Operation Manual

Hardware Manual of

Goodrive800 Series Products

SHENZHEN INVT ELECTRIC CO., LTD.

Preface

Thank you for purchasing our products.

Please read this manual carefully before any application.

Goodrive800 series products are developed for sophisticated application market which needs high overload capacity, high reliability and continuous operations. Its rated current is especially designed for various heavy-load applications such as metallurgy, port machinery, lifting, shore power, petroleum, petrochemical, municipal, chemical, electric power, building materials, mining, ship-building, paper-making, dynamometer machine, EPS and other industries and devices.

Goodrive800 series products apply international module, providing rectifier unit, IGBT or whole cabinet to meet requirements of end-users and clients of OEM and integrated system. Different modules can be combined flexibly according to different requirement on the basic of standard configuration. Not only the user can control machines at high precision, but also the excellent product reliability is embedded. Various solution applications are also provided to improve the convenient application at a great rate.

The manual provides detailed instruction of installation and commissioning, electrical connections, parameter setting, common troubleshooting and routine maintenance. Please read corresponding manual during installation, commissioning and application to ensure proper use and long service life of the product.

If the product is ultimately used for military affairs or manufacture of weapon, it will be listed on the export control formulated by ***Foreign Trade Law of the People's Republic of China***. Rigorous review and necessary export formalities are needed when exported.

Our company reserves the right to update the information of our products.

The manual of Goodrive800 includes:

Software Manual of Goodrive800 Series PWM Rectifiers;

Software Manual of Goodrive800 Series Inverters;

Installation and Maintenance Manual of Goodrive800 Series Products and***;***

Application Manual of Goodrive800 Series Products.

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Chapter 1 Safety precautions

Please read this manual carefully and follow all safety precautions before moving, installing, operating and servicing the inverter. If ignored, physical injury or death may occur, or damage may occur to the devices.

If any physical injury or death or damage to the devices occurs for ignoring to the safety precautions in the manual, our company will not be responsible for any damages and we are not legally bound in any manner.

1.1 Safety definition

Danger: Serious physical injury or even death may occur if not follow relevent requirements.

Warning: Physical injury or damage to the devices may occur if not follow relevent requirements.

Note: Physical hurt may occur if not follow relevent requirements.

Qualified electricians: People working on the device should take part in professional electrical and safety training, receive the certification and be familiar with all steps and requirements of installing, commissioning, operating and maintaining the device to avoid any emergency.

1.2 Warning symbols

Warnings caution you about conditions which can result in serious injury or death and/or damage to the equipment, and advice on how to avoid the danger. Following warning symbols are used in this manual:

Symbols	Name	Instruction	Abbreviation
 Danger	Danger	Serious physical injury or even death may occur if not follow the relative requirements	
 Warning	Warning	Physical injury or damage to the devices may occur if not follow the relative requirements	
 Do not	Electrostatic discharge	Damage to the PCBA board may occur if not follow the relative requirements	
 Hot sides	Hot sides	Sides of the device may become hot. Do not touch.	
Note	Note	Physical hurt may occur if not follow the relative requirements	Note

1.3 Safety guidelines

- ✧ Only qualified electricians are allowed to operate on the inverter.
- ✧ Do not carry out any wiring and inspection or changing components when the power supply is applied. Ensure all input power supply is disconnected before wiring and checking and always wait for at least the time designated on the inverter or until the DC bus voltage is less than 36V. Below is the table of the waiting time:

Voltage degree of Goodrive800 series products	Minimum waiting time
380V	15 minutes
660V	

	✧ Do not refit Goodrive800 series products unauthorizedly; otherwise fire, electric shock or other injury may occur.
	✧ The base of the radiator may become hot during running. Do not touch to avoid hurt.
	✧ The electrical parts and components inside Goodrive800 series products are electrostatic. Take measurements to avoid electrostatic discharge during relevent operation.

1.3.1 Delivery and installation

	✧ Use special tools to install and remove the unit. ✧ Use crane to intall the whole machine. ✧ Do not install Goodrive800 series products on combustible materials and avoid them to contact any combustible materials. ✧ Connect the optional parts according to the wiring diagram. ✧ Prevent dumping in installation because the gravity of the unit is high. ✧ Ensure that no other objects, such as screws, cable, left in the cabinet or Goodrive800 series products after installation or maintenance, otherwise damage may occur. ✧ Do not operate if there is any damage or components loss. ✧ Do not touch Goodrive800 series products with wet items or some part of the body, electric shock may occur.

Note:

✧ Select appropriate moving and installing tools to ensure a safe and normal running of the inverter and avoid physical injury or death. For physical safety, the erector should take some mechanical protective measurements, such as wearing exposure shoes and working uniforms.

✧ Ensure to avoid physical shock or vibration during delivery and installation.

✧ Install away from children and other public places.

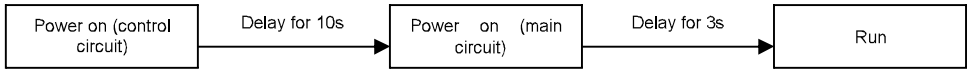
✧ Goodrive800 series products cannot meet the requirements of low voltage protection in IEC61800-5-1 if the sea level of installation site is above 2000m.

✧ The leakage current of Goodrive800 series products may be above 3.5mA during operation. Ground with proper techniques and ensure the grounding resistor is less than 10Ω. The conductivity of PE grounding conductor is the same as that of the phase conductor (with the same cross sectional area).

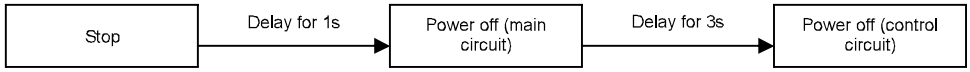
Cross-sectional area of conductor power cord (mm^2)	Cross-sectional area of grounding conductor (mm^2)
S≤16	S
16<S≤35	16
35<S	S/2

1.3.2 Sequence of power on/off

Time sequence of power on:



Time sequence of power off:



1.3.2 Commissioning and running

- ✧ Disconnect all power supplies applied to Goodrive800 series products before the terminal wiring and wait for at least the designated time after disconnecting the power supply.
- ✧ Check the connection of cable before power on.
- ✧ If the auxiliary control power of Goodrive800 series products is provided by external device, all power supplies are not disconnected. Check according to the diagram because voltage may be present when the device is not started, otherwise physical injury may occur.
- ✧ The operator can not touch the electrical parts in the cabinet directly. Pay attention when process the metal shield.
- ✧ Do not carry out any withstand voltage test in unit connection. Disconnect the motor cable before any isolution or withstand voltage test to the motor or motor cable.
- ✧ High voltage is present inside the product during running. Do not open the cabinet door.
- ✧ The inverter may start up by itself when P01.21=1. Do not get close to the product and motor.
- ✧ Voltage is also present on the motor terminals even if the motor does not rotate.
- ✧ “E-stop” of the device is for the disconnection of input power supply but not for the use of “E-stop device”.
- ✧ The device can not be used to break the motor suddenly. A mechanical braking device should be provided.
- ✧ Follow below precautions:
  1. All input power supplies are disconnected (including the mian and control power supply).
  2. Permanent magnet synchronous motor has stopped and the measured output voltage of Goodrive800 series products is less than 36V.
  3. The waiting time after permanent magnet synchronous motor stopping is no less than the designated time on Goodrive800 series products and the measured voltage between (+) and (-) is less than 36V.
  4. Ensure the motor does not rotate again during operation. It is recommended to install external braking devices or switch off the direct electrical connection between permanent magnet synchronous motor and Goodrive800 series products.

Note:

- ✧ Do not switch on or off the input power supply of Goodrive800 series products frequently.
- ✧ For Goodrive800 series products that have been stored for a long time, check and fix the capacitance and try to run it again before utilization (see Installation and Maintenance Manual).
- ✧ Cover the cabinet door before running, otherwise electric shock may occur.

1.3.3 Maintenance and replacement of components

- ✧ Only qualified electricians are allowed to perform the maintenance, inspection, and components replacement of Goodrive800 series products.
- ✧ Disconnect all power supplies to Goodrive800 series products before the terminal wiring. Wait for at least the time designated on Goodrive800 series products after disconnection.
- ✧ Take measures to avoid screws, cables and other conductive matters to fall into Goodrive800 series products during maintenance and component replacement.
- ✧ Operating optical fiber should be very careful. Do not touch the plug fiber optic fiber, because

	✧ Operate the optical fiber carefully. Do not touch the conduction-section (glass fiber) when plugging and inserting, because the fiber optic section (glass fiber) is extremely sensitive to dirt. The minimum bend radius of the optical fiber is 35 mm.

Note:

✧ Please select proper torque to tighten screws.

✧ Keep the inverter, parts and components away from combustible materials during maintenance and component replacement.

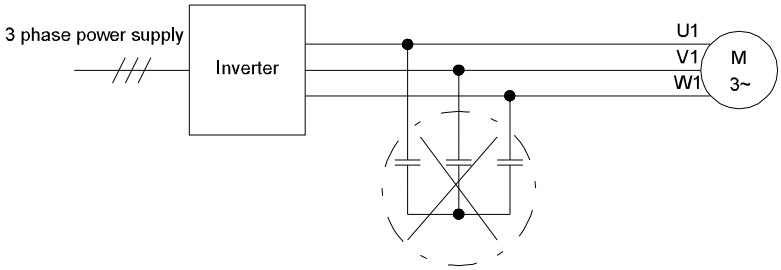
✧ Do not carry out any isolation and pressure test on the inverter and do not measure the control circuit of the inverter by megameter.

1.3.4 What to do after scrapping

⚠	✧ There are heavy metals in Goodrive800 series products. Deal with it as industrial effluent.

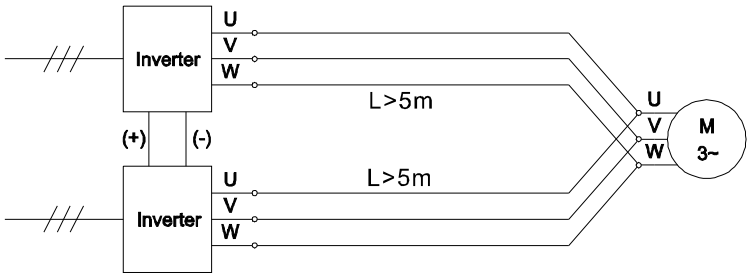
1.4 Notice in installation and applications

1.4.1 Do not connect the output of invertet to capacitor

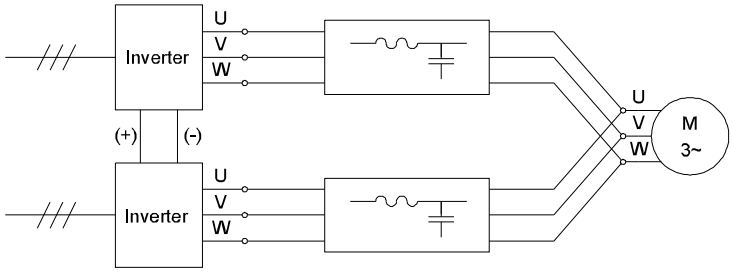


1.4.2 Cable requirement of parallel connection (the inverter and the power unit)

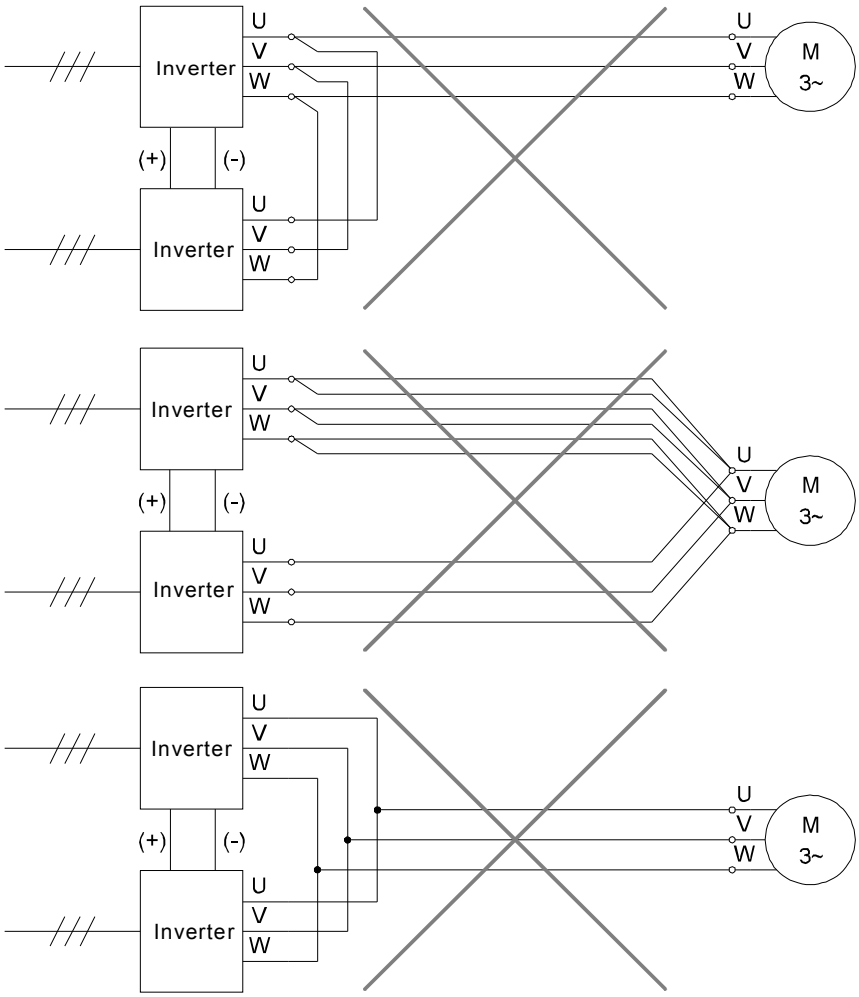
Conection 1: the outptu cables are converged to the motor and the cable length between the inverter and the motor is more than 5m.



Connection 2: the output cables are converged to the sinusoidal filter.



Wrong connection: the output cables are converged at the inverter side and the cables length between the inverter and the motor is different.



The distance between the inverter and the inverter is less than 5m

Chapter 2 Application precautions

2.1 Inspection before power on

2.1.1 Unpacking inspection

Check as followings after receiving products:

1. Check that there are no damage and humidification to the package.
2. Check the information on the type designation label on the outside of the package to verify that the drive is of the correct type.
3. Check that there are no signs of water in the package and no signs of damage or breach to the inverter.
4. Check the information on the type designation label on the outside of the package to verify that the name plate is of the correct type.
5. Check to ensure the accessories (including user's manual, control keypad and extension card) inside the device is complete.

If any problem, please contact with local dealers or INVT offices.

2.1.2 Application confirmation

Check the machine before beginning to use the product:

1. Check the load type to verify that there is no overload of Goodrive800 series products during work and check that whether the drive needs to modify the power degree.
2. Check the product meets the requirements of the communication mode.
3. Check the grid voltage is in the allowable input voltage range of Goodrive800 series products.
4. Check that the actual current of the motor is less than the rated current of Goodrive800 series products.

2.1.3 Environment

Check as followings before the actual installation and usage:

1. Check that the ambient temperature of Goodrive800 series products is below 40℃. If exceeds, derate 3% for every additional 1℃. Additionally, Goodrive800 series products can not be used if the ambient temperature is above 50℃.
2. Check that the ambient temperature of Goodrive800 series products in actual usage is above -10℃. If not, add heating facilities.
3. Check that the altitude of the actual usage site is below 1000m. If exceeds, derate1% for every additional 100m.
4. Check that the humidity of the actual usage site is below 90% and condensation is not allowed. If not, add additional protection inverters.
5. Check that the actual usage site is away from direct sunlight and foreign objects can not enter Goodrive800 series products. If not, add additional protective measures.
6. Check that there is no conductive dust or flammable gas in the actual usage site. If not, add additional protection to inverters.

2.1.4 Installation confirmation

Check as followings after the installation:

1. Check that the load range of the input and output cables meet the need of actual load.
2. Check that the accessories of Goodrive800 series products are correctly and properly installed. The installation cables should meet the needs of every component (including reactors, input filters, output reactors, output filters, DC reactors, braking units and braking resistors).
3. Check that Goodrive800 series product is installed on non-flammable materials and the calorific accessories (reactors and brake resistors) are away from flammable materials.

4. Check that all control cables and power cables are run separately and the routation complies with EMC requirement.
5. Check that all grounding systems are properly grounded according to the requirements of Goodrive800 series products.
6. Check that the free space during installation is sufficient according to the instructions in user's manual.
7. Check that the installation conforms to the instructions in user's manual. The drive must be installed in an upright position.
8. Check that the external connection terminals are tightly fastened and the torque is appropriate.
9. Check that there are no screws, cables and other conductive items left in Goodrive800 series products.

2.2 Environmental requirements of the product

Refer to *Installation and Maintenance Manual for Goodrive800 series products*.

Instalaltion site is important to the application and maintencen of Goodrive800 series priducts, please select the installation site according to followings:

Environmental conditions		Standards
Operation environment	Installation site	Install the drive system vertically on the indoor base; Outlet/inlet≥10cm; Distance between the cabinet and walls or other obstacle≥5 cm; The cooling medium is air.
	Ambient temperature	-10°C~50°C, Changes of air temperature ≤0.5°C /min; Derate if the temperature is above 40°C; Max. temperature: 50°C
	Relative humidity	5%~95%
	Other climatic conditions	No condensation, freezing rain, snow and hail; Solar radiation≤700W/m^2; Barometric pressure 70~106kPa
	Salt spray and corrosive gas content	Pollution degree 2
	Dirt and solid particle content	Pollution degree 2
	Altitude	≤1000m; Derate if the altitude is above 1000m; Derate 1% for every additional 100m
	Vibration	Maximum amplitude≤5.8m/s^2(0.6g)
Storage environment	Storage site	Clean and dry
	Ambient temperature	-30°C ~60℃; Changes of air temperature ≤1 ℃/min
	Relative humidity	5%~95%
	Storage time	≤6 months
Transportation environment	Transportation tools	Automobiles, trains, ships are available for standard package
	Ambient temperature	-30°C ~60°C
	RH	≤95% at 40°C

Environmental conditions		Standards
	Vobration	15m/s^2(1.5g) at sinusoidal vibration 9~200Hz

2.3 Derating of Goodrive800 series products

2.3.1 Capacity

Inverter sizing is based on the rated motor current and power. To achieve the rated motor power given in the table, the rated current of Goodrive800 series products must be higher than or equal to the rated motor current. Also the rated power of Goodrive800 series products must be higher than or equal to the rated motor power. The power ratings are the same regardless of the supply voltage within one voltage range.

Note:

1. The maximum allowed motor shaft power is limited to 1.5*PN. If the limit is exceeded, motor torque and current are automatically restricted. The function protects the input bridge of the drive against overload.

2. The ratings apply at ambient temperature of 40 °C

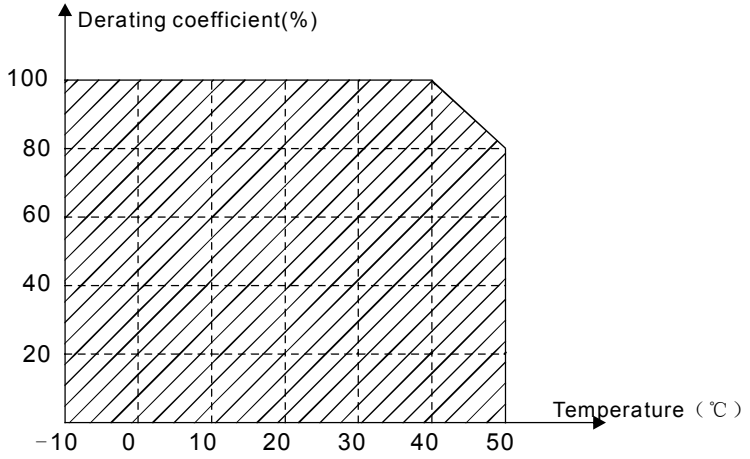
3. It is important to check that in common DC systems the power flowing through the common DC connection does not exceed PN.

2.3.2 Derating

The load capacity decreases if the installation site ambient temperature exceeds 40 °C, the altitude exceeds 1000 meters or the carrier frequency exceeds the default value.

2.3.2.1 Temperature derating

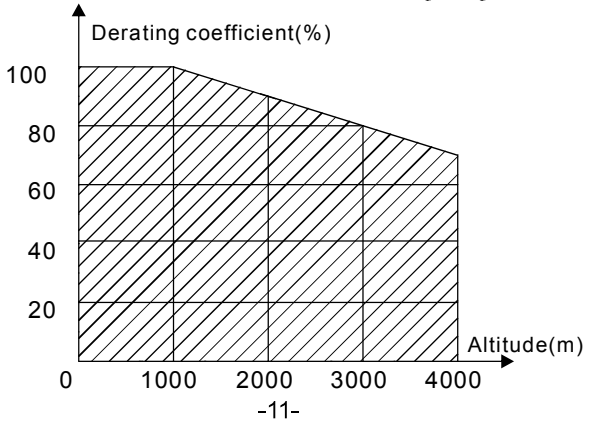
In the temperature range +40°C~+50°C, the rated output current is decreased by 2% for every additional 1 °C. Refer to the below list for the actual derating.



It is not recommended to use the inverter when the temperature is above 50 °C.

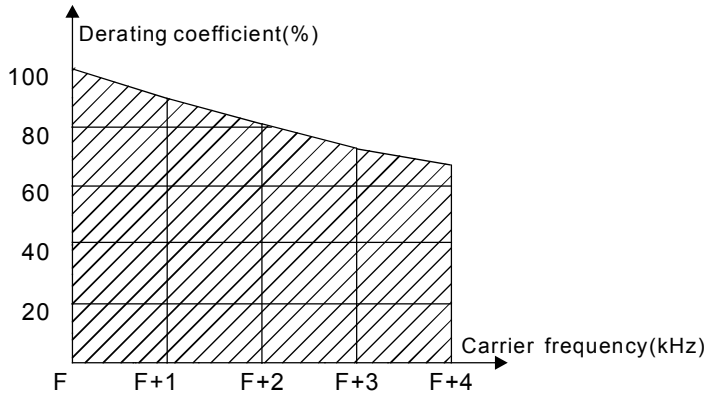
2.3.2.2 Altitude derating

The device can output at rated power if the installation site below 1000m. The output power decreases if the altitude exceeds 1000 meters. Below is the detailed decreasing range of the derating:



2.3.2.3 Carrier frequency derating

Different Goodrive800 series products have different carrier frequency. The rated power is based on the factory carrier frequency, and if the value exceeds the setting range, Goodrive800 series products need to derate 10% for every additional 1kHz.



2.4 Application standard

Goodrive800 series products follow:

EN/ISO 13849-1:2008	Machinery Safety - The safety-related parts of control systems - Part 1: General principles for design
IEC/EN 60204-1:2006	Machinery Safety - The electrical equipment of the machine - Part 1: General requirements
IEC/EN 62061:2005	Machinery Safety-Functional safety of the safety-related electrical, electronic and programmable electronic control system
IEC/EN 61800-3:2004	Adjustable speed electrical drive systems. Part 3: EMC standards and specific test of EMC adjustable speed electrical power drive systems
IEC/EN 61800-5-1:2007	Adjustable speed electrical drive systems-Part 5-1:Safety requirements - electrical, thermal and energy
IEC/EN 61800-5-2:2007	Adjustable speed electrical drive systems- Part 5-2: Safety requirements - functional

2.4.1 CE mark

The CE mark is attached to the drive to verify that the drive follows the provisions of the European Low Voltage (2006/95/EC) and EMC Directives (2004/108/EC).

2.4.2 Compliance with the European EMC Directive

The EMC Directive defines the requirements for immunity and emissions of electrical equipment used within the European Union. The EMC product standard (EN 61800-3:2004) covers requirements stated for drives. See section EMC regulations.

2.5 EMC regulations

EMC product standard (EN 61800-3:2004) contains the EMC requirements to the inverter.

First environment: domestic environment (includes establishments connected to a low-voltage network which supplies buildings used for domestic purposes).

Second environment includes establishments connected to a network not directly supplying domestic premises.

Four categories of the inverter:

Inverter of category C1: inverter of rated voltage less than 1000 V and used in the first environment.

Inverter of category C2: inverter of rated voltage less than 1000 V other than pins, sockets and motion

devices and intended to be installed and commissioned only by a professional electrican when used in the first environment.

Inverter of category C3: inverter of rated voltage less than 1000 V and used in the second environment other than the first one

Inverter of category C4: inverter of rated voltage more than 1000 V or the nomninal current is above or equal to 400A and used in the complicated system in second environment

Note: IEC/EN 61800-3 in EMC standard doesn't limit the power distribution of the inverter, but it defines the ustage, installation and commission. The professional electrician has necessary skills in installing and/or commissioning power drive systems, including their EMC aspects.

2.5.1 Category C2

The emission limits are complied with the following provisions:

1. The optional EMC filter is selected according to the options and installed as specified in the EMC filter manual.
2. The motor and control cables are selected as specified in this manual.
3. The drive is installed according to the instructions given in this manual.

	In a domestic environment, this product may cause radio inference, in which case supplementary mitigation measures may be required.

2.5.2 Category C3

The immunity performance of the drive complies with the demands of IEC/EN 61800-3, second environment.

The emission limits are complied with the following provisions:

1. The optional EMC filter is selected according to the options and installed as specified in the EMC filter manual.
2. The motor and control cables are selected as specified in this manual.
3. The drive is installed according to the instructions given in this manual.

	A drive of category C3 is not intended to be used on a low-voltage public network which supplies domestic premises. Radio frequency interference is expected if the drive is used on such a network.

Chapter 3 Technical parameters

3.1 Product model and name

3.1.1 Model of Goodrive800 series products

GD 800 - 2 6 - 0400 – 4 - RL

① ② ③ ④ ⑤ ⑥ ⑦

Descriptions:

Sign	Instruction	Example
①	Product name	GD: Goodrive series inverters
②	Series name	300: Common inverters
		800: Industrial drive products
③	Rectification mode/ topology type	1: Two-quadrant variable frequency drive
		2: Four-quadrant variable frequency drive
		5: Inverter
		6: Diode rectification
		7: Thyristor rectification
		8: IGBT synchronous rectification
		9: IGBT PWM rectification
		0: LCL PWM rectification filter
④	Structure type	1: Unit product
		2: Standard drive product
		6: Cabinet product (IP20)
		8: Cabinet product (IP54)
⑤	Power code	Refer to the electrical parameteres
⑥	Voltage degree	4: 380V(-15%)~440V(+10%)
		6: 520V(-15%)~690V(+10%)
⑦	Lot number	MLR: The cabinet order is switch cabinet→filter and rectifier cabinet→ inverter cabinet; MRL: The cabinet order is inverter cabinet←filter and rectifier cabinet← switch cabinet; MSC: Single cabinet(the default can be ingorned)

3.1.2 Model of Goodrive800 control unit

GD800 – ICU – 0400 – 4

① ② ③ ④

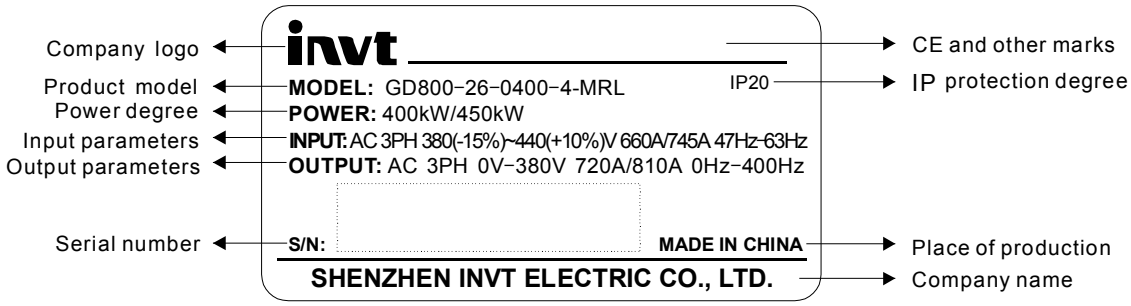
Key	Sign	Instruction	Example
Product series	①	Product series	GD: Goodrive series inverters
Product name	②	Product name	300: Common inverters 800: Industrial drive products

Key	Sign	Instruction	Example
	③	Control unit type	RCU: PWM rectifier control unit ICU: inverter control unit
Power code	④	Power code	Refer to the electric parameters definition of each unit for the definition of the power code
Voltage degree	⑤	Voltage degree	4: 380V(-15%)~440V(+10%) 6: 520V(-15%)~690V(+10%)

3.1.3 Product name of Goodrive800 series models

Product name	Series name	Name	Voltage degree	Power range
Unit product	Goodrive800-11	Inverter unit	380	4~400
			660	22~500
	Goodrive800-51	IGBT unit	380	37~400
			660	75~500
	Goodrive800-61	Diode rectifier unit	380	132~400
			660	132~500
	Goodrive800-71	SCR thyristor rectifier unit	380	400~600
			660	630~1000
	Goodrive800-81	IGBT synchronous rectifier unit	380	75~400
			660	75~500
	Goodrive800-01	LCL PWM filter unit	380	250~400
			660	315~500
Standard cabinet product	Goodrive800-16	Cabinet inverter	380	75~1200
			660	75~1500
	Goodrive800-26	Four-quadrant cabinet inverter	380	75~2400
			660	75~3000
	Goodrive800-56	Cabinet converter	380	75~2400
			660	75~3000
	Goodrive800-66	Cabinet diode rectifier	380	132~1200
			660	132~1500
	Goodrive800-76	Cabinet SCR rectifier	380	200~2400
			660	200~3000
	Goodrive800-86	Cabinet IGBT synchronous rectifier	380	75~1200
			660	75~1500
	Goodrive800-96	Cabinet IGBT PWM rectifier	380	75~2400
			660	75~3000

3.2 Product name



Note: only when the product past some certifications, such as CE certification, the corresponding sign will display.

3.3 Product specifications

3.3.1 Product specifications of Goodrive800-26 series four-quadrant cabinet inverter

Function		Specifications
Power input	Rated input voltage(V)	AC 3PH 380(-15%)~440(+10%) AC 3PH 520(-15%)~690(+10%)
	Rated input current(A)	Refer to 3.4.1
	Rated input frequency (Hz)	50Hz/60Hz, range: 47~63Hz
	Rated input efficiency (%)	＞95%
	Rated input power factor (%)	＞98%
	Rated input current hormonic (%)	<5%
Power output	Rated output voltage(V)	0~1.15*input voltage
	Rated output current(A)	Refer to 3.4.1
	Rated output power(kW)	Refer to 3.4.1
	Rated output frequency(Hz)	0~400Hz
Operation control	Control mode	V/F, close-loop vector and open-loop vector
	Carrier frequency	1-8 kHz
	Speed range	Close-loop vector : 1:1000 Open-loop vector : 1:100
	Speed control accuracy	Close-loop vector: ± 0.1% of the Max. speed Open-loop vector: ± 0.5% of the Max. speed
	Current limit	Max. value: 200% of the rated current
	The parallel uneven flow degrees of the power unit	≤5% of the unit rated current
	The parallel uneven flow degrees of the system	≤5% of the system rated current
	Bus voltage detection	Overvoltage point ±1%

Function		Specifications
	accuracy	
	The output current detection accuracy	Rated current ±3%
	The terminal analog input resolution	≤20mV
	The terminal switch input resolution	≤2ms
Protections	Motor protection	Motor overload and overtemperature protection
	Overcurrent protection	150% of rated current:60s, 180% of rated current:10s, 200% of rated current:1s
	Overvoltage protection	380~440V: bus 800V overvoltage
		520~690V: bus 1200V overvoltage
	Undervoltage protection	380~440V: bus 350V undervoltage
		520~690V: bus 570V undervoltage
	Overtemperature protection	Module temperature 85℃
	Fault protection	More than 30 fault protections and 20 unit fault protections
	Safety protection	STO, SS1, SSL, SBC protections
Others	Audio noise	<90dB
	Installation mode	Floor installation
	Protection degree	IP20
	Cooling mode	Forced air cooling
	Safety and EMC performance	Meet CE requirement

3.3.2 Product specifications of Goodrive800-96 series cabinet IGBT PWM rectifier

Function		Specifications
Power input	Rated input voltage(V)	AC 3PH 380(-15%)~440(+10%) AC 3PH 520(-15%)~690(+10%)
	Rated input current(A)	Refer to 3.4.2
	Rated input frequency(Hz)	50Hz/60Hz, 47~63Hz
	Rated input efficiency(%)	≥97%
	Rated input power factor (%)	≥98%
Operation control	Current limit	Max. value: 200% of the rated current
	Carrier frequency	2~8kHz
	Bus voltage detection accuracy	±1% of the overvoltage point
	The input current detection accuracy	±3% of the rated current
Protections	Overload protection	150% of rated current:60s, 180% of rated current:10s, 200% of rated current:1s
	Overvoltage protection	380~440V: bus 800V overvoltage 520~690V: bus 1200V overvoltage
	Undervoltage protection	380~440V: bus 350V undervoltage 520~690V: bus 570V undervoltage
	Overtemperature protection	85℃
	Fault protection	More than 30 fault protections and 20 unit fault protections
Others	Audio noise	<90dB
	Installation mode	Floor installation
	Protection degree	IP20
	Cooling mode	Forced air cooling
	Safety and EMC performance	Meet CE requirement

3.3.3 Product specifications of Goodrive800-56 series standard IGBT cabinet

Function		Specifications
Power input	Input voltage (V)	400V:DC 350V-800V 690V:DC 650V-1200V
	Rated input current(A)	Refer to 3.4.3
Power output	Output voltage (V)	0~0.7V_{DC}
	Rated output current(A)	Refer to 3.4.3
	Rated output power(kW)	Refer to 3.4.3
	Output frequency (Hz)	0~400Hz
Operation control	Current limit	Max. value: 200% of the rated current
	Carrier frequency	1~8kHz
	Bus voltage detection accuracy	Overvoltage point ±1%
	The output current detection accuracy	Rated current ±3%
Protections	Overload protection	150% of rated current:60s, 180% of rated current:10s, 200% of rated current:1s
	Overvoltage protection	380~440V: bus 800V overvoltage 520~690V: bus 1200V overvoltage
	Undervoltage protection	380~440V: bus 350V undervoltage 520~690V: bus 570V undervoltage
	Overtemperature protection	85℃
	Fault protection	More than 30 fault protections and 20 unit fault protections
Others	Audio noise	<80dB
	Installation mode	Floor installation
	Protection degree	IP20
	Cooling mode	Forced air cooling
	Safety and EMC performance	Meet CE requirement

3.3.4 Product specifications of Goodrive800-51 series power unit

Function		Specifications
Power ratings	DC voltage (V)	380~440V: DC 350V-800V 520~690V: DC 570V-1200V
	Rated input current(V)	Refer to 3.4.4
	Rated output voltage(V)	0~0.7V_{DC}
	Rated output current(A)	Refer to 3.4.4
	Rated output power(kW)	Refer to 3.4.4
	Rated input efficiency (%)	98%
	Output frequency (Hz)	0~400Hz
Operation control	Current limit	Max. value: 200% of the rated current
	Carrier frequency	1~8kHz
	Bus voltage detection accuracy	Overvoltage point ±1%
	The output current detection accuracy	Rated current ±3%
Protections	Overload protection	150% of rated current:60s, 180% of rated current:10s, 200% of rated current:1s
	Overvoltage protection	380~440V: bus 900V overvoltage 520~690V: bus1350V overvoltage
	Overtemperature protection	85℃
	Fault protection	20 unit fault protections
Others	Audio noise	<75dB
	Installation mode	Cabinet installaiton
	Protection degree	IP00
	Cooling mode	Forced air cooling
	Safety and EMC performance	Meet CE requirement

3.3.5 Product specifications of Goodrive800-11 series inverter unit

Function		Specifications
Power input	Rated input voltage(V)	AC 3PH 380(-15%)~440(+10%) AC 3PH 520(-15%)~690(+10%)
	Rated input current(A)	Refer to 3.4.5
	Rated input frequency(Hz)	50Hz/60Hz, 47~63Hz
	Rated input efficiency (%)	≥97%
Power output	Rated output voltage(V)	0~input voltage
	Rated output current(A)	Refer to 3.4.5
	Rated output power(kW)	Refer to 3.4.5
	Rated output frequency(Hz)	0~400Hz
Operation control	Current limit	Max. value: 200% of the rated current
	Carrier frequency	1~8kHz
	Bus voltage detection accuracy	Overvoltage point ±1%
	The output current detection accuracy	Rated current ±3%
Protections	Motor protection	Motor overload and overtemperature protection
	Overcurrent protection	150% of rated current:60s, 180% of rated current:10s, 200% of rated current:1s
	Overvoltage protection	380~440V: bus 800V overvoltage 520~690V: bus 1200V overvoltage
	Undervoltage protection	380~440V: bus 350V undervoltage 520~690V: bus 570V undervoltage
	Overtemperature protection	85℃
	Fault protection	20 unit fault protections
Others	Audio noise	<90dB
	Installation mode	Cabinet installation
	Protection degree	IP00
	Cooling mode	Forced air cooling
	Safety and EMC performance	Meet CE requirement

3.3.6 Product specifications of Goodrive800-01 LCL PWM filter unit

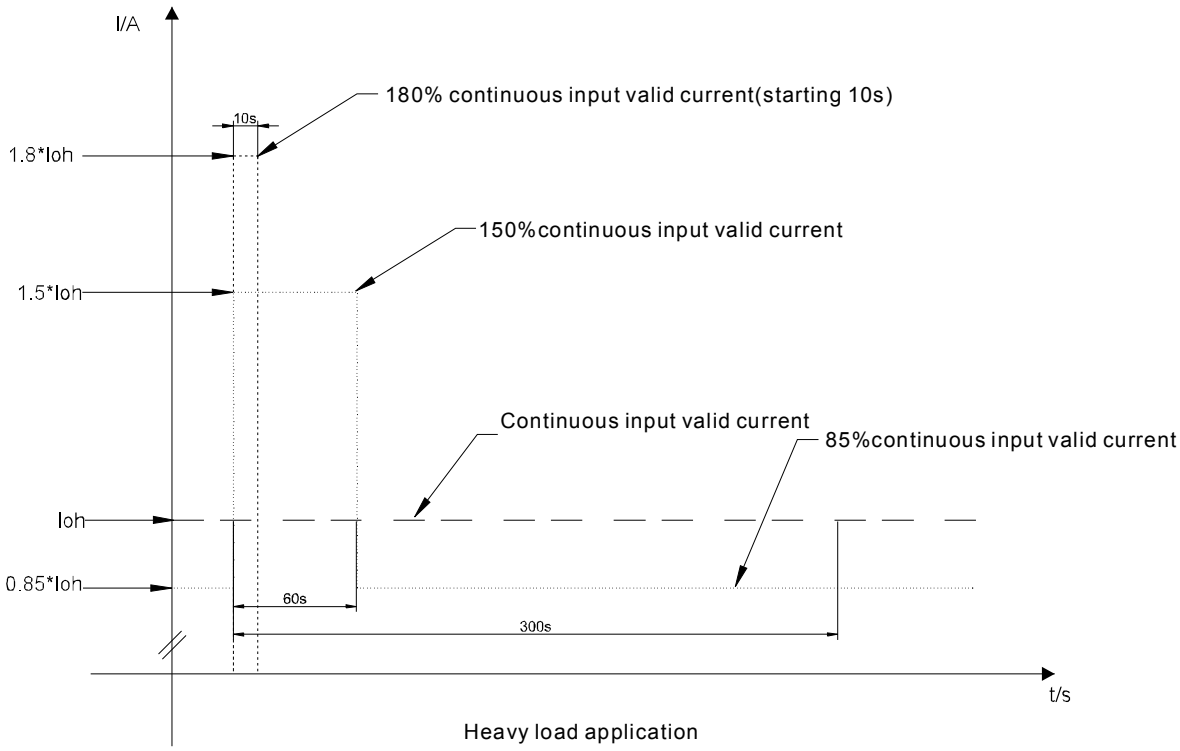
Function		Specifications
Power input	Rated input voltage(V)	AC 3PH 380(-15%)~440(+10%) AC 3PH 520(-15%)~690(+10%)
	Rated input current(A)	Refer to 3.4.6
	Rated input frequency(Hz)	50Hz/60Hz, 47~63Hz
Whole performance	Voltaeg drop at grid	2%
	Voltaeg drop at rectifier	8%
Protections	Fault protection	Fault protection signal of the reactor overheating
Others	Audio noise	<90dB
	Installation mode	Cabinet installation
	Protection degree	IP00
	Cooling mode	Forced air cooling
	Safety and EMC performance	Meet CE requirement

3.3.7 Product specifications of Goodrive800 control unit

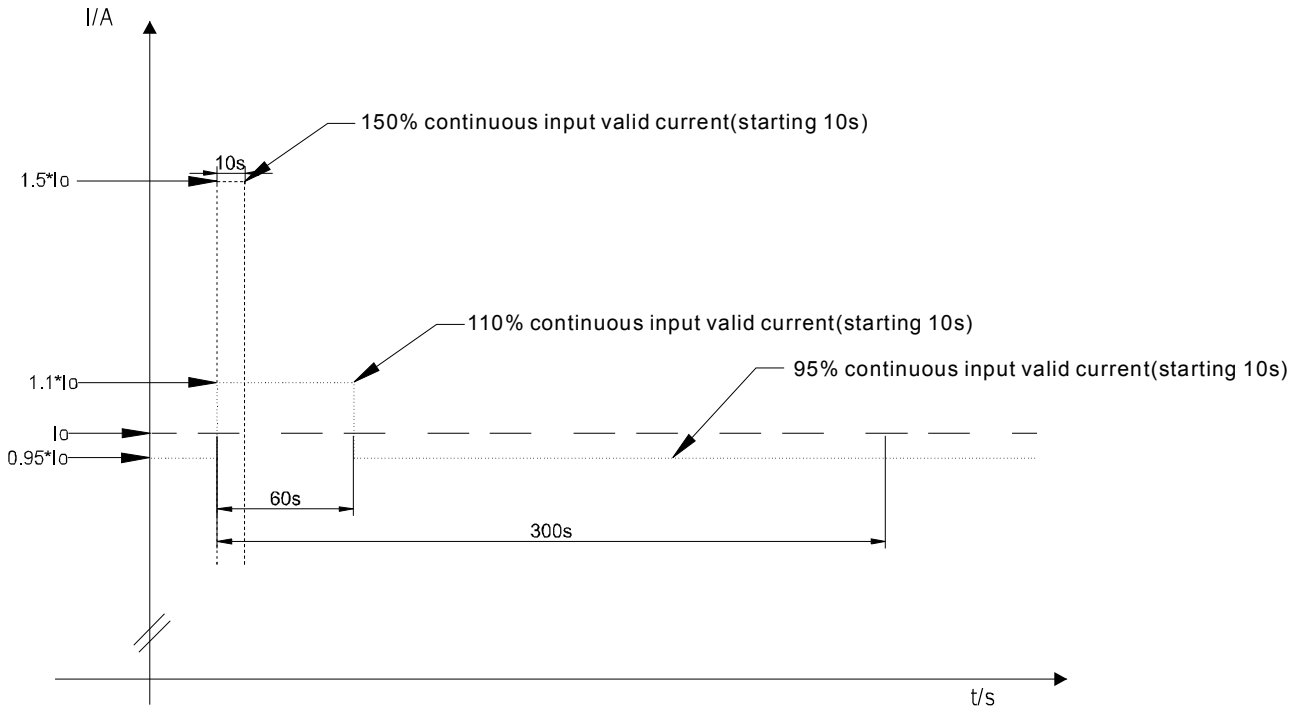
Function		Specifications
Operation power supply	Rated input voltage(V)	DC 24V±20%
	Rated input current(A)	DC 2A
Periphery Interface	10V power supply	10.5V reference power supply
	24V power supply	User power supply Max. output current: 200mA
	PW external power supply	Digital input/output operation power supply Voltage range:12~24V
	The terminal analog input resolution	≤20mV
	The terminal switch input resolution	≤20ms
	Analog input	2 (AI1,AI2) 0~10V/0~20mA 1(AI3) -10V~10V/-20mA~20mA
	Analog output	1 (AO1)0~10V/0~20mA 1(AO2) -10V~10V/-20mA~20mA
	Digital input	8 (S1~S8) common input; Max. frequency: 1kHz; internal impedance:3.3k S8 can be used as common input and high speed input; Max. frequency: 50kHz
	Digital output	1 (Y1)Y Terminal open collector output, switching capacity:200mA/30V 1 (Y2) High-speed pulse output, output frequency 0~50k, switching capacity 1A/30V
	Relay output	4 programmable relay outputs: RO1A NO, RO1B NC, RO1C common terminal RO2A NO, RO2B NC, RO2C common terminal RO3A NO, RO3B NC, RO3C common terminal RO4A NO, RO4B NC, RO4C common terminal Contact capacity:3A/AC250V，1A/DC30V Relay 4 can be used as the braking output terminal if the braking function is enabled, as well as the common relay.
	Safety terminal input	H1 and H2 is default to short-connect to COM terminal in STO safety terminal input. It is necessary to remoce the connection wires between H1 and COM, H2 and COM; If PW applies external power supply, H1 and H2 need to short-connected with external power sypply ground.
	Communication	485 communication, apply MODBUS protocol
Fiber-optic communications interface	Fiber optic port for parallel units	Up to 6 parallel power units
	Fiber optic port for master-slave communicaiton	Support the system extension and power balance
Extension Interface	Communication interface	Support PROFIBUS, Ethernet, CAN and DEVICE-NET communication protocol through the optional communication cards
	PG card interface	Support incremental encoder, UVW encoder, sine and

Function		Specifications
		cosine encoder and resolver encoder through the optional PG cards
	Signal detection interface	Optional for temperature detection board, RST signal detection board and mains synchronous cards
	IO extension interface	Can be extended to digital and analog input/output
Others	Envionment temperature	-10℃~50℃
	Installation mode	Wall mounting in cabinet
	Protection degree	IP00
	Cooling mode	Natural cooling
	Safety and EMC performance	Meet CE requirement

3.4 Main rated parameters



Heavy load application



Light load application

3.4.1 Main parameters of Goodrive800-26 series four-quadrant cabinet inverter

GD800-26 Model	Heavy overload application			Light overload application		
	P_{Lh} (kW)	I_{ih} (A)	I_{oh} (A)	P_L (kW)	I_i (A)	I_o (A)
U_N = 380 V						
GD800-26-0075-4	75	130	150	90	155	180
GD800-26-0090-4	90	155	180	110	190	215
GD800-26-0110-4	110	190	215	132	230	260
GD800-26-0132-4	132	230	260	160	280	305
GD800-26-0160-4	160	280	305	185	320	350
GD800-26-0200-4	200	345	380	220	385	425
GD800-26-0250-4-MSC	250	435	480	280	485	530
GD800-26-0250-4-MLR						
GD800-26-0250-4-MRL						
GD800-26-0315-4-MSC	315	545	600	350	605	650
GD800-26-0315-4-MLR						
GD800-26-0315-4-MRL						
GD800-26-0400-4-MSC	400	695	720	450	780	810
GD800-26-0400-4-MLR						
GD800-26-0400-4-MRL						
GD800-26-0500-4-MLR	500	870	960	550	970	1060
GD800-26-0500-4-MRL						
GD800-26-0630-4-MLR	630	1090	1200	710	1210	1300
GD800-26-0630-4-MRL						
GD800-26-0800-4-MLR	800	1390	1440	900	1560	1620
GD800-26-0800-4-MRL						
GD800-26-1000-4-MLR	1000	1635	1800	1100	1815	1950
GD800-26-1000-4-MRL						
GD800-26-1200-4-MLR	1200	2085	2160	1350	2340	2430
GD800-26-1200-4-MRL						
U_N = 660 V						
GD800-26-0075-6	75	75	86	90	90	98
GD800-26-0090-6	90	90	98	110	110	120
GD800-26-0110-6	110	110	120	132	132	150
GD800-26-0132-6	132	132	150	160	160	175
GD800-26-0160-6	160	160	175	185	185	200
GD800-26-0200-6	200	200	220	220	220	240
GD800-26-0250-6	250	250	270	280	280	300
GD800-26-0315-6-MSC	315	315	350	350	350	380
GD800-26-0315-6-MLR						
GD800-26-0315-6-MRL						
GD800-26-0400-6-MSC	400	400	430	450	450	480

GD800-26 Model	Heavy overload application			Light overload application		
	P_{Lh} (kW)	I_{ih} (A)	I_{oh} (A)	P_L (kW)	I_i (A)	I_o (A)
GD800-26-0400-6-MLR						
GD800-26-0400-6-MRL						
GD800-26-0500-6-MSC	500	500	540	550	550	585
GD800-26-0500-6-MLR						
GD800-26-0500-6-MRL						
GD800-26-0630-6-MLR	630	630	700	710	700	760
GD800-26-0630-6-MRL						
GD800-26-0800-6-MLR	800	800	860	900	900	960
GD800-26-0800-6-MRL						
GD800-26-1000-6-MLR	1000	1000	1080	1100	1100	1170
GD800-26-1000-6-MRL						
GD800-26-1200-6-MLR	1200	1200	1290	1350	1350	1440
GD800-26-1200-6-MRL						
GD800-26-1500-6-MLR	1500	1500	1620	1650	1650	1755
GD800-26-1500-6-MRL						

Signs:

Typical capacity of heavy load application (150% overload capacity)		Typical capacity of light application (110% overload capacity)	
P_{Lh}	Typical value of available motor power	P_L	Typical value of available motor power
I_{ih}	Continous valid input current	I_i	Continous valid input current
I_{oh}	Continous valid output current	I_o	Continous valid output current
1 minute 150% overload/ 5 minutes is allowed.		1 minute 110% overload/ 5 minutes is allowed.	

Note: the power supply voltage will impact the continous valid output current.

Note: the continous valid output current and overload current is deifned at 40℃. It will derate 2% for every additional 1℃ if the temperature is above 40℃ (the maximum temperature will not exceed 50℃).

3.4.2 Main parameters of Goodrive800-96 series cabinet IGBT PWM rectifier

Model	Heavy overload application		Light overload application	
	Q_{ih} (kVA)	I_{ih}(A)	Q_i(kVA)	I_i(A)
U_N = 380 V				
GD800-96-0075-4	85	125	102	150
GD800-96-0090-4	102	150	125	182
GD800-96-0110-4	125	182	150	220
GD800-96-0132-4	150	220	185	265
GD800-96-0160-4	185	265	210	305
GD800-96-0200-4	230	330	255	365
GD800-96-0250-4	285	412	320	462
GD800-96-0315-4	360	520	400	580
GD800-96-0400-4	455	660	515	745
GD800-96-0500-4-MLR	570	824	640	924
GD800-96-0500-4-MRL				
GD800-96-0630-4-MLR	720	1040	800	1160
GD800-96-0630-4-MRL				
GD800-96-0800-4-MLR	910	1320	1030	1490
GD800-96-0800-4-MRL				
GD800-96-1000-4-MLR	1080	1560	1200	1740
GD800-96-1000-4-MRL				
GD800-96-1200-4-MLR	1365	1980	1545	2235
GD800-96-1200-4-MRL				
Note: above two products can be parallel-connected if the power is above 1200kW. For example, two Goodrive800-96-1000-4 products can be parallel- used as the application of Goodrive800-96-2000-4.				
U_N = 660 V				
GD800-96-0075-6	85	72	102	86
GD800-96-0090-6	102	86	125	106
GD800-96-0110-6	125	106	150	128
GD800-96-0132-6	150	128	185	154
GD800-96-0160-6	185	154	210	178
GD800-96-0200-6	230	192	250	212
GD800-96-0250-6	285	240	320	268
GD800-96-0315-6	360	302	400	335
GD800-96-0400-6	455	382	515	432
GD800-96-0500-6	570	478	630	525
GD800-96-0630-6-MLR	720	604	800	670
GD800-96-0630-6-MRL				
GD800-96-0800-6-MLR	910	764	1030	864
GD800-96-0800-6-MRL				

Model	Heavy overload application		Light overload application	
	Q_{lh} (kVA)	I_{ih}(A)	Q_l(kVA)	I_i(A)
GD800-96-1000-6-MLR	1140	956	1260	1050
GD800-96-1000-6-MRL				
GD800-96-1200-6-MLR	1365	1146	1545	1296
GD800-96-1200-6-MRL				
GD800-96-1500-6-MLR	1710	1434	1890	1575
GD800-96-1500-6-MRL				
Note: above two products can be parallel-connected if the power is above 1500kW. For example, two Goodrive800-96-1000-6 products can be parallel-used as the application of Goodrive800-96-2000-6.				

Signs:

Typical capacity of heavy load application (150% overload capacity)		Typical capacity of light application (110% overload capacity)	
Q_{lh}	Rated input capacity	Q_l	Rated input capacity
I_{ih}	Continous valid input current	I_i	Continous valid input current
1 minute 150% overload/ 5 minutes is allowed.		1 minute 110% overload/ 5 minutes is allowed.	

Note: the power supply voltage will impact the continous valid output current.

Note: the continous valid output current and overload current is deifned at 40℃. It will derate 2% for every additional 1℃ if the temperature is above 40℃ (the maximum temperature will not exceed 50℃).

3.4.3 Main parameters of Goodrive800-56 series cabinet inverter

Model	Heavy overload application		Light overload application	
	P_{Lh}(kW)	I_{oh}(kW)	P_L(kW)	I_o(A)
U_N =380 V				
GD800-56-0132-4	132	260	160	305
GD800-56-0160-4	160	305	185	350
GD800-56-0200-4	200	380	220	425
GD800-56-0250-4	250	480	280	530
GD800-56-0315-4	315	600	350	650
GD800-56-0400-4	400	720	450	810
GD800-56-0500-4	500	960	550	1060
GD800-56-0630-4	630	1200	710	1300
GD800-56-0800-4	800	1440	900	1620
GD800-56-1000-4	1000	1800	1100	1950
GD800-56-1200-4	1200	2160	1350	2430
Note: 1. Contact with us if the power is less than 132kW. 2. Above two products can be parallel-connected if the power is above 1200kW. For example, two Goodrive800-56-1000-4 products can be parallel-used as the application of Goodrive800-56-2000-4.				
U_N =660 V				
GD800-56-0160-6	160	175	185	200
GD800-56-0200-6	200	220	220	240
GD800-56-0250-6	250	270	280	300
GD800-56-0315-6	315	350	350	380
GD800-56-0400-6	400	430	450	480
GD800-56-0500-6	500	540	550	585
GD800-56-0630-6	630	700	710	760
GD800-56-0800-6	800	860	900	960
GD800-56-1000-6	1000	1080	1100	1170
GD800-56-1200-6	1200	1290	1350	1440
GD800-56-1500-6	1500	1620	1650	1755
Note: 1. Contact with us if the power is less than 160kW. 2. Above two products can be parallel-connected if the power is above 1500kW. For example, two Goodrive800-56-1000-6 products can be parallel-used as the application of Goodrive800-56-2000-6.				

Signs:

Typical capacity of heavy load application (50% overload capacity)		Typical capacity of light application (10% overload capacity)	
P_{Lh}	Typical value of available motor power	P_L	Typical value of available motor power
I_{oh}	Continous valid output current	I_o	Continous valid output current
1 minute 150% overload/ 5 minutes is allowed.		1 minute 110% overload/ 5 minutes is allowed.	

Note: the power supply voltage will impact the continous valid output current.

Note: the continous valid output current and overload current is deifned at 40℃. It will derate 2% for every additional 1℃ if the temperature is above 40℃ (the maximum temperature will not exceed 50℃).

3.4.4 Main parameters of Goodrive800-51 series power unit

Model	Heavy overload application			Light overload application			Air volume(m^3/h)
	Q_{lh}(kVA)	P_{Ld}(kW)	I_{oh}(A)	Q_l(kVA)	P_L(kW)	I_0(A)	
U_N =380 V							
GD800-51-0037-4	50	37	75	60	55	92	250
GD800-51-0045-4	60	45	92	75	75	115	250
GD800-51-0055-4	75	55	115	98	90	150	250
GD800-51-0075-4	98	75	150	120	110	180	400
GD800-51-0090-4	118	90	180	140	132	215	400
GD800-51-0110-4	140	110	215	170	132	260	400
GD800-51-0132-4	170	132	260	200	160	305	600
GD800-51-0160-4	200	160	305	230	185	350	600
GD800-51-0200-4	250	200	380	280	220	425	600
GD800-51-0250-4	315	250	480	350	280	530	1650
GD800-51-0315-4	395	315	600	425	350	650	1650
GD800-51-0400-4	475	400	720	535	450	810	1650
U_N =660 V							
GD800-51-0075-6	98	75	86	110	90	98	400
GD800-51-0090-6	110	90	98	140	110	120	400
GD800-51-0110-6	135	110	120	170	132	150	400
GD800-51-0132-6	170	132	150	200	160	175	400
GD800-51-0160-6	200	160	175	230	185	200	600
GD800-51-0200-6	250	200	220	275	220	240	600
GD800-51-0250-6	310	250	270	340	280	300	600
GD800-51-0315-6	400	315	350	435	350	380	1650
GD800-51-0400-6	490	400	430	550	450	480	1650
GD800-51-0500-6	615	500	540	670	550	585	1650

Note: Goodrive800-51 does not have standard control unit, but it needs to work with the control unit.

Signs:

Typical capacity of heavy load application (150% overload capacity)		Typical capacity of light application (110% overload capacity)	
Q_{lh}	Rated input capacity	Q_l	Rated input capacity
P_{Lh}	Typical value of available motor power	P_L	Typical value of available motor power
I_{oh}	Continous valid output current	I_o	Continous valid output current
1 minute 150% overload/ 5 minutes is allowed.		1 minute 110% overload/ 5 minutes is allowed.	

Note: the power supply voltage will impact the continous valid output current.

Note: the continous valid output current and overload current is deifned at 40℃. It will derate 2% for every additional 1℃ if the temperature is above 40℃ (the maximum temperature will not exceed 50℃).

3.4.5 Main parameters of Goodrive800-11 inverter unit

Model	Heavy overload application			Light overload application			Air volume(m^3/h)
	P_{Lh}(kW)	I_{ih}(A)	I_{oh}(A)	P_L(kW)	I_i(A)	I_o(A)	
U_N =380 V							
GD800-11-0004-4	4	13.5	9.5	5.5	19.5	14	45
GD800-11-05R5-4	5.5	19.5	14	7.5	25	18.5	45
GD800-11-07R5-4	7.5	25	18.5	11	32	25	100
GD800-11-0011-4	11	32	25	15	40	32	100
GD800-11-0015-4	15	40	32	18.5	47	38	180
GD800-11-0018-4	18.5	47	38	22	56	45	180
GD800-11-0022-4	22	56	45	30	70	60	180
GD800-11-0030-4	30	70	60	37	80	75	180
GD800-11-0037-4	37	80	75	45	94	92	240
GD800-11-0045-4	45	94	92	55	128	115	240
GD800-11-0055-4	55	128	115	75	160	150	240
GD800-11-0075-4	75	160	150	90	190	180	450
GD800-11-0090-4	90	190	180	110	225	215	450
GD800-11-0110-4	110	225	215	132	265	260	450
GD800-11-0132-4	132	265	260	160	310	305	600
GD800-11-0160-4	160	310	305	185	360	355	600
GD800-11-0200-4	200	385	380	220	430	425	600
GD800-11-0250-4	250	485	480	280	545	530	1650
GD800-11-0315-4	315	610	600	350	625	650	1650
GD800-11-0400-4	400	715	720	450	810	830	1650
U_N =660 V							
GD800-11-0022-6	22	35	27	30	40	35	240
GD800-11-0030-6	30	40	35	37	47	45	240
GD800-11-0037-6	37	47	45	45	52	52	240
GD800-11-0045-6	45	52	52	55	65	62	240
GD800-11-0055-6	55	65	62	75	85	86	450
GD800-11-0075-6	75	85	86	90	95	98	450
GD800-11-0090-6	90	95	98	110	118	120	450
GD800-11-0110-6	110	118	120	132	145	150	450
GD800-11-0132-6	132	145	150	160	165	175	550
GD800-11-0160-6	160	165	175	185	190	200	600
GD800-11-0200-6	200	210	220	220	230	240	600
GD800-11-0250-6	250	255	270	280	286	300	600
GD800-11-0315-6	315	334	350	350	360	380	1650
GD800-11-0400-6	400	411	430	450	411	480	1650
GD800-11-0500-6	500	518	540	550	570	585	1650

Note: Goodrive800-11 does not have standard control unit, but it needs to work with the control unit.

Signs:

Typical capacity of heavy load application (150% overload capacity)		Typical capacity of light application (110% overload capacity)	
P_{Lh}	Typical value of available motor power	P_L	Typical value of available motor power
I_{ih}	Continous valid input current	I_i	Continous valid input current
I_{oh}	Continous valid output current	I_o	Continous valid output current
1 minute 150% overload/ 5 minutes is allowed.		1 minute 110% overload/ 5 minutes is allowed.	

Note: the power supply voltage will impact the continous valid output current.

Note: the continous valid output current and overload current is deifned at 40℃. It will derate 2% for every additional 1℃ if the temperature is above 40℃ (the maximum temperature will not exceed 50℃).

3.4.6 Main parameters of Goodrive800-01 LCL PWM filter unit

Model	Heavy-overload		Light-overload		Air volume(m^3/h)
	Q_h(kVA)	I_h(A)	Q(kVA)	I(A)	
U_N =380 V					
GD800-01-0250-4	285	412	320	462	680
GD800-01-0315-4	360	520	400	580	680
GD800-01-0400-4	455	660	515	745	680
U_N =660 V					
GD800-01-0315-6	360	302	400	335	680
GD800-01-0400-6	455	382	515	432	680
GD800-01-0500-6	570	478	630	525	680

Signs:

Typical capacity of heavy overload (150% Overload capacity)		Typical capacity of light overload (110% Overload capacity)	
Q_h	Rated input capacity	Q	Rated input capacity
I_h	Continous valid output current	I	Continous valid output current
1 minute 150% overload/ 5 minutes is allowed.		1 minute 110% overload/ 5 minutes is allowed.	

3.4.7 Models of Goodrive800 control unit

Power code	380V rectifier control unit	380V inverter control unit	660V rectifier control unit	660V inverter control unit
0004	/	GD800-ICU-0004-4	/	/
05R5	/	GD800-ICU-05R5-4	/	/
07R5	/	GD800-ICU-07R5-4	/	/
0011	/	GD800-ICU-0011-4	/	/
0015	/	GD800-ICU-0015-4	/	/
0018	/	GD800-ICU-0018-4	/	/
0022	/	GD800-ICU-0022-4	/	GD800-ICU-0022-6
0030	/	GD800-ICU-0030-4	/	GD800-ICU-0030-6
0045	/	GD800-ICU-0045-4	/	GD800-ICU-0045-6
0055	/	GD800-ICU-0055-4	/	GD800-ICU-0055-6
0075	GD800-RCU-0075-4	GD800-ICU-0075-4	GD800-RCU-0075-6	GD800-ICU-0075-6
0090	GD800-RCU-0090-4	GD800-ICU-0090-4	GD800-RCU-0090-6	GD800-ICU-0090-6
0110	GD800-RCU-0110-4	GD800-ICU-0110-4	GD800-RCU-0110-6	GD800-ICU-0110-6
0132	GD800-RCU-0132-4	GD800-ICU-0132-4	GD800-RCU-0132-6	GD800-ICU-0132-6
0160	GD800-RCU-0160-4	GD800-ICU-0160-4	GD800-RCU-0160-6	GD800-ICU-0160-6
0200	GD800-RCU-0200-4	GD800-ICU-0200-4	GD800-RCU-0200-6	GD800-ICU-0200-6
0250	GD800-RCU-0250-4	GD800-ICU-0250-4	GD800-RCU-0250-6	GD800-ICU-0250-6
0315	GD800-RCU-0315-4	GD800-ICU-0315-4	GD800-RCU-0315-6	GD800-ICU-0315-6
0400	GD800-RCU-0400-4	GD800-ICU-0400-4	GD800-RCU-0400-6	GD800-ICU-0400-6
0500	GD800-RCU-0500-4	GD800-ICU-0500-4	GD800-RCU-0500-6	GD800-ICU-0500-6
0630	GD800-RCU-0630-4	GD800-ICU-0630-4	GD800-RCU-0630-6	GD800-ICU-0630-6
0800	GD800-RCU-0800-4	GD800-ICU-0800-4	GD800-RCU-0800-6	GD800-ICU-0800-6
1000	GD800-RCU-1000-4	GD800-ICU-1000-4	GD800-RCU-1000-6	GD800-ICU-1000-6
1200	GD800-RCU-1200-4	GD800-ICU-1200-4	GD800-RCU-1200-6	GD800-ICU-1200-6
1500	/	/	GD800-RCU-1500-6	GD800-ICU-1500-6
1600	GD800-RCU-1600-4	GD800-ICU-1600-4	GD800-RCU-1600-6	GD800-ICU-1600-6
2000	GD800-RCU-2000-4	GD800-ICU-2000-4	GD800-RCU-2000-6	GD800-ICU-2000-6
2400	GD800-RCU-2400-4	GD800-ICU-2400-4	GD800-RCU-2400-6	GD800-ICU-2400-6
2500	/	/	GD800-RCU-2500-6	GD800-ICU-2500-6
3000	/	/	GD800-RCU-3000-6	GD800-ICU-3000-6

3.5 Loss calculation of inverters

1. Total loss of the inverter = (Bridge rectifier loss + Conduction loss of the converter bridge + Switching losses of the converter bridge)* Inverter power.

2. Current coefficient: for the rectifier bridge, it corresponds to the rated input current of the inverter; for the converter bridge, it corresponds to the rated output current of the inverter.

3. The percentage in the table below corresponds to the rated power of the inverter.

4. The total loss of the inverter is ±10% of the actual loss.

5. 1k，2k，3k of the switching losses of the converter bridge is the carrier frequency of the converter bridge and the carrier loss which is not in the table can be calculated by linear interpolation.

For example, if the inverter is 380V, 400kW, the current coefficient is 1 and the switching losses of the converte are 2k:

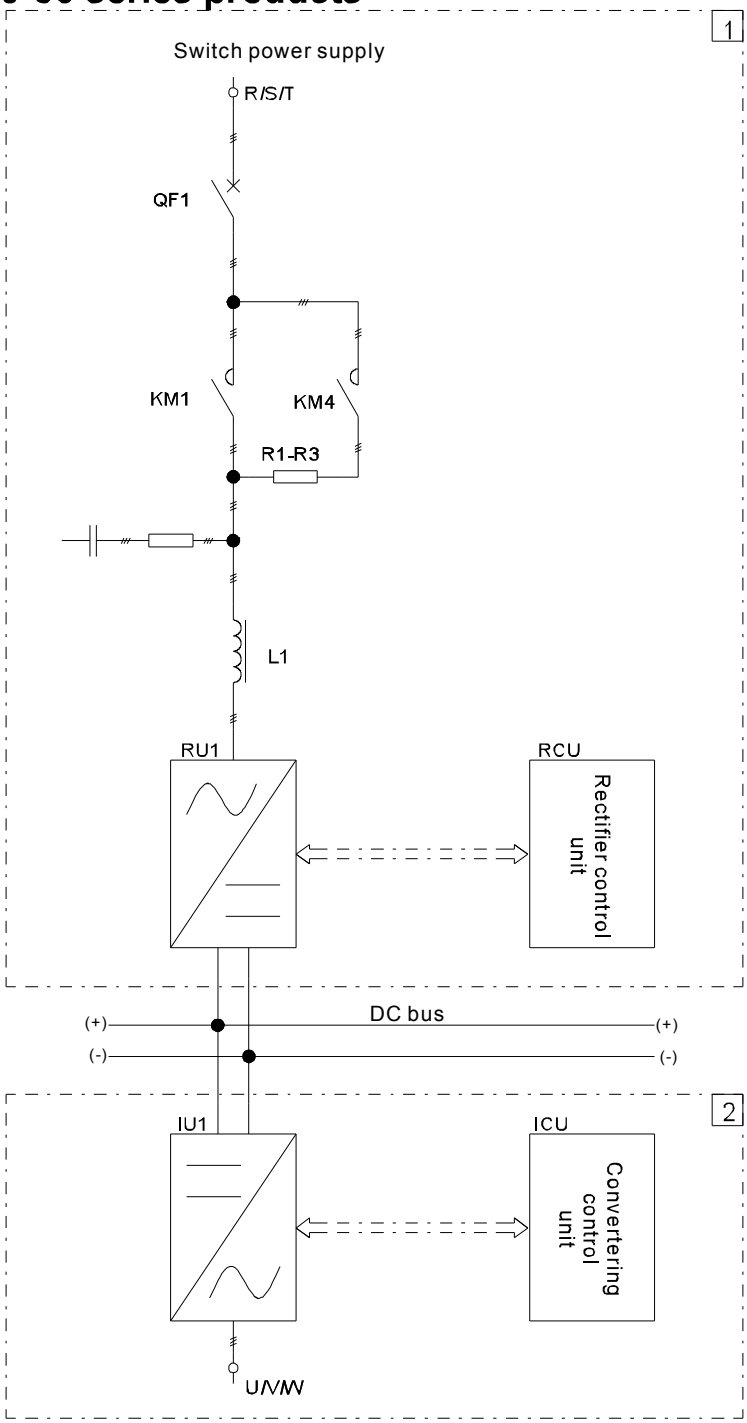
Total loss of the inverter = (0.47%+0.72%+0.34%)*400000=6120(W) = 6.12(kW)

Voltage degree	Current coefficient	Bridge rectifier loss	Conduction loss of the converter bridge	Switching losses of the converter bridge							
				1k	2k	3k	4k	5k	6k	7k	8k
380V series	0.5	0.18%	0.29%	0.08%	0.17%	0.25%	0.34%	0.42%	0.51%	0.59%	0.68%
	0.55	0.20%	0.32%	0.09%	0.19%	0.28%	0.37%	0.47%	0.56%	0.65%	0.75%
	0.6	0.22%	0.36%	0.10%	0.20%	0.31%	0.41%	0.51%	0.61%	0.71%	0.81%
	0.65	0.25%	0.40%	0.11%	0.22%	0.33%	0.44%	0.55%	0.66%	0.77%	0.88%
	0.7	0.28%	0.44%	0.12%	0.24%	0.36%	0.47%	0.59%	0.71%	0.83%	0.95%
	0.75	0.31%	0.48%	0.13%	0.25%	0.38%	0.51%	0.64%	0.76%	0.89%	1.02%
	0.8	0.34%	0.53%	0.14%	0.27%	0.41%	0.54%	0.68%	0.81%	0.95%	1.09%
	0.85	0.37%	0.57%	0.14%	0.29%	0.43%	0.58%	0.72%	0.86%	1.01%	1.15%
	0.9	0.40%	0.62%	0.15%	0.31%	0.46%	0.61%	0.76%	0.92%	1.07%	1.22%
	0.95	0.43%	0.67%	0.16%	0.32%	0.48%	0.64%	0.81%	0.97%	1.13%	1.29%
	1	0.47%	0.72%	0.17%	0.34%	0.51%	0.68%	0.85%	1.02%	1.19%	1.36%
	1.05	0.51%	0.77%	0.18%	0.36%	0.53%	0.71%	0.89%	1.07%	1.25%	1.42%
	1.1	0.54%	0.82%	0.19%	0.37%	0.56%	0.75%	0.93%	1.12%	1.31%	1.49%
	1.15	0.58%	0.87%	0.19%	0.39%	0.58%	0.78%	0.97%	1.17%	1.36%	1.56%
	1.2	0.62%	0.93%	0.20%	0.41%	0.61%	0.81%	1.02%	1.22%	1.42%	1.63%
	1.25	0.66%	0.99%	0.21%	0.42%	0.64%	0.85%	1.06%	1.27%	1.48%	1.70%
	1.3	0.70%	1.04%	0.22%	0.44%	0.66%	0.88%	1.10%	1.32%	1.54%	1.76%
	1.35	0.75%	1.10%	0.23%	0.46%	0.69%	0.92%	1.14%	1.37%	1.60%	1.83%
	1.4	0.79%	1.16%	0.24%	0.47%	0.71%	0.95%	1.19%	1.42%	1.66%	1.90%
	1.45	0.84%	1.23%	0.25%	0.49%	0.74%	0.98%	1.23%	1.48%	1.72%	1.97%
	1.5	0.88%	1.29%	0.25%	0.51%	0.76%	1.02%	1.27%	1.53%	1.78%	2.03%
	1.55	0.93%	1.35%	0.26%	0.53%	0.79%	1.05%	1.31%	1.58%	1.84%	2.10%
	1.6	0.98%	1.42%	0.27%	0.54%	0.81%	1.09%	1.36%	1.63%	1.90%	2.17%
	1.65	1.03%	1.49%	0.28%	0.56%	0.84%	1.12%	1.40%	1.68%	1.96%	2.24%
	1.7	1.08%	1.56%	0.29%	0.58%	0.86%	1.15%	1.44%	1.73%	2.02%	2.31%
	1.75	1.13%	1.63%	0.30%	0.59%	0.89%	1.19%	1.48%	1.78%	2.08%	2.37%
	1.8	1.19%	1.70%	0.31%	0.61%	0.92%	1.22%	1.53%	1.83%	2.14%	2.44%
	1.85	1.24%	1.78%	0.31%	0.63%	0.94%	1.25%	1.57%	1.88%	2.20%	2.51%

Voltage degree	Current coefficient	Bridge rectifier loss	Conduction loss of the converter bridge	Switching losses of the converter bridge							
				1k	2k	3k	4k	5k	6k	7k	8k
	1.9	1.30%	1.85%	0.32%	0.64%	0.97%	1.29%	1.61%	1.93%	2.26%	2.58%
	1.95	1.36%	1.93%	0.33%	0.66%	0.99%	1.32%	1.65%	1.98%	2.31%	2.65%
	2	1.41%	2.01%	0.34%	0.68%	1.02%	1.36%	1.70%	2.03%	2.37%	2.71%
660V series	0.5	0.11%	0.18%	0.14%	0.29%	0.43%	0.57%	0.71%	0.86%	1.00%	1.14%
	0.55	0.12%	0.21%	0.16%	0.31%	0.47%	0.63%	0.79%	0.94%	1.10%	1.26%
	0.6	0.13%	0.23%	0.17%	0.34%	0.51%	0.69%	0.86%	1.03%	1.20%	1.37%
	0.65	0.15%	0.26%	0.19%	0.37%	0.56%	0.74%	0.93%	1.11%	1.30%	1.49%
	0.7	0.16%	0.28%	0.20%	0.40%	0.60%	0.80%	1.00%	1.20%	1.40%	1.60%
	0.75	0.17%	0.31%	0.21%	0.43%	0.64%	0.86%	1.07%	1.29%	1.50%	1.71%
	0.8	0.19%	0.34%	0.23%	0.46%	0.69%	0.91%	1.14%	1.37%	1.60%	1.83%
	0.85	0.20%	0.37%	0.24%	0.49%	0.73%	0.97%	1.21%	1.46%	1.70%	1.94%
	0.9	0.21%	0.39%	0.26%	0.51%	0.77%	1.03%	1.29%	1.54%	1.80%	2.06%
	0.95	0.23%	0.42%	0.27%	0.54%	0.81%	1.09%	1.36%	1.63%	1.90%	2.17%
	1	0.24%	0.46%	0.29%	0.57%	0.86%	1.14%	1.43%	1.71%	2.00%	2.29%
	1.05	0.26%	0.49%	0.30%	0.60%	0.90%	1.20%	1.50%	1.80%	2.10%	2.40%
	1.1	0.28%	0.52%	0.31%	0.63%	0.94%	1.26%	1.57%	1.89%	2.20%	2.51%
	1.15	0.29%	0.55%	0.33%	0.66%	0.99%	1.31%	1.64%	1.97%	2.30%	2.63%
	1.2	0.31%	0.59%	0.34%	0.69%	1.03%	1.37%	1.71%	2.06%	2.40%	2.74%
	1.25	0.33%	0.62%	0.36%	0.71%	1.07%	1.43%	1.79%	2.14%	2.50%	2.86%
	1.3	0.34%	0.66%	0.37%	0.74%	1.11%	1.49%	1.86%	2.23%	2.60%	2.97%
	1.35	0.36%	0.70%	0.39%	0.77%	1.16%	1.54%	1.93%	2.31%	2.70%	3.09%
	1.4	0.38%	0.73%	0.40%	0.80%	1.20%	1.60%	2.00%	2.40%	2.80%	3.20%
	1.45	0.40%	0.77%	0.41%	0.83%	1.24%	1.66%	2.07%	2.49%	2.90%	3.31%
	1.5	0.41%	0.81%	0.43%	0.86%	1.29%	1.71%	2.14%	2.57%	3.00%	3.43%
	1.55	0.43%	0.85%	0.44%	0.89%	1.33%	1.77%	2.21%	2.66%	3.10%	3.54%
	1.6	0.45%	0.90%	0.46%	0.91%	1.37%	1.83%	2.29%	2.74%	3.20%	3.66%
	1.65	0.47%	0.94%	0.47%	0.94%	1.41%	1.89%	2.36%	2.83%	3.30%	3.77%
	1.7	0.49%	0.98%	0.49%	0.97%	1.46%	1.94%	2.43%	2.91%	3.40%	3.89%
	1.75	0.51%	1.02%	0.50%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%
	1.8	0.53%	1.07%	0.51%	1.03%	1.54%	2.06%	2.57%	3.09%	3.60%	4.11%
	1.85	0.55%	1.12%	0.53%	1.06%	1.59%	2.11%	2.64%	3.17%	3.70%	4.23%
	1.9	0.57%	1.16%	0.54%	1.09%	1.63%	2.17%	2.71%	3.26%	3.80%	4.34%
	1.95	0.59%	1.21%	0.56%	1.11%	1.67%	2.23%	2.79%	3.34%	3.90%	4.46%
	2	0.61%	1.26%	0.57%	1.14%	1.71%	2.29%	2.86%	3.43%	4.00%	4.57%

Chapter 4 Electrical connection

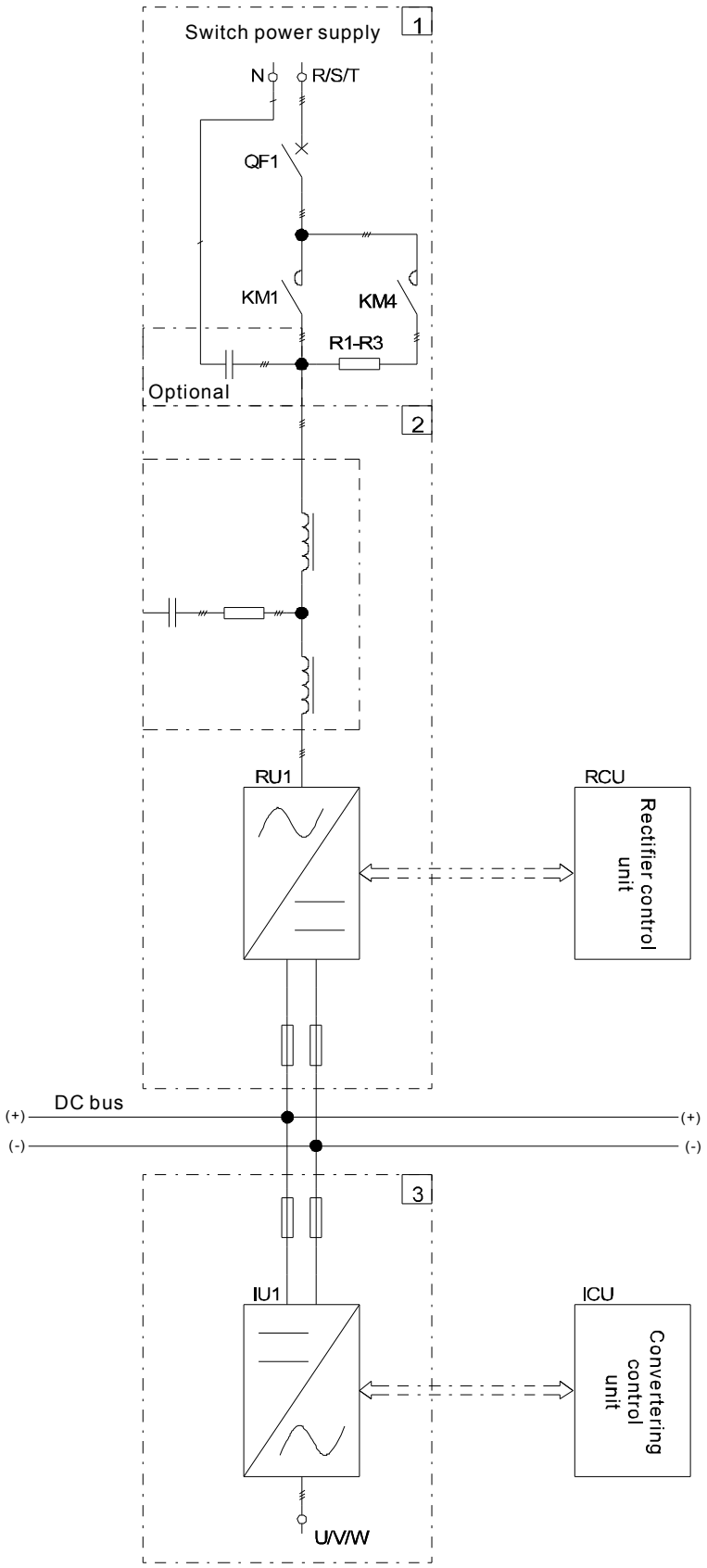
4.1 Wiring diagram of Goodrive800-26, Goodrive800-96 and Goodrive800-56 series products



Electrical schematic diagram of the main circuit for Goodrive800-26 series 0075~0200-4 (0075~0250-6) is part 1 and 2 in the diagram.

Electrical schematic diagram of the main circuit for Goodrive800-96 series 0075~0200-4 (0075~0250-6) is part 1 in the diagram.

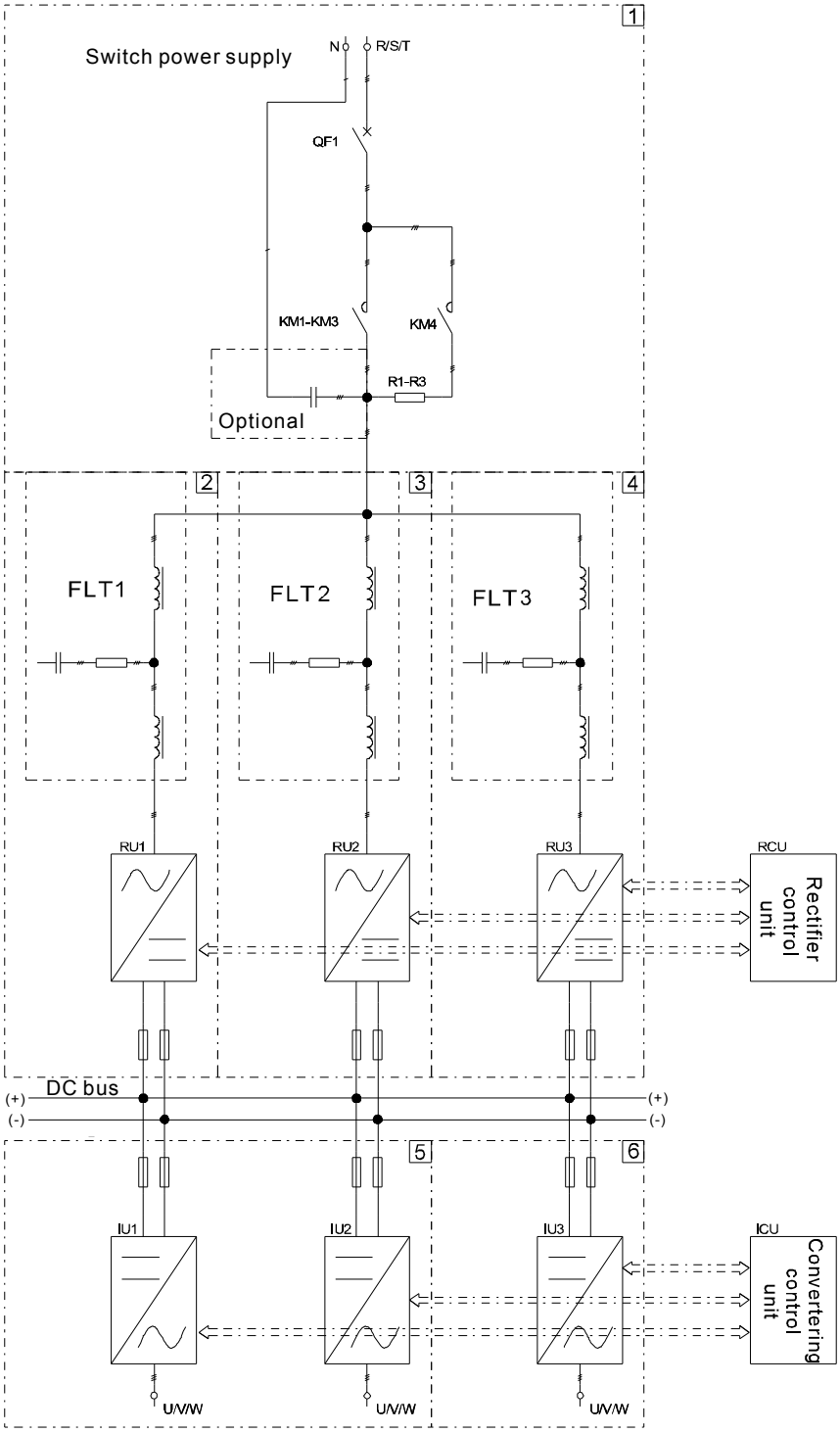
Electrical schematic diagram of the main circuit for Goodrive800-56 series 0132~0200-4 (0160~0250-6) is part 2 in the diagram.



Electrical schematic diagram of the main circuit for Goodrive800-26 series 0250~0400-4 (0315~0500-6) is part 1, 2 and 3 in the diagram.

Electrical schematic diagram of the main circuit for Goodrive800-96 series 0250~0400-4 (0315~0500-6) is part 1 and 2 in the diagram.

Electrical schematic diagram of the main circuit for Goodrive800-56 series 0250~0400-4 (0315~0500-6) is part 3 in the diagram.



Electrical schematic diagram of the main circuit for Goodrive800-26 series 0500~0800-4 (0630~1000-6) is part 1, 2, 3 and 5 in the diagram.

Electrical schematic diagram of the main circuit for Goodrive800-26 series 1000~1200-4 (1200~1500-6) is part 1, 2, 3, 4, 5 and 6 in the diagram.

Electrical schematic diagram of the main circuit for Goodrive800-96 series 0500~0800-4 (0630~1000-6) is part 1, 2 and 3 in the diagram.

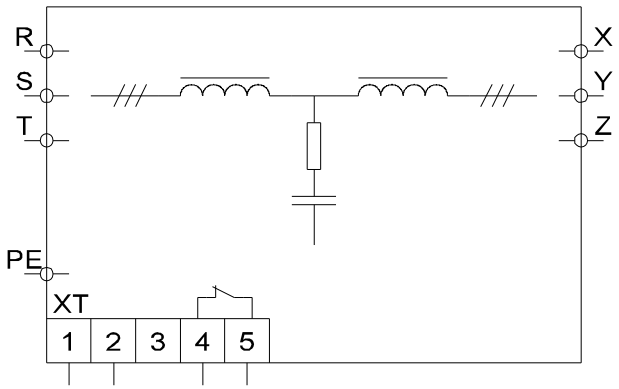
Electrical schematic diagram of the main circuit for Goodrive800-96 series 1000~1200-4 (1200~1500-6) is part 1, 2, 3 and 4 in the diagram.

Electrical schematic diagram of the main circuit for Goodrive800-56 series 0500~0800-4 (0630~1000-6) is part 5 in the diagram.

Electrical schematic diagram of the main circuit for Goodrive800-56 series 1000~1200-4 (1200~1500-6) is part 5 and 6 in the diagram.

Sign	Terminal function
R,S,T,N	Three-phase and four-wire AC input terminals Connected to the grid, N line is not available for connection
U,V,W	Three-phase and four-wire AC output terminals Generally connected to the motor, Note: U, V and W terminals of 250~1200-4(315~1500-6) are the output terminals ofpower unit.
(+), (-)	DC output if ① is rectifier unit DC input if ② is inverter unit
PE	Grounding terminal Each machine needs to be grounded

4.2 Wiring diagram of Goodrive800-01 series LCL PWM filter unit

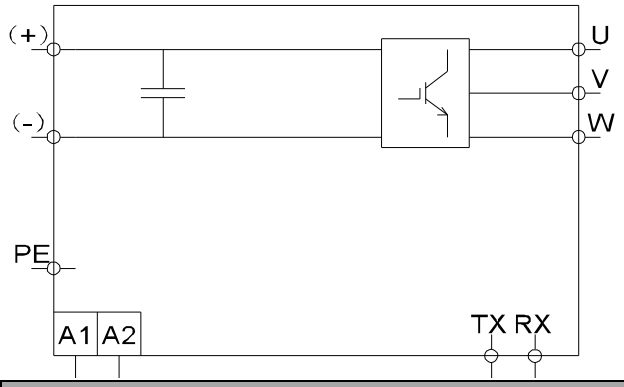


Functions:

Sign		Description
R, S, T		Three-phase input of the reactor at the grid side
X, Y, Z		Three-phase input of the reactor at the rectifier side
XT	1	AC220V control power supply input L
	2	AC220V control power supply input N
	3	Null
	4	Reactor overtemperature NC output
	5	

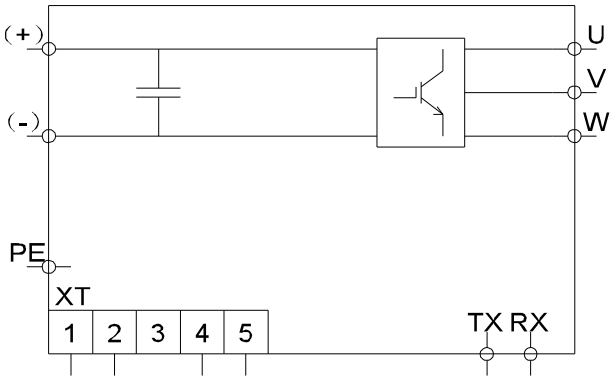
4.3 Wiring diagram of Goodrive800-51 series inverter unit

4.3.1 Goodrive800-51 series 0075~0110-4(0075~0132-6)



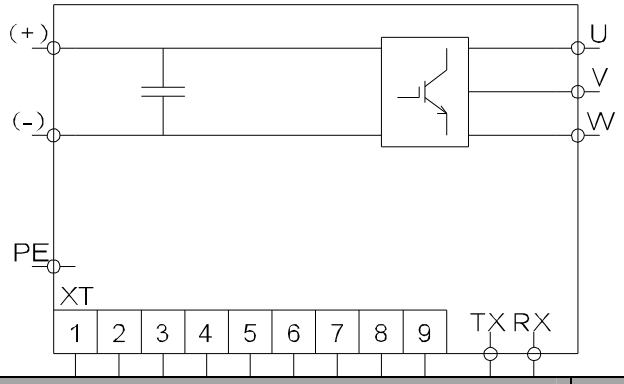
Sign	Description
U, V, W	Three-phase AC input if ① is the rectifier unit Three-phase AC output if ②is the inverter unit
(+), (-)	DC bus output if ① is the rectifier unit DC bus input if ② is the inverter unit
PE	Grounding terminal
A1	AC220V control power supply input L
A2	AC220V control power supply input N
TX	Fiber sends data
RX	Fiber receives data

4.3.2 Goodrive800-51 series 0132~0200-4(0160~0250-6)



Sign		Description
U, V, W		Three-phase AC input if ① is the rectifier unit Three-phase AC output if ②is the inverter unit
(+), (-)		DC bus output if ① is the rectifier unit DC bus input if ② is the inverter unit
PE		Grounding terminal
XT	1	AC220V control power supply input L
	2	AC220V control power supply input N
	3	Null
	4	Reactor overtemperature contact input
	5	
TX		Fiber sends data
RX		Fiber receives data

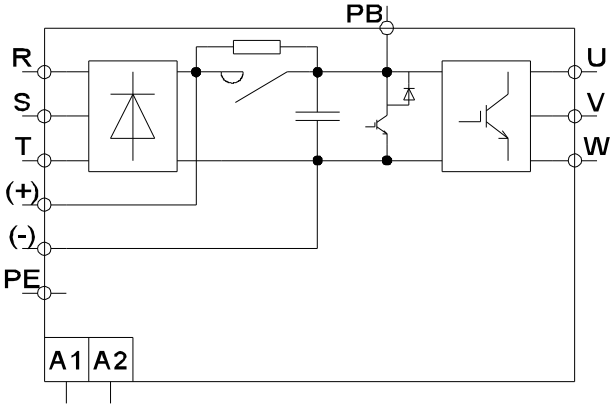
4.3.3 Goodrive800-51 series 0250~0400-4(0315~0500-6)



Sign		Description	Remark
U, V, W		Three-phase AC input if ① is the rectifier unit Three-phase AC output if ② is the inverter unit	
(+), (-)		DC bus output if ① is the rectifier unit DC bus input if ② is the inverter unit	
PE		Grounding terminal	
XT	1	A phase of the power suply for AC380V fan	Notice the sequence of the fan. The rotating direction is the same as the designated direction.
	2	B phase of the power suply for AC380V fan	
	3	C phase of the power suply for AC380V fan	
	4	AC220V control power supply input L	
	5	AC220V control power supply input N	
	6	Control power supply output L (connect to the A phase of the fan power supply)	Generally the control power input of the filter unit
	7	Control power supply output N	
	8	Filter overtemperature contact input	Short-connected if not needed
	9		
TX		Fiber sends data	
RX		Fiber receives data	

4.4 Wiring diagram of Goodrive800-11 series inverter unit

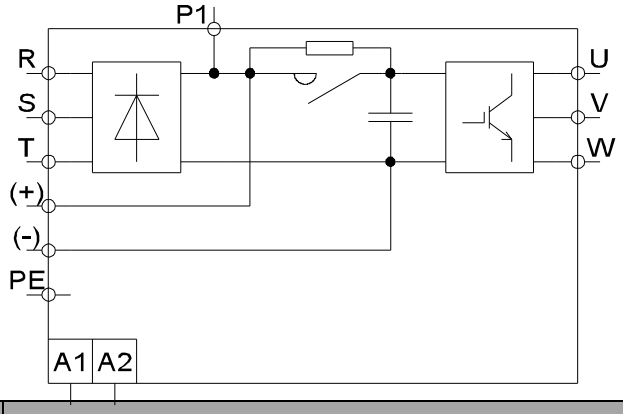
4.4.1 Goodrive800-11 series 0004~0030-4



Sign	Description
R,S,T	Three-phase AC input

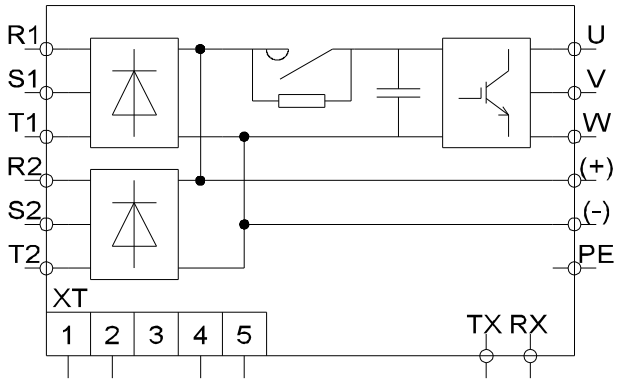
Sign	Description
U,V,W	Three-phase AC output
PB,(+)	External braking resistor terminal
(+),(-)	DC bus output
PE	Grounding terminal
A1	AC220V control power supply input L
A2	AC220V control power supply input N

4.4.2 Goodrive800-11 series 0037~0110-4



Sign	Description
R,S,T	Three-phase AC input
U,V,W	Three-phase AC output
P1,(+)	External braking reactor terminal
(+),(-)	DC bus output
PE	Grounding terminal
A1	AC220V control power supply input L
A2	AC220V control power supply input N

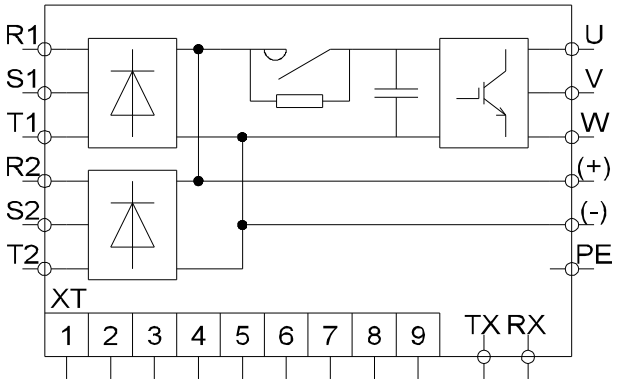
4.4.3 Goodrive800-11 series 0132~0200-4(0160~0250-6)



Sign	Description
R1,S1,T1	Three-phase AC input
R2,S2,T2	Three-phase AC input
U,V,W	Three-phase AC output
(+),(-)	DC bus output
PE	Grounding terminal

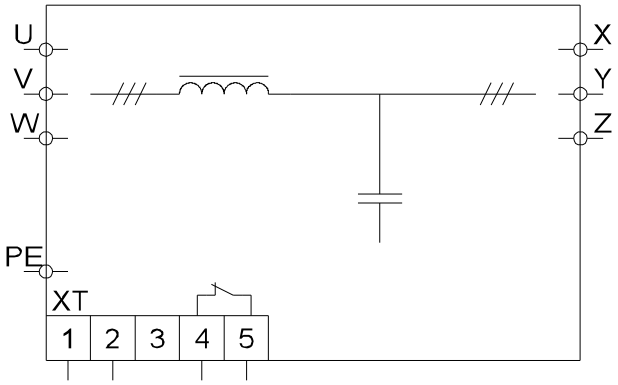
Sign		Description
XT	1	AC220V control power supply input L
	2	AC220V control power supply input N
	3	Null
	4	Reactor overtemperature NC contact input
	5	
TX		Fiber sends data
RX		Fiber receives data

4.4.4 Goodrive800-11 series 0250~0400-4(0315~0500-6)



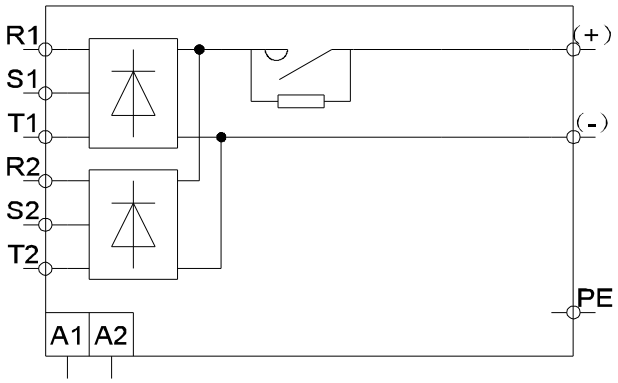
Sign		Description	Remark
R1,S1,T1		Three-phase AC input	
R2,S2,T2		Three-phase AC input	
U,V,W		Three-phase AC output	
(+),(-)		DC bus output	
PE		Grounding terminal	
XT	1	A phase of the power suply for AC380V fan	Notice the sequence of the fan. The rotating direction is the same as the designated direction.
	2	B phase of the power suply for AC380V fan	
	3	C phase of the power suply for AC380V fan	
	4	AC220V control power supply input L	
	5	AC220V control power supply input N	
	6	Spare (usually as control power output)	Output L of the control power supply (connect with A phase of the fan power supply)
	7		Output N of the control power supply
	8	Spare (usually as filter unit overtemperature contact input)	Short-connected if not needed
	9		
TX		Fiber sends data	
RX		Fiber receives data	

4.5 Wiring diagram of sine filters (optional)



Sign		Description
R,S,T		Reactor three-phase input at grid side
X,Y,Z		Three-phase output
PE		Grounding terminal
XT	1	AC220V control power supply input L
	2	AC220V control power supply input N
	3	Null
	4	Overtemperature NC contact output
	5	

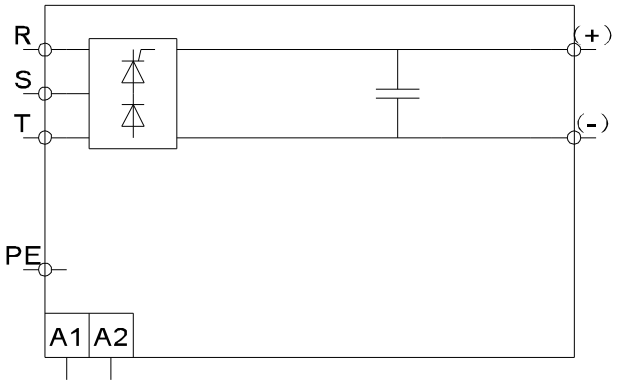
4.6 Wiring diagram of Goodrive800-61 series diode rectifier unit



Sign	Description
R1,S1,T1	Three-phase AC input
R2,S2,T2	Three-phase AC input
(+),(-)	DC bus output
PE	Grounding terminal
A1	AC220V control power supply input L
A2	AC220V control power supply input N

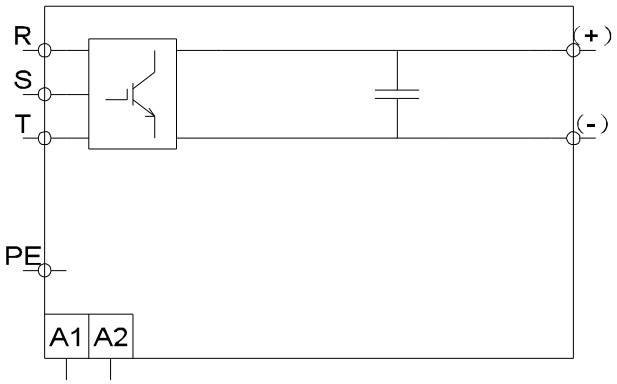
Note: R1 is short-connected with R2, S1 with S2 and T1 with T2 in factory.

4.7 Wiring diagram of Goodrive800-71 series SRC rectifier unit



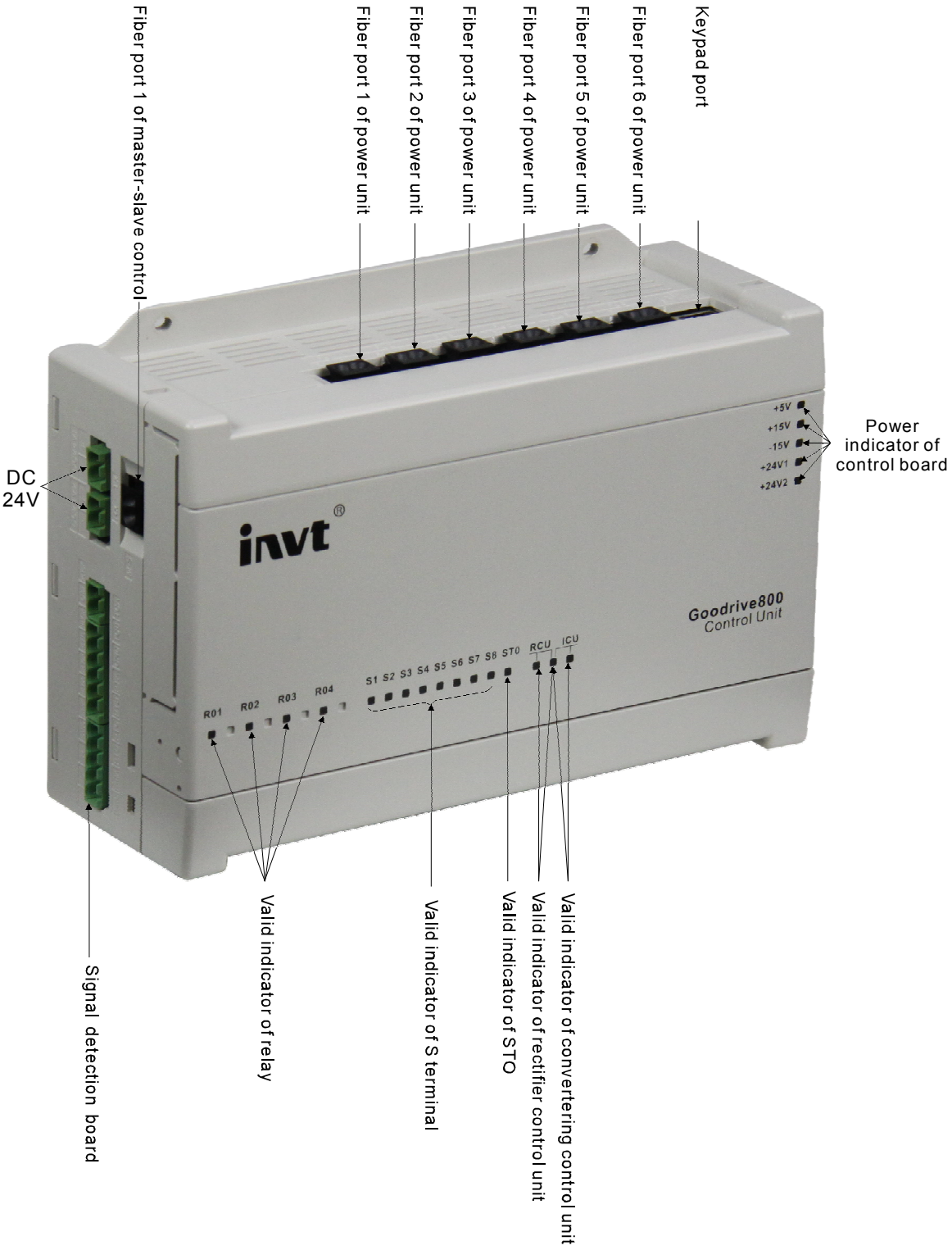
Sign	Description
R,S,T	Three-phase AC input
(+),(-)	DC bus output
PE	Grounding terminal
A1	AC220V control power supply input L
A2	AC220V control power supply input N

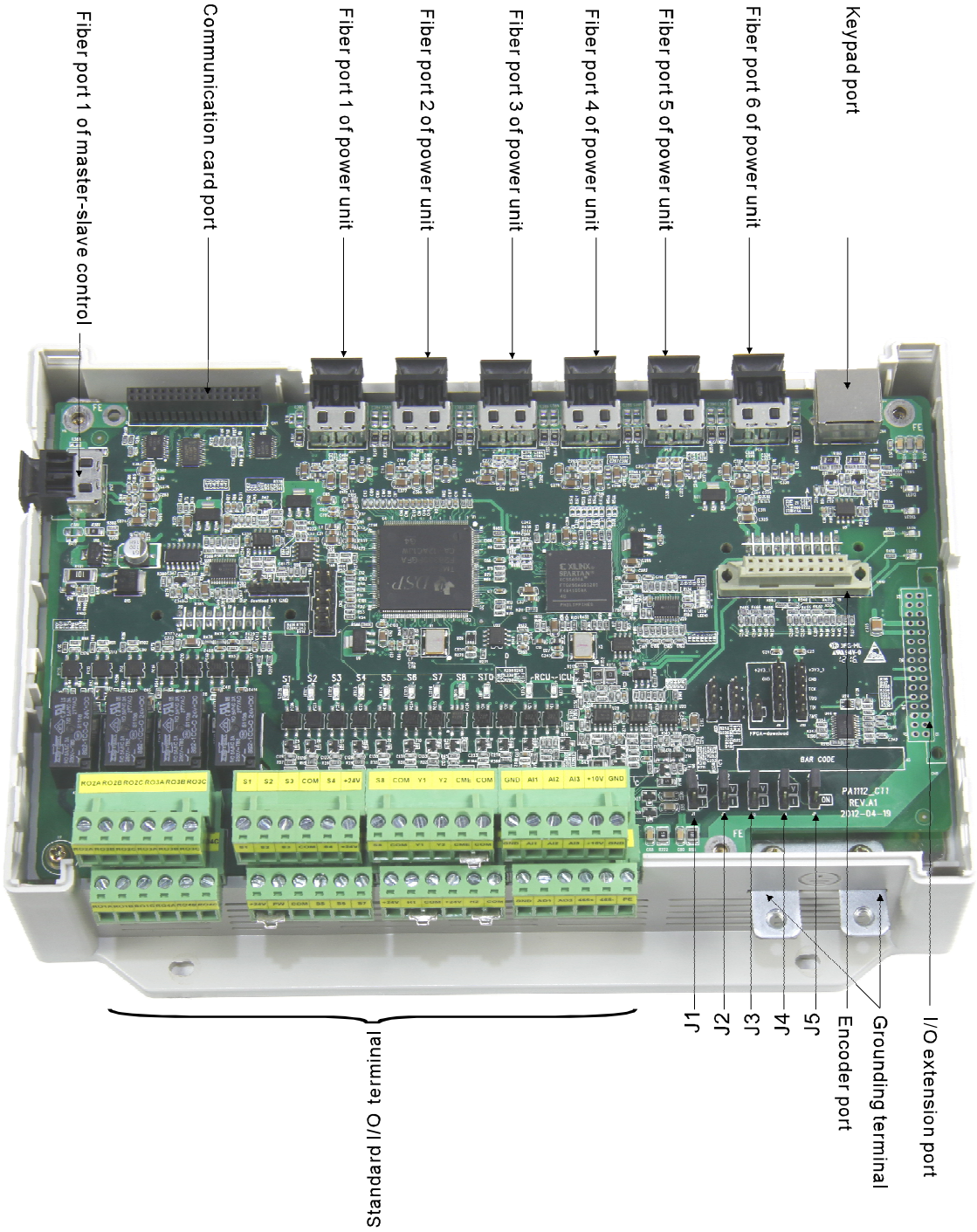
4.8 Wiring diagram of Goodrive800-81 series IGBT synchronous rectifier unit



Sign	Description
R,S,T	Three-phase AC input
(+),(-)	DC bus output
PE	Grounding terminal
A1	AC220V control power supply input L
A2	AC220V control power supply input N

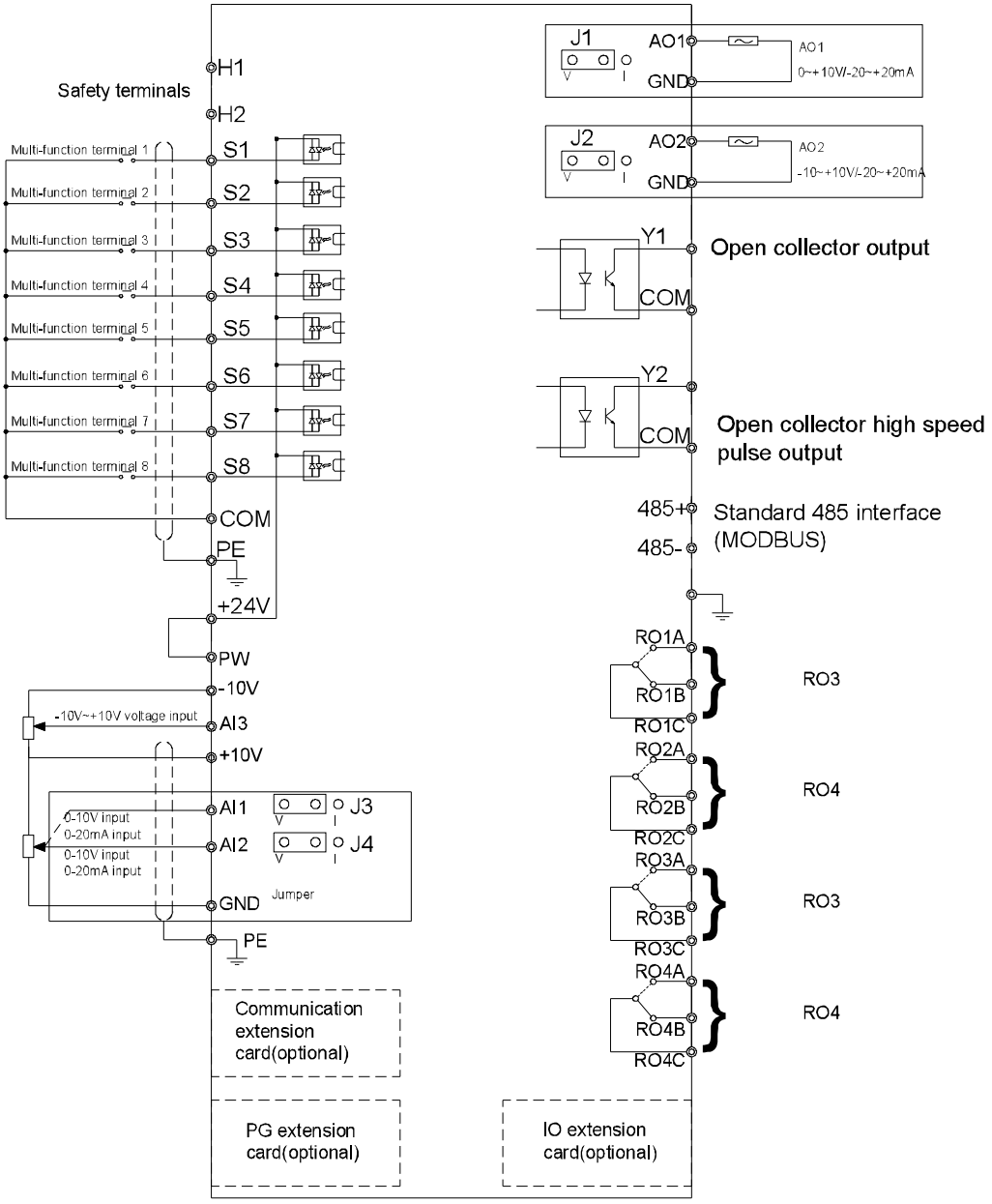
4.9 Schematic diagram of control unit





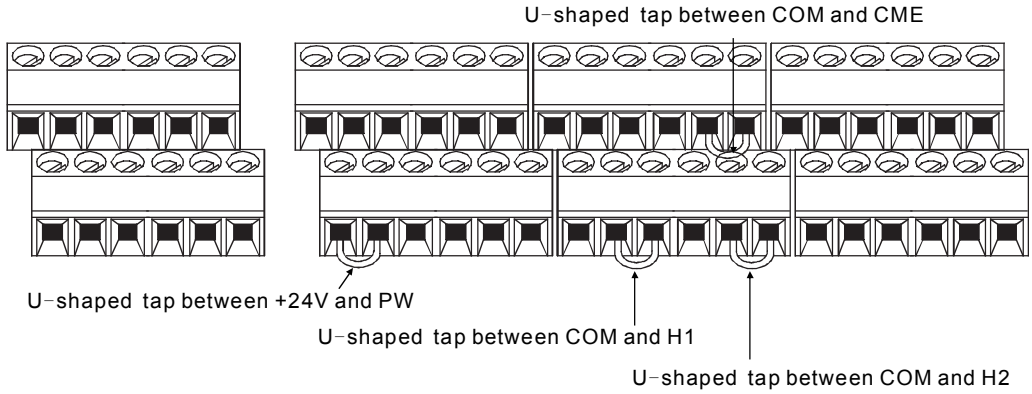
Note: the control board is installed in the contrl box.

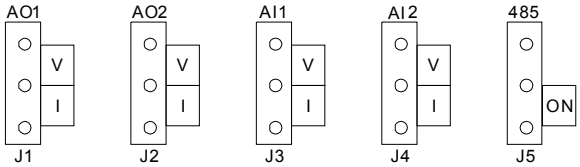
4.9.1 Wiring of control circuit

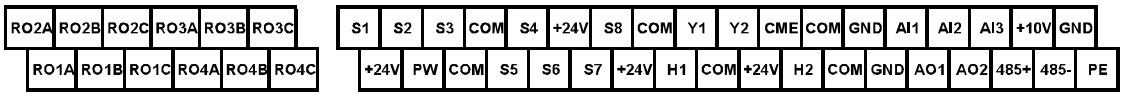


Note: above terminals are not the terminals on extension card. It is necessary to select the communication extension card, IO extension card, PG card, RST detection board and temperature detection board according to actual requiremtn for Goodrive800 series products.

4.9.2 Control terminals



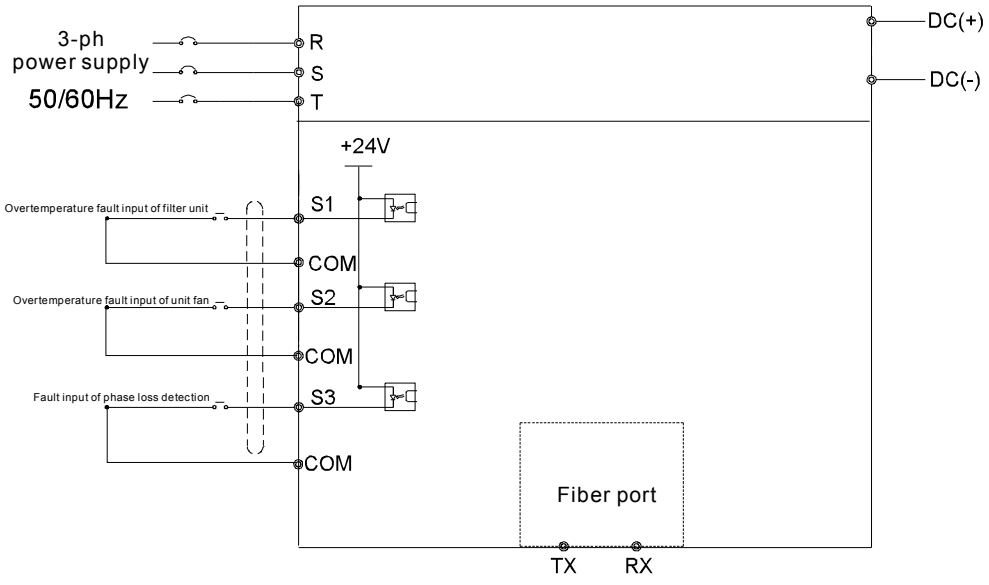




Type	Sign	Name	Function
Power supply	+10V	10V power supply	Local 10.5V reference power supply
	+24V	24V power supply	24V Max. output current 200mA
	PW	External power supply	External power supply Range: 12~24V
	GND	Ground	+10V reference zero potential
	COM	+24V common terminal	+24V common terminal
Analog input	AI1	Analog input 1	1. Input range: 0~10V or 0~20mA 2. Input/current input is determined by J3
	AI2	Analog input 2	1. Input range: 0~10V or 0~20mA 2. Input/current input is determined by J4
	AI3	Analog input 3	1. Input range: -10~10V
Analog output	AO1	Analog output 1	1. Input range: 0~10V or 0~20mA 2. Input/current input is determined by J1
	AO2	Analog output 2	1. Input range: 0~10V or 0~20mA 2. Input/current input is determined by J2
Digital input	S1	Digital input 1	1. Input impedance: 3.3kΩ 2. Voltage input range: 12~30V 3. Support NPN and PNP
	S2	Digital input 2	
	S3	Digital input 3	
	S4	Digital input 4	
	S5	Digital input 5	
	S6	Digital input 6	
	S7	Digital input 7	
	S8	Digital input 8	Besides the function of S1~S7, it can be as the high frequency pulse input channel Maximum input frequency: 50kHz
Digital output	Y1	Collector output 1	1.Switching capacity: 200mA/30V 2.Output frequency range: 0-1kHz
	Y2	Collector output 2	1. Switching capacity: 1A /30V 2. Output frequency range: 0~50kHz
Safety function	H1	Safe input 1	Short-connected with COM terminal in factory. Remove the connection wires between H1 and COM, H2 and COM if safety input is used.
	H2	Safe input 2	

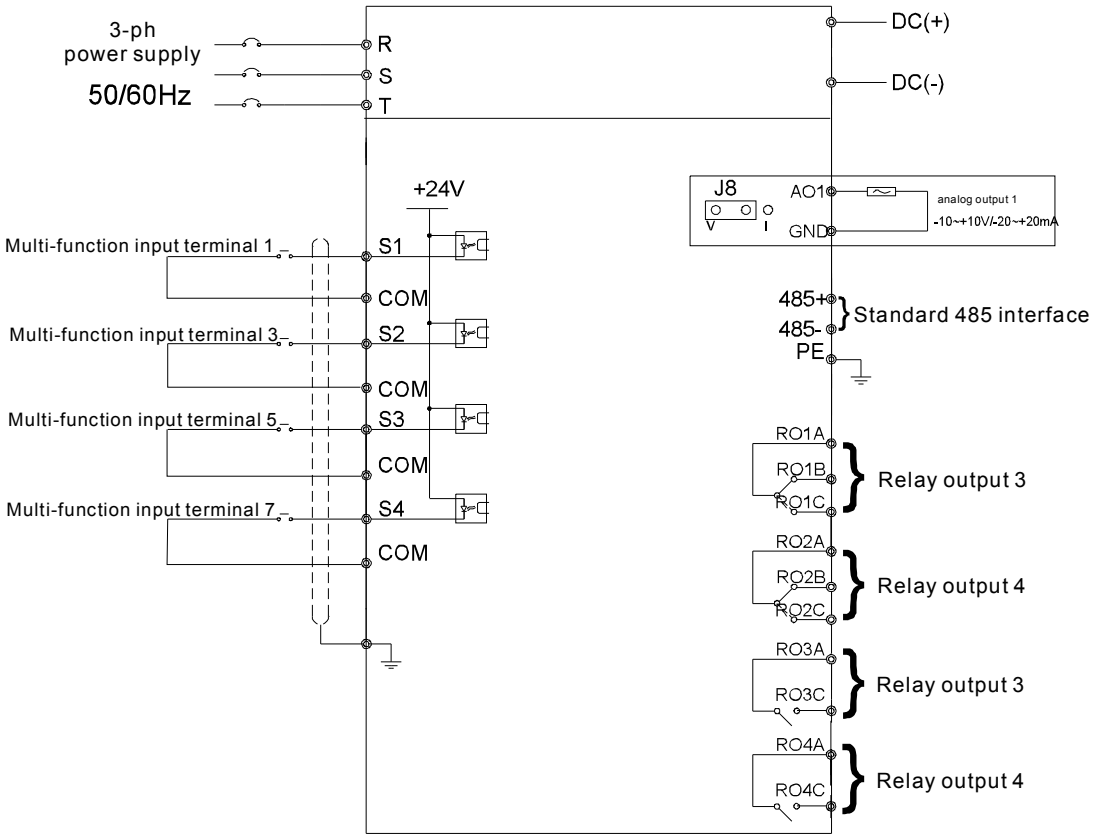
Type	Sign	Name	Function
Relay output	RO1A	Relay 1 NO contact	1. Contact capacity: AC250V/3A，DC30V/1A 2. Can not be used as the high frequency switch output Note: if H1 or H2 input is valid for STO function, then RO4 is forced output and can be used as common relay.
	RO1B	Relay 1 NC contact	
	RO1C	Relay 1 common contact	
	RO2A	Relay 2 NO contact	
	RO2B	Relay 2 NC contact	
	RO2C	Relay 2 common contact	
	RO3A	Relay 3 NO contact	
	RO3B	Relay 3 NC contact	
	RO3C	Relay 3 common contact	
	RO4A	Relay 4 NO contact	
	RO4B	Relay 4 NC contact	
	RO4C	Relay 4 common contact	
Communication	485+	485 communication	485 communication terminal Apply MODBUS protocol J5 can select whether to connect 120Ω terminal resistor
	485-		

4.10 Goodrive800 series unit control board



Type	Sign	Name	Function
Power supply	COM	+24V common terminal	+24V common terminal
Digital input	S1	Analog input 1	1. Input impedance: 3.3kΩ 2. Voltage input range: 12~30V
	S2	Analog input 2	
	S3	Analog input 3	

4.11 Goodrive800 series thyristor rectifier control board



Type	Sign	Name	Function
Analog output	AO	Analog output	1. Output range: 0~10V or 0~20mA 2. The output is determined by J8
Power supply	COM	+24V common terminal	+24V common terminal
Digital input	S1	Analog input 1	1. Input impedance: 3.3kΩ 2. Voltage input range: 12~30V
	S2	Analog input 2	
	S3	Analog input 3	
	S4	Analog input 4	
Relay output	RO1A	Relay 1 NO contact	1. Contact capacity: AC250V/3A, DC30V/1A 2. Not used as high frequency switch output (pay attention to it)
	RO1B	Relay 1 NC contact	
	RO1C	Relay 1 common contact	
	RO2A	Relay 2 NO contact	
	RO2B	Relay 2 NC contact	
	RO2C	Relay 2 common contact	
	RO3A	Relay 3 NO contact	1. Contact capacity:AC240V/16A
	RO3C	Relay 3 common contact	
	RO4A	Relay 4 NO contact	
	RO4C	Relay 4 common contact	
Communication	485+、485-	485 communication	485 communication terminal, apply MODBUS protocol

Chapter 5 Configuration table of the cabinets

5.1 Configuration table of Goodrive800-26 series products

GD800-26 model	Rectifying		Invertering	
	Quantity	Specifications	Quantity	Specifications
U_N = 380 V				
GD800-26-0075-4	GD800-96-0075-4	1	GD800-51-0075-4*	1
GD800-26-0090-4	GD800-96-0090-4	1	GD800-51-0090-4*	1
GD800-26-0110-4	GD800-96-0110-4	1	GD800-51-0110-4*	1
GD800-26-0132-4	GD800-96-0132-4	1	GD800-51-0132-4*	1
GD800-26-0160-4	GD800-96-0160-4	1	GD800-51-0160-4*	1
GD800-26-0200-4	GD800-96-0200-4	1	GD800-51-0200-4*	1
GD800-26-0250-4	GD800-96-0250-4	1	GD800-56-0250-4	1
GD800-26-0315-4	GD800-96-0315-4	1	GD800-56-0315-4	1
GD800-26-0400-4	GD800-96-0400-4	1	GD800-56-0400-4	1
GD800-26-0500-4	GD800-96-0500-4	1	GD800-56-0500-4	1
GD800-26-0630-4	GD800-96-0630-4	1	GD800-56-0630-4	1
GD800-26-0800-4	GD800-96-0800-4	1	GD800-56-0800-4	1
GD800-26-1000-4	GD800-96-1000-4	1	GD800-56-1000-4	1
GD800-26-1200-4	GD800-96-1200-4	1	GD800-56-1200-4	1
U_N = 660 V				
GD800-26-0075-6	GD800-96-0075-6	1	GD800-51-0075-6*	1
GD800-26-0090-6	GD800-96-0090-6	1	GD800-51-0090-6*	1
GD800-26-0110-6	GD800-96-0110-6	1	GD800-51-0110-6*	1
GD800-26-0132-6	GD800-96-0132-6	1	GD800-51-0132-6*	1
GD800-26-0160-6	GD800-96-0160-6	1	GD800-51-0160-6*	1
GD800-26-0200-6	GD800-96-0200-6	1	GD800-51-0200-6*	1
GD800-26-0250-6	GD800-96-0250-6	1	GD800-51-0250-6*	1
GD800-26-0315-6	GD800-96-0315-6	1	GD800-56-0315-6	1
GD800-26-0400-6	GD800-96-0400-6	1	GD800-56-0400-6	1
GD800-26-0500-6	GD800-96-0500-6	1	GD800-56-0500-6	1
GD800-26-0630-6	GD800-96-0630-6	1	GD800-56-0630-6	1
GD800-26-0800-6	GD800-96-0800-6	1	GD800-56-0800-6	1
GD800-26-1000-6	GD800-96-1000-6	1	GD800-56-1000-6	1
GD800-26-1200-6	GD800-96-1200-6	1	GD800-56-1200-6	1
GD800-26-1500-6	GD800-96-1500-6	1	GD800-56-1500-6	1
Note: the model marked with "*" means power unit+control unit. For example "GD800-51-0075-4*" means GD800-51-0075-4+ GD800-ICU-0075-4				

5.2 Configuration table of Goodrive800-96 series products

Model	Rectifier unit		LCL Filtering unit		Rectifier control unit	
	Specifications	Quantity	Specifications	Quantity	Specifications	Quantity
U_N = 380 V						
GD800-96-0075-4	GD800-51-0075-4	1	/		GD800-RCU-0075-4	1
GD800-96-0090-4	GD800-51-0090-4	1	/		GD800-RCU-0090-4	1
GD800-96-0110-4	GD800-51-0110-4	1	/		GD800-RCU-0110-4	1
GD800-96-0132-4	GD800-51-0132-4	1	/		GD800-RCU-0132-4	1
GD800-96-0160-4	GD800-51-0160-4	1	/		GD800-RCU-0160-4	1
GD800-96-0200-4	GD800-51-0200-4	1	/		GD800-RCU-0200-4	1
GD800-96-0250-4	GD800-51-0250-4	1	GD800-01-0250-4	1	GD800-RCU-0250-4	1
GD800-96-0315-4	GD800-51-0315-4	1	GD800-01-0315-4	1	GD800-RCU-0315-4	1
GD800-96-0400-4	GD800-51-0400-4	1	GD800-01-0400-4	1	GD800-RCU-0400-4	1
GD800-96-0500-4	GD800-51-0250-4	2	GD800-01-0250-4	2	GD800-RCU-0500-4	1
GD800-96-0630-4	GD800-51-0315-4	2	GD800-01-0315-4	2	GD800-RCU-0630-4	1
GD800-96-0800-4	GD800-51-0400-4	2	GD800-01-0400-4	2	GD800-RCU-0800-4	1
GD800-96-1000-4	GD800-51-0315-4	3	GD800-01-0315-4	3	GD800-RCU-1000-4	1
GD800-96-1200-4	GD800-51-0400-4	3	GD800-01-0400-4	3	GD800-RCU-1200-4	1
U_N = 660 V						
GD800-96-0075-6	GD800-51-0075-6	1	/		GD800-RCU-0075-6	1
GD800-96-0090-6	GD800-51-0090-6	1	/		GD800-RCU-0090-6	1
GD800-96-0110-6	GD800-51-0110-6	1	/		GD800-RCU-0110-6	1
GD800-96-0132-6	GD800-51-0132-6	1	/		GD800-RCU-0132-6	1
GD800-96-0160-6	GD800-51-0160-6	1	/		GD800-RCU-0160-6	1
GD800-96-0200-6	GD800-51-0200-6	1	/		GD800-RCU-0200-6	1
GD800-96-0250-6	GD800-51-0250-6	1	/		GD800-RCU-0250-6	1
GD800-96-0315-6	GD800-51-0315-6	1	GD800-01-0315-6	1	GD800-RCU-0315-6	1
GD800-96-0400-6	GD800-51-0400-6	1	GD800-01-0400-6	1	GD800-RCU-0400-6	1
GD800-96-0500-6	GD800-51-0500-6	1	GD800-01-0500-6	1	GD800-RCU-0500-6	1
GD800-96-0630-6	GD800-51-0315-6	2	GD800-01-0315-6	2	GD800-RCU-0630-6	1
GD800-96-0800-6	GD800-51-0400-6	2	GD800-01-0400-6	2	GD800-RCU-0800-6	1
GD800-96-1000-6	GD800-51-0500-6	2	GD800-01-0500-6	2	GD800-RCU-1000-6	1
GD800-96-1200-6	GD800-51-0400-6	3	GD800-01-0400-6	3	GD800-RCU-1200-6	1
GD800-96-1500-6	GD800-51-0500-6	3	GD800-01-0500-6	3	GD800-RCU-1500-6	1

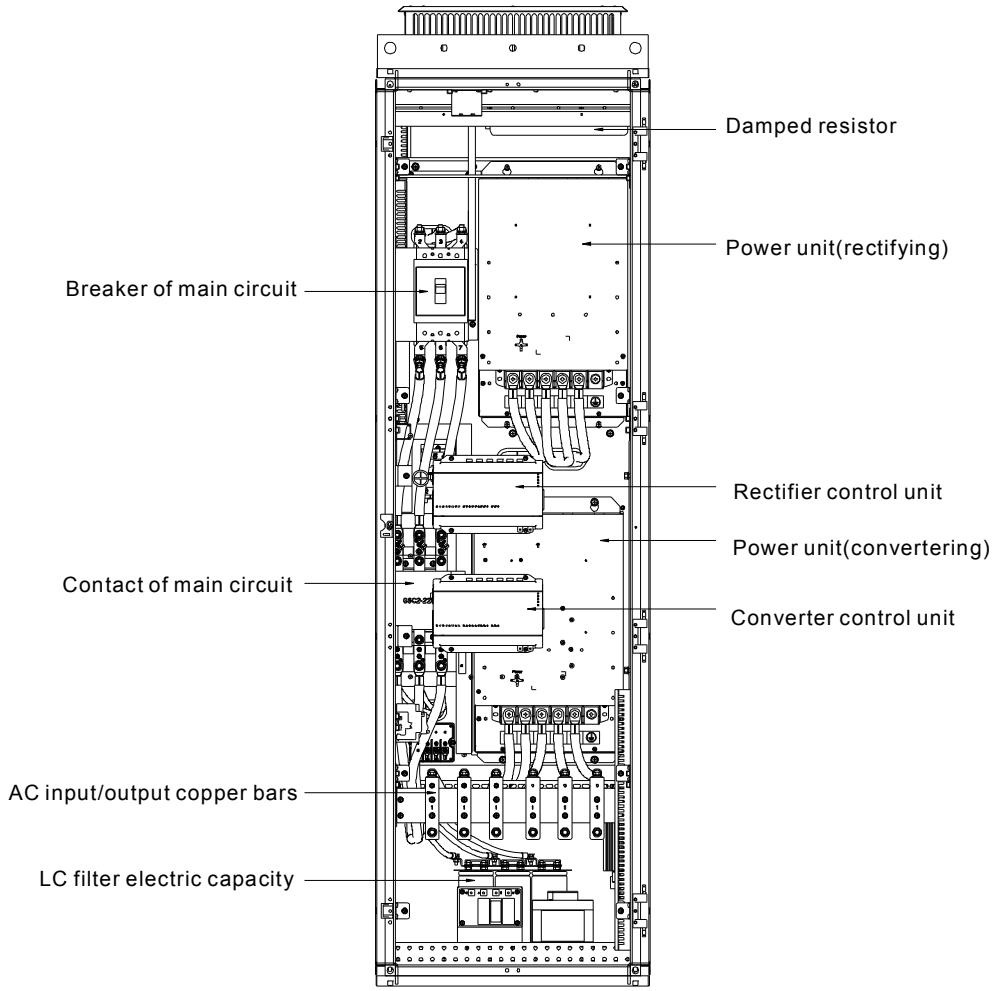
5.3 Configuration table of Goodrive800-56 series products

Model	IGBT		Inverter control unit	
	Specifications	Quantity	Specifications	Quantity
U_N =380 V				
GD800-56-0132-4	GD800-51-0132-4	1	GD800-ICU-0132-4	1
GD800-56-0160-4	GD800-51-0160-4	1	GD800-ICU-0160-4	1
GD800-56-0200-4	GD800-51-0200-4	1	GD800-ICU-0200-4	1
GD800-56-0250-4	GD800-51-0250-4	1	GD800-ICU-0250-4	1
GD800-56-0315-4	GD800-51-0315-4	1	GD800-ICU-0315-4	1
GD800-56-0400-4	GD800-51-0400-4	1	GD800-ICU-0400-4	1
GD800-56-0500-4	GD800-51-0250-4	2	GD800-ICU-0500-4	1
GD800-56-0630-4	GD800-51-0315-4	2	GD800-ICU-0630-4	1
GD800-56-0800-4	GD800-51-0400-4	2	GD800-ICU-0800-4	1
GD800-56-1000-4	GD800-51-0315-4	3	GD800-ICU-1000-4	1
GD800-56-1200-4	GD800-51-0400-4	3	GD800-ICU-1200-4	1
U_N =660 V				
GD800-56-0160-6	GD800-51-0160-6	1	GD800-ICU-0160-6	1
GD800-56-0200-6	GD800-51-0200-6	1	GD800-ICU-0200-6	1
GD800-56-0250-6	GD800-51-0250-6	1	GD800-ICU-0250-6	1
GD800-56-0315-6	GD800-51-0315-6	1	GD800-ICU-0315-6	1
GD800-56-0400-6	GD800-51-0400-6	1	GD800-ICU-0400-6	1
GD800-56-0500-6	GD800-51-0500-6	1	GD800-ICU-0500-6	1
GD800-56-0630-6	GD800-51-0315-6	2	GD800-ICU-0630-6	1
GD800-56-0800-6	GD800-51-0400-6	2	GD800-ICU-0800-6	1
GD800-56-1000-6	GD800-51-0500-6	2	GD800-ICU-1000-6	1
GD800-56-1200-6	GD800-51-0400-6	3	GD800-ICU-1200-6	1
GD800-56-1500-6	GD800-51-0500-6	3	GD800-ICU-1500-6	1

Chapter 6 Main components

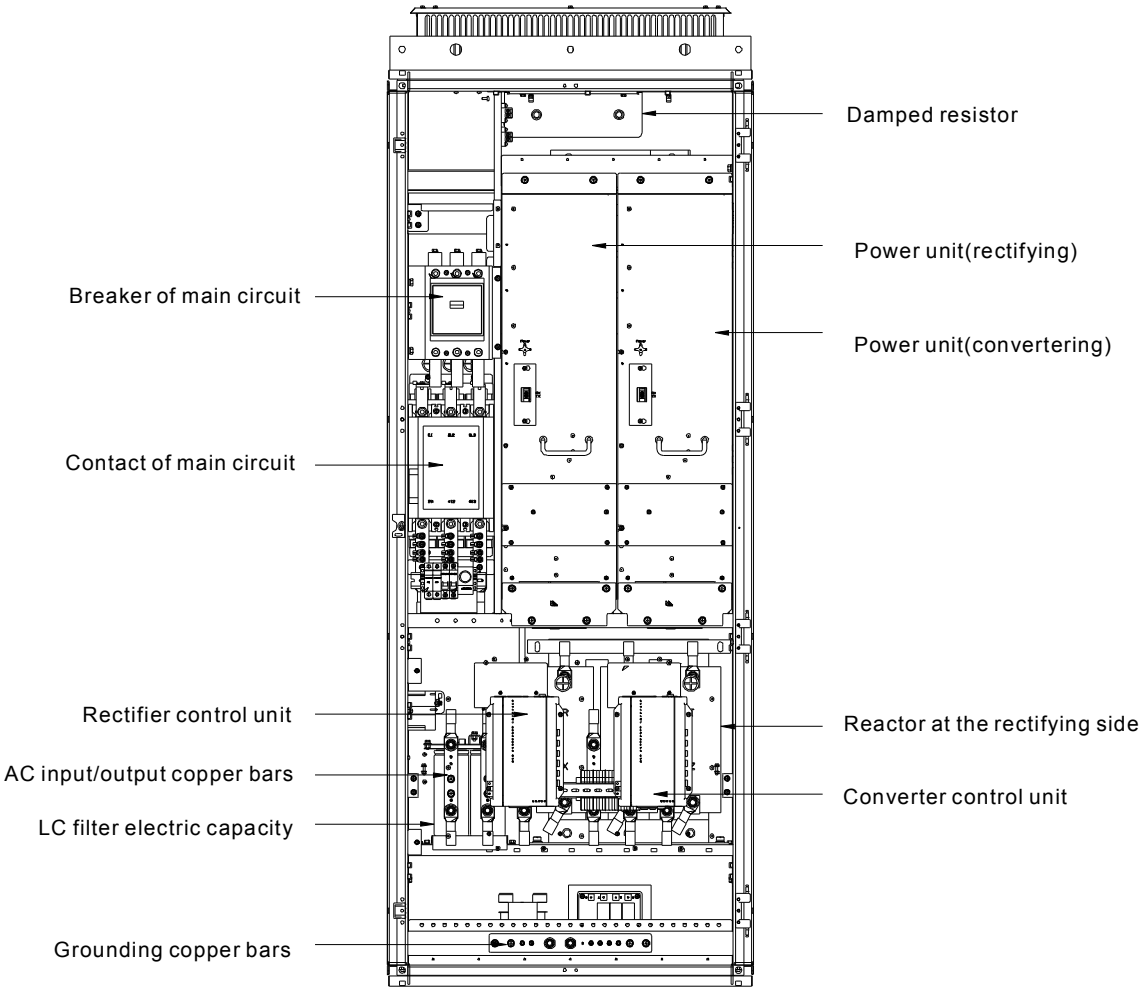
6.1 Goodrive800-26 series products

6.1.1 Goodrive800-26 series 75~110kW-4 (75~132kW-6)



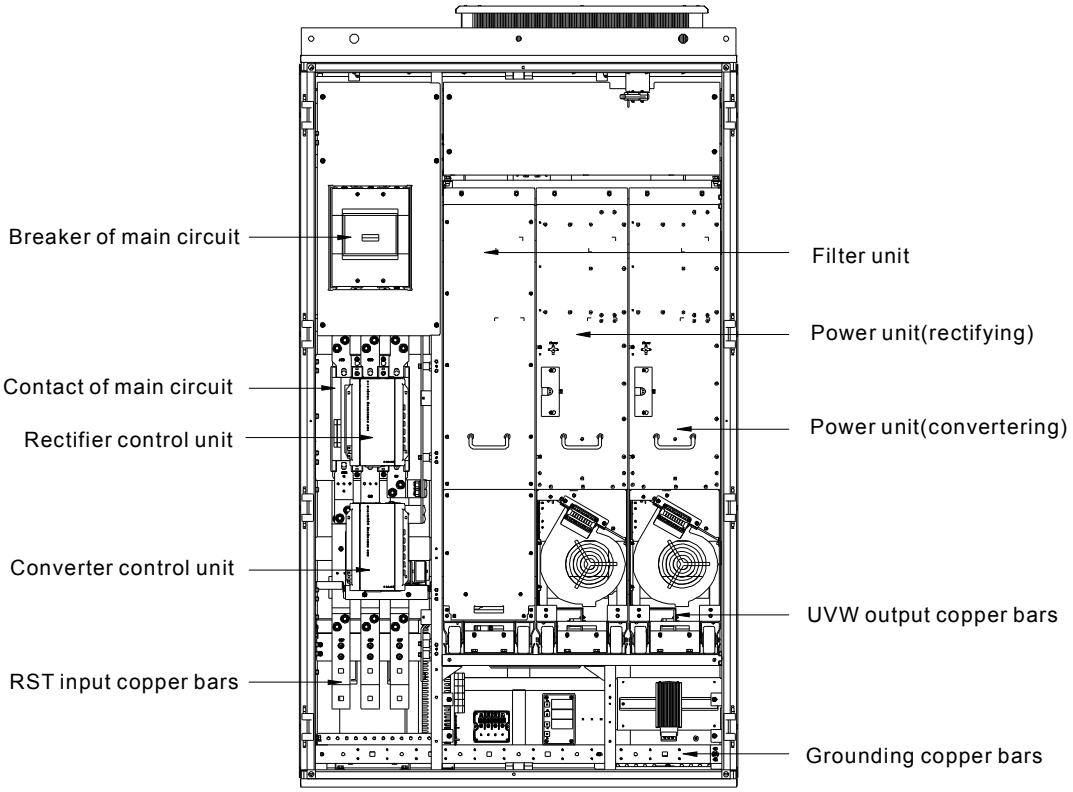
Components layout diagram of Goodrive800-26 series 0075~0110-4 (0075~0132-6)

Components layout diagram of Goodrive800-96 series 0075~0110-4 (0075~0132-6) is the diagram without IGBT, convertering control unit and AC output copper bars.



Components layout diagram of Goodrive800-26 series 0132~0200-4 (0160~0250-6)

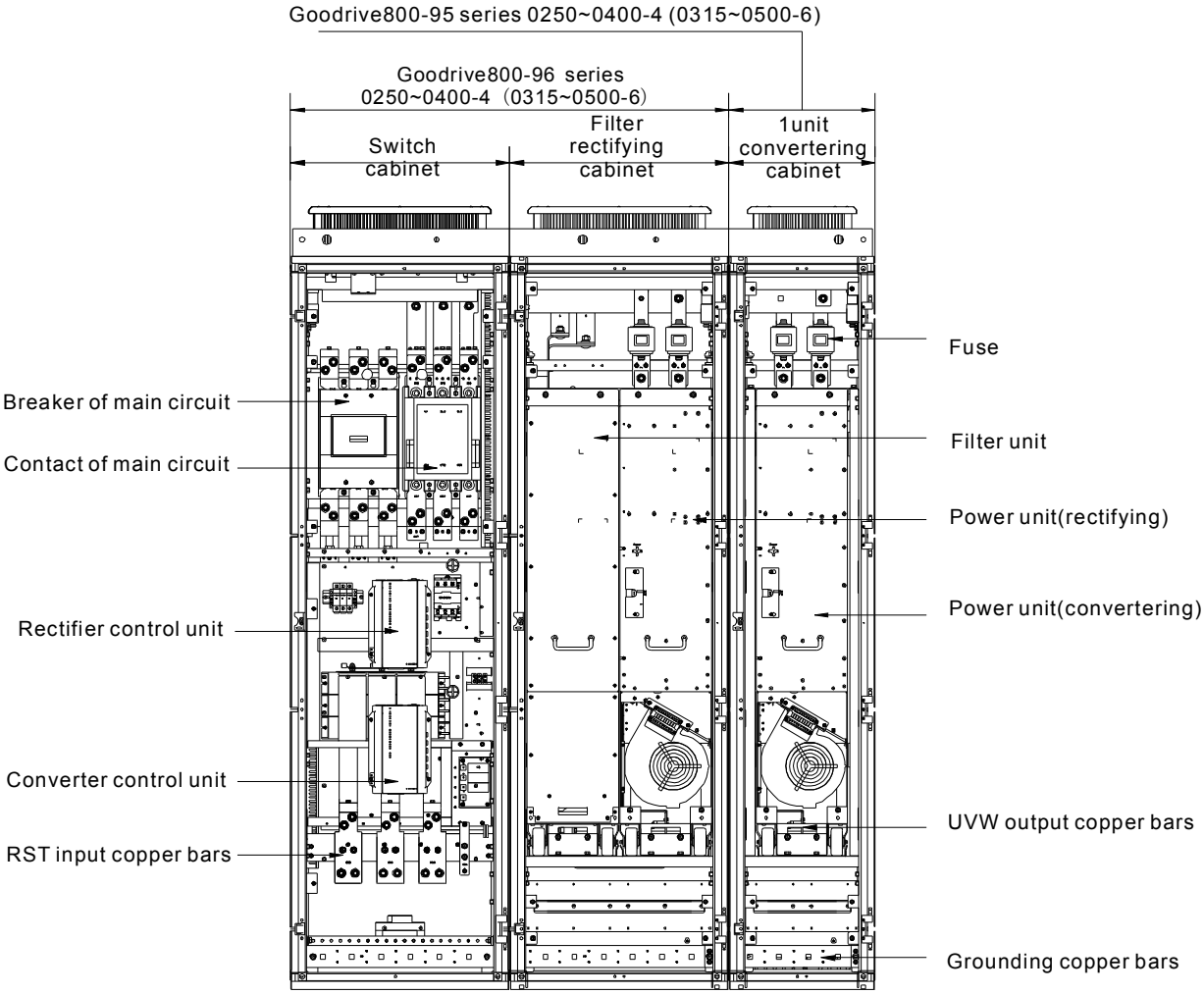
Components layout diagram of Goodrive800-96 series 0132~0200-4 (0160~0250-6) is the diagram without power unit, convertering control unit and AC output copper bars.



Components layout diagram of Goodrive800-26 series 0250~0400-4(0315~0500-6)

Components layout diagram of Goodrive800-96 series 0250~0400-4(0315~0500-6) is the diagram without convertering cabinet and convertering control unit

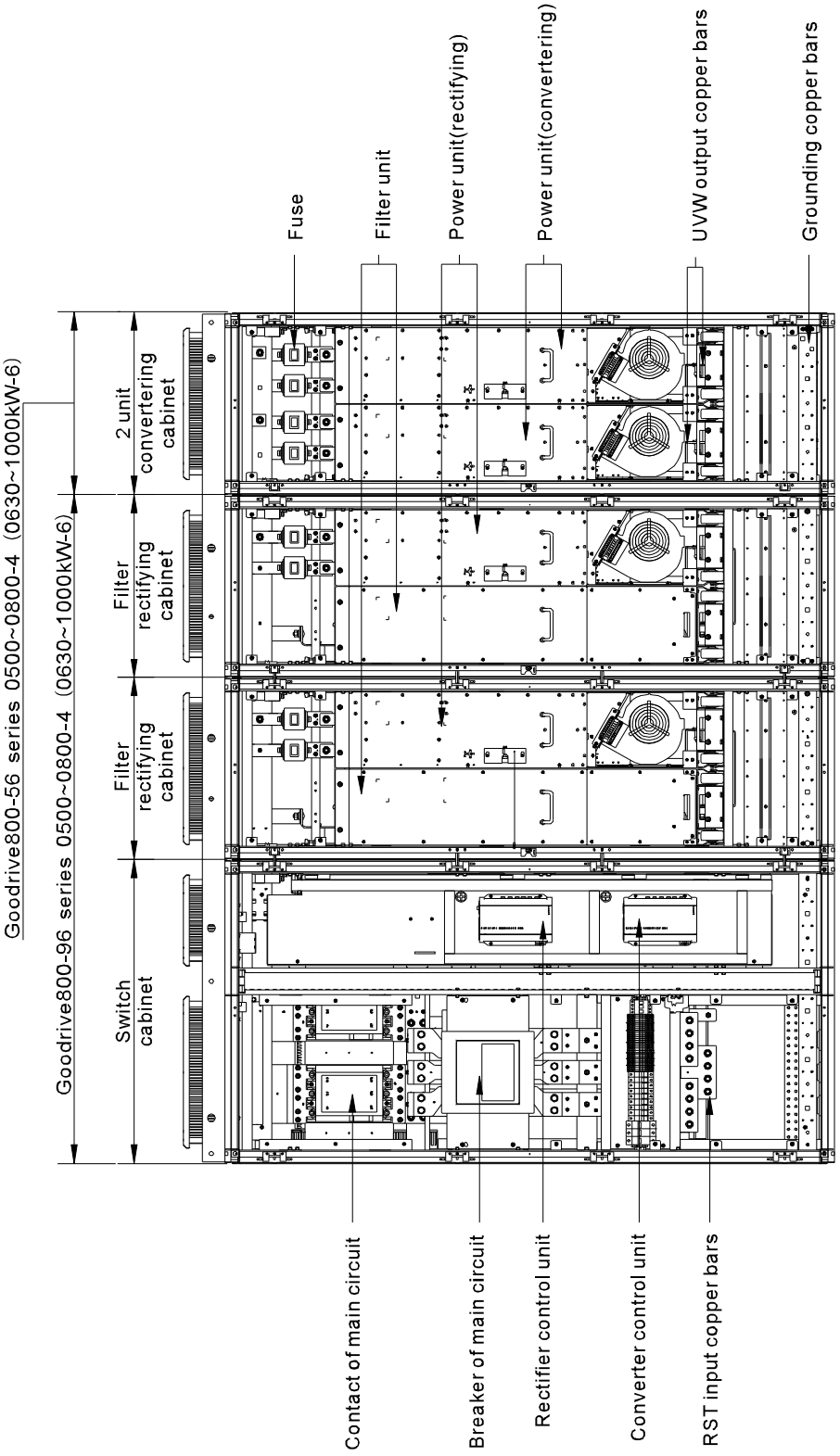
Components layout diagram of Goodrive800-56 series 0250~0400-4(0315~0500-6)is the diagram without filter rectifier cabinet and switch cabinet



Components layout diagram of Goodrive800-26 series 0500~0800-4(0630~1000-6)

Components layout diagram of Goodrive800-96 series 0500~0800-4(0630~1000-6)is the diagram without convertering cabinet and convertering control unit

Components layout diagram of Goodrive800-56 series 0500~0800-4(0630~1000-6)is the diagram without filter rectifier cabinet and switch cabinet



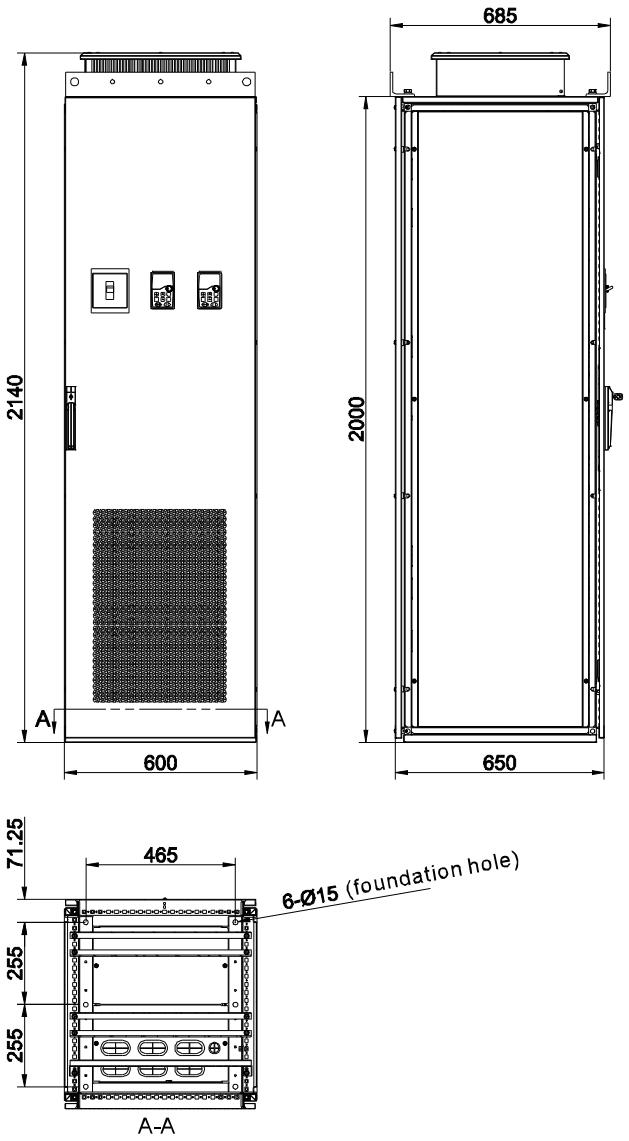
Components layout diagram of Goodrive800-26 series 1000~1200-4(1200~1500-6)

Components layout diagram of Goodrive800-96 series 1000~1200-4(1200~1500-6)is the diagram without convertering cabinet and convertering control unit

Components layout diagram of Goodrive800-56 series 1000~1200-4(1200~1500-6)is the diagram without filter rectifier cabinet and switch cabinet

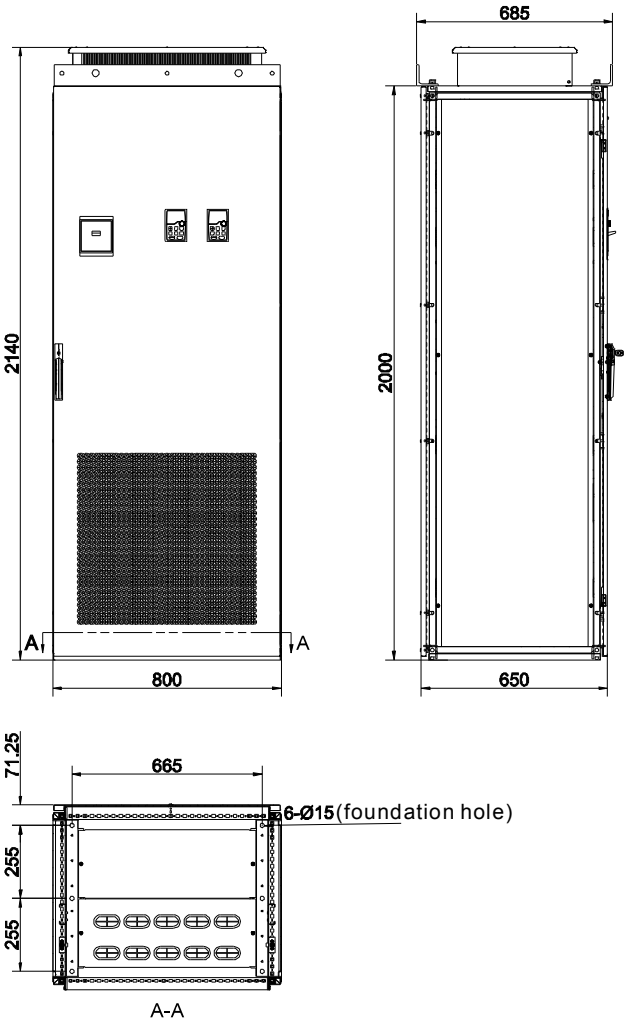
Chapter 7 Dimensions

7.1 Dimension of Goodrive800-26, Goodrive800-96 and Goodrive800-56 series products



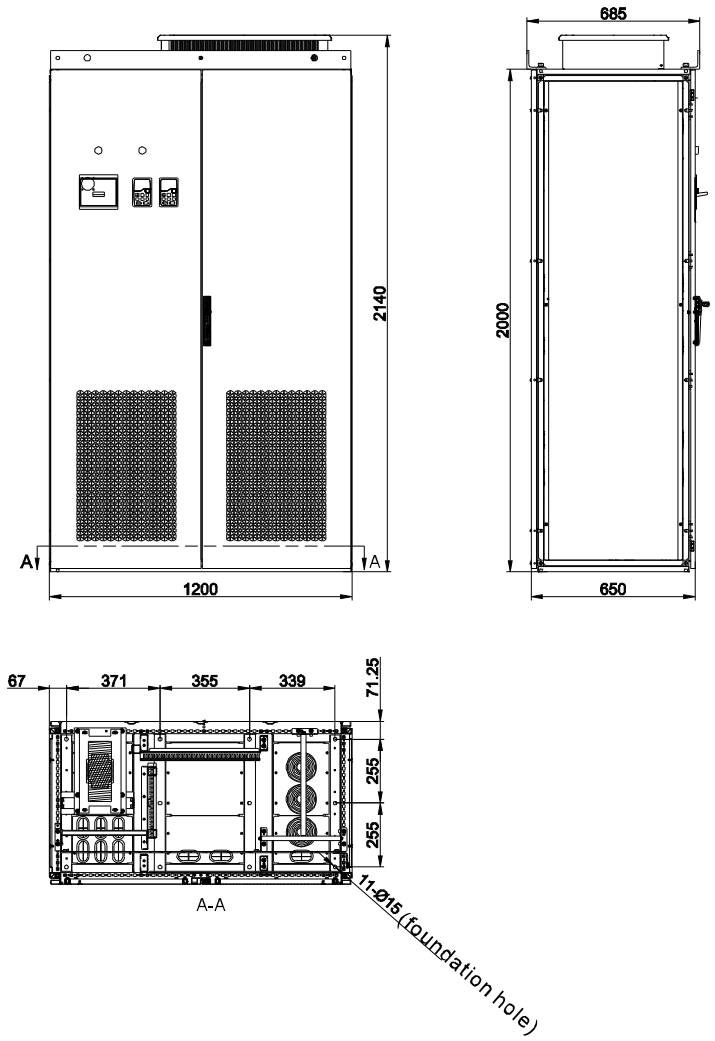
Dimension of Goodrive800-26 series 0075~0110-4(0075~0132-6)

Dimension of Goodrive800-96 series 0075~0110-4(0075~0132-6)



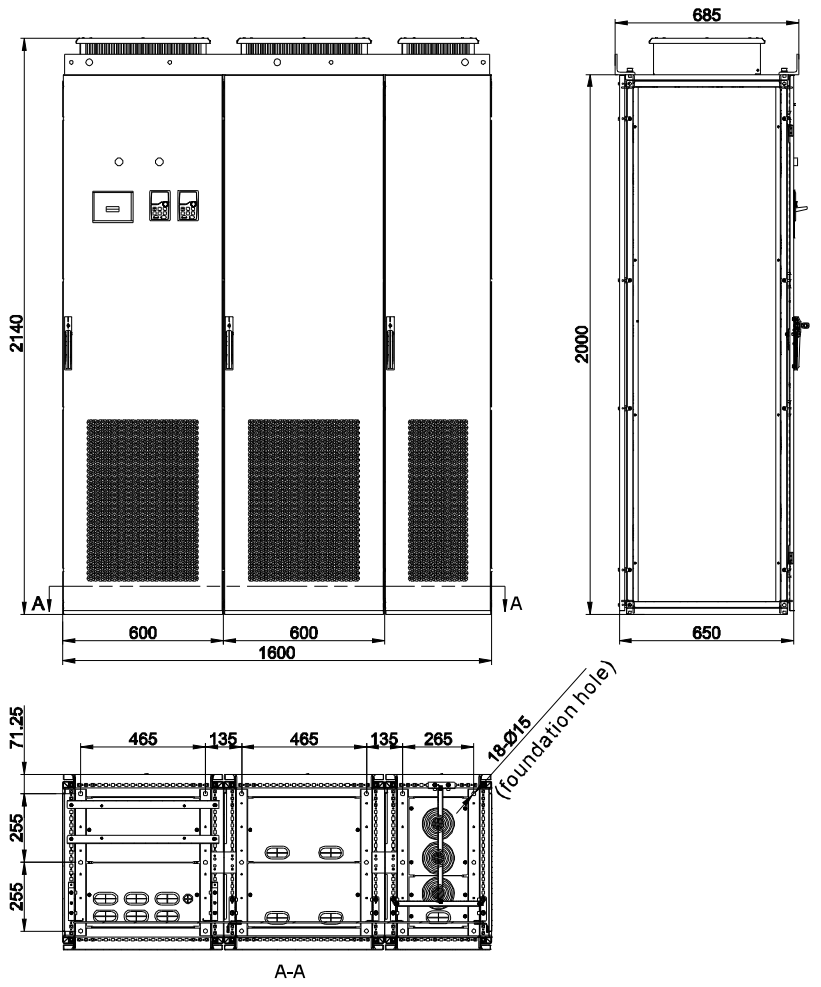
Dimension of Goodrive800-26 series 0132~0200-4(0160~0250-6)

Dimension of Goodrive800-96 series 0132~0200-4(0160~0250-6)



Dimension of Goodrive800-26 series 0250~0400-4(0315~0500-6)single-machine

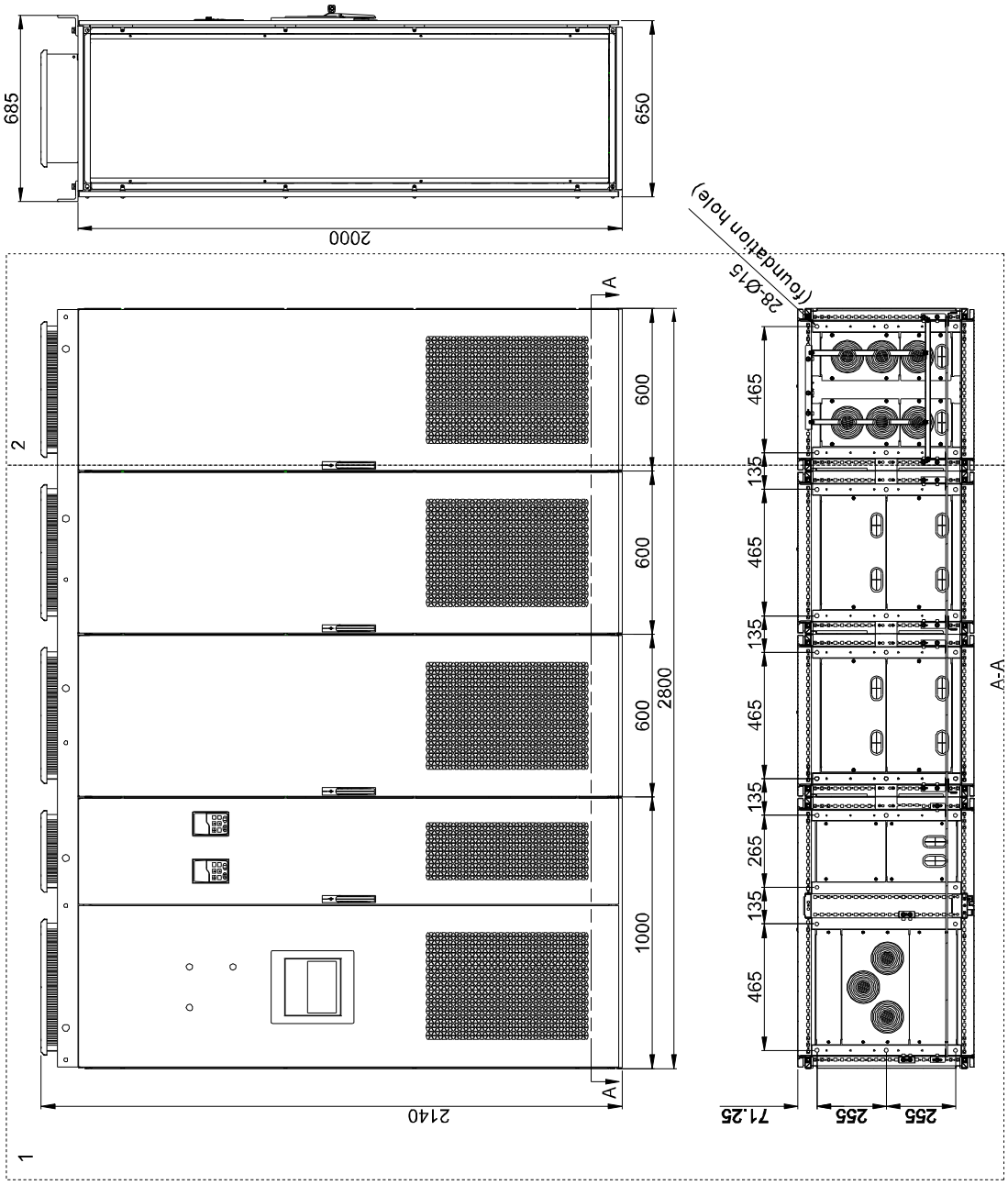
Dimension of Goodrive800-96 series 0250~0400-4(0315~0500-6)



The dimension diagram of Goodrive800-26 series 0250~0400-4(0315~0500-6)is part 1 and 2 in the diagram above.

The dimension diagram of Goodrive800-96 series 0250~0400-4(0315~0500-6)is part 1 in the diagram above.

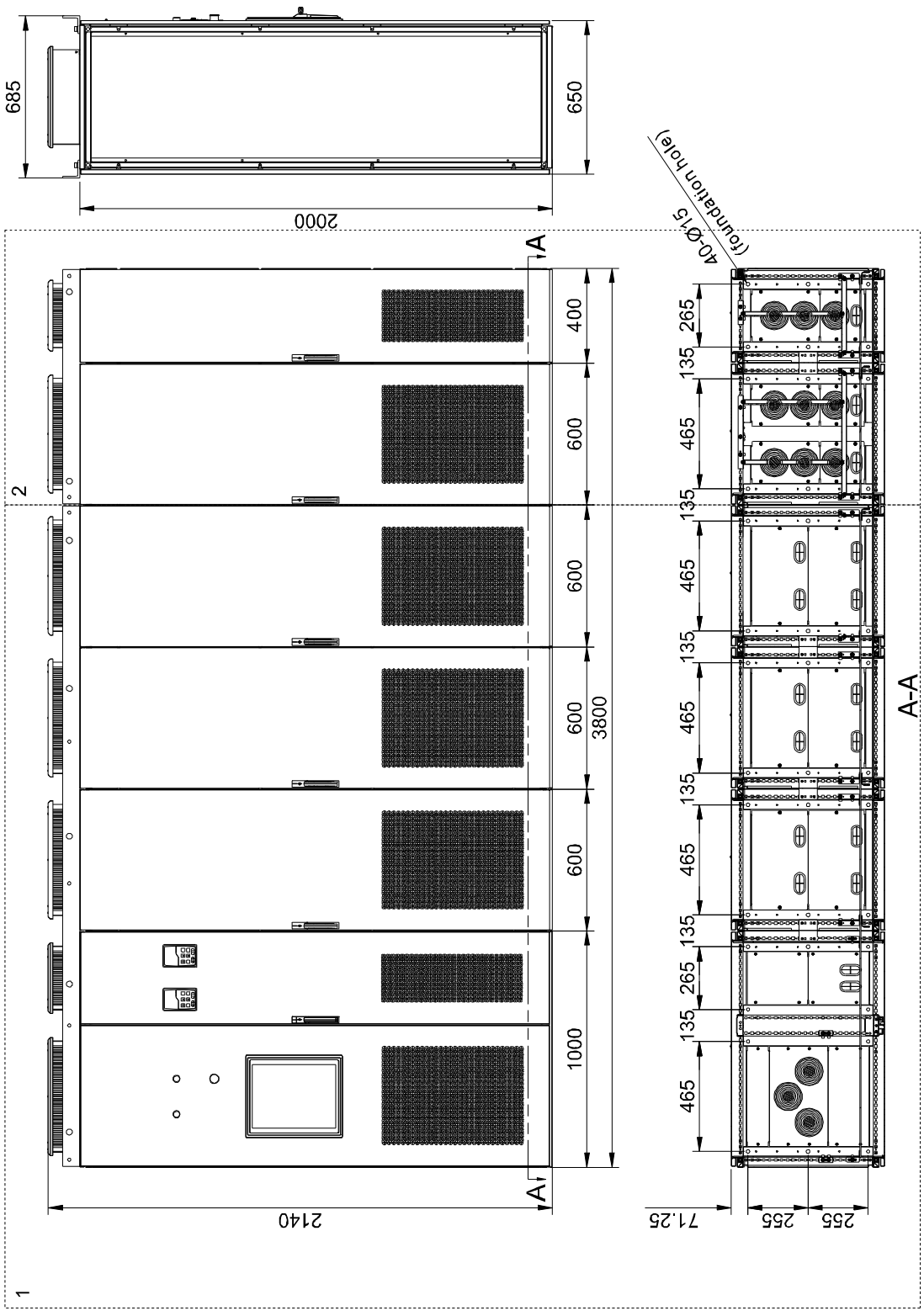
The dimension diagram of Goodrive800-56 series 0250~0400-4(0315~0500-6)is part 2 in the diagram above.



The dimension diagram of Goodrive800-26 series 0500~0800-4(0630~1000-6) is part 1 and 2 in the diagram above.

The dimension diagram of Goodrive800-96 series 0500~0800-4(0630~1000-6) is part 1 in the diagram above.

The dimension diagram of Goodrive800-56 series 0500~0800-4(0630~1000-6) is part 2 in the diagram above.



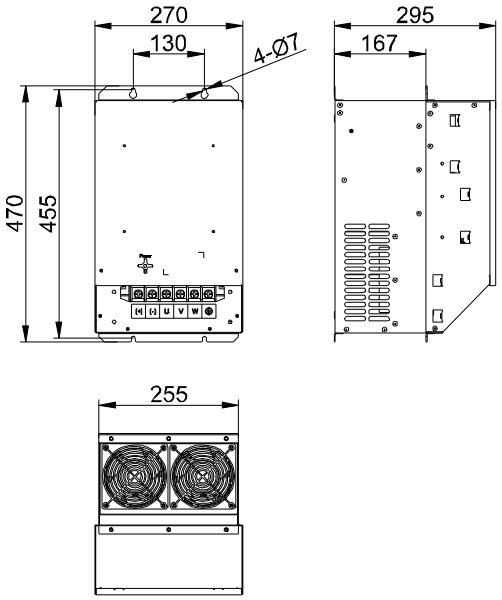
The dimension diagram of Goodrive800-26 series 1000~1200-4(1200~1500-6)is part 1 and 2 in the diagram above.

The dimension diagram of Goodrive800-96 series 1000~1200-4(1200~1500-6)is part 1 in the diagram above.

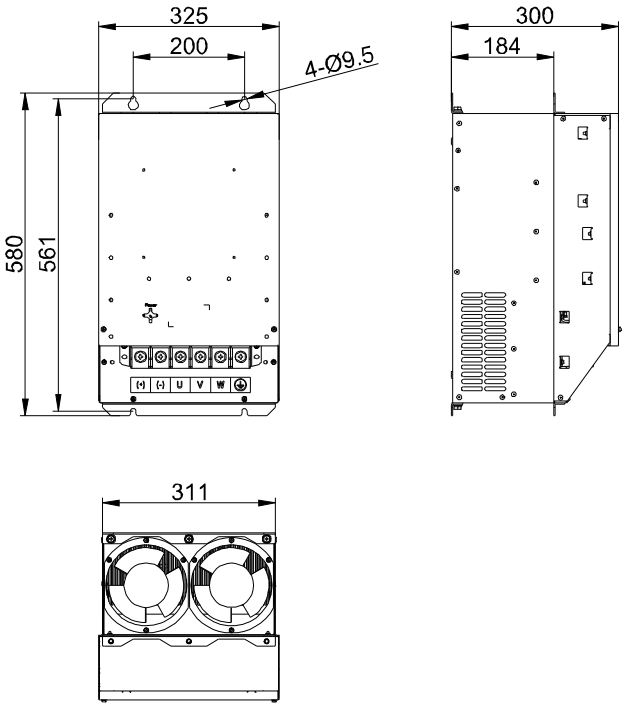
The dimension diagram of Goodrive800-56 series 1000~1200-4(1200~1500-6)is part 2 in the diagram above.

7.2 Goodrive800-51 series

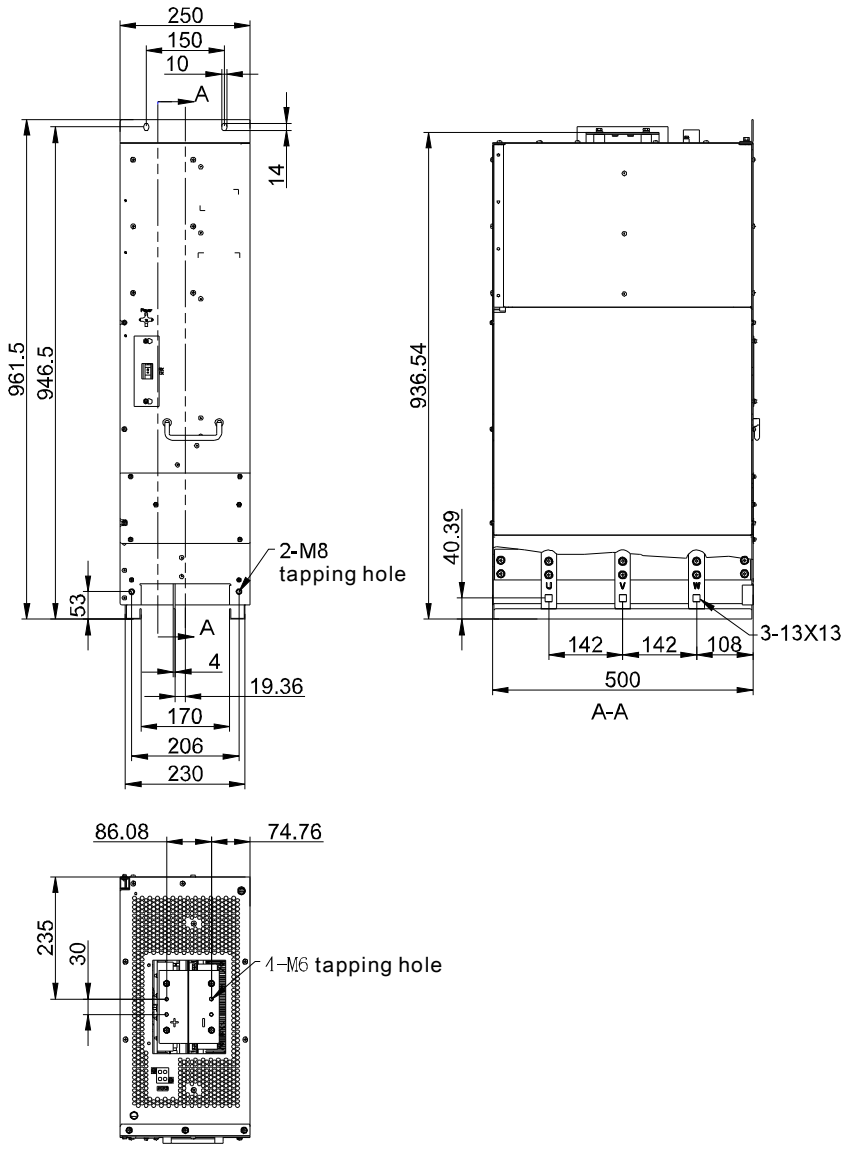
7.2.1 Goodrive800-51 series 0037~0055-4



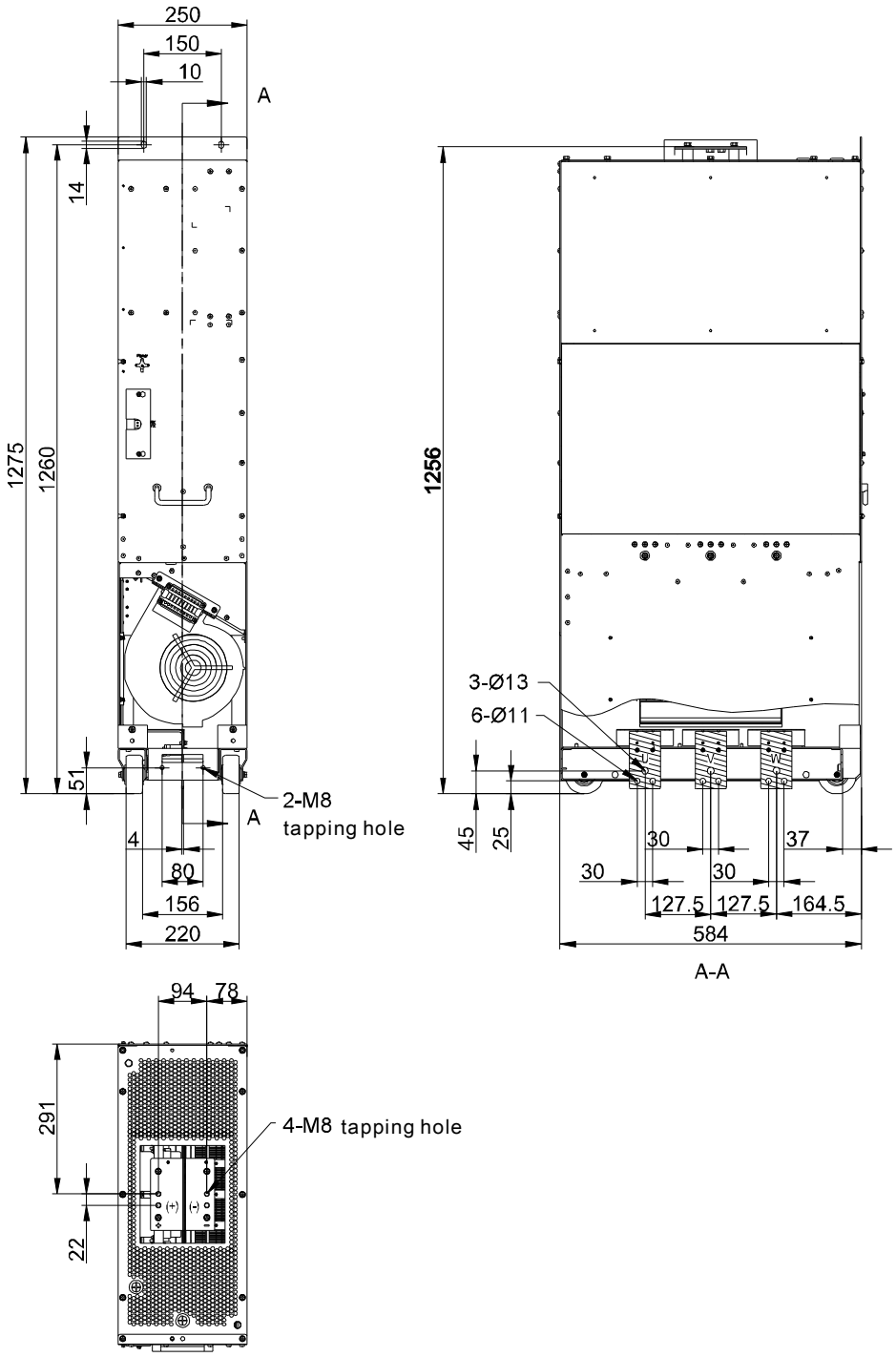
7.2.2 Goodrive800-51 series 0075~0110-4(0075~0132-6)



7.2.3 Goodrive800-51 series 0132~0200-4(0160~0250-6)

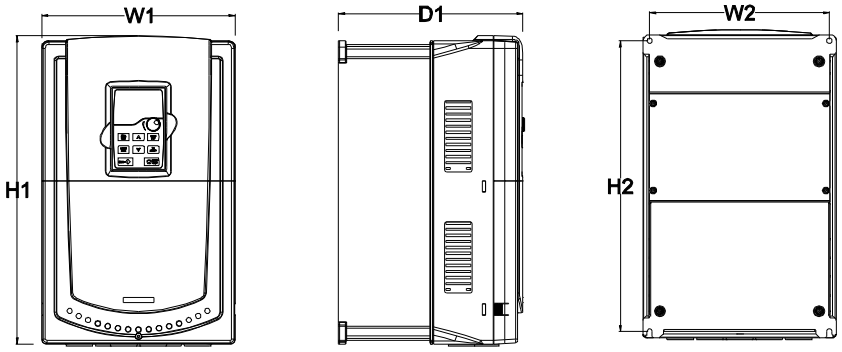


7.2.4 Goodrive800-51 series 0250~0400-4(0315~0500-6)

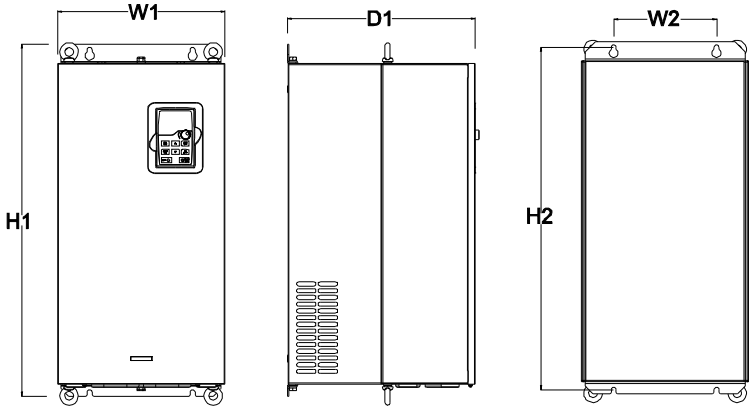


7.3 Goodrive800-11 series

7.3.1 Dimension of Goodrive800-11 series 0004~0110-4 for wall installation



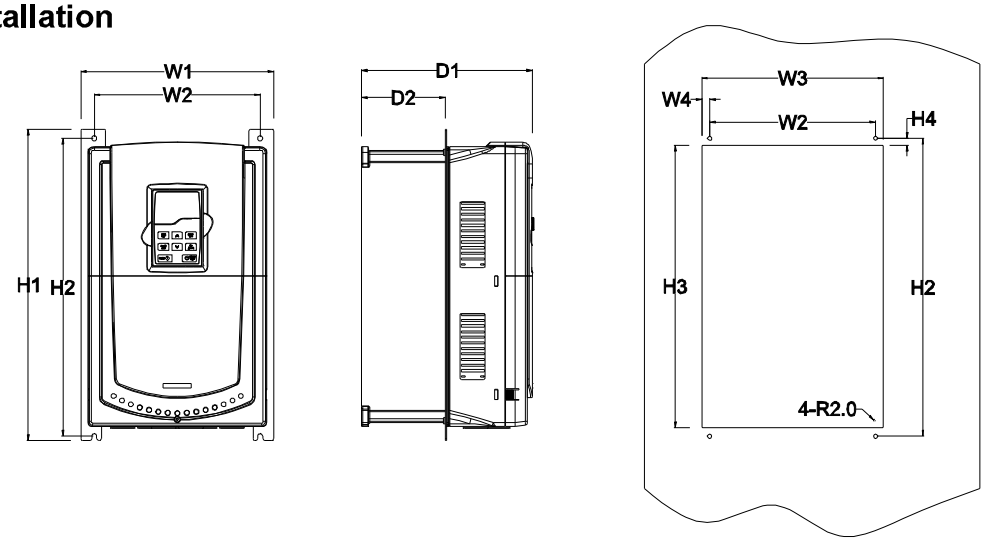
Wall installation of 0004-0030 inverters



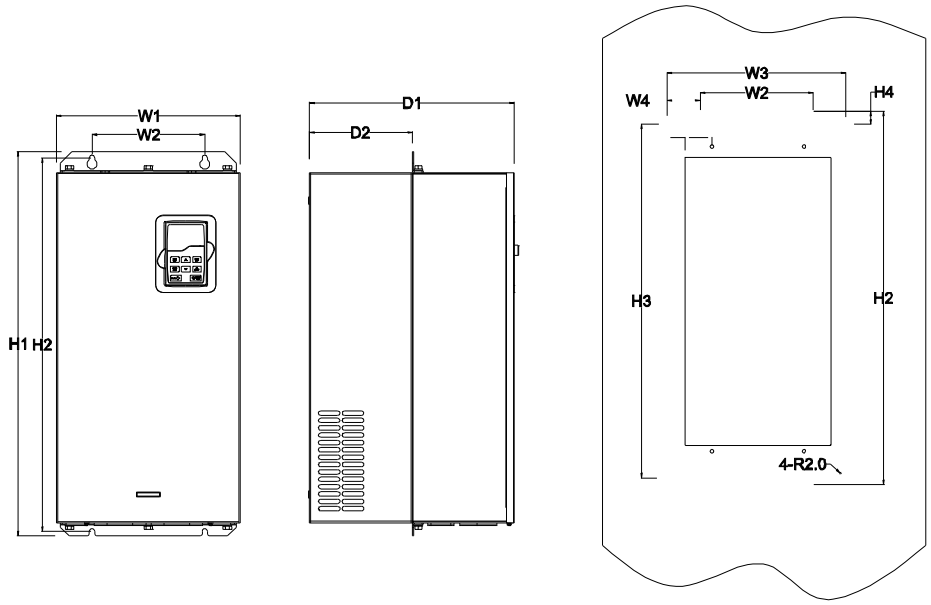
Wall installation of 0037-0110 inverters

Model	W1	W2	H1	H2	D1	Installation hole
0004~05R5	146	131	263	243.5	181	6
07R5~0011	170	151	331.5	303.5	216	6
0015~0018	230	210	342	311	216	6
0022~0030	255	237	407	384	245	7
0037~0055	270	130	555	540	325	7
0075~0110	325	200	680	661	365	9.5

7.3.2 Dimension of Goodrive800-11 series 0004~0110-4 for flange installation



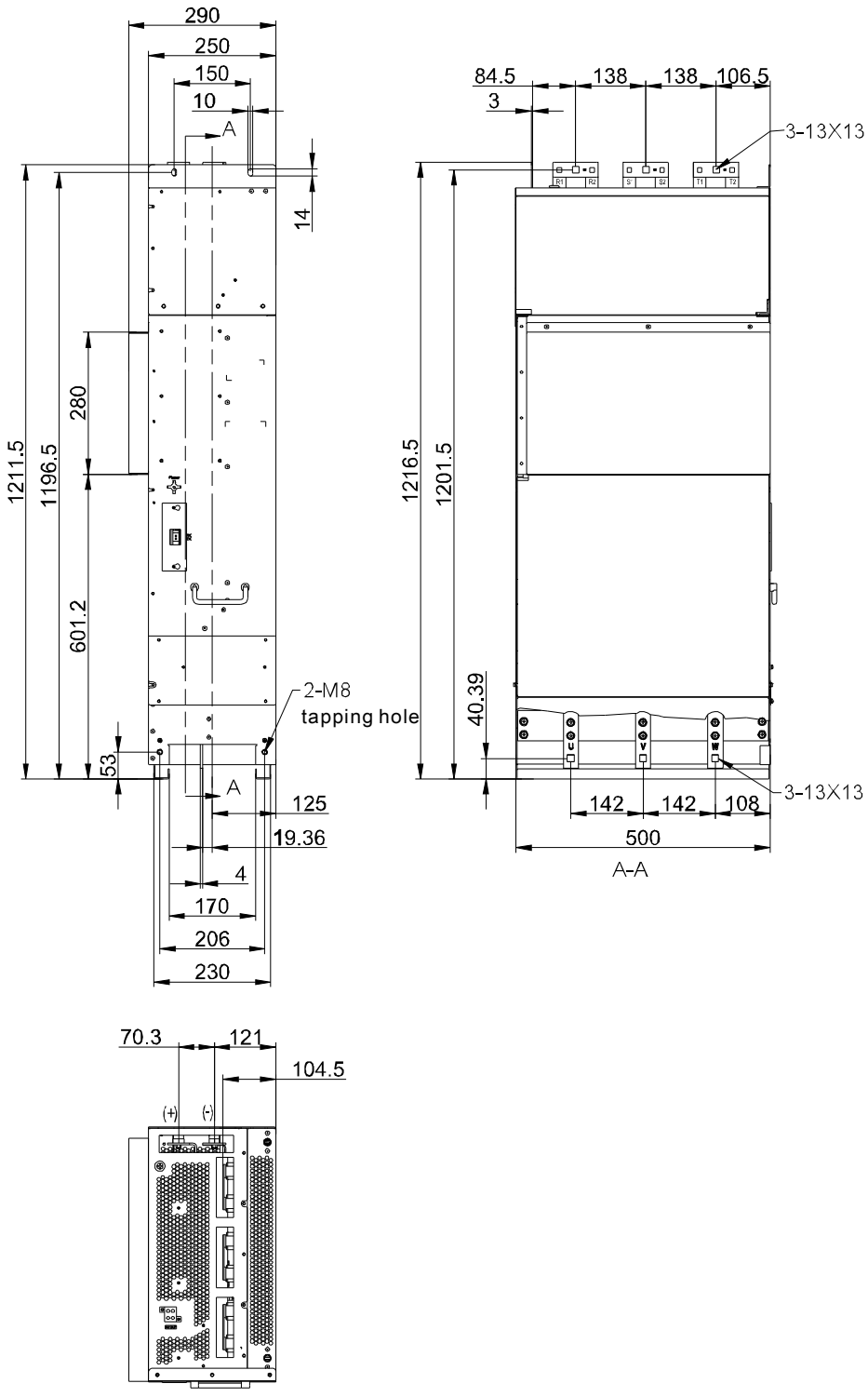
Flange installation of 0004-0030 inverters



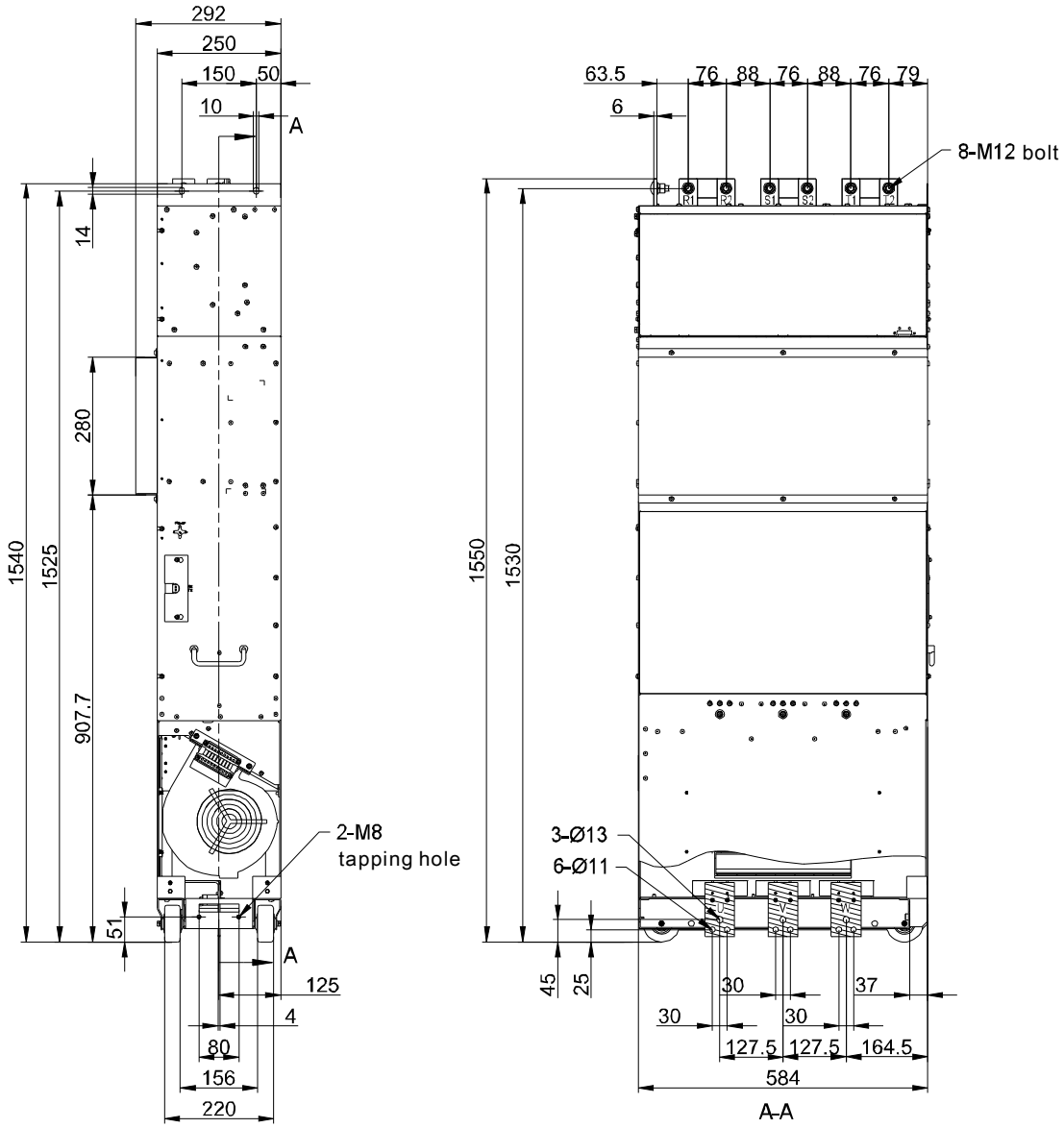
Flange installation of 0037-0110 inverters

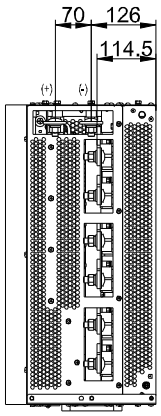
Model	W1	W2	W3	W4	H1	H2	H3	H4	D1	D2	Installation hole
0004~05R5	170	131	150	9.5	292	276	260	10	181	79.5	6
07R5~0011	191	151	174	11.5	370	351	324	15	216.2	113	6
0015~0018	250	210	234	12	375	356	334	10	216	108	6
0022~0030	275	237	259	11	445	426	404	10	245	119	7
0037~0055	270	130	261	65.5	555	540	516	17	325	167	7
0075~0110	325	200	317	58.5	680	661	626	23	363	182	9.5

7.3.3 Goodrive800-11 series 0132~0200-4(0160~0250-6)



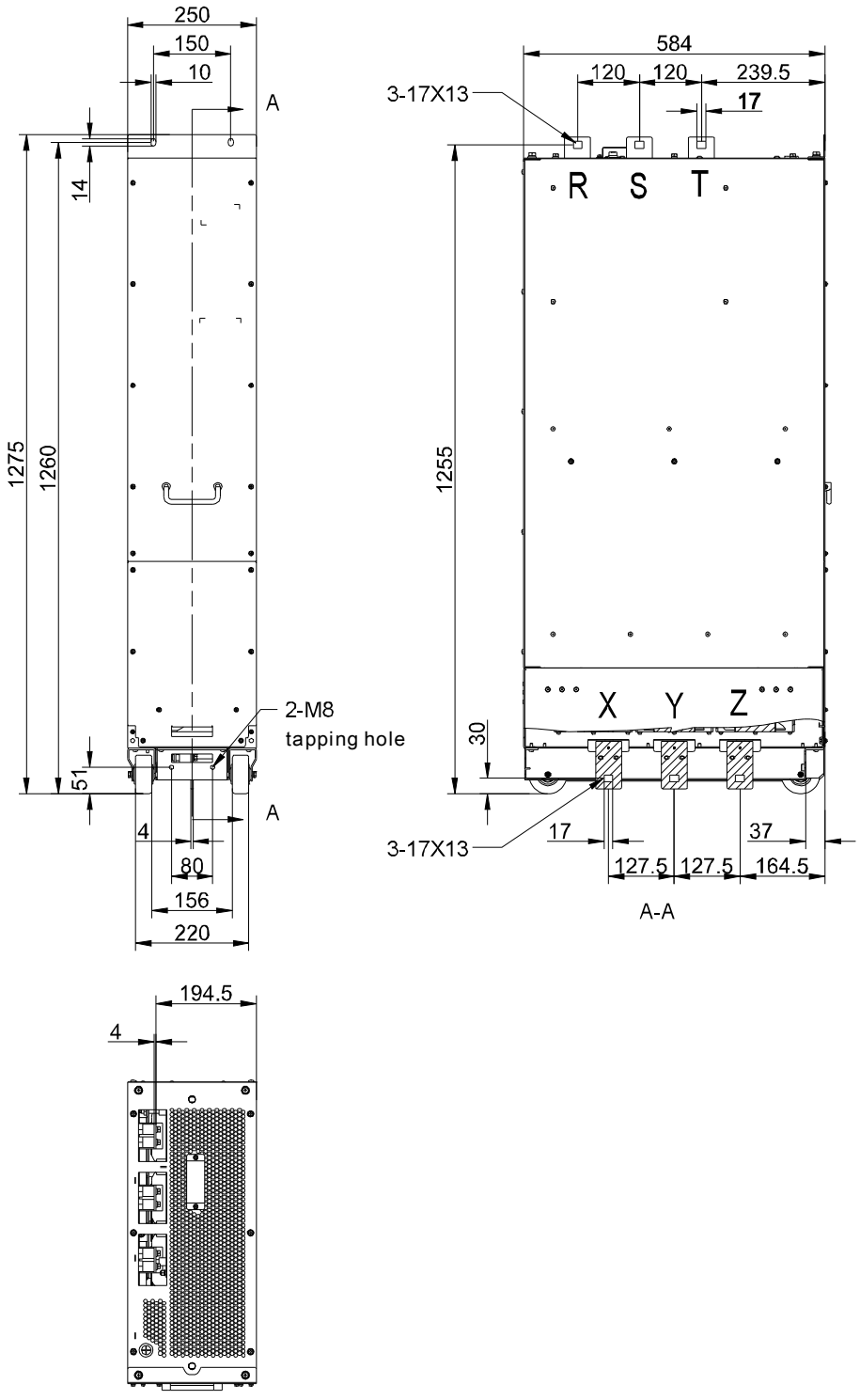
7.3.4 Goodrive800-11 series 0250~0400-4(0315~0500-6)



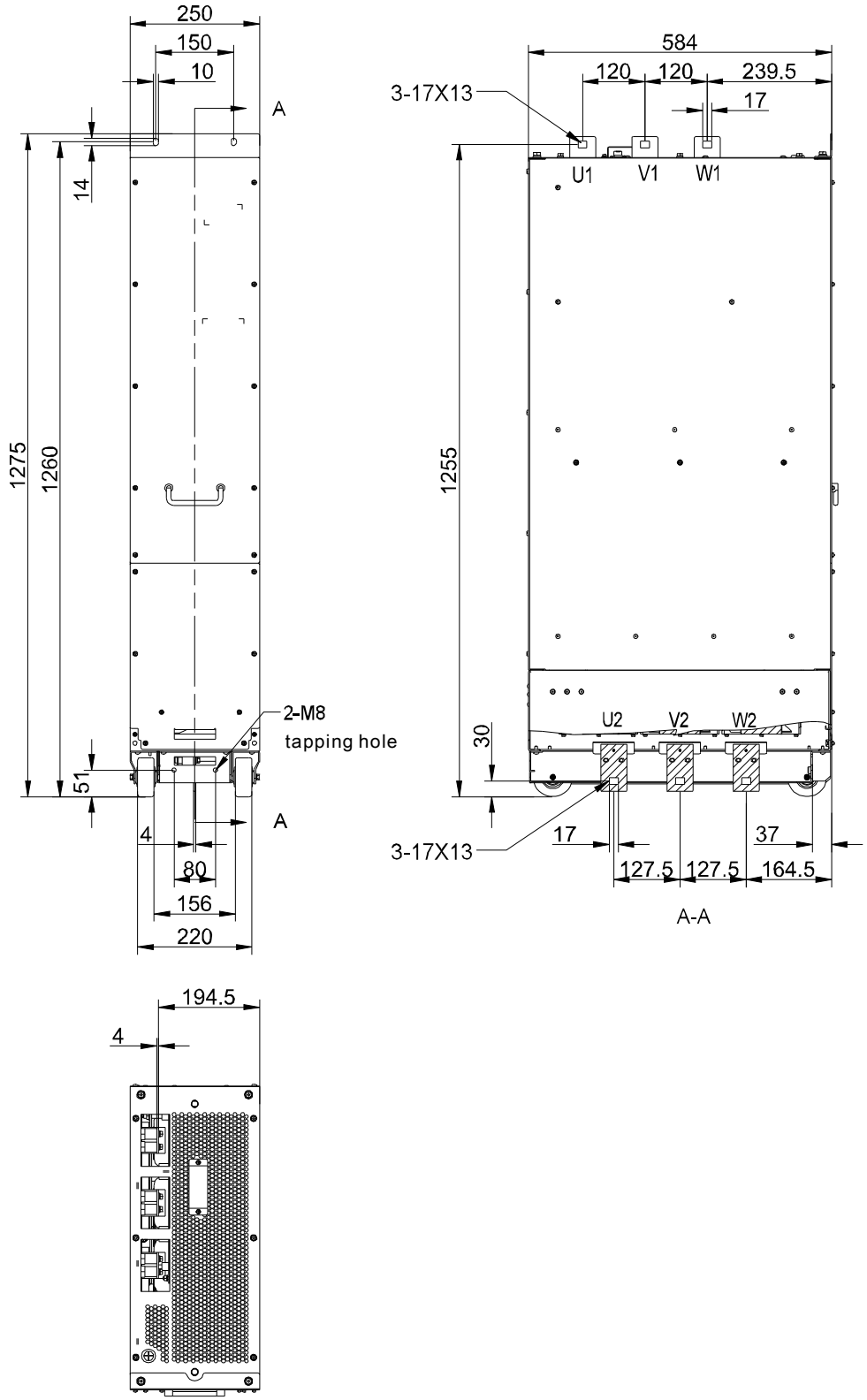


7.4 Goodrive800-01 series

7.4.1 Goodrive800-01 series 0250~0400-4(0315~0500-6)

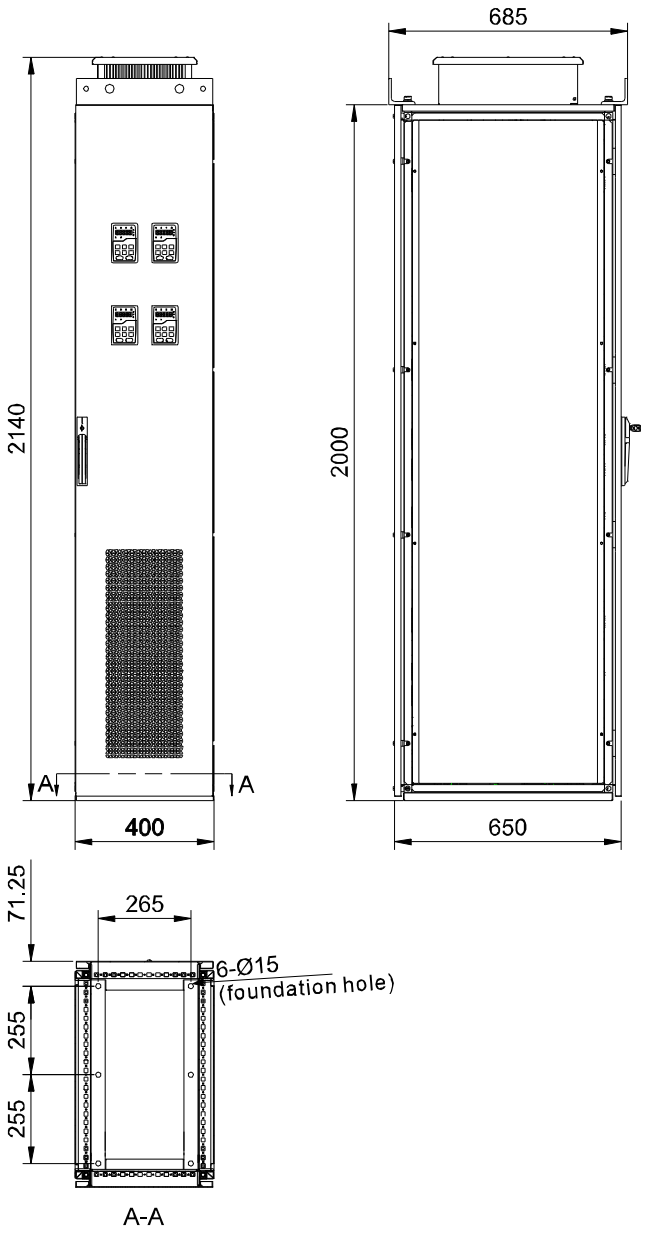


7.5 Goodrive800 series sine filter units



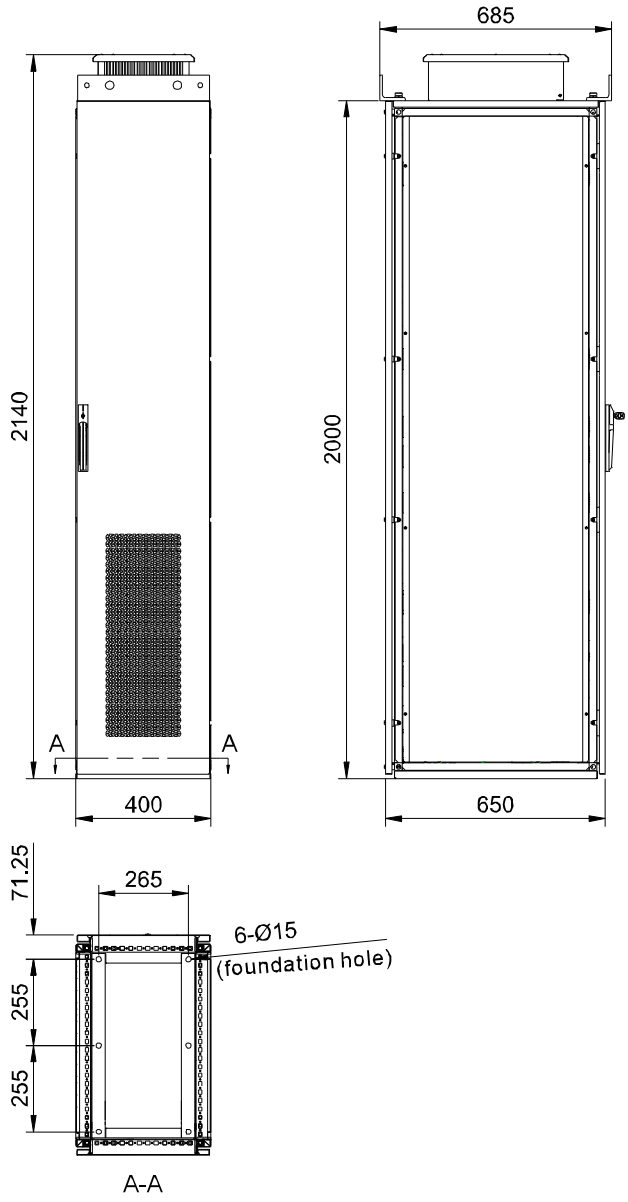
Goodrive800 sine filter units are optional.

7.6 Goodrive800 series standard cabinet

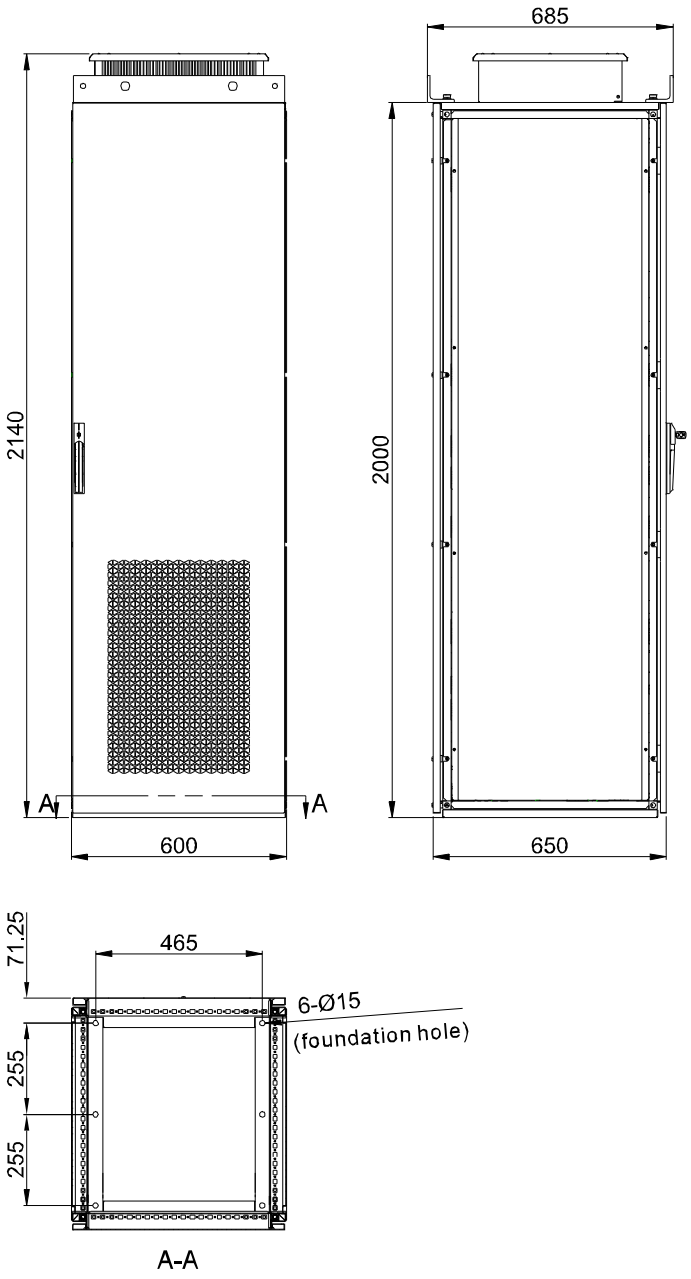


7.7 Goodrive800 series engineering IP20 standard cabinet

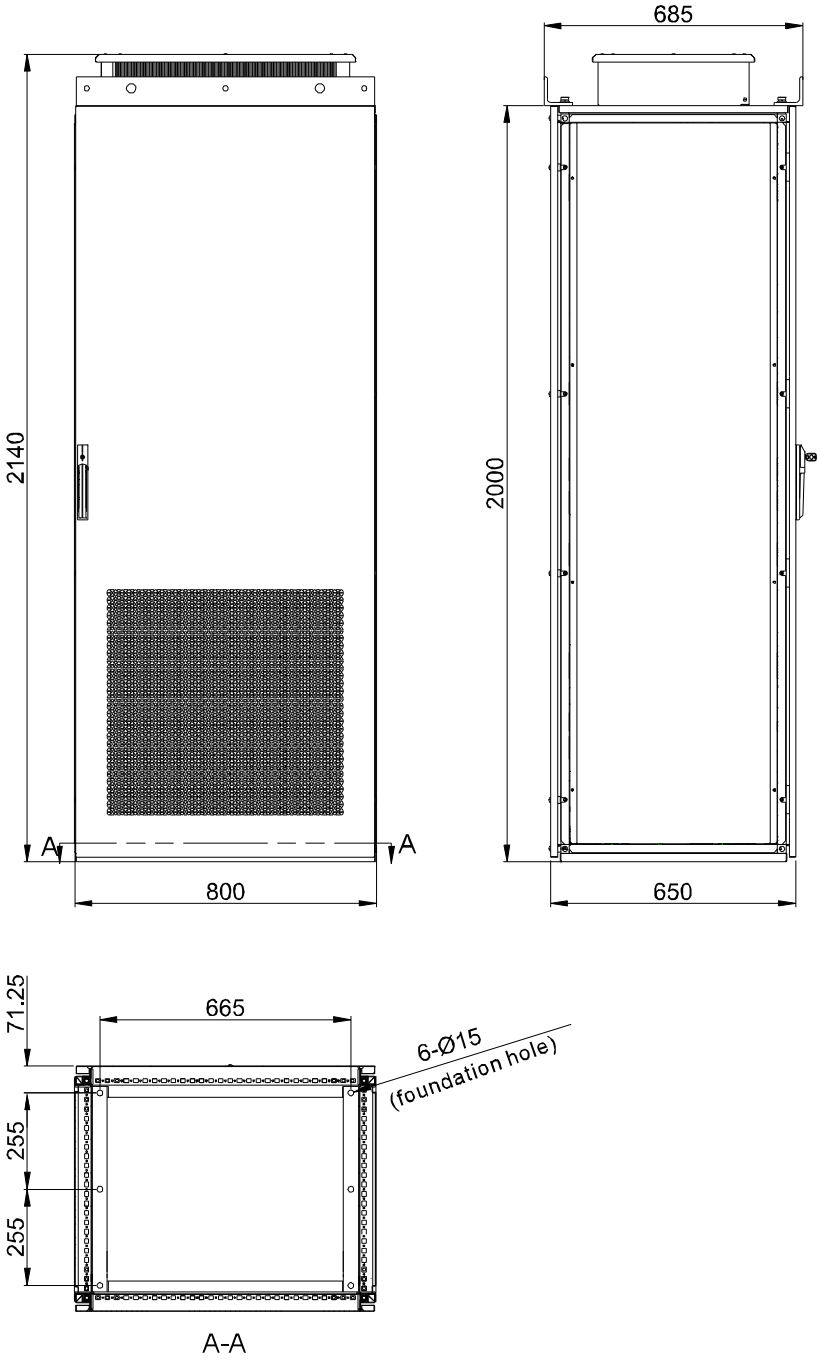
7.7.1 400mm standard cabinet



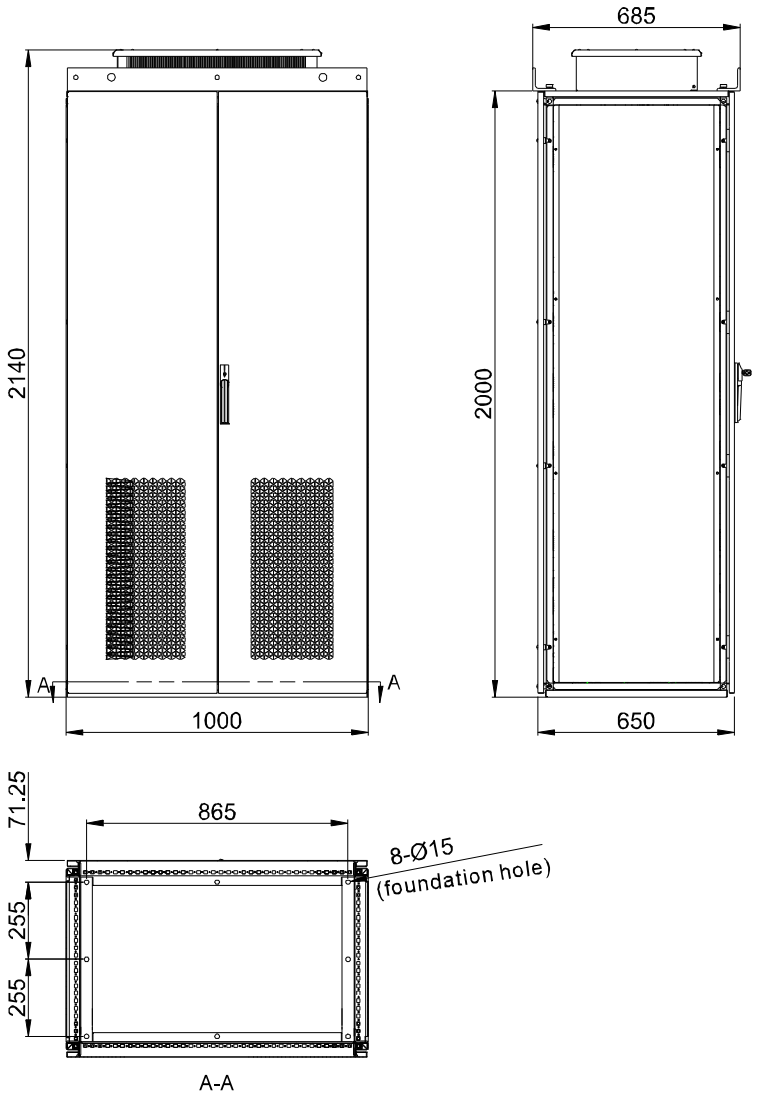
7.7.2 600mm standard cabinet



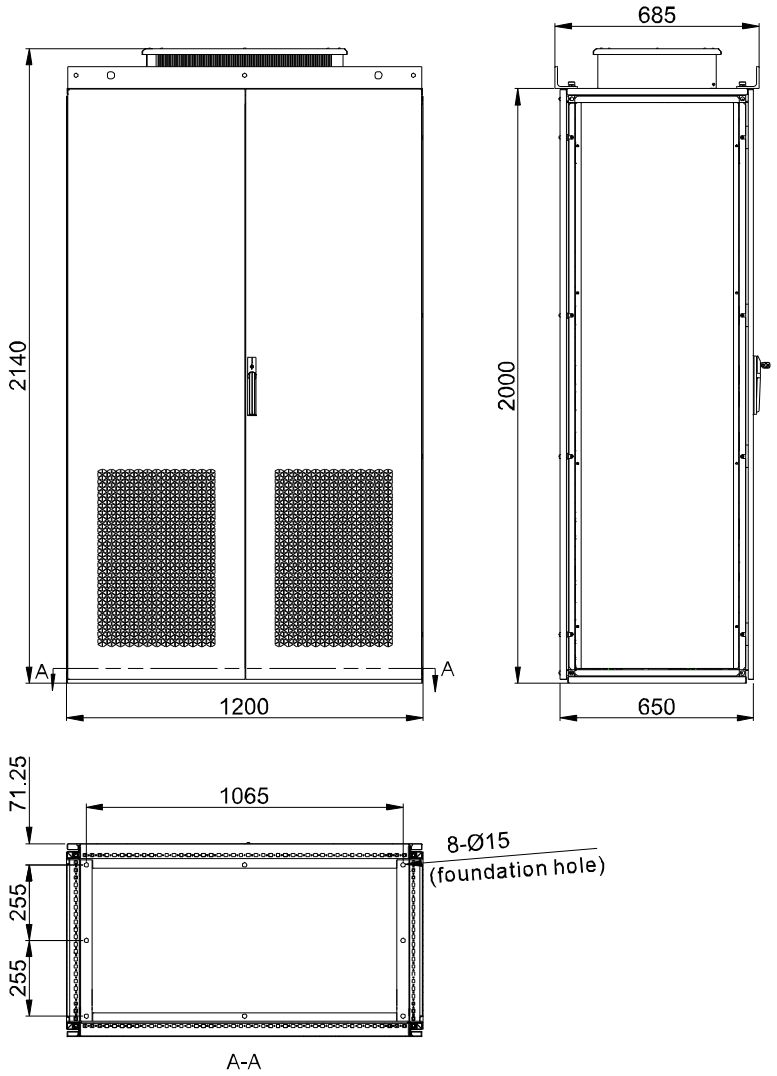
7.7.3 800mm standard cabinet



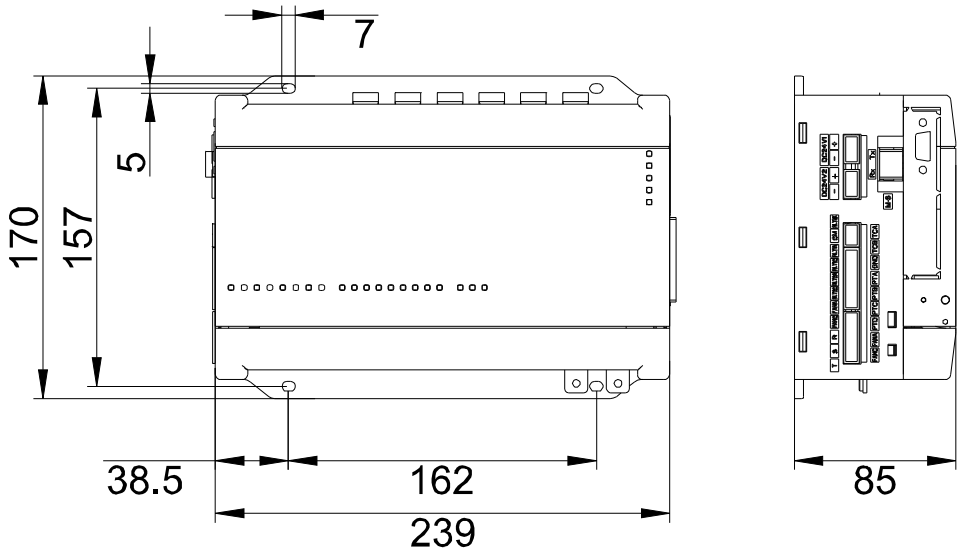
7.7.4 1000mm standard cabinet

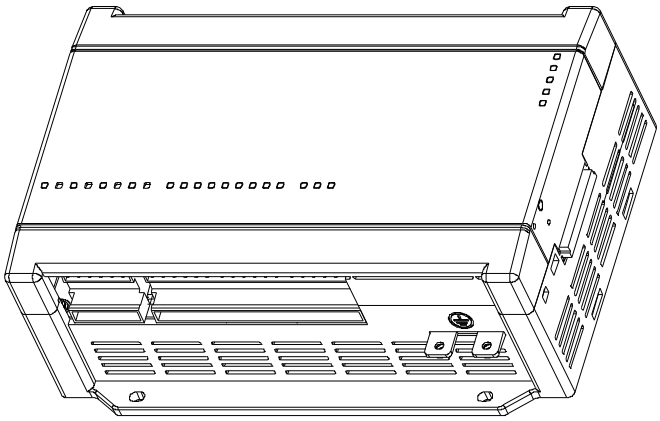


7.7.5 1200mm standard cabinet

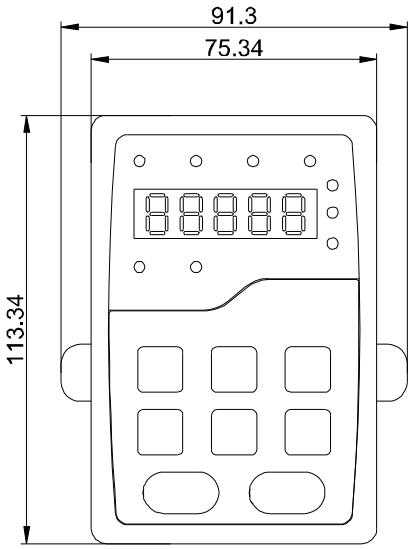


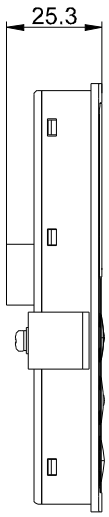
7.8 Goodrive800 series control units

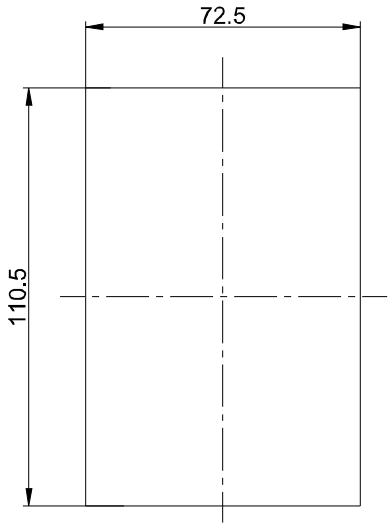




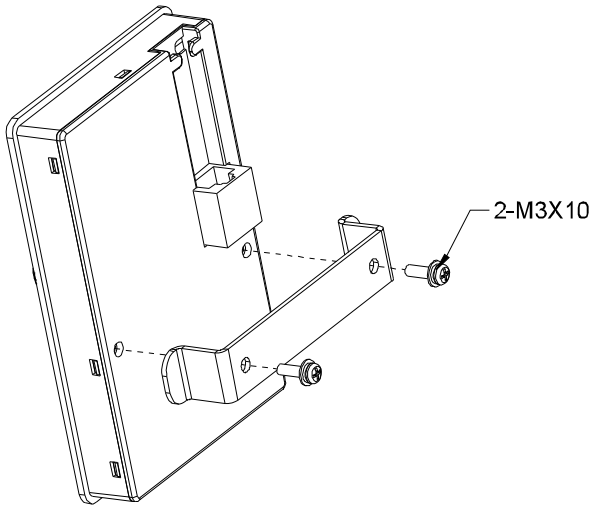
7.9 Goodrive800 series keypads







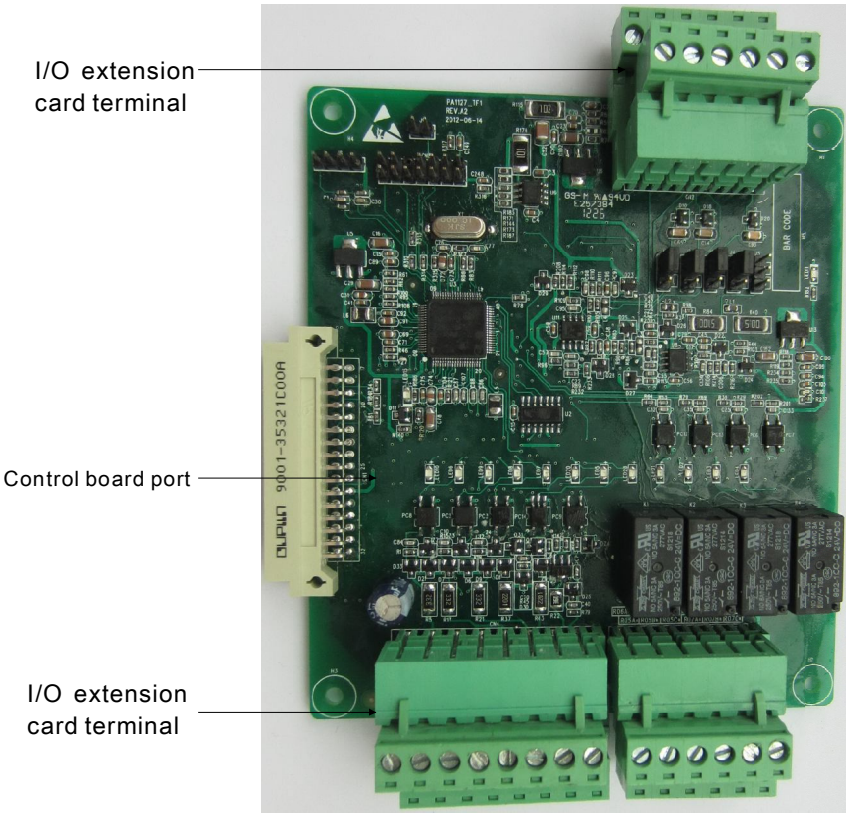
Sheet metal hole

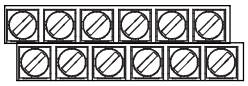


Chapter 8 Peripheral options

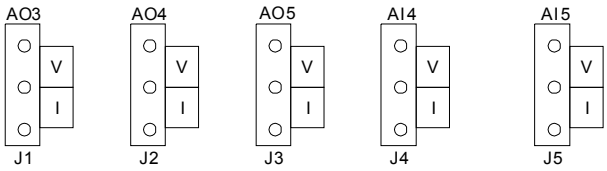
8.1 Optional card

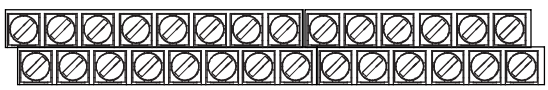
8.1.1 IO extension card





AO5	GND	AI6	AI7	GND	-10V
AO3	AO4	GND	AI4	AI5	+10V





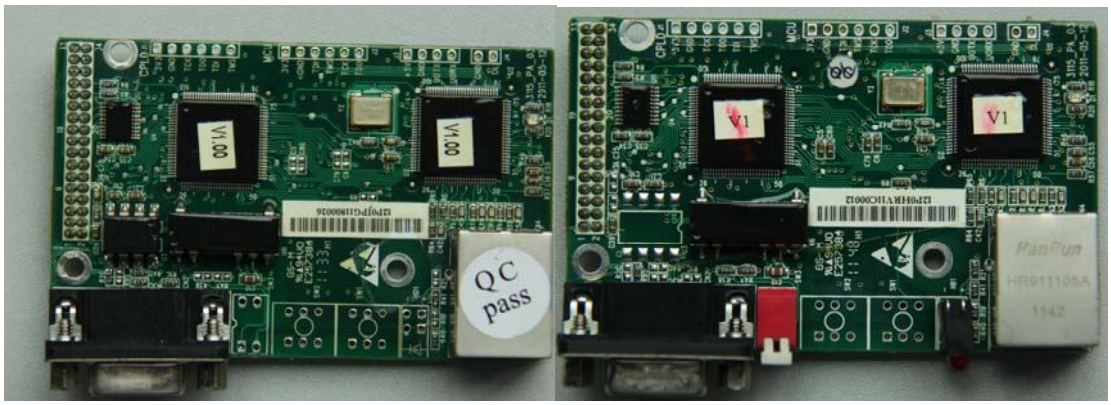
S9	S10	S11	COM	S12	S13	S14	+24V	RO6A	RO6B	RO6C	RO8A	RO8B	RO8C
+24V	PW	COM	S15	S16	Y3	CME	COM	RO5A	RO5B	RO5C	RO8A	RO8B	RO8C

Type	Sign	Terminal	Function
Power supply	+10V	10V Power supply	Local 10.5V reference power supply
	-10V	-10V Power supply	Local -10.5V reference power supply
	+24V	24V Power supply	24V Max. output current 200mA
	PW	External power supply	External power supply Range: 12~24V
	GND	Ground	+10V reference zero potential
	COM	+24V common terminal	+24V common terminal
Analog input	AI4	Analog input 4	1. Input range: 0~10V or 0~20mA 2. Input/current input is determined by J4
	AI5	Analog input 5	1. Input range:0~10V or 0~20mA 2. Input/current input is determined by J5
	AI6	Analog input 6	1. Input range: -10~10V
	AI7	Analog input 7	1. Input range:-10~10V
Analog output	AO3	Analog output 3	1. Output range: -10~10V or -20~20mA 2. Input/current input is determined by J1
	AO4	Analog output 4	1. Output range: -10~10V or -20~20mA 2. Input/current input is determined by J2
	AO5	Analog output 5	1. Output range: 0~10V or 0~20mA 2. Input/current input is determined by J3
Digital input	S9	Digital input 9	1. Input impedance: 3.3kΩ 2. Voltage input range: 12~30V 3. Support NPN and PNP
	S10	Digital input 10	
	S11	Digital input 11	
	S12	Digital input 12	
	S13	Digital input 13	
	S14	Digital input 14	
	S15	Digital input 15	
	S16	Digital input 16	Besides the function of S9~S15, it can be as the high frequency pulse input cahnnel Maximum input frequency: 50kHz
Digital output	Y3	Collector output 3	1. Switching capacity: 1A /30V 2. Output frequency range: 0~50kHz
Realy output	RO5A	Relay 5 NO contact	1. Contact capacity: AC250V/3A，DC30V/1A 2. Can not be used as the high frequency switch output
	RO5B	Relay 5 NC contact	
	RO5C	Relay 5 common contact	
	RO6A	Relay 6 NO contact	
	RO6B	Relay 6 NC contact	
	RO6C	Relay 6 common	

Type	Sign	Terminal	Function
		contact	
	RO7A	Relay 7 NO contact	
	RO7B	Relay 7 NC contact	
	RO7C	Relay 7 common contact	
	RO8A	Relay 8 NO contact	
	RO8B	Relay 8 NC contact	
	RO8C	Relay 8 common contact	

8.1.2 Communciation extension card

8.1.2.1 Outline drawing



Ethernet+CAN communication card Ethernet +PROFIBUS communication card

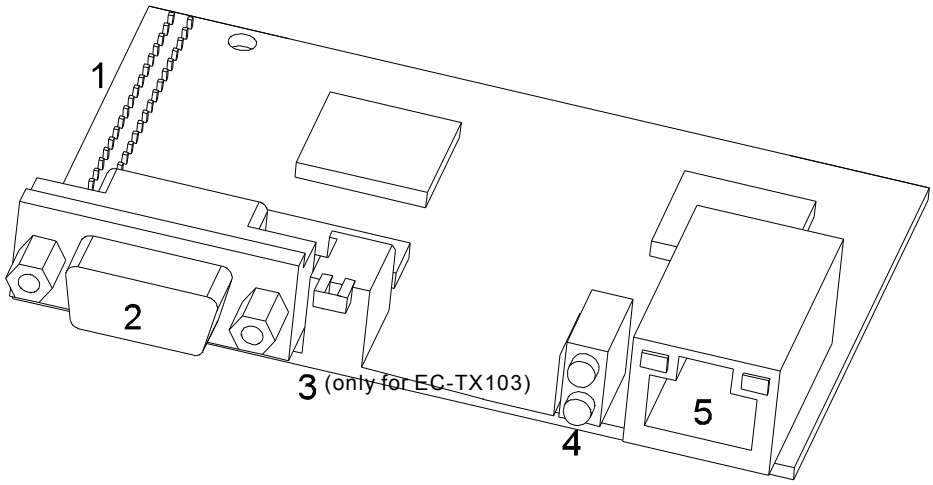
8.1.2.2 Product name

EC-TX 1 03

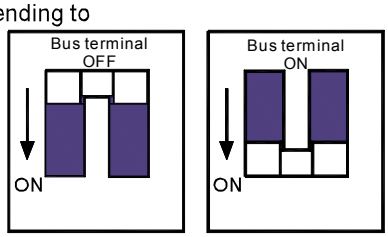
① ② ③ ④

No.	Description	Details
①	Product type	EC: Extension card
②	Card type	TX: Communication card
③	Technology version	Odds such as 1,3,5,7 stands for the 1st, 2nd, 3rd,4th technical version
④	Difference	03: Profibus+Ethernet communications card 04: Ethernet+CAN communications card

8.1.2.3 Structure of EC-TX series communication card



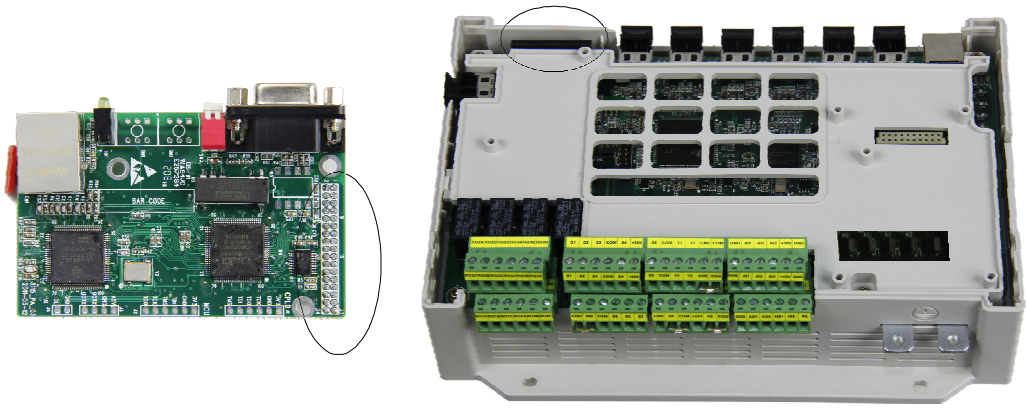
Outline drawing of EC-TX series communication card

<table>
<tr><th>Serial No.</th><th>Name</th><th>Description</th></tr>
<tr><td>1</td><td>Interface with the control board</td><td>Connected to the control board</td></tr>
<tr><td>2</td><td>Bus communication interface</td><td>Shielded twisted-pair copper wire is widely used for Profibus and CAN transimission.
Pin arrangements when Profibus protocol is available:
<table>
<tr><th colspan="2">Connector pins</th><th>Description</th><th colspan="2">Connector pins</th><th>Description</th></tr>
<tr><td>1</td><td>-</td><td>Not used</td><td>2</td><td>-</td><td>Not used</td></tr>
<tr><td>3</td><td>B-Line</td><td>Positive data (twisted pair)</td><td>4</td><td>RTS</td><td>Send request</td></tr>
<tr><td>5</td><td>GND_BUS</td><td>Isolated ground</td><td>6</td><td>+5V BUS</td><td>Isolated 5V DC power supply</td></tr>
<tr><td>7</td><td>-</td><td>Not used</td><td>8</td><td>A-Line</td><td>Negative data (twisted pair)</td></tr>
<tr><td>9</td><td>-</td><td>Not used</td><td>Housing</td><td>SHLD</td><td>Profibus shield cable</td></tr>
</table>
Pin arrangements when CAN protocol is available:
<table>
<tr><th colspan="2">Connector pins</th><th>Description</th><th colspan="2">Connector pins</th><th>Description</th></tr>
<tr><td>1</td><td>-</td><td>Not used</td><td>2</td><td>CANL</td><td>CAN Bus L signal</td></tr>
<tr><td>3</td><td>GNDBUS</td><td>Isolated ground</td><td>4</td><td>-</td><td>Not used</td></tr>
<tr><td>5</td><td>SHLD</td><td>Shield cable</td><td>6</td><td>GNDBUS</td><td>Isolated ground</td></tr>
<tr><td>7</td><td>CANH</td><td>CAN Bus H signal</td><td>8</td><td>-</td><td>Not used</td></tr>
<tr><td>9</td><td>-</td><td>Not used</td><td>Housing</td><td>SHLD</td><td>Shield cable</td></tr>
</table></td></tr>
<tr><td>3</td><td>Bus terminator</td><td>For EC-TX103 and valid in Profibus communication
There is a bus terminal in each heading and ending to avoid error during operation.
The DIP switch on RPBA-01PCB is used to connect the bus terminals which can
 
</td></tr>
</table>

Serial No.	Name	Description
		avoid the signal feedback from the bus cables. If the module is the first or last one in the internet, the bus terminal should be set as ON. Please disconnect EC-TX terminals when the PROFIBUS D-sub connector with internal terminals is in use.
5	LEDs	Display faults
6	Ethernet interface	Connected to Ethernet

8.1.2.4 Installation

1. Insert the communication card into the designated position on the control board:



2 Fix it on the board:

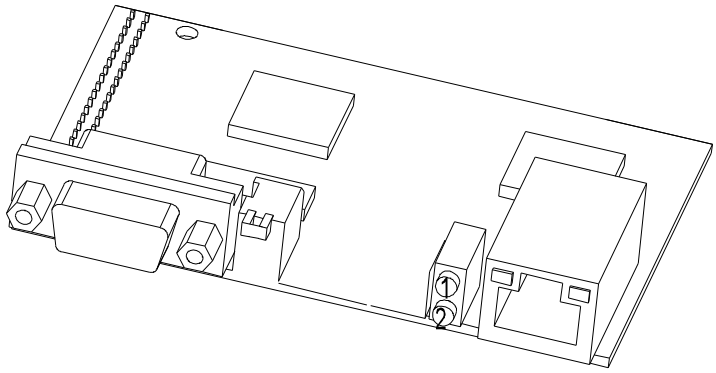
Note:

Disconnect all power supplied before installation and wait at least 3 minutes until the capacitor is discharged enough. Disconnect the dangerous voltage of the unit input/output from external control circuit.

Some electronic components on the communication card are sensitive to electrostatic discharge. Do not touch the board with hand and do wear grounding wrist strap if inevitable operation is needed to the board.

8.1.2.5 Fault display

The fault display of EC-TX series is as below:



LED No.	Name	Color	Function
1	Online	Green	ON-module online and data can be exchanged. OFF-module is not in "online" state.
2	Offline/ Fault	Red	Flicker frequency 1Hz-configuration error: The length of user parameter data sets is different from that of network configuration process during module initialization process. Flicker frequency 2Hz-user parameter data error: The length or content of user parameter data sets is different from that of network configuration process during module initialization process. Flicker frequency 4Hz- communication ASIC initialization error. OFF-Diagnostic closed. ON-module offline and data can not be exchanged. OFF-module is not in "offline" state.

8.1.3 PG extension card

8.1.3.1 Incremental encoder PG card

(1) Model and specification

EC-PG 1 01 - 05

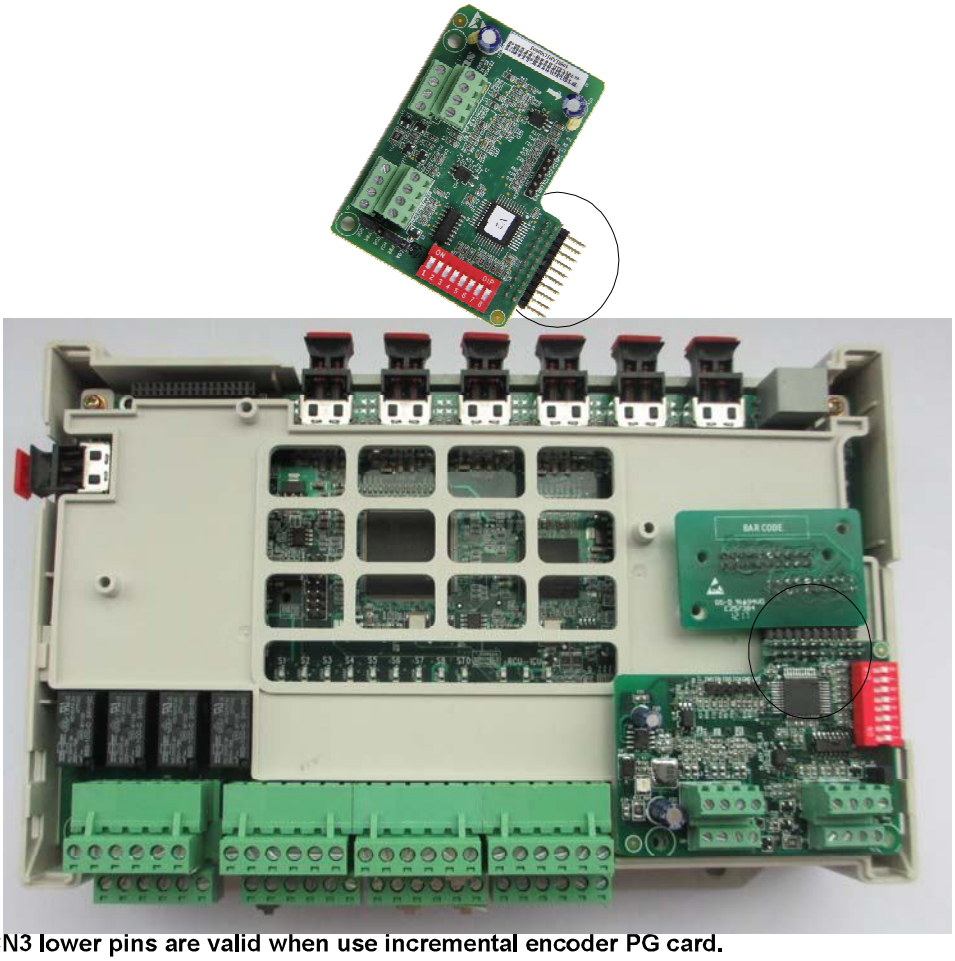
① ② ③ ④ ⑤

No.	Sign	Example
①	Product type	EC-extension card
②	Card type	PG: P/G card
③	Technical versions	Odds such as 1, 3 and 5 stands for the 1st, 2nd and 3rd generation.
④	Code	01: Incremental encoder PG card 02: Cosine encoder PG card 03: UVW encoder PG card 04: The resolver PG card
⑤	Power supply	05: 5V 12: 12~15V 24: 24V

Technical specifications

Model	EC-PG101-12	EC-PG101-24
Output power supply	Support 11.75V~16V output, the factory value is 12V±5%, Max. Output current is 350mA.	24V±5% output, Max. Output current is 300mA
Input signal	Support the differential open-collector push-pull encoder A, B, Z signal input, the response speed of 0 ~ 100kHz	Support the differential open-collector push-pull encoder A, B, Z signal input, the response speed of 0 ~ 100kHz
Output signal	Output frequency: 0~80kHz Output: Differential output, push-pull output, open collector output, frequency division output Range: 1~256 Output impedance :70Ω	Output frequency: 0~80kHz Output: Differential output, push-pull output, open collector output, frequency division output Range: 1~256 Output impedance :70Ω

(2) Installation and dimension of incremental PG card



Note: CN3 lower pins are valid when use incremental encoder PG card.

(3) Function

It is necessary to select PG card in PG vector control. The function of the PG card includes processing circuits for two channels of orthogonal coder signals, being capable of receiving signals from differential output, open-circuit collector output and push-pull output encoders, coder power supply. In addition, it can output in frequency-division the inputted encoder signals (output are two channels of orthogonal signals). The user can select by J1 and J2 according to actual utilization.

(4) Description of terminals and DIP switch

There are 2 2*4P wiring terminal on the PG card.

IA+	IA-	IB+	IB-
PWR	COM1	IZ+	IZ-

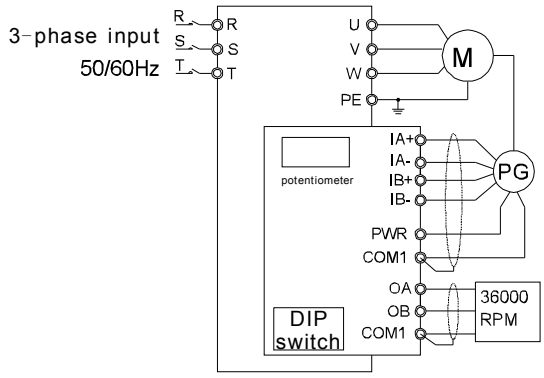
OA+	OA-	OB+	OB-
OA	OB	COM1	

Of which, PWR and COM1 are working voltage output for the encoder; IA+, IA-, IB+, IB-, IZ+ and IZ- are signal input terminals for the encoder; OA+, OA-, OB+ and OB- are output terminals for frequency-division signals; OA, OB and COM1 are the output terminal of frequency - division push-pull signal and open collector signal; the user can grounded the PG by themselves.

The frequency division factor is determined by the DIP switch on the card. The DIP switch consists of 8 bits. When the binary digits are displayed by DIP switch pluses 1, the relative value is frequency division factor. The bit marked as "1" on the DIP switch is the lower binary bit, while "8" is the higher binary bit. When the DIP switch is switched to ON, the bit is valid, indicating "1"; otherwise, it indicates "0".

Decimal digit	Binary digit	Frequency division factor
0	00000000	1
1	00000001	2
2	00000010	3
…	…	…
m	…	m+1
255	11111111	256

(5) Wiring diagram

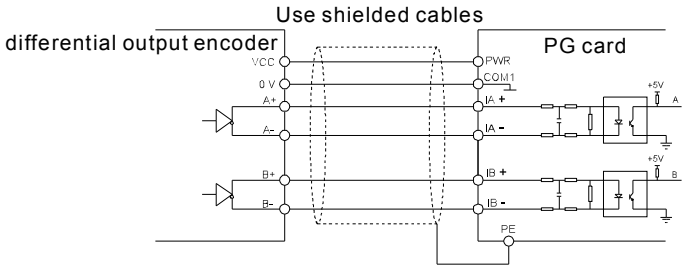


(6) Wiring notes

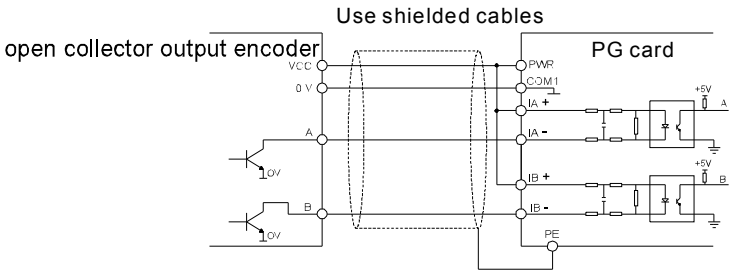
1. The signal line of PG card should be separated from the power line. Parallel wiring is forbidden.
2. Select shielded cables as the signal lines of PG card to prevent coder signals from disturbance.
3. The shielding layer of shielded cable of PG card should be grounded (such as terminal PE of the inverter), and furthermore, only one end is grounded, to prevent signal from disturbance.
4. If the frequency-division output of PG card is connected to the user power supply, the voltage should be less than 24V; otherwise, the PG card may be damaged.
5. The user can adjust 12~15V incremental encoder PG card potentiometer based on actual demand. Operate gentlly when setting the output voltage and rotating.

(7) Input application connection

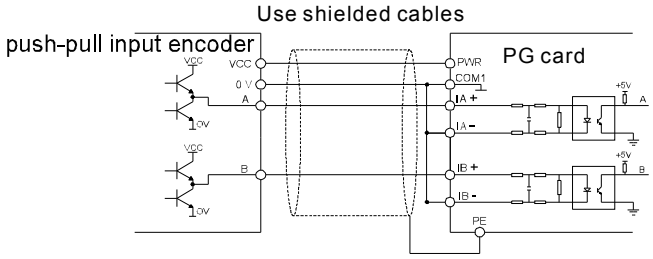
① Wiring diagram of differential output encoder



②Wiring diagram of open collector output encoder



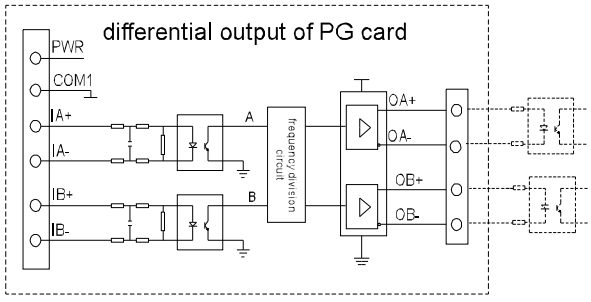
③Wiring diagram of push-pull input encoder



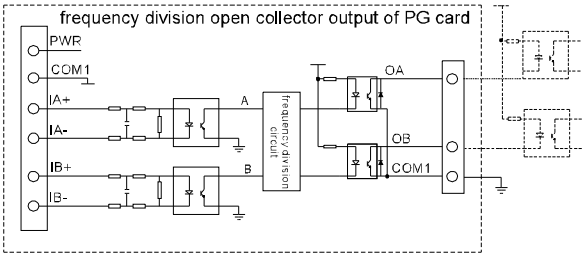
Note: connect Z signal if supporting spindle positioning inverter, and the wiring is the same as A and B signal.

(8) Output application connection

① Wiring diagram of frequency division differential output of PG card

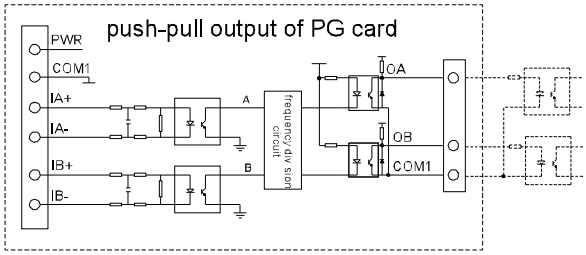


②Wiring diagram of frequency division open collector output of PG card



Note: PWR at J1 and J2 are short-connected with COA and COB in open collector output.

③Wiring diagram of push-pull output of PG card



Note:

① PWR is short-connected with HOA and HOB at J1 and J2 in pull-push output.

② Incremental encoder PG card is mainly used in asynchronous motor closed-loop vector control.

8.1.3.2 Cosine encoder PG card and UVW encoder PG card

(1) Model and specifications

The technical features are as below:

Model	EC-PG102-05	EC-PG103-05
Frequency division factor	1 (No DIP switch)	1~256 (With DIP switch)
Output power supply	Voltage range: 4.75V~7V Factory setting: 5V/±5% Max. output current: 300mA	Voltage range: 4.75V~7V Factory setting: 5V/±5% Max. output current: 300mA
Output signal	Output: Two orthogonal frequency division differential output, open collector output Open collector output impedance: 70Ω	Output: Two orthogonal frequency division differential output, open collector output Open collector output impedance: 70Ω

The user can select the output voltage according to actual working, and in long-distance transmission, the power voltage can be adjusted through potentiometer to prolong the wiring distance.

(2) Dimensions and installation of UVW encoder PG card

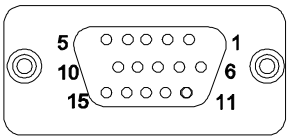
Note:

① The instalaltion and position of UVW encoder PG card is the same as that of incremental encoder PG card, corresponds to two rows of 2×10 pins.

②The instalaltion and position of cosine encoder PG card is the same as that of UVW encoder PG card, but there is no DIP switch and the position of potentiometer is R101.

(3) Description of terminals and DIP switch

There are 1 signal interface and 7 wiring terminals on UVW encoder PG card and cosine encoder PG card.



OA+	OA-	OB+	OB-
OA	OB	COM1	

DB15 Frequency division output interface

Figure E-12 Interfaces and wiring terminal of PG card

OA+, OA-, OB+ and OB- are the signal frequency division output terminals. OA, OB and COM1 are open collector output terminals.

Note: The PE terminal of PG Card has not been connected to the earth; the user must connect the card to earth by themselves.

DB15 is the port of the encoder input signal. The order of the ports signal is as follow:

Ports	SIN/COS	UVW
5	A+	A+
6	A-	A-
8	B+	B+
1	B-	B-
3	R+	Z+
4	R-	Z-
11	C+	U+
10	C-	U-
12	D+	V+
13	D-	V-
9	PWR	PWR
7	GND	GND
14	Null	W
15	Null	W-
2	Null	Null

During the application of above PG cards, insert the corresponding connecting wires of the signal arrangement of SIN/COS or UVW encoder and the synchronous PG card into DB15.

The frequency division factor of UVW encoder PG card is the same as that of the incremental encoder. Please refer to table 1-3.

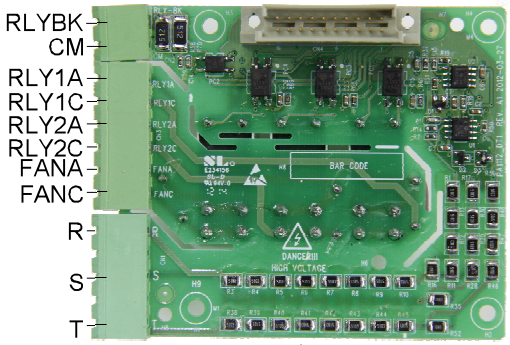
Note: ：

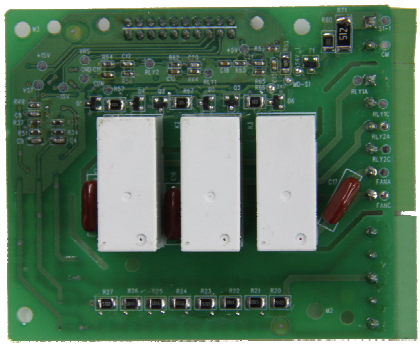
① SIN/COS or UVW encoder PG card are mainly used on the close loop vector control of SM.

② UVW encoder PG card can process the 5V incremental encoder signal and the wiring is the same as that of the incremental encoder. The main wiring ports are A, B, Z, PWR and GND on DB15.

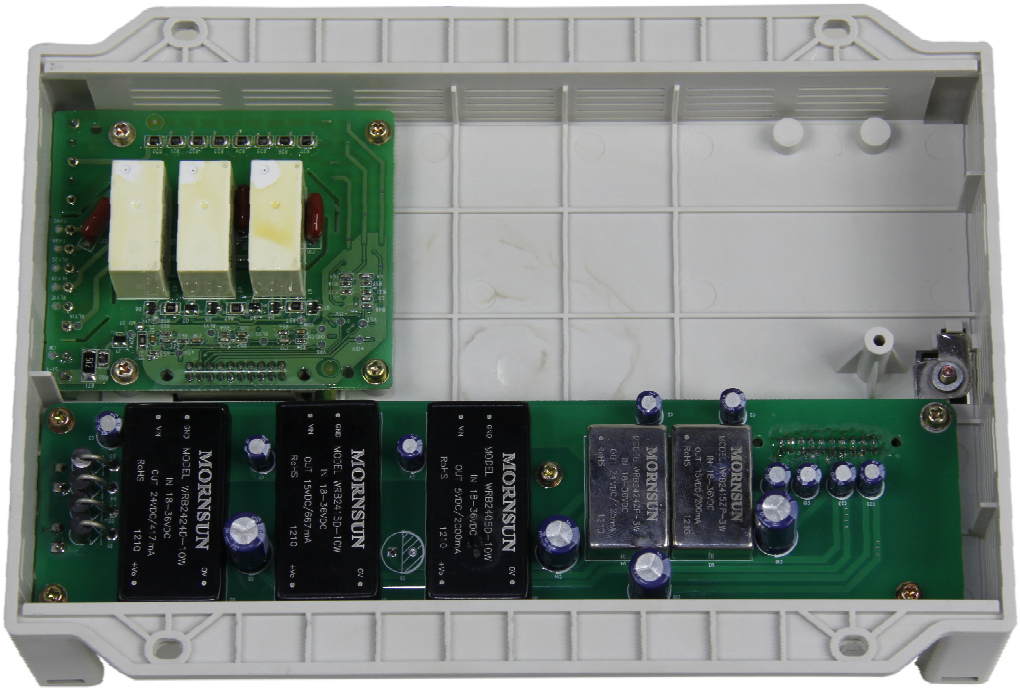
8.1.4 RST signal detection board

Note: RST signal detection board is used in Goodrive800 series rectifier control units.





On the back of the contorl board.



Terminal structure:

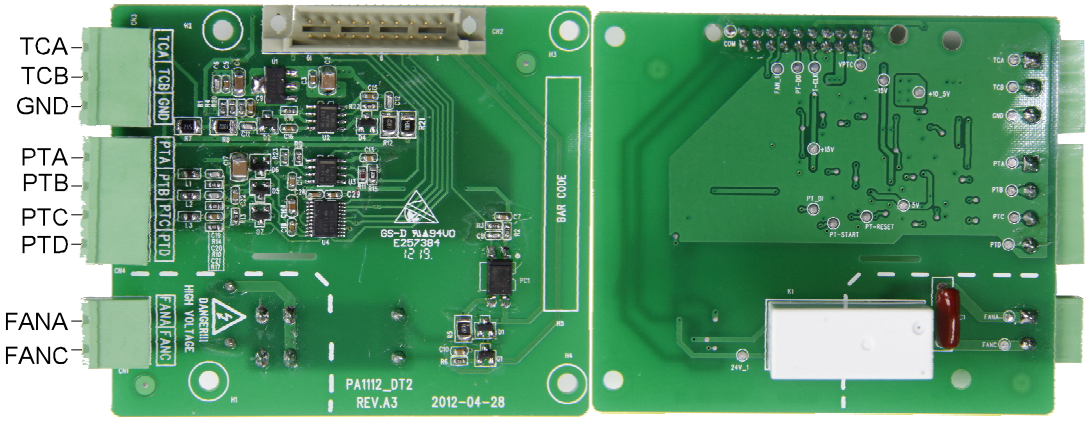
RLYBK	CM	RLY1A	RLY1C	RLY2A	RLY2A	FANA	FANC	R	S	T

Terminal description:

Sign	Description
R	Detect the input voltge R,S,T
S	
T	
FANA	External fan contorl
FANC	FANA NO, FANC common terminal
RLY1A	Main contact control
RLY1C	RLY1A NO, RLY1C common terminal
RLY2A	Buffer contact control
RLY2C	RLY2A NO, RLY2C common terminal
CM	Common feedback terminal of main contact
RLYBK	Feedback signal of main contact

8.1.5 Temperature detection board

Note: temperature detection board is used in Goodrive800 series inverter control units.



On the back of the contorl board with the RST signal detection board.

Terminal structure:

TCA	TCB	GND	PTA	PTB	PTC	PTD	FANA	FANC

Terminal description:

Sign	Description
FANC	External fan contorl
FANA	FANA NO, FANC common terminal
PTA	PT100 temperature detection signal input port
PTB	
PTC	
PTD	
GND	Grounding reference
TCA	NTC,PTC temperature detection signal input port
TCB	