



CÔNG TY TNHH HIGH ENERGY

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GIROD

QD218

Engineering Frequency Inverter



Enterprise Information Qr Code

GIROD
GIROD TECHNOLOGY

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Warranty:
2 years

 40% energy saving

www.nongluogao.com

Summary ↘

> QD218 series frequency inverter has compact structure and excellent performance, which is one specially designed for engineering machinery load. With our QD218 series products, it could help our customer to evidently improve the production efficiency.

The equipment strictly follow the related international standards such as IEC/EN61800-3,IEC/EN61000-4,IEC/EN60721-3,IEC/EN61800-5-1 and so on.



Characteristics ↘

Electronics units are all reliable brands which could serve 10 years.

Built-in DC reactor (37kw~500kw) to reduce input current harmonics content (40%) and improve power factor (0.96). Normally without DC reactor, the input current harmonics content is around 80%~100% and related power factor is 0.6.

Built-in harmonics filter to reduce the interference of radio and conduction to other equipment.

Evident energy saving effect with energy saving mode. The frequency inverter will check the real load and automatically regulate the voltage and current upon the motor to realize the evident energy saving effect.

PCB has adopted thickened three anti-paint protection to improve reliability in harsh environments with high moisture, high dust and high anti-fungal properties.

LCD Display keypad (Optional accessory)

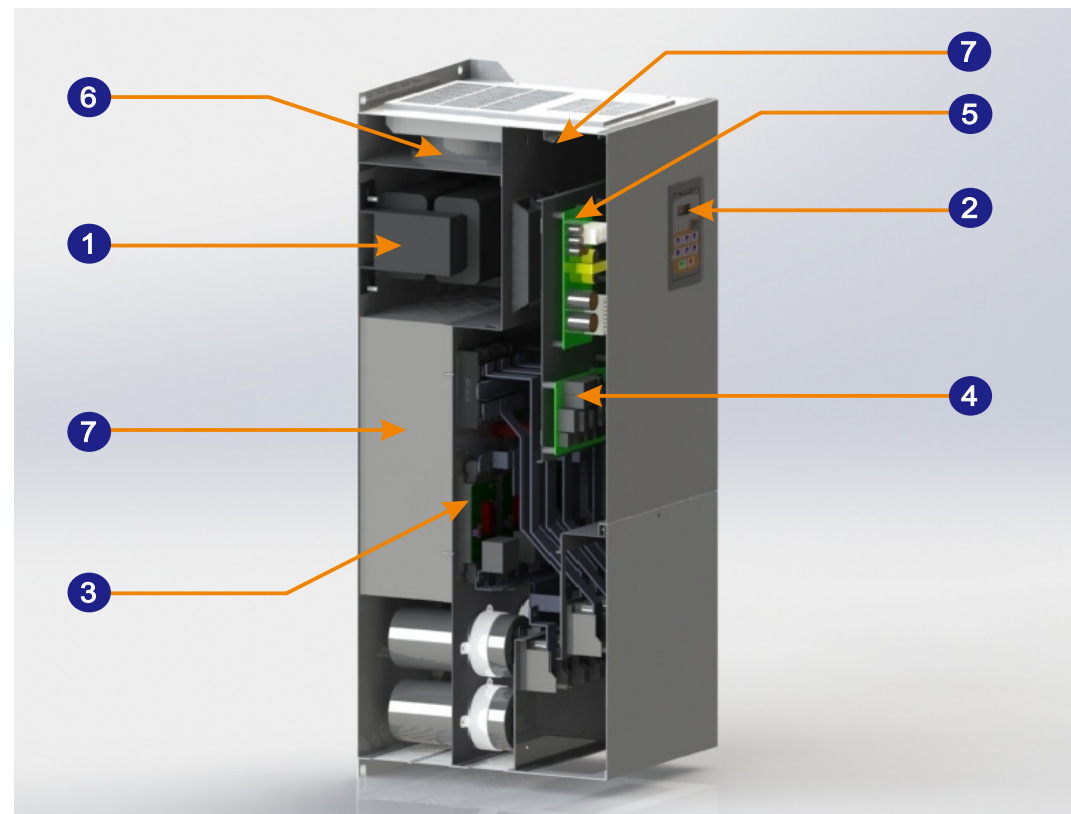
Through advanced flux and speed estimation technology, the equipment could realize flux current and torque current decoupling control to improve the low torque and guarantee 150%starting torque at 0.5Hz.

The overall structure adopts the book design

We promise to apply imported famous & reliable electronics units with partial list for your reference as below:

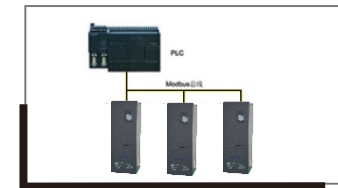
Key electronics units	Brand	Origin
IGBT	Infineon, Fuji	Germany/Japan
Hall sensor	LEM	Switzerland
Electrolytic capacitors	Epcos	Germany
Fan	Delta	Taiwan

Reliable Hardware Structure

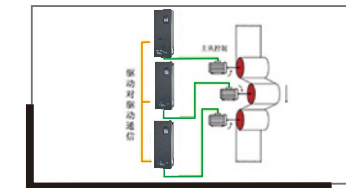


- 1 Integrated DC reactor efficiently improves power factor, greatly reduce current distortion, reduce input current value and improve the product stability.
- 2 Clear LED display to quickly adjust the guide with parameter data upload and download function. It could be installed on the cabinet gate or hold on hand to operate.
- 3 The latest generation IGBT technology to low down the energy consuming with better characteristics and better short circuit withstand capability.
- 4 Integrated C3 harmonics filter could efficiently limit electromagnetic interference which could help the equipment apply to all kinds of industrial environments and greatly low down the interference to other equipments on the site.
- 5 High standard & excellent quality units and thickened painting PCB has efficiently improved the product reliability to ensure safe running in the worst environment.
- 6 Long service term, low noise, excellent efficiency and detachable fan design to ensure safe running of the system and make clean and replacement easier.
- 7 Unique dual duct design: Power cell and control unit separately carry out cooling job to improve the equipment reliability and support parallel installation.

Rich hardware configuration



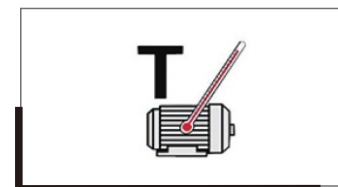
- > Standard Modbus communication will make PLC system integration easier.



- > Standard RS485 communication port could realize drive-to-drive communication.



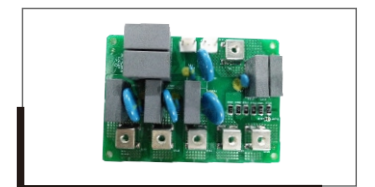
- > Standard DC reactor to improve power factor and reduce input current harmonics.



- > NTC/PTC motor heat protection terminals could guarantee the motor to run safely.



- > LCD Display keypad could directly replace LED keypad. This is one option for our customers.

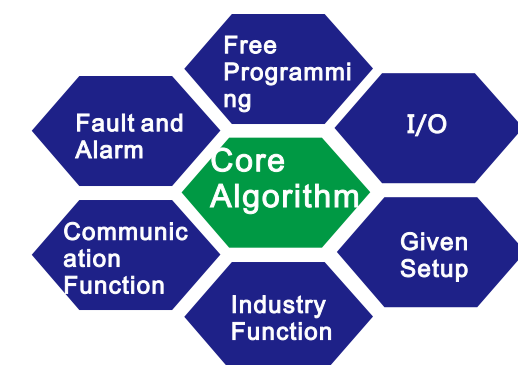


- > Standard EMC harmonics filter could reduce the radio and conduction interference to other equipments.

Powerful software function

> Open and smart software structure

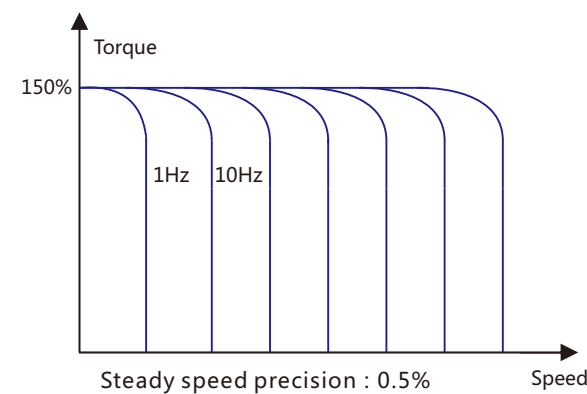
Software system adopts module design. Core control algorithm, communication function and monitor functions are all completed by module design program. Intelligent assistant function could be free programmed by function cells which could be free connected with parameter setup. Through parameter interlink mode, the user could free definite the best speed adjusting system and functions to meet all kinds of application requests.



[Powerful software function]

> Excellent performance vector control

We adopts advanced flux estimation technology, velocity estimation technology to achieve an excellent performance speed sensorless vector control and realize the best performance of normal motor.

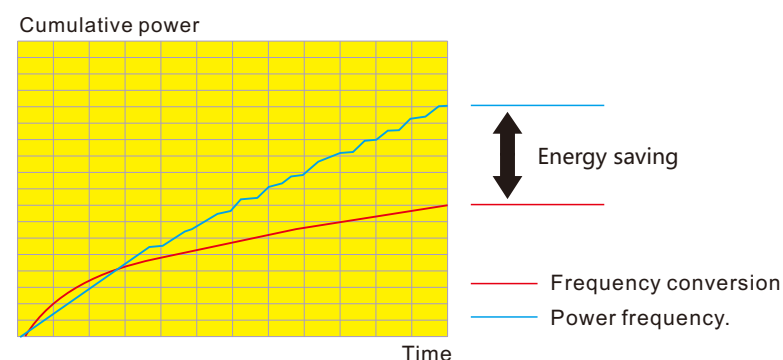


> Powerful automatic functions

Self-learning acceleration & deceleration to automatically agree with all kinds of load.

Automatically adjust carrier frequency based on environment temperature.

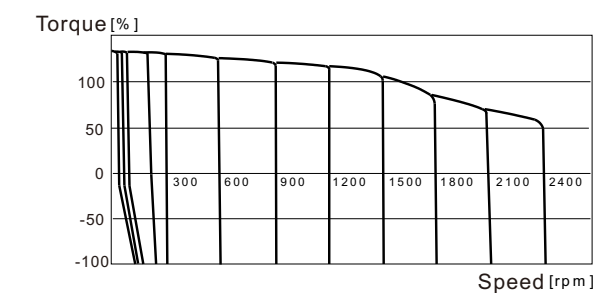
Under energy saving mode, it automatically adjusts voltage and current upon the motor to achieve the evident energy saving effect.



[Excellent performance index]

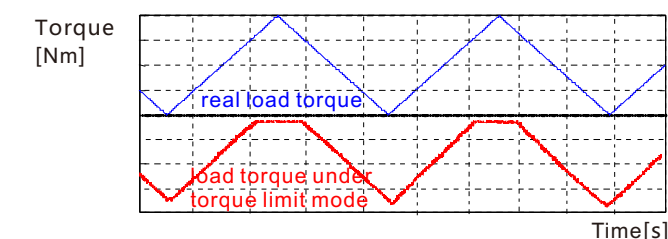
> High torque output

Non PG open loop vector control could achieve 150% torque output at 0.5Hz. And Non PG open loop vector control range could reach 1:200.



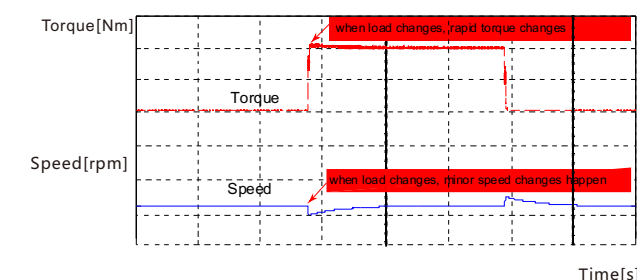
> High accuracy torque control

Non PG open loop vector control: it will limit motor torque output and efficiently avoid mechanical damage caused by torque fluctuation during speed control under $\pm 15\%$ torque limitation mode.



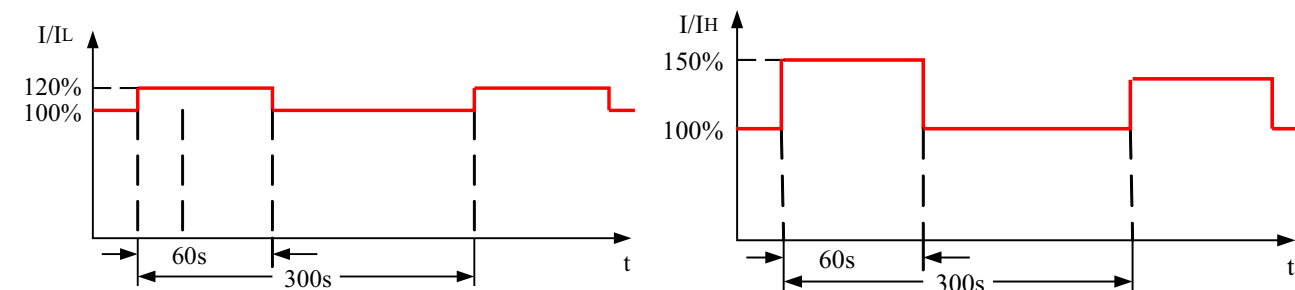
> Quick response performance

Non PG open loop vector control speed band reference value: 50Hz. When the load meets evident fluctuation, the equipment will offer the quickest torque response. When the motor speed fluctuation low down to the least, it could limit the vibration.



Overload Capability

- > QD218 series frequency inverter owns very strong overload capability to adapt cyclical impact load. The overload type could be classified into light load and heavy load. Please see the overload curve in the below.

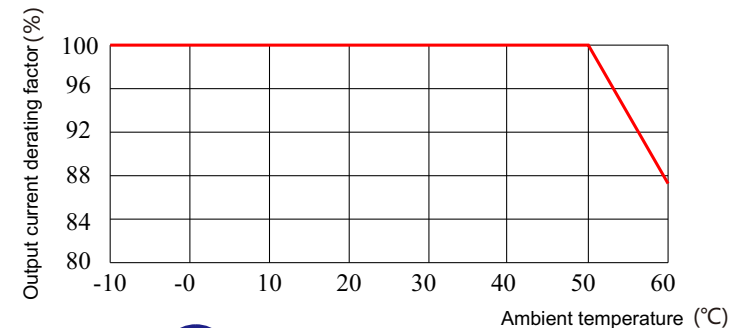


Light load: based on basic load current I_L , it could run 60s with overload 120% and the period is 300s.

Heavy load: based on basic load current, it could run 60s with overload 150% and period is 300s.

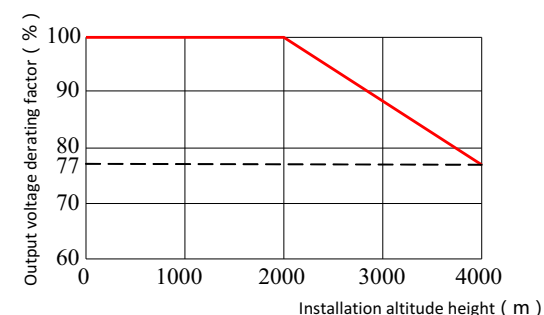
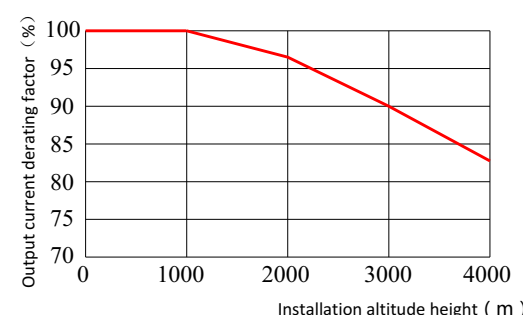
Temperature Derating

- > When QD218 series frequency inverter runs above 50°C, we have to derate the rated output current value when it runs.

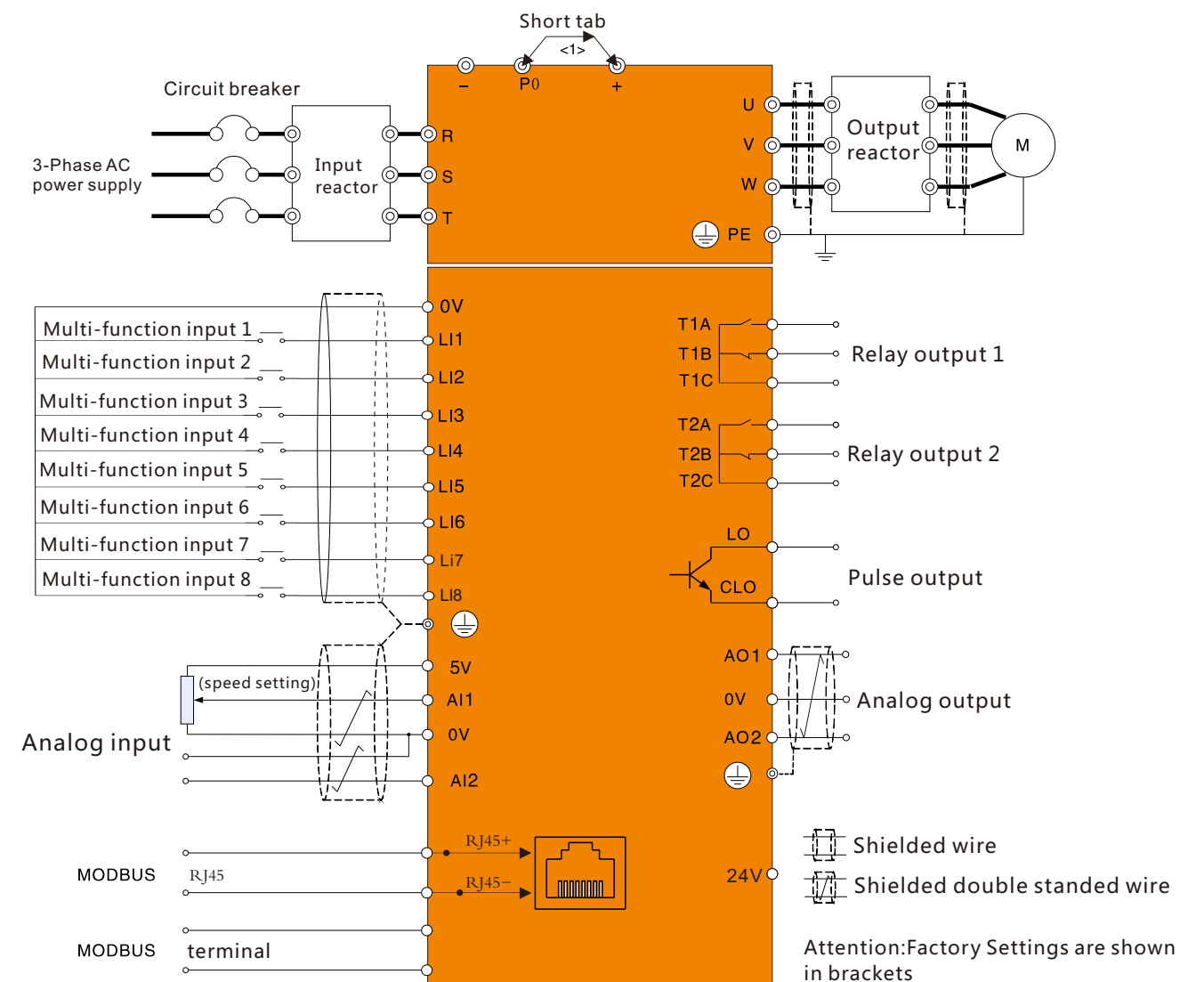


Altitude Derating

- > When QD218 series frequency inverter's installation altitude is above 1000m, we have to derate the rated output current value. When the installation altitude is above 2000m, then we have to derate the rated output voltage.



Electric Donnection Drawing



<1> 15~30kw no PO terminal

<2> There is PB terminal for 15-18.5kW. It could connect braking resistor between PB and (+). For the frequency inverter above 37kw (including), please be sure to knock down the jumper between P0 and (+) when installing DC reactor. (Optional accessory)

Technical data

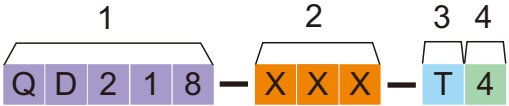
Control circuit data

Available inside power supply	5V	5VDC 5%, maximum current 10mA, it is used for benchmark potentiometer
	24V	24VDC5%, maximum current 100mA, it is used for logic input entrance
Analog input	AI1	Voltage analog input: 0~5 VDC or 0~10 VDC, Impedance is 30k Current analog input: 0/4~20mADC, impedance is 250Ω Resolution: 10digital A/D switch Factory default set: 0~5 VDC voltage input
	AI2	Voltage analog input: 0~10VDC or PTC probe input Resolution: 10 digital A/D switch
Logic input	LI1-LI8	0~24VDC power supply Positive logic (source) and negative logic (sink) are optional. Factory default set is negative logic. There are 69 functions available such as forward, reverse, run, fault reset, and multi-speed and so on.
Logic input	Mandatory effective input	F309 and F310 are mandatory effective input. It will guarantee the set function effective during powering on.
Analog output	AO1、 AO2	Voltage analog output: 0~10VDC, minimum load Impedance is 470Ω Current analog output: 0~20mA, maximum load Impedance is 700Ω Resolution: 8digital Output frequency, output current, given speed, series output date are optional Factory default set: 0~10VDC voltage output
logic output	LO、 CLO	Open collector, maximum current 100mA, maximum voltage 30VDC Optional for logic output or pulse output, factory default is logic output Output frequency, output current and given speed are optional
Relay output	T1A、 T1B、 T1C T2A、 T2B、 T2C	T1A constant open, T1B constant close, T1C public point/T2A constant open, T2B constant close, T2C public point Touch point capacity: 5A@250VAC, 5A@30VDC There are many functions optional such as fault, alarm and set frequency Only the power above (including) 15kw will have T2A, T2B and T2C.
Series communication		2-way RS-485,MODBUS-RTU,RJ45 connection port

Environmental characteristic data

IP Level	IP20	Ambient/storage temperature	-10 ~ 50°C / -20 ~ 60°C
Cooling method	Forced cooling	Humidity	Below 95RH% (Non -condensation)
Installation area	In room	Altitude	Below 1000m

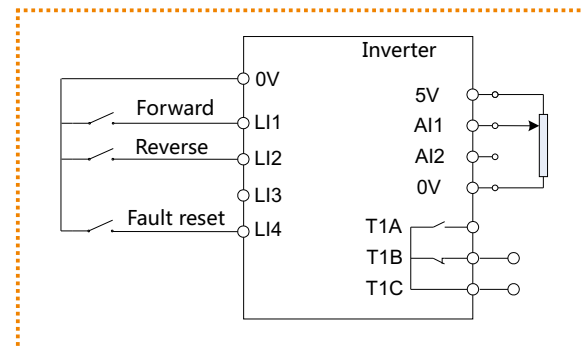
Ordering data



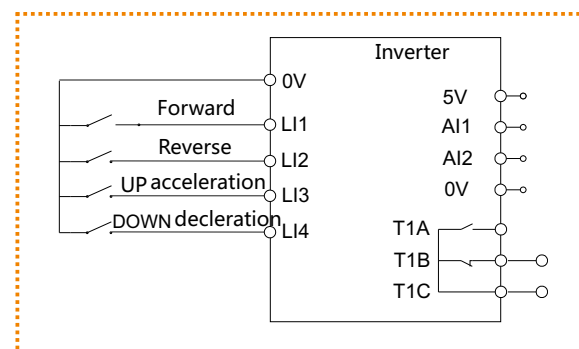
1	Inverter series
2	Adapter motor power
3	Input voltage specification (S : single phase / T : three phase)
4	Input voltage (6 : 690V / 4 : 400V / 2 : 200V)

Type	G type (overloaded)			P type (light load)		
	Line current (A)	Rated output current (A)	Motor power (kW)	Line current (A)	Rated output current (A)	Motor power (kW)
QD218-15RG/18RP-T4	40	32	15	47	38	18.5
QD218-18R5G/22RP-T4	47	38	18.5	56	45	22
QD218-22RG/30RP-T4	56	45	22	70	60	30
QD218-30RG/37RP-T4	70	60	30	80	75	37
QD218-37RG/45RP-T4	80	75	37	94	92	45
QD218-45RG/55RP-T4	94	92	45	128	115	55
QD218-55RG/75RP-T4	128	115	55	160	150	75
QD218-75RG/90RP-T4	160	150	75	190	180	90
QD218-90RG/110RP-T4	190	180	90	225	215	110
QD218-110RG/132RP-T4	225	215	110	265	260	132
QD218-132RG/160RP-T4	265	260	132	310	305	160
QD218-160RG/185RP-T4	310	305	160	355	350	185
QD218-185RG/200RP-T4	355	350	185	385	380	200
QD218-200RG/220RP-T4	385	380	200	430	425	220
QD218-220RG/250RP-T4	430	425	220	485	480	250
QD218-250RG/280RP-T4	485	480	250	545	530	280
QD218-280RG/315RP-T4	545	530	280	610	600	315
QD218-315RG/350RP-T4	610	600	315	665	650	350
QD218-350RG-T4	665	650	350	665	650	350
QD218-400RG-T4	785	725	400	785	725	400
QD218-500RG-T4	885	860	500	885	860	500

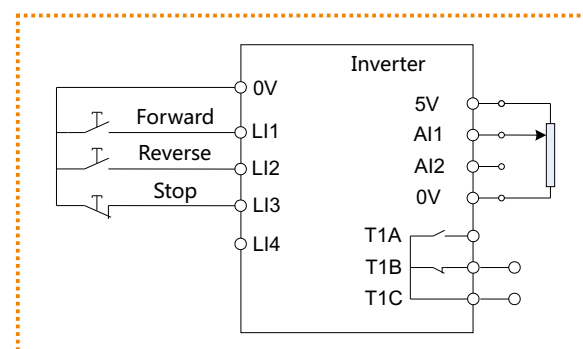
Normal control mode terminal



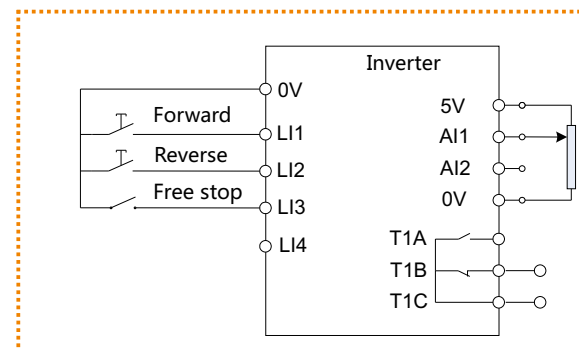
> two-wire control running



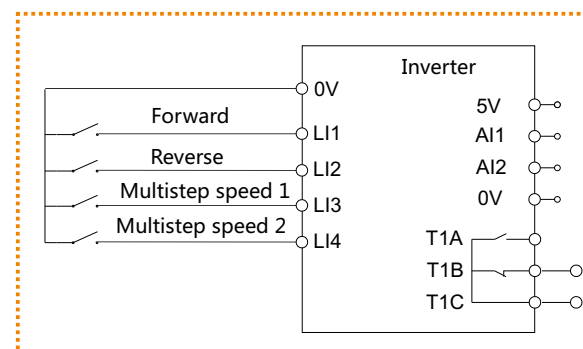
> UP/DOWN acceleration and deceleration (Negative logic)



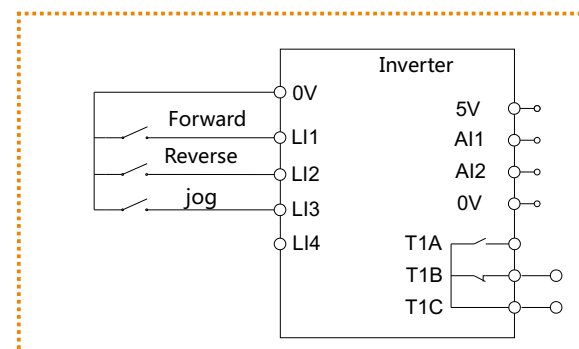
> Three-wire control running (Negative logic, decelerates to stop)



> Three-wire control running (Negative logic, motor stops freely)



> Multistep speed control running (Negative logic)



> Jog control (Negative logic)

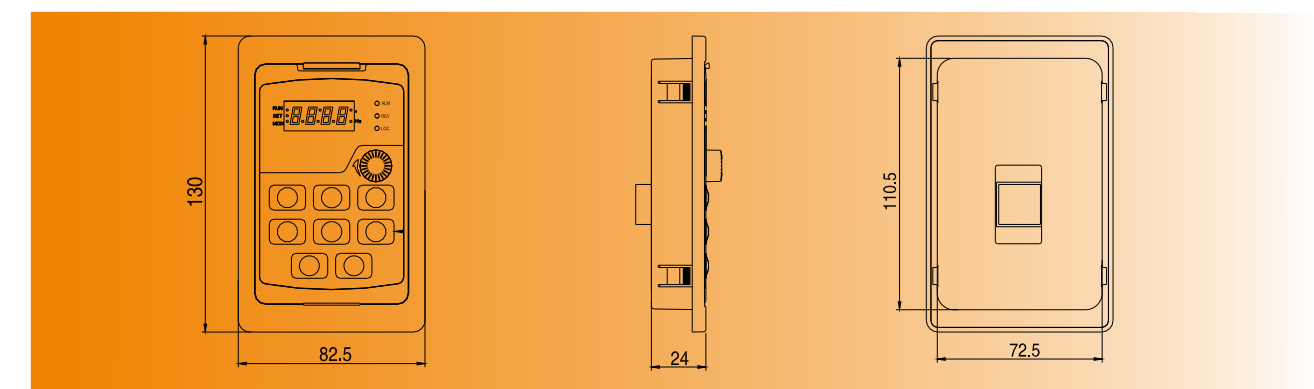
General parts

[The keypad]

The keypad could realize status display, given frequency, parameter setup, start&stop control and also could be pull-out.

When the keypad is used as pull-out keypad, its longest distance could reach 100m. When delivering the goods, we will send one 2m connection cable with RJ45 connector. (unshielded UTP double twisted cable)

Keypad Size



Chinese display keypad

LCD display keypad has the same size to integrated operation keypad.



More clear to display the content with LCD.

Several lines to display the content and meanwhile it could monitor several running parameters.

Intelligent Chinese display, easy to understand

[Braking unit]

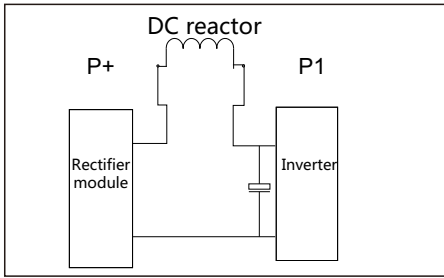
> It is mainly applied to urgent deceleration, braking, position and so on. The unit could realize the braking function by consuming the renewable energy upon power resistor. Through special energy consuming braking control circuit, it could consume the renewable energy upon the resistor to converse into heating energy.

Serial number	Voltage	Model	Sequence
1	440V	QD-CBU4030	30kW and below——50A
2		QD-CBU4045	45kW and below——75A
3		QD-CBU4055	55kW and below——85A
4		QD-CBU4075	75kW and below——100A
5		QD-CBU4110	110kW and below——150A
6		QD-CBU4160	160kW and below——200A
7		QD-CBU4220	220kW and below——300A



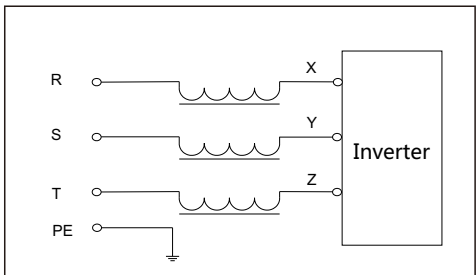
[DC reactor]

DC reactor				
Power (KW)	DC reactor	Current(A)	Inductance (mH)	Dimensions: L*W*D (mm)
37	QD-DCL-037-1	80	70%	135*145*175
45	QD-DCL-045-1	100	54%	
55	QD-DCL-055-1	120	45%	
75	QD-DCL-075-1	160	36%	155*150*195
90	QD-DCL-090-1	200	33%	160*190*215
110	QD-DCL-110-1	250	26%	160*200*230
132	QD-DCL-132-1	300	26%	
160	QD-DCL-160-1	350	17%	
185	QD-DCL-185-1	450	9%	210*225*260
200	QD-DCL-200-1	500	6%	
220	QD-DCL-220-1	500	6%	
250	QD-DCL-250-1	650	5%	220*240*285
280	QD-DCL-280-1	650	5%	
315	QD-DCL-315-1	650	5%	
355	QD-DCL-355-1	800	5%	220*250*285
450	QD-DCL-450-1	1000	4%	
500	QD-DCL-500-1	1000	4%	



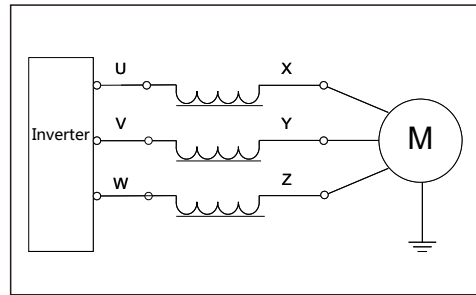
[Input reactor]

Input reactor			
Power (KW)	Input reactor	Current (A)	Dimensions: L*W*D (mm)
37	QD-ACL-037-1	90	195*160*165
45	QD-ACL-045-1	120	230*165*230
55	QD-ACL-055-1	150	230*175*230
75	QD-ACL-075-1	200	250*190*240
90	QD-ACL-090-1	250	
110	QD-ACL-110-1	250	
132	QD-ACL-132-1	290	250*200*240
160	QD-ACL-160-1	330	290*200*240
185	QD-ACL-185-1	390	
200	QD-ACL-200-1	490	
220	QD-ACL-220-1	490	290*230*300
250	QD-ACL-250-1	530	
280	QD-ACL-280-1	600	
315	QD-ACL-315-1	660	320*260*310
355	QD-ACL-355-1	800	
450	QD-ACL-450-1	1000	
500	QD-ACL-500-1	1200	360*330*435



[Output reactor]

output reactor			
Power (KW)	output reactor	Current (A)	Dimensions: L*W*D (mm)
37	QD-OCL-037-1	90	195*150*165
45	QD-OCL-045-1	120	230*165*230
55	QD-OCL-055-1	150	230*175*230
75	QD-OCL-075-1	200	250*190*240
90	QD-OCL-090-1	250	250*200*240
110	QD-OCL-110-1	250	
132	QD-OCL-132-1	290	
160	QD-OCL-160-1	330	290*210*260
185	QD-OCL-185-1	390	
200	QD-OCL-200-1	490	
220	QD-OCL-220-1	490	290*230*300
250	QD-OCL-250-1	530	
280	QD-OCL-280-1	600	
315	QD-OCL-315-1	660	320*250*310
355	QD-OCL-355-1	800	
450	QD-OCL-400-1	1000	
500	QD-OCL-500-1	1000	320*290*310
			365*310*390



Remarks: Voltage drops 2%(input reactor)
Voltage drops 2%(output reactor)

[Aluminum shell resistor]

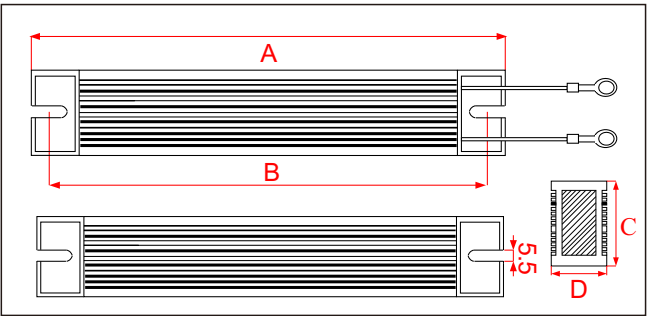


Figure A

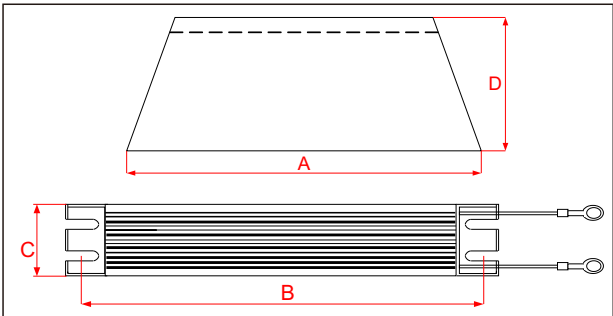


Figure B

Specifications	Figure No.	Power (W)	Size(MM)				Wiring (mm)	Lead length (mm)	Terminal
			A	B	C	D			
RL	A	60	115	102	40	20	1.5	250	
RL		80	140	127	40	20	1.5	250	
RL		100	165	152	40	20	1.5	250	
RL		120	190	177	40	20	1.5	250	
RL		150	215	202	40	20	2.5	250	
RL		200	165	152	60	30	2.5	250	
RL		300	215	202	60	30	2.5	250	
RL		400	265	252	60	30	2.5	250	
RL		500	335	322	60	30	2.5	250	
RL	B	800	400	41*387	60	59			M6
RL		1000	400	30*387	50	107			M6
RL		1200	450	30*437	50	107			M6
RL		1500	485	30*472	50	107			M6
RL		2000	550	30*537	50	107			M6
RL		2500	550	30*537	50	107			M6

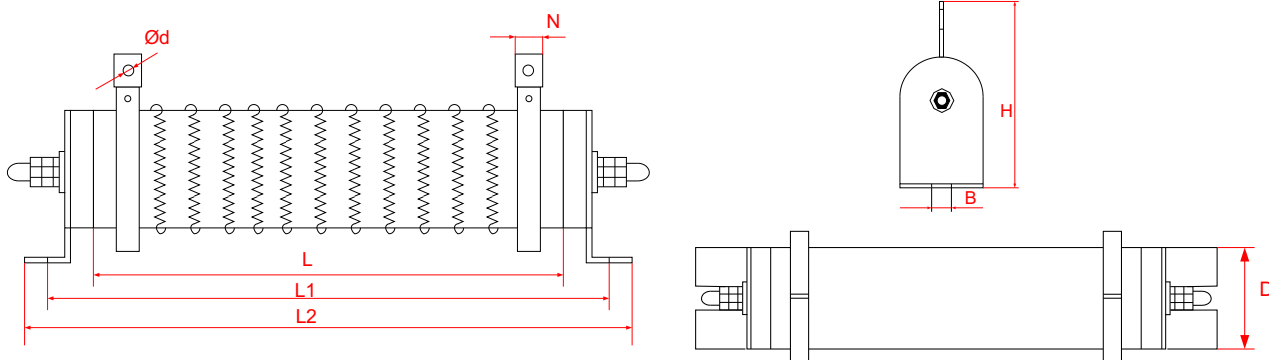
Aluminum shell resistor



Ripple resistor

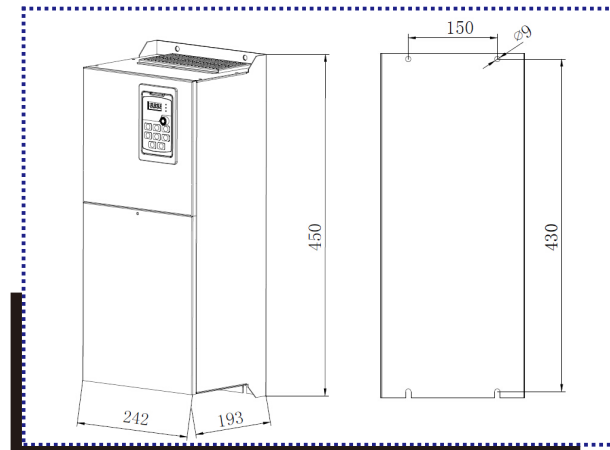


[Ripple resistor]

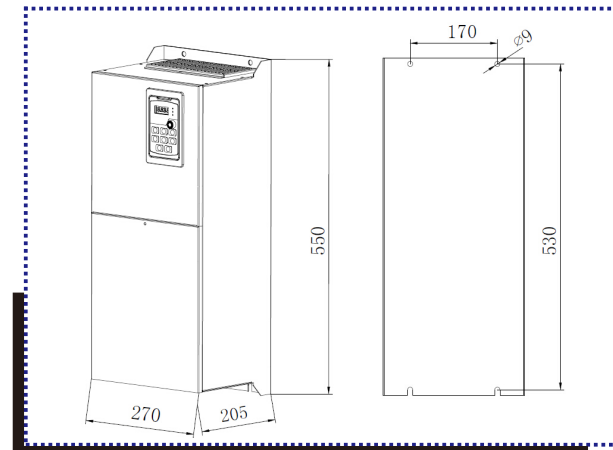


Specifications	Power (W)	Size(MM)							
		L	L1	L2	D	B	H	N	Ød
RX	50	90	132	146	28	6.5	62	10	4.5
RX	60	90	132	146	28	6.5	62	10	4.5
RX	80	140	182	198	28	6.5	62	10	4.5
RX	100	170	212	198	28	6.5	62	10	4.5
RX	150	192	222	238	40	8	90	12	5.5
RX	200	192	222	238	40	8	90	12	5.5
RX	300	280	310	326	40	8	90	12	5.5
RX	400	280	310	326	40	8	90	12	5.5
RX	500	316	346	360	50	8	107	16	6
RX	600	316	346	360	50	8	107	16	6
RX	750	316	346	360	50	8	107	16	6
RX	1000	300	334	350	60	8.5	127	16	6
RX	1200	415	449	465	60	8.5	127	16	6
RX	1500	415	449	465	60	8.5	127	16	6
RX	2000	510	544	560	60	8.5	127	16	6
RX	2500	600	636	652	60	8.5	127	16	6

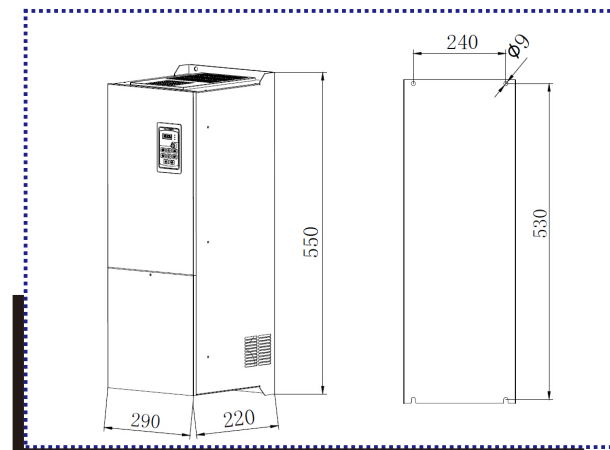
Outline dimensions(11kW above)



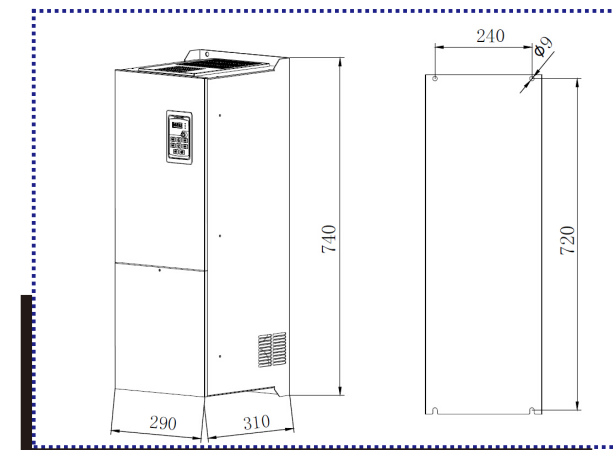
Specification: 15kW-18.5kW
Mounting: M8 screw 4pcs, nuts
Tightening torque: 12Nm (with mounting washers)
Up&downair inlet space is not less than 100mm



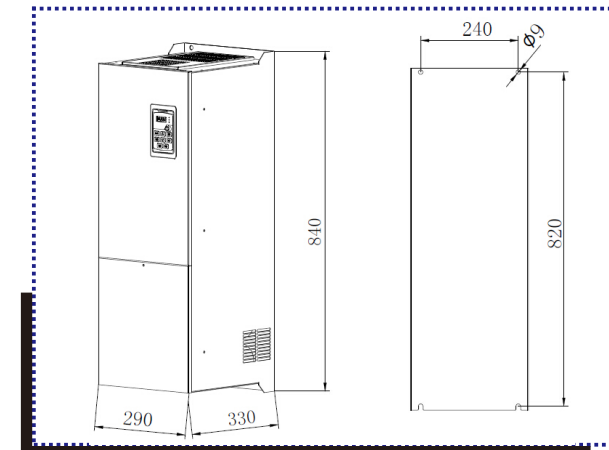
Specification : 22kW-30kW
Mounting : M8 screw 4pcs, nuts
Tightening torque: 12Nm (with mounting washers)
Up&downair inlet space is not less than 100mm



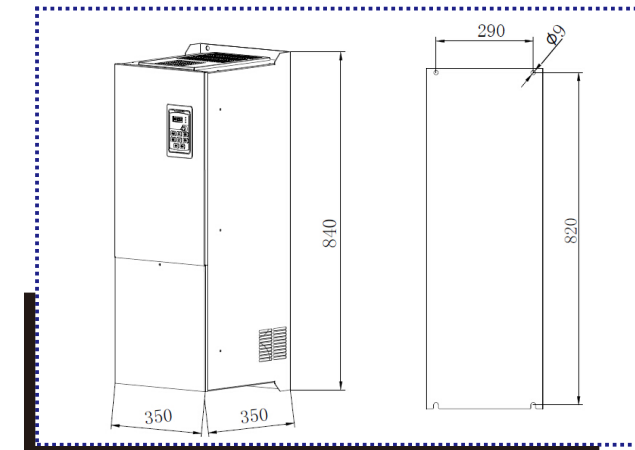
Specification : 37kW
Mounting : M8 screw 4pcs, nuts
Tightening torque: 12Nm (with mounting washers)
Up&downair inlet space is not less than 100mm



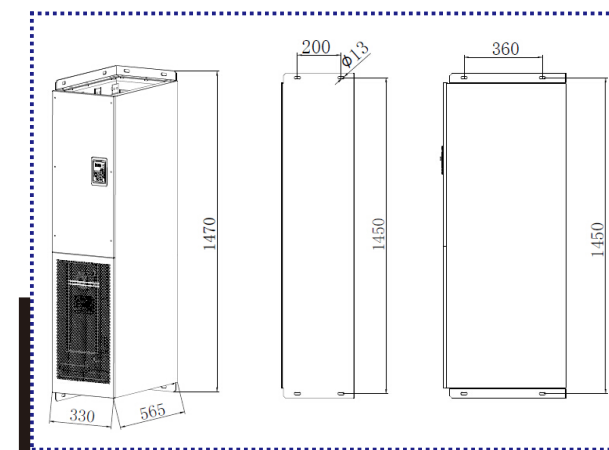
Specification : 45kW-55kW
Mounting : M8 screw 4pcs, nuts
Tightening torque: 12Nm (with mounting washers)
Up&downair inlet space is not less than 100mm



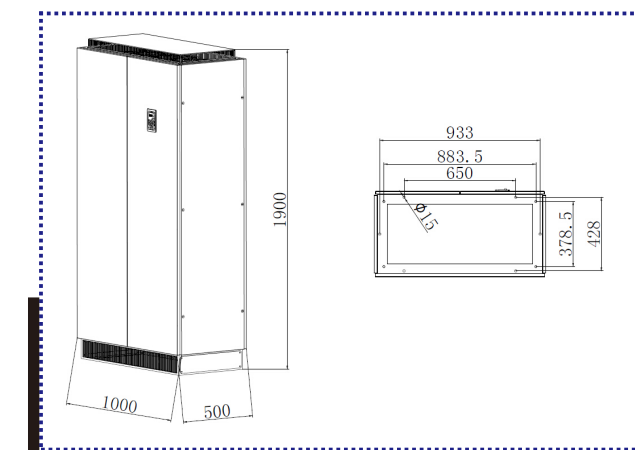
Specification : 75kW-110kW
Mounting : M8 screw 4pcs, nuts
Tightening torque: 12Nm (with mounting washers)
Up&downair inlet space is not less than 150mm



Specification : 132kW-160kW
Mounting : M8 screw 4pcs, nuts
Tightening torque: 12Nm (with mounting washers)
Up&downair inlet space is not less than 150mm



Specification : 185kW-315kW
Mounting : M12 screw 4pcs, nuts
Tightening torque: 20 Nm (with mounting washers)
Up&downair inlet space is not less than 150mm



Specification : 355kW-500kW
Mounting : M12 screw 4pcs, nuts
Tightening torque: 20Nm (with mounting washers)
Up&downair inlet space is not less than 150mm