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NO SF6

NXGREEN-12

Clean Air–Insulated Switchgear

HZM® POWER

About Hertzman

We face a variety of challenges every day—rapid technological advancements, environmental pressures, the arrival of the digital era, and the demand for efficient and green manufacturing. Hertzman takes these very challenges as its driving force, fueling our pursuit and understanding of engineering technology. Through outstanding electrification and digital products, services, and solutions, we stand together with our partners to address these challenges. By continuously innovating and advancing in technology, engineering, and processes, we deliver reliable, efficient, economical, and sustainable value.

With the rise of high–reliability power distribution networks, the popularity of new energy, new energy mobility, and microgrids, new technical issues emerge alongside their solutions. In response to these challenges in the energy and new energy sectors, the Hertzman DAVIDCLOUD energy management system, together with supporting intelligent components, provides comprehensive solutions to face these challenges alongside our customers.

In the industrial and manufacturing sectors, the reliability and cost–effectiveness of energy are paramount. In heavy chemical and manufacturing industries, Hertzman explores the high reliability of power distribution systems under extreme operating conditions. Through research and simulation in uncharted fields, we gain new insights and drive innovation and improvements in process engineering. These efforts have earned global recognition for the high reliability of Hertzman power distribution systems.

Innovation in technology and engineering processes can bring users more reliable and more efficient electrification.

Hertzman believes in the power of technology and engineering, actively exploring the unknown and harnessing electrification and digital technology to build a better world and create a better life together.


NXGREEN-12

NXGREEN
Design Characteristics

Clean Air–Insulated Switchgear

Hertzman is committed to the research of SF6 alternative technologies, providing users with green and sustainable power distribution solutions.

NXGREEN uses clean, dry air as its insulating medium. The clean air is derived from natural atmospheric components and contains no fluorinated gases, with a GWP value of less than 1.0. It offers excellent insulation performance and stability. During equipment manufacturing and operation, whether under normal conditions or in the presence of electric arcs, moisture, or other factors, and during any decomposition or transformation processes, it does not produce substances that are toxic or harmful to humans or the environment.

Advantages of Clean, Dry Air as an Insulating Medium No SF6, reducing carbon emissions across the entire lifecycle Ensures the safety of personnel and assets Supports customers' green and low-carbon objectives Provides stable, safe, and reliable electrical performance

The NXGREEN eco-friendly gas-insulated switchgear is a type-tested, environmentally friendly, gas-insulated, indoor, three-phase, metal-enclosed, single-busbar switchgear. It is suitable for secondary power distribution systems in public grids as well as in industrial power distribution networks. Its compact design and modular expandability make it an excellent choice for secondary distribution applications.

Maintenance–Free

The switchgear adopts a fully insulated, fully sealed, stainless-steel gas-tight welded tank design, ensuring that the primary live parts are unaffected and undisturbed by external environmental conditions. Its streamlined design guarantees maintenance-free operation of the main circuit throughout its service life.
The shielded cable terminal design, combined with the maintenance-free concept,ensures ease of use throughout the cabinet's entire life cycle.
No gas refilling is required over the full service life.
Expansion, replacement, and installation operations require no gas-handling work of any kind.

Easy Installation

Compact functional units save space and are easy to transport.
Sequentially assembled units with a streamlined installation path make it ideal for space-constrained locations such as outdoor substations or wind tunnels.
Generous cable compartments simplify cable installation.
Standardized busbar cabinet design enables quick and easy cabinet assembly.
External conical bushing connections follow standardized design for straightforward cable connection.
The functional units are compact, occupying minimal space and easy to transport.
Functional units are assembled sequentially, with a compact installation passage, suitable for locations with strict space requirements, such as outdoor substations or wind tunnels.
Spacious cable compartments make cable installation convenient.
Standardized busbar cabinet design allows easy cabinet assembly.
Standardized external conical bushing cable connections.

Easy Operation

Simplified maintenance and operation of functional units.
User-friendly human - machine interface makes the cabinet easy to use.
Well-designed interlocking mechanism ensures correct operating procedures.
Expandable design.

Focus on Safety

Type-tested cabinet design meets stringent electrical environment requirements.
Fully insulated, fully enclosed design with the primary system completely sealed inside the gas tank, preventing accidental contact.
Pressure relief channel for internal arc faults.
Busbar-side combined functional earthing switch using a vacuum interrupter for closing and grounding current.
Comprehensive operation interlocks ensure safe operation and maintenance.
Optional cable connector temperature monitoring.

New Intelligence

Equipped with Hertzman digital technology, capable of remote control, with communication functionality, and can be connected to the Hertzman DAVIDCLOUD power operation and maintenance cloud or other systems.
Integrated online condition monitoring and distribution automation technology, supporting distribution network automation systems.

NXGREEN
Introduction

Product Quality Standards and Management

ISO quality assurance system
Advanced technology and processes
Robotic welding and air-tightness testing
Switch run-in and operating status testing
Insulation testing
Partial discharge testing
Resistivity testing

Standards followed by NXGREEN environmentally friendly gas-insulated switchgear:

Description	IEC Standard	Category	GB/T Standard
Functional units and switchgear	IEC 62271-200 IEC 62271-1	LSC2A	GB/T 3906 GB/T 11022
Internal arc fault rating	IEC 62271-200	IAC AFLR	GB/T 3906
Earthing switch	IEC 62271-102	E2	GB/T 1985
Isolation switch	IEC 62271-102	M0	GB/T 1985
Circuit breaker	IEC 62271-100	M1, E2	GB/T 1984
Current transformer	IEC 60044-1		GB/T 1208
Voltage transformer	IEC 60044-2		GB/T 1207
High-voltage live-line display device	IEC 61958		DL/T 538
Voltage detection system	IEC 61243-5		IEC 61243-5
Protection against accidental contact, foreign objects, and water	IEC 60529		GB/T 4208
Installation	HD 637 S		
Operation of electrical equipment	EN 50110		
Environmentally friendly insulating gas			Level 2 requirements in GB/T 8979, GB/T 8982, or GB/T 13277.1

NXGREEN complies with existing Chinese National GB standards and IEC standards.

The NXGREEN State Grid standardized version meets the customized standardization requirements of the State Grid Corporation of China.
The NXGREEN automated complete equipment version meets the requirements of the China Southern Power Grid standard for environmentally friendly gas-insulated switchgear automation equipment.
Products can be customized in compliance with the regulations of different countries and regions.

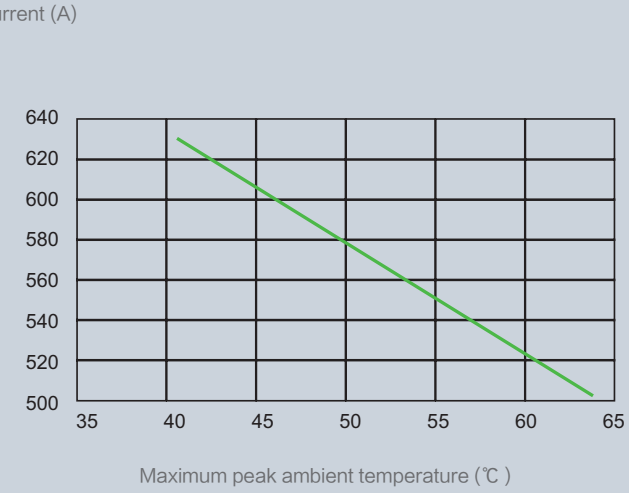
Environment

Ambient temperature: from -5℃ to +40℃ (optional: -25℃ ; when operating current is reduced, up to +55℃)
24-hour average: +35℃
Maximum installation altitude (above sea level): 1000 m
Use at higher altitudes is possible upon request, subject to consultation with the manufacturer.
Type of insulating gas: clean, dry air
Rated pressure at +20℃ : 0.02 MPa

Internal Arc Withstand Rating

The gas tank meets the pressurized sealed equipment system requirements of IEC62271-1 and GB/T11022 standards. The tank is filled with dry, clean air as the insulating medium. No on-site gas filling is required, and under normal operating conditions, no replenishment is needed during its service life. The internal arc withstand rating corresponds to an arc-fault level of AFLR, with a test current of 20 kA and a duration of 0.5 s. In the event of an internal arc fault, the gas can be safely vented downward through a pressure relief valve.

Continuous operating current allowed based on maximum ambient temperature



NXGREEN
Switchgear Design

Switchgear Design

Low–voltage compartment

Live detection system

Side extension connector

Pressure gauge

Three–position isolating switch

Operating mechanism compartment

Vacuum circuit breaker

Stainless steel enclosure for primary system installation

Connecting copper bars

Cable accessories

Lower pressure relief holes of gas tank

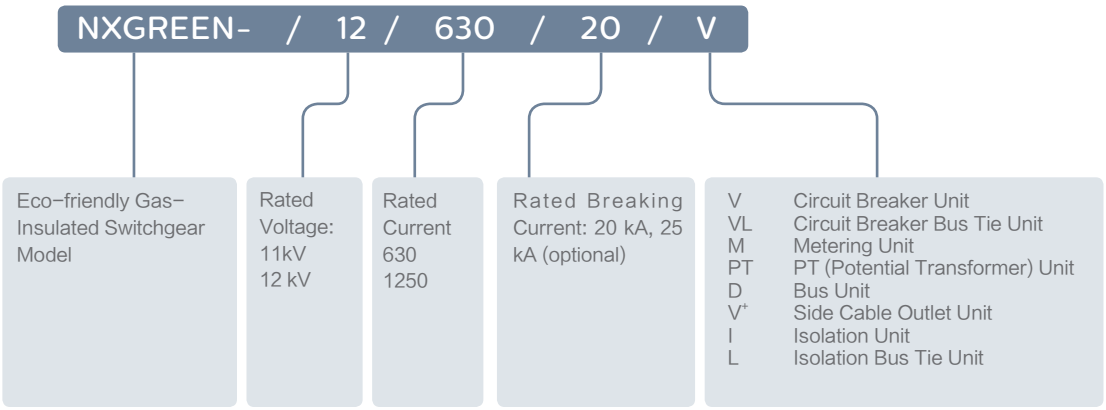
Cable compartment door

Protection level

Gas tank: IP67
Cabinet exterior: IP4X
Compartments inside cabinet: not less than IP2X
Cabinet mechanical impact: IK07

NXGREEN
Introduction

Model Definition



Interlock

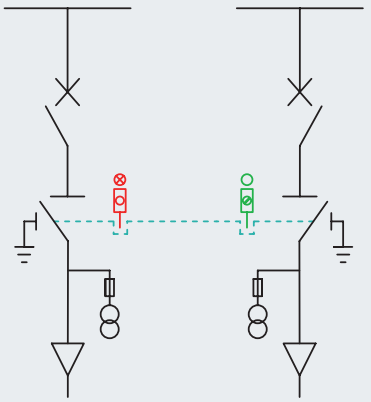
Mechanical interlocking is a fundamental technical measure to ensure the operational safety of switchgear systems.

The NXGREEN interlock system prevents any possible incorrect operations. The operating handle can only be inserted in permitted operational states; the cable compartment door can only be opened when the outgoing feeder cabinet is grounded.

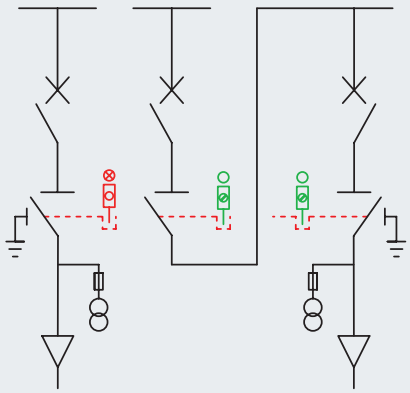
Interlocking relationships among the vacuum circuit breaker, isolating switch, grounding switch, and cable compartment door.

Switchgear	Actual status	Interlocking status for ···						
		Isolating switch		Grounding switch		Circuit breaker		Cable compartment door
		Open	Closed	Open	Closed	Open	Closed	
Isolating switch	Open	–	–	Unlocked	Unlocked	Unlocked	Locked	–
	Closed	–	–	Locked	–	Unlocked	Unlocked	–
Grounding switch	Open	Unlocked	Unlocked	–	–	Unlocked	Unlocked	Locked
	Closed	Locked	–	–	–	Locked	Locked	Unlocked
Circuit breaker	Open	Unlocked if the grounding switch is open; locked if the isolating switch is closed	Unlocked	Unlocked if the isolating switch is open; locked if the isolating switch is closed	Unlocked	–	–	–
	Closed	Locked	Locked	Unlocked if the isolating switch is open; locked if the isolating switch is closed	Unlocked	–	–	–

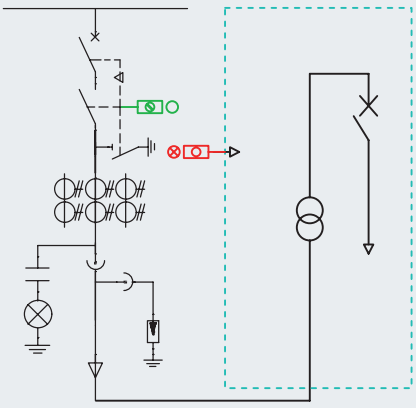
C–LOCK Key Interlock Device



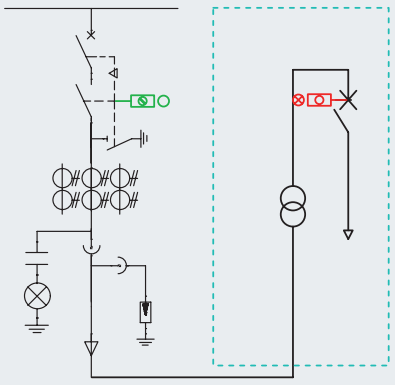
NXGREEN offers an optional C–LOCK key interlock device to achieve functional system interlocking.
In the breaker unit, a “two–locks, one–key” interlock is implemented. Cabinets A and B are each equipped with a key interlock device but share a single key. The key is assigned to the cabinet unit that requires closing; when this unit is in the closed position, the key cannot be removed or turned. In the cabinet without a key, the operating shaft cannot move. This setup realizes the “two–locks, one–key” interlock function, ensuring that only one of cabinets A or B can be closed at a time.



The breaker unit features a “three–locks, two–keys” interlock. Cabinets A, B, and C are each equipped with a key interlock device, but only two keys are provided. The keys are assigned to the two cabinet units that need to be closed; when these two units are in the closed position, the keys cannot be removed or turned. In the cabinet without a key, the operating shaft cannot move. This setup realizes the “three–locks, two–keys” interlock function, ensuring that only two of cabinets A, B, and C can be closed at the same time.



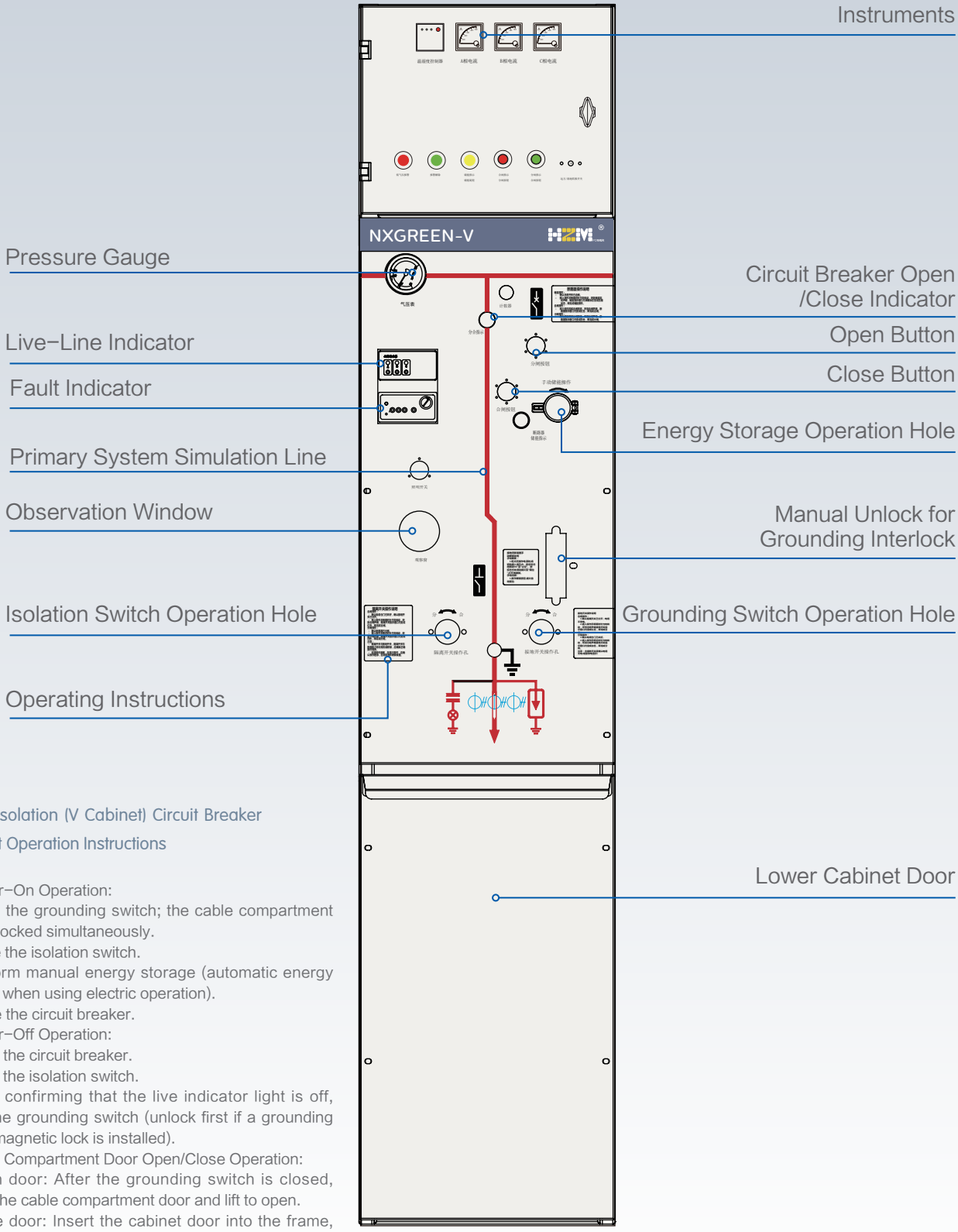
Different breaker units and the grounding switch use a “two–locks, one–key” interlock. For cabinets A and B, whose outgoing cable ends are interconnected, the system requires that each cabinet be equipped with a two–locks, one–key interlock. Each key locks its own breaker and grounding switch, preventing the accidental closing of the grounding switch on one cabinet while the breaker in the other cabinet has not been opened. This logic can be extended to meet other functional requirements of the system.



Breaker unit and transformer two–locks, one–key interlock: The breaker unit’s grounding switch and the transformer enclosure protective door are each equipped with a key interlock device, but only one key is provided. When the grounding switch is in the open position, the key cannot be removed or turned, and the transformer enclosure door cannot be opened without the key. This implements a “two–locks, one–key” interlock, preventing the transformer door from being opened while the primary side of the transformer is not grounded.

NXGREEN
Human–Machine Interface

HMI Design

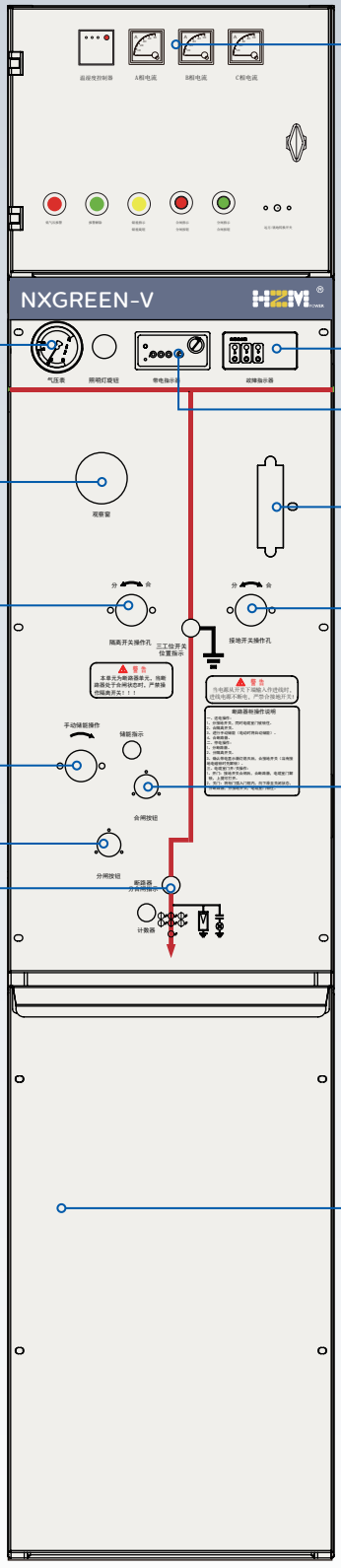


Lower Isolation

Lower Isolation (V Cabinet) Circuit Breaker Cabinet Operation Instructions

1.Power–On Operation:
A.Open the grounding switch; the cable compartment door is locked simultaneously.
B.Close the isolation switch.
C.Perform manual energy storage (automatic energy storage when using electric operation).
D.Close the circuit breaker.
2.Power–Off Operation:
A.Open the circuit breaker.
B.Open the isolation switch.
C.After confirming that the live indicator light is off, close the grounding switch (unlock first if a grounding electromagnetic lock is installed).
3.Cable Compartment Door Open/Close Operation:
A.Open door: After the grounding switch is closed, unlock the cable compartment door and lift to open.
B.Close door: Insert the cabinet door into the frame, slide down to close, open the grounding switch, and lock the cable compartment door.

HMI Design



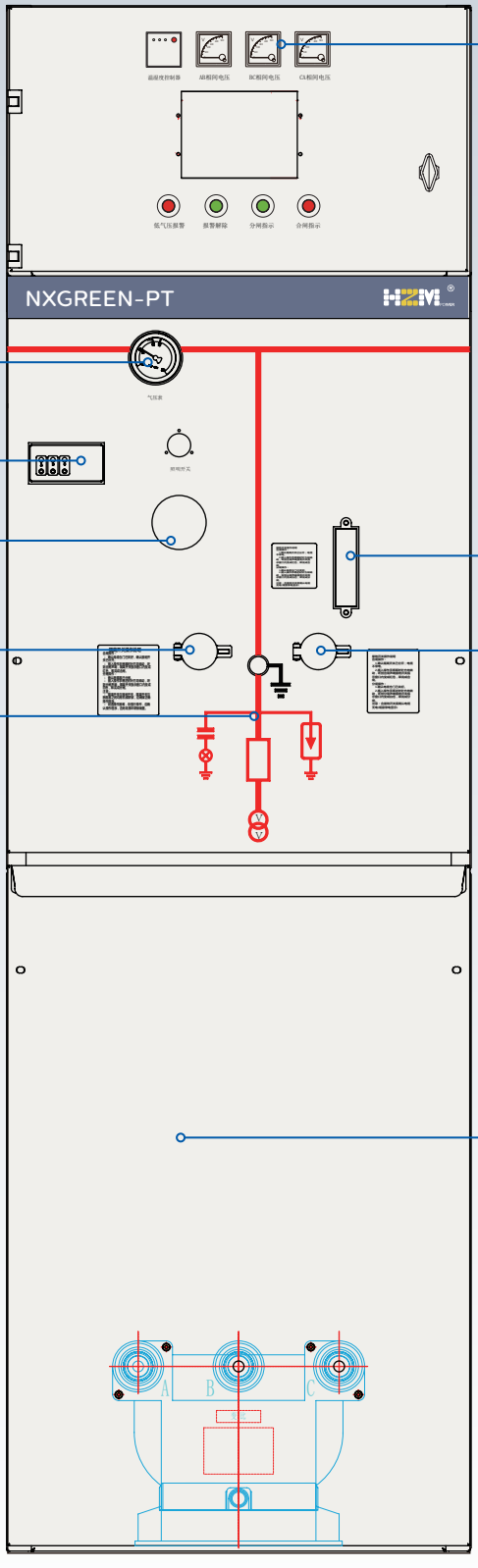
Upper Isolation

Upper Isolation (V Cabinet) Circuit Breaker Cabinet Operation Instructions

1.Power-On Operation:
A.Open the grounding switch; the cable compartment door is locked simultaneously.
B.Close the isolation switch.
C.Perform manual energy storage (automatic during electric operation).
D.Close the circuit breaker.
2.Power-Off Operation:
A.Open the circuit breaker.
B.Open the isolation switch.
C.After confirming the live indicator is off, close the grounding switch (unlock the grounding electromagnetic lock first if present).
3.Cable Compartment Door Open/Close Operation:
A.Open: After closing the grounding switch and closing the circuit breaker, unlock the cable compartment door and lift to open.
B.Close: Insert the cabinet door into the door frame, slide down to the closed position, open the circuit breaker, open the grounding switch, and lock the cable compartment door.

NXGREEN
Human–Machine Interface

HMI Design



PT Cabinet

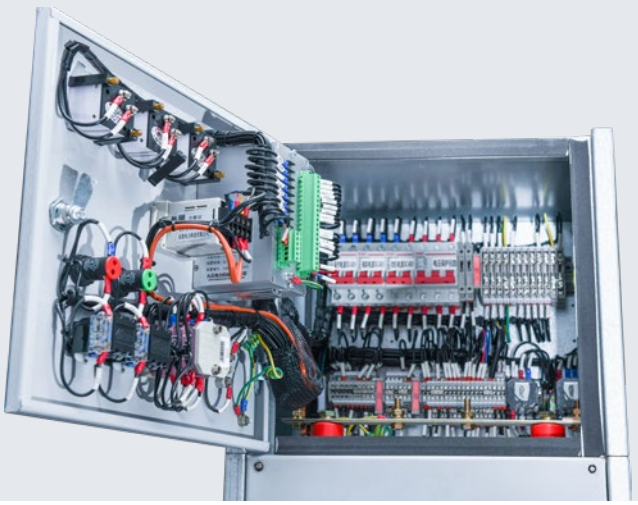
PT Cabinet Operating Instructions

1.Power–On Operation:
A.Open the grounding switch; the cable compartment door will be locked.
B.Close the isolation switch.
2.Power–Off Operation:
A.Open the isolation switch.
B.After confirming that the live indicator light is off, close the grounding switch (if a grounding electromagnetic lock is present, unlock it first).
3.Cable Compartment Door Operation:
A.Opening: After closing the grounding switch, unlock the cable compartment door and lift it to open.
B.Closing: Insert the cabinet door into the door frame, slide it downward to the closed position, open the grounding switch, and the cable compartment door will lock.

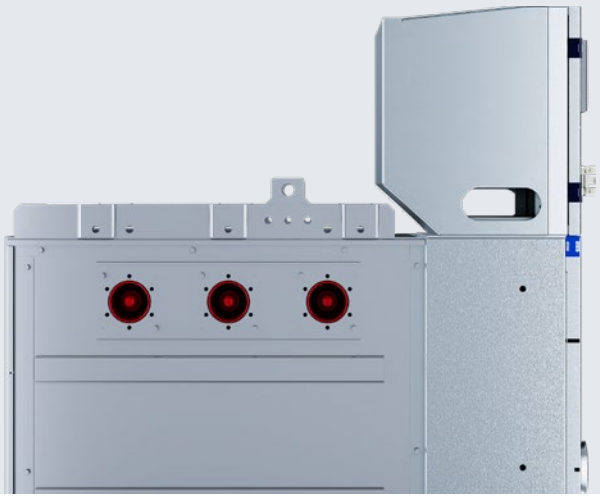
NXGREEN
Compartment Design

Basic Design of Switchgear

Low-Voltage Compartment



Side Extension Interface



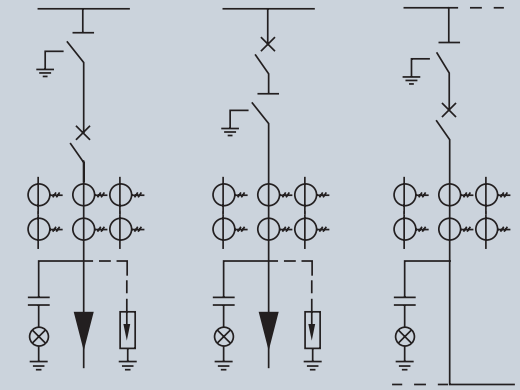
Circuit Breaker Gas Chamber

Cable Compartment

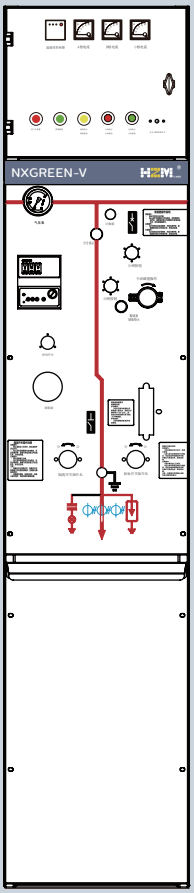
Cable compartment designed to accommodate space for 3 sets of rear plug-in heads and cable compartment pressure relief channels.

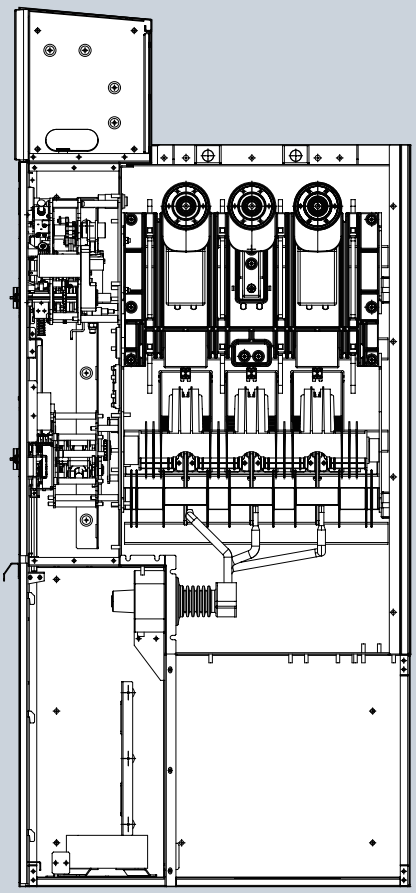
NXGREEN
Standard Unit

NXGREEN–V Circuit Breaker Unit



V Upper Isolation V Lower Isolation VL





Standard Configuration

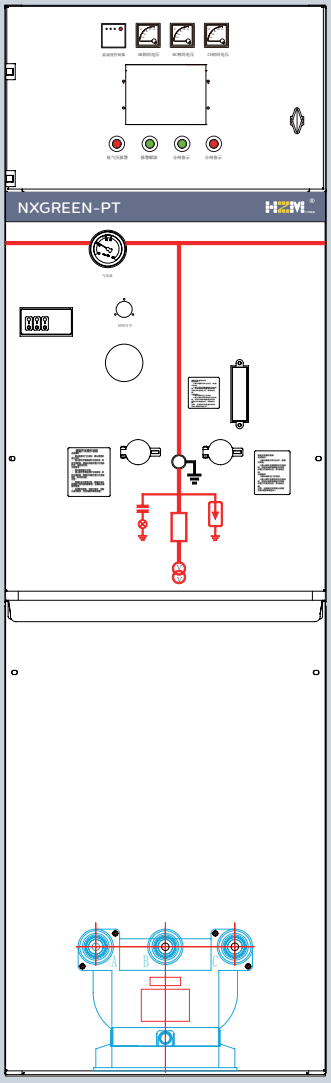
VHZ Vacuum Circuit Breaker with Operating Mechanism
EAIS–G Three–Position Isolation and Earthing Switch with Operating Mechanism
Interlock between Circuit Breaker and Three–Position Isolation/Earthing Switch Mechanism
630A Busbar
MIC300 Microcomputer Protection
C–Type Cable Bushing / Capacitive Voltage Live Display Sensor
Live Display
Pressure Gauge (1 per Gas Chamber)
Grounding Busbar
Interlock between Earthing Switch and Cabinet Door
Standard Cable Compartment Door
Standard Low–Voltage Compartment
Standard Locking Device
Temperature and Humidity Controller with Drying Device
Side–Expansion Busbar

Optional Configuration

Top–expansion busbar or air–insulated connection bushing
Short–circuit and earth–fault indicator
Current transformers and instruments
Surge arrester
Dual cable heads
Cable head temperature monitoring device
Extended–height low–voltage compartment
Protruding thickened cable compartment door
Cable door with infrared temperature observation window
C–LOCK key interlock device
Cable heads

NXGREEN
Standard Unit

NXGREEN–PT Unit with Isolating PT



Standard Configuration

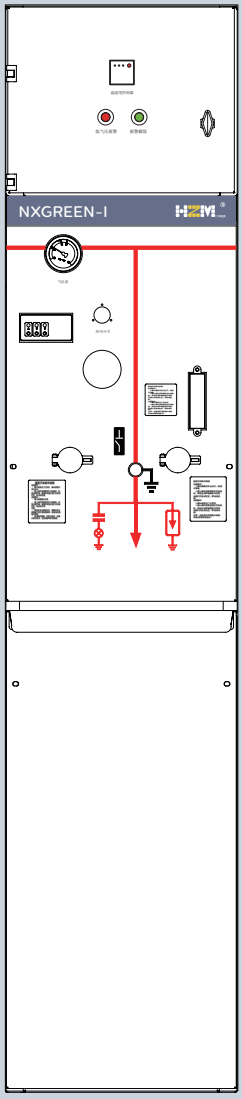
EAIS–G three–position isolating/earthing switch with operating mechanism
C–type cable bushing / capacitive voltage live display sensor
PT with protective fuse and matching fully insulated cable head
Voltmeter
Live display indicator
Pressure gauge (one per gas compartment)
Grounding bus
Interlock between grounding switch and cabinet door
Standard cable compartment door
Standard low–voltage compartment
Standard padlock device
Temperature and humidity controller with drying device
Side extension bus

Optional Configuration

Top extension bus or air–insulated connection bushing
Surge arrester
Extended–height low–voltage compartment
Protruding and reinforced cable compartment door
Cable door with infrared temperature observation window
DC operating system (optional, typically installed in PT cabinet)

NXGREEN
Standard Unit

NXGREEN–I Isolation Unit



Standard Configuration

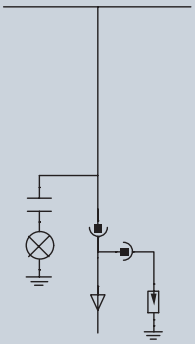
EAIS–G three–position isolation/grounding switch with operating mechanism
C–type cable bushing / capacitive voltage live display sensor
PT with protective fuse and matching fully insulated cable head
Voltmeter
Live display indicator
Pressure gauge (one per gas compartment)
Grounding busbar
Grounding switch interlocked with cabinet door
Standard cable compartment door
Standard low–voltage compartment
Standard lock device
Temperature and humidity controller with drying device
Side extension busbar

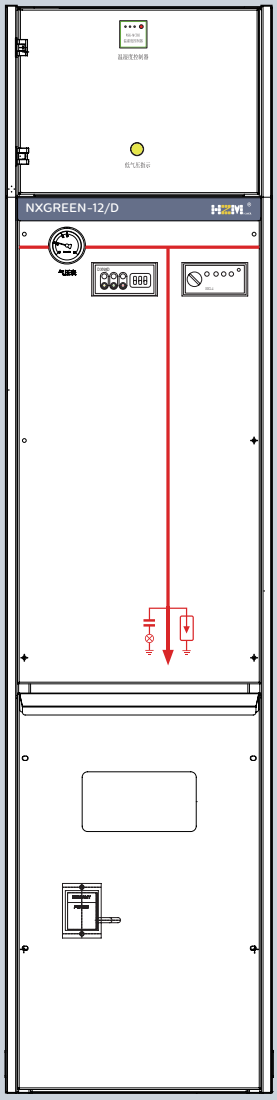
Optional Configuration

Top extension busbar or air–type connection bushing
Surge arrester
Extended–height low–voltage compartment
Protruding and reinforced cable compartment door
Cable door with infrared temperature observation window
DC operating system (optional, generally installed in the PT cabinet)

NXGREEN
Standard Unit

NXGREEN–D Busbar Unit





Standard Configuration

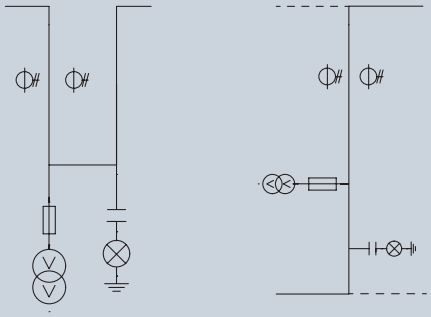
630A Busbar
C–type Cable Bushing / Capacitive Voltage Live Display Sensor
Live Display
Pressure Gauge (one per gas chamber)
Grounding Busbar
Grounding Switch Interlocked with Cabinet Door
Standard Cable Compartment Door
Standard Low–voltage Compartment
Standard Locking Device
Temperature and Humidity Controller with Drying Device
Side Extension Busbar

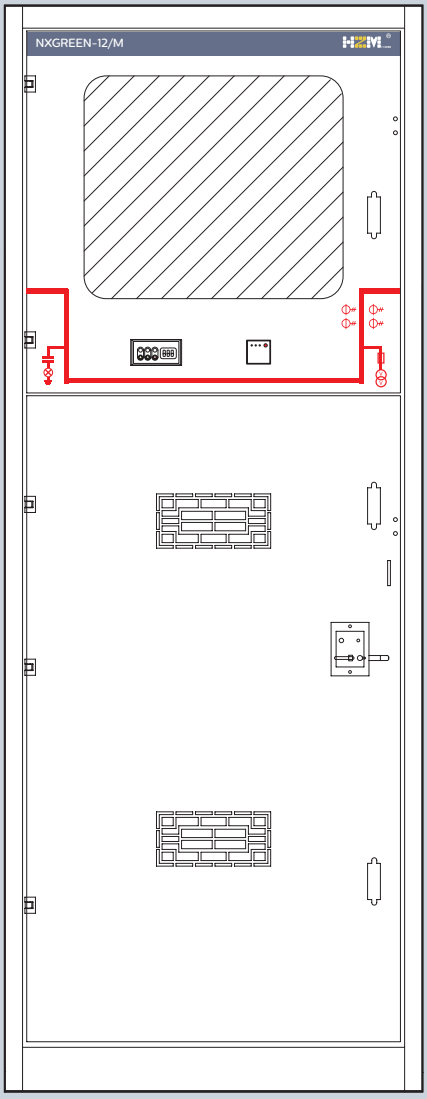
Optional Configuration

Top Extension Busbar or Air–type Connecting Bushing
Short–circuit and Ground Fault Indicator
Current Transformers and Meters
Surge Arrester
Dual Cable Terminals
Cable Temperature Monitoring Device
Raised Low–voltage Compartment
Protruding and Reinforced Cable Compartment Door
Cable Door with Infrared Temperature Window
Cable Terminals

NXGREEN
Standard Unit

NXGREEN–M Metering Unit





Standard Configuration

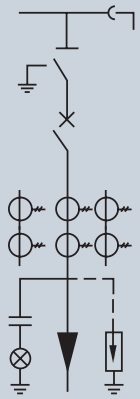
2 metering current transformers
2 metering voltage transformers
630A busbar
Air-type connection bushing / capacitive voltage live display sensor
Meters
Live display
Grounding busbar
Electromagnetic lock
Standard cable compartment door
Temperature and humidity controller with drying device

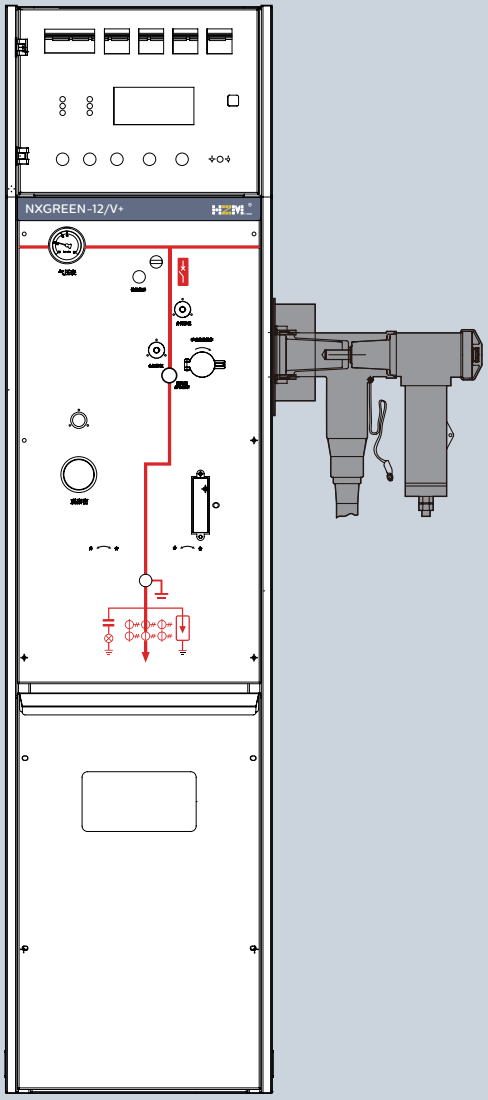
Optional Configuration

3 metering current transformers
3 metering voltage transformers
Electricity metering achieved through current transformers and voltage transformers
Metering cubicles with different busbar positions, suitable for multiple configuration schemes
Compatible with all possible structural layouts
Current transformers and voltage transformers can be interchanged in different cubicle types

NXGREEN
Standard Unit

NXGREEN–V⁺ Side Cable Outlet Unit





Standard Configuration

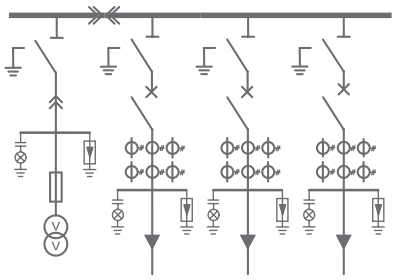
VHZ vacuum circuit breaker with operating mechanism
EAIS–G three–position isolation and grounding switch with operating mechanism
Interlock between the circuit breaker and the three–position isolation and grounding switch
630A busbar
Lower C–type cable bushing / with capacitive voltage live display sensor
Side C–type cable bushing / with capacitive voltage live display sensor
Live display
Pressure gauge (1 per gas compartment)
Grounding busbar
Interlock between grounding switch and cabinet door
Standard cable compartment door
Standard padlock device
Temperature and humidity controller with drying device

Optional Configuration

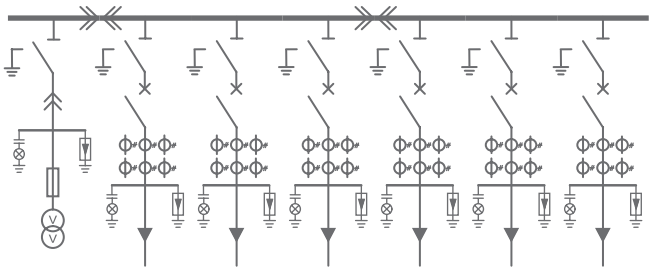
Right–side C–type cable bushing with multiple cable heads
(e.g., 3–way configuration: C+++)
Left–side C–type cable bushing with multiple cable heads
(e.g., 3–way configuration: +++C)
Motorized operating mechanism with control circuit
Short–circuit and grounding fault indicator
Current transformers and instruments
Surge arrester
Dual cable heads
Cable head temperature monitoring device
Protruding reinforced cable compartment door
Cable compartment door with infrared temperature observation window
Cable heads

Shared–box Combined Units

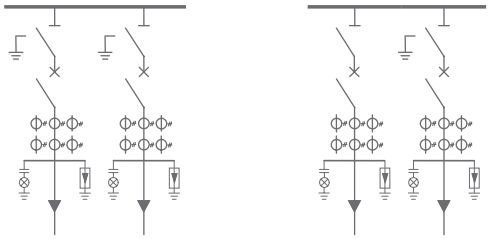
PT+VVVV Standardized Solutions



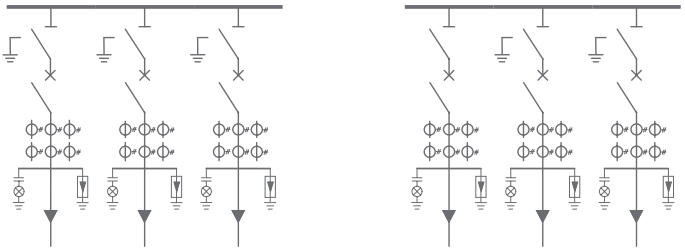
PT+VVV+VVV Standardized Solutions



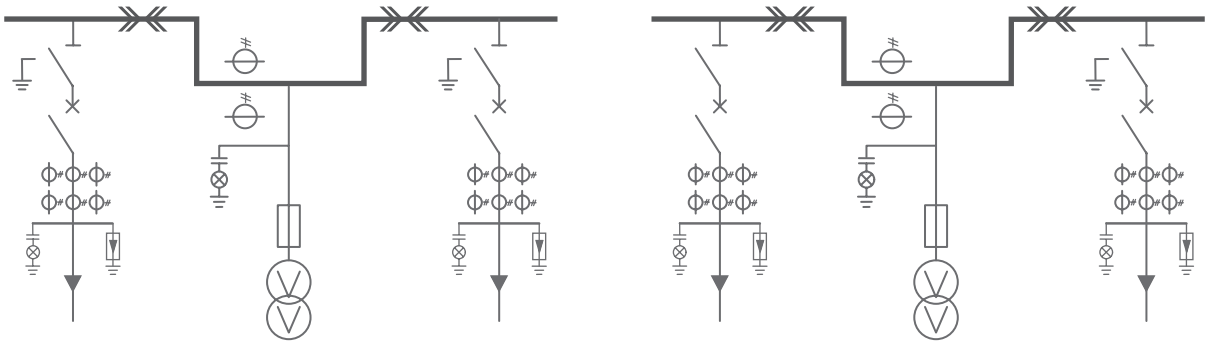
Single incoming line, single transformer unit, suitable for pad–mounted transformer high–voltage incoming and outgoing line scheme



Single incoming line, high–voltage metering scheme, suitable for pad–mounted transformer high–voltage incoming and outgoing line scheme



Single incoming line with ring–out for a single transformer unit, suitable for pad–mounted transformer high–voltage incoming and outgoing line scheme



NXGREEN Switchgear Technical Parameters

Item	Unit	Circuit Breaker Cabinet	
Rated Voltage	kV	12	11
Power Frequency Withstand Voltage	kV	42/48	28
Lightning Impulse Withstand Voltage	kV	75/85	75
Rated Current	A	630/1250	630/1250
Short-time Withstand Current of Main Circuit	kA/s	20/4	25/3
Short-circuit Breaking Current	kA	20/25	25
Active Load Current	kA	50/63	
Short-circuit Making Capacity	kA	50（5 times）	
Earthing Switch	Class	E2	
Electrical Life	Times	10000/5000	
Mechanical Life		3000/3000	
Isolation/Earthing Switch		O-0.3 s-CO-3 min-CO/ Mechanical Operating Sequence	

NXGREEN
Circuit Breaker

Circuit Breaker and Operating Mechanism

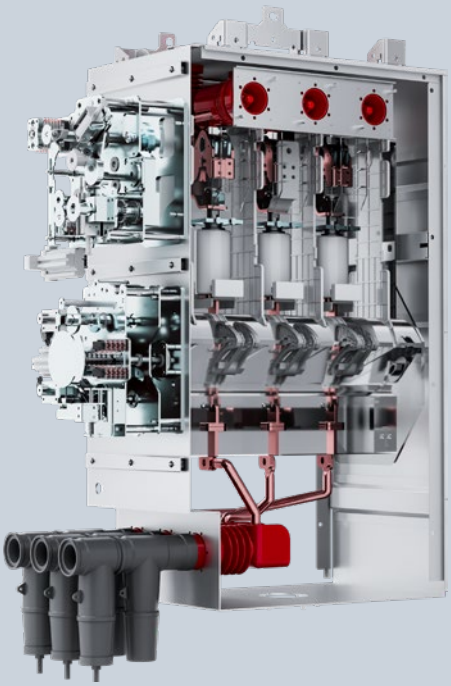
Vacuum circuit breaker paired with a three-position disconnect grounding switch, including related mechanisms and interlocks.
Hermetically welded inside the gas-insulated compartment. The environmentally friendly gas provides insulation, while the vacuum interrupter handles arc extinguishing.
Connection to external operating mechanisms uses a hermetic welded motion fit.
Vacuum circuit breaker operating mechanism
Disconnecting ground switch operating mechanism
Mechanical interlock
Electric operation with control voltages: DC 48V, AC/DC 110V, AC/DC 220V, AC 380V
Opening and closing speed is independent of operation speed
Stored-energy operating mechanism, mechanical button for open/close operation
Equipped with shunt trip device
Equipped with 4 NO (normally open) and 4 NC (normally closed) auxiliary contacts

VHZ-12 Vacuum Circuit Breaker – Electrical Parameters

VHZ Vacuum Circuit Breaker			
Rated Voltage		kV	12
Rated Frequency		Hz	50
Rated Lightning Impulse Withstand Voltage	Phase-to-Phase and Phase-to-Ground	kV	75
	Isolating Break Distance	kV	85
Rated Power Frequency Withstand Voltage	Phase-to-Phase and Phase-to-Ground	kV	42
	Isolating Break Distance	kV	48
	Busbar	A	630
	Outgoing Feeder Unit	A	630
Rated Peak Current		kA	50
Rated Short-Circuit Making Capacity		kA	50
Rated Short-Time Current of Main Circuit	4 s	kA	20
Rated Short-Time Current of Grounding Circuit	2 s	kA	20
Rated Short-Circuit Breaking Current		kA	20
Mechanical Life of Vacuum Circuit Breaker	M2		10000
Mechanical Life of Isolating Switch / Earthing Switch	M0		3000
Short-Circuit Making	Earthing Switch E2	Class	5
Vacuum Circuit Breaker	Rated Current During Grounding	kA	50

Primary Main Components

Upper Isolation Scheme



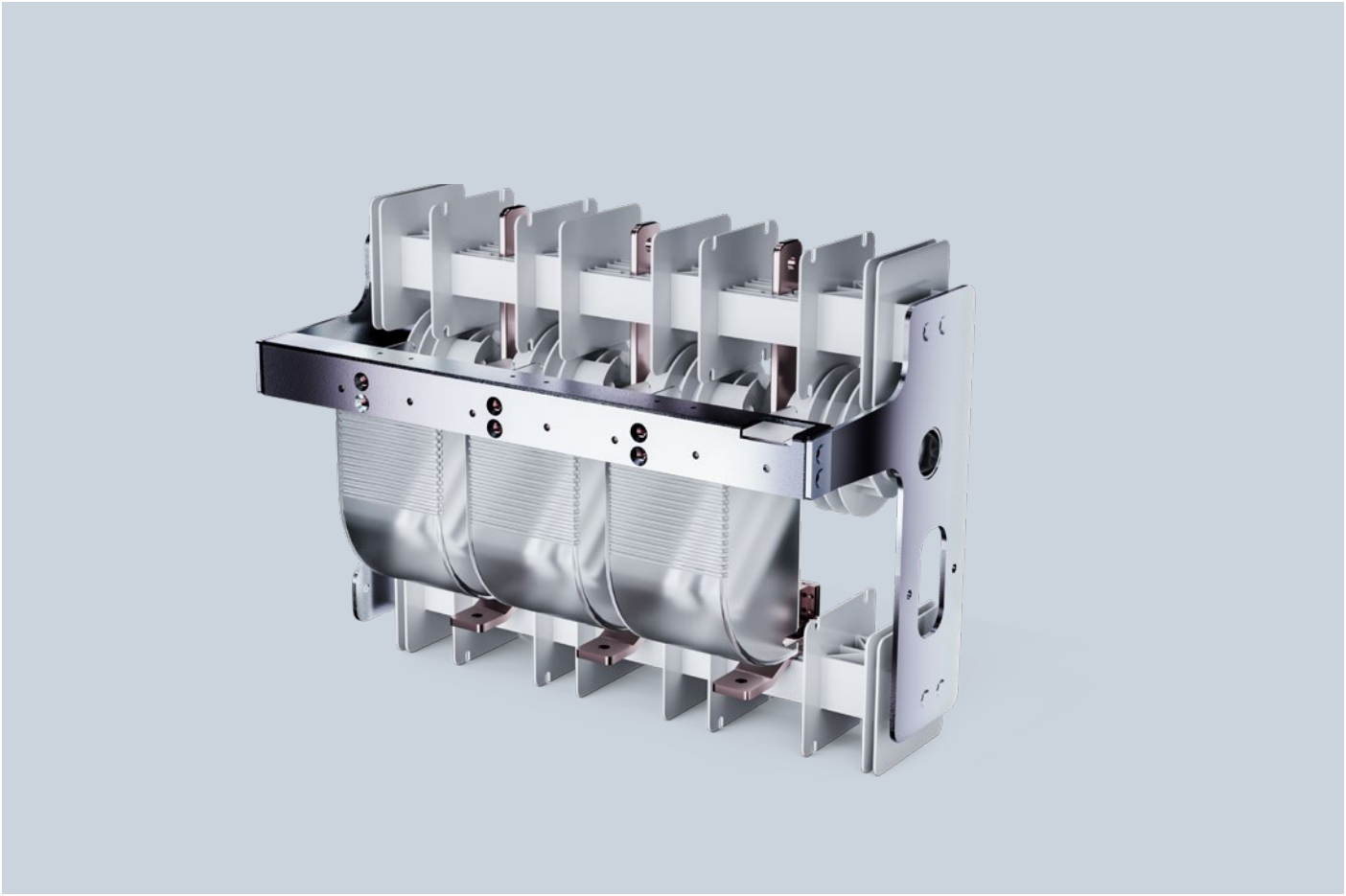
Lower Isolation Scheme

VHZ–12 Vacuum Circuit Breaker – Mechanical Characteristic Parameters

Item	Unit	Circuit Breaker
Contact gap	kV	9± 1
Contact overtravel	kV	3± 1
Average opening speed	kV	1.4±0.3
Average closing speed	A	0.8±0.2
Contact closing bounce time	kA/s	≤2
Three–phase closing asynchronism	kA	≤2
Three–phase opening asynchronism	A	≤2
Closing time	kA	30~60
Opening time		18~40
Phase–to–phase center distance		150±1.5
Opening contact rebound amplitude	Times	≤1.5
Opening contact overshoot amplitude	mm	≤2
Rated contact pressure	N	1800±160

NXGREEN
Main Components

Primary Main Components



EAIS/G–12 Type Isolating / Earthing Switch Technical Parameters

Item		Unit	Isolating Switch	Earthing Switch
Rated Voltage		kV	12	
Rated Frequency		Hz	50	
Rated Current		A	630/1250	/
1 min Power Frequency Withstand Voltage	To Ground, Between Phases	A	42	
	Between Breaks	kA/s	48	
Lightning Impulse Withstand Voltage	To Ground, Between Phases	kA	75	
	Between Breaks	A	85	
Short–time Withstand Current and Duration		kA/s	20/4 Main Circuit, 17.4/2 Earthing Circuit	
Rated Peak Withstand Current		kA	50/63	
Mechanical Life		Times	3000	
Contact Pressure		N	160 ± 20	
Manual Closing Operating Force		N	⩽ 200	
Manual Opening Operating Force		N	⩽ 200	
Moving - fixed Contact Gap		mm	⩾ 110	100
Phase Center Distance		mm	150 ± 1.5	
Earthing Switch Closing Synchronism		ms	/	⩽ 2

NXGREEN

Transformer Protection

MIC500 Series Protection and Control Device

Three–phase transformer protection utilizes vacuum circuit breakers and three–position isolating switches for line sectionalizing and earthing. When using motor–operated mechanisms, the rated operating sequences are as follows:
O–180s–CO–180s–CO or O–0.3s–CO–180s–CO.
The circuit breaker can be opened manually via a button, or automatically through a microprocessor–based protection system.
Each phase of the functional unit is equipped with protection current transformers, which monitor and transmit data to the microprocessor. In case of a grid fault, the microprocessor will operate according to the preset values.
If a self–powered protection relay is selected, fault tripping does not require any auxiliary power supply.

Transformer Protection
NXGREEN adopts microprocessor–based protection for transformers.
The microprocessor protection is applied to the circuit breaker V unit.
Functions of microprocessor–based protection, monitoring, and control
Protection against transformer overload, short–circuit, and grounding faults
Installed in the low–voltage cabinet, collecting signals via current transformers or sensors

MIC500 Protection Settings

Setting Number	Setting Name	Setting Menu	Setting Value — Reference
01	Instantaneous Overcurrent Setting	0.1~100A	
02	Time–Delay Overcurrent Setting	0.1~100A	
03	Time–Delay Overcurrent Delay	0~100s	
04	Overcurrent Setting	0.1~100A	
05	Overcurrent Delay	0~100s	
06	Overload Setting	0.1~100A	
07	Overload Delay	0~100s	
08	Zero–Sequence Overcurrent Stage I Setting	0.00~100A	
09	Zero–Sequence Overcurrent Stage I Delay	0~100s	
10	Zero–Sequence Overcurrent Stage II Setting	0.00~100A	
11	Zero–Sequence Overcurrent Stage II Delay	0~100s	
12	Zero–Sequence Overcurrent Stage III Setting	0.00~100A	
13	Zero–Sequence Overcurrent Stage III Delay	0~100s	Actual setting must not exceed 6A
14	Zero–Sequence Overcurrent Setting	0.00~100A	Actual setting must not exceed 6A
15	Zero–Sequence Overcurrent Delay	0~100S	Actual setting must not exceed 6A
16	Overvoltage Setting	50~600V	Actual setting must not exceed 6A
17	Overvoltage Delay	0~100s	
18	Undervoltage Setting	30~400V	
19	Undervoltage Delay	0~100s	
20	Current Blocking Undervoltage Setting	0 –100A	
21	Busbar Insulation Monitoring Setting	0.1~100V	
22	Busbar Insulation Monitoring Delay	0~100s	
23	Under–Frequency Load Shedding Setting	35–64.99HZ	
24	Under–Frequency Load Shedding Delay	0~100s	
25	Reclosing No–Flow Setting	0.1–5A	
26	Reclosing Delay	0~100s	
27	PT Disconnection Delay	0~100s	
28	Control Circuit Disconnection Delay	0~100s	

NXGREEN
Energy Measurement and Data Acquisition

HiCVT Electronic Voltage Sensor

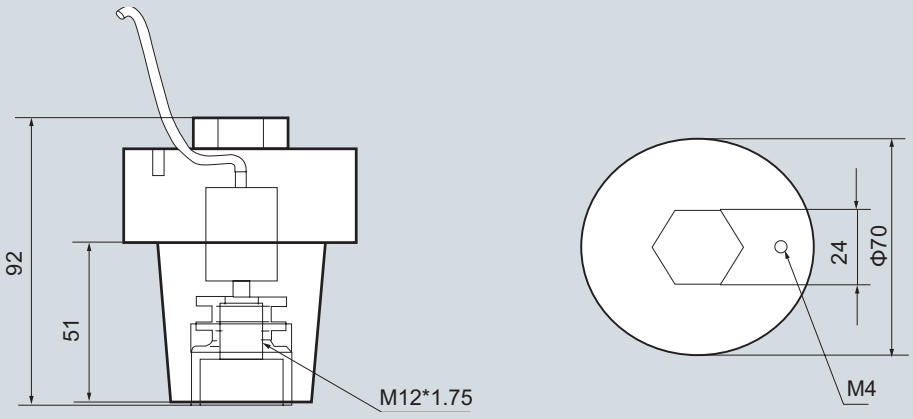
IEC61869-5

- Compatible with cable plug-in connectors
- Capacitive voltage divider technology
- Measures three-phase voltage
- Measures zero-sequence voltage
- Three-phase independent sensors
- Equipped with low-voltage signal modulator
- High precision

Voltage Indicator Adaptation Capacitance Parameters

Rated Voltage Level (kV)	Rated Phase Voltage				Adapted Sensor Capacitance (pF)
	Operating Voltage (V)	Operating Current (μA)	Phase-to-Phase Voltage Between Test Points When Phases Match (V)	Phase-to-Phase Voltage Between Test Points When Phases Do Not Match (V)	
3.6	80-100	117	<Ac30	> Ac60	185 (±15)
7.2	80-100	196			150 (±15)
12	80-100	250			115 (±15)
12	60-100	32-65			15-30
24	80-100	348			80 (±10)
40.5	80-100	330			45 (±10)

Parameter Category	Technical Specifications
Voltage Level	10kV
Primary Input Voltage	10kV/√3
Secondary Output Voltage	3.25V/√3 (Phase Voltage) 6.5V/3(Zero-Sequence Voltage)
Accuracy Class (Three-Phase Voltage)	0.5
Accuracy Class (Zero-Sequence Voltage)	1
Rated Frequency	50Hz
Insulation Level (1 min Power-Frequency Withstand Voltage)	42kV
Lightning Impulse Withstand Voltage (Peak)	75kV
Partial	≤ 10pC 14.4kV
Discharge Standard	IEC 60044-7; GB/T20840.7-2007; GB/T20840.1-2010
Rated Load	≥ 5MΩ



Voltage Transformer

GB/T20840 IEC61869-1.IEC61869-3

Electromagnetic Single-Phase
Electromagnetic Three-Phase, Y/ Δ Connection
Plug-In Type
Fuse Protection
Available Capacities: 1 kVA, 2 kVA, 3 kVA, etc.

Technical Parameters Table

Item	Unit	Parameter	Parameter
Construction Type	–	Epoxy Resin Cast Insulation Type	Epoxy Resin Cast Insulation Type
Rated Voltage	kV	12	12
Rated Frequency	Hz	50	50
Primary Voltage	kV	10	10
Secondary Voltage	V	Busbar PT $\frac{10000}{\sqrt{3}}/\frac{100}{\sqrt{3}}//\frac{100}{\sqrt{3}}\ \frac{100}{3}$	Incoming PT：100/220
Rated Capacity	VA	Busbar PT:3*30/3*30/100	Incoming PT：3*30/2*500
Output Capacity	KVA	1 (3000VA Optional)	1 (3000VA Optional)
Impedance	–	15% (3kVA)	15% (3kVA)
Accuracy	CLASS	Busbar PT:0.2 / 0.5 / 6P	Incoming PT：0.2 / 0.5 / 6P
Fuse Type	–	XRNP-12	XRNP-12
Rated Current of Fuse	A	1	1
PT Cabinet Panel Requirements	PT can use either Busbar PT or Incoming Line PT: 1.Busbar PT uses Y/Y/open-delta or VV wiring PT in a fixed form. When installed as an independent cabinet, it is equipped with an isolating switch and replaceable fuses. 2.Incoming Line PT uses two incoming lines with two sets of three-phase PTs (VV or YY wiring optional). When installed in an independent cabinet with upper and lower layers, the two sets of PTs are arranged in two separate small compartments. Incoming PT cables have independent channels, staggered between compartments. The grounding copper bar should be led to the upper-layer PT compartment so that cable shielding wires and secondary grounding wires of upper and lower layers are separated (maintenance on one PT does not affect the live operation of the other PT). 3.The Incoming PT cabinet door should have an observation window and electromagnetic lock: the door cannot be opened when PT is energized; it can be opened when PT is not energized.		

Current Transformer

Current Transformers and Zero-Sequence Transformers Technical Parameter Table

GB20840.2 IEC61869-1. IEC61869-2

Serial No.	Item	Unit	Three-Phase CT Parameters	Zero-Sequence CT Parameters
1	Rated Voltage	kV	12	12
2	Rated Frequency	Hz	50	50
3	Transformation Ratio	A	Incoming and Outgoing Line Cabinet: 600/5 (protection, measurement) Transformer Cabinet: 600/5(protection), 200/5 (measurement)	100V5 or 20/1 (customized according to user requirements)
4	Accuracy Class Configuration	Range and Accuracy:	100/5 or 20/1 (customized according to user requirements)	0 - 5A, error ≤ 0.3‰ 5 - 60A, error ≤ 0.5‰ 100/5: 60 - 600A, error < 1‰ Error varies linearly; secondary output required ≥ 3A 20/1: 60 - 120A, error < 1‰ Error varies linearly; secondary output required ≥ 3A
5	Capacity	VA	≥ 2.5	When CT ratio is 20/1, ≥ 0.5 When CT ratio is 100/5, ≥ 2.5
6	Others	Equipped with three-phase protection CTs, measurement CTs, and independent zero-sequence CTs. Independently collects three-phase current and zero-sequence current. The three-phase CTs use bushing-type installation, while the zero-sequence CTs are either window-type or split-core type.		

Current Transformer for Metering

IEC61869-1. IEC61869-2

Serial No.	Item	Unit	T Parameters	
1	Voltage	kV	Rated Voltage	10
			Maximum Voltage	12
			Rated Short-Time Power-Frequency Withstand Voltage (RMS)	42/30，（28）
			Rated Lightning Impulse Withstand Voltage (Peak)	75，（60）
2	Rated Frequency	Hz	50	
3	Transformation Ratio	A	10~750/5	
4	Accuracy Class	CLASS	0.2S	
5	Secondary Load	VA	Rated Load ≥ 15 Minimum Load 3.75	

Current Sensor

IEC61869-8

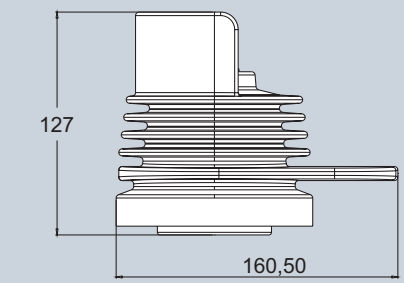
Uses Rogowski Coil Complies with IEC60044-8 Standard	No drawbacks of conventional electromagnetic transformers, such as saturation, ferromagnetic resonance, or secondary open-circuit issues Wide input range Output: 0 - 10 mV signal

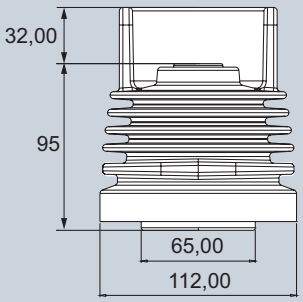
Expansion Methods

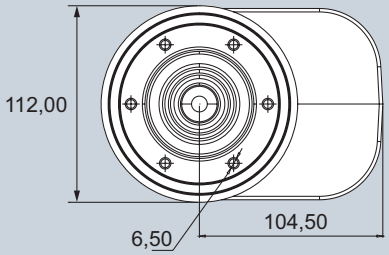
NXGREEN fully insulated switchgear provides two types of expansion connections: side–by–side cabinet expansion and top expansion connection. When connected with air–insulated cabinets such as metering cabinets, the air–insulated side expansion can be used.
Side expansion connections are suitable for situations with higher requirements for the ground foundation or limited cabinet height. Top expansion connections facilitate easier replacement in the future.
NXGREEN is an expandable fully insulated switchgear, allowing new functional units to be added from the left or right side.
Compact units can be combined to suit extremely limited space applications. Multiple combination schemes meet diverse customer requirements, and dual–side expansion is available to accommodate future needs.

Fully Insulated Cabinet NXLINK–GS Side Expansion Connector

Modular connection device for cabinet modules.
Side expansion connector is optional when ordering.
On–site installation, cabinet connection, or replacement does not require gas–related technical procedures.
Can be configured on the left side, right side, or both sides of the cabinet.
Includes copper conductor connectors and silicone rubber insulation components.
Copper conductor connector’s fixed and movable parts have allowable axial tolerance.
Silicone rubber insulation components can withstand pressure within a certain tolerance.
Silicone rubber parts have a shielding layer with connecting wires; must be reliably grounded during installation.
Primary busbar connection between cabinets is achieved through the side expansion connector.
Positioning screws ensure accurate alignment of adjacent cabinets.
Gap bolts maintain preset spacing between cabinets and ensure the connector’s pressure remains within the designed range.
Reserved side busbar segments must be equipped with shielded insulated plugs and a metal protective side panel with warning signs.
Integrated guide pins ensure axial alignment of switchgear busbars.
Mechanical stops ensure proper bolt assembly.
During expansion installation, a minimum of 500 mm additional lateral space is required for installation.
Complies with IEC 62271–211 standard.





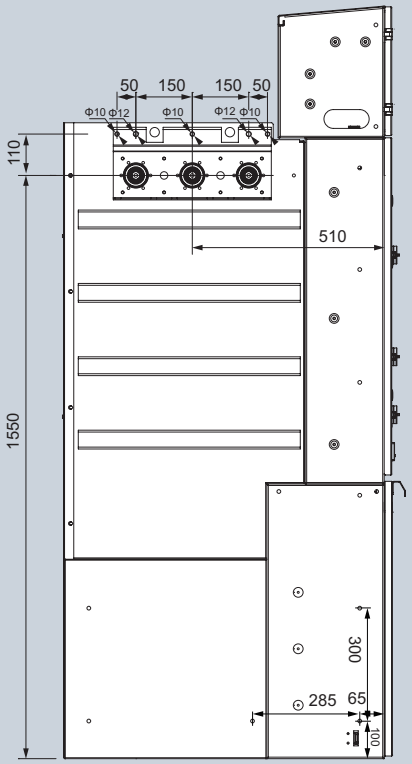


NXGREEN
Expansion Method

Side Expansion Cabinet Connection Method

1.The top bushing guide holes of the gas-insulated compartment have a center-to-center distance with the side expansion bushing of 110 ± 0.5 mm. The holes are located directly above phases A and C, with a diameter of Φ12 mm.

2.One hole is located directly above phase B. Two additional holes are located 50 mm outside the A and C guide holes, at the same height as the guide holes, with a diameter of Φ10 mm. Gas-insulated compartment connection bolts: M8 × 60 mm.
3.For the cabinet frame connection holes, the lowest hole near the cable compartment door is 65 mm from the front frame and 100 mm from the ground. Subsequent holes toward the rear are spaced 285 mm apart. Holes 65 mm from the front frame are spaced 300 mm apart vertically, with a diameter of Φ10 mm. At least 3 holes must be used simultaneously for frame connection. Frame connection bolts: M8 × 16 mm.

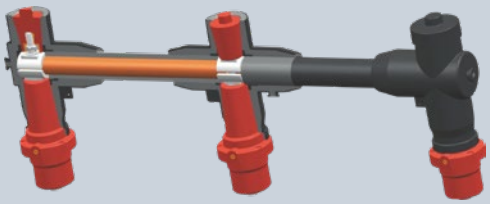


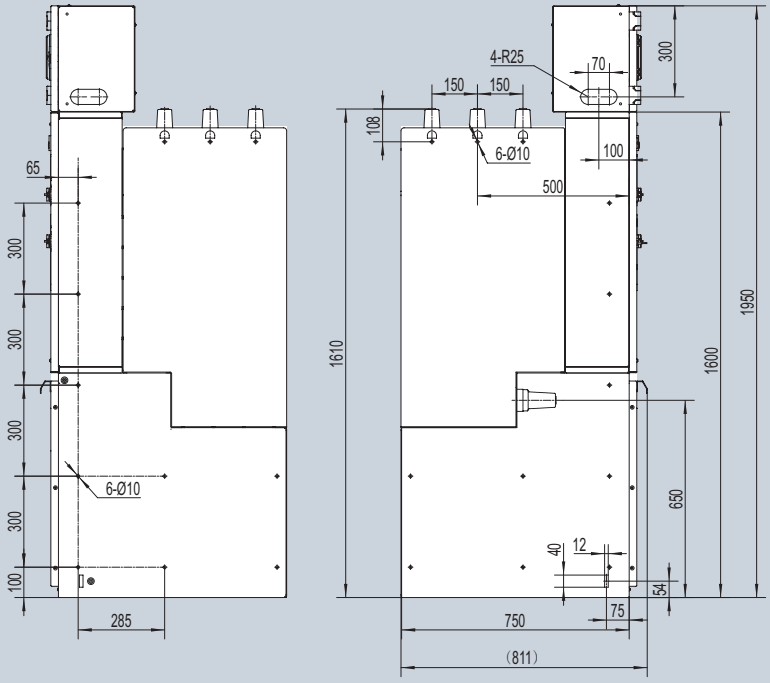
On-site installation, cabinet connection, and replacement do not require gas-related technical procedures. The cabinet’s gas-insulated top bushing is included.
Includes copper busbar conductors and silicone rubber insulation components. Silicone rubber parts have a shielding layer with connecting wires and must be reliably grounded during installation.
Primary busbar connection between cabinets is achieved through the top expansion connector. Busbars are custom-made and must strictly follow the center-to-center distance of adjacent bushings as the design reference. A protective cover is provided.

Top Expansion Cabinet Connection Method

On-site installation, cabinet connection, and replacement do not require gas-related technical procedures. The cabinet’s gas-insulated top bushing is included.
Includes copper busbar conductors and silicone rubber insulation components. Silicone rubber parts have a shielding layer with connecting wires and must be reliably grounded during installation.
Primary busbar connection between cabinets is achieved through the top expansion connector. Busbars are custom-made and must strictly follow the center-to-center distance of adjacent bushings.
Equipped with a protective cover.

NXBOW/B Fully Insulated Top-Extended Busbar





NXGREEN
Connecting Bushing

NXLINK–GC Cable Connection Bushing

DIN EN50181 IEC60137 GB/T12944.2

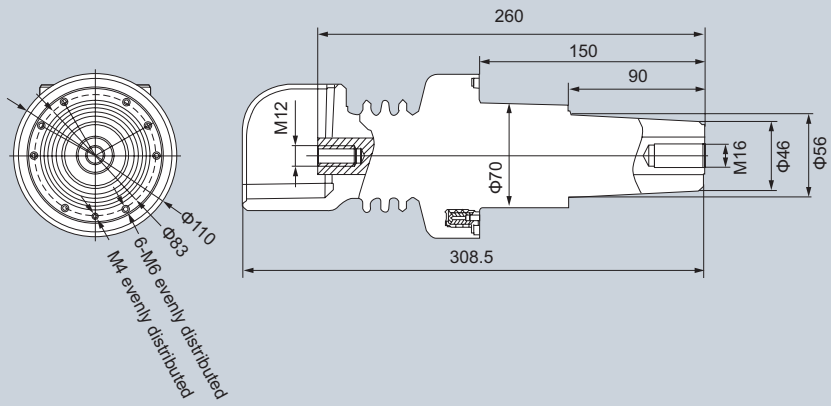
C–Type External Cone Cable Bushing
Available in standard current ratings of 630 A and 1250 A, with insulating cover.
Suitable for conventional air–insulated cable terminals.
Compatible with solid copper busbars (used in metering cabinets, etc.).
Cable installation bolt size: M16.
Pre–installed with live–line indicator and matching voltage sensor.

Technical Parameters

Power Frequency Withstand Voltage	48kV/min
Partial Discharge	13.2kV ⩽ 5pC、26.4kV ⩽ 5pC
Rated Current	630A/1250A
Capacitance	18 ± 2PF
Compatible Seal Specifications	Φ73*Φ6 (Inner Diameter × Conductor Diameter)

Cable Connection Bushing

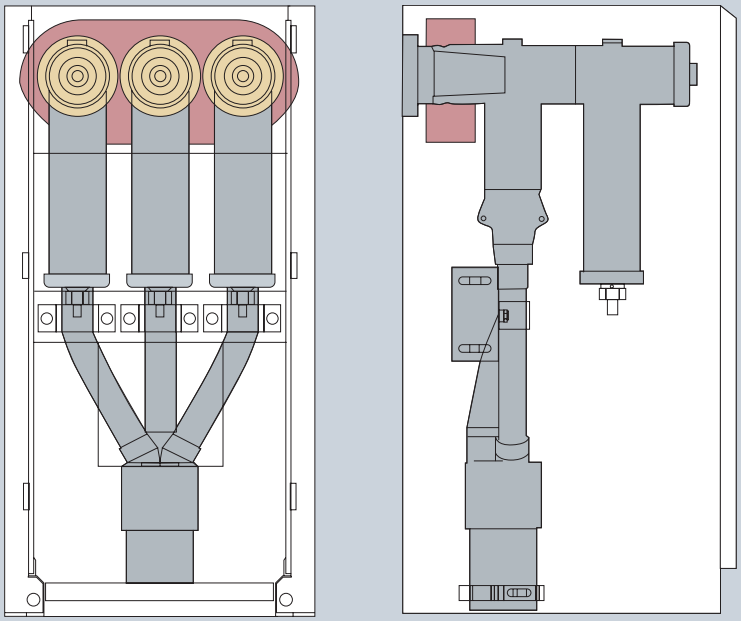
Complies with DIN EN 50181 and IEC 60137 standards.
C–Type External Cone Cable Bushing
Standard current ratings: 630 A and 1250 A.
Suitable for elbow–type and T–type cable terminations.
Cable installation bolt size: M16.
Pre–installed with live–line indicator and matching voltage sensor.
Meets dielectric withstand and partial discharge test requirements.



NXGREEN
Cable Connection and Grounding

Cable Compartment Layout

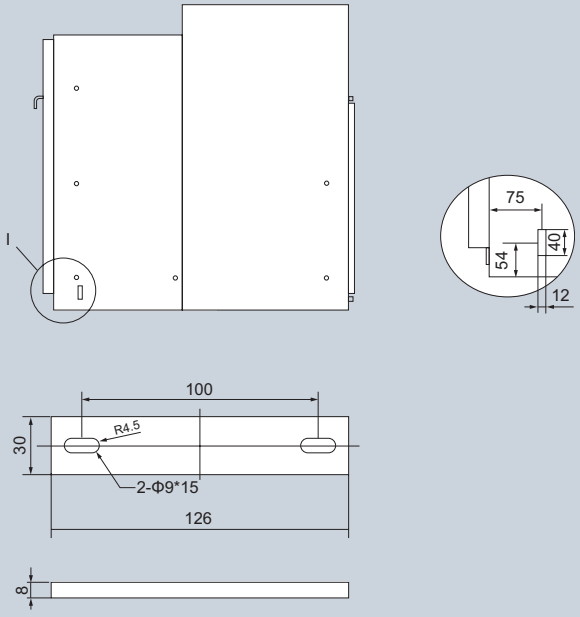
The cable room door can only be opened when the isolator is open and grounded.
Compatible with C-type cable bushings according to IEC 60137 standard
Equipped with M16 bolts
Suitable for elbow-type cable terminations
Suitable for T-type cable terminations
Standard cable support bracket included
Optional cable sealing plugs
Optional protruding cable door (requires increased cable room depth)
Optional cable door with infrared temperature observation window
Supports single cable and double cable configurations
Can be equipped with plug-in type surge arrester
Standard cable height: 650 mm (from bushing center to cable room bottom)
Single cable per phase
Double cable per phase
Single cable per phase + surge arrester
Primary cable hole diameter: 110 mm or 150 mm (selected based on cable size)
Cable hole centers are aligned with phase B bushing and ensure vertical cable routing



The primary cables are arranged in a horizontal single-row configuration. Viewed from the front of the cabinet, the order from left to right is A, B, C.
Primary cable hole diameter: ϕ110 mm or ϕ150 mm (selected based on cable size).
Primary Cable Fixing Diagram

Grounding Copper Bar Installation

Primary grounding bar through-hole size: rectangular 12 mm × 40 mm
Hole center distance: 75 mm from front frame, 54 mm from bottom frame
Primary grounding bar specification: rectangular copper bar 30 mm × 8 mm
Overlapping hole size for primary grounding bar: 2 - 9 × 15 mm
Overlapping hole spacing for cabinet-connected primary grounding bar: 100 mm



Grounding Copper Bar Specifications and Installation Dimensions

NXGREEN
Cable Connection

NXBOW Cable Terminal

DIN EN 50393 IEC60502-4 GB/T12706.4

Suitable for C-Type External Cone Cable Bushings
Standard current ratings: 630 A and 1250 A
Cable installation bolt size: M16
Insulation and protection made of EPDM rubber
Inner and outer double shielding, cable termination surface at zero potential

Technical Parameters

Rated Voltage	15kV
Applicable Bushing Type	C-Type
Power Frequency Withstand Voltage (AC)	39kV/5min
Partial Discharge	15kV, ⩽ 10pC
Impulse Voltage (10 positive and 10 negative polarity tests)	95kV
Shielding Resistance	⩽ 5000Ω
Applicable Cable Cross-Section	25-630mm^2

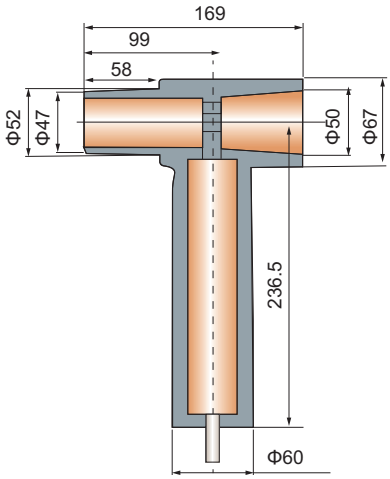
Structural Dimensions

Rated Current (A)	630	1250
Cable Size (mm^2)	25-300	400-630
Outer Diameter L (mm)	71~108	79
Height H (mm)	242±5	272±5

Cables

7.2 - 17.5 kV copper-core or aluminum-core cables
Single-core or three-core
Cross-linked polyethylene (XLPE) insulated cables, armored XLPE insulated cables

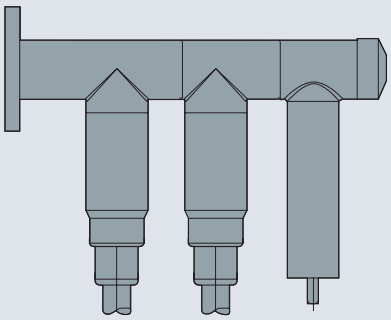
NXGREEN
Cable Connection



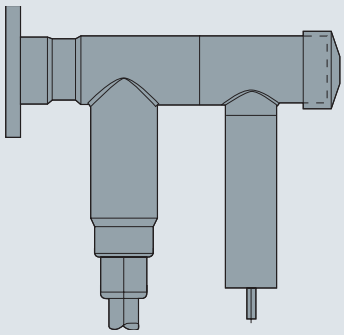
NXBOW/LA Plug–In Surge Arrester

GB11032–2020 IEC60099–1

Insulation and protection made of EPDM rubber
Uses high–performance zinc oxide resistor disk core, featuring excellent nonlinear voltage–current characteristics, good steep wave response, and high current–carrying capacity
Suitable for voltage levels 6/10 kV, 8.7/10 kV, and 8.7/15 kV



Front–Insertion, Rear–Insertion, and Surge Arrester Assembly Diagram



Front–Insertion Surge Arrester Assembly Diagram

Technical Parameters

Item	Unit	Parameter
Rated Voltage	kV	17
Continuous Operating Voltage	kV	13.6
Nominal Discharge Current	kA	5
Residual Voltage under Steep Wave Impulse Current (1/5 μs 5 kA)	kV	≤ 51.8
Residual Voltage under Lightning Impulse Current (8/20 μs 5 kA)	kV	≤ 45
Residual Voltage under Switching Impulse Current (30/60 μs 500 A)	kV	≤ 38.3
DC 1 mA Reference Voltage (kV)	kV	≥ 24
Leakage Current at 75% of DC 1 mA Reference Voltage (A)	A	≤ 50

Cable Termination Temperature Monitoring Device

Built–in Online Monitoring Plug

The system consists of a plug–mounted wireless temperature monitoring device, an intelligent gateway (or communication management unit), and the DAVID–Cloud platform.
The wireless temperature sensor is installed inside the plug, directly monitoring potential hot spots at the cable overlap. Temperature data is transmitted wirelessly in real–time to the plug–mounted monitoring device, which collects the data via RS485 interface using the standard Modbus–RTU protocol and sends it to the intelligent gateway.
The intelligent gateway forwards the data to the cloud platform via wireless 4G or wired network. The cloud platform analyzes and evaluates the data, enabling intelligent monitoring without on–site personnel.

NXGREEN
Accessories

Live–Line Indicator and Sensor

DL/T538–2020 IEC61958:2020 IEC61243–5

Panel–Mounted Live–Line Indicator Equipped with RS485 communication Voltage indication Live–line indicator features voltage testing and secondary phase verification functions Red LED flashes for indication	When the operating voltage is present, the live–line indicator flashes, ensuring clear visibility in both bright and dim environments, alerting personnel to the presence of voltage. Output voltage: 20 V to 36 V The live–line indicator is hot–swappable. The live–line indicator uses a plug–in display lamp design.

Cable Fault Indicator

DL/T1537–2023 IEC TR63298:2021

Indicates short–circuit or ground faults Locates short–circuit or ground faults Applicable to ring–fed distribution networks Applicable to radial–fed distribution networks Compatible with neutral–grounded systems	Internal Three–Phase Synthetic Grounding Optional cable temperature monitoring Optional model with RS485 communication for distribution automation Optional model with fiber optic communication for distribution automation

Technical Parameters

Applicable Voltage Level	6–35kV
Applicable Load	0–600A
Applicable Conductor Current	I ⩽ 1000A
Applicable Conductor Path	$25mm^2 \leqslant d \leqslant 300mm^2$
Action Response Time	0.06S ⩽ T ⩽ 3S
Static Power Consumption	⩽ 10 μ A
Action Reset Time	Selectable Time Delay: 6, 8, 12, 24, 36 hours
Operating Ambient Temperature	−40℃⩽ T ⩽ 75℃
Number of Operations	> 4000 times
Ground Fault Pickup Value	50 A (specific values can be discussed with manufacturer)
Short–Circuit Fault Pickup Value	800A

NXGREEN
Accessories

Operating Power

System Operating Power

For NXGREEN, depending on system requirements, various secondary control circuit and actuator power supply modes can be used, including PT-derived power, DC power from the distribution room, AC power from the distribution room, and distributed DC power.

DC Power Supply

A distributed DC power supply can be used to provide power for the secondary control circuits and operating mechanisms of the switchgear.
Available DC voltage ratings: DC 220V, DC 110V, DC 48V, etc.
Battery capacity can be configured according to system requirements, commonly 20 Ah or 40 Ah.
Features charge-discharge management and communication capabilities.

Standard Battery Pack and Power Module

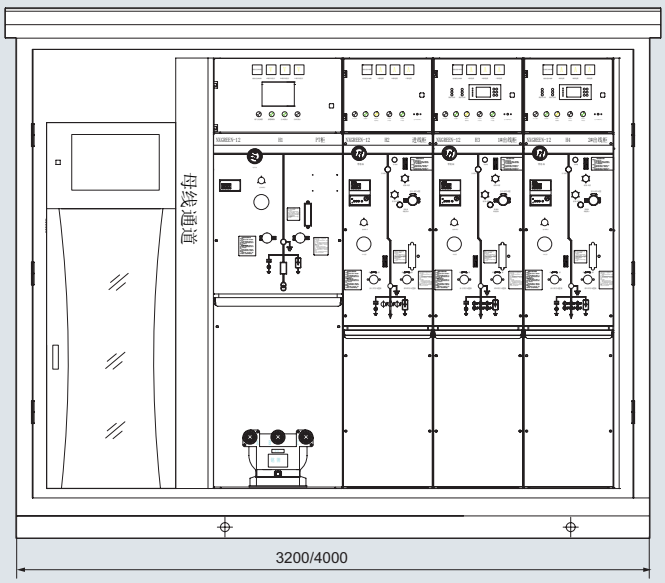
Item	Unit	Parameter
Battery Pack Type or Model		Lead-Acid Battery
Battery Rated Voltage	V	48
Battery Rated Capacity	Ah	40
Power Module Instantaneous Power	W	500
Power Module Rated Input Voltage	V	AC220/DC48
Power Module Rated Output Voltage	V	DC48

Handle

NXGREEN
Outdoor Cabinet

The NXGREEN outdoor switch station consists of insulated switchgear and control devices assembled into an outdoor-type cabinet.
The ring-main unit inside the cabinet has an internal arc fault rating of IAC-AB, including AFLR and BFLR.
The cabinet can be made of stainless steel, aluminized zinc steel, GRC cement, or other materials to meet weather resistance, corrosion resistance, and high-protection requirements for outdoor use.
Cabinet construction uses a modular design, with riveted or bolted assembly. Overall protection rating: IP4X.
Inside the cabinet, convection channels provide insulation, cooling, and ventilation. The top cover is designed with a drainage slope.
Optional cable sealing plugs effectively prevent moisture and air ingress from cable trenches.
Uses outdoor-specific padlocks, with optional intelligent padlocks.
Designed for easy lifting and installation.

Common Dimensions of Outdoor Switchgear Stations



Outdoor cabinet width: Sum of the widths of individual RMUs + DTU width (standard 600 mm) + reserved space (160 mm + 160 mm)
Outdoor cabinet height: For metal RMU enclosures ≤ 2300 mm; for non-metal RMU enclosures ≤ 2500 mm
Outdoor cabinet depth: 1150 mm

NXGREEN
Distribution Network Automation Solution

Distribution Network Automation Solution

NXGREEN, based on distribution network automation requirements, can be integrated with distribution automation systems. The system consists of one integrated measurement, control, and communication unit and multiple independent protection and control units (one protection and control unit corresponds to one feeder bay).

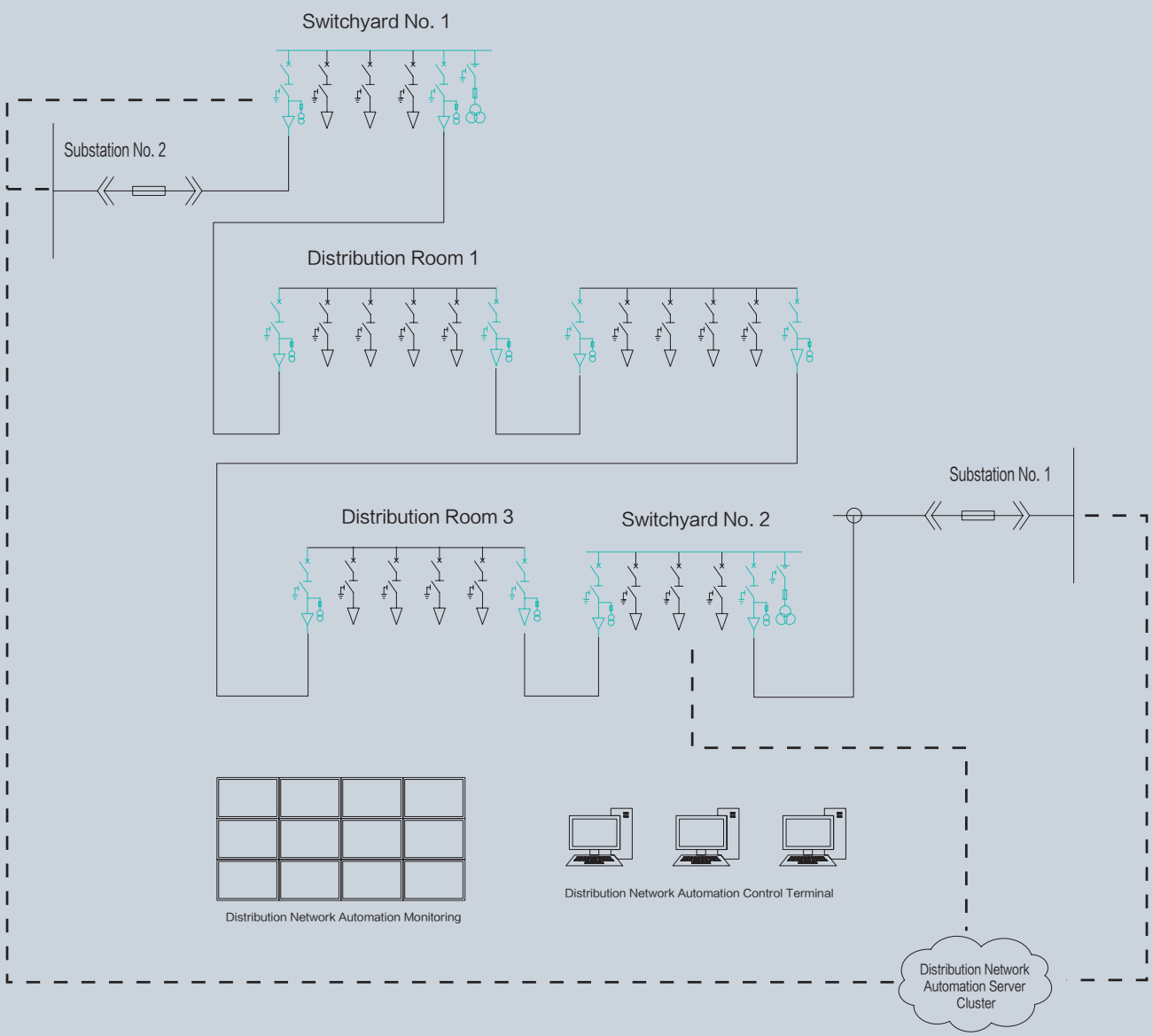
Protection and control units are equipped with protection and measurement-control modules. They are responsible for implementing telemetry, remote signaling, remote control, and protection logic functions for their corresponding feeder (including conventional protection, voltage- and current-based feeder automation, and intelligent distributed feeder automation), and achieve information interconnection with the integrated measurement, control, and communication unit via a data bus.

The automation system can collect and transmit the following data: circuit breaker position, isolator position, remote/local selection switch position, protection actions (including instantaneous trip, sectionalized overcurrent by phase, grounding), reclosing actions, device faults (terminal abnormality or failure), spring not charged, control circuit disconnection, over-limit temperature/humidity signals, DC system monitoring, SF6 low-pressure alarm signals, etc., to the distribution automation master station.

It can measure bus voltages (Uab, Ubc, 3U0), currents (Ia, Ib, Ic, 3I0), and two incoming line voltages/currents, enabling calculation of active power, reactive power, and power factor; and record short-circuit current, zero-sequence current, or zero-sequence voltage during feeder faults.

It can receive and execute remote commands from the distribution automation master station to achieve fault isolation and restoration of non-faulted zones, improving power supply reliability.

Communication protocols support State Grid, China Southern Power Grid, and relevant IEC technical standards.



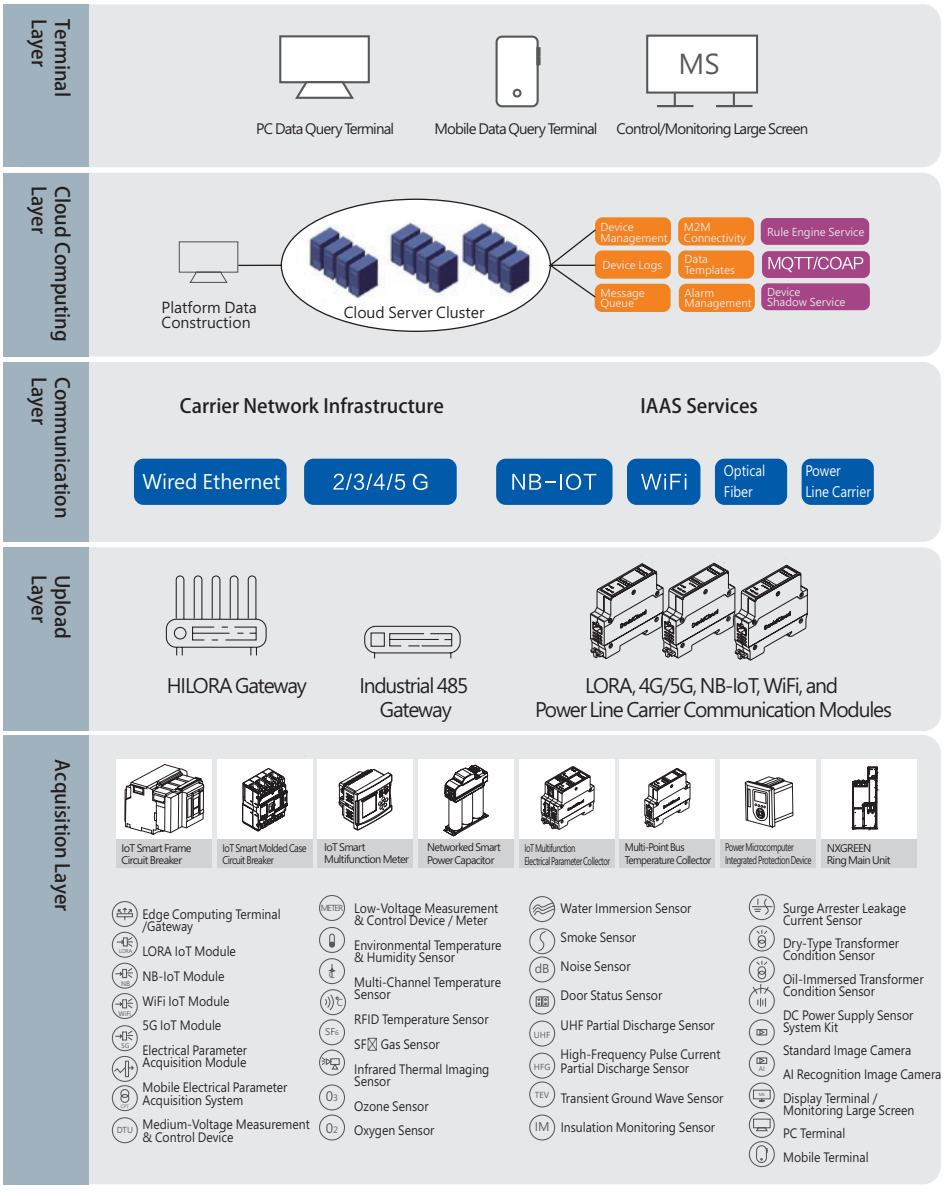
NXGREEN

Intelligent Distribution Solution

DAVID CLOUD Intelligent Distribution Management Platform Based on IoT and Cloud Computing

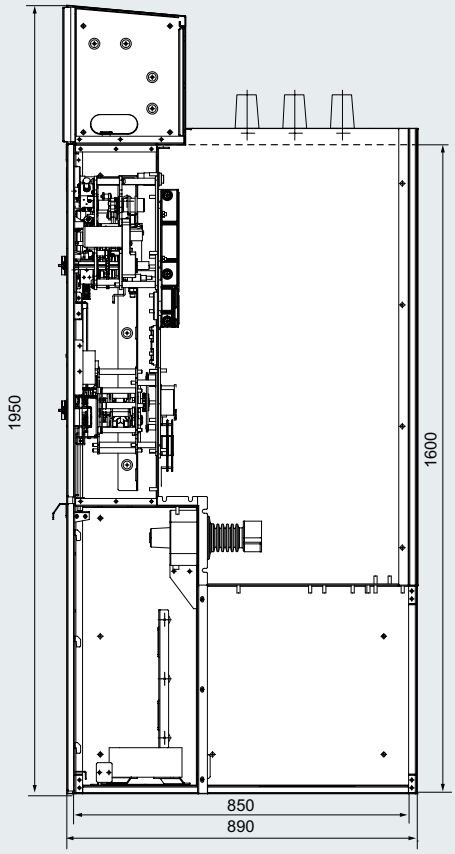
DAVIDCLOUD Power O&M Cloud Intelligent Operation & Maintenance System is a comprehensive smart O&M solution for electrical equipment, based on IoT, cloud computing, and edge computing technologies. It uses wireless physical-quantity sensors and wireless power meters, with data collected and processed by edge computing terminals and communicated to the cloud computing center. The DAVIDCLOUD system on the cloud platform serves as the operational hub, applying professional O&M knowledge and services to enhance the overall safety, reliability, and operational efficiency of equipment and systems.

NXGREEN serves as the main medium-voltage distribution component within the DAVIDCLOUD Power O&M Cloud Intelligent Operation & Maintenance System.

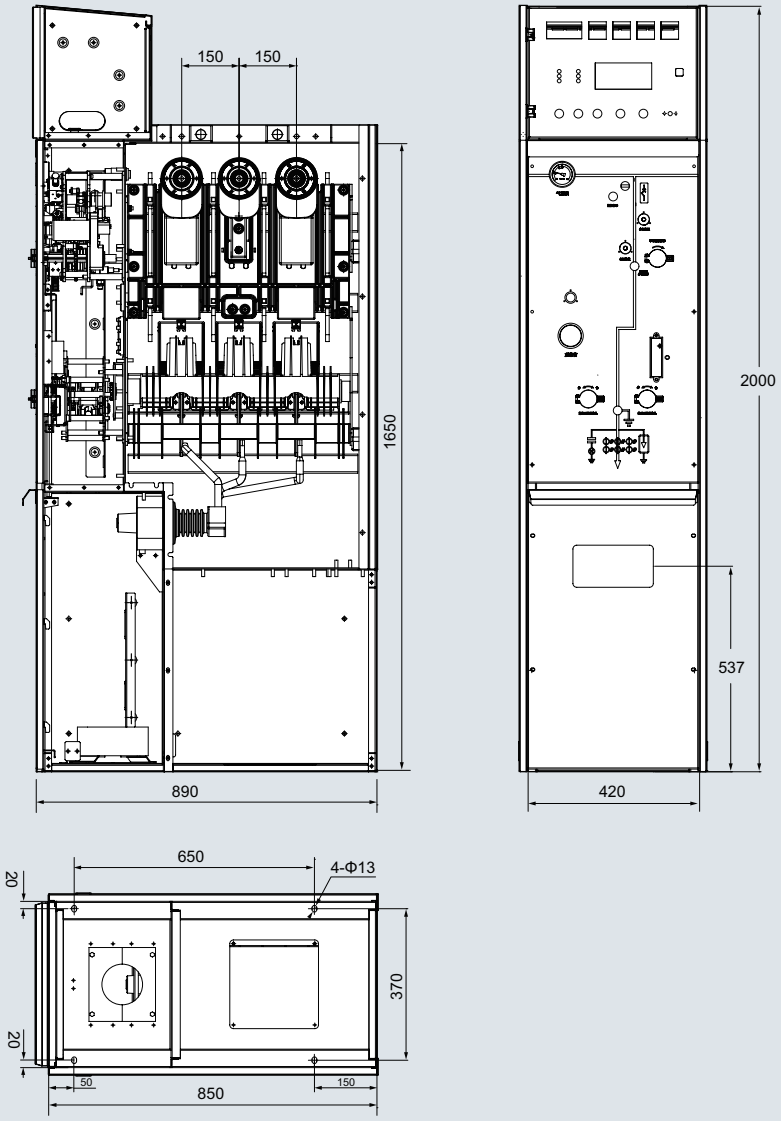


NXGREEN
Dimensions

Overall Dimension Diagram



SGCC Version Top-Extension Scheme Dimensions



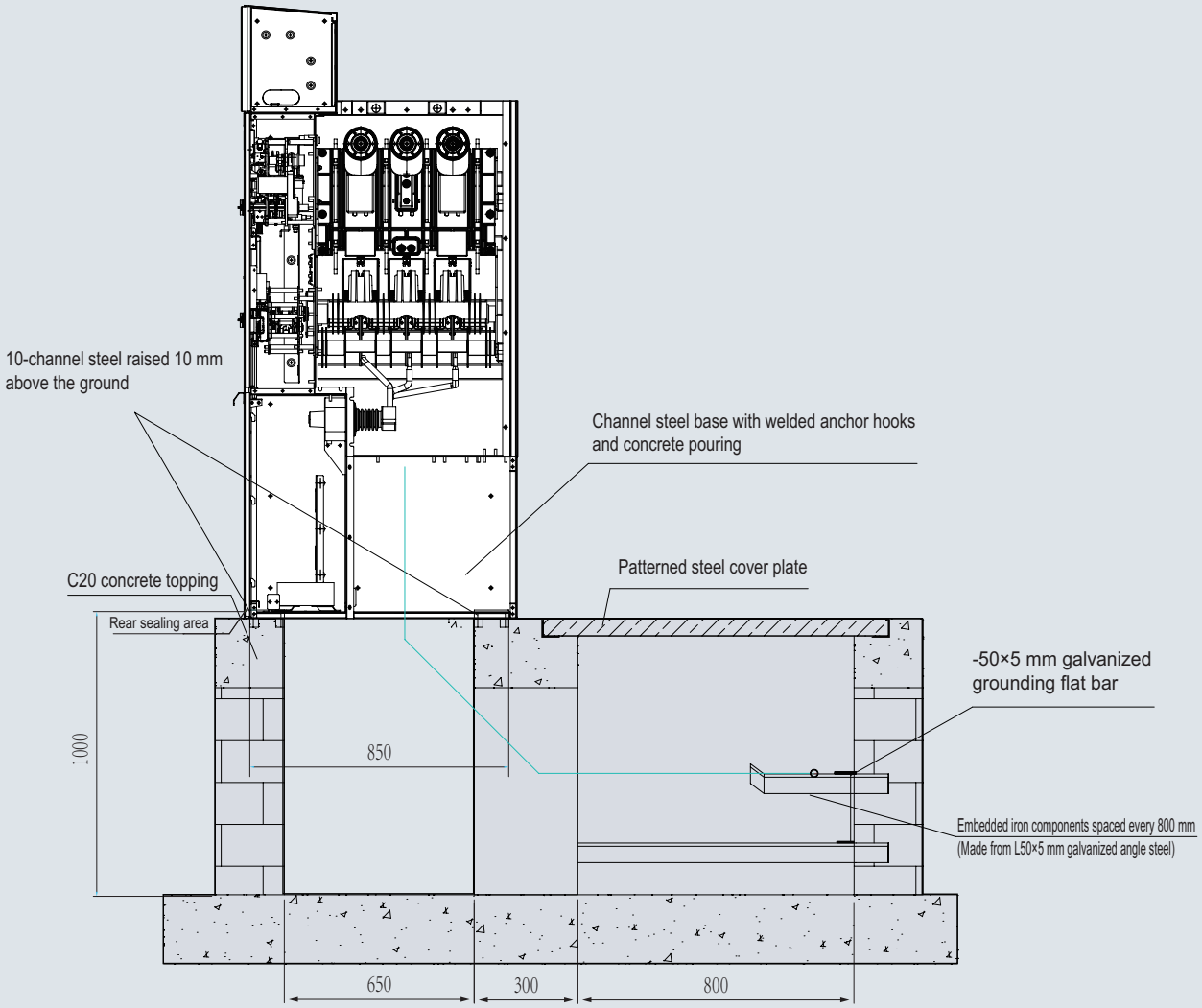
Side-Extension Scheme Dimensions

Standard Unit Dimensions

V	Circuit Breaker Unit	Width = 420 mm (optional 460mm)	Depth = 850 mm	Height = 2000 mm (1950 mm for top-extension scheme)
VL	Circuit Breaker & Bus Coupler Unit	Width = 420 mm (optional 460mm)	Depth = 850mm	Height = 2000 mm (1950 mm for top-extension scheme)
M	Metering Unit	Width = 750 mm (optional 800mm)	Depth = 850mm	Height = 2000 mm (1950 mm for top-extension scheme)
PT	Unit with Isolating PT	Width = 600 mm (optional 500mm)	Depth = 850mm	Height = 2000 mm (1950 mm for top-extension scheme)
D	Busbar Unit	Width = 420 mm (optional 460mm)	Depth = 850mm	Height = 2000 mm (1950 mm for top-extension scheme)
V+	Side Cable Outlet Unit	Width = 420 mm (optional 500mm)	Depth = 850mm	Height = 2000 mm (1950 mm for top-extension scheme)
I	Isolator Unit	Width = 420 mm (optional 500mm)	Depth = 850mm	Height = 2000 mm (1950 mm for top-extension scheme)
L	Isolator & Bus Coupler Unit	Width = 420 mm (optional 500mm)	Depth = 850mm	Height = 2000 mm (1950 mm for top-extension scheme)

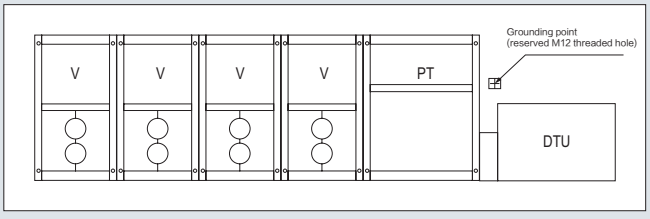
Note: When the switchgear is configured with an upward pressure relief channel, the depth is 1050 mm; if a DTU secondary corridor is configured, the height increases by 160 mm.

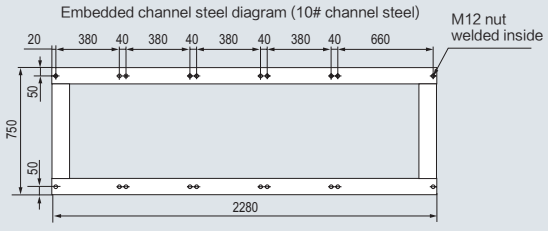
Installation Dimensions



Example: NXGREEN–VVVVPT Channel Steel Diagram

The foundation channel steel is 10# hot-dip galvanized channel steel, laid in a slot. The foundation is designed according to a cabinet depth of 850 mm, with spacing in the depth direction of 850 mm (measured from the outer edge of the channel steel).



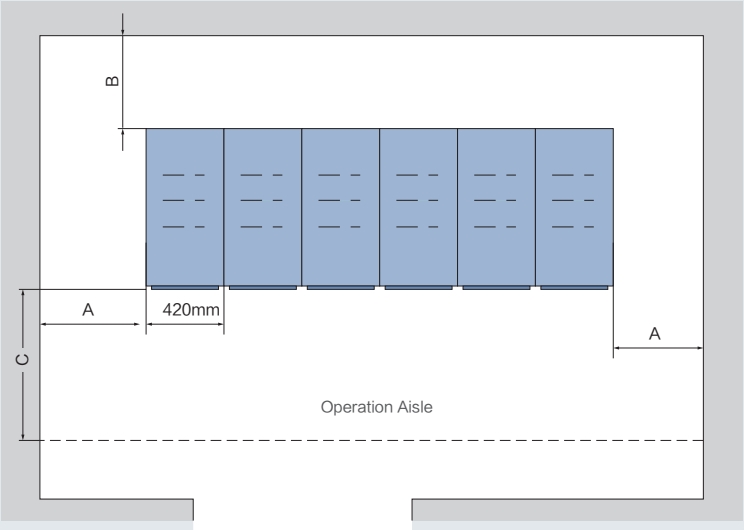


NXGREEN
Installation

The switchgear is installed on steel structural components, which can be assembled and welded from angle steel, channel steel, or square steel.
The components are embedded in civil concrete. The finished concrete floor (or tiles) should be 3 – 5 mm lower than the switchgear installation components. The completed installation components must meet a horizontal tolerance of ±1 mm per square meter.

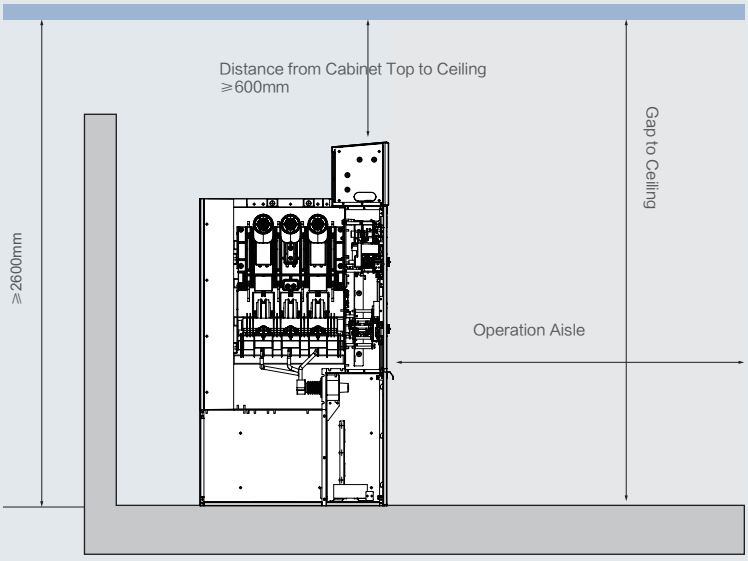
NXGREEN Installation Space

Top View



Distance Between Switchgear and Wall

	Switchgear and Wall		Spacing (mm)
A	Distance Between End Cabinet Side Panel and Wall		1200 (Recommended)
B	Distance Between Rear Panel and Wall When Installed Against a Wall	Upward or Downward Pressure Relief	1000 (Recommended)
C	Front Aisle of Cabinet		>1000 mm (Recommended)



Meets the room height design requirements for internal arc classification IAC AFLR with pressure relief devices, according to IEC 62271–200 and GB/T 3906.

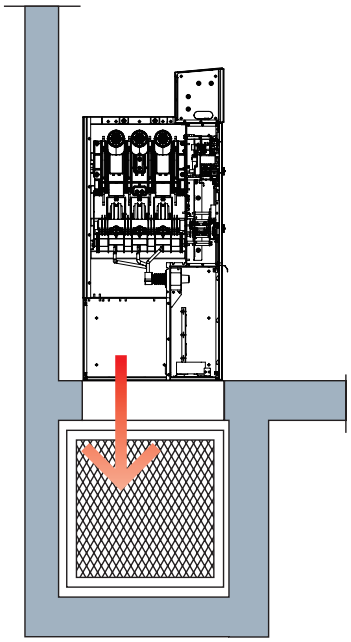
Minimum Front Clearance of Switchgear for Operation (mm)
Single–row arrangement ≥ 1000 mm
Double–row face–to–face arrangement ≥ 1500 mm
Floor to ceiling ≥ 2600 mm

NXGREEN
Pressure Relief Channel

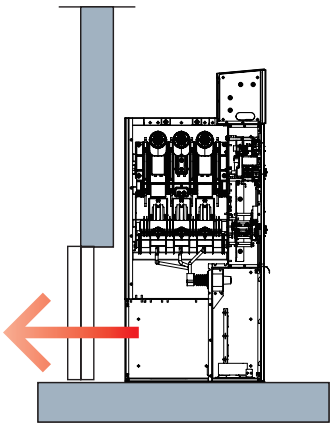
Compliant with the national standard GB/T 3906 and the IEC/EN 62271−200 standard.
The standard design releases pressure downward into the cable trench through the bottom plate of the cabinet.
It can also be specially designed to release pressure through a dedicated relief channel at the rear of the cabinet, to guide the pressure upward through the rear of the cabinet, or to be equipped with a pressure absorption device for upward pressure relief through the rear guidance.

Components and requirements:
Cable trench or floor opening with downward discharge plate
Cable trench metal mesh (provided on site)
Pressure absorption device with pressure relief channel

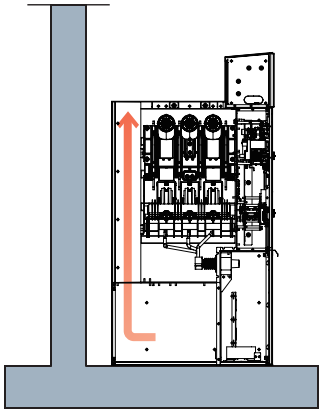
Pressure relief channel located at the rear of the open section cabinet
Total opening area ⩾ 0.5 m



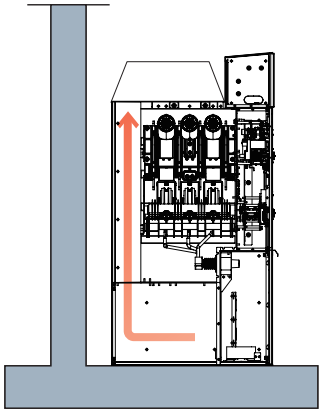
Pressure relief channel downward



Pressure relief channel rearward



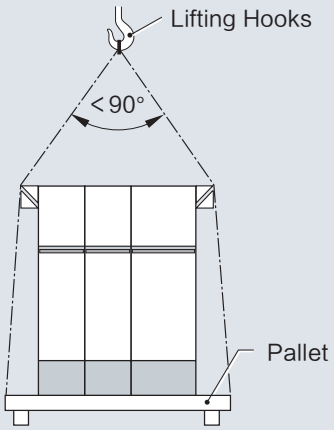
Upward via rear pressure relief channel (optional, cabinet depth 1050 mm)



Upward via rear channel with pressure absorption device (optional, cabinet depth 1050 mm)

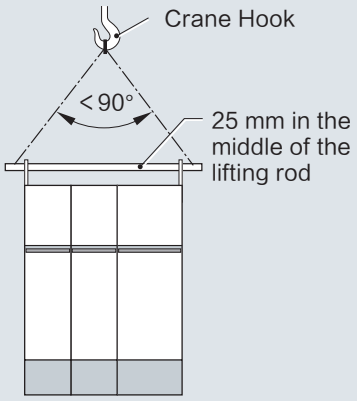
NXGREEN
Lifting

Transportation



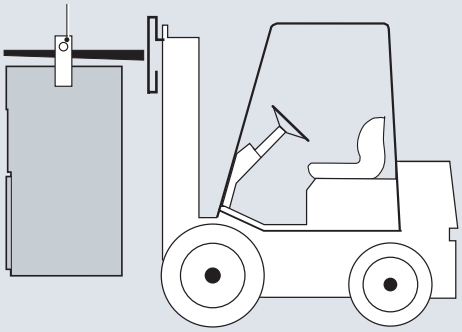
Lifted Using Pallet

Vertical Handling
When using a forklift, a base support must be added.During lifting, the sling angle must be less than 90° .Do not lift assembled switchgear directly.

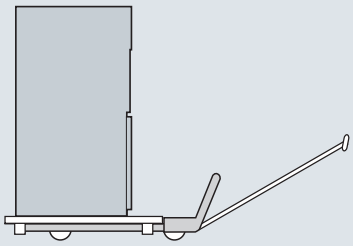


Lifted Using Lifting Rod

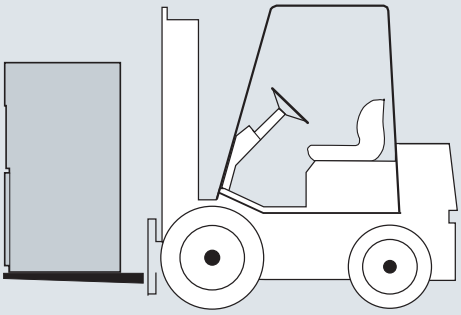
Lifting Rod ϕ25 mm
(pay attention to switchgear weight and forklift counterweight)



Suspended Forklift Handling



Manual Pallet Truck Handling



Forklift Handling

Storage

Strictly Prohibited:
Side tipping
Inversion
Vibration
Open flames
Rain exposure
Stacking
Dampness