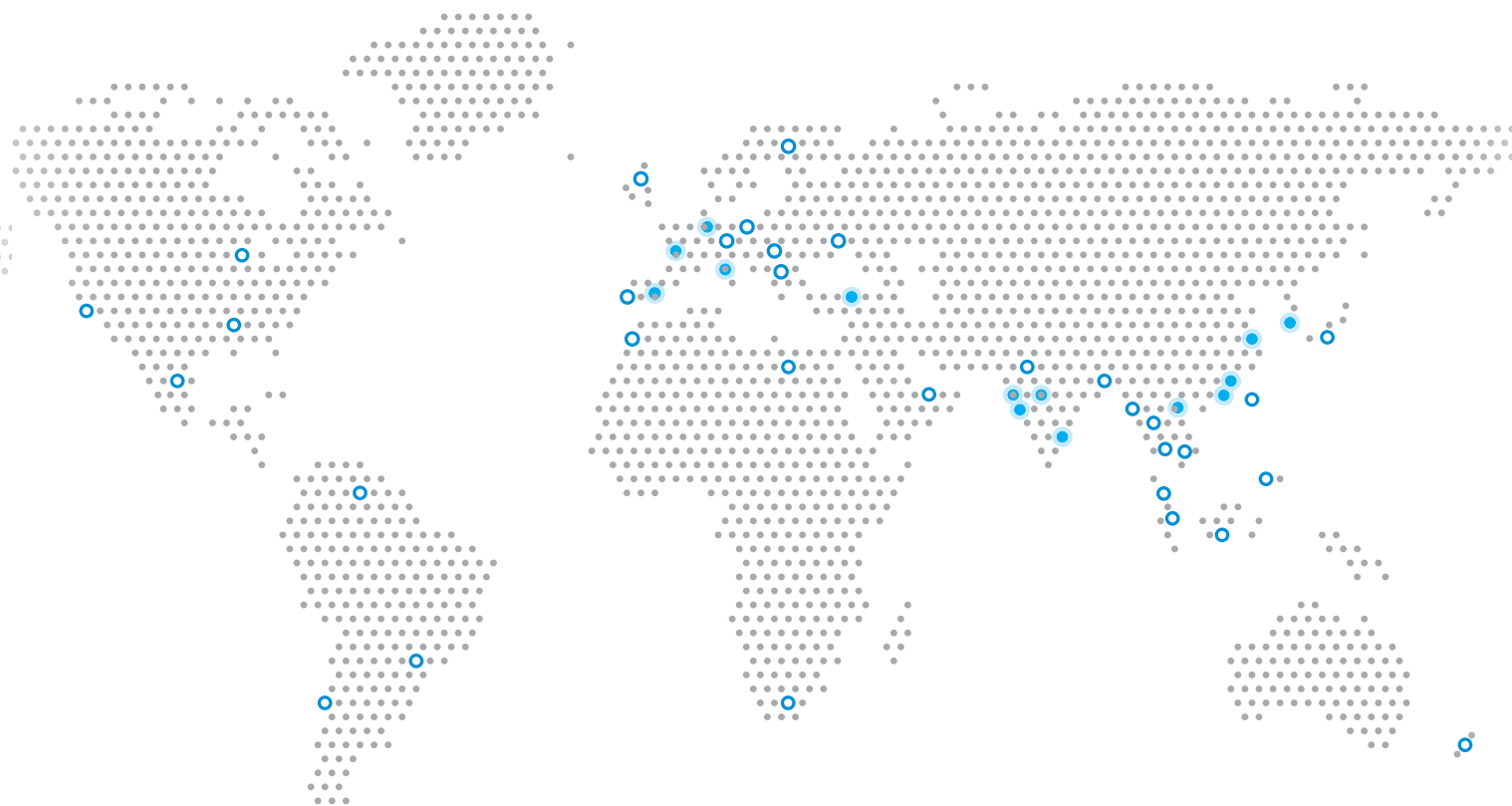




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Advancing industrial technology, for a better world

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**INOVANCE**

# HD9XS Series Medium-voltage AC Drives



## Features & functions

- **Grid Compatibility:**  
Lower/higher voltage ride through
- **Drives Protection:**  
Secondary-side short-circuit protection for transformers
- **Motor Adaptability:**  
Flexible motor compatibility supported by multiple algorithms





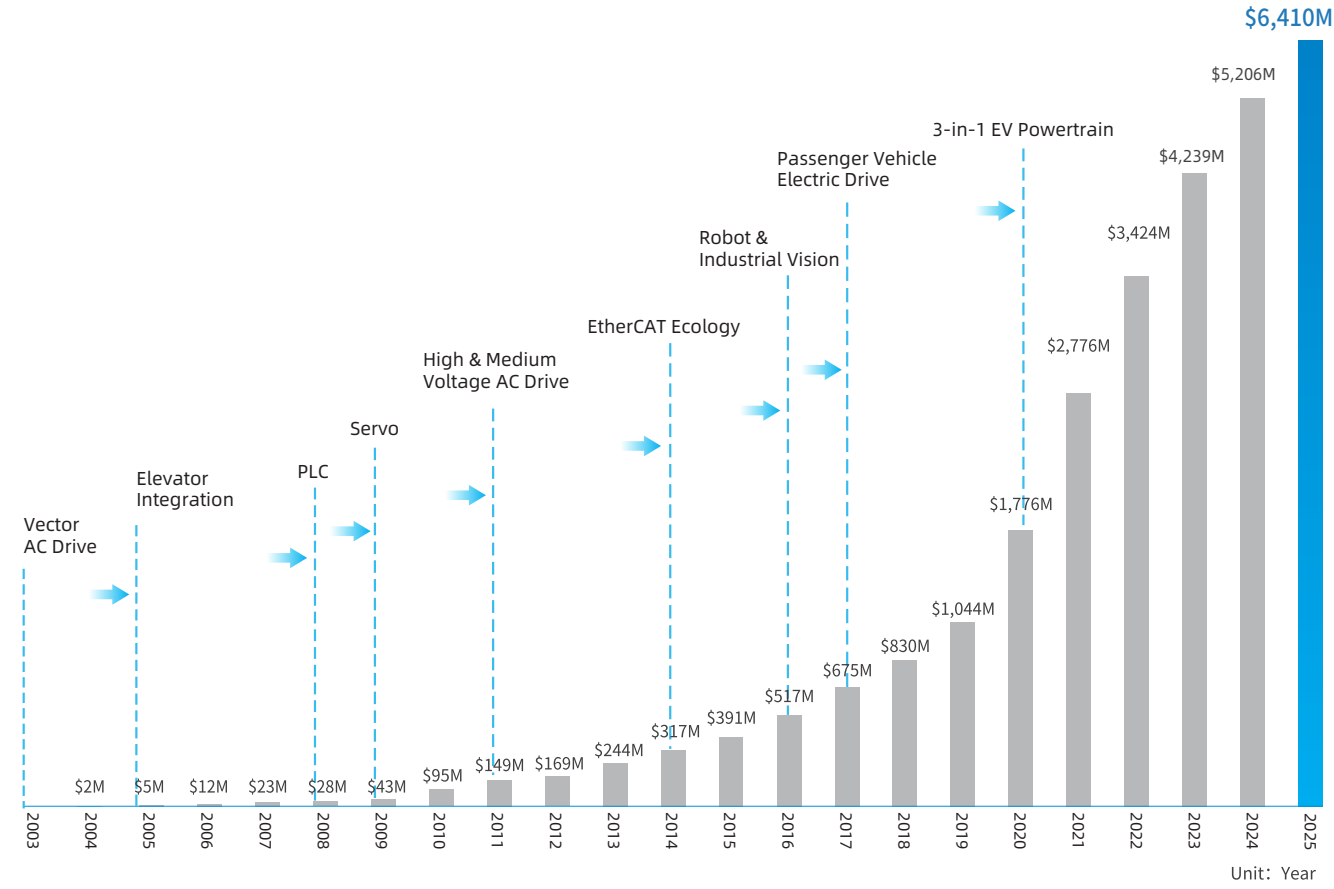


# About Us

Since 2012, Inovance has been deeply committed to its global strategy. In 2024, the company experienced rapid growth in international markets, with annual overseas revenue exceeding RMB 2 billion, representing a year-over-year increase of over 90%.

Inovance has established six R&D centers and eleven subsidiaries and offices worldwide. The company has also built a robust service network, consisting of more than 650 authorized distributors and nearly 600 service centers, covering over 100 countries.

Through its “Industry Line Internationalization” and “Leverage Global Partners” strategies, Inovance has successfully brought its leading domestic products and solutions to the international market, continuously expanding its global influence.



**2003**  
founded

**IPO:2010**  
Shenzhen, China

**30,000**  
employees

**Global**  
network of offices and distributors

**\$6.4+bn**  
revenues in 2025

**5 R&D Centers**  
Shenzhen, Suzhou, Xi'an, Nanjing, Stuttgart (Germany)

**2886** Patents and software copyrights  
Invention 450 / Utility model 1443 / Industrial design 511 / Software copyright 482

**5538** R&D Employees  
Account for 23% of total employees

**USD 604+ Million**  
Account for 8.5% of revenue 2025



# HD9XS Series Medium-voltage AC Drive

| HD9XS series<br>Medium-voltage power cells cascaded compact AC Drive |                                                                                                                                                                                                                                                                                               |                                                                                |                                                                          |                                                                            |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Appearance                                                           |                                                                                                                                                                                                             |                                                                                |                                                                          |                                                                            |
| Power Class                                                          | 3.3kV: 315kVA~1400kVA<br>4.2kV: 315kVA~1800kVA<br>6kV: 315kVA~2800kVA                                                                                                                                                                                                                         | 3.3kV: 1600kVA~2250kVA<br>4.2kV: 2000kVA~2800kVA<br>6kV: 3150kVA~4000kVA       | 3.3kV: 2500kVA~4500kVA<br>4.2kV: 3150kVA~5600kVA<br>6kV: 4500kVA~8000kVA |                                                                            |
| Appearance                                                           |                                                                                                                                                                                                             |                                                                                |                                                                          |                                                                            |
| Power Class                                                          | 6.6 kV: 315kVA~1600 kVA<br>10 kV: 315kVA~2500 kVA<br>11 kV: 315kVA~2500 kVA                                                                                                                                                                                                                   | 6.6 kV: 1800kVA~3000 kVA<br>10 kV: 2800kVA~4500 kVA<br>11 kV: 2800kVA~4500 kVA | 6.6kV: 3500kVA~4000kVA<br>10kV: 5000kVA~7000kVA<br>11kV: 5000kVA~7000kVA | 6.6kV: 4500kVA~9000kVA<br>10kV: 8000kVA~13750kVA<br>11kV: 8000kVA~13750kVA |
| Cooling                                                              | Forced air cooling                                                                                                                                                                                                                                                                            |                                                                                |                                                                          |                                                                            |
| Basic Features                                                       | The HD9XS was designed based on a two-quadrant synchronous or asynchronous motor control platform, featuring power cells connected in series and bypass supporting architecture                                                                                                               |                                                                                |                                                                          |                                                                            |
| Application Scope                                                    | Energy-saving applications of fans and water pumps in the petrochemical, electric power, chemical, metallurgical, building materials, municipal and other fields<br>Process-oriented applications, such as compressors, belt conveyors, hoists, crushers, ball mills, and AC drive soft start |                                                                                |                                                                          |                                                                            |
| Competitive Advantage                                                | High efficiency, high power factor, and low harmonics<br>High-performance vector technology and accurate speed regulation<br>Brushless synchronous motor control technology                                                                                                                   |                                                                                |                                                                          |                                                                            |

Note: The above voltage classes and power are specifications of standard products. Other voltage classes and special processoriented applications can be customized as needed.

**HD90S**  
General-purpose medium-voltage vector AC drive (asynchronous motor)

**Basic features:**  
Medium-voltage vector AC drive designed based on a two-quadrant asynchronous motor control platform, featuring a general-purpose vector algorithm and power cells connected in series



**HD93S**  
High-performance medium-voltage vector AC drive (synchronous motor)

**Basic features:**  
Designed based on a two-quadrant synchronous motor control platform, featuring a sensorless field oriented control algorithm, and compatible with electric exciting synchronous motors and permanent exciting synchronous motors



## Inovance Boosts the Upgrade of the Heavy Industry

The global heavy industry faces severe challenges of transformation and upgrade while coping with huge pressure from slow growth, overcapacity, energy conservation, and emission reduction. To help optimize the industrial structure, promote low-carbon cycle development, and improve the quality of heavy industry products, Inovance boosts the upgrade of the global heavy industry by providing efficient and durable solutions for metallurgy, electricity, building materials, petrochemical, paper making, municipal, shipbuilding, rubber, mining, and other industries.





# HD9XS Series Power Cells Cascaded MV AC Drive

## Air cooling

- The uses top quality fans, featuring a large air volume, sufficient allowance, long service life, and high stability. This meets the heat dissipation requirement of the AC drive and improves its stability.

## Transformer cabinet

- The input side adopts a multi-pulse rectification architecture formed by a phase shift transformer. This greatly improves the current waveform on the network side, increases the input power factor, and reduces the harmonic pollution of equipment to the mains.



6.6 kV: 1800kVA~3000kVA  
10 kV: 2800kVA~4500kVA  
11 kV: 2800kVA~4500kVA

## Power cell cabinet and power cell

- Each phase consists of 3 to 9 power cells to form a 4N +1 level PWM waveform. Three-phase Y connection is used to directly output 3 to 11 kV power.



Power cell

## Control system

- The AC drive uses an intelligent controller based on high-speed ARM, DSP, and FPGA. The AC drive employs the sensorless field oriented control technology and optimized ripple PWM control technology for high-quality sinusoidal voltage and current output.

## Human-Machine Interface

- The AC drive uses the novel InoTouch series touchscreen independently developed and produced by Inovance, which provides friendly interfaces and it is convenient for user system connection.



# Back-to-back Structure Design, More Compact Size



3.3kV: 315kVA~1400kVA  
4.2kV: 315kVA~1800kVA  
6kV: 315kVA~2800kVA



### Power cell cabinet



The HD9XS adopts a new power cell design and thus is lighter and more aesthetic than the HD9X series. Its innovative semi-sealed structure makes it more adaptable to the environment and more reliable.

### Control cabinet

The HD9XS use a new-generation control cabinet architecture that is consistent with the main control system of the HD9XS. This improves the uniformity of onsite spare parts. Some details in the control cabinet are optimized, making it more convenient to operate the AC drive on site.

### Bypass cabinet/Wiring cabinet

The HD9XS innovatively integrate a one-to-one manual or automatic bypass cabinet, without changing the installation size of the AC drive.

### Transformer cabinet

The HD9XS adopts front-and-back arrangement of the transformer cabinet and power cell cabinet. Its advanced thermal design not only ensures heat dissipation but also saves the onsite installation space and reduces the cost of infrastructure construction for customers.



6.6kV: 315kVA~1600kVA  
10kV: 315kVA~2500kVA  
11kV: 315kVA~2500kVA



Note: Only 6.6 kV ( ≤ 1600kVA ) / 10 kV ( ≤ 2500kVA ) / 11 kV ( ≤ 2500kVA ) built-in bypass cabinet

# Continuous Production Guaranteed by Reliability and Durability



## Reliability and a long service life guaranteed by strict component selection and the most comprehensive test

Each product is guaranteed to meet the design requirements and customers' onsite process-oriented application requirements from product design to production.

Strict component selection and design: All core components are strictly tested and screened. The selected products are of high quality and a long service life and come from top-notch brands worldwide.

Advanced test conditions and test items: The leading multifunctional full-voltage and full-load test platform dedicated to medium-voltage AC drives has a maximum load of 4 MW. Each product undergoes dielectric testing, functional testing, aging testing, mechanical back-to-back testing, and fullload current testing before delivery.



## Product safety improved by reliable short-circuit protection for the secondary side of the phase shifting transformer

Inovance independently develops the short-circuit protection technology for the secondary side of the phase shifting transformer to avoid accidents such as fire and equipment damage caused by transformer secondary side shortcircuit.

This reduces customer losses and prevents fault escalation.

Timely: The short-circuit protection technology detects short-circuit information before the transformer may malfunction and takes protective measures to ensure equipment safety.

Omni-directional: The short-circuit protection technology gives comprehensive consideration to the number of short-circuit phases and short-circuit positions, and provides effective protection under various working conditions.

Flexible: No additional equipment is needed, making operation flexible and reliable.



## Stable operation in various industry and environments, strong environmental adaptability

Inovance HD9XS series medium-voltage AC drive is designed to meet different application requirements in various use environments, such as sea, land, plains, plateaus, and corrosive or dusty environments.

Application at the highest altitude: HD9XS is used at an altitude of 4650 m over sea level in Naqu, Tibet, which is the highest-altitude application in the industry.

Application in extremely cold and dusty environments: The HD9X series medium-voltage AC drive is successfully used at a copper mine in Karabas, Russia.

Application in environments with high humidity and salt fog: The HD9X series medium-voltage AC drive is widely used in port shore power, port conveyors, and offshore platforms.



## Continuous production even with abnormal power grid, backed by strong mains adaptability

HD9XS supports low and highvoltage ride through. Inovance is one of the drafters of the DL/T1648-2016 standard of the State Grid Corporation of China (SGCC). The AC drive has passed the test by the China Electric Power Research Institute (CEPRI) affiliated to the SGCC and is suitable for applications with poor mains and those with high reliability requirements.

# Easy Commissioning and Troubleshooting



## Local multi-language touchscreen

The HD9X series medium-voltage AC drive provides the simple, sensitive, and standard 7-inch full-color touchscreen, which is easy to use even for ordinary operators. The touchscreen supports a series of functions, such as setting parameters, viewing the detailed status of power cells, viewing fault records and logs, and 4-channel oscilloscope function.

Support for English and Russian

The touchscreen supports online switching among multiple languages.

Text library files in multiple languages can be imported and exported in the Excel format.



## Troubleshooting guide

Accurate guidance: Each fault can be located accurately when HD9XS is used.

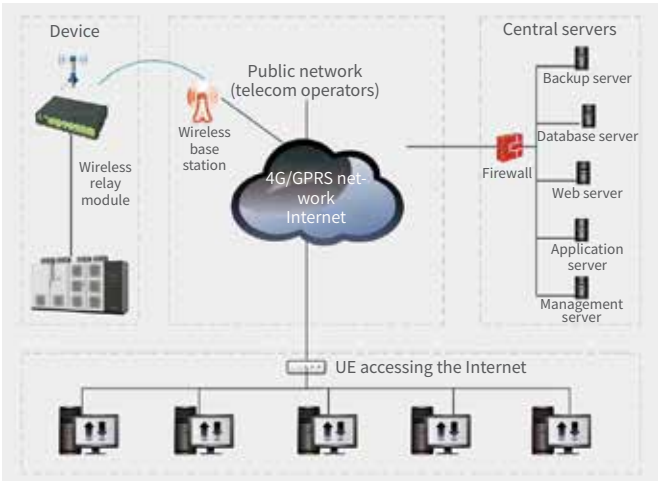
Troubleshooting: Users can quickly identify the cause of a fault and find the troubleshooting steps based on the fault code by touching a few buttons, without having to look up the user guide. This enables quick fault solving and reduces the downtime.

Black box function: There are 700 points data will be stored before and after a fault are recoded for accurate analysis of complex faults.



## Guided commissioning

The HD9X series medium-voltage AC drive is as easy to use as mobile phones. Pre-commissioning can be completed simply by setting parameters based on predefined steps.



## Guided commissioning

HD9XS supports remote fault diagnosis and commissioning based on Inovance's IoT platform. More responsive after-sales service is provided through real-time information capture.

Real-time information about product performance is analyzed.

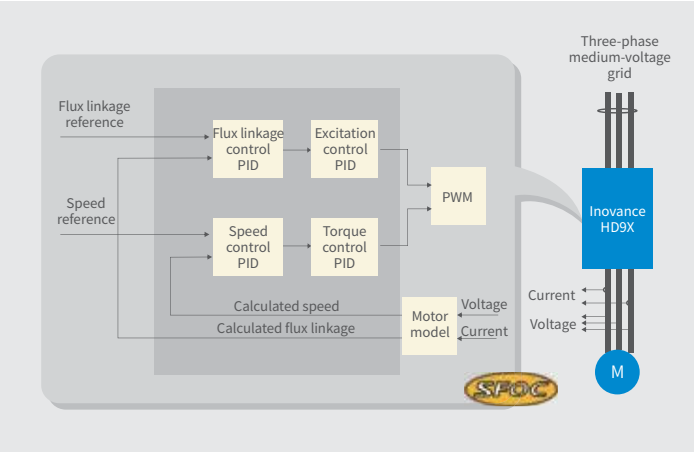
The operation efficiency, accuracy, and flexibility are improved.



# Excellent Technologies and Efficient Applications

Provide strong power for your equipments

to meet all kinds of complex and high-performance process-oriented applications

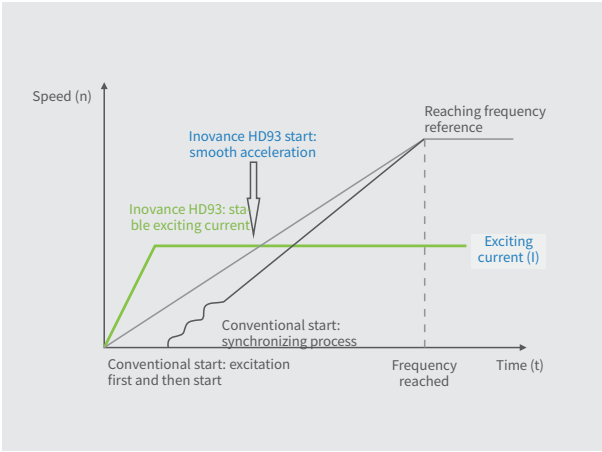


## Most suitable application algorithm for medium-voltage and high-power motors

Based on stator magnetic field orientation, the sensorless field oriented control algorithm is the most suitable vector algorithm for medium-voltage and high-power applications. On the basis of achieving high performance, the algorithm overcomes the sensitivity to rotor parameters and is suitable for both energy-saving applications with square torque loads and process-oriented applications with constant torque loads.

The sensorless field oriented control algorithm eliminates parameter dependance and makes operation more stable after the motor has been running for a long time.

The algorithm ensures efficient motor operation and greatly improves system efficiency.



## Synchronous motor control expert: mastering the core control algorithms of all types of synchronous motors

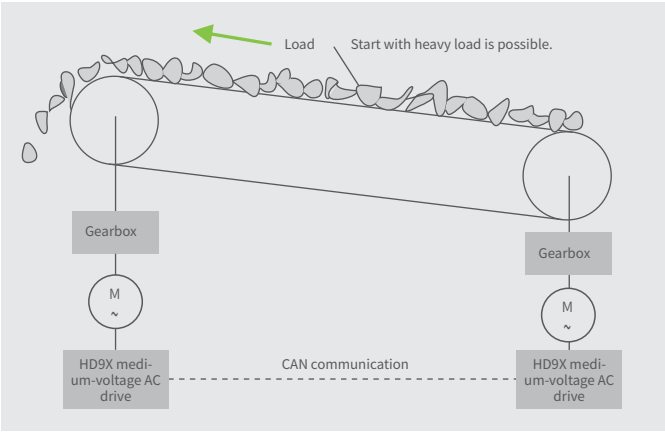
The HD93S series synchronous motor-dedicated mediumvoltage AC drive is applicable to brushed and brushless electrically excited synchronous motors, low-speed permanent magnet synchronous motor, and high-speed permanent magnet synchronous motor. It supports flux vector control (FVC) and speed sensorless vector control (SVC).

The AC drive features a 100% success rate of one-time startup, leading in the industry, SVC-controlled inversion-free startup, a large driving torque, and smooth operation.

Application to high-power electrically excited synchronous motors: 8000 kW sintering main exhaust fan of a steel plant in Hebei.

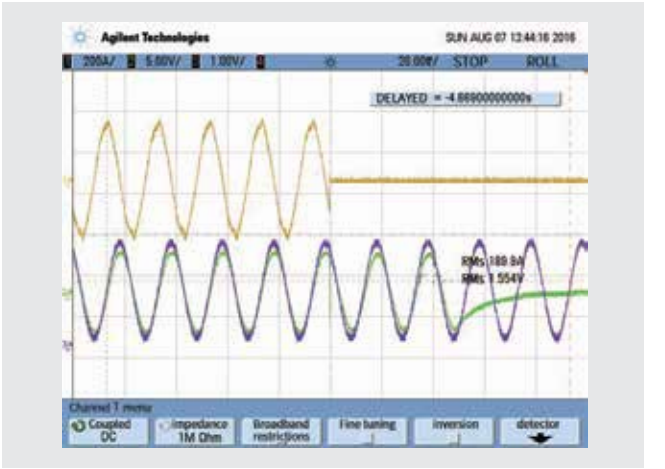
Application to low-speed permanent magnet synchronous motor: ball mill in a cement factory in Zhejiang, belt conveyor in a port in Hebei, and compact mill in a rubber factory in Tianjin.

Application to high-speed permanent magnet synchronous motor with maximum frequency: 599 Hz application of a motor test bed.



## Advanced master-slave control load distribution technology

HD9XS adopts the advanced master-slave control technology, which is widely used in multi-motor driven belt conveyors and other multi-motor parallel applications and is able to control the load imbalance to within 2%.

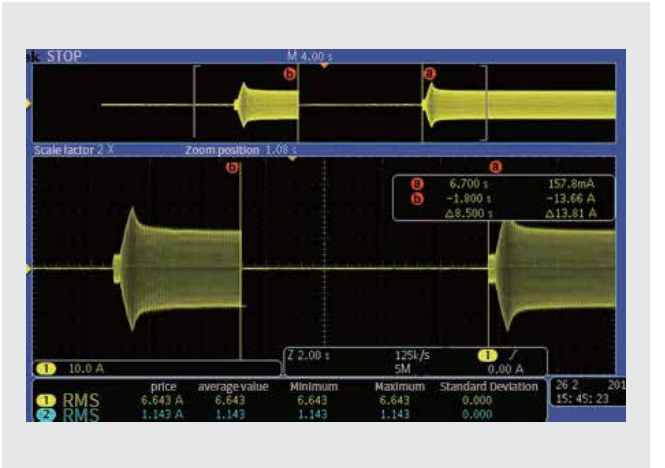


## Advanced syn-transfer technology

HD9XS implements synchronous switching for smooth load transfer with or without reactors. The switching current is less than 1.5 times the rated motor current.

The reactorless startup technology helps save more than 10% of the use cost and a lot of cabinet space.

A syn-transfer system can work with a third-party AC drive to implement soft startup and reduce repeated investment for customers.



## Fast Catching spinning motor technology reducing unnecessary stop time on site

HD9XS quickly identifies the motor speed and drives the motor to the target frequency regardless of whether the motor is in the reverse running, forward running, or static state. It is especially suitable for applications such as water pumps and herringbone air ducts. The AC drive implements flying start within 250 ms at a speed 80% to 90% faster than the common system, and provides better protection against misoperation.

# Online Power Cell Bypass Options

## Working Principle

### Real-Time Monitoring

Continuously monitors the voltage and current of each power cell to ensure optimal system performance.

### Intelligent Fault Detection

Detects cell imbalance, overcurrent, or other faults within microseconds for rapid response.

### Automatic Bypass Activation

The bypass contactor instantly isolates the faulty cell from the DC bus, allowing the system to continue operating safely.

### Adaptive Voltage Compensation

The remaining healthy cells automatically adjust their modulation index to maintain stable output voltage and uninterrupted operation.

## Key Benefits

### Zero Unplanned Downtime

Maintains system operation without interrupting production.

### Safe Maintenance

Faulty cells can be isolated and serviced safely while the system remains operational.

### Flexible Maintenance Scheduling

Perform repairs during planned maintenance windows, reducing operational impact.

### Enhanced Personnel Safety

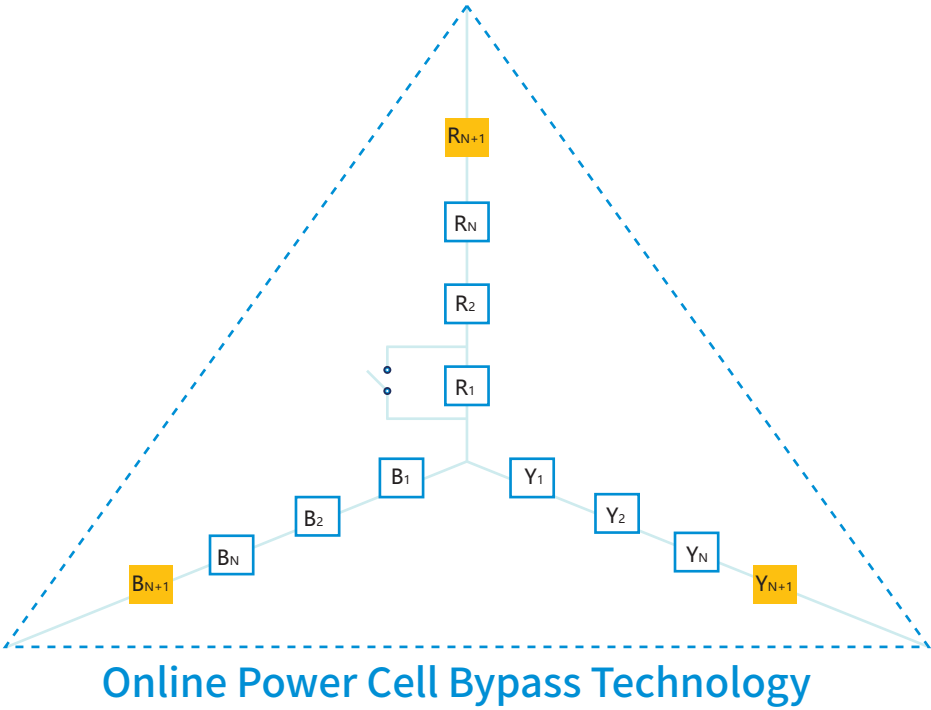
Minimizes arc flash risk by enabling maintenance on isolated, de-energized cells.

### Improved System Reliability

Ensures continuous operation even in the event of a single-cell fault.

### Lower Maintenance Costs

Reduces production losses and improves overall equipment availability.



## Working Principle

### Standby Cell Ready

A redundant standby cell (R) is continuously charged and maintained at the same voltage level as the active power cells.

### Real-Time Fault Detection

Continuous health monitoring instantly detects any failure or abnormal condition in the active cell (E).

### Automatic Failover

The control system automatically bypasses the faulty cell and switches the standby cell into operation without manual intervention.

### Seamless Operation

The switchover is completed in less than 1 ms, ensuring uninterrupted output and maintaining a smooth output waveform.

## Reliability Benefits

### 99.9%+ System Availability

Eliminates single points of failure for maximum uptime.

### Automatic Recovery

Instant fault response with no operator intervention required.

### Full Power Output

Maintains rated performance without derating during a cell failure.

### Predictive Maintenance

Schedule repairs during planned maintenance windows, avoiding emergency shutdowns.

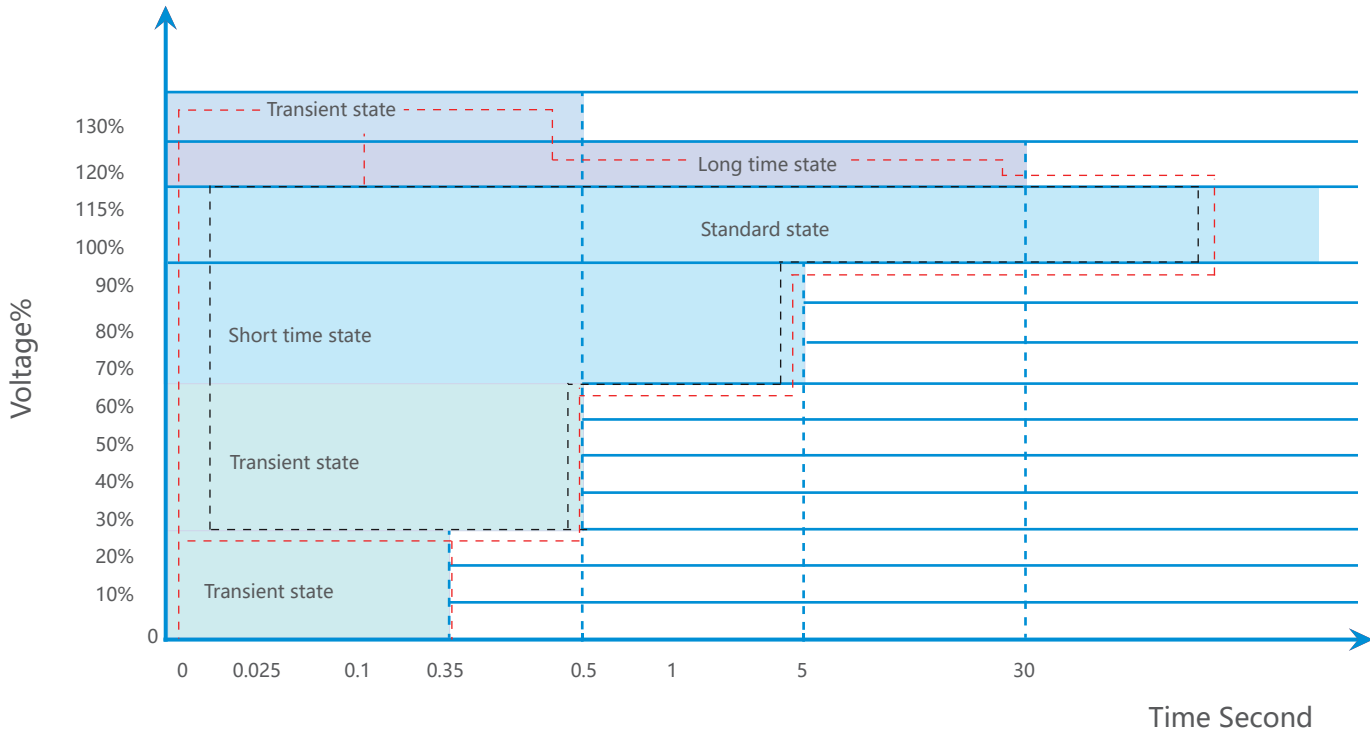
### Continuous Production

Keeps critical processes running even in the event of a power cell failure.

### Enhanced System Reliability

Maximizes equipment availability while reducing maintenance-related downtime.

## Over and Low voltage ride through



- Supports an ultra-wide input voltage range of 0% to 130% of rated voltage
- Designed for stable operation under extreme power grid voltage fluctuations

Technical Advantage

Advantage 1: Superior Voltage Ride-Through Performance

Advanced DC bus voltage sampling and intelligent control technology provide the industry's widest overvoltage and undervoltage ride-through capability, ensuring stable operation even under unstable power conditions.

Advantage 2: Industry-Leading Motor Control

Innovative flying start technology and deceleration constant magnetic flux V/F control deliver exceptional performance, enabling smooth motor restart, enhanced stability, and improved process continuity.

Advantage 3: Proven Industry Leadership

As a key contributor to the development of China's power plant industry standards, Inovance continues to lead the industry with cutting-edge technology, extensive application expertise, and reliable automation solutions.

Customer Benefits

Wide Voltage Ride-Through Capability

Designed to operate reliably under weak power grid conditions, the drive seamlessly adapts to a wide range of voltage fluctuations, including:

- Instantaneous voltage rise or drop
- Short-term voltage fluctuations
- Long-term overvoltage or undervoltage conditions

By preventing unnecessary trips, it ensures continuous machine operation, minimizes downtime, and enhances overall operational safety and reliability.

Strong R&D Team

Scientific and full-process management of R&D projects

Scientific product design guaranteed by advanced test platforms



Complete analysis and test facilities

Power device test platform  
Analysis of extreme working conditions (stray inductance and temperature simulation) of power electronic devices  
Analysis of large-capacity drive pre-research  
Electrical finite element analysis platform  
Simulation analysis of topological structures  
Simulation analysis of bus current  
Advanced algorithm simulation and comparative verification  
Thermal simulation analysis

Investment guaranteed for innovation

3 R&D centers: Shenzhen, Suzhou, and Milan, Italy  
10% of the sales revenue invested in R&D  
1697 R&D engineers  
746 patents, including 229 invention patents, 413 utility model patents, and 104 design patents  
Inovance won TÜV ETL certification in 2013. Its EMC and safety laboratory won the ACT qualification certificate of TÜV SÜD and CNAS certificate.

Ordering code

HD 9X S - J 100 / 2500 - D N  
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

|                                                                               |                                                                                                                                                                                                                                                    |                                                                                     |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| ① <b>Product series</b><br>HD: Inovance power cells cascaded compact AC drive | ③ <b>S</b> : New-generation medium-voltage compact AC drive with power cells connected in series                                                                                                                                                   | ⑤ Output voltage: in the unit of kV<br>(For example, 060 indicates 6 kV.)           |
|                                                                               |                                                                                                                                                                                                                                                    | ⑥ Rated capacity of the AC drive:<br>in the unit of kVA                             |
|                                                                               | ④ <b>Input voltage class</b><br>A: 1 kV                      G: 6.6 kV<br>B: 2.3 kV                  H: 7.2 kV<br>C: 3 kV                      J: 10 kV<br>D: 3.3 kV                  K: 11 kV<br>E: 4.2 kV                  L: 13.8 kV<br>F: 6 kV | ⑦ D: Indicates that the AC drive does not have energy feedback.                     |
|                                                                               |                                                                                                                                                                                                                                                    | ⑧ B: Indicates that the power cell is con figured with bypass.<br>N: Without bypass |



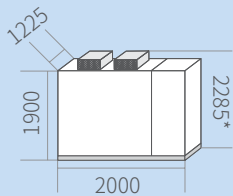
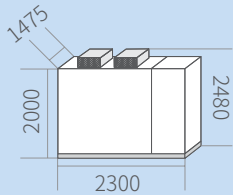
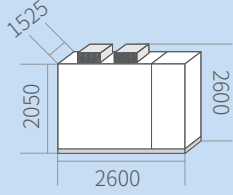
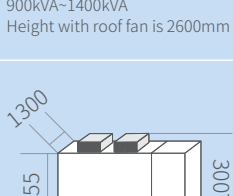
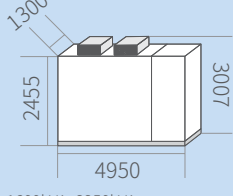
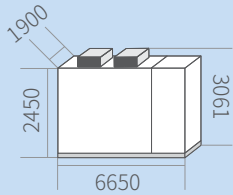
HD9XS electrical specifications

| Item                                                    | Voltage                       | 3.3kV~13.8kV                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input                                                   | Rated input voltage           | Three-phase 50Hz/60Hz, 3.3kV/4.2kV/6kV/6.6kV/10kV/11kV/13.8kV <sup>[1]</sup>                                                                                                                                                                                                                                          |
|                                                         | Voltage fluctuation           | Full-load running at U <sub>N</sub> ±10%; long-term running at -35% to -10% by applying derating                                                                                                                                                                                                                      |
|                                                         | Frequency range               | 50Hz/60Hz±10%                                                                                                                                                                                                                                                                                                         |
|                                                         | Input voltage of power cells  | 690V                                                                                                                                                                                                                                                                                                                  |
|                                                         | Input power factor            | ≥ 0.95 (with load more than 20%)                                                                                                                                                                                                                                                                                      |
|                                                         | Input current harmonics       | ≤ 4%, compliant with the IEEE519-2014 and GBT14549-93 standards                                                                                                                                                                                                                                                       |
| Output                                                  | Output voltage range          | 0kV~U <sub>N</sub>                                                                                                                                                                                                                                                                                                    |
|                                                         | Output voltage of power cells | 690V                                                                                                                                                                                                                                                                                                                  |
|                                                         | Output frequency range        | 0Hz~50Hz/60Hz; 60Hz~599Hz as customized product                                                                                                                                                                                                                                                                       |
|                                                         | Speed regulation ratio        | 40:1 (universal vector); 100:1 (SVC); 200:1 (FVC)                                                                                                                                                                                                                                                                     |
|                                                         | Rotational speed accuracy     | ±0.5 % (SVC); ± 0.2 % (FVC)                                                                                                                                                                                                                                                                                           |
| Startup torque                                          |                               | 0.5Hz/150% (SVC); 0 Hz/180% (FVC)                                                                                                                                                                                                                                                                                     |
| Technical solution                                      |                               | Power cells connected in series, AC-DC-AC, and high voltage input and output                                                                                                                                                                                                                                          |
| Control mode                                            |                               | Universal vector and SVC or FVC                                                                                                                                                                                                                                                                                       |
| Rectification                                           |                               | Diode three-phase full bridge                                                                                                                                                                                                                                                                                         |
| Inversion                                               |                               | IGBT inverter bridge                                                                                                                                                                                                                                                                                                  |
| Acceleration and deceleration time                      |                               | 0.1s~6500s; > 6500s customizable                                                                                                                                                                                                                                                                                      |
| Start/Stop control                                      |                               | Local or remote                                                                                                                                                                                                                                                                                                       |
| Control system                                          |                               | ARM, DSP, FPGA, and HMI                                                                                                                                                                                                                                                                                               |
| Panel display                                           |                               | Touchscreen, Support for English and Russian                                                                                                                                                                                                                                                                          |
| Overload capacity                                       |                               | 120% of rated current, 1 minute (> 462A, 110% of rated current, 1 minute)                                                                                                                                                                                                                                             |
| Efficiency                                              |                               | ≥ 96%                                                                                                                                                                                                                                                                                                                 |
| Fuse equipped for the AC drive                          |                               | A fuse on the input side of power cells                                                                                                                                                                                                                                                                               |
| Optical fiber adopted for the electrical isolation part |                               | Yes                                                                                                                                                                                                                                                                                                                   |
| Input filter required                                   |                               | No                                                                                                                                                                                                                                                                                                                    |
| Output filter required                                  |                               | No                                                                                                                                                                                                                                                                                                                    |
| Power factor compensation required                      |                               | No                                                                                                                                                                                                                                                                                                                    |
| Power cell protection                                   |                               | Overvoltage, undervoltage, input phase loss, overcurrent, overtemperature, and communication                                                                                                                                                                                                                          |
| System protection                                       |                               | Motor overload, output overload, output short circuit, output grounding, input overcurrent, input overvoltage, input imbalance, input grounding, cooling fan fault alarm, door switch interlock protection, transformer overheat alarm, transformer overheat trip, and transformer secondary short circuit protection |
| Mean time between failures (MTBF)                       |                               | 50,000 hours                                                                                                                                                                                                                                                                                                          |
| Communication interface                                 |                               | Modbus-RTU, Modbus-TCP/IP, CANlink, Profibus-DP, Profinet,                                                                                                                                                                                                                                                            |
| Digital input                                           |                               | 10 inputs, relay dry contact                                                                                                                                                                                                                                                                                          |
| Digital output                                          |                               | 16 outputs, relay dry contact                                                                                                                                                                                                                                                                                         |
| Analog input                                            |                               | 4 inputs, 4mA~20mA or 0V~10V                                                                                                                                                                                                                                                                                          |
| Analog output                                           |                               | 5 outputs, 4mA~20mA or 0V~10V                                                                                                                                                                                                                                                                                         |
| Service environment                                     |                               | Indoor                                                                                                                                                                                                                                                                                                                |
| Ambient temperature                                     |                               | -10° C to +40° C; derating at 40° C to 50° C; preheating before startup below -10° C                                                                                                                                                                                                                                  |
| Ambient humidity                                        |                               | 5%~95%, non-condensing                                                                                                                                                                                                                                                                                                |
| Altitude                                                |                               | ≤ 1000m; derating at more than 1000m. Specify the altitude when ordering.                                                                                                                                                                                                                                             |
| Total noise of equipment                                |                               | ≤ 85dB                                                                                                                                                                                                                                                                                                                |
| Cooling                                                 |                               | Forced air cooling                                                                                                                                                                                                                                                                                                    |
| IP rating                                               |                               | IP30, options IP31/IP41/IP42 <sup>[1]</sup>                                                                                                                                                                                                                                                                           |
| Cable entry and exit method                             |                               | Lower cable entry and exit, or customized configuration                                                                                                                                                                                                                                                               |
| Control power supply                                    |                               | 380 V±10% AC, three-phase and four-wire <sup>[1]</sup>                                                                                                                                                                                                                                                                |

[1]: If you have any other requirements, please consult the manufacturer

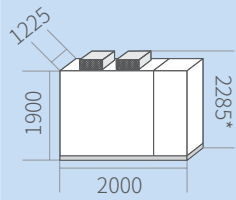
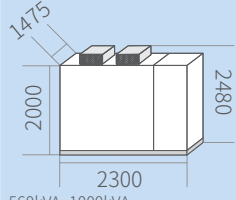
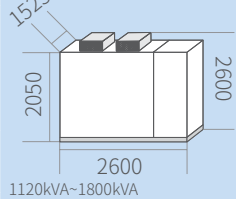
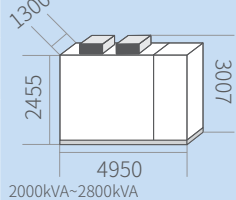
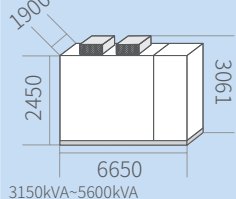
Dimensions

3.3 kV Series Installation Specifications

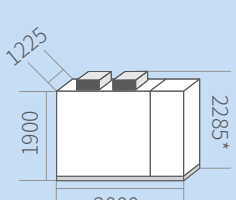
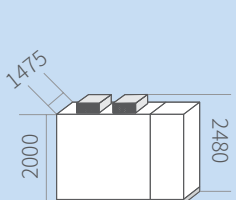
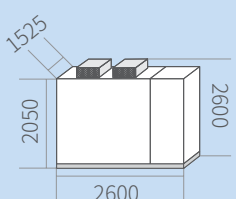
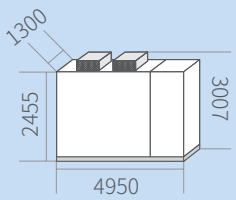
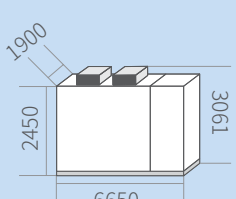
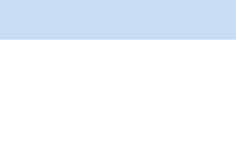
| Size                                                                                  | Applicable motor (kW)                                                                       | MVD model             | Capacity (kVA) 40° C | Dimensions (W×D×H) (mm) without roof fan | Net weight excluding bypass cabinet (kg) |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------|----------------------|------------------------------------------|------------------------------------------|
|    | 250                                                                                         | HD9XS-D033/315-DN(B)  | 315                  | 2000×1225×1900                           | 1846                                     |
|                                                                                       | 280                                                                                         | HD9XS-D033/355-DN(B)  | 355                  | 2000×1225×1900                           | 1896                                     |
|                                                                                       | 315                                                                                         | HD9XS-D033/400-DN(B)  | 400                  | 2000×1225×1900                           | 1946                                     |
|                                                                                       | 315kVA<br>Height with roof fan is 2285mm<br>355kVA~400kVA<br>Height with roof fan is 2385mm |                       |                      |                                          |                                          |
|    | 355                                                                                         | HD9XS-D033/450-DN(B)  | 450                  | 2300×1475×2000                           | 2046                                     |
|                                                                                       | 400                                                                                         | HD9XS-D033/500-DN(B)  | 500                  | 2300×1475×2000                           | 2146                                     |
|                                                                                       | 450                                                                                         | HD9XS-D033/560-DN(B)  | 560                  | 2300×1475×2000                           | 2246                                     |
|                                                                                       | 500                                                                                         | HD9XS-D033/630-DN(B)  | 630                  | 2300×1475×2000                           | 2346                                     |
|                                                                                       | 560                                                                                         | HD9XS-D033/710-DN(B)  | 710                  | 2300×1475×2000                           | 2446                                     |
|                                                                                       | 630                                                                                         | HD9XS-D033/800-DN(B)  | 800                  | 2300×1475×2000                           | 2531                                     |
|  | 710                                                                                         | HD9XS-D033/900-DN(B)  | 900                  | 2600×1525×2050                           | 2631                                     |
|                                                                                       | 800                                                                                         | HD9XS-D033/1000-DN(B) | 1000                 | 2600×1525×2050                           | 2731                                     |
|                                                                                       | 900                                                                                         | HD9XS-D033/1120-DN(B) | 1120                 | 2600×1525×2050                           | 2885                                     |
|                                                                                       | 1000                                                                                        | HD9XS-D033/1250-DN(B) | 1250                 | 2600×1525×2050                           | 3192                                     |
|                                                                                       | 1120                                                                                        | HD9XS-D033/1400-DN(B) | 1400                 | 2600×1525×2050                           | 3346                                     |
|  | 900kVA~1400kVA<br>Height with roof fan is 2600mm                                            |                       |                      |                                          |                                          |
|                                                                                       | 1250                                                                                        | HD9XS-D033/1600-DN(B) | 1600                 | 4950×1300×2455                           | 4515                                     |
|                                                                                       | 1400                                                                                        | HD9XS-D033/1800-DN(B) | 1800                 | 4950×1300×2455                           | 4835                                     |
|                                                                                       | 1600                                                                                        | HD9XS-D033/2000-DN(B) | 2000                 | 4950×1300×2455                           | 5135                                     |
|  | 1800                                                                                        | HD9XS-D033/2250-DN(B) | 2250                 | 4950×1300×2455                           | 5500                                     |
|                                                                                       | 1600kVA~2250kVA<br>Height with roof fan is 3007mm                                           |                       |                      |                                          |                                          |
|                                                                                       | 2000                                                                                        | HD9XS-D033/2500-DN(B) | 2500                 | 6650×1900×2450                           | 8955                                     |
|                                                                                       | 2240                                                                                        | HD9XS-D033/2800-DN(B) | 2800                 | 6650×1900×2450                           | 9460                                     |
|                                                                                       | 2500                                                                                        | HD9XS-D033/3150-DN(B) | 3150                 | 6650×1900×2450                           | 9930                                     |
|                                                                                       | 2800                                                                                        | HD9XS-D033/3550-DN(B) | 3550                 | 6650×1900×2450                           | 10900                                    |
|                                                                                       | 3150                                                                                        | HD9XS-D033/4000-DN(B) | 4000                 | 6650×1900×2450                           | 11350                                    |
|                                                                                       | 2500kVA~4500kVA<br>Height with roof fan is 3061mm                                           |                       |                      |                                          |                                          |
|  | 3550                                                                                        | HD9XS-D033/4500-DN(B) | 4500                 | 6650×1900×2450                           | 12060                                    |
|                                                                                       |                                                                                             |                       |                      |                                          |                                          |

# Dimensions

## 4.2kV Series Installation Specifications

| Size                                                                                                                                                                                    | Applicable motor (kW) | MVD model             | Capacity (kVA) 40° C | Dimensions (W×D×H) (mm) without roof fan | Net weight excluding bypass cabinet (kg) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|----------------------|------------------------------------------|------------------------------------------|
| <br>315kVA~400kVA<br>Height with roof fan is 2285mm<br>400kVA~450kVA<br>Height with roof fan is 2385mm | 250                   | HD9XS-E042/315-DN(B)  | 315                  | 2000×1225×1900                           | 2100                                     |
|                                                                                                                                                                                         | 280                   | HD9XS-E042/355-DN(B)  | 355                  | 2000×1225×1900                           | 2150                                     |
|                                                                                                                                                                                         | 315                   | HD9XS-E042/400-DN(B)  | 400                  | 2000×1225×1900                           | 2200                                     |
|                                                                                                                                                                                         | 355                   | HD9XS-E042/450-DN(B)  | 450                  | 2000×1225×1900                           | 2250                                     |
|                                                                                                                                                                                         | 400                   | HD9XS-E042/500-DN(B)  | 500                  | 2000×1225×1900                           | 2300                                     |
| <br>560kVA~1000kVA<br>Height with roof fan is 2480mm                                                   | 450                   | HD9XS-E042/560-DN(B)  | 560                  | 2300×1475×2000                           | 2400                                     |
|                                                                                                                                                                                         | 500                   | HD9XS-E042/630-DN(B)  | 630                  | 2300×1475×2000                           | 2500                                     |
|                                                                                                                                                                                         | 560                   | HD9XS-E042/710-DN(B)  | 710                  | 2300×1475×2000                           | 2600                                     |
|                                                                                                                                                                                         | 630                   | HD9XS-E042/800-DN(B)  | 800                  | 2300×1475×2000                           | 2700                                     |
|                                                                                                                                                                                         | 710                   | HD9XS-E042/900-DN(B)  | 900                  | 2300×1475×2000                           | 2800                                     |
| <br>1120kVA~1800kVA<br>Height with roof fan is 2600mm                                                | 800                   | HD9XS-E042/1000-DN(B) | 1000                 | 2300×1475×2000                           | 2900                                     |
|                                                                                                                                                                                         | 900                   | HD9XS-E042/1120-DN(B) | 1120                 | 2600×1525×2050                           | 3100                                     |
|                                                                                                                                                                                         | 1000                  | HD9XS-E042/1250-DN(B) | 1250                 | 2600×1525×2050                           | 3300                                     |
|                                                                                                                                                                                         | 1120                  | HD9XS-E042/1400-DN(B) | 1400                 | 2600×1525×2050                           | 3500                                     |
|                                                                                                                                                                                         | 1250                  | HD9XS-E042/1600-DN(B) | 1600                 | 2600×1525×2050                           | 3700                                     |
| <br>2000kVA~2800kVA<br>Height with roof fan is 2600mm                                                | 1400                  | HD9XS-E042/1800-DN(B) | 1800                 | 2600×1525×2050                           | 3945                                     |
|                                                                                                                                                                                         | 1600                  | HD9XS-E042/2000-DN(B) | 2000                 | 4950×1300×2455                           | 5515                                     |
|                                                                                                                                                                                         | 1800                  | HD9XS-E042/2250-DN(B) | 2250                 | 4950×1300×2455                           | 5835                                     |
|                                                                                                                                                                                         | 2000                  | HD9XS-E042/2500-DN(B) | 2500                 | 4950×1300×2455                           | 6135                                     |
| <br>3150kVA~5600kVA<br>Height with roof fan is 3061mm                                                | 2240                  | HD9XS-E042/2800-DN(B) | 2800                 | 4950×1300×2455                           | 6500                                     |
|                                                                                                                                                                                         | 2500                  | HD9XS-E042/3150-DN(B) | 3150                 | 6650×1900×2450                           | 9455                                     |
|                                                                                                                                                                                         | 2800                  | HD9XS-E042/3550-DN(B) | 3550                 | 6650×1900×2450                           | 9960                                     |
|                                                                                                                                                                                         | 3150                  | HD9XS-E042/4000-DN(B) | 4000                 | 6650×1900×2450                           | 10430                                    |
|                                                                                                                                                                                         | 3550                  | HD9XS-E042/4500-DN(B) | 4500                 | 6650×1900×2450                           | 12200                                    |
|                                                                                                                                                                                         | 4000                  | HD9XS-E042/5000-DN(B) | 5000                 | 6650×1900×2450                           | 12750                                    |
|                                                                                                                                                                                         | 4500                  | HD9XS-E042/5600-DN(B) | 5600                 | 6650×1900×2450                           | 13460                                    |

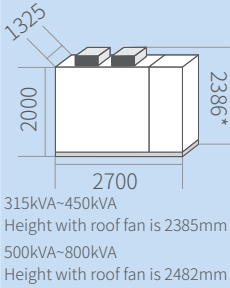
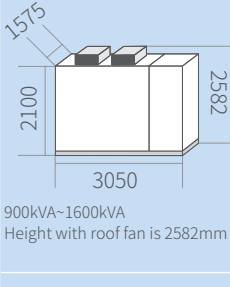
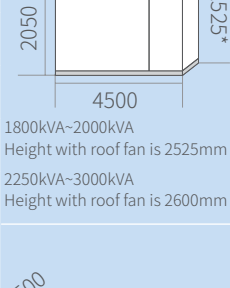
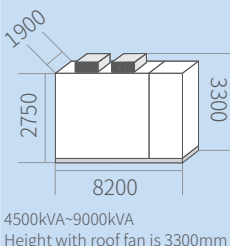
## 6 kV Series Installation Specifications

| Size                                                                                                                                                                               | Applicable motor (kW) | MVD model             | Capacity (kVA) 40° C | Dimensions (W×D×H) (mm) without roof fan | Net weight excluding bypass cabinet (kg) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|----------------------|------------------------------------------|------------------------------------------|
| <br>315kVA~630kVA<br>Height with roof fan is 2285mm<br>710kVA<br>Height with roof fan is 2385mm | 250                   | HD9XS-F060/315-DN(B)  | 315                  | 2000×1225×1900                           | 1730                                     |
|                                                                                                                                                                                    | 280                   | HD9XS-F060/355-DN(B)  | 355                  | 2000×1225×1900                           | 1860                                     |
|                                                                                                                                                                                    | 315                   | HD9XS-F060/400-DN(B)  | 400                  | 2000×1225×1900                           | 1890                                     |
|                                                                                                                                                                                    | 355                   | HD9XS-F060/450-DN(B)  | 450                  | 2000×1225×1900                           | 1920                                     |
|                                                                                                                                                                                    | 400                   | HD9XS-F060/500-DN(B)  | 500                  | 2000×1225×1900                           | 2050                                     |
| <br>450                                                                                         | 450                   | HD9XS-F060/560-DN(B)  | 560                  | 2000×1225×1900                           | 2180                                     |
|                                                                                                                                                                                    | 500                   | HD9XS-F060/630-DN(B)  | 630                  | 2000×1225×1900                           | 2210                                     |
|                                                                                                                                                                                    | 560                   | HD9XS-F060/710-DN(B)  | 710                  | 2000×1225×1900                           | 2340                                     |
|                                                                                                                                                                                    | 630                   | HD9XS-F060/800-DN(B)  | 800                  | 2300×1475×2000                           | 2500                                     |
|                                                                                                                                                                                    | 710                   | HD9XS-F060/900-DN(B)  | 900                  | 2300×1475×2000                           | 2700                                     |
| <br>800kVA~1600kVA<br>Height with roof fan is 2480mm                                          | 800                   | HD9XS-F060/1000-DN(B) | 1000                 | 2300×1475×2000                           | 2900                                     |
|                                                                                                                                                                                    | 900                   | HD9XS-F060/1120-DN(B) | 1120                 | 2300×1475×2000                           | 3100                                     |
|                                                                                                                                                                                    | 1000                  | HD9XS-F060/1250-DN(B) | 1250                 | 2300×1475×2000                           | 3300                                     |
|                                                                                                                                                                                    | 1120                  | HD9XS-F060/1400-DN(B) | 1400                 | 2300×1475×2000                           | 3500                                     |
|                                                                                                                                                                                    | 1250                  | HD9XS-F060/1600-DN(B) | 1600                 | 2300×1475×2000                           | 3700                                     |
| <br>1800kVA~2800kVA<br>Height with roof fan is 2600mm                                         | 1400                  | HD9XS-F060/1800-DN(B) | 1800                 | 2600×1525×2050                           | 3945                                     |
|                                                                                                                                                                                    | 1600                  | HD9XS-F060/2000-DN(B) | 2000                 | 2600×1525×2050                           | 4515                                     |
|                                                                                                                                                                                    | 1800                  | HD9XS-F060/2250-DN(B) | 2250                 | 2600×1525×2050                           | 4835                                     |
|                                                                                                                                                                                    | 2000                  | HD9XS-F060/2500-DN(B) | 2500                 | 2600×1525×2050                           | 5135                                     |
|                                                                                                                                                                                    | 2240                  | HD9XS-F060/2800-DN(B) | 2800                 | 2600×1525×2050                           | 5500                                     |
| <br>3150kVA~4000kVA<br>Height with roof fan is 3007mm                                         | 2500                  | HD9XS-F060/3150-DN(B) | 3150                 | 4950×1300×2455                           | 7655                                     |
|                                                                                                                                                                                    | 2800                  | HD9XS-F060/3550-DN(B) | 3550                 | 4950×1300×2455                           | 8260                                     |
| <br>3150kVA~8000kVA<br>Height with roof fan is 3061mm                                         | 3150                  | HD9XS-F060/4000-DN(B) | 4000                 | 4950×1300×2455                           | 8730                                     |
|                                                                                                                                                                                    | 3550                  | HD9XS-F060/4500-DN(B) | 4500                 | 6650×1900×2450                           | 13420                                    |
|                                                                                                                                                                                    | 4000                  | HD9XS-F060/5000-DN(B) | 5000                 | 6650×1900×2450                           | 14040                                    |
|                                                                                                                                                                                    | 4500                  | HD9XS-F060/5600-DN(B) | 5600                 | 6650×1900×2450                           | 14820                                    |
|                                                                                                                                                                                    | 5000                  | HD9XS-F060/6300-DN(B) | 6300                 | 6650×1900×2450                           | 15680                                    |
|                                                                                                                                                                                    | 5600                  | HD9XS-F060/7000-DN(B) | 7000                 | 6650×1900×2450                           | 16630                                    |
|                                                                                                                                                                                    | 6300                  | HD9XS-F060/8000-DN(B) | 8000                 | 6650×1900×2450                           | 17780                                    |

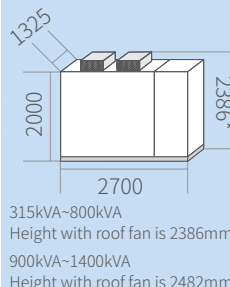
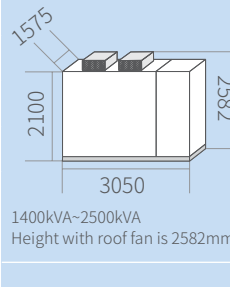
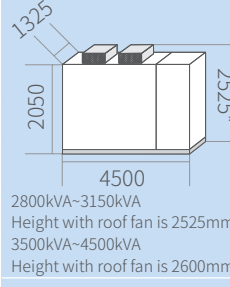


# Dimensions

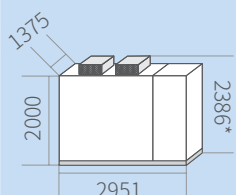
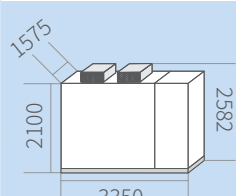
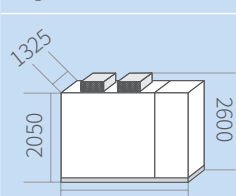
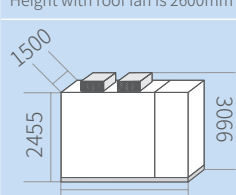
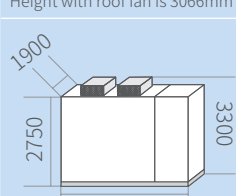
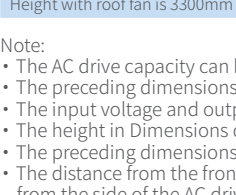
## 6.6 kV Series Installation Specifications

| Size                                                                                | Applicable motor (kW) | MVD model             | Capacity (kVA) 40° C | Dimensions (W×D×H) (mm) without roof fan | Net weight excluding bypass cabinet (kg) |
|-------------------------------------------------------------------------------------|-----------------------|-----------------------|----------------------|------------------------------------------|------------------------------------------|
|    | 250                   | HD9XS-G066/315-DN(B)  | 315                  | 2700×1325×2000                           | 2381                                     |
|                                                                                     | 280                   | HD9XS-G066/355-DN(B)  | 355                  | 2700×1325×2000                           | 2400                                     |
|                                                                                     | 315                   | HD9XS-G066/400-DN(B)  | 400                  | 2700×1325×2000                           | 2520                                     |
|                                                                                     | 355                   | HD9XS-G066/450-DN(B)  | 450                  | 2700×1325×2000                           | 2619                                     |
|                                                                                     | 400                   | HD9XS-G066/500-DN(B)  | 500                  | 2700×1325×2000                           | 2719                                     |
|                                                                                     | 450                   | HD9XS-G066/560-DN(B)  | 560                  | 2700×1325×2000                           | 2828                                     |
|                                                                                     | 500                   | HD9XS-G066/630-DN(B)  | 630                  | 2700×1325×2000                           | 2928                                     |
|                                                                                     | 560                   | HD9XS-G066/710-DN(B)  | 710                  | 2700×1325×2000                           | 3026                                     |
|   | 630                   | HD9XS-G066/800-DN(B)  | 800                  | 2700×1325×2000                           | 3126                                     |
|                                                                                     | 710                   | HD9XS-G066/900-DN(B)  | 900                  | 3050×1575×2100                           | 3902                                     |
|                                                                                     | 800                   | HD9XS-G066/1000-DN(B) | 1000                 | 3050×1575×2100                           | 4099                                     |
|                                                                                     | 900                   | HD9XS-G066/1120-DN(B) | 1120                 | 3050×1575×2100                           | 4296                                     |
|                                                                                     | 1000                  | HD9XS-G066/1250-DN(B) | 1250                 | 3050×1575×2100                           | 4496                                     |
|                                                                                     | 1120                  | HD9XS-G066/1400-DN(B) | 1400                 | 3050×1575×2100                           | 4690                                     |
|                                                                                     | 1250                  | HD9XS-G066/1600-DN(B) | 1600                 | 3050×1575×2100                           | 4884                                     |
|                                                                                     | 1400                  | HD9XS-G066/1800-DN(B) | 1800                 | 4500×1325×2050                           | 6544                                     |
|  | 1600                  | HD9XS-G066/2000-DN(B) | 2000                 | 4500×1325×2050                           | 6834                                     |
|                                                                                     | 1800                  | HD9XS-G066/2250-DN(B) | 2250                 | 4500×1325×2050                           | 6972                                     |
|                                                                                     | 2000                  | HD9XS-G066/2500-DN(B) | 2500                 | 4500×1325×2050                           | 7348                                     |
|                                                                                     | 2240                  | HD9XS-G066/2800-DN(B) | 2800                 | 4500×1325×2050                           | 7566                                     |
|                                                                                     | 2500                  | HD9XS-G066/3000-DN(B) | 3000                 | 4500×1325×2050                           | 7566                                     |
|                                                                                     | 2800                  | HD9XS-G066/3500-DN(B) | 3500                 | 6295×1500×2455                           | 9780                                     |
|                                                                                     | 3150                  | HD9XS-G066/4000-DN(B) | 4000                 | 6295×1500×2455                           | 10322                                    |
|                                                                                     | 3550                  | HD9XS-G066/4500-DN(B) | 4500                 | 8200×1900×2750                           | 13563                                    |
|  | 4000                  | HD9XS-G066/5000-DN(B) | 5000                 | 8200×1900×2750                           | 13963                                    |
|                                                                                     | 4500                  | HD9XS-G066/5600-DN(B) | 5600                 | 8200×1900×2750                           | 14358                                    |
|                                                                                     | 5000                  | HD9XS-G066/6300-DN(B) | 6300                 | 8200×1900×2750                           | 16063                                    |
|                                                                                     | 5600                  | HD9XS-G066/7000-DN(B) | 7000                 | 8200×1900×2750                           | 17454                                    |
|                                                                                     | 6300                  | HD9XS-G066/8000-DN(B) | 8000                 | 8200×1900×2750                           | 19212                                    |
|                                                                                     | 7100                  | HD9XS-G066/9000-DN(B) | 9000                 | 8200×1900×2750                           | 19649                                    |

## 10 kV Series Installation Specifications

| Size                                                                                  | Applicable motor (kW) | MVD model              | Capacity (kVA) 40° C | Dimensions (W×D×H) (mm) without roof fan | Net weight excluding bypass cabinet (kg) |
|---------------------------------------------------------------------------------------|-----------------------|------------------------|----------------------|------------------------------------------|------------------------------------------|
|    | 250                   | HD9XS-J100/315-DN(B)   | 315                  | 2700×1325×2000                           | 2520                                     |
|                                                                                       | 280                   | HD9XS-J100/355-DN(B)   | 355                  | 2700×1325×2000                           | 2520                                     |
|                                                                                       | 315                   | HD9XS-J100/400-DN(B)   | 400                  | 2700×1325×2000                           | 2520                                     |
|                                                                                       | 355                   | HD9XS-J100/450-DN(B)   | 450                  | 2700×1325×2000                           | 2520                                     |
|                                                                                       | 400                   | HD9XS-J100/500-DN(B)   | 500                  | 2700×1325×2000                           | 2520                                     |
|                                                                                       | 450                   | HD9XS-J100/560-DN(B)   | 560                  | 2700×1325×2000                           | 2640                                     |
|                                                                                       | 500                   | HD9XS-J100/630-DN(B)   | 630                  | 2700×1325×2000                           | 2760                                     |
|                                                                                       | 560                   | HD9XS-J100/710-DN(B)   | 710                  | 2700×1325×2000                           | 2860                                     |
|                                                                                       | 630                   | HD9XS-J100/800-DN(B)   | 800                  | 2700×1325×2000                           | 2960                                     |
|                                                                                       | 710                   | HD9XS-J100/900-DN(B)   | 900                  | 2700×1325×2000                           | 3170                                     |
|                                                                                       | 800                   | HD9XS-J100/1000-DN(B)  | 1000                 | 2700×1325×2000                           | 3370                                     |
|                                                                                       | 900                   | HD9XS-J100/1120-DN(B)  | 1120                 | 2700×1325×2000                           | 3570                                     |
|   | 1000                  | HD9XS-J100/1250-DN(B)  | 1250                 | 2700×1325×2000                           | 3770                                     |
|                                                                                       | 1120                  | HD9XS-J100/1400-DN(B)  | 1400                 | 3050×1575×2100                           | 4680                                     |
|                                                                                       | 1250                  | HD9XS-J100/1600-DN(B)  | 1600                 | 3050×1575×2100                           | 4880                                     |
|                                                                                       | 1400                  | HD9XS-J100/1800-DN(B)  | 1800                 | 3050×1575×2100                           | 5080                                     |
|                                                                                       | 1600                  | HD9XS-J100/2000-DN(B)  | 2000                 | 3050×1575×2100                           | 5280                                     |
|                                                                                       | 1800                  | HD9XS-J100/2250-DN(B)  | 2250                 | 3050×1575×2100                           | 5480                                     |
|                                                                                       | 2000                  | HD9XS-J100/2500-DN(B)  | 2500                 | 3050×1575×2100                           | 5680                                     |
|                                                                                       | 2240                  | HD9XS-J100/2800-DN(B)  | 2800                 | 4500×1325×2050                           | 7430                                     |
|                                                                                       | 2400                  | HD9XS-J100/3000-DN(B)  | 3000                 | 4500×1325×2050                           | 7720                                     |
|                                                                                       | 2500                  | HD9XS-J100/3150-DN(B)  | 3150                 | 4500×1325×2050                           | 7720                                     |
|                                                                                       | 2800                  | HD9XS-J100/3500-DN(B)  | 3500                 | 4500×1325×2050                           | 7870                                     |
|                                                                                       | 3000                  | HD9XS-J100/3750-DN(B)  | 3750                 | 4500×1325×2050                           | 7950                                     |
|  | 3150                  | HD9XS-J100/4000-DN(B)  | 4000                 | 4500×1325×2050                           | 8470                                     |
|                                                                                       | 3550                  | HD9XS-J100/4500-DN(B)  | 4500                 | 4500×1325×2050                           | 8500                                     |
|                                                                                       | 4000                  | HD9XS-J100/5000-DN(B)  | 5000                 | 6295×1500×2455                           | 11260                                    |
|                                                                                       | 4500                  | HD9XS-J100/5600-DN(B)  | 5600                 | 6295×1500×2455                           | 12030                                    |
|                                                                                       | 5000                  | HD9XS-J100/6300-DN(B)  | 6300                 | 6295×1500×2455                           | 12250                                    |
|                                                                                       | 5600                  | HD9XS-J100/7000-DN(B)  | 7000                 | 6295×1500×2455                           | 12590                                    |
|                                                                                       | 6300                  | HD9XS-J100/8000-DN(B)  | 8000                 | 8200×1900×2750                           | 18133                                    |
|                                                                                       | 7100                  | HD9XS-J100/9000-DN(B)  | 9000                 | 8200×1900×2750                           | 18728                                    |
|                                                                                       | 8000                  | HD9XS-J100/10000-DN(B) | 10000                | 8200×1900×2750                           | 20657                                    |
|                                                                                       | 9000                  | HD9XS-J100/11250-DN(B) | 11250                | 8200×1900×2750                           | 22472                                    |
|                                                                                       | 10000                 | HD9XS-J100/12500-DN(B) | 12500                | 8200×1900×2750                           | 24330                                    |
|                                                                                       | 11000                 | HD9XS-J100/13750-DN(B) | 13750                | 8200×1900×2750                           | 24791                                    |

## 11 kV Series Installation Specifications

| Size                                                                                                                                      | Applicable motor (kW) | MVD model              | Capacity (kVA) 40° C | Dimensions (W×D×H) (mm) without roof fan | Net weight excluding bypass cabinet (kg) |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------|----------------------|------------------------------------------|------------------------------------------|
| <br>315kVA~800kVA<br>Height with roof fan is 2386mm      | 250                   | HD9XS-K110/315-DN(B)   | 315                  | 2951×1375×2000                           | 2600                                     |
|                                                                                                                                           | 280                   | HD9XS-K110/355-DN(B)   | 355                  | 2951×1375×2000                           | 2600                                     |
|                                                                                                                                           | 315                   | HD9XS-K110/400-DN(B)   | 400                  | 2951×1375×2000                           | 2600                                     |
|                                                                                                                                           | 355                   | HD9XS-K110/450-DN(B)   | 450                  | 2951×1375×2000                           | 2600                                     |
|                                                                                                                                           | 400                   | HD9XS-K110/500-DN(B)   | 500                  | 2951×1375×2000                           | 2600                                     |
|                                                                                                                                           | 450                   | HD9XS-K110/560-DN(B)   | 560                  | 2951×1375×2000                           | 2720                                     |
|                                                                                                                                           | 500                   | HD9XS-K110/630-DN(B)   | 630                  | 2951×1375×2000                           | 2840                                     |
|                                                                                                                                           | 560                   | HD9XS-K110/710-DN(B)   | 710                  | 2951×1375×2000                           | 2940                                     |
|                                                                                                                                           | 630                   | HD9XS-K110/800-DN(B)   | 800                  | 2951×1375×2000                           | 3040                                     |
|                                                                                                                                           | 710                   | HD9XS-K110/900-DN(B)   | 900                  | 2951×1375×2000                           | 3250                                     |
| <br>900kVA~1250kVA<br>Height with roof fan is 2481mm     | 800                   | HD9XS-K110/1000-DN(B)  | 1000                 | 2951×1375×2000                           | 3450                                     |
|                                                                                                                                           | 900                   | HD9XS-K110/1120-DN(B)  | 1120                 | 2951×1375×2000                           | 3650                                     |
|                                                                                                                                           | 1000                  | HD9XS-K110/1250-DN(B)  | 1250                 | 2951×1375×2000                           | 3850                                     |
|                                                                                                                                           | 1120                  | HD9XS-K110/1400-DN(B)  | 1400                 | 3350×1575×2100                           | 4800                                     |
|                                                                                                                                           | 1250                  | HD9XS-K110/1600-DN(B)  | 1600                 | 3350×1575×2100                           | 5000                                     |
|                                                                                                                                           | 1400                  | HD9XS-K110/1800-DN(B)  | 1800                 | 3350×1575×2100                           | 5200                                     |
|                                                                                                                                           | 1600                  | HD9XS-K110/2000-DN(B)  | 2000                 | 3350×1575×2100                           | 5400                                     |
|                                                                                                                                           | 1800                  | HD9XS-K110/2250-DN(B)  | 2250                 | 3350×1575×2100                           | 5600                                     |
|                                                                                                                                           | 2000                  | HD9XS-K110/2500-DN(B)  | 2500                 | 3350×1575×2100                           | 5800                                     |
|                                                                                                                                           | 2240                  | HD9XS-K110/2800-DN(B)  | 2800                 | 4800×1325×2050                           | 7580                                     |
| <br>1400kVA~2500kVA<br>Height with roof fan is 2582mm   | 2400                  | HD9XS-K110/3000-DN(B)  | 3000                 | 4800×1325×2050                           | 7870                                     |
|                                                                                                                                           | 2500                  | HD9XS-K110/3150-DN(B)  | 3150                 | 4800×1325×2050                           | 7870                                     |
|                                                                                                                                           | 2800                  | HD9XS-K110/3500-DN(B)  | 3500                 | 4800×1325×2050                           | 8020                                     |
|                                                                                                                                           | 3000                  | HD9XS-K110/3750-DN(B)  | 3750                 | 4800×1325×2050                           | 8100                                     |
|                                                                                                                                           | 3150                  | HD9XS-K110/4000-DN(B)  | 4000                 | 4800×1325×2050                           | 8620                                     |
|                                                                                                                                           | 3550                  | HD9XS-K110/4500-DN(B)  | 4500                 | 4800×1325×2050                           | 8650                                     |
|                                                                                                                                           | 4000                  | HD9XS-K110/5000-DN(B)  | 5000                 | 6868×1500×2455                           | 11720                                    |
|                                                                                                                                           | 4500                  | HD9XS-K110/5600-DN(B)  | 5600                 | 6868×1500×2455                           | 12490                                    |
|                                                                                                                                           | 5000                  | HD9XS-K110/6300-DN(B)  | 6300                 | 6868×1500×2455                           | 12710                                    |
|                                                                                                                                           | 5600                  | HD9XS-K110/7000-DN(B)  | 7000                 | 6868×1500×2455                           | 13050                                    |
| <br>2800kVA~4500kVA<br>Height with roof fan is 2600mm  | 6300                  | HD9XS-K110/8000-DN(B)  | 8000                 | 8200×1900×2750                           | 18533                                    |
|                                                                                                                                           | 7100                  | HD9XS-K110/9000-DN(B)  | 9000                 | 8200×1900×2750                           | 19128                                    |
|                                                                                                                                           | 8000                  | HD9XS-K110/10000-DN(B) | 10000                | 8200×1900×2750                           | 21357                                    |
|                                                                                                                                           | 9000                  | HD9XS-K110/11250-DN(B) | 11250                | 8200×1900×2750                           | 23272                                    |
|                                                                                                                                           | 10000                 | HD9XS-K110/12500-DN(B) | 12500                | 8200×1900×2750                           | 24730                                    |
|                                                                                                                                           | 11000                 | HD9XS-K110/13750-DN(B) | 13750                | 8200×1900×2750                           | 25191                                    |
|                                                                                                                                           | 6300                  | HD9XS-K110/8000-DN(B)  | 8000                 | 8200×1900×2750                           | 18533                                    |
|                                                                                                                                           | 7100                  | HD9XS-K110/9000-DN(B)  | 9000                 | 8200×1900×2750                           | 19128                                    |
|                                                                                                                                           | 8000                  | HD9XS-K110/10000-DN(B) | 10000                | 8200×1900×2750                           | 21357                                    |
|                                                                                                                                           | 9000                  | HD9XS-K110/11250-DN(B) | 11250                | 8200×1900×2750                           | 23272                                    |
| <br>5000kVA~7000kVA<br>Height with roof fan is 3066mm  | 10000                 | HD9XS-K110/12500-DN(B) | 12500                | 8200×1900×2750                           | 24730                                    |
|                                                                                                                                           | 11000                 | HD9XS-K110/13750-DN(B) | 13750                | 8200×1900×2750                           | 25191                                    |
|                                                                                                                                           | 6300                  | HD9XS-K110/8000-DN(B)  | 8000                 | 8200×1900×2750                           | 18533                                    |
|                                                                                                                                           | 7100                  | HD9XS-K110/9000-DN(B)  | 9000                 | 8200×1900×2750                           | 19128                                    |
|                                                                                                                                           | 8000                  | HD9XS-K110/10000-DN(B) | 10000                | 8200×1900×2750                           | 21357                                    |
|                                                                                                                                           | 9000                  | HD9XS-K110/11250-DN(B) | 11250                | 8200×1900×2750                           | 23272                                    |
|                                                                                                                                           | 10000                 | HD9XS-K110/12500-DN(B) | 12500                | 8200×1900×2750                           | 24730                                    |
|                                                                                                                                           | 11000                 | HD9XS-K110/13750-DN(B) | 13750                | 8200×1900×2750                           | 25191                                    |
|                                                                                                                                           | 6300                  | HD9XS-K110/8000-DN(B)  | 8000                 | 8200×1900×2750                           | 18533                                    |
|                                                                                                                                           | 7100                  | HD9XS-K110/9000-DN(B)  | 9000                 | 8200×1900×2750                           | 19128                                    |
| <br>8000kVA~13750kVA<br>Height with roof fan is 3300mm | 6300                  | HD9XS-K110/8000-DN(B)  | 8000                 | 8200×1900×2750                           | 18533                                    |
|                                                                                                                                           | 7100                  | HD9XS-K110/9000-DN(B)  | 9000                 | 8200×1900×2750                           | 19128                                    |
|                                                                                                                                           | 8000                  | HD9XS-K110/10000-DN(B) | 10000                | 8200×1900×2750                           | 21357                                    |
|                                                                                                                                           | 9000                  | HD9XS-K110/11250-DN(B) | 11250                | 8200×1900×2750                           | 23272                                    |
|                                                                                                                                           | 10000                 | HD9XS-K110/12500-DN(B) | 12500                | 8200×1900×2750                           | 24730                                    |
|                                                                                                                                           | 11000                 | HD9XS-K110/13750-DN(B) | 13750                | 8200×1900×2750                           | 25191                                    |
|                                                                                                                                           | 6300                  | HD9XS-K110/8000-DN(B)  | 8000                 | 8200×1900×2750                           | 18533                                    |
|                                                                                                                                           | 7100                  | HD9XS-K110/9000-DN(B)  | 9000                 | 8200×1900×2750                           | 19128                                    |
|                                                                                                                                           | 8000                  | HD9XS-K110/10000-DN(B) | 10000                | 8200×1900×2750                           | 21357                                    |
|                                                                                                                                           | 9000                  | HD9XS-K110/11250-DN(B) | 11250                | 8200×1900×2750                           | 23272                                    |

- Note:
- The AC drive capacity can be adjusted based on user requirements and onsite requirements.
  - The preceding dimensions and weights are for reference only. The specific dimensions and weights are subject to the technical agreement.
  - The input voltage and output voltage are the same in the standard series.
  - The height in Dimensions does not include the fan height, which ranges from 300mm to 600mm.
  - The preceding dimensions and weights include the control cabinet, power cell cabinet, and transformer cabinet, but exclude the bypass cabinet.
  - The distance from the front of the AC drive to the wall must be at least 1500 mm, that from the back of the AC drive to the wall must be at least 1000mm, that from the side of the AC drive to the wall must be at least 800 mm, and that from the top of the AC drive to the roof must be at least 1000mm.

## Optional parts

| Name                                                      | Model    | Description                                                                                                                 |
|-----------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------|
| General Encoder Extension Card 1                          | PG1      | Differential input PG card with frequency dividing output                                                                   |
| General Encoder Extension Card 2                          | PG5      | OC input PG card with 1:1 frequency dividing output                                                                         |
| PROFIBUS-DP Extension Card                                | MD38DP2  | PROFIBUS-DP field bus adapter card                                                                                          |
| PROFINET IO Extension Card                                | MD500-PN | PROFINET field bus adapter card                                                                                             |
| One-to-One Manual Bypass Cabinet                          | HD-MS    | The manual bypass solution includes 3 isolation switches, QS1, QS2, QS3                                                     |
| One-to-One Automatic Bypass Cabinet                       | HD-AS    | The automatic bypass solution includes 3 contactors, KM1, KM2, KM3                                                          |
| One-to-Two Manual Bypass Cabinet                          | HD-MS-2  | The manual bypass solution includes 6 isolation switches, QS1, QS2, QS3, QS4, QS5, QS6                                      |
| One-to-Two Automatic Bypass Cabinet                       | HD-AS-2  | The automatic bypass solution includes 6 contactors, KM1, KM2, KM3, KM4, KM5, KM6                                           |
| One-to-One Automatic Bypass with Isolation Switch Cabinet | HD-AS-IS | The automatic bypass with isolation switch cabinet includes 3 contactors, KM1, KM2, KM3. And 2 isolation switches, QS1, QS2 |
| Output Isolation Cabinet                                  | HD-OI    | The cabinet includes 1 isolation switch, QS1. And 1 contactor, KM1                                                          |
| Pre-charge Cabinet                                        | HD-PC    | The cabinet includes 2 contactors, KM1, KM2. And 1 pre-charge resistor.                                                     |
| Integrated Protection Switchgear                          | HD-IP    | The cabinet includes 1 vacuum circuit breaker                                                                               |
| Remote Control Box                                        | HD-CB    | Remote control MVD, such as start, stop, reset, frequency set etc.                                                          |
| IOT Module                                                | IOT-WL   | Communicate with Inovane servers via 4G network, WiFi or Ethernet                                                           |

Note: For 10kV, 315kVA~2500kVA, the one-to-one bypass can be built into the AC drive cabinet.