

CHNT

Empower the World



17.5kV Metal Enclosed Gas Insulation Switchgear

ABOUT CHINT



CHINT A leading global provider of smart energy solutions

CHINT was established 38 years ago in 1984 and built from the capital of approximately 8,000 US dollars. With our rapid development these years, CHINT has become the world's leading intelligent energy solutions provider for the whole industrial chain with the most complete product ranges. In 2021, our annual sales revenue exceeded 16.1 billion dollars and total assets of more than 16.2 billion.

Over two decades of global expansion, our business network covers more than 140 countries and regions worldwide in business industries of low-voltage electric, power transmission and distribution, smart technology, energy instruments and meters, green energy, solar and more. CHINT has more than 40,000 employees worldwide, creating more than 200,000 jobs in the industrial chains.

As the market localization progresses steadily, CHINT Global further establishes its supply chain through business integration and industrial upgrade. Optimizing the service system and project financing, providing innovatively integrated technical services for the global energy market, and a flexible working business model. energy, intelligent manufacturing and digital technology, CHINT has adopted "One Cloud & Two Nets" as the business strategy, takes "CHINT Cloud" as the carrier of intelligent technology and data application, and takes the lead in building the energy Internet of things (EIoT) and industrial Internet of things platforms (IIoT).

Focusing on the energy system of supply, storage, transmission, distribution and consumption, CHINT has core businesses of clean energy, energy distribution, big data and energy value-added services. Furthermore, CHINT's pillar businesses include photovoltaic equipment, energy storage, power transmission & distribution, low-voltage apparatuses, intelligent terminals, software development and control automation. By developing into a platform-based enterprise, CHINT provides a package of energy solutions for public institutions, industrial & commercial users and end-users, by building a regional smart energy operation ecosphere.

Main Businesses



Clean Energy



Low-voltage Apparatus



Power Transmission and Distribution



Instrumentation and Apparatus



Smart Home



Intelligent Building



Intelligent Manufacturing



Industry Automation



Smart Heating



Smart Water



Home Electrical Apparatus



Energy Efficiency Management

ABOUT CHINT ELECTRIC

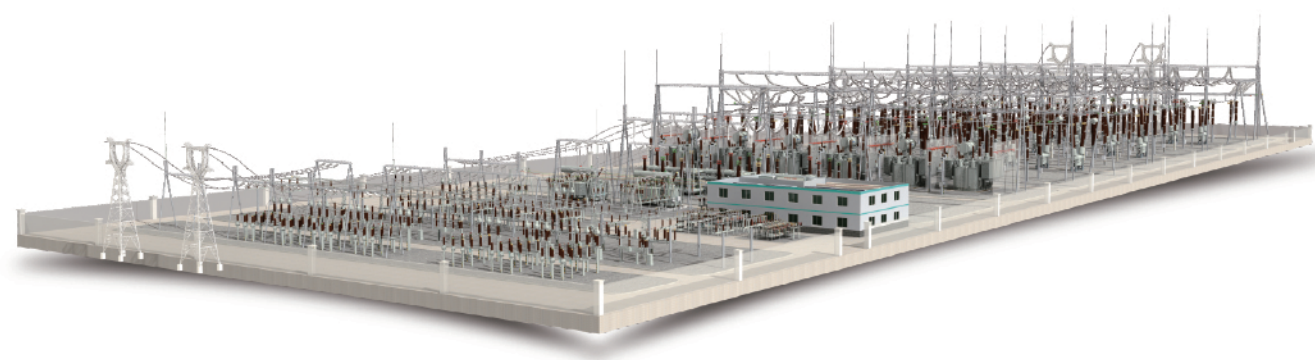
CHINT Electric Co., Ltd is a subsidiary of CHINT Group Corporation. With the wide range of transmission and distribution products, as well as the systematic and professional solution, CHINT Electric has supplied products and EPC services to customers over 140 countries across different industrial sectors, including power utility, renewable energy, oil and gas, metallurgy, railway and so on. Now CHINT Electric Co., Ltd has become one of the main players for Power T&D equipment and EPC services in the world.

Product Line

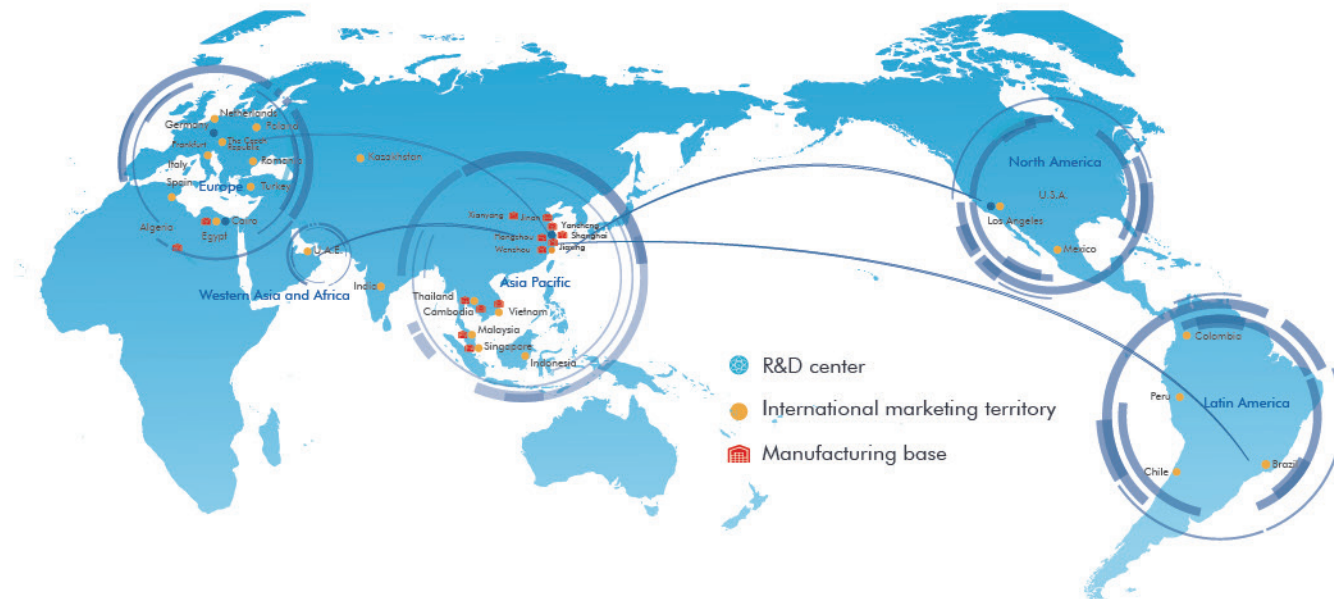
The product series is designed solely for the electrical systems with maximum voltage 750kV, covering around 2000 kinds of products within 150 series.

Product Range

- Power Transformer (Up to 750kV)
 - SVG Transformer (Up to 35kV)
 - Dry-type Transformer (Up to 35kV)
 - Reactor (Up to 252kV)
 - GIS (Up to 252kV)
 - Circuit Breaker and Disconnector (Up to 252kV)
 - MV & LV Switchgear Panels
- Surge Arrester and Insulator (Up to 1000kV)
 - Current Transformer and Potential Transformer (Up to 500kV)
 - Vacuum Circuit Breaker (Up to 12-40.5kV)
 - Distribution Automation System
 - Cable (Up to 36kV)
 - Capacitor (Up to 110kV)



GLOBAL FOOTPRINT



4 National R&D Centers: North America, Europe, Asia Pacific, North Africa

6 International Marketing Territories: Asia Pacific, Western Asia and Africa, Europe, Latin America, North America, China

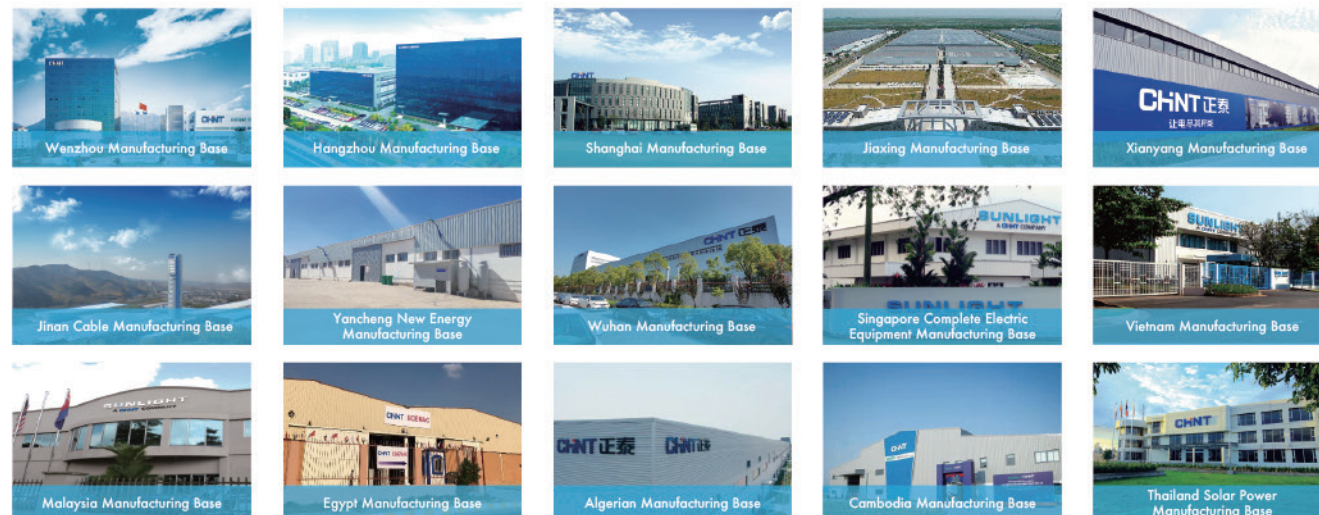
14 Manufacturing Bases: China (Wenzhou, Hangzhou, Shanghai, Jiaxing, Xianyang, Jinan, Yancheng), Thailand, Singapore, Vietnam, Malaysia, Egypt, Algeria and Cambodia

20+ International Logistics Centers

2300+ Sales Companies

GLOBAL CAPACITY LAYOUT

The industrial manufacturing bases are mainly located in Wenzhou, Hangzhou, Shanghai, Jiaxing, Xianyang and Yancheng. Additionally, CHINT has set up factories in Thailand, Singapore, Vietnam, Malaysia, Egypt, Cambodia etc.



R&D, QUALITY, SALES, LOGISTICS

Main Advantages

Global R&D System

CHINT has established national R&D centers in North America, Europe, Asia Pacific, North Africa and other areas. We have explored the mode of Industry-University Research Institute Collaboration and Integration together with the universities and research institutions worldwide so as to integrate the global innovation resources and promote corporate R&D innovation and talent cultivation.



24 research institutes



The average annual R&D investment accounts for 4-12% of the revenue



Over 6000 patents in total

Global Certification

The products have passed the standards and specifications in various regions around the world and obtained numerous international certifications



Honors

- No. 1 in China's Top 100 Private Enterprises with Social Responsibility in 2021
- No. 92 in 2021 China's Top 500 Private Enterprises
- No. 244 in 2021 Top 500 Chinese Enterprises
- The intelligent manufacturing factory of low-voltage electrical appliances was selected as the national 2021 Intelligent Manufacturing Demonstration Factory



Integrated Vertical R&D

By gathering the global industry elites to Provide safe and stable energy-saving green and advanced electric products.



At least 5% of revenue is invested in research and development



Great Quality System

Ensuring flaw-free and trouble-free products, the multi-dimensional and multilevel control is conducted through procurement, inspection, quality control and certification.



One-stop Services

CHINT's concept is that it is not difficult to fulfill a high-quality logistics distribution at one time, while it is difficult to stay as accurate and prompt as the first-time. High-efficiency and high-precision accuracy are our requirement.



48-Hour Response

Providing end-to-end one-stop services for customers with complains, business consulting and technical support by solving problems immediately and including any possible problems in advance.



17.5kV
Metal Enclosed Gas Insulation Switchgear

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Introduction

NG7-17.5 series switchgear is a kind of modular fully insulated fully sealed ring network switchgear for medium voltage distribution network, NG7-17.5 series switchgear can be used indoors, outdoors, when used indoors, most of the composition of indoor opening and closing stations, can be installed after leaving the factory, without any special tools, switchgear inflatable compartment protection level up to IP67. When used outdoors, the box protection level is generally IP54, mainly used for medium voltage distribution network, the equipment is not affected by high altitude, condensation, pollution, small animals and chemical substances and other external environmental influences, small size, maintenance-free, widely used in urban commercial centers, industrial concentration areas, airports, highways and other distribution network systems, it is not only conducive to the flexible application of line ring network, but also can be designed as dual power supply self-invested power supply to ensure power supply reliability. Before shipment, all of our unit modules are factory tested.

- Execution Standard
- IEC 62271-200

Main Technical Parameter

Item	Unit	load switch unit	Circuit breaker unit
Rated Voltage	kV	17.5	17.5
Rated frequency	Hz	60	60
Rated current	A	400	400
Power frequency withstand voltage (phase-to-phase and relatively)		38	38
Power frequency withstand voltage (between fractures)		45	45
Power frequency withstand voltage (control and auxiliary loops)		2	2
Lightning shock withstand voltage (phase-to-phase and relatively)		95/110	95/110
Rated for short-term withstand current	kA	21/1s	21/1s
Rated peak withstand current	kA	54.6	54.6
Rated short-circuit closing current	kA	54.6	54.6
Rated short-circuit breaking current	kA	/	21
Rated transfer current	A	/	/
Rated active load breaking current	A	400	/
ItemRated closed-loop breaking current	A	400	/
Mechanical life: load switch/circuit breaker	次	5000	10000
Mechanical life: isolation/grounding switch	次	2000	1000
Inflation pressure: Rated inflation pressure	Mpa	0.04	0.04
(G/C at 20° C)	%	≤ 0.01	≤ 0.01

Product technical characteristics

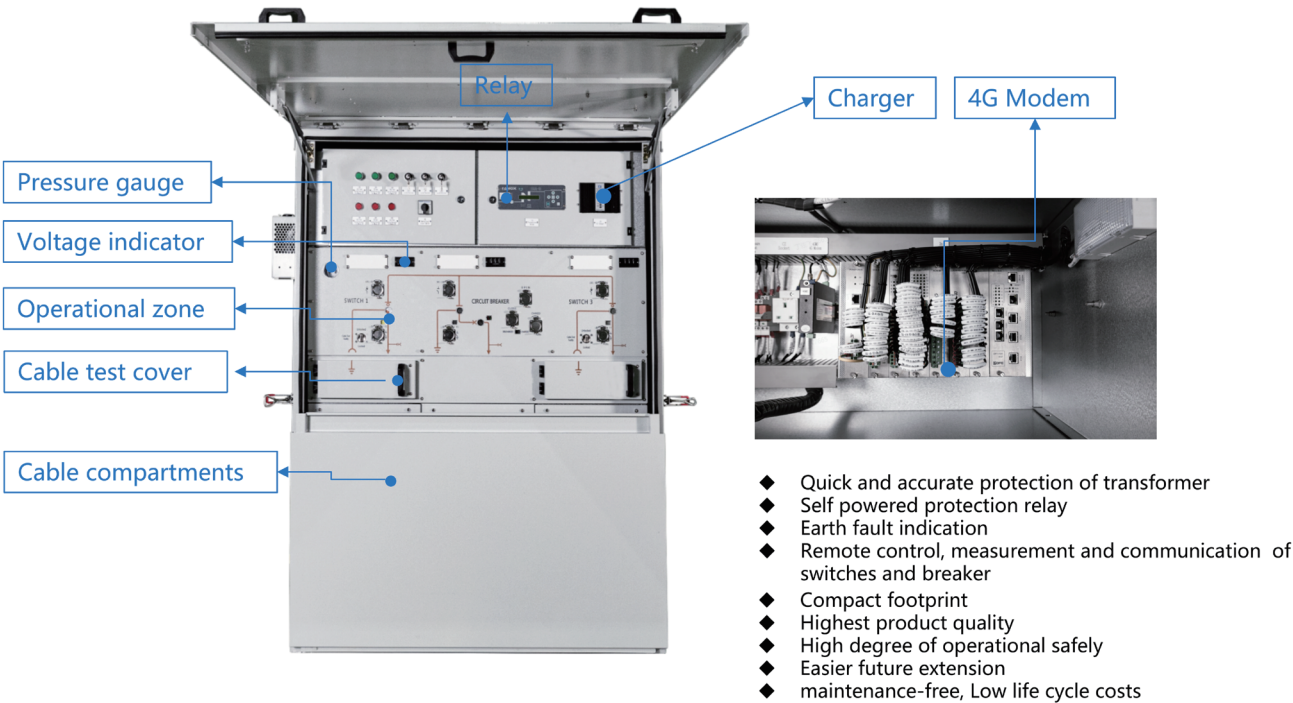
NG7-17.5 series switchgear operates under normal indoor conditions:

- Maximum temperature: +75° C
- Minimum temperature: -40° C
- 24-hour average maximum temperature: +35° C
- Humidity: Maximum average relative humidity (2 4-hour measurement) 95%
Maximum average relative humidity (1 month measurement) 90%
- In the case of installation without reducing the gas pressure: the maximum altitude is 1500 m

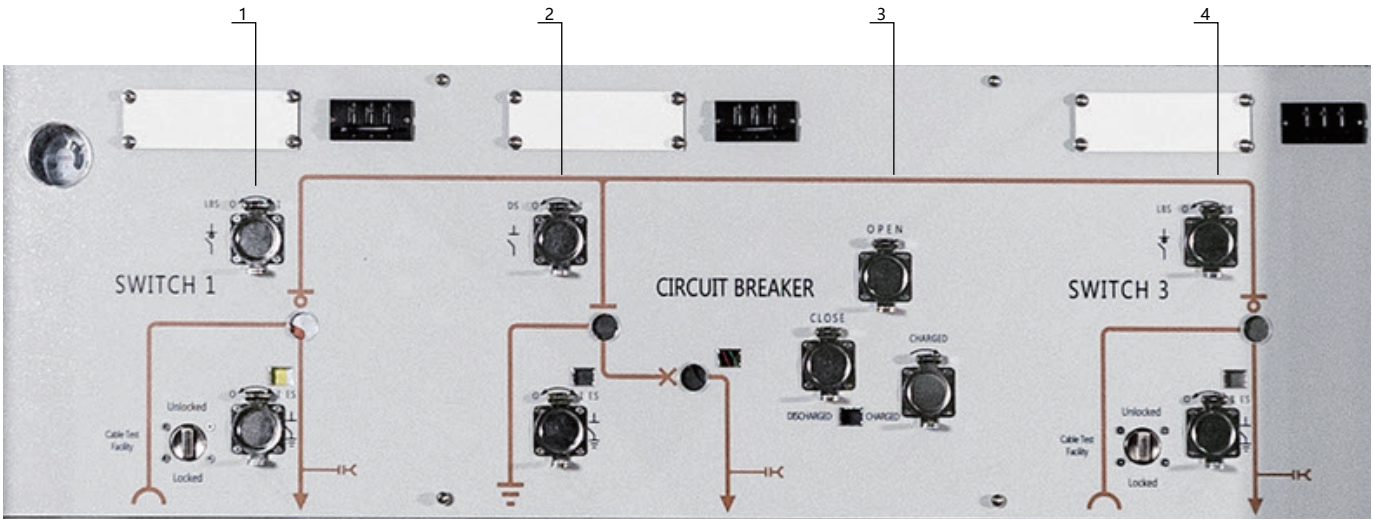
NG7-17.5 series switchgear applications in outdoor operation:

- Altitude: ≤ 4000m
- Ambient temperature: maximum temperature: +50 ° C; The average temperature within 24h does not exceed +35 ° C
- Ambient humidity: 24h relative humidity average does not exceed 95%; The average monthly relative humidity does not exceed 90%
- Installation environment: the surrounding air is free of explosive and corrosive gases, and there is no violent vibration in the installation site Impact, pollution level does not exceed THE III. level in GB/T5582;
- Ground acceleration caused by earthquakes: below the horizontal direction. 3g; Vertically below. 15g

Product structure diagram



Schematic of the mechanism panel (isolation scheme on the circuit breaker)



1.Load switch 2.Disconnect switch 3.Circuit breaker switch 4.Load switch

Primary wiring scheme

Primary wiring scheme			
	<div>Code</div> <div>H1</div> <div>NG7-F-17.5</div>	<div>Code</div> <div>H2</div> <div>NG7-V-17.5</div> <div>1500*1100*1850</div>	<div>Code</div> <div>H3</div> <div>NG7-F-17.5</div>
Cabinet size (W×D×H)			

Mechanical interlock instructions

- Reliable mechanical interlocking between circuit breaker and isolating switch, load switch/isolating switch and grounding switch to prevent misoperation;
- When the load switch is in the closed state, the ground switch cannot be operated, and the cable chamber door and cable test box are in a latched state;
- When the load switch is in the sub-gate state, the handle can be inserted into the ground switch operation hole and close the ground switch;
- When the grounding switch is in the closing position, the load switch is locked, and the cable test box can be opened for cable insulation test at this time, and the cable chamber door can be opened for installation and other work;
- When the circuit breaker is in the closed state, the isolation switch and ground switch cannot be operated;
- When isolating the gate dividing state, the circuit breaker cannot close the gate;

Isolation close, circuit breaker closed, cable room door can not be opened--- is not in the connection position can not open the cabinet door;
- Grounding, circuit breaker, grounding loop conduction, cable room door can be opened, other locations can not open the door;
- The cable room door is open, the mechanism cannot be operated, and the circuit breaker cannot be divided;
- Close the cable chamber door first, and then close the cable test box.

Switch cabinet operation

Load switch unit operation

Load switch closing

- (1) Open the load switch protective cover;
- (2) The operation handle is inserted into the operating hole of the load switch and rotates about 80 ° clockwise, and the "popping" sound is heard, the load switch is closed, and the round hole on the load switch indication panel displays "ON".

Load switch opening

- (3) The operation handle is inserted into the operating hole of the load switch and rotates about 80 ° counterclockwise, and the "popping" sound is heard, the load switch is divided, and the round hole on the load switch indication panel shows "OFF".

Earth switch closing operation

- (4) Open the protective cover of the ground switch;
- (5) The operation handle is inserted into the grounding operation hole and rotates about 180 ° clockwise, and the grounding switch is closed when the "popping" sound is heard, and the round hole on the grounding switch indication panel displays "EARTH OFF".

Earth switch opening operation

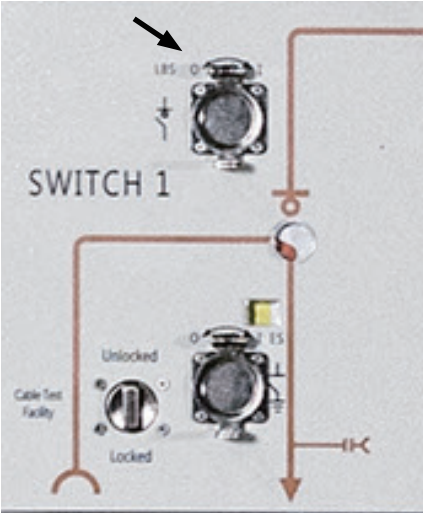
- (6) Open the protective cover of the ground switch;
- (7) The operation handle is inserted into the grounding operation hole and rotates about 180 ° counterclockwise, and the grounding switch is heard to "snap" and the grounding switch indicates that the round hole on the panel shows "OFF".

Note: Load switch unit ground switch only manual operation mode, load

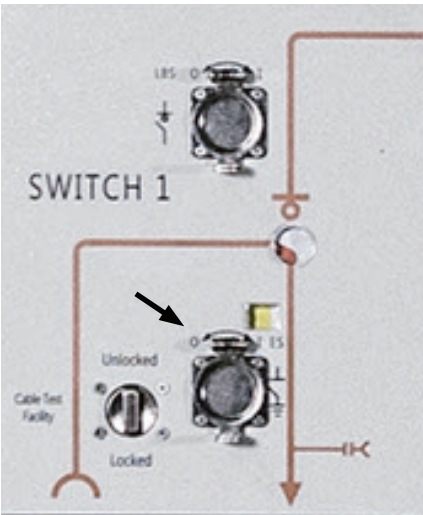
Note: The switch has two operating modes, electric and manual, the above is manual operation

For mode operation, when the switch is configured for electric operation, only need to be pressed

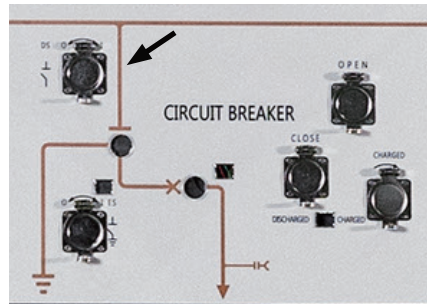
The closing/splitting button completes the load switch energy storage and closing/splitting operation



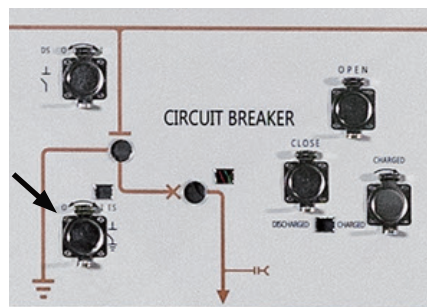
LBS operation



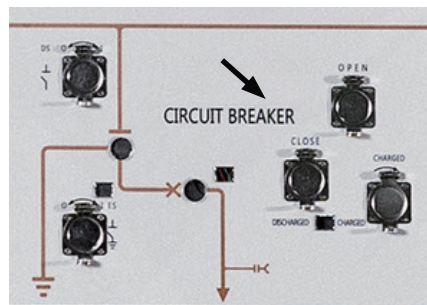
ES operation



Disconnecter switch operation



Earth switch operation



Circuit breaker operation

Circuit breaker unit operation

Note: This scheme is an upper isolation scheme, the isolator switch is at the closing gate, or the ground switch is in the closing

The state is required to operate the circuit breaker switch.

Disconnecter switch closing

- (1) Open the protective cover of the isolating switch;
- (2) Insert the operating handle, rotate about 80° clockwise, and hear "Snap" sound, disconnecter close, disconnecter indicator surface The circular hole of the plate displays "ON".

Disconnecter switch opening

- (3) Insert the operating handle, rotate about 80° counterclockwise, and hear "Snap" sound isolator split gate, the isolator switch indicates the round hole of the panel "OFF" is displayed.

Earth switch closing

- (4) Open the protective cover of the ground switch;
- (5) Insert the operating handle, rotate about 180° clockwise, and hear "Snap" sound ground switch closes, ground switch indicates panel The round holes of the box display "EARTH OFF".

Earth switch opening

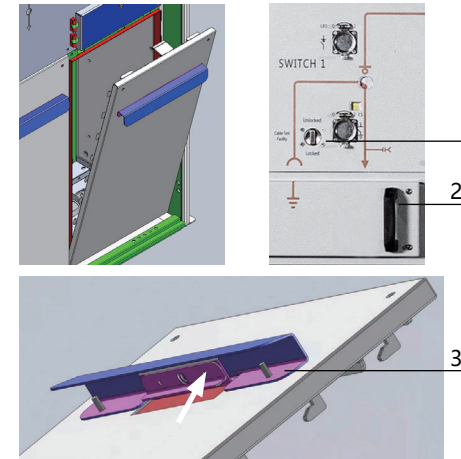
- (6) Insert the operating handle, rotate about 180 ° counterclockwise, and hear "Snap" sound ground switch split, ground switch indication panel The round hole of the box shows "OFF".

Circuit breaker closing

- (7) Insert the handle, manual energy storage, at this time the indicator arrow of the energy storage position Head in the energy storage state;
- (8) Open the protective cover, press the green closing button, the circuit breaker closes, The circuit breaker indicates that the circular hole in the panel shows "ON".

Circuit breaker opening

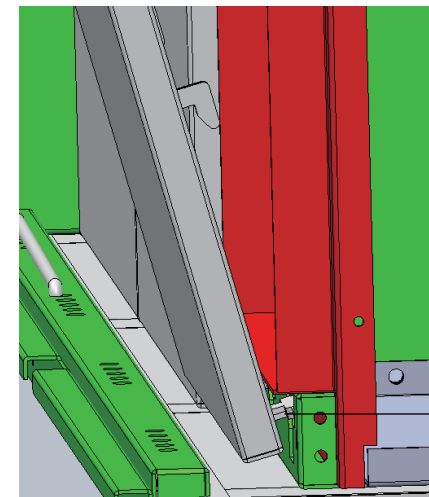
- (9) Open the protective cover, press the red gate button, the circuit breaker divides, The circuit breaker indicates that the round hole in the panel shows "OFF". The disconnecter and ground switch are only manually operated and the circuit breaker The unit is configured as standard for electric operation, e.g. with electric mode Simply press the instrument chamber shut-off button to achieve the circuit breaker shut-off



1.Unlock lever

2.Cable test box

3.Wrench inside the cable chamber door



1.Hook into the lower door hook first

Cable chamber door/cable test box open and close

Note: The cable chamber door/cable test box is interlocked with the ground switch. The cable chamber door/cable test box can only be opened when the ground switch is in the closed position, and cable insulation tests and access to the cable chamber can be performed. When the cable chamber door/ cable test box is opened, the interlocking mechanism blocks the ground switch operation hole and cannot divide the ground switch, ensuring the safety of the operator. Before the cable is installed and the equipment is put into operation, the ground switch must lock the closing position.

Cable chamber door/cable test box open

- (1) Confirm that the ground switch is in the closing position;
- (2) Remove the fixing screws on the cable room door/cable test box;
- (3) Lift the unlock lever;
- (4) Flip left to open the cable test box;
- (5) Buckle your hand into the middle of the wrench inside the cable chamber door and lift up 15mm, pull it out, and then lift it obliquely outward to open the cable chamber door.

Cable chamber door/cable test box closed

- (1) The door hook under the door of the cable room is first hung into the beam of the cable room;
- (2) Hold the handle inside the cable room door with both hands, lift up 15mm upwards, and close the cable room door;
- (3) Close the cable chamber test box (if there is no cable test box, it can be ignored);
- (4) Press down the latching rod;
- (5) Lock the cable room door and cable test box bolts.

Note: (2)(3) The order cannot be reversed.

Power feed/power outage operation

Power transmission operations

- a) Load switch unit power transmission operation
Cable chamber door closes in place -Cable test box closes in place -Tap ground switch- Load switch
- b) Circuit breaker unit power transmission operation
Cable chamber door close in place -Circuit breaker- ground switch- disconnect switch-close circuit breaker

Power outage operation

- a) Load switch unit power failure operation
Divider switch Confirm that the cable feeder is not charged with the ground switch
- b) Circuit breaker power failure operation
Splitter Disconnecter Confirm that the cable feeder is not charged With the ground switch Close the circuit breaker

Asia Pacific

China | Global HQ

Zhejiang CHINT Electrics Co., Ltd.

Address: A3 Building, No. 3655 Sixian Road, Songjiang Shanghai 201614.
Tel: +86 21 5677 7777
Fax: +86 21 5677 7777
Email: global-sales@chintglobal.com
Website: www.chintglobal.com

Singapore | Asia Pacific HQ

CHINT Global Pte Ltd

Address: 8 Kallang Avenue, #04-06/09 Aperia Office Tower 1, Singapore 339509.
Tel: +65 6329 3110
Fax: +65 6329 3159
Website: www.chintglobal.com

Sunlight Electrical Pte Ltd

Address: 1 Third Chin Bee Road, Singapore 618679.
Tel: +65 6741 9055
Fax: +65 6265 4586
Email: sales@sunlightgroup.com
Website: www.sunlightgroup.com

India

CHINT India Energy Solution Private Limited

Address: Discovery Tower, Plot No. A-17, Ground Floor Industrial Area Sector 62 Noida, India 201309.
Tel: +91 1202 9750 57
Email: marketing@chint.co.in
Website: www.chint.co.in

Philippines

CHINT Electric Co., Ltd

Address: Unit 201, Taipan Place, F. Ortigas Jr. Road, Ortigas Center, Pasig City, Metro Manila, Philippines.
Tel: +63 967 273 0174 / +63 977 017 6320
Email: liq07@chintglobal.com / wencell@chintglobal.com
Website: www.chintglobal.com

Indonesia

PT. CHINT Indonesia

Address: Kompleks Prima Center I, Blok C9-10, Jl. Pesing Poglar Jl. Pool PPD No. 11, RT.9/RW.2, Cengkareng, Jakarta Barat.
Tel: +62 21 5436 3000
Email: sales@chint-indonesia.com
Website: www.chint-Indonesia.com

Vietnam

CHINT Vietnam Holding Co., Ltd

Address: So 2Bis-4-6, Le Thanh Ton, P. Ben Nghe Quan 1, Ho Chi Minh, Vietnam.
Tel: +84 0283 8270 015
Email: marketing.vn@chintglobal.com
Website: www.chintglobal.vn

Sunlight Electrical (VN) Co., Ltd

Address: 20 Doc Lap Ave, VSIP, Thuan An City, Binh Duong Province, Vietnam.
Tel: +84 0274 3743 505
Email: sales.sev@sunlightgroup-vn.com.vn
Website: www.sunlightvietnam.com.vn

Cambodia

CHINT (Cambodia) Power Equipment Co., Ltd

Address: No.15, St. 542, Sangkat Boeung Kok 1, Khan Toul Kork, Phnom Penh, Cambodia.
Tel: +855 23 231 077
Email: lbin3@chintglobal.com
Website: www.chintglobal.com

SchneiTec CHINT Co., Ltd

Address: Ansor Kdam Village, Sna Ansa Commune, Krakor District, Pursat Province, Cambodia
Tel: +855 09 5353 268
Email: liubin@schneitec-chint.com.kh / info@schneitec-chint.com.kh
Website: www.schneitec-chint.com.kh

Latin America

Brazil

CHINT Elétricos América do Sul Ltda.

Add: Av. Paulista, 1765 - Edifício Scarpa - Conjunto 22, Bela Vista - CEP 01311-200 - São Paulo - SP
Tel.: +55 (11) 3266-7786
E-mail: chintbr@chint.com

Peru

CHINT LATAM (PERU) S.A.C.

Add: Av. Camino Real No.348, Torre El Pilar, Oficina 603, San Isidro, Lima 27, Peru
Tel: +51 1 763 4917
Email: chintlatamperu@chint.com

Ecuador

CHINT ELECTRICS (HONG KONG) LIMITED (Ecuador Branch)

Add.: Calle: REP.DEL SALVADOR Número: 10-84 Intersección: AV NACIONES UNIDAS
Edificio: CENTRO COMERCIAL MANSION BLANCA
E-mail: lufz@chintglobal.com

Europe

Italy

CHINT Italia Investment Srl

Add: Via Bruno Maderna 7 30174 Venezia
Tel: +39 041.446614
Fax: +39 041.5845900
E-mail: info@chint.it

Spain

CHINT Electrics S.L.

Add: Calle José Echegaray, Num 8.Parque Empresarial Las RozasEdificio 3,
Planta Baja, Oficina 7-8.C.P: 28232 Las Rozas (Madrid)
Tel: +34 91 645 03 53
E-mail: info@chint.eu

Czech Republic

NOARK Electric Europe s.r.o.

Add: Sezemická 2757/2, 193 00 Prague 9
Tel: +420 226 203 120
Email: europe@noark-electric.com

Turkey

CHINT Turca Elektrik Sanayi VE Ticaret Anonim Sirketi

Add: Zumrutevler Mahallesi Ural Sokak No. 22/18 NAS PLAZA B Block KAT 1,
Maltepe, Istanbul
Tel: +90216 621 00 55
Fax: +90216 621 00 50
E-mail: fatura@chint.com.tr

West Asia & Africa

Egypt

CHINT Electrics (Egypt) Co., Ltd

Add: Building B16 - Smart village, Abu Rawash - Giza, Egypt
Tel: +20 1097173769
P.O BOX : 00202
Email: chinteg@chintglobal.com

Kenya

ZHENGTAI ELECTRICS(KENYA) CO., LIMITED

Add: OFFICE 1A, 8TH FLOOR, KISM TOWERS, LR No. 209/945/1- NGONG
ROAD - NAIROBI, KENYA
Tel: +254 072256485
Email: chintkenya@chintglobal.com

U.A.E

CHINT MIDDLE EAST AND AFRICA DMCC

Add: Unit No: 2101, 21085,2109 , Jumeirah business center 1, Cluster G,
Jumeirah Lakes Towers, Dubai, UAE
Tel: +97145571532
P.O BOX: 337555
E-mail: global-sales@chint.com

Nigeria

CHINT POWER & ENERGY SERVICES CO., LIMITED

Add: 3RD FLOOR TOWER 2, CHURGATE BUILDING , VICTORIA ISLAND, LAGOS
Tel: +234 8110728119
E-mail: czjie@chintglobal.com

North America

United States

NOARK Electric (USA) Inc

Add: 2188 Pomona Blvd., Pomona, CA 91768
Tel: 626-330-7007
Fax: 626-330-8035
E-mail: nasales@noark-electric.com

Mexico

CHINT SOLAR MEXICO S DE RL DE CV

Add: Miguel Cervantes Saavedra 169 Piso 11 Col. Granada Del. Miguel Hidalgo
C.P. 11520 CDMX, México
Tel: +52 1-55-8881-6127
E-mail: info@chint-mexico.com



CHINT GLOBAL PTE. LTD.

Building A3, 3655 SiXian Road,
Songjiang District, Shanghai, China

Tel: +86-21-5677 7777

Web: www.chintglobal.com

E-mail: global-sales@chintglobal.com

A CHINT COMPANY



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