100KW-AC380V

100KW Generator Test Resistive Load

Design Principles

• Reliability, safety, economy, practicality, operability and maintainability are the basic principles, while also considering the advancement of the equipment.

• The test system uses a touch screen + PLC + contactors.



Main Requirements

• Rated Power: 100KW (600KW with auxiliary cabinets)
• Rated Voltage: AC380V
• Power Factor: 1
• Operating Frequency: 50HZ
• Control Voltage: AC220V
• Cooling: Forced air cooling
• Control: PLC + contactor
• Communication: MODBUS-TCP

Main Cabinet Dimensions

W	H	D
650	1300	850

W*H*D (650*1300*850)

标配 C13-C14 电源线；其他接口按现场 PDU 标准确认。

电源线 / 连接器可选类型

多种规格可选，满足不同国家和行业的使用需求

01 国标线

3*1.5 mm²



线规	3×1.5 mm²
线长	线长可定制（标配1.5 m）
插头类型	国标三插
适用地区	中国大陆
适用设备	常规设备、机柜设备

02 C13 C14 欧标线

3*1.5 mm²



线规	3×1.5 mm²
线长	线长可定制（标配1.5 m）
插头类型	C14 公头
插座类型	C13 母座
适用地区	欧标 / 通用
适用设备	IT设备、服务器显示器等

03 C13 C20 线

3*1.5 mm²



线规	3×1.5 mm²
线长	线长可定制（标配1.5 m）
插头类型	C20 公头
插座类型	C13 母座
适用地区	通用
适用设备	大功率设备、机柜设备

04 C19 C20 线

3*1.5 mm²



线规	3×1.5 mm²
线长	线长可定制（标配1.5 m）
插头类型	C20 公头
插座类型	C19 母座
适用地区	通用
适用设备	服务器、工业设备高功率应用

05 63A 工业连接器

（按需定制）



电流	63 A
电压	380-415 V（可定制）
线长	线长可定制
适用场景	三相大功率设备 工业测试、数据中心等

06 单相32A工业连接器

（按需定制）



电流	32 A
电压	200-250 V（可定制）
线长	线长可定制
适用场景	单相大功率设备 工业测试、机柜设备等

Design Basis · Referenced Standards

- GB-T755-2008 Rotating electrical machines - rating and performance
- GB/T2820-90 General technical requirements for power-frequency diesel generator sets
- YD/T502-2007 Diesel generator sets for telecommunications
- GB-T2820-2009 AC generator sets driven by reciprocating internal combustion engines
- GB-T20136-2006 General test methods for internal combustion engine power stations
- GJB235A-97 General specification for military mobile AC power stations
- GJB1488-1992 General test methods for military internal combustion engine power stations
- GB-T50054-1995 Code for low-voltage distribution design
- GB-T50055-1993 Code for distribution design for general electrical equipment
- GB-T63-90 Code for measurement instrumentation design for electrical installations
- GB-T6738-86 Safety requirements for electrical indicating and recording instruments and accessories

User Technical Requirements

Rated Power: 100KW (600KW with auxiliary cabinets)

Rated Voltage: AC380V

Power Factor: 1

Operating Frequency: 50HZ

Control Voltage: AC220V

Cooling: Forced air cooling

Control: PLC + contactor

Communication: MODBUS-TCP

Load Accuracy: ±5%

Protection: Overload and short-circuit protection; over-temperature alarm and load disconnection.

Input: Copper busbar.

Other:

Task of the Load System

This equipment is intended for type tests of the three-phase AC generators specified in Table 1.

No.	Parameter	Value
1	Rated power range	100KW
2	Rated frequency	50HZ
3	Rated voltage	380V
4	Maximum test current with auxiliary cabinets	910A
5	Rated power factor	1
Notes		

Test System Technical Parameters

Item	Specification
System Components	Load control enclosure, touch screen, PLC, air-cooling unit, protection unit, load resistor unit and electrical actuators.
Rated Capacity	100KW (600KW total when parallel cabinets include this unit)
Rated Voltage	380V
Test Frequency	40HZ-60HZ
Load Characteristic	Resistive
Power Factor	1
Connection	Three-phase four-wire
Loading Accuracy	≤5%
Three-Phase Unbalance	≤5%
Operating Power	AC220V
Duty	Continuous operation
Cooling	Forced air cooling
Insulation Class	F
Measurement Accuracy	Class 0.5
Loading Resolution	3KW (three-phase)
Load Stages	3KW,6KW,6KW,9KW,15KW,30KW,30KW,
Resistor Elements	1KW per resistor tube; power-frequency withstand voltage 2500V/minute
Resistor Material	Nickel-chromium alloy
Temperature Coefficient	TCR=1.3ppm/°C
Control	Local control (touch screen).
Load Protection	Short-circuit, overload and over-temperature.
Operating Environment	-20°C~45°C
Protection Rating	IP23
Enclosure Colour	Computer grey + black

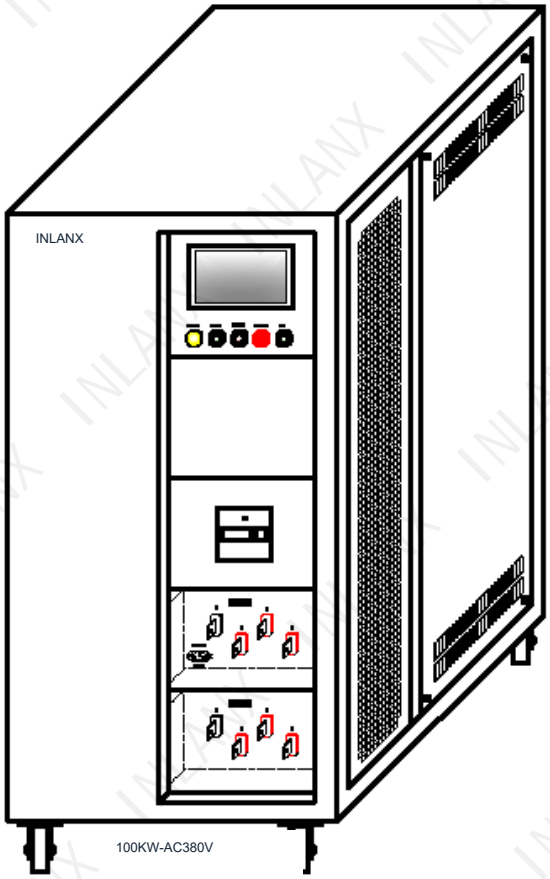
Test System Technical Scheme



Generator (or other power source)

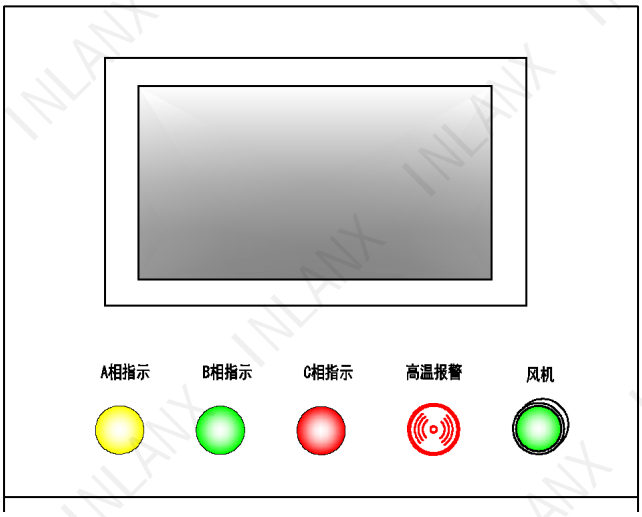


Load cabinet touch screen



1. Display and control unit
2. Control contactor
3. Main switch
4. Power input unit
5. Parallel connection unit

Control Panel



Main Equipment

Item	Description
Equipment	Load cabinet
Model	INLANX-100KW-AC380V
Quantity	1
Notes	600KW total load including this cabinet.

Cooling, Alarms and Load Control

Cooling and alarms: start the fan before loading. Loading is disabled if the fan does not start. If an abnormal condition occurs during testing, press the fan button and resume testing after the fault is cleared.

Load control: centralized and independent control are available. In centralized control, pressing a percentage applies the corresponding load.

First set the output powers Y0~Y14 in ascending order. Then define which loads are applied for 25%, 50%, 75% and 100%. Press Return after completing the settings.





Independent control permits switching individual load stages. Select Independent, then press ON below 6KW to apply a 6KW load. The 6KW indication turns red.

Electrical Display

Electrical display: after loading, switch to the display screen to observe the electrical data.



Data Reports, Waveforms and Export

The data report also allows changes to be reviewed at intervals of 1 second.





Test data can be exported:



Important Note

Important: wait until the load has cooled before stopping the fan. Before disconnecting cables, check whether they are energized. Disconnect the generator side first, then the load side.

Simple Test Procedure

1. Connection

• Connect the source under test to the Load Input copper busbars inside the cabinet.

• Connect the control power cable to the cabinet socket (AC220V).

• For tests above 100KW, connect auxiliary cabinets to the parallel busbars. Auxiliary cabinets are controlled independently, with their data displayed centrally on the main cabinet.

2. Testing

• Press the fan switch and verify normal fan operation before proceeding.

• Set touch-screen parameters (configured at the factory).

• Apply loads from the control screen.

3. Completion

• Remove all loads from the touch-screen control interface; keep only the fan running.

• After the resistors have cooled fully (normally 3 minutes), stop the fan.

• Disconnect the power-source-side cable.

• Disconnect the load-side cable.