SIMOSYNERGY

SIMOAIR

medium voltage switchgear

Certification

Type Test

intertek
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ASTA TYPE TEST CERTIFICATE OF COMPLETE TYPE TEST

Project No: SHA554892 **Certificate No:** ASTA-TYPE-0003750

Applicant: Simosynergy Sdn.Bhd.

Lot 58, Jalan Industri 13, Kaw
Melaka, Malaysia

Apparatus: 630 A, 12 kV, 50/60 Hz, thr
assembly, consists of a three-p
pole earthing switch and three

Manufactured By: Hangyue Intelligent Electric Co.,

No.4, Fushan 8th Road, Fushar
Zhuhai City, Guangdong, China

Test Report No: 250328001GZA, AG1300436-20

Designation: KYN55-12/630-25

The apparatus which is representative of the designa
evaluated in accordance with:

IEC 62271-200:2021, Clauses 7.2, 7.4.4, 7.5
IEC 62271-100:2021, Clauses 7.101.2.4,
IEC 62271-102:2018, Clauses 7.101,
and the STL Guides to IEC 62271-2
IEC 62271-100: Issue 3.0, 17th June 2024, IE
IEC 62271-1: Issue 3.0, 17th Ju

The results are shown in the record of tests attached here
considered to comply with the above Standard(s) and to ju
on the ratings page(s) of this Certificate. This Certificate
conformity of any apparatus having the same or other desi

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Intertek Page 1 of 5

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ASTA TYPE TEST CERTIFICATE OF COMPLETE TYPE TEST

Project No: SHA415250 **Certificate No:** ASTA-TYPE-0003749
Part 1 of 2

Applicant: Simosynergy Sdn.Bhd.

Lot 58, Jalan Industri 13, Kawasan P erindustrian Kelemak, 78000 Alor Gajah, Melaka, Malaysia

Apparatus: 1250 A, 12 kV, 50/60 Hz, three-pole, air-insulated, metal-enclosed switchgear assembly, consists of a three-pole withdrawable vacuum circuit-breaker, a three-pole earthing switch and three current transformers.

Manufactured By: Hangyue Intelligent Electric Co., Ltd

No.4, Fushan 8th Road, Fushan Industrial Park, Qianwu Town, Doumen District, Zhuhai City, Guangdong, China

Test Report No: 250328002GZA, AG1300435-2025 and BA0500108-2025

Designation: KYN55-12/1250-31.5

The apparatus which is representative of the designation, supplied drawings and photographs has been evaluated in accordance with:

IEC 62271-200:2021, Clauses 7.2, 7.4.4, 7.5 to 7.7, 7.9 to 7.11, 7.101, 7.102, 7.105
IEC 62271-100:2021, Clauses 7.101.2.4, 7.102 to 7.107, 7.108.2, 7.111, 7.112
IEC 62271-102:2018, Clauses 7.101, 7.102.5, 7.105, IEC 62271-1:2017
and the STL Guides to IEC 62271-200: Issue 3.0, 17th June 2024,
IEC 62271-100: Issue 3.0, 17th June 2024, IEC 62271-102: Issue 6.0, 17th June 2024,
IEC 62271-1: Issue 3.0, 17th June 2024, where applicable.

The results are shown in the record of tests attached hereto. The values obtained and the general performance is considered to comply with the above Standard(s) and to justify the ratings assigned by the manufacturer as stated on the ratings page(s) of this Certificate. This Certificate applies only to the apparatus tested. Responsibility for conformity of any apparatus having the same or other designations rests with the Manufacturer.

UKAS PRODUCT CERTIFICATION
0010

Certification Engineer

Certification Officer

19 November 2025
Date

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Application

Typical Uses

SIMOAIR - KYN55-12

SIMOAIR, using SIEMENS vacuum circuit breaker, type tested switchgear for indoor installation according to IEC 62271-200 and VDE 0671-200.

Loss of service continuity	: LSC 2B
Category	: PM
Partition Class	: IAC A FLR
Internal Arc Classification	: Isc <= 31.5kA
Arc Duration	: 1s
Maximum Ratings	: 12 kV / 31.5kA / 1250A

Typical Uses

The SIMOAIR circuit-breaker switchgear can be used in transformer and switching substations, e.g.:

Power Supply Systems

- Power supply companies

Industry

- Power stations
- Cement industry
- Automobile industry
- Iron and steel works
- Rolling mills
- Mining industry
- Textile, paper and food industries
- Chemical industry
- Petroleum industry
- Pipeline installations
- Offshore installations
- Electro chemical plants
- Petro chemical plants
- Ship building industry
- Diesel power plants
- Emergency power supply installations
- Lignite open-cast mines
- Traction power supplies

Technical Data

Ratings

RATINGS	SIMOAIR-630A	SIMOAIR-1250A
Rated Voltage	12 kV	12 kV
Operational Voltage	11 kV	11 kV
Rated Current	630 A	1250 A
Rated Frequency	50Hz / 60Hz	50Hz / 60Hz
Rated Short-Time Withstand Current	25kA / 4s	31.5kA / 4s
Rated Short Circuit Closing Current	25 kA	31.5 kA
Rated Short Circuit Breaking Current	25 kA	31.5 kA
Rated Short Time Withstand Current Duration	4s	4s
Rated Peak Withstand Current	65 kA	81.9 kA
Peak Closing and Breaking Current	65 kA	81.9 kA
Short-time Withstand Power Frequency	42 kV	42 kV
Earthing Switch - Short Time Withstand Current & Duration	31.5kA / 4s	31.5kA / 4s
Earthing Circuit – Short Time Withstand Current & Duration	27.4kA / 3s	27.4kA / 3s
Rated Peak Withstand Current (Grounding Switch)	80 kA	80 kA
Rated Short-Time Power Frequency Withstand Voltage	42 kV	42 kV
Rated Lightning Impulse Withstand Voltage	75 kV	75 kV
Rated Short-Time Power Frequency Withstand Voltage (Fracture)	48 kV	48 kV
Peak Value of Rated Lightning Impulse Withstand Voltage (Fracture)	85 kV	85 kV
Operating Voltage of Electric Operating Mechanism	30/110Vdc / 230Vac	30/110Vdc / 230Vac
Insulation Test for Auxiliary and Control Circuits (1 min)	2 kV	2 kV

DIMENSION	SIMOAIR-630A	SIMOAIR-1250A
Width	550 mm	550 mm
Height	2380 mm	2380 mm
Depth	1500 mm	1500 mm

DEGREE OF PROTECTION	SIMOAIR-630A	SIMOAIR-1250A
Enclosure	1P 4X	IP 4X
Compartments	1P 2X	1P 2X

Technical Data

Classification | Dimensions | Room Planning

Internal Arc Classification	
Classification	IAC

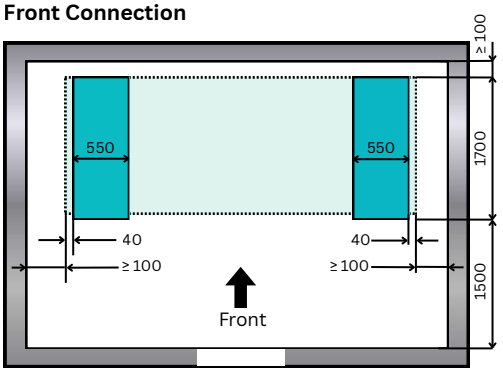
Accessibility	
Front	Type A
Rear	Type A
Lateral	Type A
Test Current (kA)	25/31.5
Arc Duration (s)	1.0

Construction and Design	
Partition Class	PM (Metallic Partition)
Loss of service Continuity Category	LSC2B (Metal-Clad)

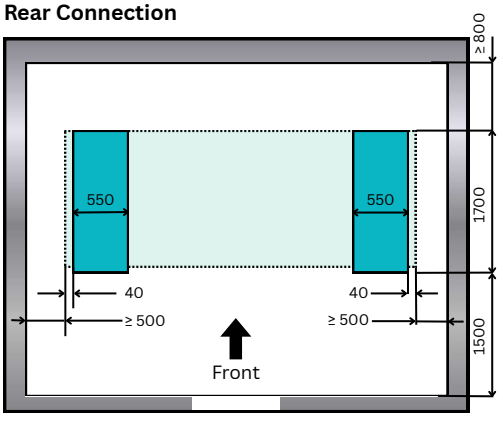
Compartment Accessibility (standard)	
Busbar Compartment	Tool-Based
Switching-Device Compartment	Interlock-Controlled
Low-Voltage Compartment	Tool-Based
Connection Compartment	
- Front Connection	Interlock-Controlled and Tool-Based
- Rear Connection	Tool-Based

Room Planning (Room Height ≥ 2800 mm)

Front Connection

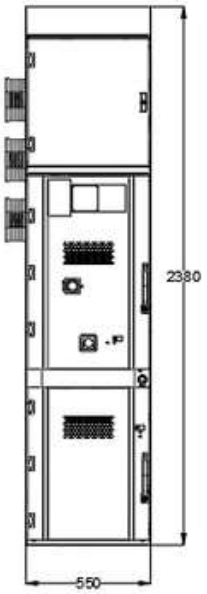


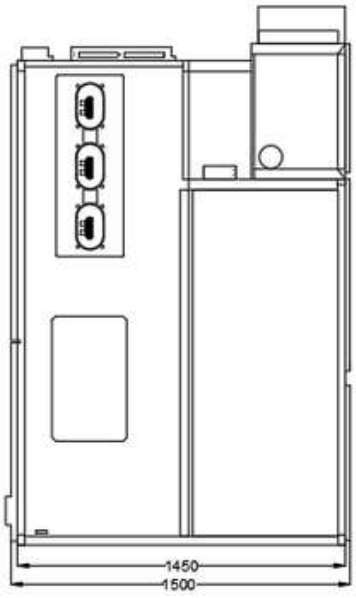
Rear Connection

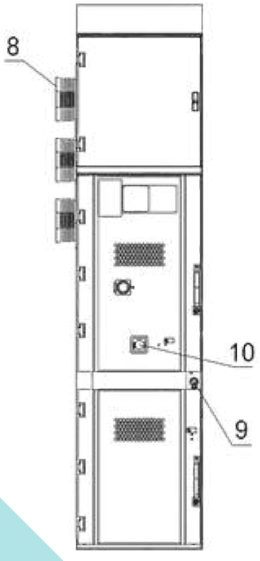


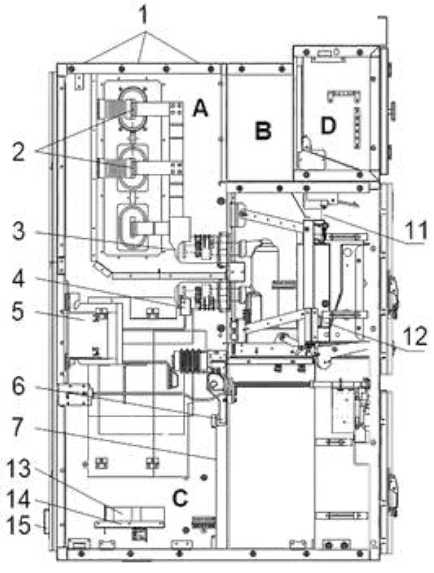
Design

Panel Design









Legend for Panel Design

A) BUSBAR COMPARTMENT
母线室
B) CIRCUIT BREAKER COMPARTMENT
断路器室
C) CABLE COMPARTMENT
电缆室
D) LOW-VOLTAGE COMPARTMENT
低压室

1) PRESSURE RELIEF PLATE
卸压板
2) BUSBAR
分支母线
3) FIXED CONTACT
静触头
4) CONTACT BOX BUSHING
触头盒
5) CURRENT TRANSFORMER
电流互感器
6) EARTHING SWITCH
接地开关
7) EARTHING COPPER BAR
接地铜排
8) WALL BUSHING
穿墙套管
9) EARTHING SWITCH OPERATING HOLE
接地开关操作孔
10) TROLLEY OPERATING HOLE
手车操作孔
11) CONTROL CIRCUIT SOCKET
控制线插座
12) CIRCUIT BREAKER TROLLEY
断路器手车
13) ZERO-SEQUENCE CURRENT TRANSFORMER
零序互感器
14) CABLE TERMINATION KIT
电缆夹组件
15) LIGHTING
照明灯

Design

Compartments | Interlocks | Operations

Switching-Device Compartment

- All switching operations with high-voltage door closed
- Pressure relief upwards
- Panel powder-coated with epoxy resin
- Metallic, earthed shutters and partitions ensure partition class PM
- High-voltage door pressure resistant in the event of internal arcs in the panel
- Metallic ducts on the side for laying control cables
- Interlocking between high-voltage door and circuit-breaker truck ensures interlock-based access
- Option: Test sockets for capacitive voltage detecting system
- Shutter operating mechanisms separately for:
  - Busbar compartment
  - Connection compartment

Connection Compartment

- Pressure relief upwards through rear pressure relief duct
- Suitable for connection of:
  - Single-core XLPE cables up to max. 6 x 500 mm² per phase
  - Three-core XLPE cables up to max. 3 x 300 mm² per panel
  - Bars made of flat copper with bushings in a floor cover or fully insulated bars including floor cover
- Shutters to be opened separately to permit cable testing
- Earthing busbar
- Connection from front or rear
- Option: Pressure-resistant floor cover
- Use of block-type current transformers
- Bolted rear covers of the connection compartment provide tool-based access for panels with connection from rear
- Interlocked high-voltage door and bolted partitions between connection compartment and switching-device compartment provide interlock-based and tool-based access for panels with connection from front

Interlocks

- Interlocking conditions are satisfied according to IEC 62271-200 / VDE 0671-200
- Earthing switch can only be operated with circuit-breaker truck in test position
- Circuit-breaker truck can only be moved with circuit-breaker “OPEN” and earthing switch “OPEN”
- Mechanical coding on the circuit-breaker truck prevents insertion of similar circuit-breaker trucks for lower rated normal currents into panels with higher rated normal currents
- Interlocking of high-voltage door against circuit-breaker truck
- The high-voltage door can only be opened when the circuit-breaker truck is in test position
- Option: Electromagnetic interlocks

Busbar Compartment

- Pressure relief upwards and through rear pressure relief duct
- Busbars made of flat copper, bolted from panel to panel
  - For rated normal currents up to 1250A
  - Option: Insulated busbars
- Bolted rear and top covers provide tool-based access
- Option: Coupling electrode for capacitive voltage detecting system
- Options: Possibility of installing the following components:
  - Voltage transformers
  - Busbar earthing switch
  - Current transformers in the run of busbars

Low-Voltage Compartment

- Low-voltage Compartment
- For accommodation of all protection, control, measuring and metering equipment
- Partitioned safe-to-touch from the high-voltage part

Low-Voltage Cable

- Control cables of the panel are flexible and have metallic covers
- Connection of switching device truck and panel wiring to low-voltage compartment via 64-pole coded plug connectors
- Bus wires are pluggable from panel to panel

Design

Key Benefits | Features

SAVE LIFES

- Supports all switching operations, including emergency manual operations, with the high-voltage door closed.
- Interlocking mechanisms between high-voltage doors and switching devices.
- Rack-in and rack-out operations of the circuit-breaker truck with the high-voltage door closed.
- Metallic, earthed shutters and partitions (Partition Class: PM).
- Internal arc tested design up to 12kV, 1s, compliant with IEC 62271-200.
- Equipped with maintenance-free vacuum circuit-breakers.

PEACE OF MIND

- Factory-assembled and type-tested switchgear, adhering to IEC 62271-200 standards.
- Circuit-breakers are type-tested within the panel.
- Use of globally available standard components.
- Maintenance-free vacuum circuit-breakers ensure reliable performance.
- Built under DIN EN ISO 9001 quality management systems.

SAVES MONEY

- Cost-effective maintenance-free vacuum circuit-breakers enhance long-term savings.

INCREASES PRODUCTIVITY

- Metallic, earthed shutters and partitions maintain service continuity during maintenance (LSC2B according to IEC 62271-200).
- Designed to ensure minimal service interruptions and reduced downtime.

Standards

Standards | Specification | Guidelines

Device / Feature	IEC Standard	VDE Standard	DIN / EN Standard
SIMOAIR Switchgear	IEC 62271-1	VDE 0671-1	DIN / EN 62271-1
	IEC 62271-200	VDE 0671-200	DIN / EN 62271-200
Internal Arcing Test	IEC 62271-200	VDE 0671-200	–
Circuit Breaker	IEC 62271-100	VDE 0671-100	DIN / EN 62271-100
Circuit Breaker, Generator Switching	IEC / IEEE 62271-37-013	–	–
Vacuum Contactor	IEC 62271-106	VDE 0670-501	DIN / EN 62271-106
Disconnector and Earthing Switch	IEC 62271-102	VDE 0671-102	DIN / EN 62271-102
HV HRC Fuses	IEC 60282	VDE 0670-4	DIN / EN 62271-103
Voltage Detecting System	IEC 61243-5	VDE 0682-415	DIN / EN 62271-105
Internal Arc Classification	IEC 62271-200	VDE 0671-200	DIN / EN 60282-1
Degree of Protection	IEC 60529	VDE 0470-1	DIN / EN 61243-5
	IEC 62271-200	VDE 0671-200	DIN / EN 60529
Current Carrying Capacity	IEC 62271-1	VDE 0671-1	DIN / EN 62271-1
	IEC 62271-200 (1)	VDE 0671-200 (1)	DIN / EN 62271-200 (1)
Insulation	IEC 60071	VDE 0111	DIN / EN 60071
Current Transformer	IEC 61869-2	VDE 0414-1	DIN / EN 61869-2
Voltage Transformer	IEC 61869-3	VDE 0414-2	DIN / EN 61869-3
Installation	IEC 61936-1	VDE 0101	DIN / EN 61936-1
Enclosure	IP 4X (2) (Protection against Solid Foreign Bodies)		
Compartments	IP 2X (Protection against Solid Foreign Bodies)		

(1) Ambient air temperatures: Maximum of 24 h mean +35 °C; Maximum +40 °C
– The current-carrying capacity of the panels and busbars depends on the ambient air temperature outside the enclosure.
– To attain the maximum rated normal currents, some panel variants are provided with natural or forced ventilation.
(2) Higher degree of protection IP5x for enclosure on request.

Standards

Standards | Specification | Guidelines

Type of Service Location

- The switchgear can be used for indoor installation in accordance with IEC 61936 (Power installations exceeding 1 kV AC) and VDE 0101.
- Outside lockable electrical service locations: At places which are not accessible to the public. Enclosures of switchgear can only be removed with tools.
- Inside lockable electrical service locations: A lockable electrical service location is a place outdoors or indoors that is reserved exclusively for housing electrical equipment and which is kept under lock and key. Access is restricted to authorized personnel and persons who have been properly instructed in electrical engineering. Untrained or unskilled persons may only enter under the supervision of authorized personnel or properly instructed persons.

Current-Carrying Capacity

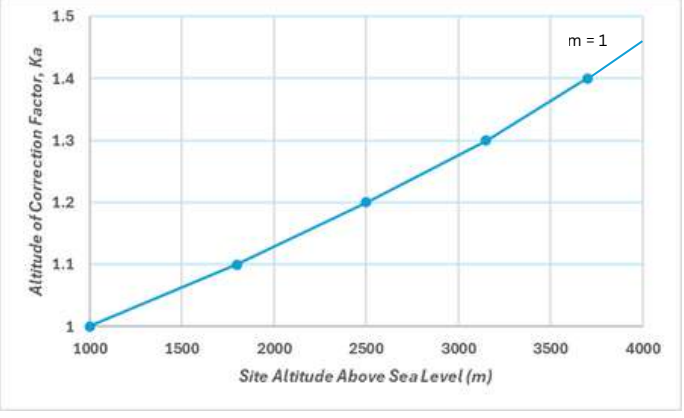
- According to IEC 62271-1 / VDE 0671-1 and IEC 62271-200 / VDE 0671-200 current carrying capacities refer to the following ambient air temperatures:
  - Maximum of 24-hour mean = +35 °C
  - Maximum = +40 °C
- The current-carrying capacity of the panels and busbars depends on the ambient air temperature outside the enclosure.
- To attain the maximum rated normal currents, the panels are provided with natural or forced ventilation.

Dielectric Strength

- The dielectric strength is verified by testing the switchgear with rated values of short-duration power-frequency withstand voltage and lightning impulse withstand voltage according to IEC 62271-1 / VDE 0671-1 (see table “Dielectric strength”).
- The rated values are referred to sea level and to normal atmospheric conditions (1013 hPa, 20 °C, 11 g/m³ humidity) in accordance with IEC 60071 / VDE 0111.
- The dielectric strength decreases with increasing altitude. For site altitudes above 1000 m (above sea level) the standard rated power-frequency withstand voltages are not applicable. Instead, special arrangements apply for insulation.
- Site altitude
  - As altitude increases, the dielectric strength in air decreases due to the decreasing air density. This reduction is permitted up to a site altitude of 1000 m according to IEC and VDE.
  - For site altitudes above 1000 m, a higher insulation level must be selected. It remains valid up to the maximum operational site altitude. For up to 1000 m, the altitude correction factor Ka is 1.0.

Altitude Correction Factor, Ka

- For site altitudes above 1000 m, the altitude correction factor Ka is recommended, depending on the actual site altitude above sea level.
- Rated short-duration power-frequency withstand voltage to be selected for site altitudes > 1000 m
- ≥ Rated short-duration power-frequency withstand voltage up to ≤ 1000 m × Ka
- Rated lightning impulse withstand voltage to be selected for site altitudes > 1000 m
- ≥ Rated lightning impulse withstand voltage up to ≤1000 m × Ka



Standards

Standards | Specification | Guidelines

Terms

“Make-proof earthing switches” are earthing switches with short-circuit making capacity according to IEC 62271-102 and VDE 0671-102 / EN 62271-102

Climate and Environmental Influences

The switchgear may be used, subject to possible additional measures, under the following environmental influences and climate classes:

Environmental influences
- Natural foreign materials
- Chemically active pollutants
- Small animals

Climate classes
- 3K3
- 3C3
- The climate classes are classified according to IEC 60721-3-3.

Protection Against Solid Foreign Bodies, Electric Shock and Ingress of Water

SIMOAIR switchgear fulfills acc. to the standards IEC 62271-200, IEC 60529, VDE 0470-1 and VDE 0671-200, the following degrees of protection:

- Enclosure:
  - IP 4X, IP 5X (protection against solid foreign bodies)
  - IP X1, IP X2 (protection against ingress of water)
- Compartments:
  - IP 2X (protection against solid foreign bodies)

Higher degree of protection for enclosure on request.

Internal Arc Classification

Protection of operating personnel by means of tests for verifying the internal arc classification
- Internal arcing tests must be performed in accordance with IEC 62271-200 / VDE 0671-200
- The switchgear complies with criteria 1 to 5 specified in the mentioned standards for the basic version up to 31.5kA.
- Definitions of the criteria

Criterion 1

Correctly secured doors and covers do not open. Limited deformations are accepted.

Criterion 2

No fragmentation of the enclosure. Projection of small parts up to a mass of 60 g are accepted.

Criterion 3

Arcing does not cause holes in the accessible sides up to a height of 2 m.

Criterion 4

Horizontal and vertical indicators do no ignite due to the effect of hot gases.

Criterion 5

The enclosure remains connected to its earthing point.

Internal Arc Clasification according to IEC

IAC	Internal Arc Clasification
A	300 mm distance of indicators for test (Installation in Closed Electrical Service Location)
F	Front Arrangement of Indicators for Test
L	Lateral Arrangement of Indicators for Test
R	Rear Arrangement of Indicators for Test
Isc	Test Current for SimoAir ≤ 12 kV up to 31.5 kA
t	Arc Duration 1s

SIMOSYNERGY

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