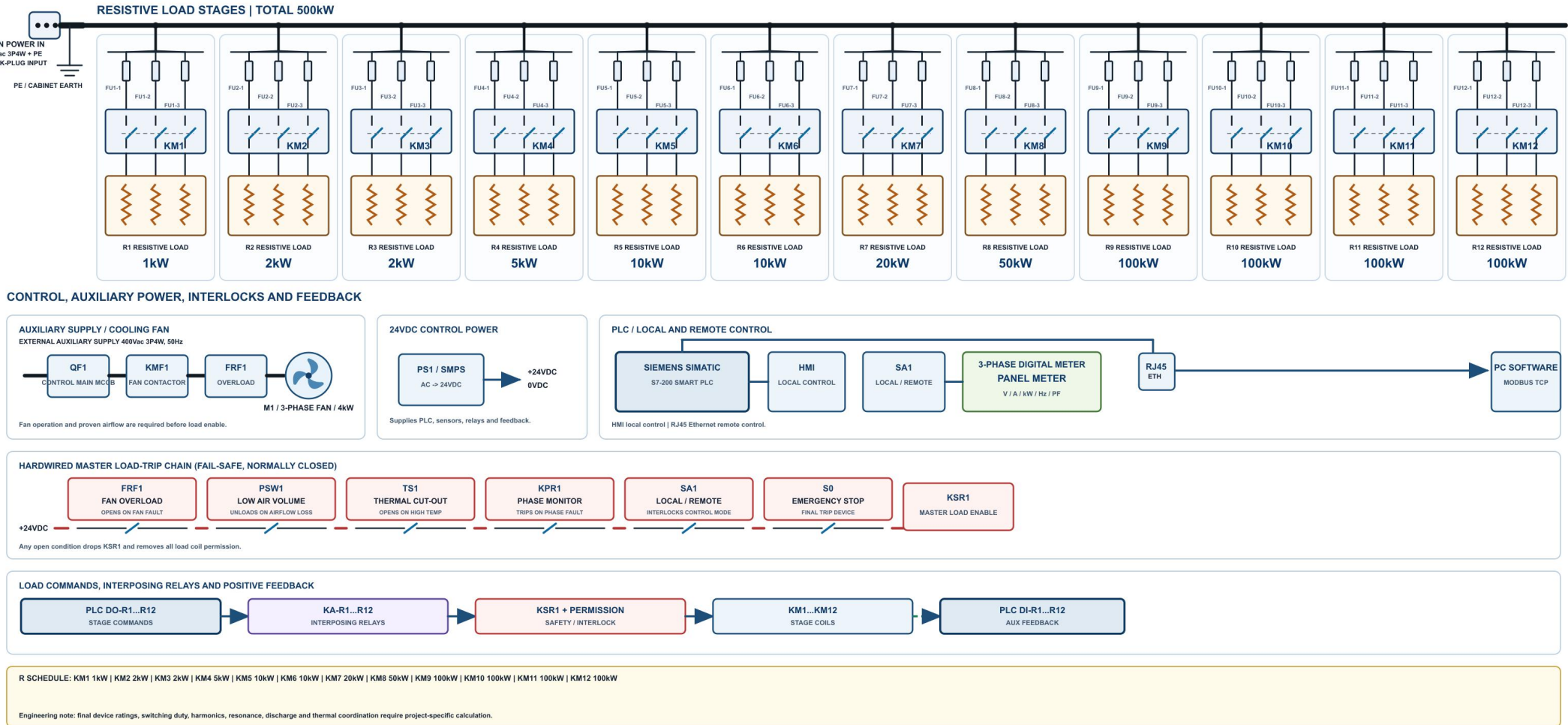
Power derate at other voltages	
400Vac	500kW
380Vac	451kW
360Vac	405kW

Single Line Diagram

SILV-500L 500kW RESISTIVE LOAD BANK - SINGLE-LINE DIAGRAM

400Vac 50Hz 3P4W + PE | 12 total switched stages | IEC-style protection and control logic

P 500kW



Key Parts Of Load Bank



Control Panel assemble

- HMI touch screen
- Alarm indicators
- Digital meter
- Push buttons/E-stop



Resistive Load Element.

Finned stainless heating tubular. Ni-chrome resistance core. temperature tolerance @1200°C



Load Switch & Protection.

Generally choosing **Schneider or Siemens contactors** for resistive load branch circuit. fuse protection added.



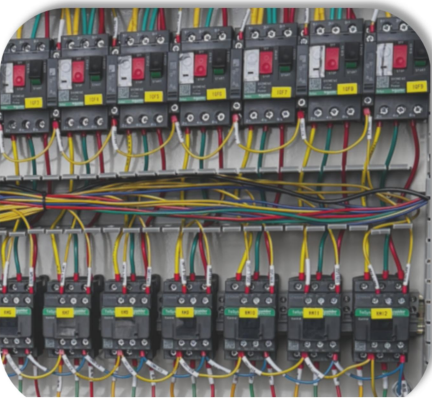
Power-fit quick connector

400Amps IEC standard quick connector . fit with 90-120 mmsq cable .
Male base on load bank enclosure



3 phase AC Industrial Blowers.

Resistive element generates massive heat while loading. Axial blower is crucial to reach volume ≥ 70m³/ kW/H. Each blower is equiped with air pressure switch.



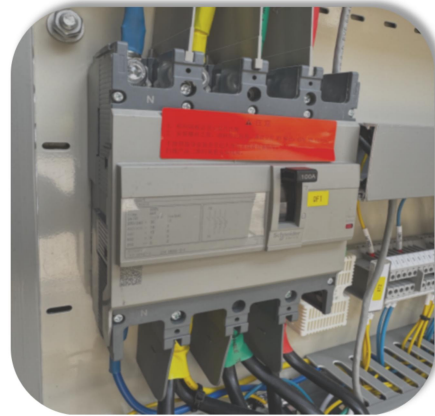
Thermal Relays

Each fan is fully protected by thermal relays



Stainless Steel Louvers

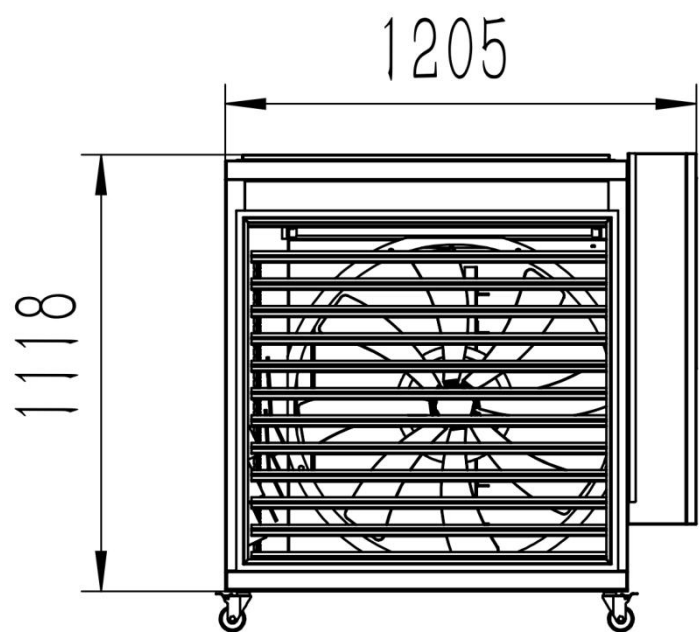
Stainless steel 304 material been used at hot air exhaust side. equiped with stainless grill nets. to protect the device itself from heat.



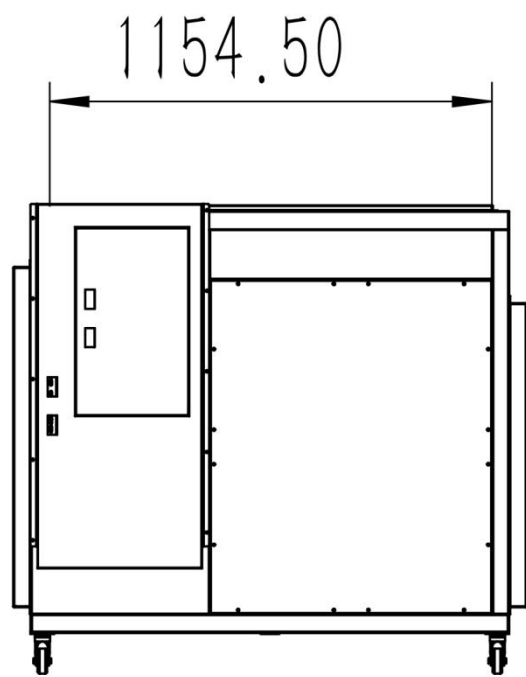
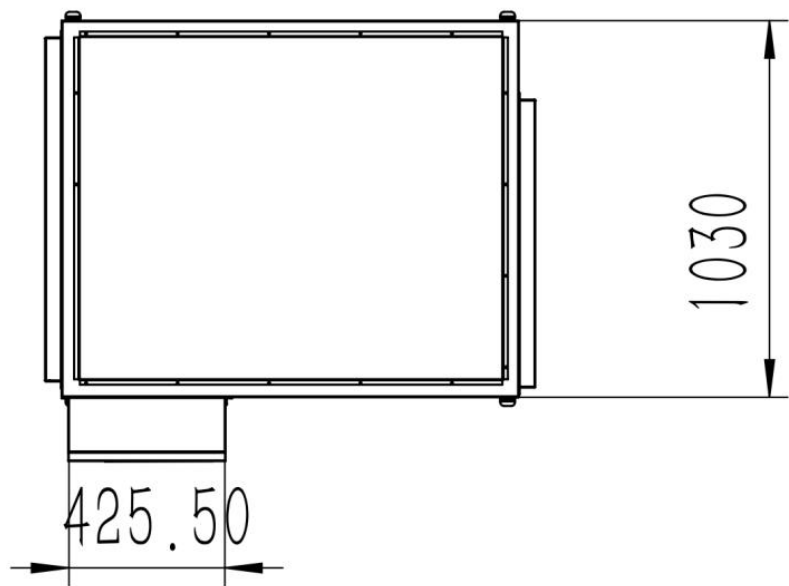
MCCB

An MCCB is installed at control circuit.

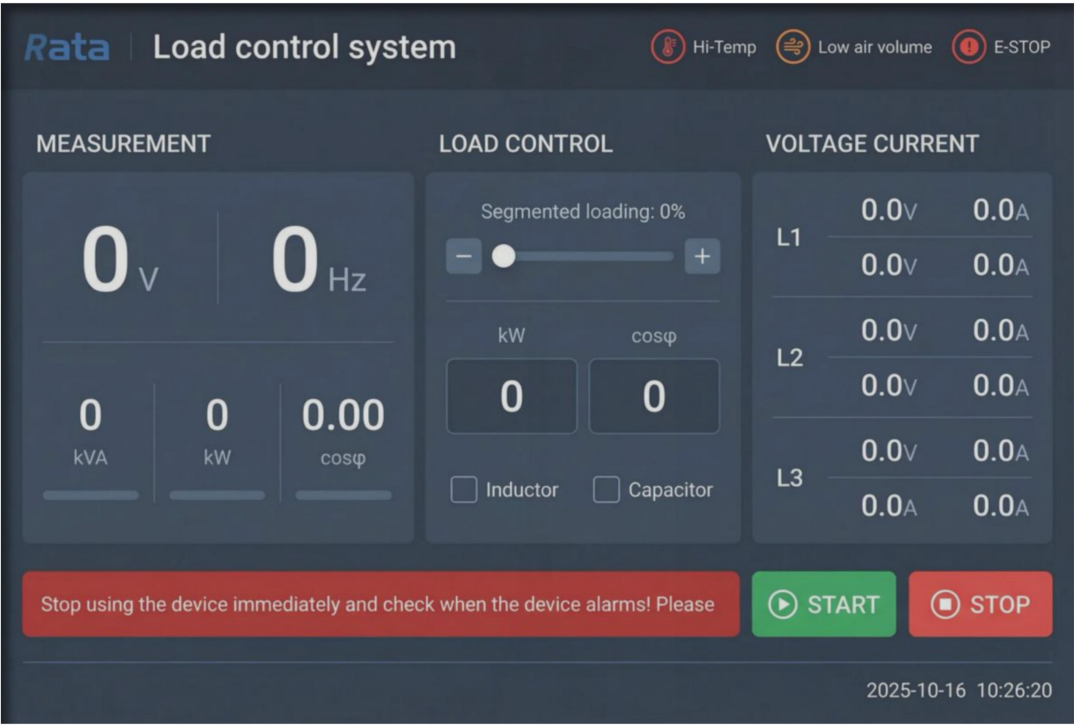
Engineering Drawing



- Note**
1. The load bank is a floor- standing unit equipped with four heavy-duty castors for easy movement.
 - 2.The load bank is suitable for both indoor and outdoor use.
 - 3.An external auxiliary power supply is required to power the cooling fans and the control circuit.
 4. The applied voltage must be the less than rated voltage of 400Vac. A maximum overload pf 10% is permitted for no more than 5 minutes.
 5. Read the operation manual thoroughly before use. The load bank must be operated only by trained and qualified personnel.



Control Interface



- Rata Load Control System | Quick Reference Guide**
- 1. Real-Time Monitoring**
Primary Metrics: Large central displays for **Voltage (V)** and **Frequency (Hz)**.
Power Indicators: Live readings for **kVA**, **kW**, and **Power Factor (cosφ)**.
Phase Analysis: The right-hand table provides individual **Voltage** and **Current (A)** readings for three-phase lines (**L1**, **L2**, **L3**)
 - 2. Alarm Indicators**
Hi-Temp: System overheating alert.
Low air volume: Cooling fan airflow deficiency.
E-STOP: Emergency stop status activated.
Safety Rule: Immediately stop operation if any alarm light turns red.
 - 3. Load Control & Settings**
Loading Slider: Use the +/- buttons or slider to adjust load from **0% to 110%**.
Manual Entry: Input specific values for **kW** and **cosφ** in the white entry boxes.
Load Type: Select **Inductor** or **Capacitor** check-boxes to modify reactive power.
Segmented Loading: Enable this for precise step-loading configurations.
 - 4. Execution**
Green Button (I): Start / Apply Load.
Red Button (O): Stop / Shed Load.
Fan Status: The blue dashed line and fan icon indicate the cooling system activity.

Spare parts list

List Of Spare Parts Supplying(Free Of Charge)	
Items	Quantity
● Intermediate relays.	4unit / load bank
● Branch load fuses	3 units/ load bank
● Air-pressure switch.	2 units/load bank
● Ni-Cr heating element(Resistors)	3 units/load bank
● Indicators& Push buttons	3 units/load bank

Contact for more info.	
● Name: Mr. Gong Zhenhua	● Email: gongzhenhua@rata.top
● website: www.cnloadbank.com	● whatsapp: 0086-13890270038