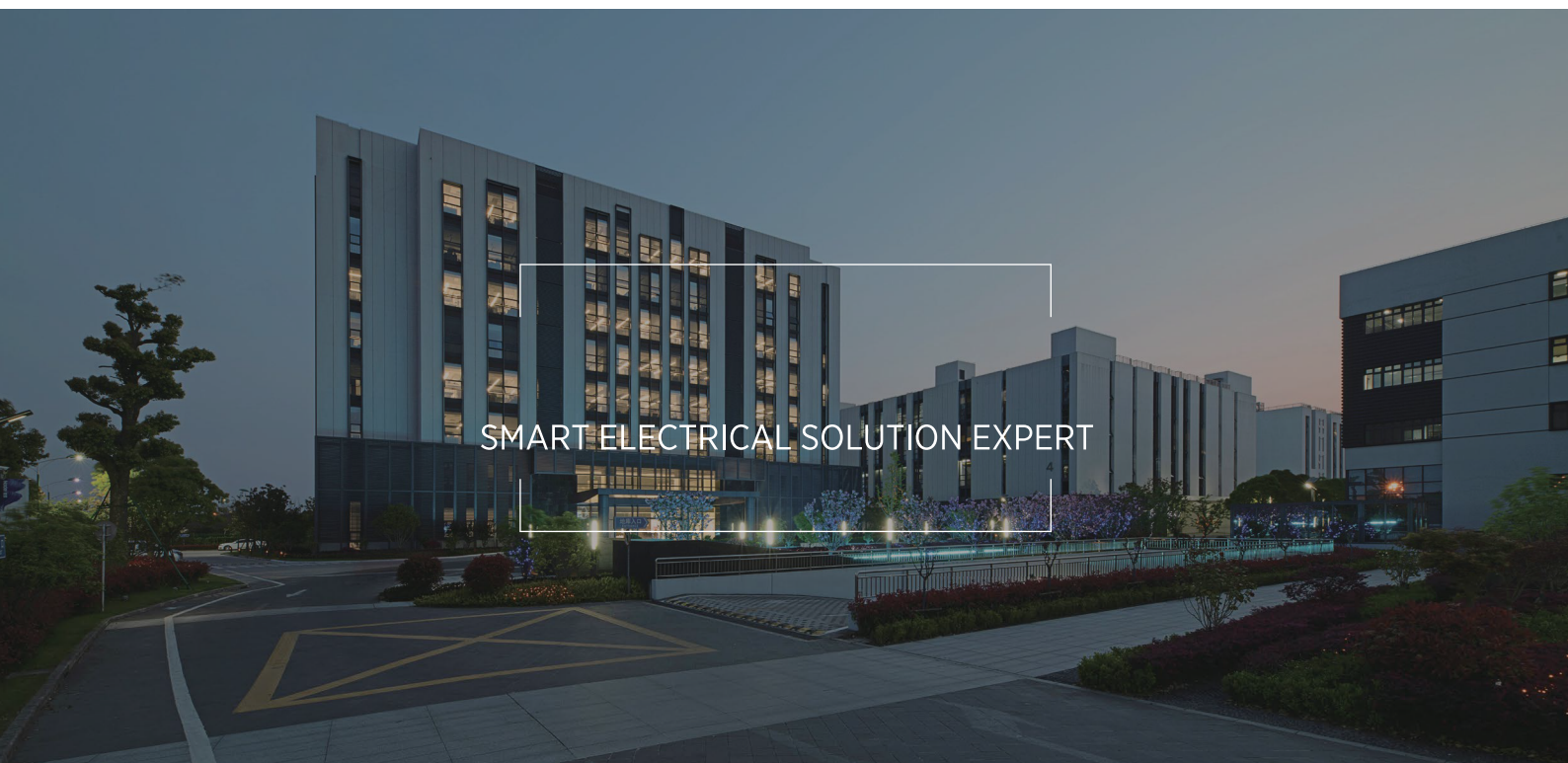




NEA series

Intelligent Switchgear

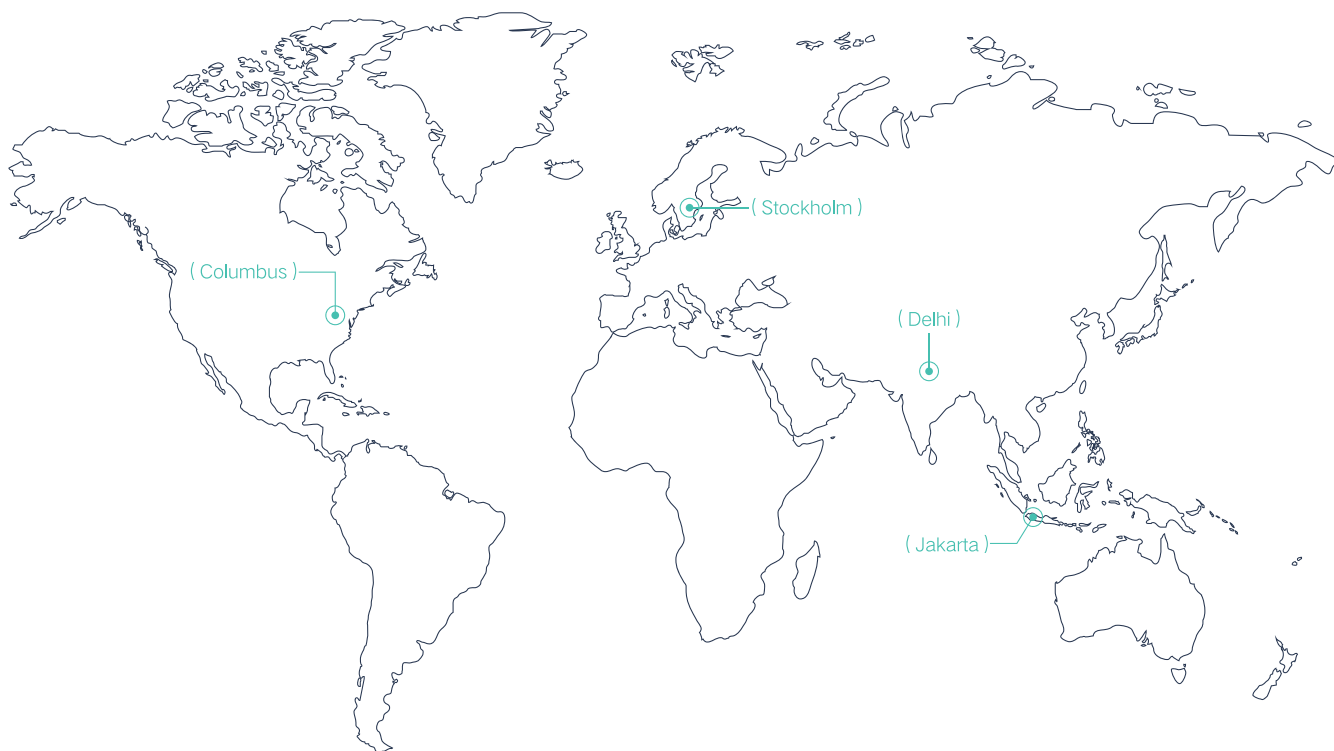


Company Profile

LAZZEN is a leading “Smart Electrical Solution Expert” in the industry. Its products and solutions are applied to a wide range of scenarios from power generation, power transmission and distribution to power consumption. Its business covers many fields, including power grid, new energy, real estate, information and communication, power generation, industrial control, and industrial buildings.

LAZZEN was listed on the Shenzhen Stock Exchange in 2014, with stock code 002706.SZ. LAZZEN has always adhered to the core value of “satisfying customers”, and promoted the product development on the basis of market demand, with annual R&D investment accounting for more than 6% of revenue every year. Its R&D center was rated as the "National Enterprise Technology Center", the "Enterprise Postdoctoral Research Workstation" was set up, and the laboratory passed the dual accreditation of CNAS and UL. LAZZEN has become a national demonstration enterprise of intellectual property.

LAZZEN provides high-quality products and system solutions to global users through its super representative and end-to-end service system, with offices set in more than 140 cities in China, as well as in Europe, North America, Asia and other countries and regions.



Service Network

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Scope of Application and Purpose

NEA series LV switchgear is applicable to LV distribution system with AC 50Hz, rated insulation voltage of AC 1,000V, working voltage of AC 400V and below, and rated current of 6,300A and below, and can be used for power receiving and feeding, busbar coupler, lighting, and power load control. With standardized and modularized functional unit design, as well as networked and intelligent communication and monitoring functions, the NEA series LV switchgear provides customers with customized distribution solutions and reliable power protection, and can be widely used in electric power systems, communication equipment room and data center, municipal infrastructural setups (airports, commercial real estate, high-end civil real estate, hospitals, rail transit), industrial facilities (petrochemical, power plant, steel and non-ferrous metal, papermaking, water treatment, cement and glass, food and beverage, pharmaceuticals, textiles), and other industries.

Product Overview



Main Technical Parameters

S/N	Item		Parameters
1	Rated insulation voltage (Ui)		690V/1000V AC
2	Rated operational voltage (Ue)		400V AC
3	Rated frequency (F)		50Hz
4	Rated impulse withstand voltage (Uimp)		6KV/8kV/12kV
5	Over-voltage grade		IV
6	Pollution grade		3
7	Main busbar	Rated current (A)	To 6300
		Rated peak withstand current (kA)	To 220
		Rated short-time withstand current (kA/1s)	To 100
8	Distribution busbar	Rated current (A)	Up to 2100/4200
		Rated peak withstand current (kA)	To 187
		Rated short-time withstand current (kA/1s)	Up to 85
9	Size	Recommended height, mm	2200/2350
		Recommended width, mm	400/600/650/800/850/1000/1200
		Recommended depth, mm	1000/1200
		Modulus	E=25mm
10	EMC Environment		Category A
11	Protection level		Up to IP41
12	Internal isolation form		Up to 4b
13	Mechanical collision rating		Up to IK10
14	Maximum feeder circuits		18
15	Arrangement of cabinets and boards		Off-wall switchgear
16	Wiring mode		Rear outgoing
17	Cable incoming/outgoing		Top and bottom
18	Main busbar installation position		Top
19	Vertical busbar form		Rectangular busbar, irregular busbar

S/N	Item	Parameters
20	Function unit installation mode	Fixed, withdrawn, inserted
21	Profiles for switchgear body	High-strength profiles
22	Panels and cross members for switchgear body	Al-Zn alloy coated steel sheet
23	Door opening performance	Internally hinged; the combined switchgear door can be opened by 90° or more.
24	Switchgear body color	RAL7035 or customer-specified
25	Housing	Epoxy resin powder coating > 70 μm

Normal working environment

◆Altitude:< 2,000 m; if higher than 2,000 m, the switchgear should be derated

◆Environmental temperature: -5 °C to 40 °C; average temperature within 24 h: no more than 35 °C

◆Relative humidity: When the surrounding air temperature is +40 °C, the relative humidity of the atmosphere shall not exceed 50%. Higher relative humidity is allowed only at lower temperatures, for example, the relative humidity can be 90% at +20 °C. Dehumidification or corresponding measures should be taken for condensation caused by temperature changes.

◆Level 3 pollution

◆Indoor installation in a place without conductive and explosive dust

◆When actual application conditions are more severe than the above, please consult the manufacturer.

◆High-altitude derating coefficient

1) Derating cannot be considered if the altitude is lower than 2,000m;

2) Refer to the derating coefficient table of the components installed in the switchgear the if the altitude is higher than 2,000m.

Switchgear Classification

ACB Solutions

In the ACB solution, NDW2 series air circuit breaker is selected, with rated currents ranging from 630A to 6300A, meeting the requirements of high-power incoming wires, feeders, busbar couplers, etc.

◆Maximally three 1600ANDW2 series air circuit breakers can be installed.

◆Minimum switchgear width: 400 mm

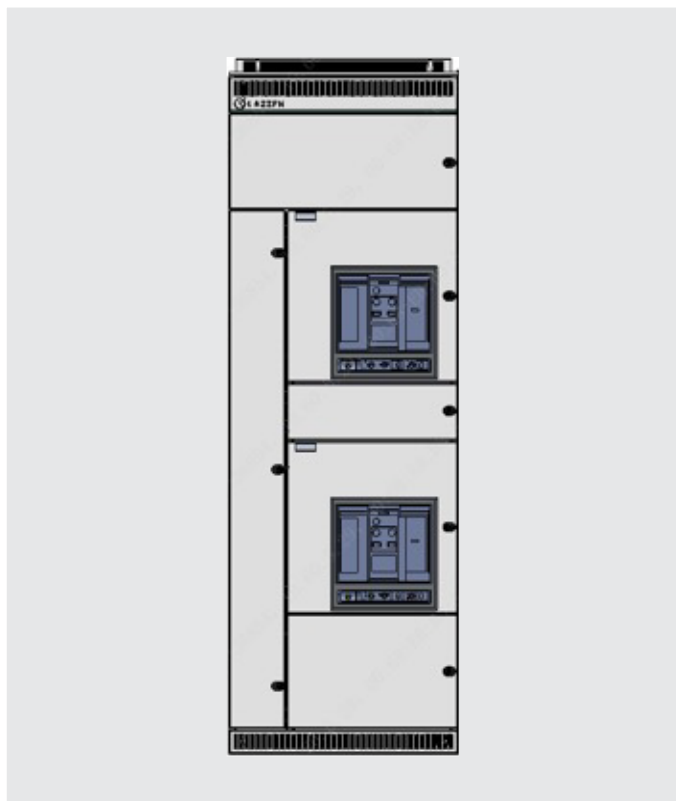
◆Maximum rated current: 6,300 A

◆Partition form: up to Form4b

◆Maintenance direction: Rear

◆Location of incoming and outgoing wires: top and bottom

◆Rated short-time withstand current: up to 100 kA/1s



Fixed Partition Switchgear

Standard Fixed Partition Switchgear

The fixed partition switchgear is of fixed installation structure and can be equipped with NDM3 molded case circuit breakers. The standard switchgear structure is equipped with unified horizontal busbar compartment, vertical busbar compartment, inter-switchgear connection compartment, device compartment, and cable compartment. Different switchgear widths and depths are available to suit different installation and maintenance requirements.

Under the premise of ensuring safety and providing convenient operation, the fixed partition unit with plug-in base can provide users with easy and fast replacement and maintenance when the system is powered on, so as to guarantee the continuous power supply of important loads.

The connecting wires and communication cables between the switchgears can be routed through the switchgears to connect the compartments, and relevant ports can be reserved for convenient wire connection between the switchgears.

- ◆ Partition form: up to Form4b
- ◆ Maintenance direction: Rear
- ◆ Location of incoming and outgoing wires: top and bottom
- ◆ Modular structure is adopted to facilitate any combination of units in the switchgear.
- ◆ An independent compartment is provided for each circuit, improving installation safety and personal protection.
- ◆ With the application of the plug-in NDM3 series molded case circuit breaker, it is convenient for users in maintenance without power outage, improving the continuity of power consumption and maintenance safety.

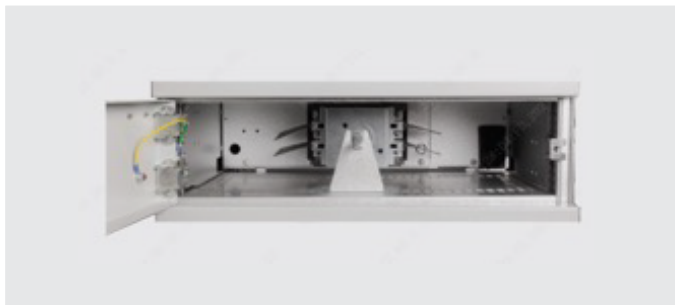
- ◆ The dedicated communication cable channel is effective against EMC interference.



Fixed Partition Unit

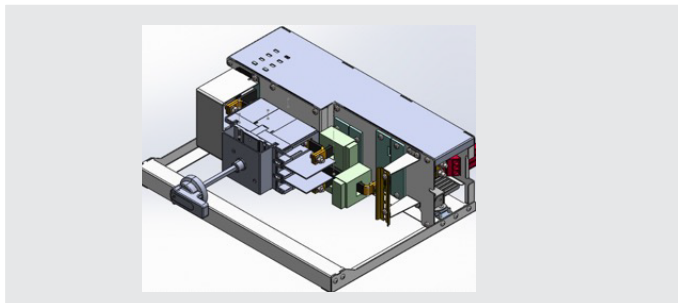
Fixed wiring is adopted for the fixed partition unit, the functional units are bolted with the distribution busbar, the pressure applied on the bolt connection point can be controlled by tightening torque to realize the best connection effect and the higher electrical connection quality, which is especially suitable for heavy-current power distribution circuits of 400A and above.

- ◆ The fixed partition units are usually installed in fixed partition switchgear, and can also be installed in multi-function feeder cabinet.
- ◆ The fixed division unit can be installed with fixed, plug-in or withdrawable circuit breakers, which are ideal for real-time maintenance.
- ◆ Height of standard fixed partition unit: 6E, 8E, 10E, 12E, 16E, 20E, 24E, 32E



PnP Unit

The plug-and-play (PnP) solution has an overall plug-and-pull function, which can replace the plug-in circuit breaker, facilitating the maintenance of the functional unit. In addition, the circuits with the same circuit function can be interchanged, which is convenient for the on-site load adjustment. The current levels cover the 3P and 4P solutions of 100A, 160A, 250A, 400A and 630A, the molded case circuit breaker is fixed, and the circuit breaker and the switchgear door are interlocked by a door coupling mechanism to prevent opening the outer door under load.



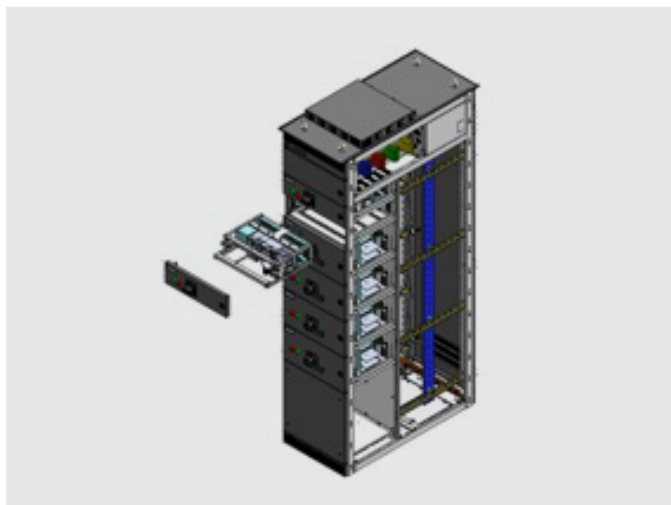
Compact Fixed Partition Switchgear

The compact fixed partition switchgear follows the switchgear structure of the NEA series, and equipped with the NDM3E IOT type molded case circuit breaker, reducing its width to 500mm. It is unnecessary to set external transformers, resulting in a higher density of circuit breaker capacity. The measurement data is acquired by the high-precision measuring module inside the circuit breaker and transmitted via the ModBus RS485 communication protocol.

It can provide users with easy and fast replacement and maintenance when the system is powered on, so as to guarantee the continuous power supply of important loads.

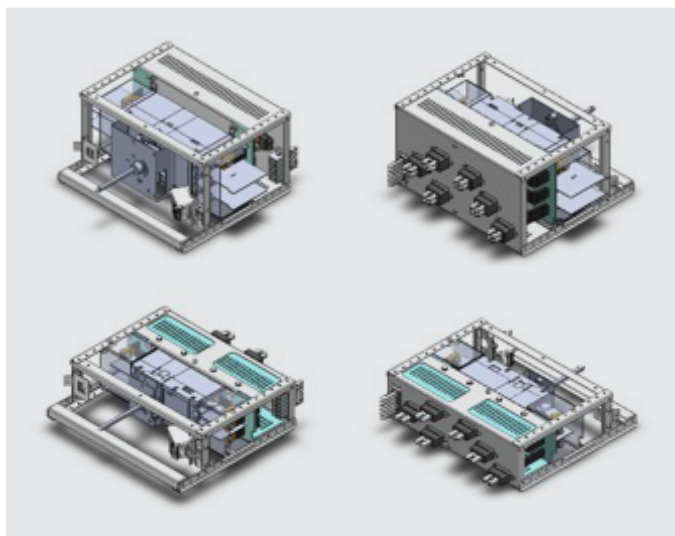
The connecting wires and communication cables between the switchgears can be routed through the switchgears to connect the compartments, and relevant ports can be reserved for convenient wire connection between the switchgears.

- ◆ Partition form: up to Form3b
- ◆ Maintenance direction: Rear
- ◆ Location of incoming and outgoing wires: top and bottom
- ◆ The maximum rated current of the feeder circuit: up to 630A
- ◆ Modular structure is adopted to facilitate any combination of units in the switchgear.
- ◆ The protection grade can be up to IP20 after the PnP unit is pulled out.
- ◆ An independent compartment is provided for each circuit, improving installation safety and personal protection.
- ◆ With the application of the PnP unit, it is convenient for users in maintenance without power outage, improving the continuity of power consumption and maintenance safety.
- ◆ The dedicated communication cable channel is effective against EMC interference.



PnP Unit

The plug-and-play (PnP) unit has an overall plug-and-pull function and can replace the plug-in circuit breaker, facilitating the maintenance of the functional unit. In addition, the circuits with the same circuit function can be interchanged, which is convenient for the on-site load adjustment. The current levels cover the SP solutions of 63A, 100A, 125A, 160A, 200A, 250A, 400A and 630A, the molded case circuit breaker is fixed, and the circuit breaker and the switchgear door are interlocked by a door coupling mechanism to prevent opening the outer door under load.



Withdrawable Switchgear

The withdrawable switchgear is equipped with withdrawable units and can be equipped with NDM3 molded case circuit breakers.

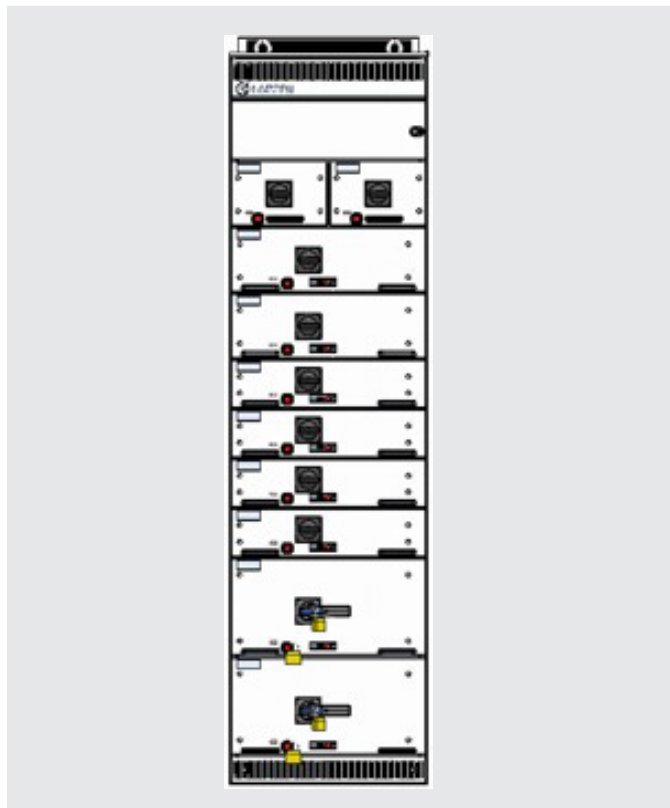
The standard switchgear structure is equipped with unified horizontal busbar compartment, vertical busbar compartment, inter-switchgear connection compartment, device compartment, and cable compartment.

Different switchgear widths and depths are available to suit different installation and maintenance requirements.

Under the premise of ensuring safety and providing convenient operation, it can provide users with easy and fast replacement and maintenance when the system is powered on, so as to guarantee the continuous power supply of important loads.

The connecting wires and communication cables between the switchgears can be routed through the switchgears to connect the compartments, and relevant ports can be reserved for convenient wire connection between the switchgears.

- ◆ Partition form: up to Form4b
- ◆ The maximum rated current can up to 630A for the feeder circuit, and 250KW for the motor circuit.
- ◆ Maintenance direction: Rear
- ◆ Location of incoming and outgoing wires: top and bottom
- ◆ Modular drawer structure is adopted to facilitate any combination of units in the switchgear.
- ◆ An independent compartment is provided for each circuit, improving installation safety and personal protection.
- ◆ The protection grade can be up to IP20 after the withdrawable unit is pulled out.
- ◆ The dedicated communication cable channel is effective against EMC interference.



Withdrawable Unit

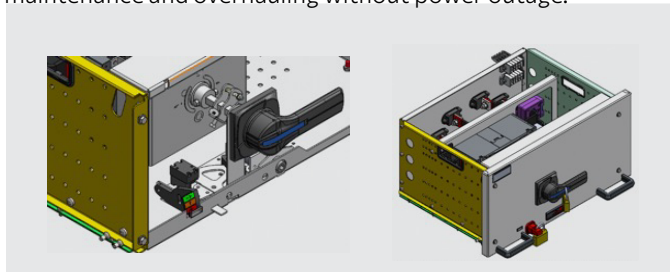
The withdrawable unit consists of a fixed part and a movable part, with the main structural components made of metal material. The movable part is reliably connected to the metal base plate through metal guide rail, effectively maintaining the continuity of the protective circuit. The withdrawable units of the same specification are 100% fully interchangeable, and can satisfy the needs of all kinds of motor protection and power distribution applications. Its maximum capacity is:

● MCC: 250kW/400V

● PCC: 630A 3P/4P

The withdrawable unit is usually installed in the standard withdrawable switchgear, and can also be installed in the multi-function feeder switchgear. The maximum partition type of the switchgear structure can be up to 4b, achieving modification and expansion without power outage and high continuity of power supply.

The withdrawable unit is of openable structure, a mechanical interlock is set between the withdrawable unit door and the circuit breaker, and emergency unlock function is configured for the switchgear door, which can achieve the commissioning, maintenance and overhauling without power outage.



The withdrawable unit has nine specifications, including 4E, 6E, 8E, 8E/2, 12E, 16E, 20E, 24E and 32E, with hand-operated mechanism and pushing mechanism.

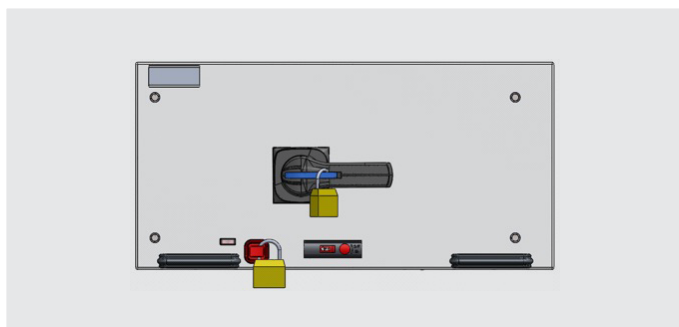
The main and auxiliary circuits are provided with terminals in the cable compartment.

The pushing mechanism of the entire-mold withdrawable unit is operated by a crank, making it easy to crank the drawer in and out;

The pushing mechanism of the half-mold withdrawable unit is equipped with an unlock button for direct manual operation.

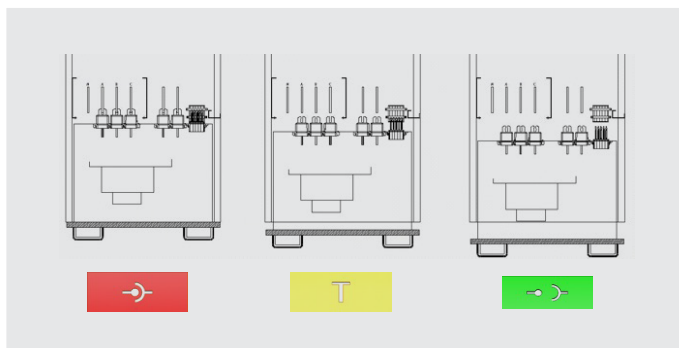
The withdrawable unit is equipped with multiple safety devices to ensure the safety of the equipment and operators to the maximum extent:

◆Manual error-proof interlock is adopted. When the molded case circuit breaker is switched on, the crank cannot be inserted, effectively preventing the functional unit from being inserted/withdrawn under load.



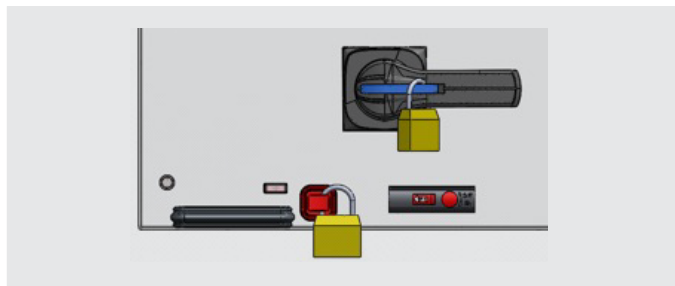
◆The drawer position signal is clear and accurate, the drawer is interlocked in place, and the circuit breaker can be switched on only when the drawer is in the "Connect" or "Test" position.

◆There are four positions: "Connect", "Test", "Isolate" and "Remove". The connector and distribution busbar on the incoming side of the withdrawable unit meet the isolation requirements when the drawer is in the "Test" position.



◆The withdrawable unit can be locked with up to three padlocks at three positions - "Connect", "Test" and "Isolate", effectively preventing personal injury caused by incorrect switch-on of cables or subordinate equipment during maintenance.

◆When the circuit breaker is switched off/on, its operating handle can be locked by a padlock to prevent mis-operation.



Capacitance Compensation Cabinet

NEA provides withdrawable capacitance compensation cabinet solutions, and the branch circuit is dedicated for protecting the fusible circuit breaker and the capacitor.

The contactor, capacitor and reactor are installed in modular unit. The design of modular and withdrawable unit has the following characteristics:

◆Compact structure, higher installation capacity per switchgear;

◆Easy expansion of later capacity;

◆More convenient maintenance and repair.

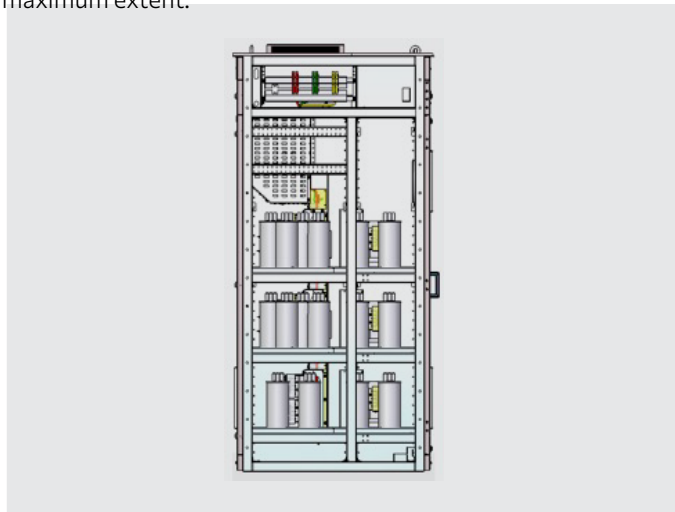
Transparent polycarbonate protective plates are installed on the front and between phases of the branch protection fuse:

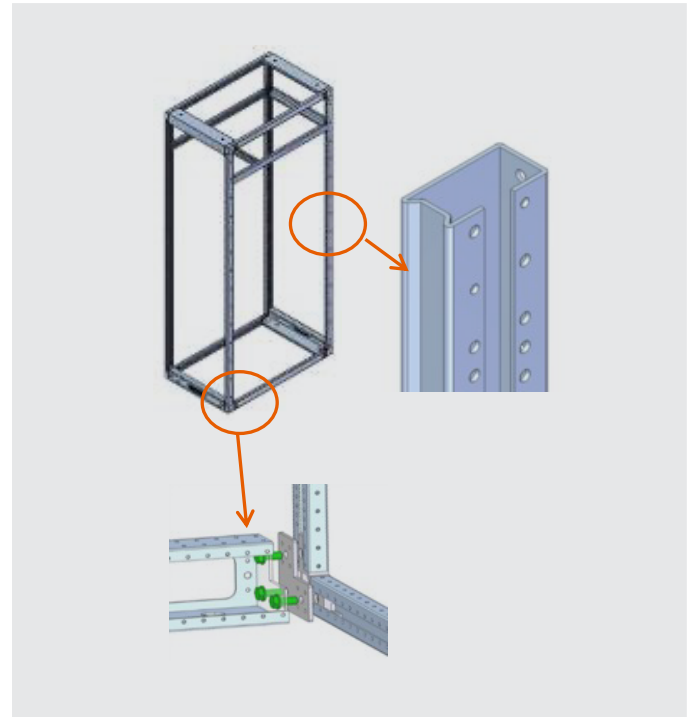
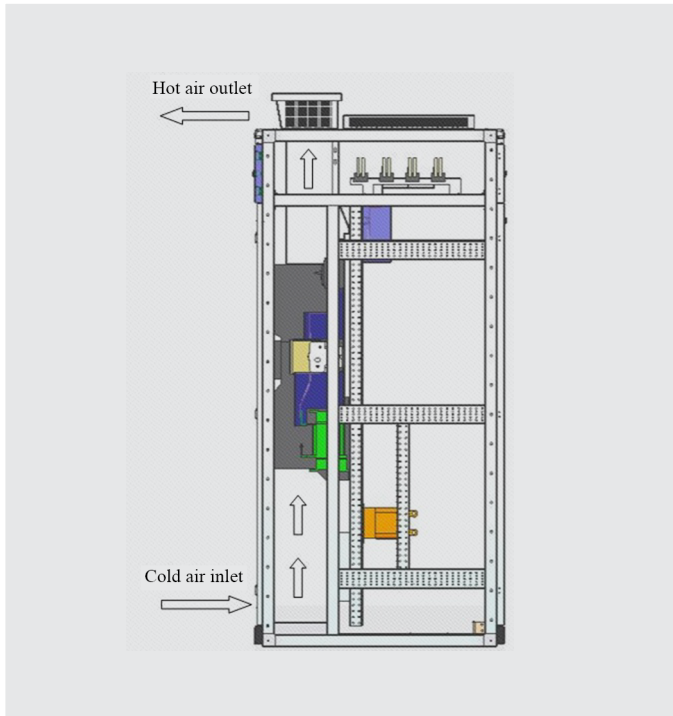
◆Avoid accidental electric shock when replacing the fuse core; avoid the impact of fuse failure on other normal circuits;

◆Protective cover is installed on the front of the exposed live parts in the switchgear to meet the protection level of IP20 for opening the door, ensuring the safety of the operators to the maximum extent.

◆NEA series soft starter switchgear/VFD switchgear is provided with a unique ventilation duct design, which can directly discharge the heat generated during the operation of the soft starter/VFD outside the switchgear, avoiding the circulation of hot air inside the switchgear, thereby improving the operating ambient temperature inside the switchgear and effectively extending the service life of the soft starter/VFD.

◆Protective cover is installed on the front of the exposed live parts in the switchgear to meet the protection level of IP20 for opening the door, ensuring the safety of the operators to the maximum extent.





Structural Design

Frame and Shell

Frame structure

The frame is made of 6cm bendable profile and composed of standard prefabricated components with preset interval modulus holes, which is easy to expand. The standard modulus is 1E=25mm, and a variety of standard sizes are available to meet the needs of different solutions.

◆ The frame is of non-conductive magnetic structure, and the magnetic breaking parts are made of high-strength zinc alloy to effectively prevent against eddy current effect. The frame is made of high-strength profiles and connected with self-tapping screws to ensure that the frame structure is maintenance-free.

◆ The frame, partitions and mounting plates are made of high-quality Al-Zn alloy coated steel sheet to prevent against corrosion.

Enclosure

◆ The enclosure is treated on the surface by epoxy resin powder spraying, and subjected to degreasing, surface adjustment and phosphating before spraying to improve the adhesion of the spraying material, making the enclosure beautiful, wear-resistant and corrosion-resistant, and realizing high durability.

◆ The door panels, top panels, rear panels and side panels are all installed with self-tapping screws. The protection level of the structure can be determined according to user needs, meeting IP20-IP41. The compartment or space for commissioning or maintenance are required to be installed with separate door panels, ensuring the safety of workers to the greatest extent. All the non-live parts of the metal structure are reliably grounded, with clear grounding signs to ensure the safety of operators.

Features:

- Flexible design: Provide the structural size scheme according to user needs, customize the installation solutions for fixed/withdrawable and mixed type, optimize the installation space.

- Flexible assembly: Modular profile fully assembled combination structure, which is flexible and convenient to install and easy to maintain on site.

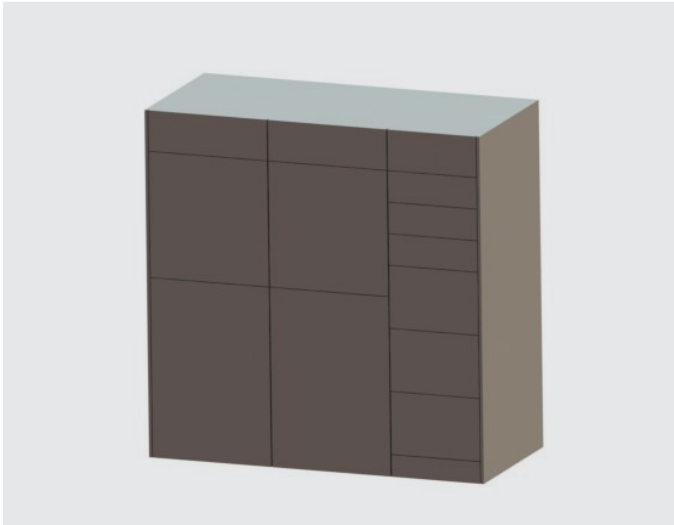
- Convenient switchgear combination: The top cover of the switchgear can be disassembled on site, making it easy to adjust the position of the main busbar and facilitate switchgear combination.

Flexible cabling: The switchgear is surrounded by high-strength detachable metal blanking plates, which can support the upper, lower, side and rear cable connection.

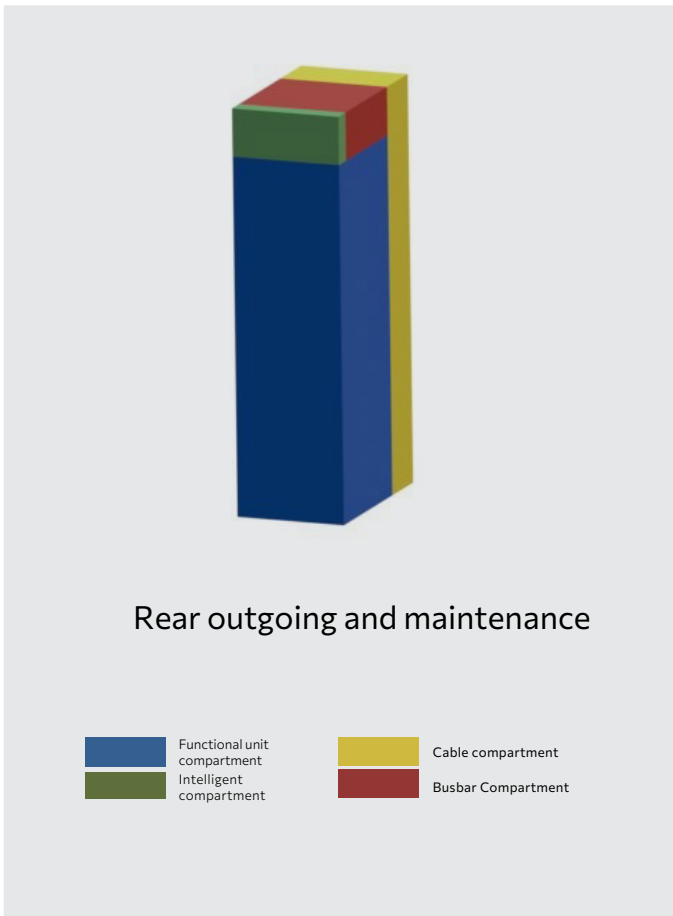
- Good heat dissipation effect: The top and bottom of the switchgear are designed with "vent window" which is conducive to ventilation and heat dissipation, and the temperature in the switchgear is kept stable through independent ventilation and heat dissipation channels.

Arrangement and Functional Compartments

Arrangement mode: single-sided



Internal compartment



The NEA LV switchgear consists of 4 different compartments.

- ◆Functional unit compartment: The withdrawable units, air circuit breakers, VFDs, soft starters, etc. are installed in the functional unit compartment.

- ◆Cable compartment: The incoming and outgoing copper busbars and wiring terminals are set in the cable compartment.

- ◆Intelligent compartment: The intelligent components such as PLC and information acquisition device can be installed in the intelligent compartment, and the intelligent compartment can also be used as a connection channel for the control line between the switchgears.

- ◆Busbar compartment: The main busbars are arranged in the busbar compartment.

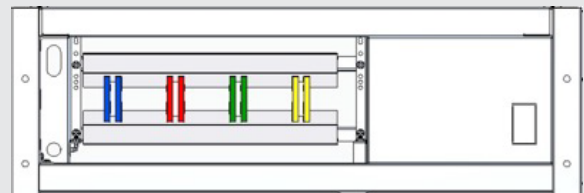
The NEA M LV switchgear is available with 2b/3b/4a/4b partitions, which are perfect for:

- ◆Effective prevention of fault arc spread;

- ◆Prevention against contact with neighboring functional units that are operating electrically.

Busbar system

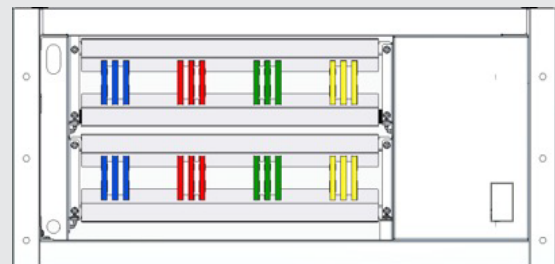
Main busbar



4000A system (maximum rated current of horizontal busbar: up to 4000A)



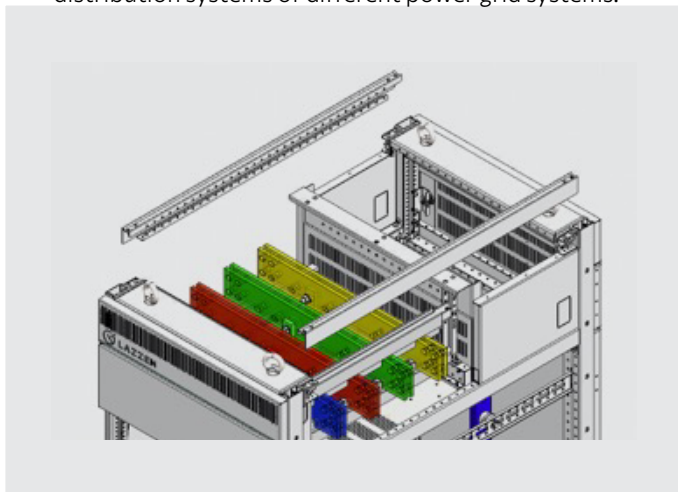
4000A/5000A system (maximum rated current of horizontal busbar: up to 5000A)



6300A system (maximum rated current of horizontal busbar: up to 6300A)

◆ **Convenient and reasonable:** The main busbar is placed on the top of the switchgear, and is composed of single or multiple copper bars, which not only minimizes the temperature rise impact of the copper bars on functional units, but also provides a safe and convenient operating space for the combination of switchgears.

◆ **Diverse specifications:** The main busbar system has a current range of 1600A to 6300A and is composed of single or multiple rectangular copper bars with different cross-sectional specifications, which can be adapted to distribution systems of different power grid systems.



◆ **Safe and reliable:** The busbar system is completely enclosed in an isolated busbar compartment, completely independent from other functional units. The rated short-term withstand current can reach up to 100kA/1s, and the rated peak withstand current up to 220kA, ensuring the dynamic and thermal stability of the busbar system in case of short circuit;

◆ **Easy switchgear combination:** The top cover of the busbar compartment is detachable, and the main busbar is placed in sections according to the width of the switchgear, and the switchgears can be flexibly and reliably combined on the spot through the standard reserved holes of the copper bar.

◆ **Safe insulation:** The busbar is fixed inside the switchgear through insulated busbar clamp and insulated bracket, with a stable insulation distance kept between phase wires and between the phase wire and the grounding component. All busbar brackets and insulating parts are moisture-proof, flame-retardant and self-extinguishing.

◆ **Low resistance and low consumption:** The copper bar in the switchgear is made of high-quality electrolytic copper with a purity of up to 99.90%, which conforms to GB/T 5585.1 standard.

◆ **The connecting copper bars are tightened by double-piece clamping bolts to effectively decrease the contact impedance and reduce the loss of the distribution circuit.**

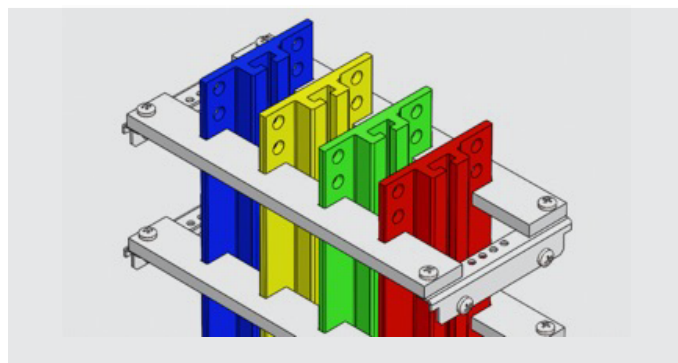
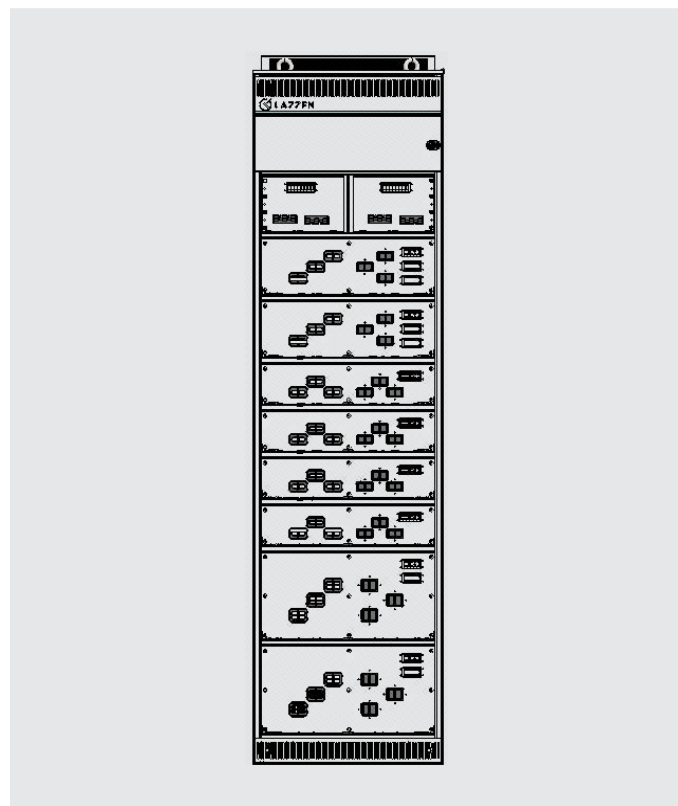
◆ **Multiple applications:** Users can select bare copper bar,

tin-plated copper bar, silver-plated copper bar according to the actual use environment (containing ammonia, sulfur, chloride or salt mist).

Distribution busbar

For standard feeder switchgear, the distribution busbar is a rectangular busbar, with a maximum current of 4200A.

For multi-function feeder switchgear, the power distribution busbar is the patented shaped busbar, which can be connected without holes, as well as the mixed installation of four functional units, namely, fixed (FFF), plug-in (DDD), hybrid (WFF/WFD/WFW), and withdrawable (WWW) units, with a maximum current of 2100A. Flexible configuration for design scheme: The modulus and number of withdrawable units can be flexibly configured in the design scheme of mixed installation of withdrawable units and fixed units.



◆ Shaped copper bar: Profiled copper bar is used in the vertical busbar to increase the heat dissipation area and mechanical strength.

Protective Earth Busbar (PE) and Neutral Wire (N)

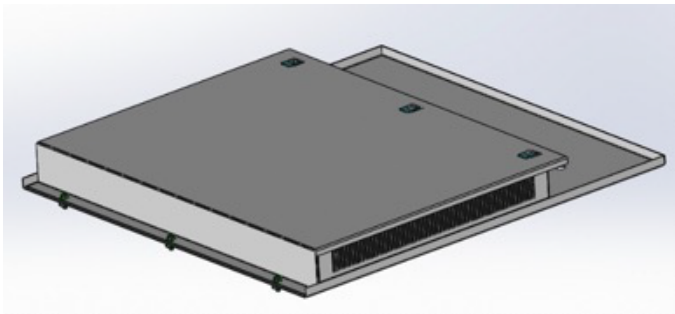
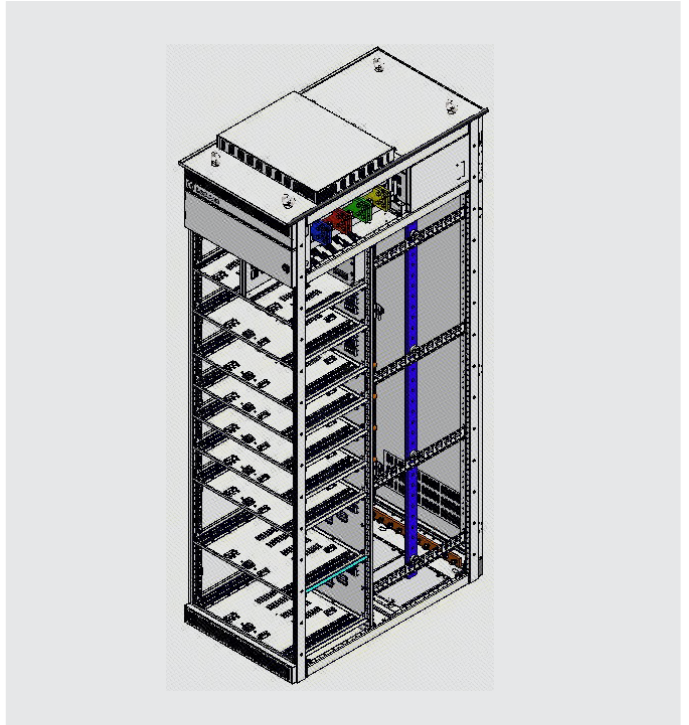
◆ The neutral wire (N) and the main busbar are installed in the same compartment, effectively reducing the impact of eddy current on the temperature rise of the entire switchgear.

◆ The protective earth busbar (PE) extends upwards from the back of the switchgear and is fixed to the frame to ensure electrical continuity. The copper bar is provided with modular holes to facilitate the connection of the cables.

◆ The neutral wire (N) of the control switchgear is arranged along the outgoing wire of the withdrawable switchgear, which is easy for users to connect.

Pressure Relief Cover

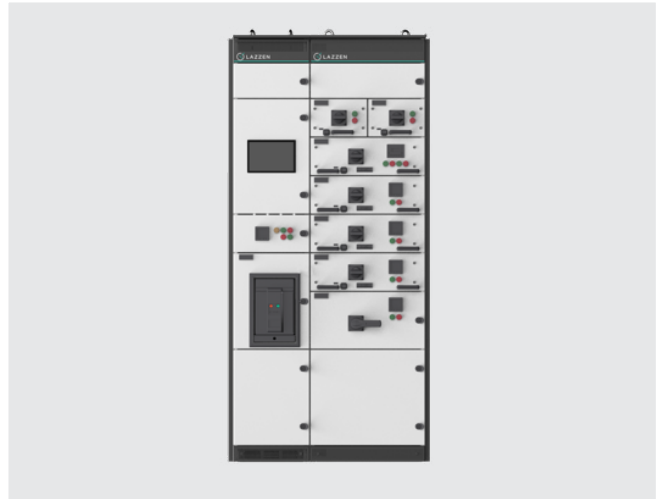
◆ The solution is capable to release the pressure through the pressure relief cover in the event of an arc fault inside the complete equipment, reducing the impact of the arc on the interior of the equipment and preventing it from spreading further. When an arc fault occurs inside the equipment, the pressure generated by the arc fault will push the pressure plate open, and the pressure relief cover can be easily bent through the micro-connection, thereby releasing the pressure.



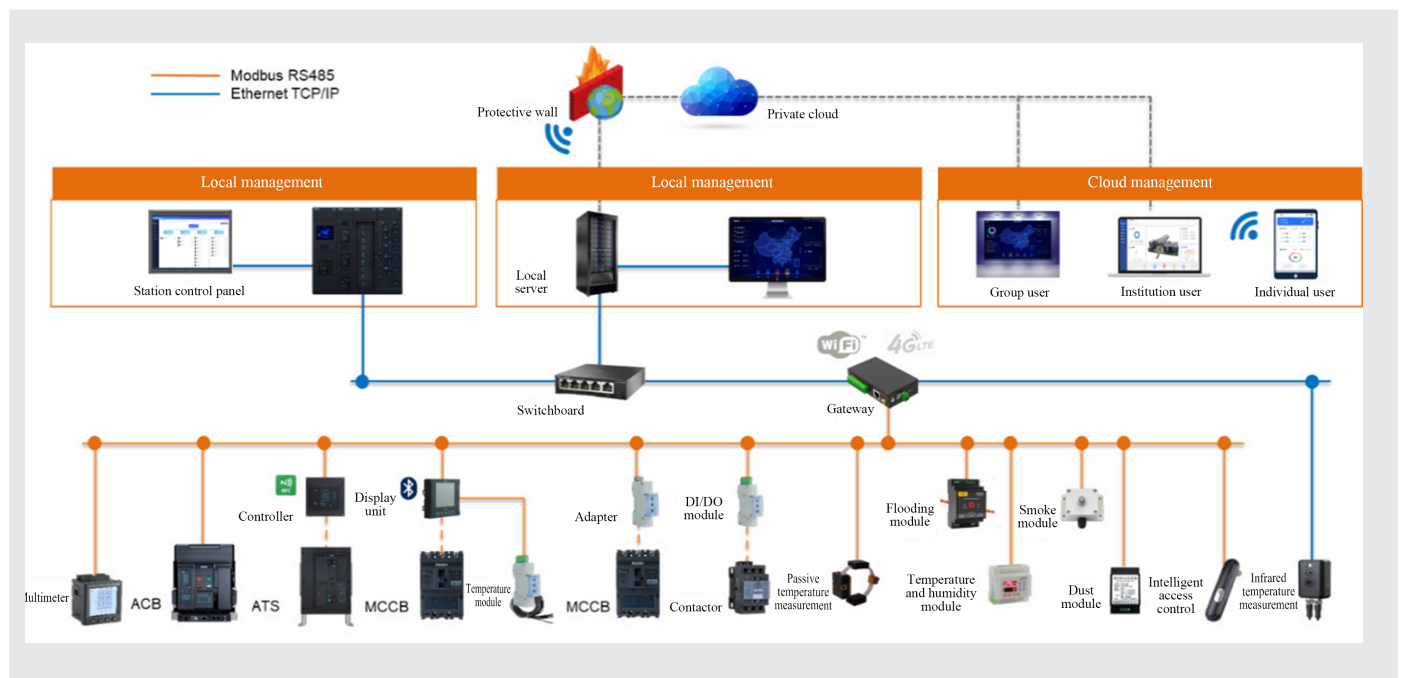
Intelligent System Solutions

The intelligent components and communication equipment manufactured by LAZZEN can be perfectly integrated with air circuit breaker, molded case circuit breaker, dual-power automatic transfer switch, miniature circuit breaker, contactor, power meter and gateway. Relying on remote management services, it can provide site management, energy efficiency management, intelligent power distribution, fault management and intelligent O&M.

LAZZEN provides users with a comprehensive electrical safety monitoring and management platform - "Intelligent Cloud Distribution System Platform", which is applied together with the intelligent electrical equipment (circuit breakers, instruments, etc.) and information technologies to achieve functions such as centralized data acquisition, transmission, and human-computer interaction. The platform can monitor and manage the project site in terms of station management, energy efficiency management, intelligent power distribution, fault management and intelligent O&M, and also enables automatic energy saving and consumption reduction by remote control, thus achieving the goal of "carbon reduction".



Architecture Diagram



Features

LAZZEN-MagicOink Power intelligent cloud power distribution system is an easy-to-use and efficient electrical digital systematic 1+2+3+4 solution with the functions of acquisition, monitoring, analysis, prediction, guidance and carbon saving.

1. A comprehensive electrical digital systematic solution that integrates software and hardware (developed independently by national brands for many years with full intelligent coverage)
2. Two information security systems to safeguard users' private data (three-level security system at public security level + information security management system)
3. Three core capabilities: analysis, prediction and regulation (Analysis: component health assessment; prediction: Predictive maintenance; Regulation: energy regulation strategy)
4. Four customer benefits: reliability, efficiency, cost reduction and low carbon (Reliability: improve power supply continuity; Efficiency: enhance the O&M efficiency; Cost Reduction: reduce the maintenance costs and asset losses; Low Carbon: optimize the energy utilization)

Application scenario

Protective Earth Busbar (PE) and Neutral Wire (N)

Flexible application

◆“Digital and intelligent” application to keep track of project information at any time

◆Modular interface design for quick and easy access

Coordinated Operation

◆Multi-platform application, supporting IOS, Android and Harmony OS

◆24/7 online monitoring to avoid blind spots in O&M management

◆Synchronized with the web for real-time feedback of data and information

Easy Operation

◆Project management, quick switching of project scenarios, online queries

◆Modular design with nine-panel grid for independent application of each functional section

Page Display

◆Overview information: Site information, site assets, site power consumption

◆Monitoring and control: Equipment monitoring, one-key switching, scheduled control

◆Topology logs: System/topology, video monitoring, logs and records

Asset Management

◆Device displayed by classification, same as the web end

◆Presentation of power distribution architecture, quick grasp of equipment connection overview

Fault and O&M Management

◆Faults: SMS notification, quick identification, fault classification, fault analysis

◆O&M: Fault work order, fault progress query, fault

◆Records: Operation records, displacement records (account number)

PC terminal

Main Advantages

◆System architecture: B/S architecture, convenient deployment, and reduced maintenance costs in the later stage

◆Flexible deployment: Multiple deployment modes, supporting local and cloud applications

◆System integration: Integration of low and medium voltage system platforms, covering primary, secondary and terminal equipment

◆Intelligent experience: Committed to improving customers' power supply continuity and O&M efficiency, reducing asset losses and O&M costs, optimizing energy utilization, and assisting customers in low-carbon and sustainable development.

◆System safety: Leading national brand, data privacy security

◆Service customization: Provide customized services and products in line with customers' business and operation logic.

Page Display

◆Four management functions: Project management, energy management, asset management, electric charge management

◆Data interaction: Power environment monitoring, equipment control, fault warning, O&M management, history Logging

Solution Components

Software platform

Intelligent Cloud Power Distribution System (LYME Series)

◆ Project Management

Data overview, customized display module

◆ Asset Management

Establish traceable equipment areas

◆ Energy Management

Energy consumption analysis, energy efficiency analysis, renewable energy, carbon peaking and carbon neutrality goals, electric energy quality, trend comparison

◆ Electric Charge Management

Electric charge metering (electricity price, basic price, electric power change), electricity consumption trend

◆ Power environment monitoring

Electrical parameter, energy consumption parameter, service life status, diagnostic information

◆ Equipment control

Establish a batch operation mechanism to facilitate on-site applications

◆ Fault alarm

Make statistics of the causes and types of alarms, and provide fault analysis suggestions

◆ Operation and maintenance management

Define the O&M business logic, constantly observe the troubleshooting progress and status

◆ Historical Record

Access to historical data, effective targeted maintenance

◆ Extended Functions

Single-line diagram positioning, 3D scenario display, customized pages, device connection, etc.



Communication module

Edge Computing Gateway

- ※ Ultra-thin body, rail-based installation, more convenient
- ※ Plug and play, automatic scanning, fast networking
- ※ Available with WiFi, 4G, LoRa, TCP/IP
- ※ 2 sets of RS485 ports, satisfying more complex site requirements



Switchboard

- ※ 5, 8 and 16 network ports optional, satisfying the needs of multi-device access
- ※ Rail-based installation
- ※ 10-58V DC voltage input



Wired temperature detection module

- ※ Lightweight body, modular design
- ※ Temperature range: 0 to +150 °C
- ※ 6-way temperature measurement
- ※ Plug and play, fast networking



Infrared temperature measuring module

- ※ Visual temperature distribution
- ※ Magnet-based installation, wall mounting, lifting
- ※ Temperature range: -20 to +150 °C
- ※ Cross-positioning of the highest temperature



Wireless temperature sensor

- ※ Wireless passive, maintenance-free, starting current of 5A
- ※ Installed with metal strap
- ※ Temperature range: -50 to +125 °C
- ※ Measuring accuracy: $\pm 1^{\circ}\text{C}$



Switchgear environment testing module

- ※ Dust content testing to prevent abnormal working conditions
- ※ Smoke detection, warning of electrical fires
- ※ Warning of switchgear flooding to protect the safe operation of the power distribution system
- ※ Temperature and humidity monitoring for working environment to prevent condensation and frosting

Vibration monitoring module

- ※ Switchgear intrusion monitoring
- ※ Magnet-based installation



Intelligent access control

- ※ Prevent unauthorized personnel from opening switchgear doors
- ※ Support remote unlocking and unlocking by card swiping
- ※ Support unlocking with mechanical key in case of emergency



Human-machine interface

Station control panel

- ※ Multiple sizes available, including 10.1", 13.3", 15.6", 17.3", 18.5" and 19"
- ※ Ethernet connection
- ※ Customizable configurations (customizable CPU, RAM, HDD)
- ※ Rapid deployment of client and support for cloud and local deployment

QR Code Nameplate

- ※ Scan the QR code on the nameplate to get product information and configuration list.
- ※ Scan the QR code to get the digital management of equipment assets and the operation and maintenance files.
- ※ Access to expert communication immediately
- ※ Low-carbon operation and maintenance, eliminating the loss and wear of paper operation and maintenance files, waste of resources, etc.



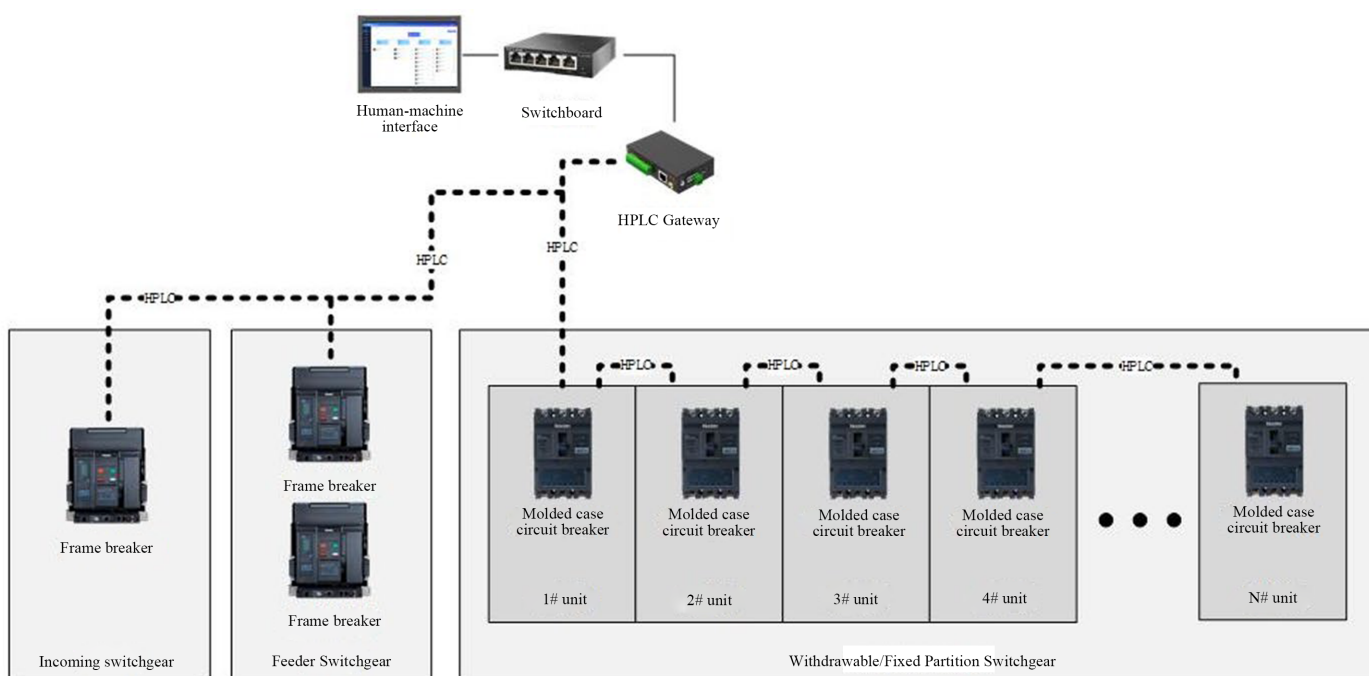
Switchgear: C0000001

Typical Solution Configuration

Derived Communication Solution Package

Carrier Communication Solution

Communication Topology



The intelligent components and communication equipment manufactured by LAZZEN can be perfectly integrated with air circuit breaker, molded case circuit breaker, dual-power automatic transfer switch, miniature circuit breaker, contactor, power meter and gateway. Relying on remote management services, it can provide site management, energy efficiency management, intelligent power distribution, fault management and intelligent O&M.

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4G&5G Communication Solution

Communication Topology

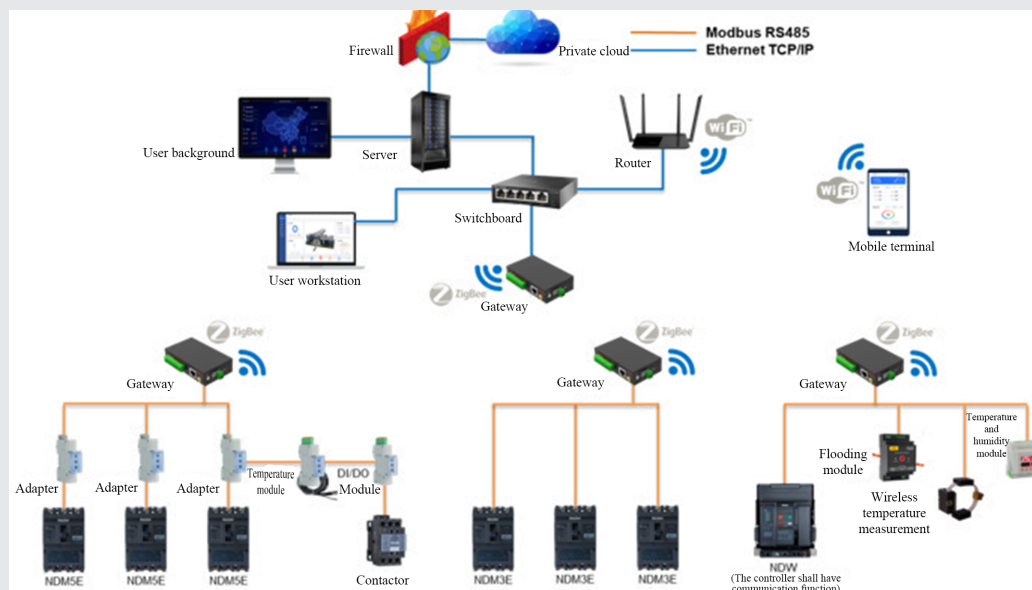
4G&5G communication solution is mainly for top-level communication, especially for some projects that require remote wireless communication between the switchgears.

S/N	Material code	Material name	Functions
1	30174590	NDGW-1TG-box	4G/5G gateway
2	30156492	Plug-in triple-cut card, 3G/year	Traffic card
3	30164769	IoT card, 12G/year, mobile traffic card	Traffic card

Zigbee communication solution

Communication Topology

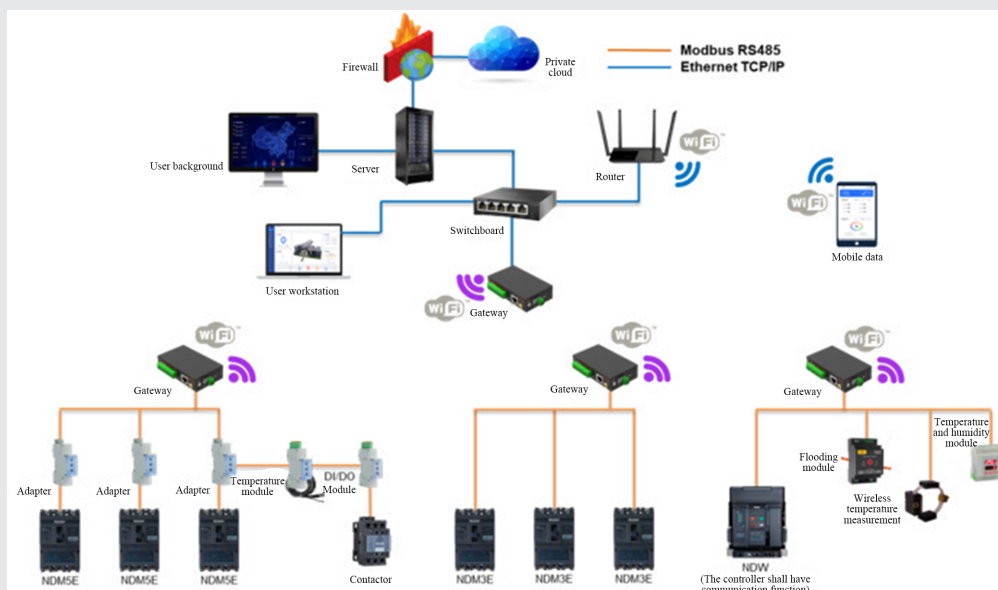
Zigbee communication solution is mainly suitable for component-to-component near field communication. It is based Zigbee transmitting device, Zigbee receiving device, intelligent circuit breaker (such as NDM3E, NDM5E, NDW*), intelligent components, etc. See the following figure for details.



Reference configuration list

S/N	Material code	Material name	Functions
Functional devices			
1	30174903	NDGW-2Z-11E	Modbus RS485 to Zigbee
2	30174904	NDGW-2ZC-11E	Zigbee to Modbus TCP
3	30174184	Station control host	185 inches
4	30162137	ISE1005D-S	Switchboard
5	30136019	WHD20R-11/CJ	Temperature and humidity sensor
Basic devices			
1		24VDC switch power supply module	Provide power supply for gateways, sensors and other smart devices
2		NDW1A Series	With communication function
3		NDW2 Series	With communication function
4		NDW3 Series	With communication function
5		NDM3E-ET32 Series	
6		NDMSE-ETB-PT Series	
7		NDMSE-ETC-PT Series	

Wi-Fi communication solution is mainly suitable for component-to-component near field communication. It is based on Wi-Fi transmitting device, Wi-Fi receiving device, intelligent circuit breaker (such as NDM3E, NDM5E, NDW*), intelligent components, etc. See the following figure for details.

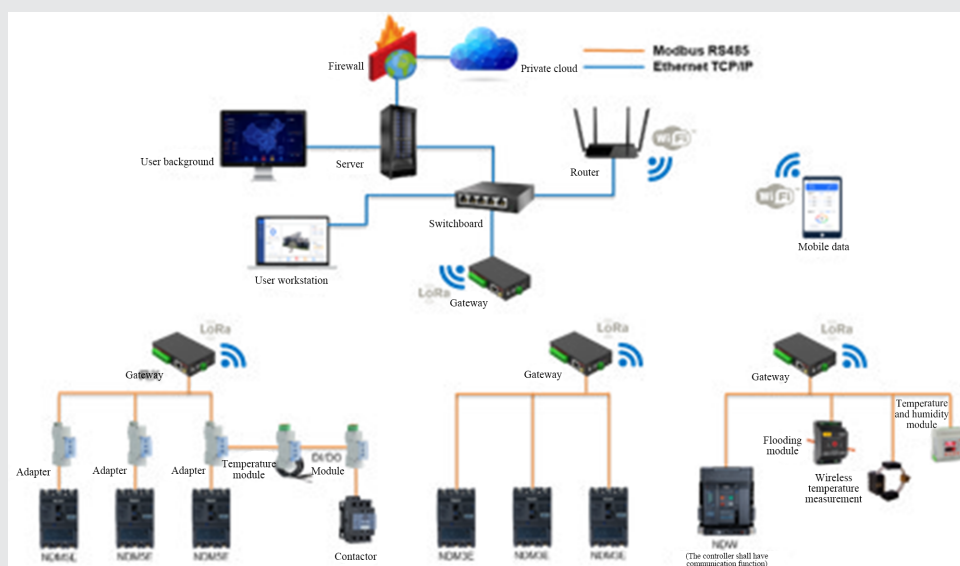


S/N	Material code	Material name	Functions
Functional devices			
1	30174940	NDGW-2W-21G	Modbus RS485 to WiFi
2	30170812	Huawei 4g Router B311b-853	Router
3	30174184	Station control host	18.5 inches
4	30162137	ISE1005D-S	Switchboard
5	30136019	WHD20R-11/CJ	Temperature and humidity sensor
Basic devices			
1		24VDC switch power supply module	Provide power supply for gateways, sensors and other smart devices
2		NDW1A Series	With communication function
3		NDW2 Series	With communication function
4		NDW3 Series	With communication function
5		NDM3E-ET32 Series	
6		NDM5E-ETB-PT Series	
7		NDM5E-ETC-PT Series	

LoRa Communication Solution

Communication Topology

LoRa communication solution is mainly suitable for component-to-component near field communication. It is based on LoRa transmitting device, LoRa receiving device, intelligent circuit breaker (such as NDM3E, NDM5E, NDW*), intelligent components, etc. See the following figure for details.



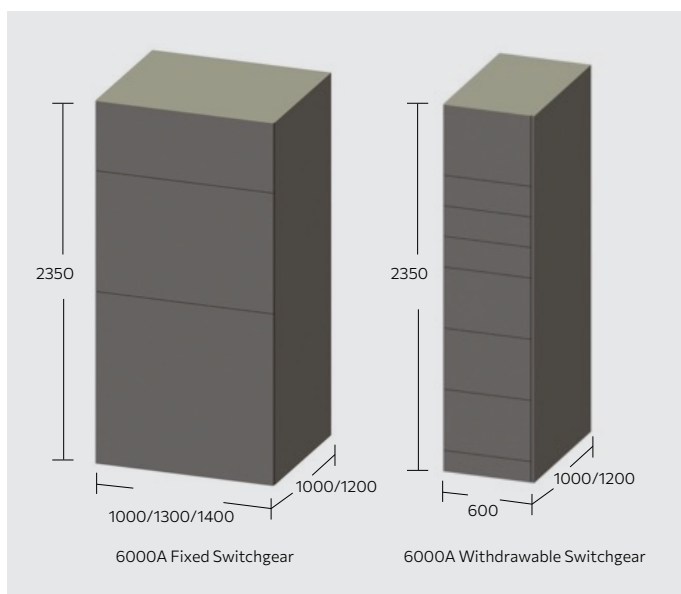
Reference configuration list

S/N	Material code	Material name	Functions
Functional devices			
1	30174899	NDGW-2L-11E	Modbus RS485 to LoRa
2	30174902	NDGW-2LC-11E	LoRa to ModBus TCP
3	30174184	Station control host	185 inches
4	30162137	ISE1005D-S	Switchboard
5	30136019	WHD20R-11/CJ	Temperature and humidity sensor
Basic devices			
1		24VDC switch power supply module	Provide power supply for gateways, sensors and other smart devices
2		NDW1A Series	With communication function
3		NDW2 Series	With communication function
4		NDW3 Series	With communication function
5		NDM3E-ET32 Series	
6		NDM5E-ETB-PT Series	
7		NDM5E-ETC-PT Series	

Product Outline and Installation

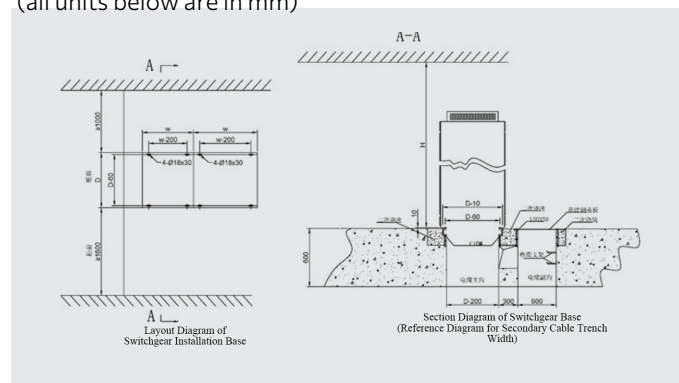
Product Outline and Installation

The following units are all in mm, representing for the switchgear frame size, excluding the ventilation windows on the switchgear top.



Product Installation Diagram

W: Switchgear width; D: Switchgear depth
(all units below are in mm)



Installation Requirements for LV Switchgear Distribution Room

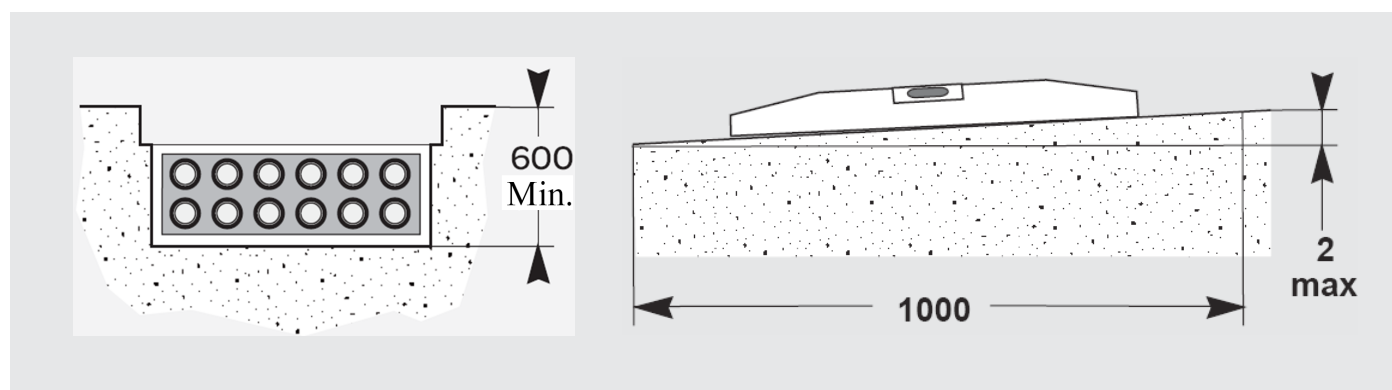
- ◆ The LV switchgear shall be installed vertically in the distribution room.
- ◆ If installed against the wall, to satisfy the heat dissipation requirements, the distance shall be ≥ 100 mm from the rear obstacle and ≥ 600 mm from the top obstacle.
- ◆ The width of the operating channel in front of the LV switchgear door is shown in the table below.

Minimum Width of LV Switchgear Channels Arranged in Rows (m)

Type of LV Switchgear		Single row			Two rows, face to face			Two rows, back to back			Multiple rows in the same direction			Two rows, back to back			Multiple rows in the same direction		
		Before	Behind		Before	Behind		Before	Behind		Before	Behind		Before	Behind		Before	Behind	
			Maintenance	Operating		Maintenance	Operating		Maintenance	Operating		Maintenance	Operating		Maintenance	Operating		Maintenance	Operating
Fixed	Unrestricted	1.5	1.0	1.2	2.0	1.0	1.2	1.5	1.5	2.0	2.0	1.5	1.0	1.0					
	Restricted	1.3	0.8	1.2	1.8	0.8	1.2	1.3	1.3	2.0	2.0	1.3	0.8	0.8					
Withdr- awable	Unrestricted	1.8	1.0	1.2	2.3	1.0	1.2	1.8	1.0	2.0	2.3	1.8	1.0	1.0					
	Restricted	1.6	0.8	1.2	2.0	0.8	1.2	1.6	0.8	2.0	2.0	1.6	0.8	0.8					

Note: Please refer to national and relevant standards for specific item design.

- ◆ The installation site shall be clean. The ground shall be flat, with a horizontal deviation of no more than 2 mm/m.
- ◆ If the rear connection is adopted, an available space of at least 1,000 mm shall be reserved behind the NEA for opening the switchgear door and maintenance. If the front connection is used, an available space of at least 100 mm shall be reserved behind the NEA to avoid potential damage to the switchgear surface during installation.
- ◆ An available space of at least 1,200mm (or 1,600mm for 6300A) should be reserved in front of the NEA to allow for full opening of the door, maintenance or use of lifting equipment (where applicable).
- ◆ Some space shall be reserved on both sides for future expansion (where applicable).
- ◆ An available space of at least 600mm shall be reserved at the top for top connection.
- ◆ There are two options for cable routing for bottom connection. 1) The cable is laid in the trough at the bottom of the device, and the trough shall be at least 600mm deep to ensure the minimum bending radius of the cable; 2) the cable is laid under the raised floor, in which case it is necessary to drill holes in the floor for cable routing.



Packaging and Storage

During transportation and intermediate storage, the switchgear shall be protected with suitable packaging. The sharp edges and corners of the switchgear shall be treated before packing. In order to facilitate the operation of forklift truck, wooden cross rack shall be provided directly for unpacked switchgear, or installed underneath the packaging materials for packaged switchgear. To protect its body from moisture, the packaging of the switchgear shall be wrapped with plastic film, and a desiccant shall be provided between the plastic film and the body.

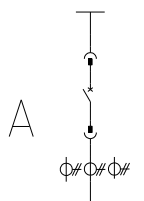
The switchgear shall be stored in such a warehouse with an environment temperature of -25°C to $+55^{\circ}\text{C}$, a relative humidity of below 70%, and no acidic, alkaline or other corrosive gases in the surrounding air.

Primary Circuit Solution

For the functional units of the LV switchgear with E=25mm and a height of 2,200mm, the installation space is 72E.

Option A - Top Incoming

Scheme Diagram

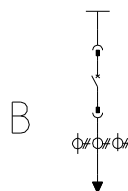


Option A

Switchgear Type		(Top) incoming					
Current (A)		Circuit breaker (withdrawable)	CTs	Unit height	Minimum size /mm		
Switchgear height					Switchgear width	Switchgear depth	
A01	400	NDW2-16/C04/3/KY D2B2F2 M	BH-0.66 400/5	24E	2200/2350	400	1000/1200
A02	630	NDW2-16/C06/3/KY D2B2F2 M	BH-0.66 600/5	24E	2200/2350	400	1000/1200
A03	800	NDW2-16/C08/3/KY D2B2F2 M	BH-0.66 800/5	24E	2200/2350	400	1000/1200
A04	1000	NDW2-16/C10/3/KY D2B2F2 M	BH-0.66 1000/5	24E	2200/2350	400	1000/1200
A05	1250	NDW2-16/C12/3/KY D2B2F2 M	BH-0.66 1200/5	24E	2200/2350	400	1000/1200
A06	1600	NDW2-16/C16/3/KY D2B2F2 M	BH-0.66 1500/5	24E	2200/2350	400	1000/1200
A07	2000	NDW2-20/C20/3/KY D2B2F2 M	BH-0.66 2000/5	24E	2200/2350	600	1000/1200
A08	2500	NDW2-32/C25/3/KY D2B2F2 M	BH-0.66 2500/5	32E	2200/2350	600	1000/1200
A09	2900	NDW2-32/C29/3/KY D2B2F2 M	BH-0.66 3000/5	32E	2200/2350	600	1000/1200
A10	3200	NDW2-32/C32/3/KY D2B2F2 M	BH-0.66 3000/5	32E	2200/2350	600	1000/1200
A11	4000	NDW2-40/C40/3/KY D2B2F2 M	BH-0.66 4000/5	32E	2200/2350	650	1000/1200
A12	5000	NDW2-63/C50/3/KY D2B2F2 M	BH-0.66 5000/5	34E	2200/2350	1100	1000/1200
A13	6300	NDW2-63/C63/3/KY D2B2F2 M	BH-0.66 6000/5	34E	2200/2350	1100	1000/1200
A14	400	NDW2-16/C04/4/KY D2B2F2 M	BH-0.66 400/5	24E	2200/2350	600	1000/1200
A15	630	NDW2-16/C06/4/KY D2B2F2 M	BH-0.66 600/5	24E	2200/2350	600	1000/1200
A16	800	NDW2-16/C08/4/KY D2B2F2 M	BH-0.66 800/5	24E	2200/2350	600	1000/1200
A17	1000	NDW2-16/C10/4/KY D2B2F2 M	BH-0.66 1000/5	24E	2200/2350	600	1000/1200
A18	1250	NDW2-16/C12/4/KY D2B2F2 M	BH-0.66 1200/5	24E	2200/2350	600	1000/1200
A19	1600	NDW2-16/C16/4/KY D2B2F2 M	BH-0.66 1500/5	24E	2200/2350	600	1000/1200
A20	2000	NDW2-20/C20/4/KY D2B2F2 M	BH-0.66 2000/5	32E	2200/2350	600	1000/1200
A21	2500	NDW2-32/C25/4/KY D2B2F2 M	BH-0.66 2500/5	32E	2200/2350	650	1000/1200
A22	2900	NDW2-32/C29/4/KY D2B2F2 M	BH-0.66 3000/5	32E	2200/2350	650	1000/1200
A23	3200	NDW2-32/C32/4/KY D2B2F2 M	BH-0.66 3000/5	32E	2200/2350	650	1000/1200
A24	4000	NDW2-40/C40/4/KY D2B2F2 M	BH-0.66 4000/5	32E	2200/2350	650	1000/1200
A25	5000	NDW2-63/C50/4/KY D2B2F2 M	BH-0.66 5000/5	34E	2200/2350	1200	1000/1200
A26	6300	NDW2-63/C63/4/KY D2B2F2 M	BH-0.66 6000/5	34E	2200/2350	1200	1000/1200

Option B - Feeder (1 ACB)

Scheme Diagram

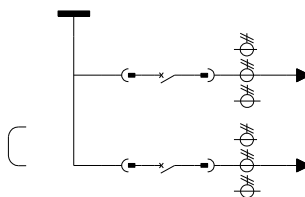


Option B

		Switchgear Type	Feeder					
Current (A)		Circuit breaker (withdrawable)	CTs	Unit height	Minimum size /mm			
					Switchgear height	Switchgear width	Switchgear depth	
B01	400	NDW2-16/C04/3/KY D2B2F2 M	BH-0.66 400/5	24E	2200/2350	400	1000/1200	
B02	630	NDW2-16/C06/3/KY D2B2F2 M	BH-0.66 600/5	24E	2200/2350	400	1000/1200	
B03	800	NDW2-16/C08/3/KY D2B2F2 M	BH-0.66 800/5	24E	2200/2350	400	1000/1200	
B04	1000	NDW2-16/C10/3/KY D2B2F2 M	BH-0.66 1000/5	24E	2200/2350	400	1000/1200	
B05	1250	NDW2-16/C12/3/KY D2B2F2 M	BH-0.66 1200/5	24E	2200/2350	400	1000/1200	
B06	1600	NDW2-16/C16/3/KY D2B2F2 M	BH-0.66 1500/5	24E	2200/2350	400	1000/1200	
B07	2000	NDW2-20/C20/3/KY D2B2F2 M	BH-0.66 2000/5	32E	2200/2350	600	1000/1200	
B08	2500	NDW2-32/C25/3/KY D2B2F2 M	BH-0.66 2500/5	32E	2200/2350	600	1000/1200	
B09	2900	NDW2-32/C29/3/KY D2B2F2 M	BH-0.66 3000/5	32E	2200/2350	600	1000/1200	
B10	3200	NDW2-32/C32/3/KY D2B2F2 M	BH-0.66 3000/5	32E	2200/2350	600	1000/1200	
B11	400	NDW2-16/C04/4/KY D2B2F2 M	BH-0.66 400/5	24E	2200/2350	600	1000/1200	
B12	630	NDW2-16/C06/4/KY D2B2F2 M	BH-0.66 600/5	24E	2200/2350	600	1000/1200	
B13	800	NDW2-16/C08/4/KY D2B2F2 M	BH-0.66 800/5	24E	2200/2350	600	1000/1200	
B14	1000	NDW2-16/C10/4/KY D2B2F2 M	BH-0.66 1000/5	24E	2200/2350	600	1000/1200	
B15	1250	NDW2-16/C12/4/KY D2B2F2 M	BH-0.66 1200/5	24E	2200/2350	600	1000/1200	
B16	1600	NDW2-16/C16/4/KY D2B2F2 M	BH-0.66 1500/5	24E	2200/2350	600	1000/1200	
B17	2000	NDW2-20/C20/4/KY D2B2F2 M	BH-0.66 2000/5	32E	2200/2350	600	1000/1200	
B18	2500	NDW2-32/C25/4/KY D2B2F2 M	BH-0.66 2500/5	32E	2200/2350	650	1000/1200	
B19	2900	NDW2-32/C29/4/KY D2B2F2 M	BH-0.66 3000/5	32E	2200/2350	650	1000/1200	
B20	3200	NDW2-32/C32/4/KY D2B2F2 M	BH-0.66 3000/5	32E	2200/2350	650	1000/1200	

Option C - Feeder (2 ACBs)

Scheme Diagram

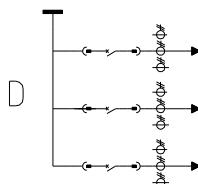


Option C

		Switchgear Type	Feeder					
Current (A)		Minimum size /mm						
		Circuit breaker (withdrawable)	CTs	Unit height	Switchgear height	Switchgear width	Switchgear depth	
C01	2000	NDW2-20/C20/3/KY D2B2F2 M	BH-0.66 2000/5	24E	2200/2350	800	1000/1200	
C02	2000	NDW2-20/C20/3/KY D2B2F3 M	BH-0.66 2000/5	24E				
C03	2500	NDW2-32/C25/3/KY D2B2F1 M	BH-0.66 2500/5	24E	2200/2350	800	1000/1200	
C04	2500	NDW2-32/C25/3/KY D2B2F2 M	BH-0.66 2500/5	24E				
C05	2000	NDW2-20/C20/4/KY D2B2F2 M	BH-0.66 2000/5	24E	2200/2350	800	1000/1200	
C06	2000	NDW2-20/C20/4/KY D2B2F3 M	BH-0.66 2000/5	24E				

Option D - Feeder (3 ACBs)

Scheme Diagram

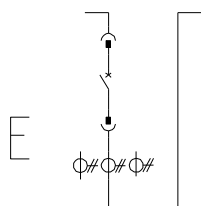


Option D

Switchgear Type		Feeder					
Current (A)	Minimum size /mm						
	Circuit breaker (withdrawable)	CTs	Unit height	Switchgear height	Switchgear width	Switchgear depth	
D01	400	NDW2-16/C04/3/KY D2B2F0 M	BH-0.66 400/5	24E	2200/2350	800	1000/1200
D02	630	NDW2-16/C06/3/KY D2B2F1 M	BH-0.66 600/5	24E	2200/2350	800	1000/1200
D03	800	NDW2-16/C08/3/KY D2B2F2 M	BH-0.66 800/5	24E	2200/2350	800	1000/1200
D04	1000	NDW2-16/C10/3/KY D2B2F2 M	BH-0.66 1000/5	24E	2200/2350	800	1000/1200
D05	1250	NDW2-16/C12/3/KY D2B2F2 M	BH-0.66 1200/5	24E	2200/2350	800	1000/1200
D06	1600	NDW2-16/C16/3/KY D2B2F2 M	BH-0.66 1500/5	24E	2200/2350	800	1000/1200
D07	1600	NDW2-16/C16/4/KY D2B2F3 M	BH-0.66 1500/5	24E	2200/2350	800	1000/1200

Option E - Bus coupler

Scheme Diagram

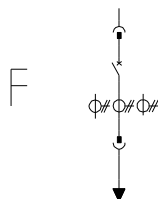


Option E

		Switchgear Type	Bus coupler				
Current (A)		Minimum size /mm					
		Circuit breaker (withdrawable)	CTs	Unit height	Switchgear height	Switchgear width	Switchgear depth
E01	400	NDW2-16/C04/3/KY D2B2F2 M	BH-0.66 400/5	24E	2200	600	1000/1200
E02	630	NDW2-16/C06/3/KY D2B2F2 M	BH-0.66 600/5	24E	2200	600	1000/1200
E03	800	NDW2-16/C08/3/KY D2B2F2 M	BH-0.66 800/5	24E	2200	600	1000/1200
E04	1000	NDW2-16/C10/3/KY D2B2F2 M	BH-0.66 1000/5	24E	2200	600	1000/1200
E05	1250	NDW2-16/C12/3/KY D2B2F2 M	BH-0.66 1200/5	24E	2200	600	1000/1200
E06	1600	NDW2-16/C16/3/KY D2B2F2 M	BH-0.66 1500/5	24E	2200	600	1000/1200
E07	2000	NDW2-20/C20/3/KY D2B2F2 M	BH-0.66 2000/5	32E	2200	800	1000/1200
E08	2500	NDW2-32/C25/3/KY D2B2F2 M	BH-0.66 2500/5	32E	2200	800	1000/1200
E09	2900	NDW2-32/C29/3/KY D2B2F2 M	BH-0.66 3000/5	32E	2200	800	1000/1200
E10	3200	NDW2-32/C32/3/KY D2B2F2 M	BH-0.66 4000/5	32E	2200	800	1000/1200
E11	4000	NDW2-40/C40/3/KY D2B2F2 M	BH-0.66 4000/5	32E	2200	850	1000/1200
E12	5000	NDW2-63/C50/3/KY D2B2F2 M	BH-0.66 5000/5	34E	2200	1300	1000/1200
E13	6300	NDW2-63/C63/3/KY D2B2F2 M	BH-0.66 6000/5	34E	2350	1300	1000/1200
E14	400	NDW2-16/C04/4/KY D2B2F2 M	BH-0.66 400/5	24E	2200	800	1000/1200
E15	630	NDW2-16/C06/4/KY D2B2F2 M	BH-0.66 600/5	24E	2200	800	1000/1200
E16	800	NDW2-16/C08/4/KY D2B2F2 M	BH-0.66 800/5	24E	2200	800	1000/1200
E17	1000	NDW2-16/C10/4/KY D2B2F2 M	BH-0.66 1000/5	24E	2200	800	1000/1200
E18	1250	NDW2-16/C12/4/KY D2B2F2 M	BH-0.66 1200/5	24E	2200	800	1000/1200
E19	1600	NDW2-16/C16/4/KY D2B2F2 M	BH-0.66 1500/5	24E	2200	800	1000/1200
E20	2000	NDW2-20/C20/4/KY D2B2F2 M	BH-0.66 2000/5	32E	2200	800	1000/1200
E21	2500	NDW2-32/C25/4/KY D2B2F2 M	BH-0.66 2500/5	32E	2200	850	1000/1200
E22	2900	NDW2-32/C29/4/KY D2B2F2 M	BH-0.66 3000/5	32E	2200	850	1000/1200
E23	3200	NDW2-32/C32/4/KY D2B2F2 M	BH-0.66 3000/5	32E	2200	850	1000/1200
E24	4000	NDW2-40/C40/4/KY D2B2F2 M	BH-0.66 4000/5	32E	2200	850	1000/1200
E25	5000	NDW2-63/C50/4/KY D2B2F2 M	BH-0.66 5000/5	34E	2200	1400	1000/1200
E26	6300	NDW2-63/C63/4/KY D2B2F2 M	BH-0.66 6000/5	34E	2350	1400	1000/1200

Option F - Power Supply and Lighting (withdrawable)

Scheme Diagram

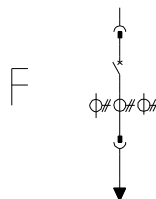


Option F

Switchgear Type		Power Supply and Lighting (withdrawable)					
Current (A)		Minimum size / mm					
		Circuit breaker (withdrawable)	CTs	Unit height	Switchgear height	Switchgear width	Switchgear depth
F01	16	NDM3-63L/3300 16A+Manual operation + handle	BH-0.66 15/5	8E/2	2200	600	1000/1200
F02	20	NDM3-63L/3300 20A+Manual operation + handle	BH-0.66 20/5	8E/2	2200	600	1000/1200
F03	25	NDM3-63L/3300 25A+Manual operation + handle	BH-0.66 25/5	8E/2	2200	600	1000/1200
F04	32	NDM3-63L/3300 32A+Manual operation + handle	BH-0.66 30/5	8E/2	2200	600	1000/1200
F05	40	NDM3-63L/3300 40A+Manual operation + handle	BH-0.66 40/5	8E/2	2200	600	1000/1200
F06	50	NDM3-63L/3300 50A+Manual operation + handle	BH-0.66 50/5	8E/2	2200	600	1000/1200
F07	63	NDM3-63L/3300 63A+Manual operation + handle	BH-0.66 75/5	8E/2	2200	600	1000/1200
F08	80	NDM3-100C/3300 80A+Manual operation + handle	BH-0.66 75/5	6E	2200	600	1000/1200
F09	100	NDM3-100C/3300 100A+Manual operation + handle	BH-0.66 100/5	6E	2200	600	1000/1200
F10	100	NDM3-125L/3300 100A+Manual operation + handle	BH-0.66 100/5	6E	2200	600	1000/1200
F11	125	NDM3-125L/3300 125A+Manual operation + handle	BH-0.66 150/5	6E	2200	600	1000/1200
F12	160	NDM3-160C/3300 160A+Manual operation + handle	BH-0.66 150/5	6E	2200	600	1000/1200
F13	160	NDM3-160L/3300 160A+Manual operation + handle	BH-0.66 150/5	6E	2200	600	1000/1200
F14	160	NDM3-160M/3300 160A+Manual operation + handle	BH-0.66 150/5	6E	2200	600	1000/1200
F15	180	NDM3-250L/3300 180A+Manual operation + handle	BH-0.66 200/5	6E	2200	600	1000/1200
F16	200	NDM3-250L/3300 200A+Manual operation + handle	BH-0.66 200/5	6E	2200	600	1000/1200
F17	225	NDM3-250L/3300 225A+Manual operation + handle	BH-0.66 250/5	6E	2200	600	1000/1200
F18	250	NDM3-250L/3300 250A+Manual operation + handle	BH-0.66 250/5	6E	2200	600	1000/1200
F19	315	NDM3-400L/3300 315A+Manual operation + handle	BH-0.66 300/5	12E	2200	600	1000/1200
F20	350	NDM3-400L/3300 350A+Manual operation + handle	BH-0.66 400/5	12E	2200	600	1000/1200
F21	400	NDM3-400L/3300 400A+Manual operation + handle	BH-0.66 400/5	12E	2200	600	1000/1200
F22	400	NDM3-630L/3300 400A+Manual operation + handle	BH-0.66 400/5	12E	2200	600	1000/1200
F23	500	NDM3-630L/3300 500A+Manual operation + handle	BH-0.66 500/5	12E	2200	600	1000/1200
F24	630	NDM3-630L/3300 630A+Manual operation + handle	BH-0.66 600/5	12E	2200	600	1000/1200
F25	16	NDM3-63/4300B 16A+Manual operation + handle	BH-0.66 15/5	8E	2200	600	1000/1200
F26	20	NDM3-63/4300B 20A+Manual operation + handle	BH-0.66 20/5	8E	2200	600	1000/1200
F27	25	NDM3-63/4300B 25A+Manual operation + handle	BH-0.66 25/5	8E	2200	600	1000/1200
F28	32	NDM3-63/4300B 32A+Manual operation + handle	BH-0.66 30/5	8E	2200	600	1000/1200
F29	40	NDM3-63/4300B 40A+Manual operation + handle	BH-0.66 40/5	8E	2200	600	1000/1200
F30	50	NDM3-63/4300B 50A+Manual operation + handle	BH-0.66 50/5	8E	2200	600	1000/1200

Option F - Power Supply and Lighting (withdrawable)

Scheme Diagram

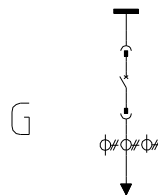


Option F

Switchgear Type		Power Supply and Lighting (withdrawable)					
Current (A)		Minimum size /mm					
		Circuit breaker (withdrawable)	CTs	Unit height	Switchgear height	Switchgear width	Switchgear depth
F31	63	NDM3-63/4300B 63A+Manual operation + handle	BH-0.66 75/5	8E	2200	600	1000/1200
F32	80	NDM3-100/4300B 80A+Manual operation + handle	BH-0.66 75/5	8E	2200	600	1000/1200
F33	100	NDM3-100/4300B 100A+Manual operation + handle	BH-0.66 100/5	8E	2200	600	1000/1200
F34	100	NDM3-125/4300B 100A+Manual operation + handle	BH-0.66 100/5	8E	2200	600	1000/1200
F35	125	NDM3-125/4300B 125A+Manual operation + handle	BH-0.66 150/5	8E	2200	600	1000/1200
F36	160	NDM3-160C/4300B 160A+Manual operation + handle	BH-0.66 150/5	8E	2200	600	1000/1200
F37	160	NDM3-160L/4300B 160A+Manual operation + handle	BH-0.66 150/5	8E	2200	600	1000/1200
F38	160	NDM3-160M/4300B 160A+Manual operation + handle	BH-0.66 150/5	8E	2200	600	1000/1200
F39	180	NDM3-250/4300B 180A+Manual operation + handle	BH-0.66 200/5	8E	2200	600	1000/1200
F40	200	NDM3-250/4300B 200A+Manual operation + handle	BH-0.66 200/5	8E	2200	600	1000/1200
F41	225	NDM3-250/4300B 225A+Manual operation + handle	BH-0.66 250/5	8E	2200	600	1000/1200
F42	250	NDM3-250/4300B 250A+Manual operation + handle	BH-0.66 250/5	8E	2200	600	1000/1200
F43	315	NDM3-400/4300B 315A+Manual operation + handle	BH-0.66 300/5	16E	2200	600	1000/1200
F44	350	NDM3-400/4300B 350A+Manual operation + handle	BH-0.66 400/5	16E	2200	600	1000/1200
F45	400	NDM3-400/4300B 400A+Manual operation + handle	BH-0.66 400/5	16E	2200	600	1000/1200
F46	400	NDM3-630/4300B 400A+Manual operation + handle	BH-0.66 400/5	16E	2200	600	1000/1200
F47	500	NDM3-630/4300B 500A+Manual operation + handle	BH-0.66 500/5	16E	2200	600	1000/1200
F48	630	NDM3-630/4300B 630A+Manual operation + handle	BH-0.66 600/5	16E	2200	600	1000/1200

Option G - Power Supply and Lighting (fixed partition)

Scheme Diagram

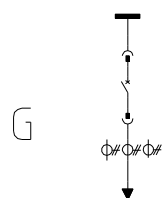


Option G

Switchgear Type		Power Supply and Lighting (fixed partition)					
Current (A)		Minimum size / mm					
		Circuit breaker (withdrawable)	CTs	Unit height	Switchgear height	Switchgear width	Switchgear depth
G01	16	NDM3-63L/3300 16A+Z3H+Manual operation + handle	BH-0.66 15/5	6E	2200	600	1000/1200
G02	20	NDM3-63L/3300 20A+Z3H+Manual operation + handle	BH-0.66 20/5	6E	2200	600	1000/1200
G03	25	NDM3-63L/3300 25A+Z3H+Manual operation + handle	BH-0.66 25/5	6E	2200	600	1000/1200
G04	32	NDM3-63L/3300 32A+Z3H+Manual operation + handle	BH-0.66 30/5	6E	2200	600	1000/1200
G05	40	NDM3-63L/3300 40A+Z3H+Manual operation + handle	BH-0.66 40/5	6E	2200	600	1000/1200
G06	50	NDM3-63L/3300 50A+Z3H+Manual operation + handle	BH-0.66 50/5	6E	2200	600	1000/1200
G07	63	NDM3-63L/3300 63A+Z3H+Manual operation + handle	BH-0.66 75/5	6E	2200	600	1000/1200
G08	80	NDM3-100C/3300 80A+Z3H+Manual operation + handle	BH-0.66 75/5	6E	2200	600	1000/1200
G09	100	NDM3-100C/3300 100A+Z3H+Manual operation + handle	BH-0.66 100/5	6E	2200	600	1000/1200
G10	100	NDM3-125L/3300 100A+Z3H+Manual operation + handle	BH-0.66 100/5	6E	2200	600	1000/1200
G11	125	NDM3-125L/3300 125A+Z3H+Manual operation + handle	BH-0.66 150/5	6E	2200	600	1000/1200
G12	160	NDM3-160C/3300 160A+Z3H+Manual operation + handle	BH-0.66 150/5	6E	2200	600	1000/1200
G13	160	NDM3-160L/3300 160A+Z3H+Manual operation + handle	BH-0.66 150/5	6E	2200	600	1000/1200
G14	160	NDM3-160M/3300 160A+Z3H+Manual operation + handle	BH-0.66 150/5	6E	2200	600	1000/1200
G15	180	NDM3-250L/3300 180A+Z3H+Manual operation + handle	BH-0.66 200/5	6E	2200	600	1000/1200
G16	200	NDM3-250L/3300 200A+Z3H+Manual operation + handle	BH-0.66 200/5	6E	2200	600	1000/1200
G17	225	NDM3-250L/3300 225A+Z3H+Manual operation + handle	BH-0.66 250/5	6E	2200	600	1000/1200
G18	250	NDM3-250L/3300 250A+Z3H+Manual operation + handle	BH-0.66 250/5	6E	2200	600	1000/1200
G19	315	NDM3-400L/3300 315A+Z3H+Manual operation + handle	BH-0.66 300/5	10E/12E	2200	600	1000/1200
G20	350	NDM3-400L/3300 350A+Z3H+Manual operation + handle	BH-0.66 400/5	10E/12E	2200	600	1000/1200
G21	400	NDM3-400L/3300 400A+Z3H+Manual operation + handle	BH-0.66 400/5	10E/12E	2200	600	1000/1200
G22	400	NDM3-630L/3300 400A+Z3H+Manual operation + handle	BH-0.66 400/5	12E	2200	600	1000/1200
G23	500	NDM3-630L/3300 500A+Z3H+Manual operation + handle	BH-0.66 500/5	12E	2200	600	1000/1200
G24	630	NDM3-630L/3300 630A+Z3H+Manual operation + handle	BH-0.66 600/5	12E	2200	600	1000/1200
G25	16	NDM3-63/4300B 16A+Z3H+Manual operation + handle	BH-0.66 15/5	8E	2200	600	1000/1200
G26	20	NDM3-63/4300B 20A+Z3H+Manual operation + handle	BH-0.66 20/5	8E	2200	600	1000/1200
G27	25	NDM3-63/4300B 25A+Z3H+Manual operation + handle	BH-0.66 25/5	8E	2200	600	1000/1200
G28	32	NDM3-63/4300B 32A+Z3H+Manual operation + handle	BH-0.66 30/5	8E	2200	600	1000/1200
G29	40	NDM3-63/4300B 40A+Z3H+Manual operation + handle	BH-0.66 40/5	8E	2200	600	1000/1200
G30	50	NDM3-63/4300B 50A+Z3H+Manual operation + handle	BH-0.66 50/5	8E	2200	600	1000/1200

Option G - Power Supply and Lighting (fixed partition)

Scheme Diagram



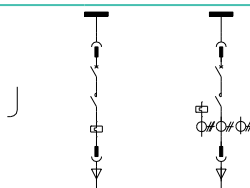
Option G

Switchgear Type		Power Supply and Lighting (fixed partition)						
Current (A)		Minimum size / mm						
		Circuit breaker (withdrawable)	CTs	Unit height	Switchgear height	Switchgear width	Switchgear depth	
G31	63	NDM3-63/4300B 63A+Z3H+Manual operation + handle	BH-0.66 75/5	8E	2200	600	1000/1200	
G32	80	NDM3-100/4300B 80A+Z3H+Manual operation + handle	BH-0.66 75/5	8E	2200	600	1000/1200	
G33	100	NDM3-100/4300B 100A+Z3H+Manual operation + handle	BH-0.66 100/5	8E	2200	600	1000/1200	
G34	100	NDM3-125/4300B 100A+Z3H+Manual operation + handle	BH-0.66 100/5	8E	2200	600	1000/1200	
G35	125	NDM3-125/4300B 125A+Z3H+Manual operation + handle	BH-0.66 150/5	8E	2200	600	1000/1200	
G36	160	NDM3-160C/4300B 160A+Z3H+Manual operation + handle	BH-0.66 150/5	8E	2200	600	1000/1200	
G37	160	NDM3-160L/4300B 160A+Z3H+Manual operation + handle	BH-0.66 150/5	8E	2200	600	1000/1200	
G38	160	NDM3-160M/4300B 160A+Z3H+Manual operation + handle	BH-0.66 150/5	8E	2200	600	1000/1200	
G39	180	NDM3-250/4300B 180A+Z3H+Manual operation + handle	BH-0.66 200/5	8E	2200	600	1000/1200	
G40	200	NDM3-250/4300B 200A+Z3H+Manual operation + handle	BH-0.66 200/5	8E	2200	600	1000/1200	
G41	225	NDM3-250/4300B 225A+Z3H+Manual operation + handle	BH-0.66 250/5	8E	2200	600	1000/1200	
G42	250	NDM3-250/4300B 250A+Z3H+Manual operation + handle	BH-0.66 250/5	8E	2200	600	1000/1200	
G43	315	NDM3-400/4300B 315A+Z3H+Manual operation + handle	BH-0.66 300/5	12E	2200	600	1000/1200	
G44	350	NDM3-400/4300B 350A+Z3H+Manual operation + handle	BH-0.66 400/5	12E	2200	600	1000/1200	
G45	400	NDM3-400/4300B 400A+Z3H+Manual operation + handle	BH-0.66 400/5	12E	2200	600	1000/1200	
G46	400	NDM3-630/4300B 400A+Z3H+Manual operation + handle	BH-0.66 400/5	12E	2200	600	1000/1200	
G47	500	NDM3-630/4300B 500A+Z3H+Manual operation + handle	BH-0.66 500/5	12E	2200	600	1000/1200	
G48	630	NDM3-630/4300B 630A+Z3H+Manual operation + handle	BH-0.66 600/5	12E	2200	600	1000/1200	

Note: If A-type handle is selected for NDM3-400/3P, the unit height can be 8E.

Option J - Direct Start (withdrawable)

Scheme Diagram

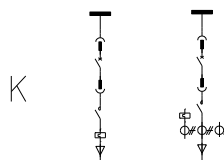


Option J

Switchgear Type			Direct start (withdrawable)						
Power (KW)	Current (electrical) (A)					Minimum size /mm			
		Circuit breaker	Contactor	Thermorelay	Unit height	Switchgear height	Switchgear width	Switchgear depth	
J01	0.37	1.22	NDM3-63M/32002 10A+Manual operation + handle	NDC1-0910+NF1-22	NDR2-3806	6E	2200	600	1000/1200
J02	0.55	1.55	NDM3-63M/32002 10A+Manual operation + handle	NDC1-0910+NF1-22	NDR2-3806	6E	2200	600	1000/1200
J03	0.75	2.05	NDM3-63M/32002 10A+Manual operation + handle	NDC1-0910+NF1-22	NDR2-3807	6E	2200	600	1000/1200
J04	1.1	2.81	NDM3-63M/32002 16A+Manual operation + handle	NDC1-3210+NF1-22	NDR2-3808	6E	2200	600	1000/1200
J05	1.5	3.68	NDM3-63M/32002 16A+Manual operation + handle	NDC1-3210+NF1-22	NDR2-3808	6E	2200	600	1000/1200
J06	2.2	5.03	NDM3-63M/32002 16A+Manual operation + handle	NDC1-3210+NF1-22	NDR2-3810	6E	2200	600	1000/1200
J07	3	6.81	NDM3-63M/32002 16A+Manual operation + handle	NDC1-4011+NF1-22	NDR2-3812	6E	2200	600	1000/1200
J08	4	8.8	NDM3-63M/32002 16A+Manual operation + handle	NDC1-4010+NF1-22	NDR2-3814	6E	2200	600	1000/1200
J09	5.5	11.61	NDM3-63M/32002 16A+Manual operation + handle	NDC1-4010+NF1-22	NDR2-3816	6E	2200	600	1000/1200
J10	7.5	15.41	NDM3-63M/32002 20A+Manual operation + handle	NDC1-4010+NF1-22	NDR2-3821	6E	2200	600	1000/1200
J11	11	22.51	NDM3-63M/32002 32A+Manual operation + handle	NDC1-4010+NF1-22	NDR2-3822	6E	2200	600	1000/1200
J12	15	29.99	NDM3-63M/32002 50A+Manual operation + handle	NDC1-8011+NF1-22	NDR2-3822	6E	2200	600	1000/1200
J13	18.5	36.32	NDM3-63M/32002 50A+Manual operation + handle	NDC1-8011+NF1-22	NDR2-3835	6E	2200	600	1000/1200
J14	22	42.95	NDM3-63M/32002 63A+Manual operation + handle	NDC1-8011+NF1-22	NDR2-9555	6E	2200	600	1000/1200
J15	30	57.32	NDM3-125M/32002 80A+Manual operation + handle	NDC1-8011+NF1-22	NDR2-9557	6E	2200	600	1000/1200
J16	37	70.24	NDM3-125M/32002 100A+Manual operation + handle	NDC1-8011+NF1-22	NDR2-9559	6E	2200	600	1000/1200
J17	45	84	NDM3-125M/32002 125A+Manual operation + handle	NDC1-115+NF1-22	NDR2-9563+NA2-95 Independent mount	8E	2200	600	1000/1200

Option K - Direct Start (fixed partition)

Scheme Diagram

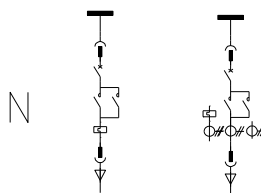


Option K

Switchgear Type		Direct Start (fixed partition)							
Power (KW)	Current (electrical) (A)	Circuit breaker (plug-in back-panel wiring)				Unit height	Minimum size /mm		
		Circuit breaker (plug-in back-panel wiring)		Contactor	Thermorelay		Switchgear height	Switchgear width	Switchgear depth
K01	0.37	1.22	NDM3-63M/32002 10A+Z3H+Manual operation + handle	NDC1-0910+NF1-22	NDR2-3806	6E	2200	600	1000/1200
K02	0.55	1.55	NDM3-63M/32002 10A+Z3H+Manual operation + handle	NDC1-0910+NF1-22	NDR2-3806	6E	2200	600	1000/1200
K03	0.75	2.05	NDM3-63M/32002 10A+Z3H+Manual operation + handle	NDC1-0910+NF1-22	NDR2-3807	6E	2200	600	1000/1200
K04	1.1	2.81	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1-3210+NF1-22	NDR2-3808	6E	2200	600	1000/1200
K05	1.5	3.68	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1-3210+NF1-22	NDR2-3808	6E	2200	600	1000/1200
K06	2.2	5.03	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1-3210+NF1-22	NDR2-3810	6E	2200	600	1000/1200
K07	3	6.81	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1-4011+NF1-22	NDR2-3812	6E	2200	600	1000/1200
K08	4	8.8	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1-4010+NF1-22	NDR2-3814	6E	2200	600	1000/1200
K09	5.5	11.61	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1-4010+NF1-22	NDR2-3816	6E	2200	600	1000/1200
K10	7.5	15.41	NDM3-63M/32002 20A+Z3H+Manual operation + handle	NDC1-4010+NF1-22	NDR2-3821	6E	2200	600	1000/1200
K11	11	22.51	NDM3-63M/32002 32A+Z3H+Manual operation + handle	NDC1-4010+NF1-22	NDR2-3822	6E	2200	600	1000/1200
K12	15	29.99	NDM3-63M/32002 50A+Z3H+Manual operation + handle	NDC1-8011+NF1-22	NDR2-3822	6E	2200	600	1000/1200
K13	18.5	36.32	NDM3-63M/32002 50A+Z3H+Manual operation + handle	NDC1-8011+NF1-22	NDR2-3835	6E	2200	600	1000/1200
K14	22	42.95	NDM3-63M/32002 63A+Z3H+Manual operation + handle	NDC1-8011+NF1-22	NDR2-9555	6E	2200	600	1000/1200
K15	30	57.32	NDM3-125M/32002 80A+Z3H+Manual operation + handle	NDC1-8011+NF1-22	NDR2-9557	6E	2200	600	1000/1200
K16	37	70.24	NDM3-125M/32002 100A+Z3H+Manual operation + handle	NDC1-8011+NF1-22	NDR2-9559	6E	2200	600	1000/1200
K17	45	84	NDM3-125M/32002 125A+Z3H+Manual operation + handle	NDC1-115+NF1-22	NDR2-9563+NA2-95 Independent mount	12E	2200	600	1000/1200
K18	55	102.11	NDM3-250M/32002 160A+Z3H+Manual operation + handle	NDC1-150+NF1-22	NDR2-9565+NA2-95 Independent mount	12E	2200	600	1000/1200
K19	75	138.35	NDM3-250M/32002 180A+Z3H+Manual operation + handle	NDC1-185+NF1-22	NDR2-3808+NA2-38 Independent mount	12E	2200	600	1000/1200
K20	90	163.63	NDM3-250M/32002 225A+Z3H+Manual operation + handle	NDC1-185+NF1-22	NDR2-3808+NA2-38 Independent mount	12E	2200	600	1000/1200
K21	110	198.72	NDM3-400M/32002 250A+Z3H+Manual operation + handle	NDC1-225+NF1-22	NDR2-3808+NA2-38 Independent mount	24E	2200	600	1000/1200
K22	132	237.71	NDM3-400M/32002 315A+Z3H+Manual operation + handle	NDC1-265+NF1-22	NDR2-3808+NA2-38 Independent mount	24E	2200	600	1000/1200
K23	160	287.83	NDM3-400M/32002 350A+Z3H+Manual operation + handle	NDC1-330+NF1-22	NDR2-3808+NA2-38 Independent mount	24E	2200	600	1000/1200
K24	185	349	NDM3-630M/32002 500A+Z3H+Manual operation + handle	NDC1-500+NF1-22	NDR2-3808+NA2-38 Independent mount	24E	2200	600	1000/1200
K25	220	404.86	NDM3-630M/32002 500A+Z3H+Manual operation + handle	NDC1-500+NF1-22	NDR2-3810+NA2-38 Independent mount	24E	2200	600	1000/1200
K26	250	458.62	NDM3-630M/32002 500A+Z3H+Manual operation + handle	NDC1-500+NF1-22	NDR2-3810+NA2-38 Independent mount	24E	2200	600	1000/1200

Option N - Forward and Reverse (withdrawable)

Scheme Diagram

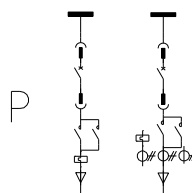


Option N

Switchgear Type			Forward and Reverse (withdrawable)						
Power (KW)	Current (electrical) (A)				Minimum size /mm				
		Circuit breaker	Contactor AC220V	Thermorelay	Unit height	Switchgear height	Switchgear width	Switchgear depth	
N01	0.37	1.22	NDM3-63M/32002 10A+Manual operation + handle	NDC1N-0910+NF1-22	NDR2-3806+NA2-38 Independent mount	6E	2200	600	1000/1200
N02	0.55	1.55	NDM3-63M/32002 10A+Manual operation + handle	NDC1N-0910+NF1-22	NDR2-3806+NA2-38 Independent mount	6E	2200	600	1000/1200
N03	0.75	2.05	NDM3-63M/32002 10A+Manual operation + handle	NDC1N-0910+NF1-22	NDR2-3807+NA2-38 Independent mount	6E	2200	600	1000/1200
N04	1.1	2.81	NDM3-63M/32002 16A+Manual operation + handle	NDC1N-3210+NF1-22	NDR2-3808+NA2-38 Independent mount	8E	2200	600	1000/1200
N05	1.5	3.68	NDM3-63M/32002 16A+Manual operation + handle	NDC1N-3210+NF1-22	NDR2-3808+NA2-38 Independent mount	8E	2200	600	1000/1200
N06	2.2	5.03	NDM3-63M/32002 16A+Manual operation + handle	NDC1N-3210+NF1-22	NDR2-3810+NA2-38 Independent mount	8E	2200	600	1000/1200
N07	3	6.81	NDM3-63M/32002 16A+Manual operation + handle	NDC1N-4011+NF1-22	NDR2-3812+NA2-38 Independent mount	8E	2200	600	1000/1200
N08	4	8.8	NDM3-63M/32002 16A+Manual operation + handle	NDC1N-4011+NF1-22	NDR2-3814+NA2-38 Independent mount	8E	2200	600	1000/1200
N09	5.5	11.61	NDM3-63M/32002 16A+Manual operation + handle	NDC1N-4011+NF1-22	NDR2-3816+NA2-38 Independent mount	8E	2200	600	1000/1200
N10	7.5	15.41	NDM3-63M/32002 20A+Manual operation + handle	NDC1N-4011+NF1-22	NDR2-3821+NA2-38 Independent mount	8E	2200	600	1000/1200
N11	11	22.51	NDM3-63M/32002 32A+Manual operation + handle	NDC1N-4011+NF1-22	NDR2-3822+NA2-38 Independent mount	8E	2200	600	1000/1200
N12	15	29.99	NDM3-63M/32002 50A+Manual operation + handle	NDC1N-8011+NF1-22	NDR2-3822+NA2-38 Independent mount	12E	2200	600	1000/1200
N13	18.5	36.32	NDM3-63M/32002 50A+Manual operation + handle	NDC1N-8011+NF1-22	NDR2-3835+NA2-38 Independent mount	12E	2200	600	1000/1200
N14	22	42.95	NDM3-63M/32002 63A+Manual operation + handle	NDC1N-8011+NF1-22	NDR2-9555+NA2-95 Independent mount	12E	2200	600	1000/1200
N15	30	57.32	NDM3-125M/32002 80A+Manual operation + handle	NDC1N-8011+NF1-22	NDR2-9557+NA2-95 Independent mount	12E	2200	600	1000/1200
N16	37	70.24	NDM3-125M/32002 100A+Manual operation + handle	NDC1N-8011+NF1-22	NDR2-9559+NA2-95 Independent mount	12E	2200	600	1000/1200

Option P - Forward and Reverse (fixed partition)

Scheme Diagram

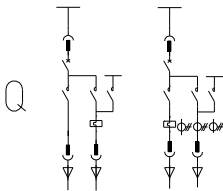


Option K

	Switchgear Type		Forward and Reverse (fixed partition)						
	Power (KW)	Current (electrical) (A)	Circuit breaker (plug-in back-panel wiring)	Contactor AC220V	Thermorelay	Unit height	Switchgear height	Switchgear width	Switchgear depth
P01	0.37	1.22	NDM3-63M/32002 10A+Z3H+Manual operation + handle	NDC1N-0910+NF1-22	NDR2-3806+NA2-38 Independent mount	12E	2200	600	1000/1200
P02	0.55	1.55	NDM3-63M/32002 10A+Z3H+Manual operation + handle	NDC1N-0910+NF1-22	NDR2-3806+NA2-38 Independent mount	12E	2200	600	1000/1200
P03	0.75	2.05	NDM3-63M/32002 10A+Z3H+Manual operation + handle	NDC1N-0910+NF1-22	NDR2-3807+NA2-38 Independent mount	12E	2200	600	1000/1200
P04	1.1	2.81	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1N-3210+NF1-22	NDR2-3808+NA2-38 Independent mount	12E	2200	600	1000/1200
P05	1.5	3.68	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1N-3210+NF1-22	NDR2-3808+NA2-38 Independent mount	12E	2200	600	1000/1200
P06	2.2	5.03	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1N-3210+NF1-22	NDR2-3810+NA2-38 Independent mount	12E	2200	600	1000/1200
P07	3	6.81	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1N-4011+NF1-22	NDR2-3812+NA2-38 Independent mount	12E	2200	600	1000/1200
P08	4	8.8	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1N-4011+NF1-22	NDR2-3814+NA2-38 Independent mount	12E	2200	600	1000/1200
P09	5.5	11.61	NDM3-63M/32002 16A+Z3H+Manual operation + handle	NDC1N-4011+NF1-22	NDR2-3816+NA2-38 Independent mount	12E	2200	600	1000/1200
P10	7.5	15.41	NDM3-63M/32002 20A+Z3H+Manual operation + handle	NDC1N-4011+NF1-22	NDR2-3821+NA2-38 Independent mount	12E	2200	600	1000/1200
P11	11	22.51	NDM3-63M/32002 32A+Z3H+Manual operation + handle	NDC1N-4011+NF1-22	NDR2-3822+NA2-38 Independent mount	12E	2200	600	1000/1200
P12	15	29.99	NDM3-63M/32002 50A+Z3H+Manual operation + handle	NDC1N-8011+NF1-22	NDR2-3822+NA2-38 Independent mount	12E	2200	600	1000/1200
P13	18.5	36.32	NDM3-63M/32002 50A+Z3H+Manual operation + handle	NDC1N-8011+NF1-22	NDR2-3835+NA2-38 Independent mount	12E	2200	600	1000/1200
P14	22	42.95	NDM3-63M/32002 63A+Z3H+Manual operation + handle	NDC1N-8011+NF1-22	NDR2-9555+NA2-95 Independent mount	12E	2200	600	1000/1200
P15	30	57.32	NDM3-125M/32002 80A+Z3H+Manual operation + handle	NDC1N-8011+NF1-22	NDR2-9557+NA2-95 Independent mount	12E	2200	600	1000/1200
P16	37	70.24	NDM3-125M/32002 100A+Z3H+Manual operation + handle	NDC1N-8011+NF1-22	NDR2-9559+NA2-95 Independent mount	12E	2200	600	1000/1200
P17	45	84	NDM3-125M/32002 125A+Z3H+Manual operation + handle	NDC1N-115+NF1-22	NDR2-9563+NA2-95 Independent mount	16E	2200	600	1000/1200
P18	55	102.11	NDM3-250M/32002 160A+Z3H+Manual operation + handle	NDC1N-150+NF1-22	NDR2-9565+NA2-95 Independent mount	16E	2200	600	1000/1200
P19	75	138.35	NDM3-250M/32002 180A+Z3H+Manual operation + handle	NDC1N-185+NF1-22	NDR2-3808+NA2-38 Independent mount	24E	2200	600	1000/1200
P20	90	163.63	NDM3-250M/32002 225A+Z3H+Manual operation + handle	NDC1N-185+NF1-22	NDR2-3808+NA2-38 Independent mount	24E	2200	600	1000/1200
P21	110	198.72	NDM3-400M/32002 250A+Z3H+Manual operation + handle	NDC1N-225+NF1-22	NDR2-3808+NA2-38 Independent mount	32E	2200	600	1000/1200
P22	132	237.71	NDM3-400M/32002 315A+Z3H+Manual operation + handle	NDC1N-265+NF1-22	NDR2-3808+NA2-38 Independent mount	32E	2200	600	1000/1200
P23	160	287.83	NDM3-400M/32002 350A+Z3H+Manual operation + handle	NDC1N-330+NF1-22	NDR2-3808+NA2-38 Independent mount	32E	2200	600	1000/1200
P24	185	349	NDM3-630M/32002 500A+Z3H+Manual operation + handle	NDC1N-500+NF1-22	NDR2-3808+NA2-38 Independent mount	36E	2200	600	1000/1200
P25	220	404.86	NDM3-630M/32002 500A+Z3H+Manual operation + handle	NDC1N-500+NF1-22	NDR2-3810+NA2-38 Independent mount	36E	2200	600	1000/1200
P26	250	458.62	NDM3-630M/32002 500A+Z3H+Manual operation + handle	NDC1N-500+NF1-22	NDR2-3810+NA2-38 Independent mount	36E	2200	600	1000/1200

Option Q - Star-Delta Start (withdrawable)

Scheme Diagram

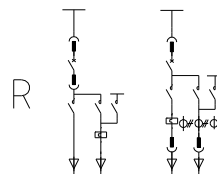


Option Q

Switchgear Type				Star-Delta Start (withdrawable)						
	Power (KW)	Current (electrical)	Current (electrical)	Circuit breaker (fixed)	Contactor (AC220V)	Thermorelay	Minimum size /mm			
		In(A)	IrD(A)				Unit height	Switchgear height	Switchgear width	Switchgear depth
Q01	11KW	22	13	NDM3-63M/32002 25A+Manual operation + handle	3*(NDC1-3210+NF1-22)	NDR2-3822	16E	2200	600	1000/1200
Q02	15KW	30	16	NDM3-63M/32002 50A+Manual operation + handle	3*(NDC1-4011+NF1-22)	NDR2-3832	16E	2200	600	1000/1200
Q03	18.5KW	37	22	NDM3-63M/32002 50A+Manual operation + handle	3*(NDC1-5011+NF1-22)	NDR2-9555	16E	2200	600	1000/1200
Q04	22KW	44	26	NDM3-63M/32002 50A+Manual operation + handle	3*(NDC1-5011+NF1-22)	NDR2-9557	16E	2200	600	1000/1200
Q05	30KW	56	35	NDM3-125M/32002 80A+Manual operation + handle	3*(NDC1-6511+NF1-22)	NDR2-9559	16E	2200	600	1000/1200
Q06	37KW	68	40	NDM3-125M/32002 80A+Manual operation + handle	3*(NDC1-8011+NF1-22)	NDR2-9563	16E	2200	600	1000/1200

Option R – Star-Delta Start (fixed partition)

Scheme Diagram

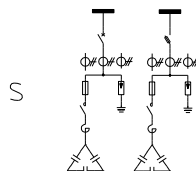


Option R

	Switchgear Type			Star-Delta Start (fixed partition)						
	Power (KW)	Current (electrical) In(A)	Current (electrical) IrD(A)	Circuit breaker	Contactor (AC220V)	Thermorelay	Unit height	Switchgear height	Switchgear width	Switchgear depth
R01	11KW	22	13	NDM3-63M/32002 25A+Z3H+Manual operation + handle	3*(NDC1-3210+NF1-22)	NDR2-3822	16E	2200	600	1000/1200
R02	15KW	30	16	NDM3-63M/32002 50A+Z3H+Manual operation + handle	3*(NDC1-4011+NF1-22)	NDR2-3832	16E	2200	600	1000/1200
R03	18.5KW	37	22	NDM3-63M/32002 50A+Z3H+Manual operation + handle	3*(NDC1-5011+NF1-22)	NDR2-9555	16E	2200	600	1000/1200
R04	22KW	44	26	NDM3-63M/32002 50A+Z3H+Manual operation + handle	3*(NDC1-5011+NF1-22)	NDR2-9557	16E	2200	600	1000/1200
R05	30KW	56	35	NDM3-125M/32002 80A+Z3H+Manual operation + handle	3*(NDC1-6511+NF1-22)	NDR2-9559	16E	2200	600	1000/1200
R06	37KW	68	40	NDM3-125M/32002 80A+Z3H+Manual operation + handle	3*(NDC1-8011+NF1-22)	NDR2-9563	16E	2200	600	1000/1200
R07	45KW	83	47	NDM3-125M/32002 100A+Z3H+Manual operation + handle	3*(NDC1-115+NF1-22)	NDR2-9565+NA2-95 Independent mount	24E	2200	600	1000/1200
R08	55KW	98	58	NDM3-250M/32002 160A+Z3H+Manual operation + handle	3*(NDC1-115+NF1-22)	NDR2-3808+NA2-38 Independent mount	24E	2200	600	1000/1200
R09	75KW	135	78	NDM3-250M/32002 160A+Z3H+Manual operation + handle	3*(NDC1-150+NF1-22)	/	24E	2200	600	1000/1200
R10	90KW	158	99	NDM3-250M/32002 225A+Z3H+Manual operation + handle	3*(NDC1-185+NF1-22)	/	24E	2200	600	1000/1200

Option S- Capacitance Compensation Cabinet (switch)

Scheme Diagram



Option S

	Switchgear Type		Capacitance Compensation Cabinet (contactor switching)								
	Total installed capacity (Kvar)	Branch capacity (Kvar)	Main Components						Minimum size /mm		
			Circuit breaker	Branch protection fuse	Capacitor switch contactor (AC220V)	Electric reactor	Electrical capacity	Compensation controller	Unit height	Switchgear height	Switchgear width
S01	180	6x30	NDGR2-630/3P Out-of-cabinet operation	NT00	NDK1-80	SRCKSG0.48-2.1/7	BSMJ0.48-30-3	/	2200	800	1000
S02	400	8x50	NDGR2-1000/3P Out-of-cabinet operation	NT00	NDK1-125	SRCKSG0.48-3.5/7	BSMJ0.48-30-3	/	2200	1000	1000
S03	180	6x30	NDM3-400L/3300	NT00	NDK1-80	SRCKSG0.48-2.1/7	BSMJ0.48-30-3	/	2200	800	1000
S04	400	8x50	NDM3-800L/3300	NT00	NDK1-125	SRCKSG0.48-3.5/7	BSMJ0.48-30-3	/	2200	1000	1000

Option T - Forward and Reverse (plug-and-play)

Cabinet depth

Scheme Diagram



Option T

Switchgear Type		Power Supply and Lighting (plug-and-play)					
Power (KW)	Minimum size /mm						
	Circuit breaker (fixed)	CTs	Unit height	Switchgear height	Switchgear width	Switchgear depth	
T01	125	NDM3-125L/3300 125A+Manual operation + handle	BH-0.66 150/5	8E	2200	600	1000/1200
T02	160	NDM3-160L/3300 160A+Manual operation + handle	BH-0.66 200/5	8E	2200	600	1000/1200
T03	250	NDM3-250L/3300 250A+Manual operation + handle	BH-0.66 250/5	8E	2200	600	1000/1200
T04	400	NDM3-400L/3300 400A+Manual operation + handle	BH-0.66 400/5	16E	2200	600	1000/1200
T05	630	NDM3-630L/3300 630A+Manual operation + handle	BH-0.66 600/5	16E	2200	600	1000/1200
T06	125	NDM3-125L/4300 125A+Manual operation + handle	BH-0.66 150/5	8E	2200	600	1000/1200
T07	160	NDM3-160L/4300 160A+Manual operation + handle	BH-0.66 200/5	8E	2200	600	1000/1200
T08	250	NDM3-250L/4300 250A+Manual operation + handle	BH-0.66 250/5	8E	2200	600	1000/1200
T09	400	NDM3-400L/4300 400A+Manual operation + handle	BH-0.66 400/5	16E	2200	600	1000/1200
T10	630	NDM3-630L/4300 630A+Manual operation + handle	BH-0.66 600/5	16E	2200	600	1000/1200

Option U - Power Supply and Lighting (plug-and-play)

Scheme Diagram



Option T

Switchgear Type		Power Supply and Lighting (plug-and-play)					
Current (A)		Minimum size /mm					
		Circuit breaker	CTs	Unit height	Switchgear height	Switchgear width	Switchgear depth
U01	63	NDM3E-250M/ET32/3300 63A+Manual operation + handle	Built-in circuit breaker	6E	2200	500	1000
U02	100	NDM3E-250M/ET32/3300 100A+Manual operation + handle	Built-in circuit breaker	6E	2200	500	1000
U03	125	NDM3E-250M/ET32/3300 125A+Manual operation + handle	Built-in circuit breaker	6E	2200	500	1000
U04	160	NDM3E-250M/ET32/3300 160A+Manual operation + handle	Built-in circuit breaker	6E	2200	500	1000
U05	200	NDM3E-250M/ET32/3300 200A+Manual operation + handle	Built-in circuit breaker	6E	2200	500	1000
U06	250	NDM3E-250M/ET32/3300 250A+Manual operation + handle	Built-in circuit breaker	6E	2200	500	1000
U07	400	NDM3E-400M/ET32/3300 400A+Manual operation + handle	Built-in circuit breaker	10E	2200	500	1000
U08	400	NDM3E-400H/ET32/3300 400A+Manual operation + handle	Built-in circuit breaker	10E	2200	500	1000
U09	630	NDM3E-630M/ET32/3300 630A+Manual operation + handle	Built-in circuit breaker	10E	2200	500	1000
U10	630	NDM3E-630H/ET32/3300 630A+Manual operation + handle	Built-in circuit breaker	10E	2200	500	1000

Use and Maintenance

Use

After installation or adjustment, the NEA LV switchgear needs to undergo the following inspections and tests before operation.

- ◆The switchgear shall not be damaged at the coating and internally free of debris.
- ◆Check whether the electrical devices and wires inside the LV switchgear meet the requirements of the drawings, whether the wire ends are numbered, and whether the wires are connected in order and securely.
- ◆The busbar shall well be connected, and the insulation support and other accessories should be installed firmly and reliably.
- ◆Check whether the installed electrical device is in good contact and meets their technical requirements.
- ◆Check whether the mechanical and electrical interlocks are reliable.
- ◆The functional units of the same specification should be interchangeable.
- ◆Check whether the withdrawable components are flexible, accurate and easy in movement, and in reliable contact.
- ◆Check and test whether the grounding device of the LV switchgear is reliable, attached with obvious markings, and tested for voltage withstand.

Maintenance

NEA LV switchgear should be maintained by professionals and subjected to routine inspection every 6 months for the following items:

- ◆Check whether the primary and secondary connectors of the withdrawable unit are properly inserted in place;
- ◆Check whether the connecting wires inside the unit are secure;
- ◆Check whether there is dust on the interphase partition of the circuit breaker;
- ◆Check whether the mechanical interlock is accurate and reliable;
- ◆Check whether the electrical properties and operating characteristics meet the requirements.

Note: Equipment maintenance and electrical insulation inspection shall be conducted once a year.

Product Completeness

The following documents and attachments should be delivered together with the NEA LV switchgear:

- ◆Packing list;
- ◆Product quality certificate
- ◆Instruction manual
- ◆Installation and operation manuals of main components;
- ◆Delivery test report
- ◆Relevant necessary drawings;
- ◆Switchgear door keys, handling handles, and other spare parts and accessories provided in the supporting list.

Ordering instructions

Users should provide the following information:

- ◆Main circuit scheme number, equipment model, rated capacity and single-wire system diagram;
- ◆Schematic diagram of auxiliary circuit or schematic wiring diagram;
- ◆Arrangement and combination diagram of LV switchgears, layout plan;
- ◆Switchgear color;
- ◆For any other special requirements, please consult with us.



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