Goodrive10 inverters

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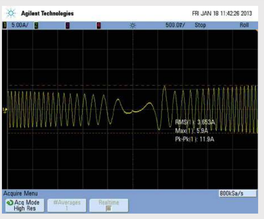
Brief introduction of Goodrive10 inverters

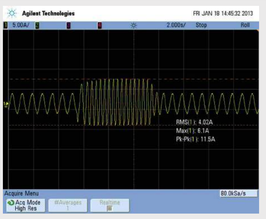
Goodrive10 Series mini-economy inverters are designed for the small-power OEM application market. With The function of vectorization V/f control and PID function, multi- step speed, DC braking and Modbus communication and so on, the inverter has more advantages but occupied less installation space.

Advantages

1. V/f control



FWD/REV current waveform with full load at 50Hz



Current waveform in sudden acceleration/deceleration at 0.5Hz

2. Natural cooling(for the applications with cotton and dust)

Remarks:
1. Natural cooling: single phase or three phase 220V 0.2-0.75kW,
2. Air forced cooling: single phase or three phase 220V 1.5-2.2kW, three phase 380V 0.75-2.2kW.

3. Mini structure, less installation space)

GD100-2R2-4 GD10-2R2-4

4. tandard potentiometer and external LED keypad

Remarks:
Optional installation bracket is needed when install external keypad.

5. ollow IEC GB standards, and meet the testing requirements of CE certification

6. V rious function setting

(1)Standard Modbus communication
(2)Built‑in PID
(3)16 steps multi‑step speed control
(4)Flexible V/f curve setting
(5)Multi‑function I/O terminal(the delay time can be set)
(6)Fault protection at overcurrent, overvoltage, undervoltage, overtemperature and overload with detailed fault information
(7)DC braking, flux braking and resistor dynamic braking
(8)Overcurrent and overvoltage stall, stronger load adaptability

Technical specifications

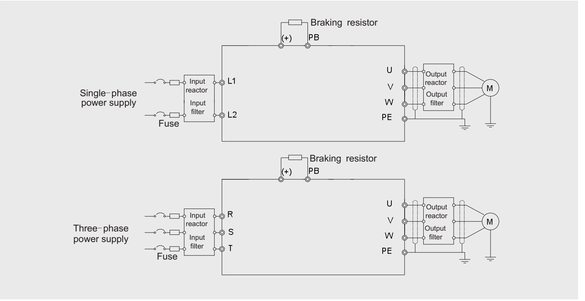
Function	Specification
Input voltage (V)	Single phase 220(-15%)~240(+10%) Three phase 220(-15%)~240(+10%) Three phase 380(-15%)~440(+10%)
Input frequency (Hz)	50Hz or 60Hz Allowed range: 47~63Hz
Output voltage (V)	Equal to input voltage with the deviation of less than 5%
Output frequency (Hz)	50Hz/60Hz, Fluctuation range: ±5%
Control mode	V/f
Maximum output frequency	400Hz
Adjustable-speed ratio	1:100
Overload capability	150% of rated current: 1 minute, 180% of rated current: 10 seconds, 200% of rated current: 1 second
Terminal analog input resolution	≤20mV
Terminal switch input resolution	≤8ms
Analog input/output	1 input 0~10V/0~20mA; 1 output 0~10V/0~20mA
Digital input/output	5 common input, output (common used with digital output) and 1 programmable relay output
Communication	485 communication
Mountable method	Wall mountable
Temperature of the running environment	-10~40℃, derate above 40℃
Cooling	Single/three-phase 220V 0.2-0.75kW natural cooling
	Single/three-phase 220V 1.5-2.2kW, three-phase 380V 0.75-2.2kW
Fault protections	Overcurrent, overvoltage, undervoltage, overtemperature, overload and other protections
Braking unit	Only standard for GD10-B

Applications:

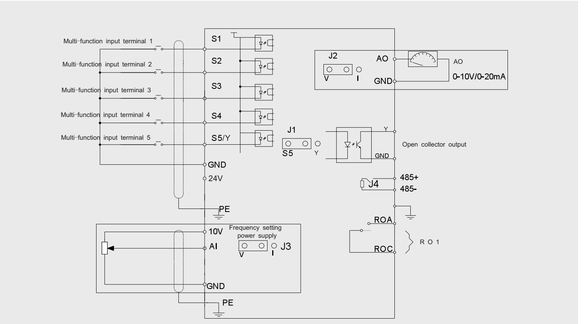
Packaging machinery, food machinery, textile machinery, centrifuge, engraving machine, and cutting machine, etc.

Standard wiring

Wiring diagram of main circuit



Wiring diagram of control circuit



Standard wiring

Wiring diagram of main circuit

GD10 – 2R2G – 4 - B

① ② ③ ④

Field identification	Sign	Detailed description of the sign	Detailed content
Abbreviation	①	Product abbreviation	Goodrive10 is shorted for GD10
Rated power	②	Power range + Load type	2R2-2.2kW
			GC onstant torque load
Voltage degree	③	Voltage degree	4:three-phase 380V 2: three-phase 220V S2: single-phase 220V
Lot No.	④	Lot No.	Default: No braking unit
			B: Built-in braking unit

Rated specifications

Model		Output power(kW)	Input current(A)	Output current (A)
Single-phase 230V	GD10-0R2G-S2-B	0.2	4.9	1.6
	GD10-0R4G-S2-B	0.4	6.5	2.5
	GD10-0R7G-S2-B	0.75	9.3	4.2
	GD10-1R5G-S2-B	1.5	15.7	7.5
	GD10-2R2G-S2-B	2.2	24	10
Three-phase 230V	GD10-0R2G-2-B	0.2	1.9	1.6
	GD10-0R4G-2-B	0.4	2.7	2.5
	GD10-0R7G-2-B	0.75	4.9	4.2
	GD10-1R5G-2-B	1.5	9	7.5
	GD10-2R2G-2-B	2.2	15	10
Three-phase 400V	GD10-0R7G-4-B	0.75	3.2	2.5
	GD10-1R5G-4-B	1.5	4.3	4.2
	GD10-2R2G-4-B	2.2	7.1	5.5

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FAMCO
هایپرصنعت

Goodrive20-EU Series

General Purpose Vector Control Inverter

invt

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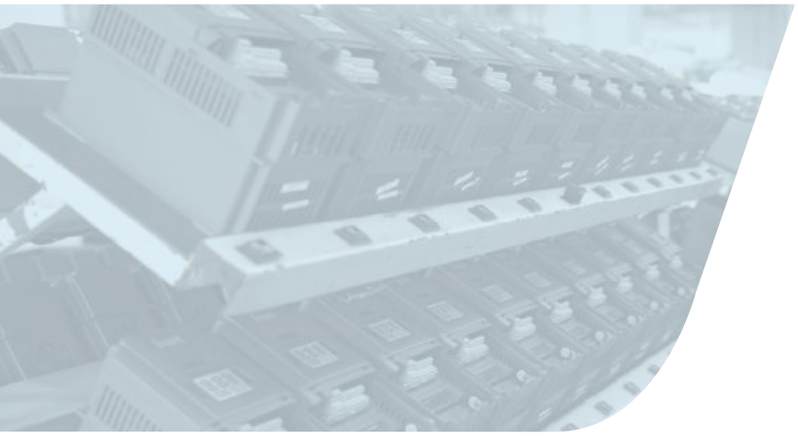

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Introduction

Goodrive20-EU is a general purpose vector control inverter with certified STO (Safe Torque OFF) function. It's oriented for OEM equipment markets, mainly covering the applications of water treatment, printing and packaging, winding equipment, paper machinery, shearing equipment, plastic machinery, food machinery, cable machinery, textile machinery, HVAC, etc.

Main Features

1. V/F and Sensorless Vector Control
2. External keypad for parameters copy
3. Common DC bus solution (400V; ≥4kW)
4. Starting torque up to 0.5Hz/150%
5. Built-in DC reactor for inverters ≥18.5kW
6. Built-in braking unit (standard≤37kW, optional ≥45kW)
7. Standard C3 filter (≥4kW), optional C3 filter (≤2.2kW) and C2 Filter

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Features

Mini design for inverters (≤2.2kW); side by side installation of multiple inverters, reducing installation space

Flexible installation ways

Inverters (≤ 2.2kW support wall mounting and rail mounting.

Rail mounting

Wall mounting

Inverters (≥4kW) support wall mounting and flange mounting.

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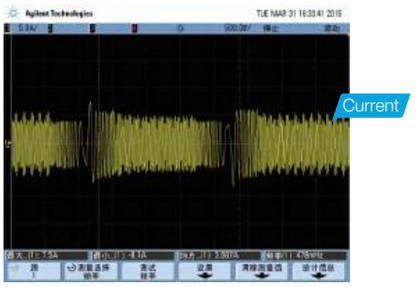
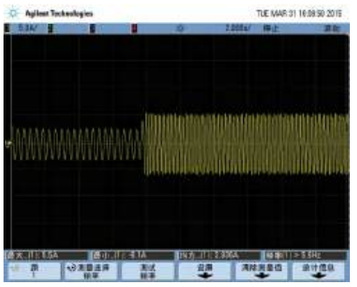
Excellent Performance

Excellent vector control performance

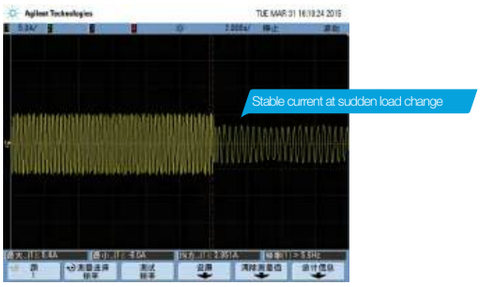


Current waveforms in vector control mode with 50Hz and full load

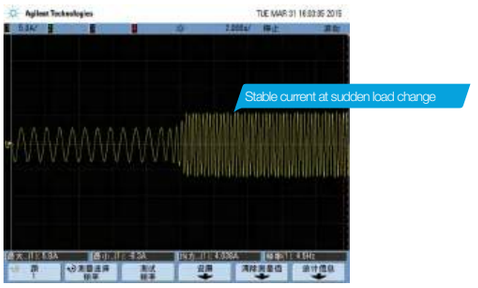
Excellent motor drive performance



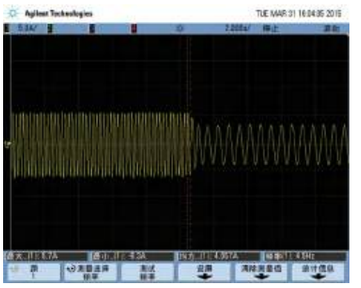
Current waveforms when sudden loading in V/F control mode with 2Hz and full load



Current waveforms when sudden unloading in V/F control mode with 2Hz and full load

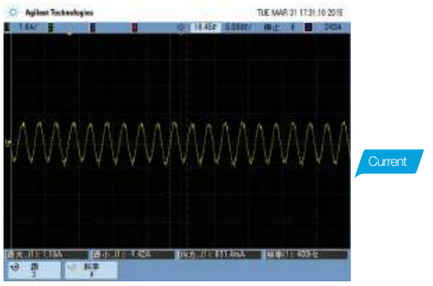


Current waveforms when sudden loading in vector control mode with 0.5Hz and full load

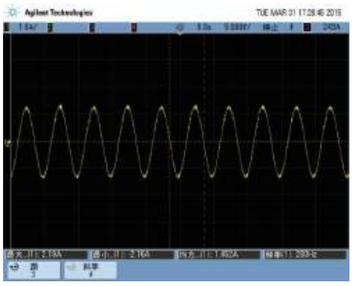


Current waveforms when sudden unloading in vector control mode with 0.5Hz and full load

Excellent high frequency running performance



Current waveforms when sudden loading in vector control mode with 0.5Hz and full load

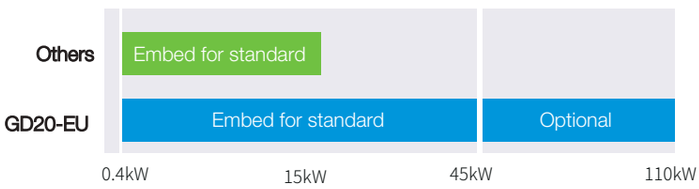


Current waveforms when sudden unloading in vector control mode with 0.5Hz and full load

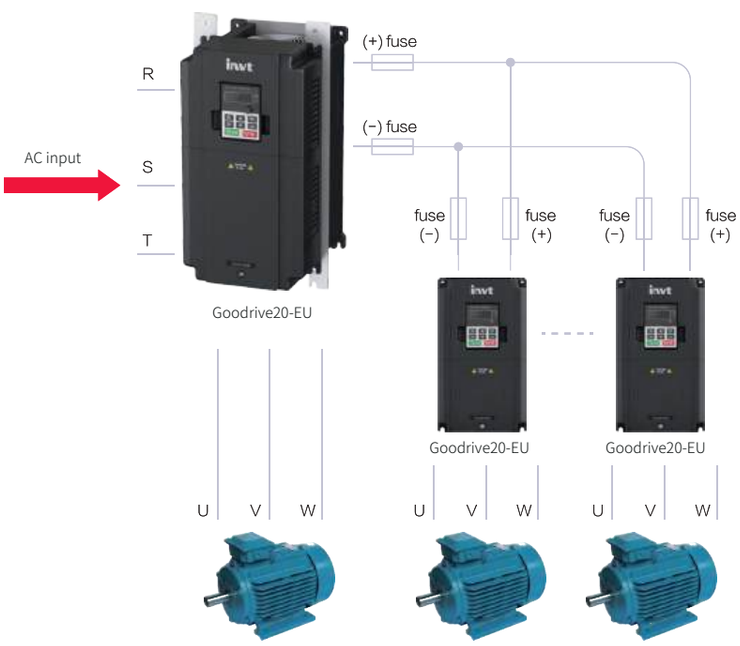
Multi-function and easy to use

Built-in DC reactor for inverter ⩾18.5kW

The braking unit is built-in and standard for inverters ≤37kW but optional for inverter of 45-110kW.



Inverter (400V; ≥4kW) support the Common DC bus solution.



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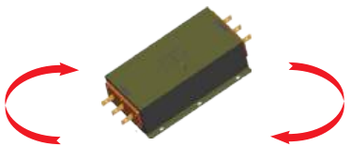
Built-in Safe Torque Off function

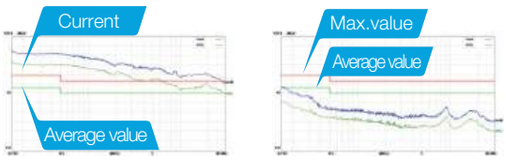
Model	Certification standard and level		
	IEC 61508	EN/ISO 13849-1	EN954-1
-S2:0.4~2.2kW -2:0.4~0.75kW -4:0.75~2.2kW	SIL2	PLd	Category 3
-2:1.5~7.5kW -4:4~110kW	SIL3	PLe	Category 3

C3 and C2 filters

C3 filters are built in inverters (3PH; 400V; ≥4kW) and (3PH; 230V; ≥1.5kW) by using J10 to determine the connection or disconnection. External C3 filters can be configured for inverters (1PH; 230V; ≤2.2kW), (3PH; 400V; ≤2.2kW) and (3PH; 230V; ≤ 0.75kW).

External C2 filters are optional for all GD20-EU series inverters.





Before installing the filter | After installing the filter

Conductive interference test of the power supply terminals

Remarks:
C2 filter: EMC performance of the inverter achieves the limited usage requirement in civil environment.
C3 filter: EMC performance of the inverter achieves the limited usage requirement in industrial environment.

External keypad

The membrane keypad are standard for inverters (3PH; 400V; ≤ 2.2kW), which also support external LED keypads. The keypads for inverters (3PH; 400V; ≥4kW) can be used as external keypads.

GD20-EU series inverters can be configured with LED keypad which has the data copy function to upload or download the parameters.

Pluggable design for cooling fans, easy maintenance

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Abundant Software Functions

Function	Used to	Remarks
RS485 communication	Read and modify inverter parameters through connection to the upper computer so as to control inverter running status.	Configured with RS485 communication interface
PID	Carry out PID operation on feedback signals to control inverter output frequency and improve target accuracy and stability. Applicable to pressure, flow and temperature process control.	Supports PID output polarity switching.
Motor parameter autotuning	Carry out rotation or static autotuning, improving control accuracy and response speed.	Classified into rotation autotuning and static autotuning.
Simple PLC function	Change the running frequency and direction automatically according to the running time set by simple PLC to meet process requirements.	Supports multiple running modes.
Multi-step speed control	Meet the speed control requirements in different periods of time.	A maximum of 16 steps can be divided for multi-step speed control.
Multiple V/F curve settings	Meet the requirements of energy-saving operation for fans and water pumps and of various variable frequency power supplies; adapt to different load applications.	Linear, multi-dot, multi-power and V/F separation settings, implementing flexible setting of V/F curves.
Virtual terminals	Take external signals as local virtual I/O to reduce hardware configuration.	Corresponding virtual terminal functions must be enabled in communication mode.
Delay of switching on and off	Provide more programming and control modes	Max. switching on/off delay is 50s
Uninterrupted running in instantaneous power off	Ensure uninterrupted running in instantaneous power off. Especially applicable to the situations with high requirements on continuous operation.	At transient voltage drop, the inverter can keep running by feedback energy without stop in valid time.
Various protection functions	Provide overall fault protection functions.	Various measures provided to protect against faults such as overcurrent, overvoltage, undervoltage, overheating, and overload, whose information can be saved.
Multiple braking modes available	Provide multiple braking modes, satisfying accurate and quick stop under different loads.	DC braking, flux braking, dynamic braking
Battery capacity display	Display the accumulative power consumption on the inverter without watt-hour meter.	Inverter power consumption can be queried.

Reliable QA

Perfect and Reliable Test System Ensure Products Adapt Complicated Site Environments and Achieved ACT Certificate of TÜV SÜD

Experiment Type	Experiment Name	Classification
Mechanical Reliability Experiments	Packaging Experiments	Package compression experiments
		Package Resonance imaging and storage test
		Package random vibration test
		Package dropping test
		Package rolling test
		Package dumping test
		Package inclined impact test
	Impact Test	Half-sine shock test(working and non-working state)
		Trapezoidal wave impulse test(non-working state)
	Vibration Test	Sinusoidal vibration test(working state)
		Random vibration test(working and non-working state)
Climatic Environmental Reliability Test	Temperature Experiment	Low temperature storage test
		High temperature storage test
		Low temperature working test
		High temperature working test
		Gradient temperature change test
		Temperature impact test
	Temperature Humidity Test	Constant temperature & humidity test
		Alternation temperature & humidity test
	Salt Spray Test	Constant salt spray test
		Alternation salt spray test
	Low Air Pressure Test	Combined dry heat & low air pressure test
		Combined cold & low air pressure test

Remarks:
The full name of ACT is Acceptance of Client's Testing, which means the German TÜV SÜD admit the technology level of the lab and accept their separate testing data and test reports officially.

Electric Vibration System

Low Pressure Test Chamber& Constant temperature and humidity test chamber

Faster temperature chamber& Thermal Shock Test Chamber

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Applications

Textile machinery

Food machinery

Plastic machinery

Printing and packaging

Environmental protection equipment

Ceramic equipment

Woodworking equipment

Conveying equipment

Air compressor

Cable machinery

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Technical specification

Function		Specification
Power Input	Input Voltage (V)	1PH 220V (-15%)~240V(+10%) 3PH 220V(-15%)~240V(+10%) 3PH 380V (-15%)~440V(+10%)
	Input Current (A)	Refer to the rated value
	Input Frequency (Hz)	50Hz or 60Hz, allowed range: 47~63Hz
Power Output	Output Motor Capacity (kW)	Refer to the rated value
	Output Current (A)	Refer to the rated value
	Output Voltage (V)	0~input voltage, error<5%
	Output Frequency (Hz)	0~400Hz
Technical Control Feature	Control Mode	SVPWM, SVC
	Adjustable-speed Ratio	1:100
	Speed Control Accuracy	± 0.2% (SVC)
	Speed Fluctuation	± 0.3% (SVC)
	Torque Response	<20ms (SVC)
	Torque Control Accuracy	10%
	Starting Torque	0. 5Hz/150% (SVC)
	Overload Capability	150% of rated current: 1 minute 180% of rated current: 10 seconds 200% of rated current: 1 second
Running Control Feature	Frequency Setting Method	Digital setting, analog setting, pulse frequency setting, multi-step speed running setting, simple PLC setting, PID setting, MODBUS communication setting Shift between the set combination and set channel.
	Auto-adjustment of the Voltage	Keep a stable voltage automatically when the grid voltage transients
	Fault Protection	Provide comprehensive fault protection functions: over-current, over-voltage, under-voltage, over-heating, phase loss and overload, etc.
Peripheral Interface	Analog Input	1 (AI2) 0~10V/0~20mA and 1 (AI3) -10~10V
	Analog Output	2 (AO1, AO2) 0~10V/0~20mA（Only 1 AO for inverters ≤2.2kW）
	Digital Input	4 common inputs, the Max. frequency: 1kHz; 1 high speed input, the Max. frequency: 50kHz
	Digital Output	1 Y1 terminal output;
	Relay Output	2 programmable relay outputs(Only 1 Relay output for inverters ≤2.2kW) RO1A NO, RO1B NC, RO1C common terminal RO2A NO, RO2B NC, RO2C common terminal Contactor capacity: 3A/AC250V
Others	Mountable Method	Wall and rail mountable
	Braking Unit	≤37kW Standard built-in. 45~110kW Optional built-in (model "-B")
	EMI Filter	Optional filter: meet the degree requirement of IEC61800-3 C2, IEC61800-3 C3
	Temperature of the Running Environment	-10~50°C Above 40°C, derate 1% for every additional 1°C.
	Altitude	<1000m Above 1000m, derate 1% for every additional 100m.
	Protective Degree	IP20
	Safety	Meet the requirement of CE
	Cooling	Fan cooling

Selection

Type designation key

GD20-055G-4-B-EU

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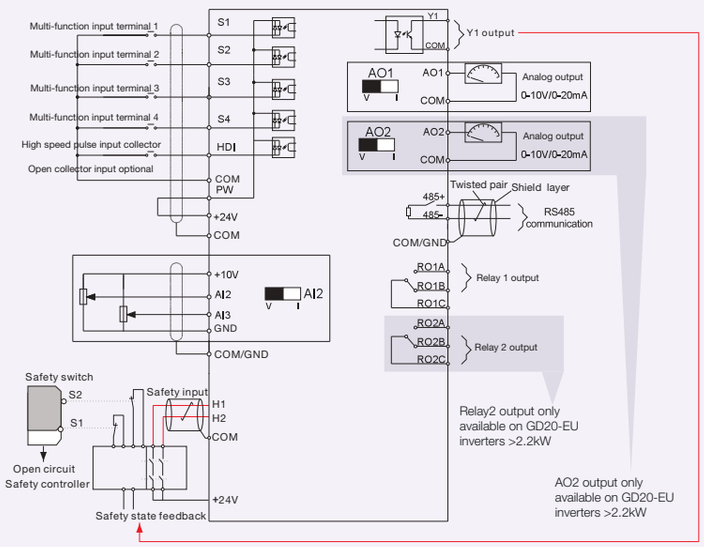
Key	No.	Detailed description	Detailed content
Abbreviation	①	Product abbreviation	GD20-EU is short for Goodrive20-EU
Rated power	②	Power range+load type	055:55kW G: constant torque load
Voltage degree	③	Voltage degree	S2: AC 1PH 220V(-15%)~240V(+10%) 2: AC 3PH 220V(-15%)~240V(+10%) 4: AC 3PH 380V(-15%)~440V(+10%)
Additional information 1	④	Braking unit	B: For inverter ⩾45kW and With "B" assigned, means built-in braking unit.
Additional information 2	⑤	Special function	EU: built-in Safe Torque Off function; Without EU, without the function

Rated parameters

Model	Voltage degree	Output power (kW)	Input current (A)	Output current (A)	STO function
GD20-0R4G-S2-EU	1PH 230V	0.4	6.5	2.5	Class SIL2 PLd CAT.3
GD20-0R7G-S2-EU		0.75	9.3	4.2	
GD20-1R5G-S2-EU		1.5	15.7	7.5	
GD20-2R2G-S2-EU		2.2	24	10	
GD20-0R4G-2-EU	3PH 230V	0.4	3.7	2.5	
GD20-0R7G-2-EU		0.75	5	4.2	
GD20-1R5G-2-EU		1.5	7.7	7.5	Class SIL3 PLe CAT.3
GD20-2R2G-2-EU		2.2	11	10	
GD20-004G-2-EU		4	17	16	
GD20-5R5G-2-EU		5.5	21	20	
GD20-7R5G-2-EU		7.5	31	30	
GD20-0R7G-4-EU	3PH 400V	0.75	3.4	2.5	Class SIL2 PLd CAT.3
GD20-1R5G-4-EU		1.5	5.0	4.2	
GD20-2R2G-4-EU		2.2	5.8	5.5	
GD20-004G-4-EU		4	13.5	9.5	Class SIL3 PLe CAT.3
GD20-5R5G-4-EU		5.5	19.5	14	
GD20-7R5G-4-EU		7.5	25	18.5	
GD20-011G-4-EU		11	32	25	
GD20-015G-4-EU		15	40	32	
GD20-018G-4-EU		18.5	47	38	
GD20-022G-4-EU		22	51	45	
GD20-030G-4-EU		30	70	60	
GD20-037G-4-EU		37	80	75	
GD20-045G-4-EU		45	98	92	
GD20-045G-4-B-EU		45	98	92	
GD20-055G-4-EU		55	128	115	
GD20-055G-4-B-EU		55	128	115	
GD20-075G-4-EU		75	139	150	
GD20-075G-4-B-EU		75	139	150	
GD20-090G-4-EU		90	168	180	
GD20-090G-4-B-EU		90	168	180	
GD20-110G-4-EU		110	201	215	
GD20-110G-4-B-EU		110	201	215	

Standard wiring

Wiring diagram of control circuit



Logic table for STO function

Input states and corresponding faults of STO function:

STO input state	Corresponding STO fault
H1, H2 opens simultaneously	Trigger STO function,the drive can't operate normally
H1, H2 closes simultaneously	Don't trigger STO function,the drive can operate normally
Either H1 or H2 opens or closes	Trigger STL1/STL2/STL3 fault,fault code: 38: Safety circuit of channel 1 is abnormal (STL1) 39: Safety circuit of channel 2 is abnormal (STL2) 40: Internal circuit is abnormal (STL3)

Control terminal diagram

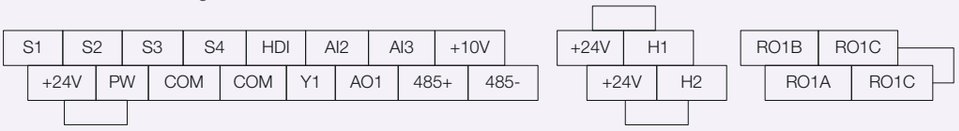


Fig 1 Connection terminal diagram for inverters ≤2.2kW

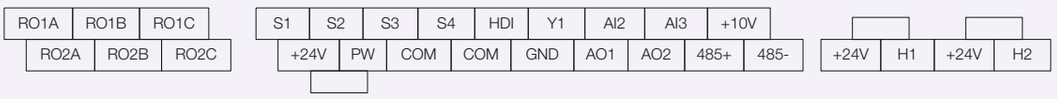


Fig2 Connection terminal diagram for inverters ≥ 4kW

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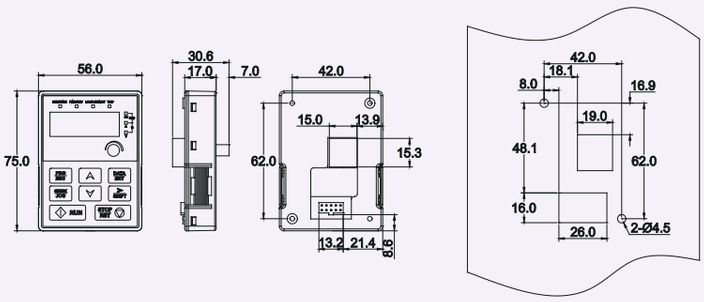
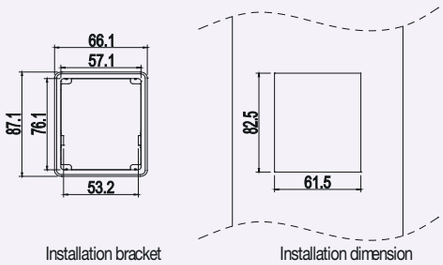
Installation dimension

External keypad dimension



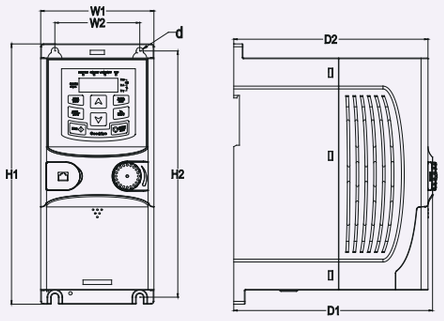
Overall drawing　　Hole drawing

Note: The external keypad can be 20 meters away from the inverter at most.



Installation bracket　　Installation dimension

Inverter dimension



Wall mounting of 0.75~2.2kW inverters

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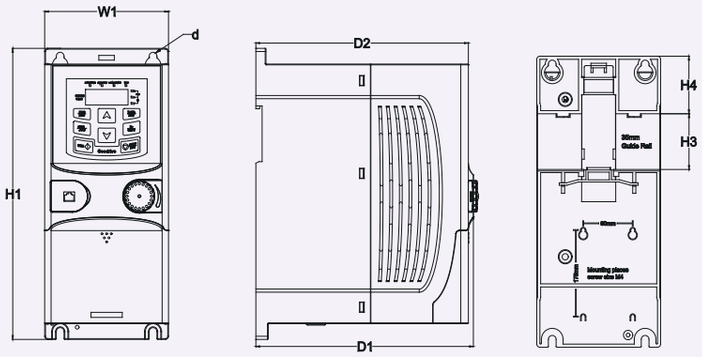
Dimension (unit: mm)

Model	W1	W2	H1	H2	D1	D2	Hole (d)
GD20-0R4G-S2-EU	80.0	60.0	160.0	150.0	123.5	120.3	5
GD20-0R7G-S2-EU	80.0	60.0	160.0	150.0	123.5	120.3	5
GD20-1R5G-S2-EU	80.0	60.0	185.0	175.0	140.5	137.3	5
GD20-2R2G-S2-EU	80.0	60.0	185.0	175.0	140.5	137.3	5
GD20-0R4G-2-EU	80.0	60.0	185.0	175.0	140.5	137.3	5
GD20-0R7G-2-EU	80.0	60.0	185.0	175.0	140.5	137.3	5
GD20-0R7G-4-EU	80.0	60.0	185.0	175.0	140.5	137.3	5
GD20-1R5G-4-EU	80.0	60.0	185.0	175.0	140.5	137.3	5
GD20-2R2G-4-EU	80.0	60.0	185.0	175.0	140.5	137.3	5



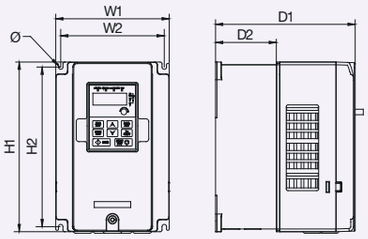
Rail mounting of inverters of 1PH 230V/3PH 400V (≤2.2kW) and 3PH 230V (≤0.75kW)

Dimension (unit: mm)

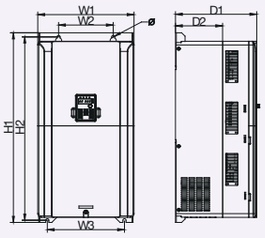
Model	W1	H1	H3	H4	D1	D2	Hole (d)
GD20-0R4G-S2-EU	80.0	160.0	35.4	36.6	123.5	120.3	5
GD20-0R7G-S2-EU	80.0	160.0	35.4	36.6	123.5	120.3	5
GD20-1R5G-S2-EU	80.0	185.0	35.4	36.6	140.5	137.3	5
GD20-2R2G-S2-EU	80.0	185.0	35.4	36.6	140.5	137.3	5
GD20-0R4G-2-EU	80.0	185.0	35.4	36.6	140.5	137.3	5
GD20-0R7G-2-EU	80.0	185.0	35.4	36.6	140.5	137.3	5
GD20-0R7G-4-EU	80.0	185.0	35.4	36.6	140.5	137.3	5
GD20-1R5G-4-EU	80.0	185.0	35.4	36.6	140.5	137.3	5
GD20-2R2G-4-EU	80.0	185.0	35.4	36.6	140.5	137.3	5

Installation dimension

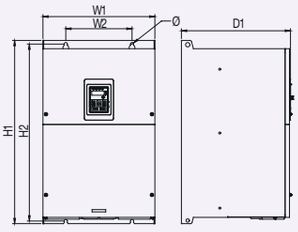
Inverter dimension



Wall mounting of 3PH 400V 4~37kW and 3PH 230V 1.5~7.5 kW inverters



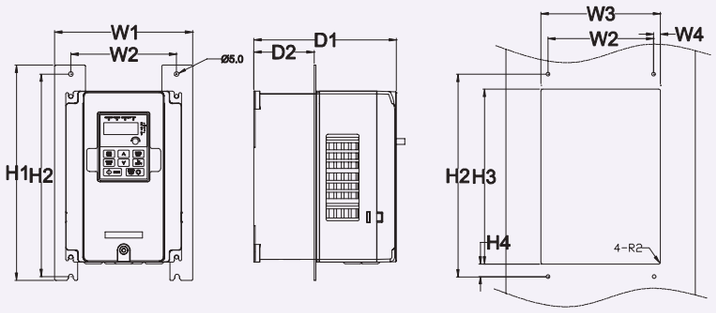
Wall mounting of 3PH 400V 45~75kW inverters



Wall mounting of 3PH 400V 90~110kW inverters

Dimension (unit: mm)

Model	W1	W2	W3	H1	H2	D1	D2	Hole (d)
GD20-1R5G-2-EU	146.0	131.0	—	256.0	243.5	167.0	84.5	6
GD20-2R2G-2-EU	146.0	131.0	—	256.0	243.5	167.0	84.5	6
GD20-004G-2-EU	146.0	131.0	—	256.0	243.5	167.0	84.5	6
GD20-5R5G-2-EU	170.0	151.0	—	320.0	303.5	196.3	113.0	6
GD20-7R5G-2-EU	170.0	151.0	—	320.0	303.5	196.3	113.0	6
GD20-004G-4-EU	146.0	131.0	—	256.0	243.5	167.0	84.5	6
GD20-5R5G-4-EU	146.0	131.0	—	256.0	243.5	167.0	84.5	6
GD20-7R5G-4-EU	170.0	151.0	—	320.0	303.5	196.3	113.0	6
GD20-011G-4-EU	170.0	151.0	—	320.0	303.5	196.3	113.0	6
GD20-015G-4-EU	170.0	151.0	—	320.0	303.5	196.3	113.0	6
GD20-018G-4-EU	200.0	185.0	—	340.6	328.6	184.3	104.5	6
GD20-022G-4-EU	200.0	185.0	—	340.6	328.6	184.3	104.5	6
GD20-030G-4-EU	250.0	230.0	—	400.0	380.0	202.0	123.5	6
GD20-037G-4-EU	250.0	230.0	—	400.0	380.0	202.0	123.5	6
GD20-045G-4-EU	282.0	160.0	226.0	560.0	542.0	238.0	138.0	9
GD20-055G-4-EU	282.0	160.0	226.0	560.0	542.0	238.0	138.0	9
GD20-075G-4-EU	282.0	160.0	226.0	560.0	542.0	238.0	138.0	9
GD20-090G-4-EU	338.0	200.0	—	554.0	535.0	329.2	—	9.5
GD20-110G-4-EU	338.0	200.0	—	554.0	535.0	329.2	—	9.5



Flange mounting of 3PH 400V 4~75kW and 3PH 230V 1.5~7.5kW inverters

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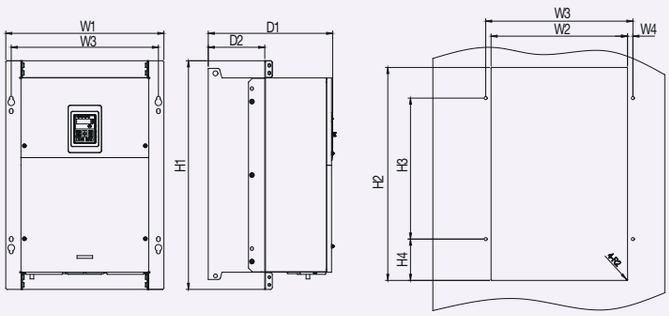

Flange mounting of 3PH 400V 90~110kW inverters

Dimension (unit: mm)

Model	W1	W2	W3	W4	H1	H2	H3	H4	D1	D2	Hole (d)	Nut
GD20-1R5G-2-EU	170.2	131	150	9.5	292	276	260	6	167	84.5	6	M5
GD20-2R2G-2-EU	170.2	131	150	9.5	292	276	260	6	167	84.5	6	M5
GD20-004G-2-EU	170.2	131	150	9.5	292	276	260	6	167	84.5	6	M5
GD20-5R5G-2-EU	191.2	151	174	11.5	370	351	324	12	196.3	113	6	M5
GD20-7R5G-2-EU	191.2	151	174	11.5	370	351	324	12	196.3	113	6	M5
GD20-004G-4-EU	170.2	131	150	9.5	292	276	260	6	167	84.5	6	M5
GD20-5R5G-4-EU	170.2	131	150	9.5	292	276	260	6	167	84.5	6	M5
GD20-7R5G-4-EU	191.2	151	174	11.5	370	351	324	12	196.3	113	6	M5
GD20-011G-4-EU	191.2	151	174	11.5	370	351	324	12	196.3	113	6	M5
GD20-015G-4-EU	191.2	151	174	11.5	370	351	324	12	196.3	113	6	M5
GD20-018G-4-EU	266	250	224	13	371	250	350.6	20.3	184.6	104	6	M5
GD20-022G-4-EU	266	250	224	13	371	250	350.6	20.3	184.6	104	6	M5
GD20-030G-4-EU	316	300	274	13	430	300	410	55	202	118.3	6	M5
GD20-037G-4-EU	316	300	274	13	430	300	410	55	202	118.3	6	M5
GD20-045G-4-EU	352	332	306	13	580	400	570	80	238	133.8	9	M8
GD20-055G-4-EU	352	332	306	13	580	400	570	80	238	133.8	9	M8
GD20-075G-4-EU	352	332	306	13	580	400	570	80	238	133.8	9	M8
GD20-090G-4-EU	418.5	361	389.5	14.2	600	559	370	108.5	329.5	149.5	9.5	M8
GD20-110G-4-EU	418.5	361	389.5	14.2	600	559	370	108.5	329.5	149.5	9.5	M8

Note: In flange installation mode, the installation bracket is optional

Optional parts

External LED keypad

Including the external keypads with or without the parameter copying function.

parameter copying

Reactor

Input reactor: Improve the power factor of the input side of the inverter and control the higher harmonic current.

Output reactor: Prolong the effective transmitting distance of the inverter and control the sudden high voltage when switching on/off the IGBT of the inverter.

Filter

Input filter: Control the electromagnetic interference generated from the inverter, please install close to the input terminal side of the inverter.

Output filter: Control the interference from the output side of the inverter, please install close to the output terminals of the inverter.

Braking resistor

Auxiliary equipment for braking system, shorten the deceleration time.

Membrane of heat releasing holes at the side

Apply to severe environment and improve protective effect.

Derate 10% of the machine.

Keypad Bracket

Use it to install the keypad on the front of cabinet

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About us

Shenzhen INVT Electric Co., Ltd. (INVT for short, stock code: 002334) was founded in 2002, focusing on the fields of industrial automation and energy power. It was listed on Shenzhen Stock Exchange (SZSE) and issued A shares in 2010. Adhering to the core values of "Achieve customers, performance orientation, open and win-win cooperation, struggle and innovation" and with the mission of making every effort to offer most valuable products and services to strengthen customer competitiveness, INVT provides differentiated and specialized industry solutions, customized technical services, global localization operations, and digital management models to global customers.

Core competitiveness

Company scale: In 2023, the total operating revenue was approximately RMB 4.59 billion, a year-on-year increase of 12.03%. The net profit was approximately 371 million Yuan, a year-on-year increase of 35.06%. The total assets reached 5.186 billion Yuan, a year-on-year increase of 6.13%. INVT has 4 large bases of production and research, 15 holding subsidiaries, and over 5000 employees.

R&D capability: INVT is a national key high-tech enterprise in China's Torch Program and a drafting unit for the national standard of low-voltage VFDs. It has established a strict quality management system and passed CNAS certification. The R&D testing laboratory has been awarded the Acceptance of Client Testing (ACT) accreditation by TUV-SUD in Germany, and the main products are CE-compliant. INVT has also been recognized as the National Enterprise Technology Center, and Guangdong Engineering Technology Research Center, and has undertaken a number of national, provincial and municipal science and technology projects. By the end of 2023, INVT has 1538 patents and 283 computer software copyrights.

Marketing and service network: INVT has set up dozens of branches and hundreds of joint warranty centers around the world, and has established strong cooperative relationships with many domestic and international channel partners. This comprehensive sales and service network enables INVT to respond quickly to global market demands and provide immediate technical support and quality after-sales service.

Business segments

Industrial automation: Offering VFDs, servo systems, motors, controllers, human-machine interfaces, sensors, elevator drive systems, industrial internet, and other products and integrated solutions, which are widely used in compressors, cranes, solar pumps, printing and packaging machinery, 3C electronics, lithium-ion battery equipment, semiconductor equipment, offshore equipment, iron and steel, petroleum, chemical industry, and other fields.

Network power: Offering micro module data centers, power supply and distribution products, intelligent temperature control products, intelligent monitoring products, and integrated solutions, which are widely used in cloud data centers, finance, communication, medical, energy, and other fields.

New energy vehicle: Offering comprehensive products such as main motor controllers, auxiliary motor controllers, vehicle controllers, and onboard power supplies, covering the full range of solutions for commercial vehicles and passenger cars.

PV energy storage: Offering grid-tie inverters, energy storage inverters, off-grid inverters, monitoring accessories, which have been applied in many scenarios at home and abroad.

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Product introduction

Smart VFDs drive a better future

GD27 is a newly designed smart VFD, in compact structure, with excellent performance and rich functions, simple and easy to use. It can be widely used in industries such as woodworking, textiles, food, printing and packaging, plastics, HVAC, logistics and transportation equipment.

Power range:
AC 1PH 200V~240V 0.4kW~2.2kW
AC 3PH 200V~240V 0.4kW~15kW
AC 3PH 380V~480V 0.75kW~22kW

Characteristics	Advantages
Embedded EMC filter [1)]	Compliant with EN/IEC61800-3 C3
Embedded STO function [1)]	Compliant with EN/IEC61800-5-2 SIL2
Compact bookstyle design	Support for side-by-side mounting, saving cabinet space
Push-in spring-loaded control terminals	Tool free wiring, saving 50% of wiring time
Support for DIN rail mounting [2)]	Making disassembly and assembly easy, saving time and effort
Natural cooling (frame A)	Without noise, good environment adaptability
Support for parameter copying keypads	Facilitating batch operation and maintenance
Standard models and EU models available	Wide range of models for selection, saving procurement cost
Support for IM and PM motors	Enabling customers to select motors as required
Enhanced circuit board coating	Improving reliability in hostile environments
Pluggable fan	Easy to maintain
Embedded braking unit	No external configuration need, saving cost

1) The EU models have been embedded with STO and EMC filters as standard configuration.
2) The DIN rail mounting bracket is optional. Only frames A and B support DIN rail mounting.

Product application

Woodworking machinery

Carton machinery

Food machinery

Logistics conveyor line

Textile machinery

Plastic machinery

Stone machinery

Optical devices

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Product characteristics

Excellent performance

New generation of motor control platform

Capable of driving asynchronous motors and permanent magnet synchronous motors, supporting SVC and V/F control methods.

Supporting long motor cables

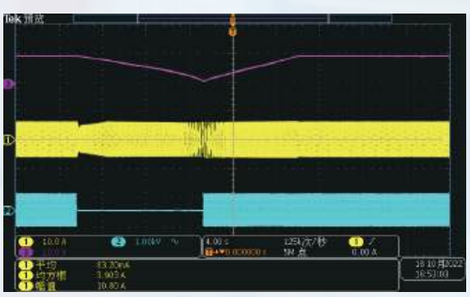
Supporting up to 150m motor cable applications without the need of additional output reactors.

Outstanding torque control

Torque control accuracy < 5%
Torque response time < 10ms

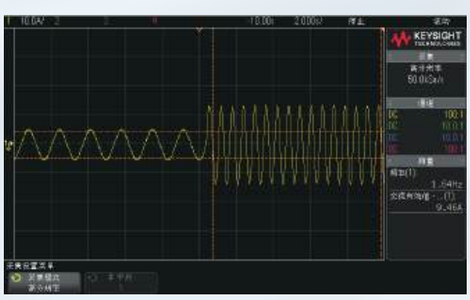
Transient power loss ride-through

When the power grid drops suddenly, the VFD can keep running with the feedback energy within valid time. This function is particularly applicable to scenarios with high requirements for equipment operation continuity.



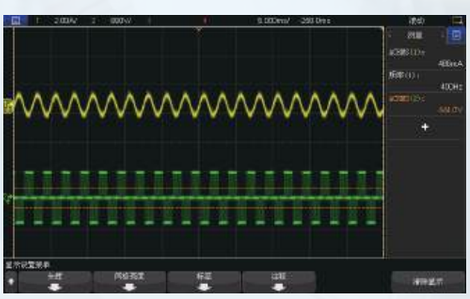
Remarkable load carrying capability at low frequency

Current waveform with sudden 100% load at a low frequency of 0.5Hz.



Remarkable load carrying capability at high frequency

Current and voltage waveform of motor at stable running at high frequency.



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Saving time and increasing efficiency

Easy and flexible mounting

Compact bookstyle design supports side-by-side mounting, saving cabinet space and cost. Frames A and B support optional DIN rail bracket mounting.

Pluggable fan

Wireless fool-proofing design makes assembly, disassembly, and maintenance easy.

Support for external keypads

Both common LED keypads and special LED keypads with the parameter copying function are supported, facilitating batch debugging.
Using an external optional keypad mounting bracket helps moniotring from the external of cabinet.

Push-in spring loaded control terminals

Tool-free wiring, easy and fast, saving the wiring time by 50%.

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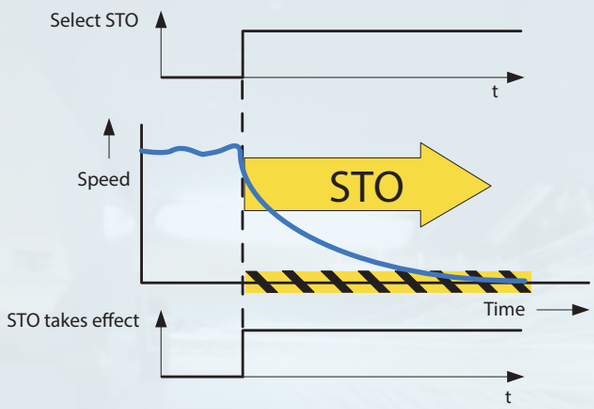
Safe and reliable

Embedded safety functions

STO compliant with SIL2, which prevents the VFD from starting by mistake and enhances the safety of device maintenance and operation.

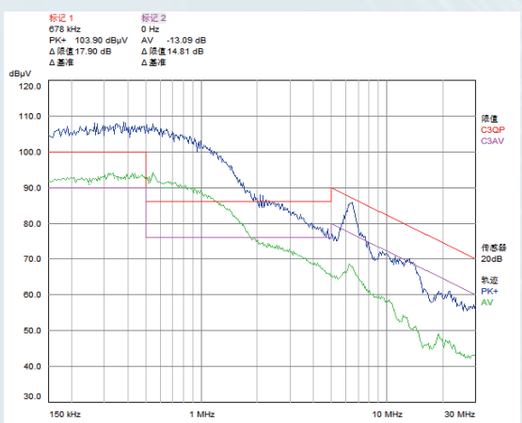


Excellent environment adaptability

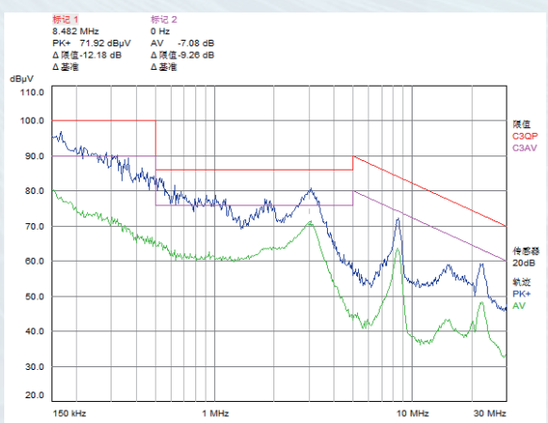
Enhanced circuit board coating for reliable running under full load in an environment up to 50 °C.
Independent air duct design.

Embedded EMC filter

Compliant with IEC61800-3 C2/C3, effectively reducing electromagnetic interference and ensuring stable equipment running without separate installation of external filter, with less cost.



Without filter



Filter embedded

Power terminal conductivity disturbance test

Note:
Embedded with C2 filters, applicable to civilian environments.
Embedded with C3 filters, applicable to industrial envrionments.

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Technical Parameters

Item	Specifications
Input voltage	AC 1PH 200V-240V AC 3PH 200V-240V AC 3PH 380V-480V
Input frequency	50Hz or 60Hz; Allowed range: 47-63Hz
Output frequency	0-599Hz
Control mode	Space voltage vector control, and sensorless vector control (SVC)
Motor type	Asynchronous motor (AM) and synchronous motor (SM)
Speed ratio	For AMs: 1: 100 (SVC); For SMs: 1: 20 (SVC)
Speed control accuracy	±0.2% (SVC)
Speed fluctuation	±0.3% (SVC)
Torque response	<10ms (SVC)
Torque control accuracy	5% (SVC)
Starting torque	For AMs: 0.25Hz/150% (SVC); For SMs: 2.5Hz/150% (SVC)
Overload capacity	150% of the rated current for 60s, 180% of the rated current for 10s
Frequency setting method	Setting through keypad digital, analog, multi-step running, simple PLC, PID, and Modbus communication. Setting combinations and setting channels can be switched
Automatic voltage regulation	Able to keep constant output voltage even when the grid voltage changes
Fault protection	Including protection against overcurrent, overvoltage, undervoltage, overtemperature, overload, phase loss, and short circuit
Analog input	Two inputs. AI1: 0-10V/0-20mA; AI2: 0-10V
Analog output	One output. AO1: 0-10V/0-20mA
Digital input	Four regular inputs. Max. frequency: 1kHz One high-speed input. Max. frequency: 50kHz
Digital output	One Y terminal open collector output
Relay output	Two programmable relay outputs RO1A: NO; RO1B: NC; RO1C: common RO2A: NO; RO2B: NC; RO2C: common Contact capacity: 3A/AC250V, 1A/DC30V
STO input	STO redundant input, connected to the external NC contact. When the contact opens, STO acts and the VFD stops output. Safety input signal wires use shielded wires whose length is within 25m. The H1 and H2 terminals are short connected to +24V by default. Remove the jumper from the terminals before using the STO function.
Altitude	Below 1000m
Temperature of storage	-20-70°C
Temperature of running environment	-10-50°C
RH	< 95% RH, no condensation
IP rating	IP20
Braking unit	Embedded braking unit as standard configuration
Installation method	Supports wall mounting, DIN rail mounting (optional for A and B enclosures), flange mounting (optional for C, D, E enclosures)
Cooling method	Wall mounting, DIN rail mounting, side-by-side mounting Cooling method 1PH/3PH 220V voltage class: natural cooling for 0.75kW and lower 3PH 380V voltage class: natural cooling for 1.5kW and lower Others: Forced air cooling
Certification standard	CE requirements are met

Note: Standard models have two groups of relay, while EU models have a group of relay and a group of STO function terminal.

The highest ambient temperature is 40°C when multiple GD27 VFDs are mounted closely side by side.

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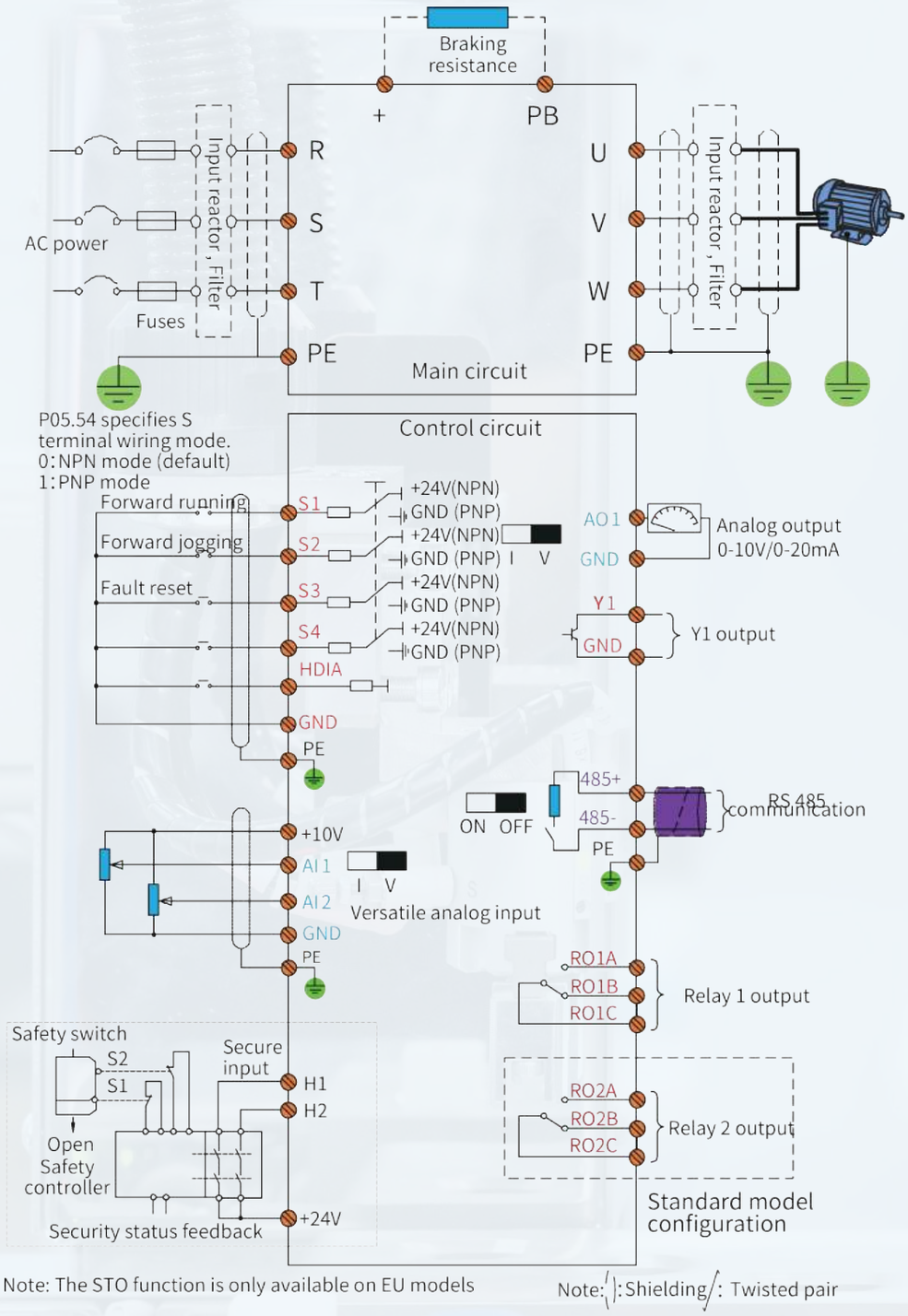
Wiring



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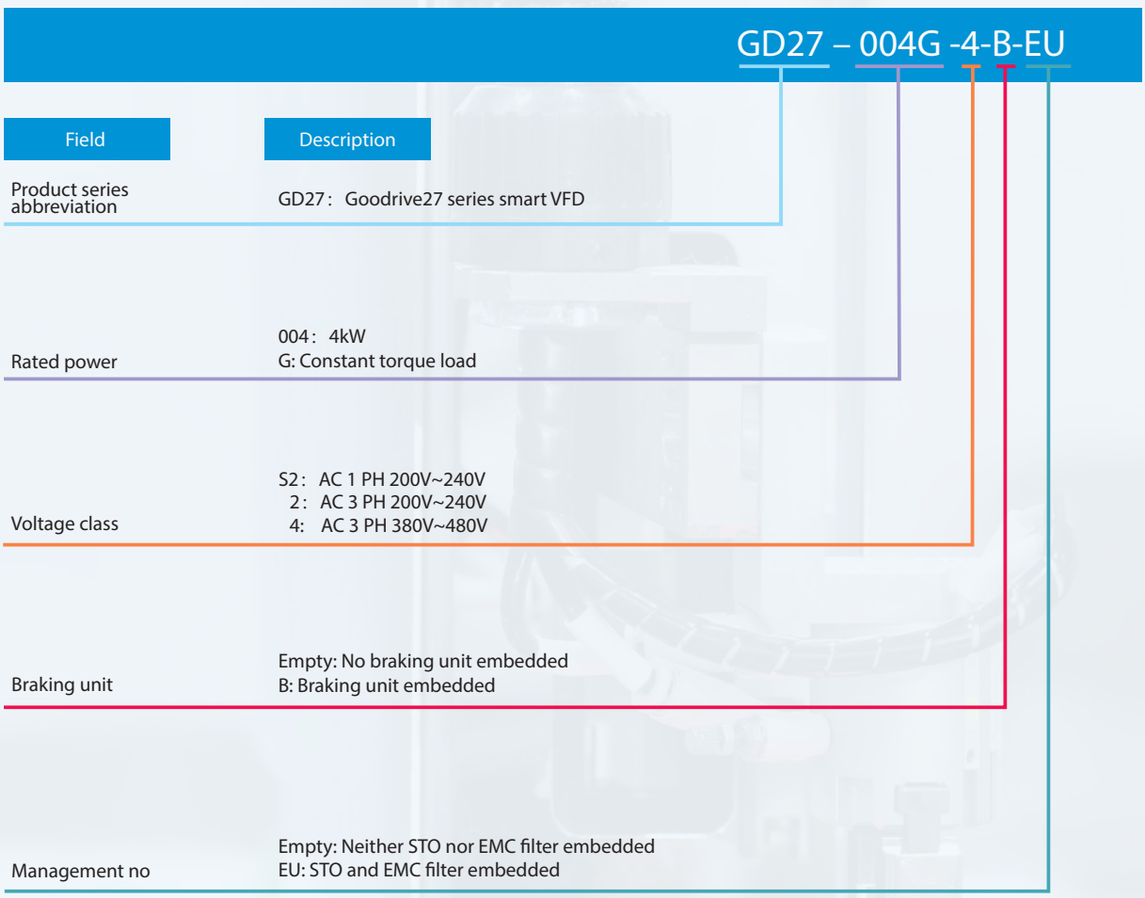
Model description

Naming rule



Field	Description
Product series abbreviation	GD27： Goodrive27 series smart VFD
Rated power	004： 4kW G: Constant torque load
Voltage class	S2： AC 1 PH 200V~240V 2： AC 3 PH 200V~240V 4： AC 3 PH 380V~480V
Braking unit	Empty: No braking unit embedded B: Braking unit embedded
Management no	Empty: Neither STO nor EMC filter embedded EU: STO and EMC filter embedded

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Product model selection

VFD model	Output power (kw)	Input current (A)	Output current (A)	Exterior frame
AC 1PH 200V~240V				
GD27-0R4G-S2-B-XX	0.4	6.5	2.5	A
GD27-0R7G-S2-B-XX	0.75	11	4.2	A
GD27-1R5G-S2-B-XX	1.5	18	7.5	B
GD27-2R2G-S2-B-XX	2.2	24.3	10	B
AC 3PH 200V~240V				
GD27-0R4G-2-B-EU	0.4	3.6	2.5	A
GD27-0R7G-2-B-EU	0.75	7	4.2	A
GD27-1R5G-2-B-EU	1.5	11.6	7.5	B
GD27-2R2G-2-B-EU	2.2	16	10	B
GD27-004G-2-B-EU	4	22.3	16	C
GD27-5R5G-2-B-EU	5.5	25	20	C
GD27-7R5G-2-B-EU	7.5	33	30	D
GD27-011G-2-B-EU	11	44	42	D
GD27-015G-2-B-EU	15	60	55	E
AC 3PH 380V~480V				
GD27-0R7G-4-B-XX	0.75	4.5	2.5	A
GD27-1R5G-4-B-XX	1.5	6.5	3.7	A
GD27-2R2G-4-B-XX	2.2	8.8	5.5	B
GD27-003G-4-B-XX	3	12.2	7.5	B
GD27-004G-4-B-XX	4	15.6	9.5	B
GD27-5R5G-4-B-XX	5.5	22.3	14	C
GD27-7R5G-4-B-XX	7.5	28.7	18.5	C
GD27-011G-4-B-XX	11	36	25	D
GD27-015G-4-B-XX	15	46	32	D
GD27-018G-4-B-XX	18.5	57	38	E
GD27-022G-4-B-XX	22	62	45	E

Note: -XX indicates empty or -EU. -EU indicates the STO and EMC filter have been embedded.

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Accessary model selection

Common keypad		Order No. (with packaging) : 11022-00121 Function: The LED keypad can be mounted externally.
Keypad with parameter		Order No.(with packaging) : 11022-00129 Function: The LED keypad can be mounted externally and can be used to upload and download parameters, facilitating commissioning.
Keypad bracket 1		Order No.(with packaging) : 61001-00090 Function: It is used to fix the LED keypad when the LED keypad is mounted to the electrical cabinet.
Keypad bracket 2		Order No.(with packaging) : 11022-00136 Function: It is used to fix the LED keypad when the LED keypad is mounted to the electrical cabinet. The keypad can be removed from the bracket directly.
DIN rail mounting bracket		Order No.(with packaging) : 11091-00014 Function: It is used for DIN rail mounting, facilitating the mounting efficiency.

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Mounting method

Wall mounting

A、B

C

D、E

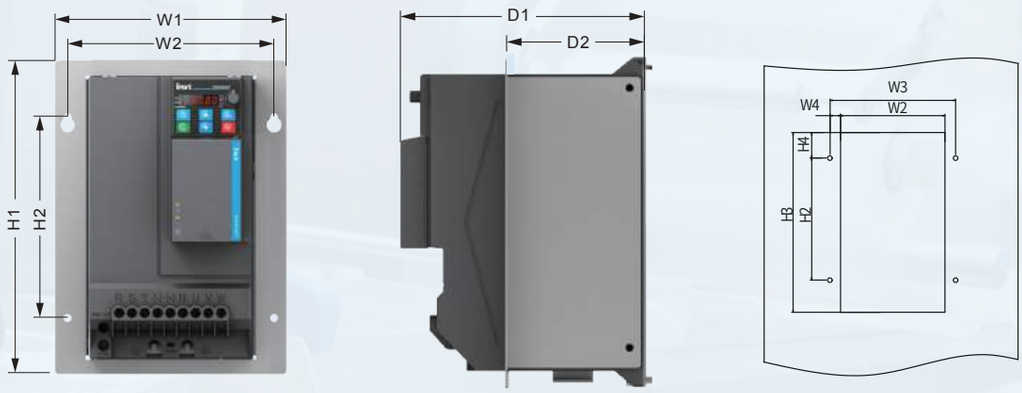
Cover-Removed Schematic Diagram

Unit：mm

VFD model	Outline dimensions（mm）			Mounting hole distance（mm）		Mounting hole diamter（mm）	Frame
	W1	H1	D1	W2	H2		
GD27-0R4G-S2-B-xx	60	190	155	36	180	Ø 5	A
GD27-0R7G-S2-B-xx	60	190	155	36	180	Ø 5	A
GD27-1R5G-S2-B-xx	70	190	155	36	180	Ø 5	B
GD27-2R2G-S2-B-xx	70	190	155	36	180	Ø 5	B
GD27-0R4G-2-B-EU	60	190	155	36	180	Ø 5	A
GD27-0R7G-2-B-EU	60	190	155	36	180	Ø 5	A
GD27-1R5G-2-B-EU	70	190	155	36	180	Ø 5	B
GD27-2R2G-2-B-EU	70	190	155	36	180	Ø 5	B
GD27-004G-2-B-EU	90	235	155	70	220	Ø 6	C
GD27-5R5G-2-B-EU	90	235	155	70	220	Ø 6	C
GD27-7R5G-2-B-EU	130	250	185	100	237	Ø 6	D
GD27-011G-2-B-EU	130	250	185	100	237	Ø 6	D
GD27-015G-2-B-EU	160	300	190	130	287	Ø 6	E
GD27-0R7G-4-B-xx	60	190	155	36	180	Ø 5	A
GD27-1R5G-4-B-xx	60	190	155	36	180	Ø 5	A
GD27-2R2G-4-B-xx	70	190	155	36	180	Ø 5	B
GD27-003G-4-B-xx	70	190	155	36	180	Ø 5	B
GD27-004G-4-B-xx	70	190	155	36	180	Ø 5	B
GD27-5R5G-4-B-xx	90	235	155	70	220	Ø 6	C
GD27-7R5G-4-B-xx	90	235	155	70	220	Ø 6	C
GD27-011G-4-B-xx	130	250	185	100	237	Ø 6	D
GD27-015G-4-B-xx	130	250	185	100	237	Ø 6	D
GD27-018G-4-B-xx	160	300	190	130	287	Ø 6	E
GD27-022G-4-B-xx	160	300	190	130	287	Ø 6	E

Note: -XX indicates empty or -EU. -EU indicates the STO and EMC filter have been embedded.

Flange mounting



Unit：mm

VFD model	Outline dimensions（mm）			Mounting hole distance（mm）							Mounting hole diamter（mm）
	W1	H1	D1	W2	W3	W4	H2	H3	H4	D2	
GD27-004G-2-B-EU	151	249	155	92	121	15	156	201	8	73	Ø6
GD27-5R5G-4-B-XX	151	249	155	92	121	15	156	201	8	73	Ø6
GD27-7R5G-4-B-XX	151	249	155	92	121	15	156	201	8	73	Ø6
GD27-7R5G-2-B-EU	185	250.5	185	132	165	16.5	160	226.5	33.5	103.9	Ø6
GD27-011G-2-B-EU	185	250.5	185	132	165	16.5	160	226.5	33.5	103.9	Ø6
GD27-011G-4-B-XX	185	250.5	185	132	165	16.5	160	226.5	33.5	103.9	Ø6
GD27-015G-4-B-XX	185	250.5	185	132	165	16.5	160	226.5	33.5	103.9	Ø6
GD27-015G-2-B-EU	221	301	190	162	191.5	14.75	200	277	38.1	103.9	Ø6
GD27-018G-4-B-XX	221	301	190	162	191.5	14.75	200	277	38.1	103.9	Ø6
GD27-022G-4-B-XX	221	301	190	162	191.5	14.75	200	277	38.1	103.9	Ø6

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GD170-PV Series

Solar Pump Controller

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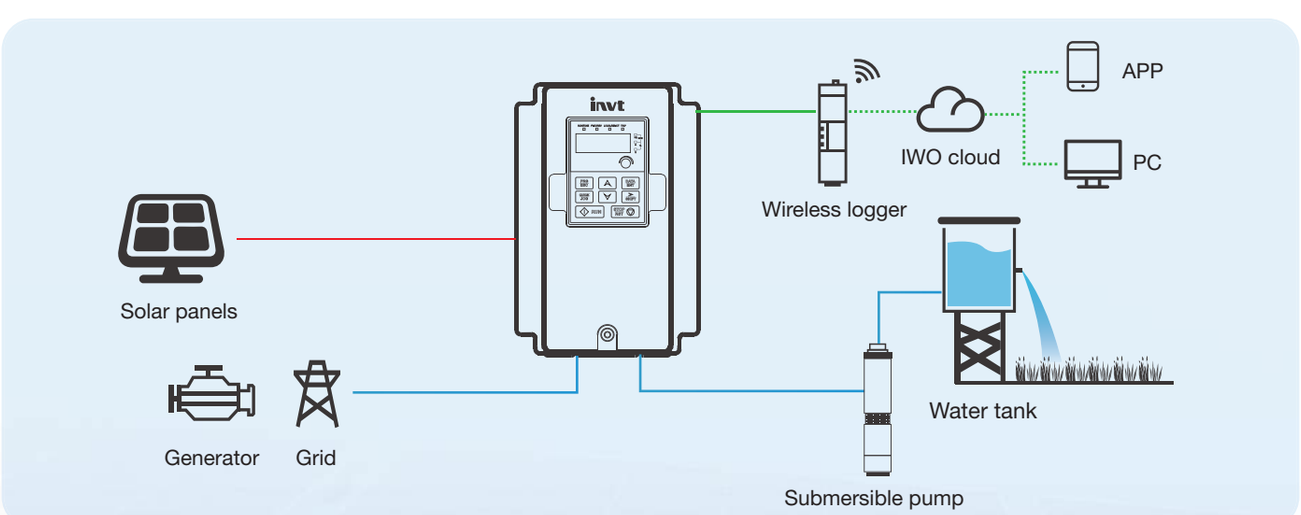
GD170-PV Series
Solar Pump Controller

- Hybrid operation（AC supply & PV supply）
- Advanced MPPT algorithms
- High efficiency and stability
- Effective protection function
- Intelligent IOT
- Drive multi types of pumps (PMSM, AM, Single phase motors,etc)



Application scenarios


Grassland animal husbandry


Desert management


Agricultural irrigation


Domestic water use

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Product Specification

DC input	
Max DC voltage(V)	800
Start voltage(V)	300
Min. work voltage(V)	250
Recommended MPPT voltage(V)	300~750
Recommended input work voltage(V)	550
AC input	
Input voltage(Vac)	3PH 380（-15%）~440（+10%）-4 3PH 220（-15%）~240（+10%）-2 1PH 220（-15%）~240（+10%）-S2 & -SS2
Input frequency(Hz)	47~63
AC output	
Output voltage(Vac)	0-input voltage
Output frequency(Hz)	0-400
Control performance	
Control method	V/F (SVPWM)
Pump type	Asynchronous，synchronous and single phase motor.
Overload capability	120% of rated current: 1 minute 150% of rated current: 10 seconds
Others	
Protective degree	IP20
Cooling method	Forced air cooling
Interface	LED keypad
Professional function	
Protection function	Low water level, overload, overcurrent, overvoltage, weak sunlight alarm, overheating, etc.
MPPT function	Automatic factory setting
Auto run/stop	Sleep when the light is weak, and wake up when the light is strong
Water level monitor	Sleep when the water is full, and wake up when the water level is low
Certification	
Certification standard	CE

Product Parameters

Voltage	Model	Rated output power (kW)	Max. DC input current (A)	Rated input current (A)	Rated output current (A)	Product dimension (mm)
1PH 220V Input/output	GD170-0R4-SS2-PV	0.4	9	6.5	4.2	80*160*123.5
	GD170-0R7-SS2-PV	0.75	9	9.3	7.2	80*185*140.5
	GD170-1R5-SS2-PV	1.5	12	15.7	10.2	
	GD170-2R2-SS2-PV	2.2	12	24	14	
1PH 220V	GD170-0R4-S2-PV	0.4	9	6.5	2.5	80*160*123.5
	GD170-0R7-S2-PV	0.75	9	9.3	4.2	
	GD170-1R5-S2-PV	1.5	12	15.7	7.5	80*185*140.5
	GD170-2R2-S2-PV	2.2	12	24	10	
3PH 220V	GD170-1R5-2-PV	1.5	12	7.7	7.5	146*256*167
	GD170-2R2-2-PV	2.2	12	11	10	
	GD170-004-2-PV	4.0	20	17	16	170*320*196.3
	GD170-5R5-2-PV	5.5	30	25	20	
	GD170-7R5-2-PV	7.5	40	33	30	

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Voltage	Model	Rated output power (kW)	Max. DC input current (A)	Rated input current (A)	Rated output current (A)	Product dimension (mm)
3PH 380V	GD170-0R7-4-PV	0.75	9	3.4	2.5	80*185*140.5
	GD170-1R5-4-PV	1.5	9	5	4.2	
	GD170-2R2-4-PV	2.2	12	5.8	5.5	
	GD170-004-4-PV	4.0	16.5	13.5	9.5	
	GD170-5R5-4-PV	5.5	23.9	19.5	14	146*256*167
	GD170-7R5-4-PV	7.5	30.6	25	18.5	
	GD170-011-4-PV	11	39.2	32	25	170*320*196.3
	GD170-015-4-PV	15	49	40	32	
	GD170-018-4-PV	18.5	50	47	38	
	GD170-022-4-PV	22	60	51	45	200*340.6*184.3
	GD170-030-4-PV	30	81	70	60	
	GD170-037-4-PV	37	90	80	75	250*400*202
	GD170-045-4-PV	45	130	98	92	
	GD170-055-4-PV	55	150	128	115	282*560*238
	GD170-075-4-PV	75	200	139	150	
	GD170-090-4-PV	90	250	168	180	338*554*326
	GD170-110-4-PV	110	300	201	215	
	GD170-132-4-PV	132	360	265	260	500*870*360
	GD170-160-4-PV	160	430	310	305	
	GD170-185-4-PV	185	500	345	340	500*870*358
	GD170-200-4-PV	200	550	385	380	
	GD170-220-4-PV	220	480	430	425	750*1410*380
	GD170-250-4-PV	250	525	485	480	

Note: Power range up to 500kW

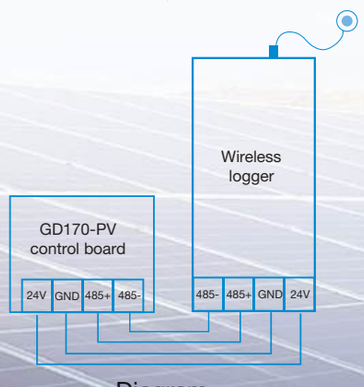
Online Platform

INVT solar water pump remote monitoring platform. Option 4G & WIFI data logger.


4G standard version


WiFi version

Remote upgrade | After-sales management | Fault per-alarm | Remote monitoring | Historic data query | Data analysis statistics



Diagram


APP


PC client

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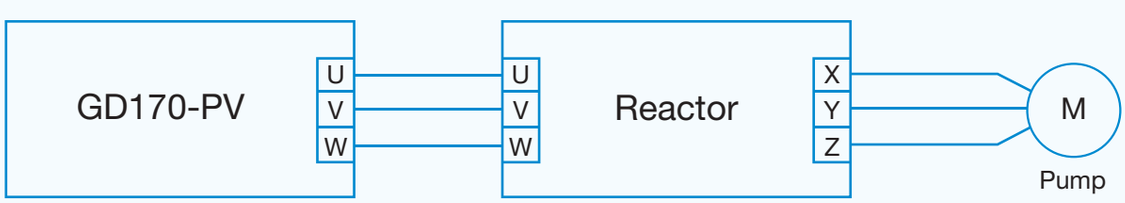
Reactor

When the distance between the contorller and motor is longer than 50m, we suggest adding an output reactor.

Model	Output reactor	Dimension (mm)
GD170-1R5-2-PV	OCL2-004-4	110*84*130
GD170-2R2-2-PV	OCL2-004-4	110*84*130
GD170-004-2-PV	OCL2-5R5-4	155*76*140
GD170-5R5-2-PV	OCL2-7R5-4	155*76*165
GD170-7R5-2-PV	OCL2-015-4	155*135*130
GD170-0R7-4-PV	OCL2-1R5-4	110*84*130
GD170-1R5-4-PV	OCL2-1R5-4	110*84*130
GD170-2R2-4-PV	OCL2-2R2-4	110*84*130
GD170-004-4-PV	OCL2-004-4	110*84*130
GD170-5R5-4-PV	OCL2-5R5-4	155*76*140
GD170-7R5-4-PV	OCL2-7R5-4	155*76*165
GD170-011-4-PV	OCL2-011-4	155*135*130
GD170-015-4-PV	OCL2-015-4	155*135*130
GD170-018-4-PV	OCL2-018-4	155*135*130
GD170-022-4-PV	OCL2-022-4	195*130*165
GD170-030-4-PV	OCL2-037-4	195*130*165
GD170-037-4-PV	OCL2-037-4	195*130*165
GD170-045-4-PV	OCL2-045-4	195*135*165
GD170-055-4-PV	OCL2-055-4	250*170*230
GD170-075-4-PV	OCL2-075-4	250*175*230
GD170-090-4-PV	OCL2-110-4	250*175*230
GD170-110-4-PV	OCL2-110-4	250*175*230
GD170-132-4-PV	OCL2-160-4	290*190*250
GD170-160-4-PV	OCL2-200-4	290*190*250
GD170-185-4-PV	OCL2-200-4	290*190*250
GD170-200-4-PV	OCL2-200-4	290*190*250
GD170-220-4-PV	OCL2-280-4	320*212*320
GD170-250-4-PV	OCL2-280-4	320*212*320
GD170-280-4-PV	OCL2-350-4	320*240*340
GD170-315-4-PV	OCL2-350-4	320*240*340
GD170-355-4-PV	OCL2-400-4	320*240*320
GD170-400-4-PV	OCL2-400-4	320*240*320
GD170-450-4-PV	OCL2-500-4	385*250*395
GD170-500-4-PV	OCL2-500-4	385*250*395



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FAMCO
هایپرصنعت

Goodrive200A Series

General Purpose Vector Control Drive



invt

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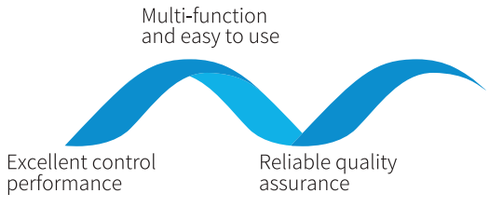
Product Family

Product Advantage



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Goodrive200A Series Vector General
General Purpose Vector Drive

Product Introduction

GD200A series high performance general vector VFD, positioned as a new generation general purpose VFD; products using DSP control system and vector V/F control technology, with excellent motor drive performance and various protecting functions, widely used in air compressor, plastic machine, petroleum industry, coal industry, HVAC applications, fan pump and other standard transmission load.

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High Performance

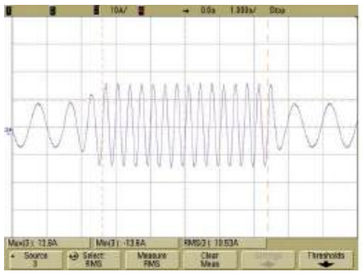
More Accurate Motor Auto-tuning

Accurate rotating and static motor auto-tuning
Convenient debugging and easy operation

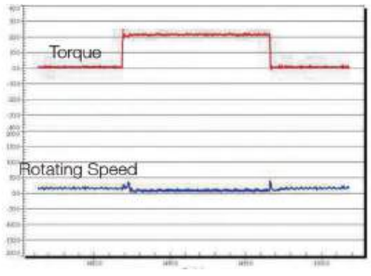
Rotating auto-tuning	Static auto-tuning
Need to separate the load Applied to the situation need high control accuracy	Needn't to separate the load Applied to the situation when the load is difficult to separate

Advanced open loop vector control

The current, torque and rotating speed waveforms when sudden loading or unloading in asynchronous motor open loop vector control mode with 0.5Hz running frequency and full load.



Current



Torque & Rotating speed

Perfect voltage and current control, reducing the fault protection times

OC fault Adjust the output frequency to avoid overcurrent of the VFD during acceleration

OV fault Adjust the output frequency to avoid overvoltage of the DC bus during deceleration

Multiple braking modes and instant stopping

Dynamic braking

- Configure braking units and resistors
- Available on the situation of big inertia load and frequent braking
- Big braking torque and quick braking

DC braking

- No need to configure braking units and resistors
- Available on the situation when start the running motor after braking and the situation when keep the moment output after braking to zero speed
- Not available on the situation of big inertia load or instant stopping braking in high speed running

Flux braking

- No need to configure braking units and resistors
- Available on the instant stopping situation with big inertia load and no frequent braking
- Not available on the situation of big inertia load and frequent and braking(the energy consumed on the stator and its cooling is better than DC braking)

Short circuit braking

- No need to configure braking units and resistors, capable of braking quickly
- Applicable to the motors at quick start and stop or restart after braking
- Not applicable to big inertia load and frequent braking

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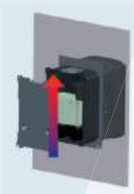
Multi-Function with Simple Operation

Separate Air-duct

The separate air duct prevents the contaminants into the electronic parts/components and greatly improves the protective effect of the VFD, as well as its reliability and service life, to adapt various complicated site environments. It can also facilitate the heat-releasing in control cabinets and the heat-releasing design of the customer.



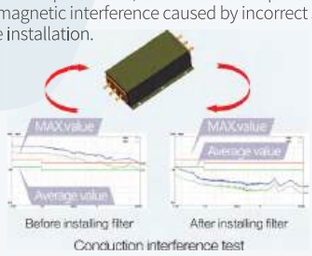
Multiple installation modes

3PH 380V 0.75~200kW or 3PH 220V 0.75~110kW:Wall mounting and flange mounting
3PH 380V 220~315kW or 3PH 220V 132~160kW:Wall mounting and floor mounting
3PH 380V 355~500kW or 3PH 220V 185~250kW:Floor mounting

Remark: above power ratings are subject to G type machine.

Standard built-in C3 input filters, optional external C2 filters

C3 input filter is embedded in the factory to meet different application requirements,save installation space and avoid electromagnetic interference caused by incorrect selection and site installation.



Remarks:
C2 filter:EMC performance of the VFD achieves the limited usage requirement in civil environment.
C3 filter:EMC performance of the VFD achieves the limited usage requirement in industrial environment.

Book structure

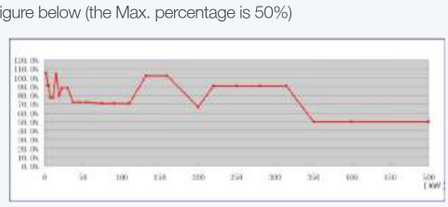
Parallel installation
Smaller installation space with less cost and beautiful appearance.

The rivet design ensures reliable integration connection

Greener Proper grounding
Stronger corrosion-resistance Excellent EMC performance

Smaller Size

Due to the thermal simulation and advanced modularized design, the size of our product is reduced greatly. The width ratio between Goodrive200A and CHF100A is shown in the figure below (the Max. percentage is 50%)



GD200A series

Membrane keypad design (which can be connected to external keypads) is available for VFDs (≤3PH 380V 15kW or 3PH 220V 7.5kW); swappable keypadsare standard for VFDs (≥3PH 380V 18.5kW or 3PH 220V 11kW)

Abundant terminals

Terminals	Quantity	Features
Digital input	8 channels	1KHz NPN and PNP
High speed Pulse input	1 channel	50KHz NPN and PNP
Analog input	2 channels	0~10V,0~20mA, -10V~+10V
Digital output	1 channel	Max. output frequentcy:1KHz
High speed Pulse output	1 channel	Max. output frequency:50KHz
Analog output	2 channels	0~10V,0~20mA
Relay output	2 channels	3A/250VAC, 1A/30VDC, NO+NC

High Performance Keypad

External LED keypads are standard for VFDs (≥3PH 380V 18.5kW or 3PH 220V 11kW to support parameters upload and download, the maximum external length is 200m and the keypads have digital potentiometers; external keypads are optional for VFDs (≤3PH 380V 15kW or 3PH 220V 7.5kW).

External keypad

LCD keypad

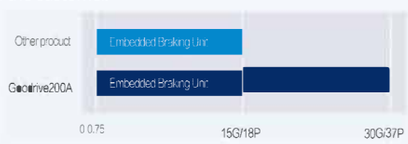
The optional external LCD keypad supports parameters loading and unloading with English.

Available on DC power supply

Reduce the occupied space and decrease the costsign of the customer.

Embedded braking units of 3PH 380V 0.75~30kW or 3PH 220V 0.75~15kW VFDs

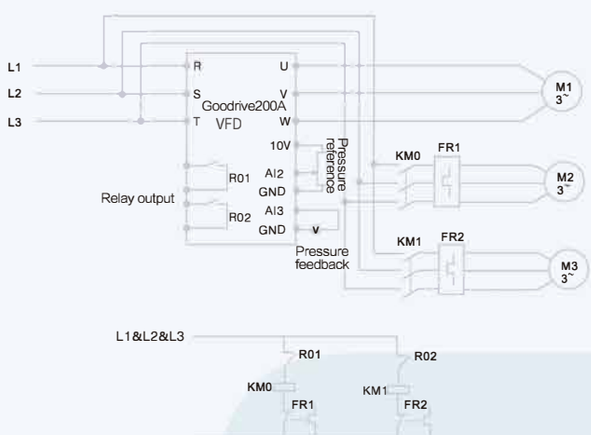
Reduce the occupied space and decrease the costsign of the customer.



Supporting common DC bus

Reduce the power lost on DBR
Note the impact current and the capacity of the input AC system

Function of water supply



In the diagram above, M2 and M3 are auxiliary motors which are controlled by RO1 and RO2. PID constant-pressure automatic control system is formed by the VFD through pressure feedback. The pressure reference can apply analog or keypad input. Modbus RS-485 communication is also supported.

The product design follows IEC national standards and passes the CE test certification.

CE

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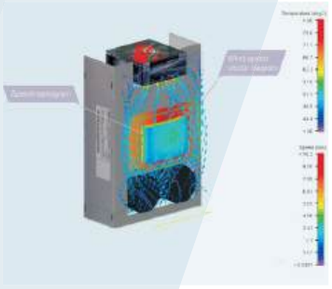
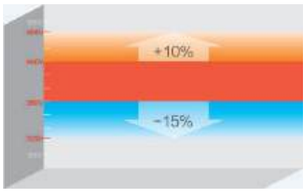
- Advanced thermal technology makes exact thermal design



- Wide voltage range meets the requirement of grid environment



AC 3PH:380V(-15%)-440V(+10%) Wide voltage range

- Perfect and reliable test system ensure products adapt complicated site environments

Experiment type	Experiment name	Classification
Mechanical reliability experiments	Package experiments	Package compression experiments
		Package resonance imaging and storage test
		Package random vibration test
		Package dropping test
		Package rolling test
		Package dumping test
		Package inclined impact test
	Impact test	Half-sine wave impulse test(non-working state)
		Trapezoidal wave impulse test (non-working state)
	Vibration test	Sinusoidal vibration test (working state)
		Random vibration test (working and non-working state)
Climatic environmental reliability test	Temperature experiment	Low temperature storage test
		High temperature storage test
		Low temperature experiments
		High temperature experiments
		Temperature gradient experiments
		Temperature impact test
	Thermal test	Constant thermal test
		Alternation thermal test
	Salt spray test	Constant salt spray test
		Alternation salt spray test
	Low air pressure test	Low Air Pressure Test
		Low temperature and low pressure test
		High temperature and low pressure test

Remarks:
INVT is the manufacturer achieved ACT certificate of TÜV SÜD .The full name of ACT is Acceptance of Client's Testing, which means the German TÜV SÜD admit the technology level of the lab and accept their separate testing data and test reports officially.

Electric Vibration System

Low Pressure Test Chamber (L)
Constant Temperature and Humidity Test Chamber (R)

Natural Convection Test Chamber (L)
Thermal Shock Test Chamber (R)

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Applications

Air compressor

Oil industry

Warming and water supply

Plastic machine

Mining

Fan and water pump

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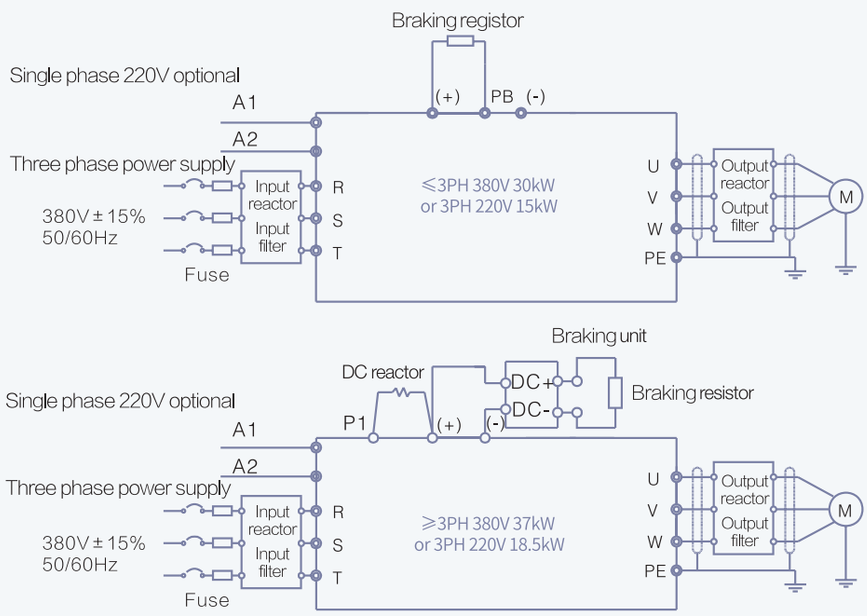
Technical Specifications

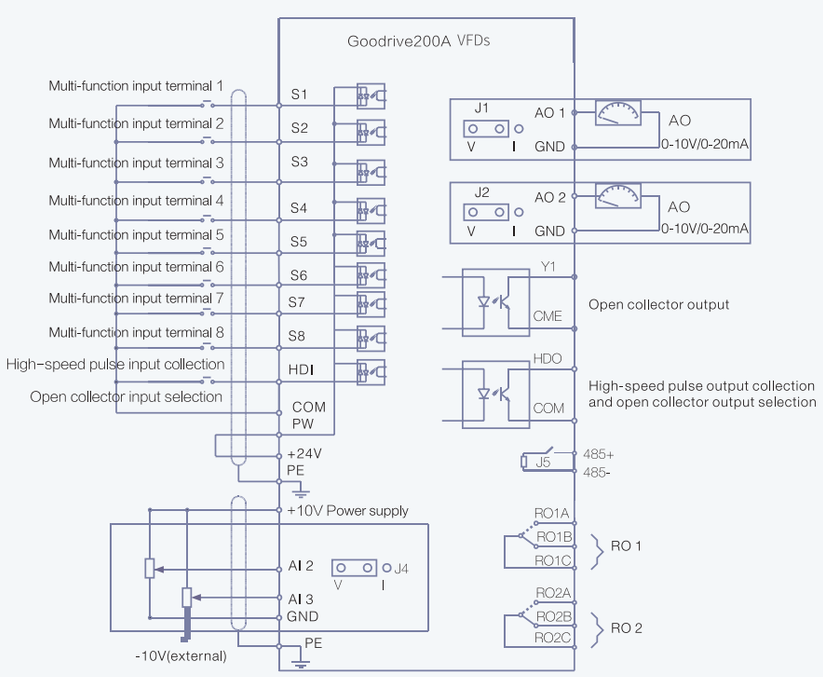
Function		Specification
Input	Input voltage (V)	AC 3PH 220V(-15%)~240V(+10%) AC 3PH 380V(-15%)~440V(+10%)
	Input frequency (Hz)	50Hz or 60Hz Allowed range: 47~63Hz
Output	Output frequency (Hz)	0~400Hz
Technical control feature	Control mode	V/F SVC
	Motor type	Asynchronous motor
	Speed ratio	Asynchronous motor 1:100
	Overload capability	G type: 150% of rated current: 1 minute 180% of rated current: 10 seconds 200% of rated current: 1 second P type: 120% of rated current: 60 second
Running control feature	Frequency setting	Digital setting, analog setting, pulse frequency setting, multi-step speed running setting, simple PLC setting, PID setting, MODBUS communication setting, PROFIBUS communication setting. Realize the shifting between the set combination and set channel.
	Auto voltage adjustment	Keep a stable voltage automatically when the grid voltage transients
	Fault protection	Provide over 30 fault protection functions: overcurrent, overvoltage, undervoltage, overheating, phase loss and overload, etc.
	Speed tracking	Restart the rotating motor smoothly
Peripheral interface	Terminal analog input resolution	≤10mV
	Terminal switch input resolution	≤ 2ms
	Analog input	2 channels (AI1, AI2) 0~10V/0~20mA and 1 channel (AI3) -10~10V
	Analog output	2 channels (AO1, AO2) 0~10V /0~20mA
	Digital input	8 channels common input, the Max. frequency: 1kHz 1 channel high speed input, the Max. frequency: 50kHz
	Digital output	1 channel high speed pulse output, the Max. frequency: 50kHz; 1 channel Y terminal open collector pole output
	Relay output	2 channels programmable relay output RO1A NO, RO1B NC, RO1C common terminal RO2A NO, RO2B NC, RO2C common terminal Contactor capacity: 3A/250VAC,1A/30VDC
Others	Mountable method	Wall, flange and floor mountable
	Temperature of the running environment	-10~50°C, derate above 40°C
	Ingress protection	IP20
	Cooling	Air-cooling
	Braking unit	Built-in braking unit for below 30G/37P (including 30G/37P) Optional External braking unit for others
	Braking resister	External braking
	EMC filter	Built-in C3 filter: meet the degree requirement of IEC61800-3 C3 Optional external filter, meet the degree requirement of IEC61800-3 C2

Standard Wiring

Wiring diagram of the main circuit



Wiring diagram of the control board



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Type Selection

Power ratings and dimension

VFD model	Rated output power (kW)	Input current (A)	Rated output current (A)	Gross weight (kg)	Packaging dimension (mm)
3-phase 220VAC±15%					
GD200A-0R7G-2	0.75	5.8	5	2.4	265x195x245
GD200A-1R5G/2R2P-2	1.5/2.2	13.5/19.5	9.5/14	3.6	340x225x255
GD200A-2R2G/004P-2	2.2/4.0	19.5/25	14/18.5	3.8	
GD200A-004G/5R5P-2	4/5.5	25/32	18.5/25	6.1	445x295x325
GD200A-5R5G/7R5P-2	5.5/7.5	32/40	25/32	7	
GD200A-7R5G/011P-2	7.5/11	40/47	32/38	6.8	
GD200A-011G/015P-2	11/15	56/70	45/60	13	550x375x375
GD200A-015G/018P-2	15/18.5	70/80	60/75	13.2	
GD200A-018G/022P-2	18.5/22	80/94	75/92	26.4	680X400X460
GD200A-022G/030P-2	22/30	94/128	92/115	28	
GD200A-030G/037P-2	30/37	128/160	115/150	30	
GD200A-037G/045P-2	37/45	160/190	150/180	56.3	762x447x579
GD200A-045G/055P-2	45/55	190/225	180/215	56.3	
GD200A-055G/075P-2	55/75	225/265	215/260	56.3	
GD200A-075G/090P-2	75/90	265/310	260/305	99.0	970x630x565
GD200A-090G/110P-2	90/110	345/385	340/380	99.0	
GD200A-110G/132P-2	110/132	385/430	380/425	99.0	
GD200A-132G/160P-2	132/160	485/545	480/530	144.0	1085x827x595
GD200A-160G/185P-2	160/185	545/610	530/600	144.0	
GD200A-185G/200P-2	185/200	625/715	650/720	394.0	1850x840x820
GD200A-200G-2	200	715	720	395.0	
GD200A-220G-2	220	840	820	395.0	
GD200A-250G-2	250	890	860	395.0	
3-phase 380VAC±15%					
GD200A-0R7G-4	0.75	3.4	2.5	2.4	265x195x245
GD200A-1R5G-4	1.5/2.2	5	3.7	2.4	
GD200A-2R2G-4	2.2/4.0	5.8	5	2.4	
GD200A-004G/5R5P-4	4/5.5	13.5/19.5	9.5/14	3.6	340x225x255
GD200A-5R5G/7R5P-4	5.5/7.5	19.5/25	14/18.5	3.8	
GD200A-7R5G/011P-4	7.5/11	25/32	18.5/25	6.1	445x295x325
GD200A-011G/015P-4	11/15	32/40	25/32	7	
GD200A-015G/018P-4	15/18.5	40/47	32/38	6.8	
GD200A-018G/022P-4	18.5/22	47/56	38/45	8.8	460x340x330
GD200A-022G/030P-4	22/30	56/70	45/60	13	550x375x375
GD200A-030G/037P-4	30/37	70/80	60/75	13.2	
GD200A-037G/045P-4	37/45	80/94	75/92	26.4	680X400X460
GD200A-045G/055P-4	45/55	94/128	92/115	28	
GD200A-055G/075P-4	55/75	128/160	115/150	30	
GD200A-075G/090P-4	75/90	160/190	150/180	56.3	762x447x579
GD200A-090G/110P-4	90/110	190/225	180/215	56.3	
GD200A-110G/132P-4	110/132	225/265	215/260	56.3	
GD200A-132G/160P-4	132/160	265/310	260/305	99.0	970x630x565
GD200A-160G/185P-4	160/185	310/345	305/340	99.0	
GD200A-185G/200P-4	185/200	345/385	340/380	99.0	
GD200A-200G/220P-4	200/220	385/430	380/425	99.0	
GD200A-220G/250P-4	220/250	430/485	425/480	144.0	1085x827x595
GD200A-250G/280P-4	250/280	485/545	480/530	144.0	
GD200A-280G/315P-4	280/315	545/610	530/600	144.0	
GD200A-315G/355P-4	315/355	610/625	600/650	145.0	
GD200A-355G/400P-4	355/400	625/715	650/720	394.0	1850x840x820
GD200A-400G-4	400	715	720	395.0	
GD200A-450G-4	450	840	820	395.0	
GD200A-500G-4	500	890	860	395.0	

Remarks:
(1)The input current of the VFD 0.75G-315G/350P is tested when the input voltage is 380V and there is no DC reactor and output/input reactor.
(2)The current of the VFD 350G/400P-500G is tested when the input voltage is 380V and there is input reactor.
(3)Rated output current is defined when the rated output voltage is 380V.

Installation Dimensions

Wall mounting

(unit: mm)

Model		W1	W2	H1	H2	D1	Installation holes
3-phase 220VAC series	0.75kW	126	115	186	175	155	5
	1.5kW-2.2kW	146	131	256	243.5	171	6
	4kW-7.5kW	170	151	320	301	199.6	6
	11kW-15kW	255	237	407	384	245.6	7
	18.5kW-30kW	270	130	557	540	332.6	7
	37kW-55kW	325	200	682	661	373.6	9.5
	75kW-110kW	500	180	872	850	368.4	11
	132kW-160kW	680	230	960	926	387.9	13
3-phase 380VAC series	0.75kW~2.2kW	126	115	186	175	155	5
	4kW~5.5kW	146	131	256	243.5	171	6
	7.5kW~15kW	170	151	320	301	199.6	6
	18.5kW	230	210	342	311	219.4	6
	22kW~30kW	255	237	407	384	245.6	7
	37kW~55kW	270	130	557	540	332.6	7
	75kW~110kW	325	200	682	661	373.6	9.5
	132kW~200kW	500	180	872	850	368.4	11
	220kW~315kW	680	230	960	926	387.9	13

Flange mounting

(unit: mm)

Model		W1	W2	W3	W4	H1	H2	H3	H4	D1	D2	Installation holes
3-phase 220VAC series	0.75kW	150.2	115	130	7.5	234	220	190	13.5	155	65.5	5
	1.5kW-2.2kW	170.2	131	150	9.5	292	276	260	6	171	84.5	6
	4kW-7.5kW	191.2	151	174	11.5	370	351	324	12	199.6	113	6
	11kW-15kW	275	237	259	11	445	426	404	10	245.6	119	7
	18.5kW-30kW	270	130	261	65.5	557	540	516	17.5	332.6	167	7
	37kW-55kW	325	200	317	58.5	682	661	626	23.5	373.6	182	9.5
	75kW-110kW	500	180	480	60	872	850	796	37	368.4	178.5	11
3-phase 380VAC series	0.75kW~2.2kW	150.2	115	130	7.5	234	220	190	13.5	155	65.5	5
	4kW~5.5kW	170.2	131	150	9.5	292	276	260	6	171	84.5	6
	7.5kW~15kW	191.2	151	174	11.5	370	351	324	12	199.6	113	6
	18.5kW	250	210	234	12	375	356	334	10	219.4	108	6
	22kW~30kW	275	237	259	11	445	426	404	10	245.6	119	7
	37kW~55kW	270	130	261	65.5	557	540	516	17.5	332.6	167	7
	75kW~110kW	325	200	317	58.5	682	661	626	23.5	373.6	182	9.5
	132kW~200kW	500	180	480	60	872	850	796	37	368.4	178.5	11

Floor mounting

(unit: mm)

Model		W1	W2	W3	W4	H1	H2	D1	D2	Installation holes
3-phase 220VAC series	132-160kW	750	230	714	680	1410	1390	387.9	150	13/12
	185kW-250kW	620	230	573	/	1700	1678	568.4	240	22/12
3-phase 380VAC series	220kW~315W	750	230	714	680	1410	1390	387.9	150	13/12
	355kW~500kW	620	230	573	/	1700	1678	568.4	240	22/12

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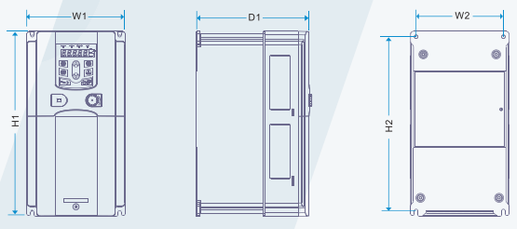
روبروی پالایشگاه نفت پارس، پلاک ۱۲

Installation Diagram

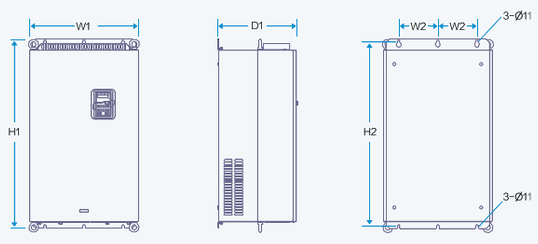
- 3-phase 220VAC series Wall Mounting for 0.75-160kW VFDs

  3-phase 380VAC series Wall Mounting for 0.75-315kW VFDs



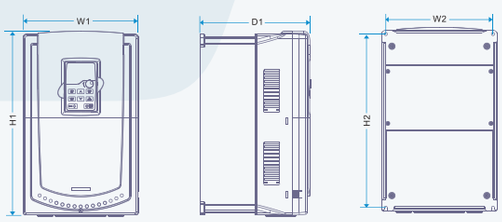
3-phase 220VAC series 0.75-7.5kW Wall mounting Installation diagram

3-phase 380VAC series 0.75-15kW Wall mounting Installation diagram



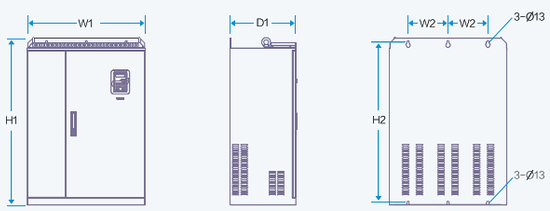
3-phase 220VAC series 75-110kW Wall mounting Installation diagram

3-phase 380VAC series 132-200kW Wall mounting Installation diagram



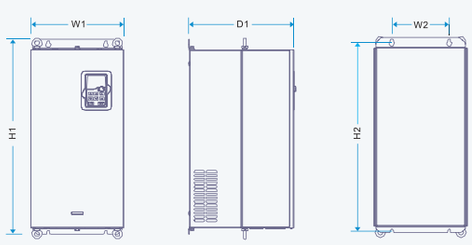
3-phase 220VAC series 11-15kW Wall mounting Installation diagram

3-phase 380VAC series 18.5-30kW Wall mounting Installation diagram



3-phase 220VAC series 132-160kW Wall mounting Installation diagram

3-phase 380VAC series 220-315kW Wall mounting Installation diagram



3-phase 220VAC series 18.5-55kW Wall mountingInstallation diagram

3-phase 380VAC series 37-110kW Wall mountingInstallation diagram

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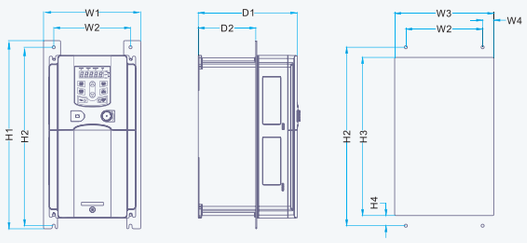
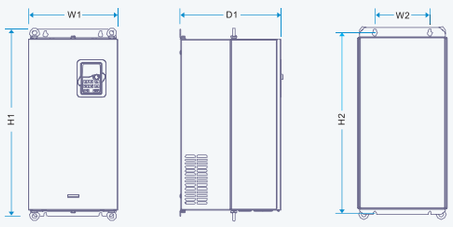
invt

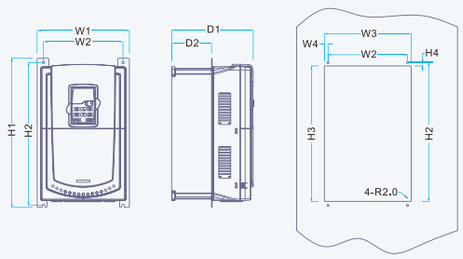
3-phase 220VAC series Flange Mounting for 0.75-110kW VFDs
3-phase 380VAC series Flange Mounting for 0.75-200kW VFDs



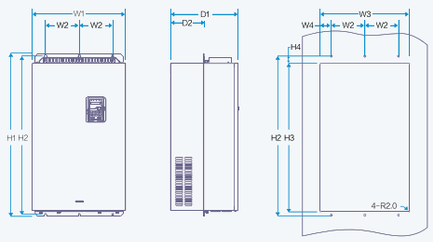
3-phase 220VAC series 0.75-7.5kW Flange mounting Installation diagram
3-phase 380VAC series 0.75-15kW Flange mounting Installation diagram



3-phase 220VAC series 18.5-55kW Flange mounting Installation diagram
3-phase 380VAC series 37-110kW Flange mounting Installation diagram

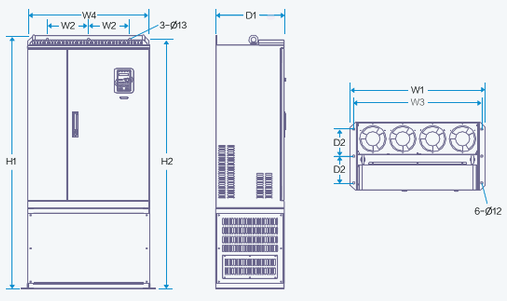


3-phase 220VAC series 11-15kW Flange mounting Installation diagram
3-phase 380VAC series 18.5-30kW Flange mounting Installation diagram

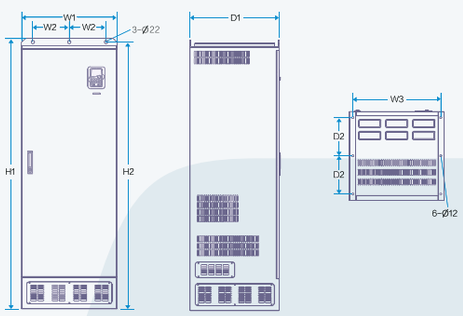


3-phase 220VAC series 75-110kW Flange mounting Installation diagram
3-phase 380VAC series 132-200kW Flange mounting Installation diagram

3-phase 220VAC series Floor Mounting for 132-250kW VFDs
3-phase 380VAC series Floor Mounting for 220-500kW VFDs

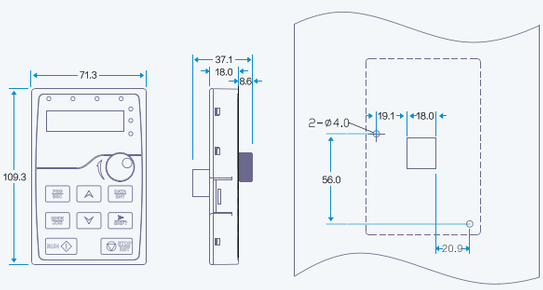


3-phase 220VAC series 132-160kW Floor mounting Installation diagram
3-phase 380VAC series 220-315kW Floor mounting Installation diagram



3-phase 220VAC series 185-250kW Floor mounting Installation diagram
3-phase 380VAC series 355-500kW Floor mounting Installation diagram

Dimensions for Keypad



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Optional Parts

Flange mounting panel

Needed for 3-phase 380V series 0.75-30kW VFDS or
3-phase 220V series 0.75-15kW VFDS
Not needed for 3-phase 380V series 37kW-200kW VFDS or
3-phase 220V series 18.5-110kW VFDS

Installation base

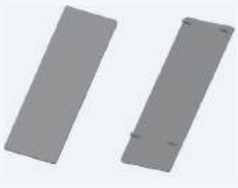
Only optional in 3-phase 380V series 220-315kW VFDS or
3-phase 220V series 132-160kW VFDS.Its
bases can be built in an input AC (or DC) reactor or an
output AC reactor

Installation bracket for the keypad

Installation bracket or M3 screw can be used in the
installation of external keypad.

Heat-releasing hole

VFD needs to derate when selecting a cover consult
with the INVT technicians for the detailed information.



LCD keypad

10 rows of high definition displaying
Compatible with the LED keypad

AC single-phase 220V input auxiliary power supply

For more convenient debugging

Filters

VFD model		Input filter	Output filter
GD200A 3-phase 380VAC Series	G:0.75—2.2kW	FLT-P04006L-B	FLT-L04006L-B
	G:4—5.5kW P:5.5—7.5kW	FLT-P04016L-B	FLT-L04016L-B
	G:7.5—11kW P:11—15kW	FLT-P04032L-B	FLT-L04032L-B
	G:15—18.5kW P:18.5—22kW	FLT-P04045L-B	FLT-L04045L-B
	G:22—30kW P:30—37kW	FLT-P04065L-B	FLT-L04065L-B
	G:37—45kW P:45—55kW	FLT-P04100L-B	FLT-L04100L-B
	G:55—75kW P:75—90kW	FLT-P04150L-B	FLT-L04150L-B
	G:90kW P:110kW	FLT-P04200L-B	FLT-L04200L-B
	G:110—132kW P:132—160kW	FLT-P04250L-B	FLT-L04250L-B
	G:160—200kW P:185—220kW	FLT-P04400L-B	FLT-L04400L-B
	G:220—280kW P:250—315kW	FLT-P04600L-B	FLT-L04600L-B
	G:315—400kW P:355-400kW	FLT-P04800L-B	FLT-L04800L-B
	G:450——500kW	FLT-P041000L-B	FLT-L041000L-B

Remarks: IEC61800-3 C2 degree requirement can be achieved by using the external filters.
For the selection of filters for the three-phase 220V VFDs, please consult the technical support team at INVT.

Reactor

The VFDs of 37G/45P and above can be connected with external DC reactor. The reactor can improve the power factor and avoid damage to the recitifier bridge caused by overcurrent and damage to the rectifier circuit by harmonic

VFD model	Input reactor		DC reactor	Output reactor	
	G-type	P-type		G-type	P-type
GD200A-0R7G-4	GDL-ACL0005-4CU	/	/	GDL-OCL0005-4CU	/
GD200A-1R5G-4	GDL-ACL0005-4CU	/	/	GDL-OCL0005-4CU	/
GD200A-2R2G-4	GDL-ACL0006-4CU	/	/	GDL-OCL0006-4CU	/
GD200A-004G/5R5P-4	GDL-ACL0014-4CU	GDL-ACL0020-4CU	/	GDL-OCL0010-4CU	GDL-OCL0014-4CU
GD200A-5R5G/7R5P-4	GDL-ACL0020-4CU	GDL-ACL0025-4CU	/	GDL-OCL0014-4CU	GDL-OCL0020-4CU
GD200A-7R5G/011P-4	GDL-ACL0025-4CU	GDL-ACL0035-4AL	/	GDL-OCL0020-4CU	GDL-OCL0025-4CU
GD200A-011G/015P-4	GDL-ACL0035-4AL	GDL-ACL0040-4AL	/	GDL-OCL0025-4CU	GDL-OCL0035-4AL
GD200A-015G/018P-4	GDL-ACL0040-4AL	GDL-ACL0051-4AL	/	GDL-OCL0035-4AL	GDL-OCL0040-4AL
GD200A-018G/022P-4	GDL-ACL0051-4AL	GDL-ACL0051-4AL	/	GDL-OCL0040-4AL	GDL-OCL0050-4AL
GD200A-022G/030P-4	GDL-ACL0051-4AL	GDL-ACL0070-4AL	/	GDL-OCL0050-4AL	DL-OCL0060-4AL
GD200A-030G/037P-4	GDL-ACL0070-4AL	GDL-ACL0090-4AL	/	GDL-OCL0060-4AL	GDL-OCL0075-4AL
GD200A-037G/045P-4	GDL-ACL0090-4AL	GDL-ACL0110-4AL	GDL-DCL0100-4AL	GDL-OCL0075-4AL	GDL-OCL0092-4AL
GD200A-045G/055P-4	GDL-ACL0110-4AL	GDL-ACL0150-4AL	GDL-DCL0125-4AL	GDL-OCL0092-4AL	GDL-OCL0115-4AL
GD200A-055G/075P-4	GDL-ACL0150-4AL	GDL-ACL0150-4AL	GDL-DCL0160-4AL	DL-OCL0115-4AL	GDL-OCL0150-4AL
GD200A-075G/090P-4	GDL-ACL0150-4AL	GDL-ACL0220-4AL	GDL-DCL0210-4AL	GDL-OCL0150-4AL	GDL-OCL0220-4AL
GD200A-090G/110P-4	GDL-ACL0220-4AL	GDL-ACL0220-4AL	GDL-DCL0210-4AL	GDL-OCL0220-4AL	GDL-OCL0220-4AL
GD200A-110G/132P-4	GDL-ACL0220-4AL	GDL-ACL0265-4AL	GDL-DCL0255-4AL	GDL-OCL0220-4AL	GDL-OCL0265-4AL
GD200A-132G/160P-4	GDL-ACL0265-4AL	GDL-ACL0330-4AL	GDL-DCL0300-4AL	GDL-OCL0265-4AL	GDL-OCL0330-4AL
GD200A-160G/185P-4	GDL-ACL0330-4AL	GDL-ACL0390-4AL	GDL-DCL0365-4AL	GDL-OCL0330-4AL	GDL-OCL0400-4AL
GD200A-185G/200P-4	GDL-ACL0390-4AL	GDL-ACL0390-4AL	GDL-DCL0455-4AL	GDL-OCL0400-4AL	GDL-OCL0400-4AL
GD200A-200G/220P-4	GDL-ACL0390-4AL	GDL-ACL0450-4AL	GDL-DCL0455-4AL	GDL-OCL0400-4AL	GDL-OCL0450-4AL
GD200A-220G/250P-4	GDL-ACL0450-4AL	GDL-ACL0500-4AL	GDL-DCL0505-4AL	GDL-OCL0450-4AL	GDL-OCL0500-4AL
GD200A-250G/280P-4	GDL-ACL0500-4AL	GDL-ACL0500-4AL	GDL-DCL0550-4AL	GDL-OCL0500-4AL	GDL-OCL0560-4AL
GD200A-280G/315P-4	GDL-ACL0500-4AL	GDL-ACL0580-4AL	GDL-DCL0675-4AL	GDL-OCL0560-4AL	GDL-OCL0660-4AL
GD200A-315G/355P-4	GDL-ACL0580-4AL	GDL-ACL0660-4AL	GDL-DCL0675-4AL	GDL-OCL0660-4AL	GDL-OCL0660-4AL
GD200A-355G/400P-4	Standard	Standard	GDL-DCL0810-4AL	GDL-OCL0660-4AL	GDL-OCL0720-4AL
GD200A-400G-4	Standard	/	GDL-DCL0810-4AL	GDL-OCL0720-4AL	/
GD200A-450G-4	Standard	/	GDL-DCL1000-4AL	GDL-OCL0820-4AL	/
GD200A-500G-4	Standard	/	GDL-DCL1000-4AL	GDL-OCL1000-4AL	/

Note: For the selection of reactors for the three-phase 220V VFDs, please consult the technical support team at INVT.

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Braking system

The 380V VFDs ≤30G/37P and 220V VFDs ≤15G are build-in braking unit for standard, the others are external braking unit for optional, please choosing the resistor and power of braking resistor for site situation(require of braking torque and amount). Braking resistor can increase braking torque of VFD , In the table it designs the resistor power according to 100% braking torque,10% braking count, 50% braking count, 80% braking count; and customers can choose braking system according to specific process and work condition.

VFD model	Braking unit model	100% braking torque fit braking resisters (Ω)	Power of braking resister(kW) (10% braking count)	Power of braking resister(kW) (50% braking count)	Power of braking resister(kW) (80% braking count)	Allowing minimum braking resister(Ω)
GD200A-0R7G-4	Built-in braking unit	653	0.1	0.6	0.9	240
GD200A-1R5G-4		326	0.23	1.1	1.8	170
GD200A-2R2G-4		222	0.33	1.7	2.6	130
GD200A-004G/5R5P-4		122	0.6	3	4.8	80
GD200A-5R5G/7R5P-4		89	0.75	4.1	6.6	60
GD200A-7R5G/011P-4		65	1.1	5.6	9	47
GD200A-011G/015P-4		44	1.7	8.3	13.2	31
GD200A-015G/018P-4		32	2	11	18	23
GD200A-018G/022P-4		27	3	14	22	19
GD200A-022G/030P-4		22	3	17	26	17
GD200A-030G/037P-4		16	5	23	36	17
GD200A-037G/045P-4	DBU100H-060-4	13	6	28	44	11.7
GD200A-045G/055P-4	DBU100H-110-4	10	7	34	54	6.4
GD200A-055G/075P-4		8	8	41	66	
GD200A-075G/090P-4		6.5	11	56	90	
GD200A-090G/110P-4	DBU100H-160-4	5.4	14	68	108	4.4
GD200A-110G/132P-4		4.5	17	83	132	
GD200A-132G/160P-4	DBU100H-220-4	3.7	20	99	158	3.2
GD200A-160G/185P-4	DBU100H-320-4	3.1	24	120	192	2.2
GD200A-185G/200P-4		2.8	28	139	222	
GD200A-200G/220P-4		2.5	30	150	240	
GD200A-220G/250P-4	DBU100H-400-4	2.2	33	165	264	1.8
GD200A-250G/280P-4		2.0	38	188	300	
GD200A-280G/315P-4	Two DBU100H-320-4	3.6*2	21*2	105*2	168*2	2.2*2
GD200A-315G/355P-4		3.2*2	24*2	118*2	189*2	
GD200A-355G/400P-4		2.8*2	27*2	132*2	210*2	
GD200A-400G-4		2.4*2	30*2	150*2	240*2	
GD200A-450G-4	Two DBU100H-400-4	2.2*2	34*2	168*2	270*2	1.8*2
GD200A-500G-4		2*2	38*2	186*2	300*2	

Note: For the selection of external braking units for the three-phase 220V VFDs, please consult the technical support team at INVT or refer to the DBU100H manual.

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Goodrive270 series

VFD for fan and pump

invt

RoHS CE

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Features

Goodrive270 series VFD is an optimized VFD special for fan and pump. Simple and easy to use, the VFD can drive the fans and pumps in wastewater treatment, HVAC, chemical, metallurgical, electric power and other industries.

Power range: 1.5~500kW

Voltage class: AC 3PH 380~480V

- Optimized size: Booksize compact, easy to install.
- Motor compatibility: Able to drive both synchronous motors and asynchronous motors.
- Functions special for fans and pumps.
- Energy-saving and efficient.
- Flexible expansion: Support for IO, communication, and IoT add-ons.

Applications

HVAC

Municipal water supply

Delivery pump

Sewage treatment

Municipal heating system

Irrigation pump

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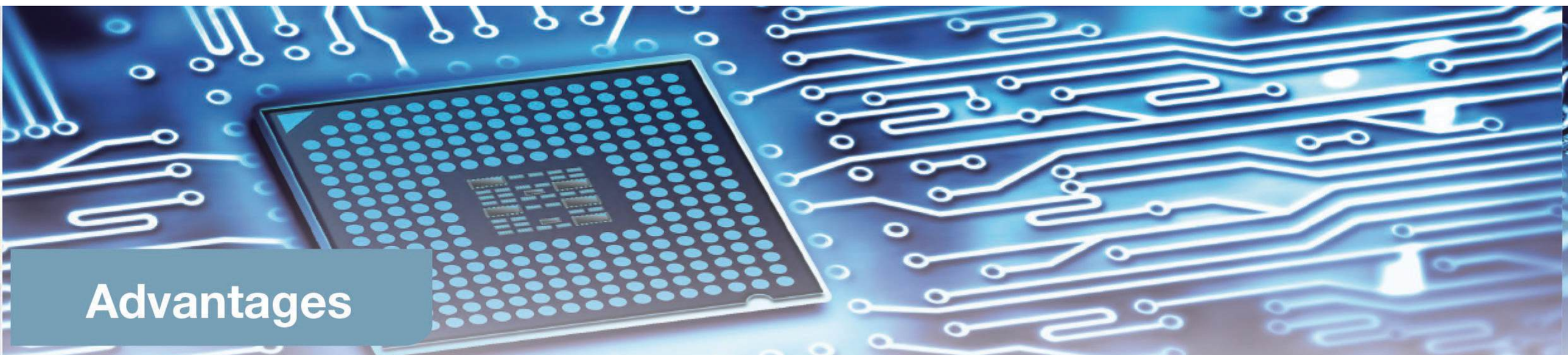
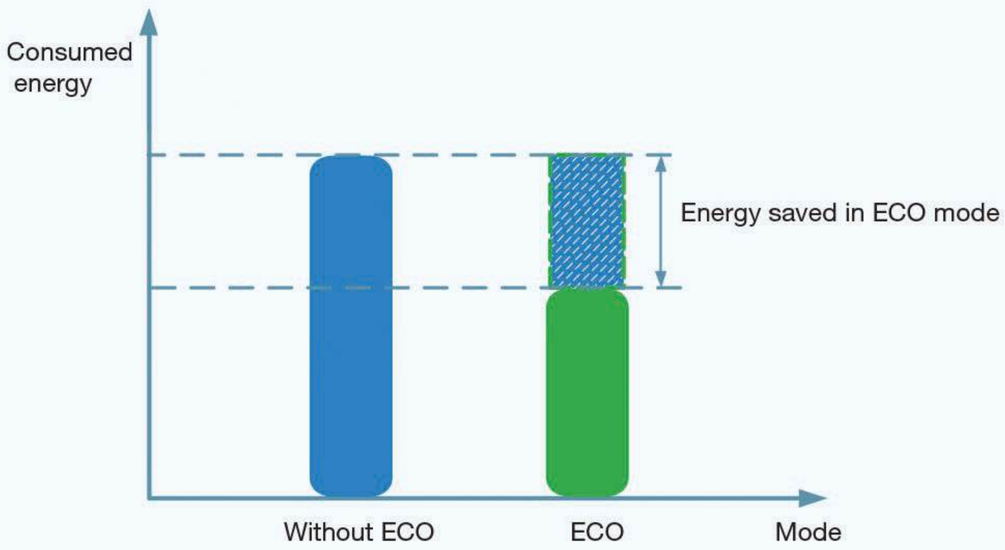
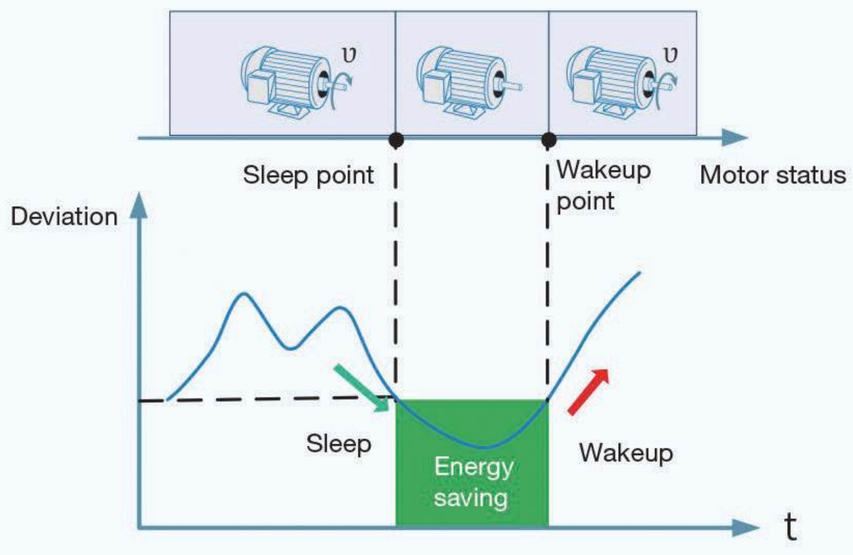


Advantages

- ECO mode: ensures the implementation of best performance and minimum loss at low dynamic load to optimize the output power.



- Energy-saving control: implements sleep at night or energy-saving run at extremely light load to avoid frequent startup or stop.



- Fire ride-through (special for water pumps): In fire mode for tunnel or building fans in emergency, the fault alarm is screened out to ensure longer running.

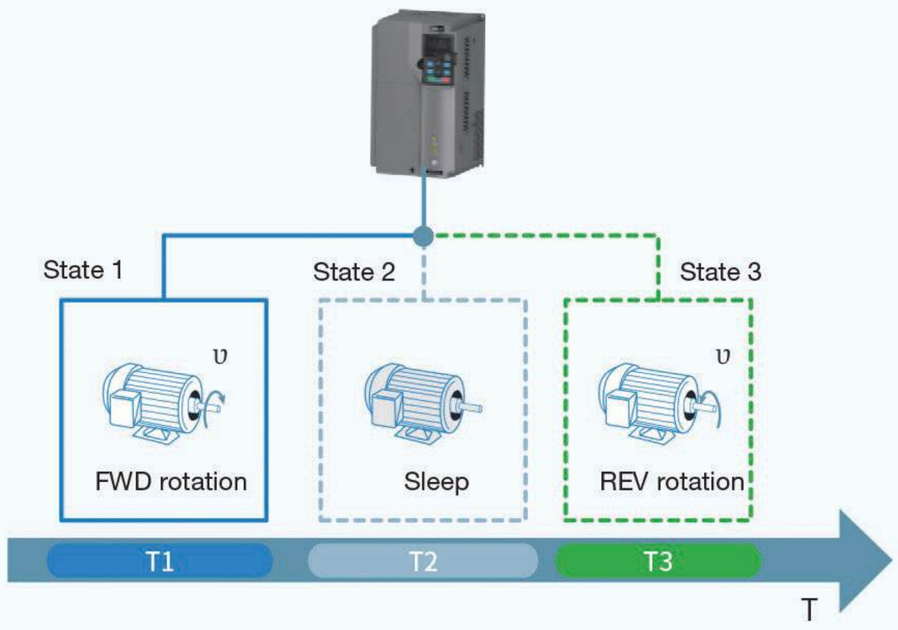
- Anti-waterhammer

Prevents water pump damage or water valve damage.

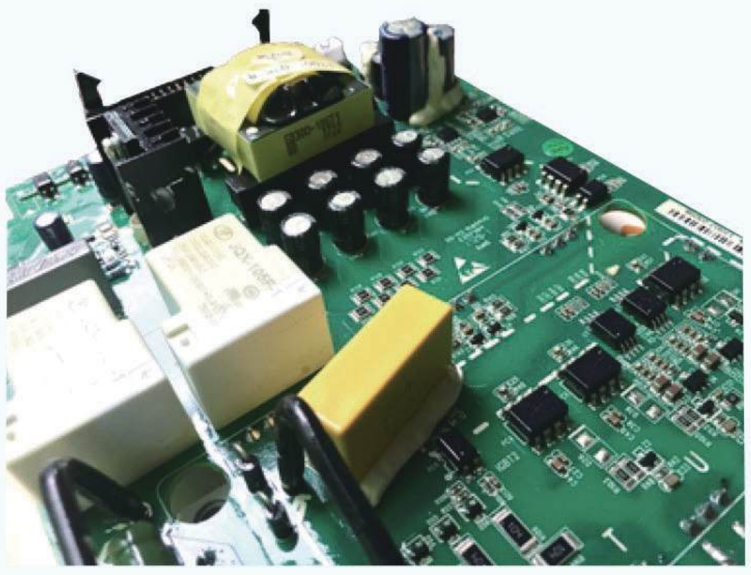
- Water level control

When the present water level is lower than the water level lower limit but higher than the water shortage level, the system runs at the backup pressure for exceptional situations. When the present water level is lower than the water shortage level, the system stops running.

- Cleaning: implements automatic cleaning for water pumps by means of periodic forward/reverse rotation and sleep to reduce the manual maintenance workload.



- Thickened circuit board coating: helps to enhance the PCB protection and adapt to hostile environments to ensure long and reliable run.



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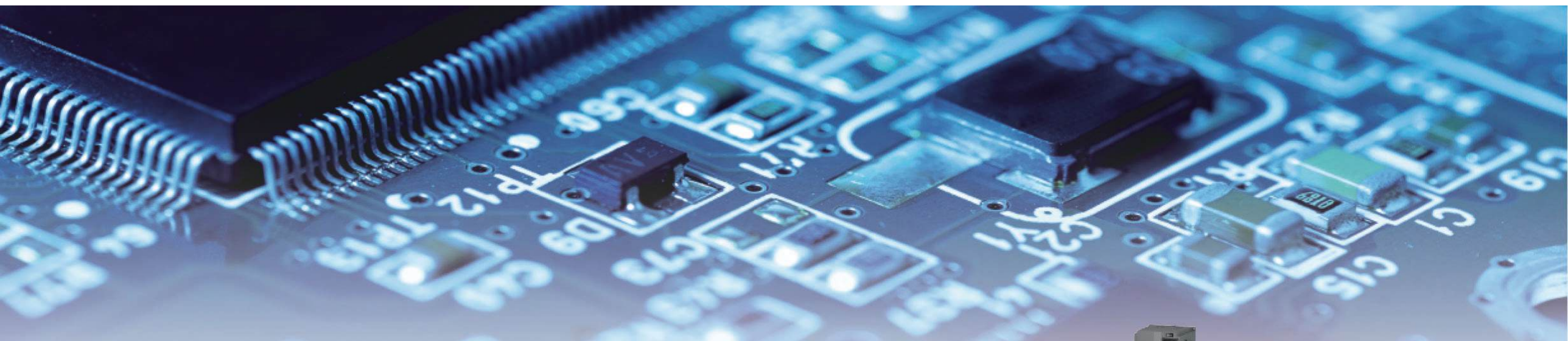
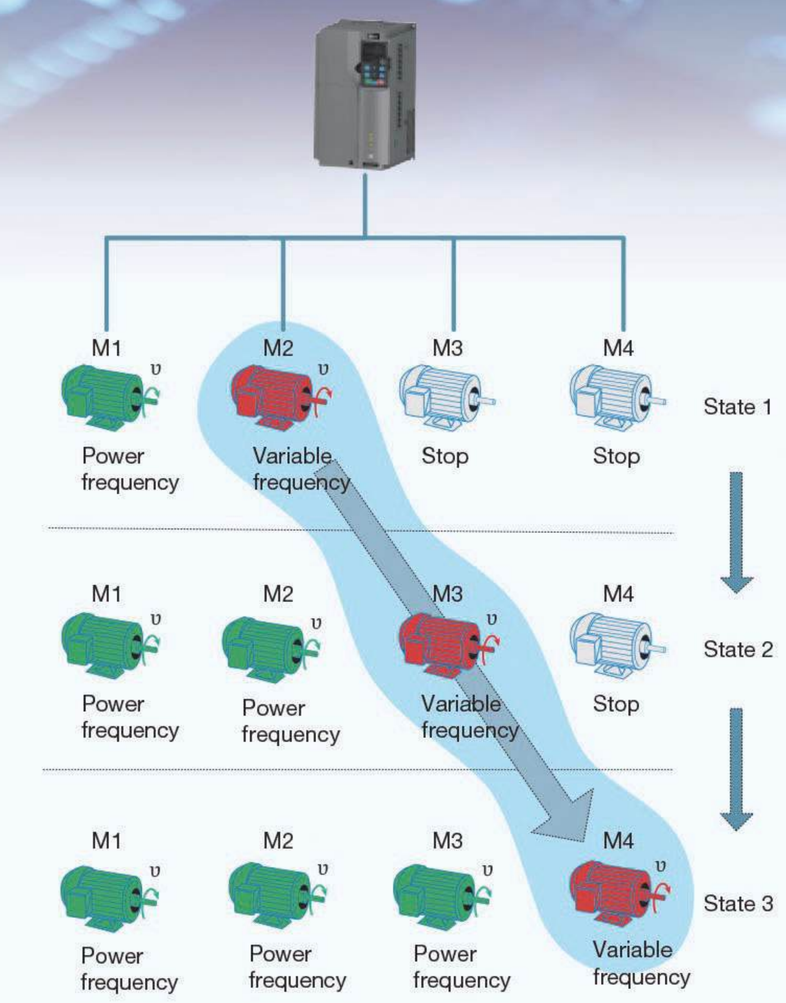


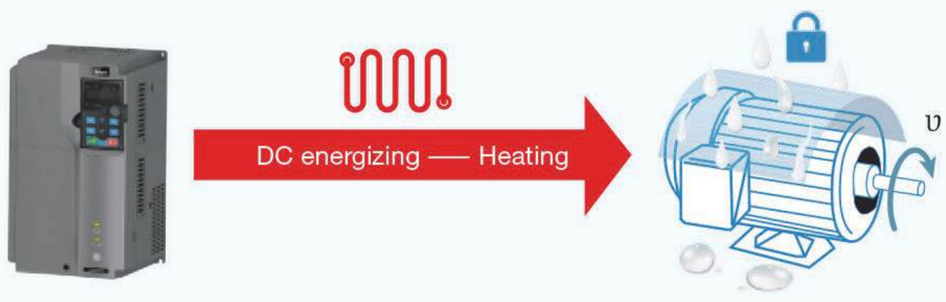
- Multi-pump polling and auxiliary pump startup/stop: Support for cyclic and fixed variable-frequency pump water supply, and sleep control.

The VFD does not specify a certain pump as the variable-frequency pump. If the water supply pressure is insufficient, the variable-frequency pump that is running is switched to the power grid, and a next pump is selected as the variable-frequency pump (a maximum of eight variable-frequency pumps can be controlled and only one variable-frequency pump can be used at a time).



- Freezing protection: When the ambient temperature is lower than the specified threshold, the motor automatically rotates to avoid freezing to achieve the protection purpose.

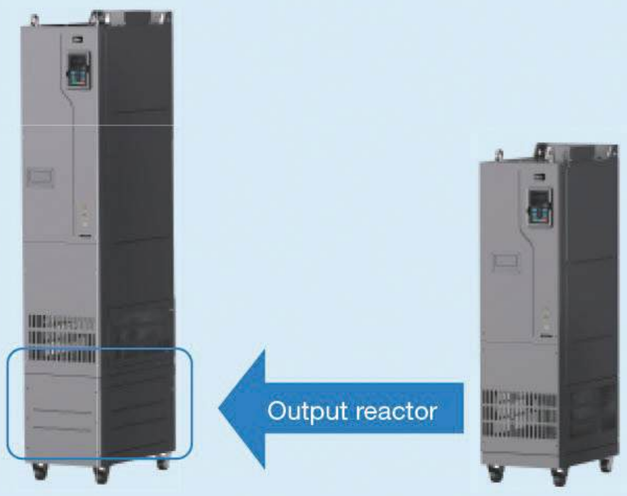
- Motor heating: uses DC energizing to increase the motor surface temperature at intermittent working and avoid motor faults caused by condensation.



Abundant configuration

- **A.** 30~355kW VFD models support optional built-in DC reactors.
  400~500kW VFD models have been configured with DC reactors.

- **B.** 220kW and higher VFD models support output reactors (Optional -L2/L3 model).



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Type Selection

Naming conventions

GD270-160-4-L1

① ② ③ ④

Field	Sign	Description	Content
Product series abbreviation	①	Product series abbreviation	GD270: Goodrive270 series VFD for fan and pump.
Rated power	②	power level	160：160kW
Voltage class	③	Voltage class	◆ 4：AC 3PH 380~480V ◆ Rated voltage: 380V
Management number	④	Optional	◆ Default: Empty. ◆ L1: with built-in DC reactor, applicable to 30~355kW models. ◆ L3: with built-in DC reactor and output AC reactor, applicable to 220kW and higher models. Note: DC reactors are standard parts for 400~500kW models.

Product model selection

VFD model	Output power (kW)	Input current (A)	Output current (A)	Boundary dimension W*H*D (mm)	Package dimensions L*W*H (mm)	Standard weight (kg)	Gross weight (kg)
GD270-030-4	30	75	60	266*371*208	490x315x315	8	10
GD270-037-4	37	90	75	266*371*208	490x315x315	8	10
GD270-045-4	45	108	92	316*430*223	580x395x360	14	16
GD270-055-4	55	142	115	352*580*258	695x440x410	18	21
GD270-075-4	75	177	150	352*580*258	695x440x410	18	21
GD270-090-4	90	200	180	352*580*258	695x440x410	18	21
GD270-110-4	110	240	215	338*554*338.3	725x495x500	34	40
GD270-132-4	132	278	250	338*554*338.3	725x495x500	34	40
GD270-160-4	160	310	305	338*825*398.3	955x480x600	53	64
GD270-185-4	185	335	330	338*825*398.3	955x480x600	53	64
GD270-200-4	200	385	380	338*825*398.3	955x480x600	53	64
GD270-220-4	220	430	425	303*1108*480	1310x630x560	78	99
GD270-250-4	250	465	460	303*1108*480	1310x630x560	78	99
GD270-280-4	280	485	530	330*1288*544	1438*668*531	89	119
GD270-315-4	315	550	600	330*1288*544	1438*668*531	89	119
GD270-355-4	355	600	650	330*1288*544	1438*668*531	90	120
GD270-400-4-L1	400	660	720	330*1398*544	1558*678*530	173	205
GD270-450-4-L1	450	745	820	330*1398*544	1558*678*530	175	207
GD270-500-4-L1	500	800	860	330*1398*544	1558*678*530	175	207

Note：The dimensions and weight of models with L suffix are provided separately by INVT .

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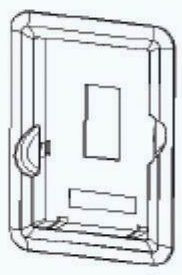
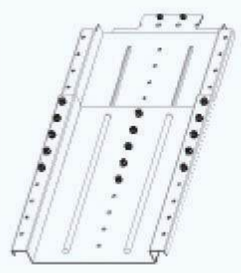
Optional parts

Name	Image	Model/Function/Apply to	Name	Image	Model/Function/Apply to
LCD keypad		**Model:** SOP-270 **Function:** External LCD display and operation panel **Apply to:** Full series	LED keypad		**Model:** BOP-270 **Function:** External LCD display and operation panel **Apply to:** Any models in the power range 1.5~22kW (Standard configuration for models in the power range 30~500kW)
Keypad bracket		**Model:** GD350-JPZJ **Function:** For fixing LED/LCD keypad outside the electrical cabinet **Apply to:** Full series	Cabinet rail component		**Model:** GD270-DGZJ **Function:** To assist cabinet installation to improve installation efficiency and safety **Apply to:** Any models in the power range 220~500kW
Flange mounting bracket		**Model:** Conatct us **Functions:** For flange mounting **Apply to:** Any models in the power range 1.5~200kW			

Expansion card model selection

Category	Model	Name	Specifications
IO card	EC-IO501-00	IO expansion card	◆ 4 digital inputs ◆ 1 digital output ◆ 1 analog input ◆ 1 analog output ◆ 2 relay outputs: 1 double-contact output, and 1 single-contact output
	EC-IO503-00	Relay card	◆ 2 digital inputs ◆ 6 relay outputs
Communication card	EC-TX503	PROFIBUS-DP communication card	Supporting the PROFIBUS-DP protocol.
	EC-TX505	CANopen communication card	◆ Based on the CAN2.0A physical layer. ◆ Supporting the CANopen protocol.
	EC-TX511	CAN master/slave control communication card	◆ Based on the CAN2.0B physical layer. ◆ Adopting INVT's master-slave control proprietary protocol.
	EC-TX509	PROFINET communication card	Supporting the PROFINET protocol.

Note: The table describes expansion card are optional and need to be purchased separately. The SIM card is used with the Internet of Things card, which needs to be purchased extra.

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Technical parameters

Function		Specifications
Technical control performance	Input voltage（V）	◆ AC 3PH 380~480V Rated voltage: 380V
	Allowed voltage transient fluctuation	◆ -15%~+10%
	Input frequency (Hz)	◆ 50Hz or 60Hz; Allowed range: 47~63Hz
	Output frequency (Hz)	◆ 0~400Hz
	Control mode	◆ Space voltage vector control, and sensorless vector control (SVC)
	Motor type	◆ Asynchronous motor (AM) and synchronous motor (SM)
	Speed ratio	◆ For AMs: 1:200 (SVC), for SMs: 1:20 (SVC)
	Speed control accuracy	◆ ±0.2%（(SVC）
	Speed fluctuation	◆ ± 0.3%（(SVC）
	Torque response	◆ <20ms（(SVC）
	Torque control accuracy	◆ ±10%（(SVC）
	Overload capacity	◆ Able to run at 110% of rated current for 1min, and an overload allowed for every 5min
Running control performance	Frequency setting method	◆ Settings can be implemented through digital, analog, pulse frequency, multi-step speed run, simple PLC, PID, and communication. ◆ Settings can be combined and the setting channels can be switched.
	Automatic voltage regulation	◆ The output voltage can be kept constant although the grid voltage changes.
	Fault protection	◆ Many protection functions available, such as protection against overcurrent, overvoltage, undervoltage, overtemperature, and phase loss
	Speed tracking restart	◆ Used to implement impact-free smooth startup for rotating motors
Peripheral interface	Analog input	◆ Two inputs. AI1: 0(2)~10V / 0(4)~20mA; AI2: -10 ~ +10V
	Analog output	◆ Two outputs. AO0/AO1: 0(2)~10V/0(4)~20mA
	Digital input	◆ Five regular inputs. Max. frequency: 1kHz; internal impedance: 3.3kΩ ◆ One high-speed input. Max. frequency: 50kHz
	Digital output	◆ One Y terminal open collector output, sharing the terminal with S4. The function can be selected through a jumper.
	Relay output	◆ One programmable relay output. ◆ RO1A: NO; RO1B: NC; RO1C: common ◆ Contact capacity: 3A/AC250V, 1A/DC30V
	Extended interfaces	◆ Two extended interfaces: SLOT1 and SLOT2 ◆ Supporting communication expansion cards, I/O cards and so on
Other	Installation method	◆ Supports wall-mounting (1.5kW~250kW) ◆ Supports floor-mounting (1.5kW~132kW) ◆ Supports flange-mounting (220kW~500kW)
	Keypad	◆ 1.5~22kW: with laminated LED keyboard as a standard configuration ◆ 30~500kW: with a LED keypad that can be used externally
	EMC filter	◆ A built-in C3 filter is optional for1.5~132kW ◆ A built-in C3 filter is a standard configuration for 160kW and higher
	Temperature of running environment	◆ -10°C ~+50°C; Derating is required when the ambient temperature exceeds 40°C.
	IP rating	◆ IP20 for 200kW and lower ◆ IP00 for 200kW and higher, supporting the optional part IP20 assembly
	Pollution degree	◆ Degree 2
	Cooling method	◆ 1.5kW: Natural cooling ◆ 2.2kW and higher: Forced air cooling

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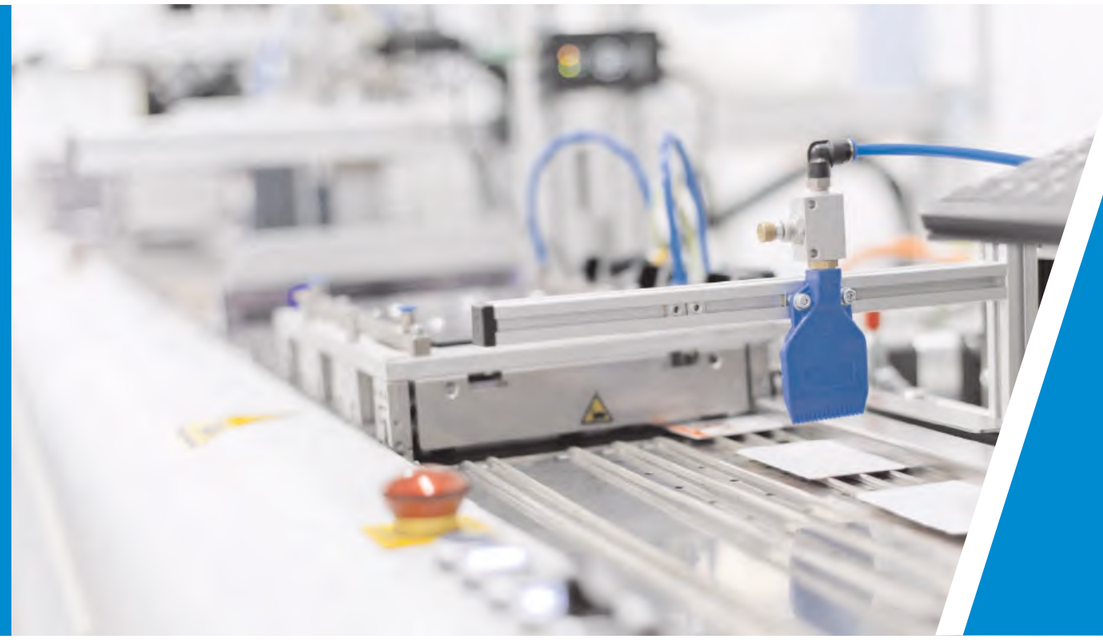
Goodrive350 Series

High-performance Multi-function VFD



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Goodrive350

Goodrive350 IP54

Introduction

GD350 is a brand new high-performance VFD which integrates the speed, torque, and position control. It is widely applicable to control over synchronous and asynchronous motors. It is highly extensible and flexible with PG card, PLC card, communication card and IO card, meeting the demands of various industries. It's oriented for mid&high end OEM market, mainly covering printing, packaging, winding, etc.

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Features

- Support SVC and VC(Closed loop) control for both asynchronous and synchronous motors.
- Enable high precision of speed, position, torque control and fast speed response.
- Support Ethernet/IP, Profinet, CAN Master/Slave, etc.
- Accept plug-in of three expansion cards simultaneously (only two cards≤ 7.5kW(10HP).
- Integrate safety function-STO(Safe Torque OFF, SIL2).
- Unique I/F control and online transition with other control modes are very suitable for the situation where theAsynchronous motor has low speed with high torque and the speed accuracy is not high.
- Multi-function LCD keyboard.
- Support optional Bluetooth card and WIFI card.

Product Advantage

Full motion and all-round

Performance improvement

Compared with the products of last generation, the performance is significantly improved

Motor auto-tuning

- Asynchronous motor---Eliminates the impact of the skin effect, improving the auto-tuning precision.
- Synchronous motor---Performs auto-tuning on the counter-electromotive force, effectively avoids the impact of the initial value of the counter-electromotive force.

DC braking

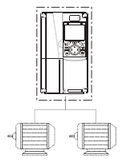
- The current change is smoother in the process of the motor entering DC braking from rotating, the current shock is weak, and the current response is faster.

Rotating speed tracking

- In any of the control modes, the rotating speed tracking method brings the least current shock, and thus significantly improves the stability.

High torque at low speed

- Special I/F control, featuring constant current source, highly applicable to scenarios where multiple motors are to be driven simultaneously and high torque is required at low speed.



State	IO/IN(M)(%)	
	Multi-point VF	I/F control
Before and after brake open in forward running	62.80%	133.40%
Before and after brake open in reverse running	62.50%	130.30%
Before and after brake close in forward running	65.70%	136.10%
Before and after brake close in reverse running	92.00%	136.30%

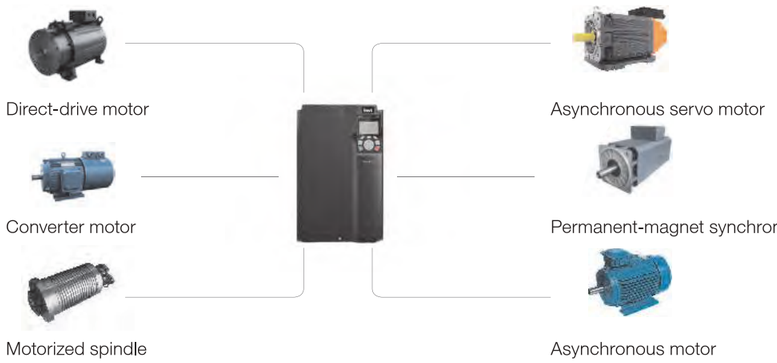
Data measured on a construction machinery site

Control performance

- New-type flux linkage observer, improving the stability of the high-speed control.
- New-type speed/current regulator, improving the current control result in quick start and reducing speed overshoot.
- New-type phase-locked loop, improving the stability of high-torque control.
- Compensation for output voltage phases and amplitude, improving the stability of high- and low-speed carriers.
- Adding the synchronous motor VF control mode based on reactive current control. The output current adapts to the load and the oscillation suppression algorithm.

Drive multiple motors

Applicable to drive various motors



Combine different controls

More precise, stronger torque, speed, and position control over motors

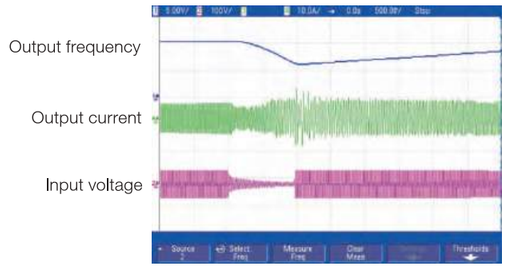
Characteristic indicator	Goodrive350
Position control precision	±1 pulse

(2) Torque and speed control performance---Ensure stable mechanical operation, fast response, and low torque ripple

Characteristic indicator	Goodrive350
Speed regulation range	1:1000
Speed stabilization precision	+0.02%
Response time in torque control	<10ms
Torque control precision	5%
Start frequency/higher start torque	0Hz/200%

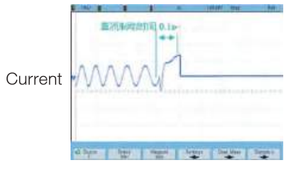
Keep running when power down

When the grid encounters a momentary power outage, the VFD can keep running by using the fed-back energy within a certain period of time.
It is highly applicable to chemical fiber and textile production lines and other scenarios where the device is Required to run continuously.

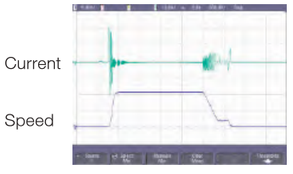


Multiple braking modes to enable fast stop

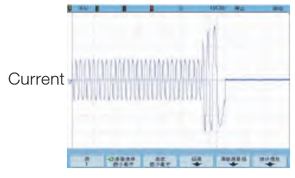
Dynamic braking	DC braking	Magnetic braking	Short-circuit braking
High torque fast speed Large-inertia loads scenarios are frequently braked	No brake unit or brake resistor required Applicable to scenarios where freely running motors are to be braked first and then started and where torque output needs to be kept after the motor is braked to run at the speed of zero	No brake unit or brake resistor required; allowing fast braking Applicable to scenarios where large-inertia loads are to be fast stopped at low frequency	No brake unit or brake resistor required; allowing fast braking Applicable only to fast stop of PMSMs or braking and then starting freely running PMSMs



Current wave in the SVPWM mode for asynchronous motors
Frequency: 10Hz
Breaking current: 100%



PMSM short-circuit braking wave
Acceleration time: 0.1s
Deceleration time is 0.4s

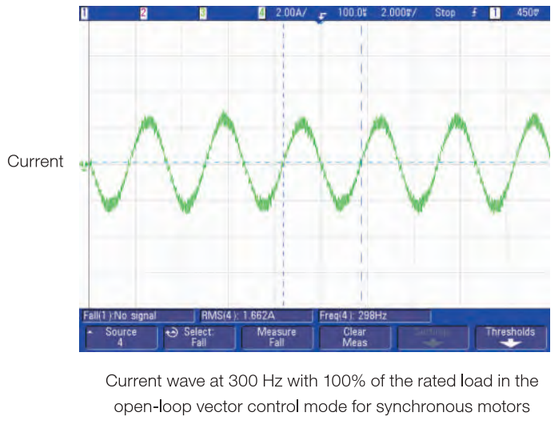


Magnetic flux braking current wave in the SVPWM mode for asynchronous motors
Frequency: 50Hz
Rated load: 100%

Proper voltage and current control, effectively reducing the number of VFD fault protection times

Overvoltage stall	Overcurrent stall
Regulates the output frequency during deceleration to prevent the motor from generating too much power due to too fast deceleration	Regulates the output frequency during acceleration to prevent too heavy loads caused due to too fast acceleration

Excellent driving performance on special motors

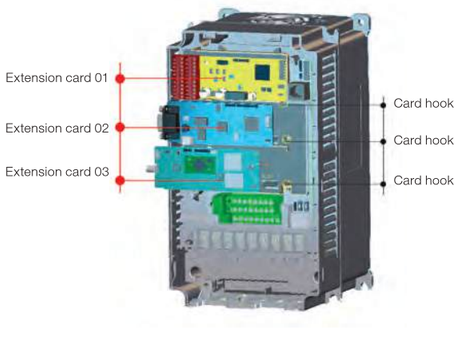


Current wave at 300 Hz with 100% of the rated load in the open-loop vector control mode for synchronous motors

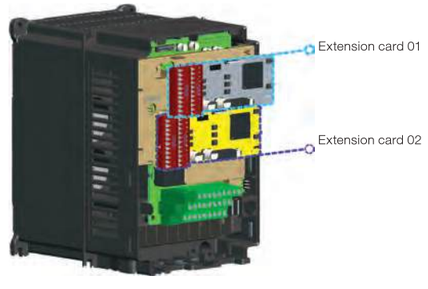
Multi-function

Enhanced extension performance

(1) Optional PLC, I/O, communication, and PG cards
(2) Consistent extension card dimensions



≥7.5kW



≤5.5kW

www.famcocorp.com
E-mail: info@famcocorp.com
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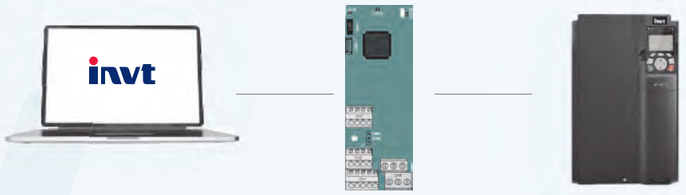
Tel:۰۲۱-۴۸۰۰۰۰۴۹
Fax:۰۲۱-۴۴۹۹۴۶۴۲
تهران، کیلومتر۲۱ بزرگراه لشگری (جاده مخصوص کرج)
روبـروی پالایشگاه نفت پـارس، پلاک ۱۲

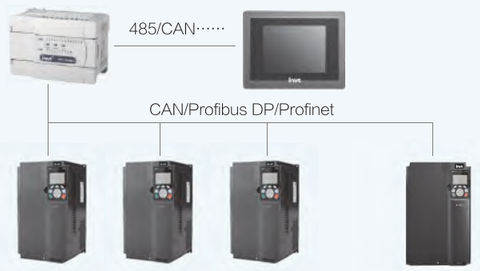
Supporting customers' secondary development

(1) Meeting customization requirements, reducing customers' costs, and improving the processes
(2) Optional PLC card, 128 k program memory space

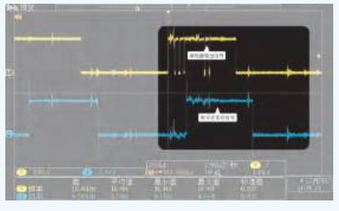


Supporting various industrial communication protocols

(1) Standard Modbus communication, supporting the following communication modes based on extension cards



Adopting the digital filtering technology that improves EMC; the anti-interference performance is twice that of conventional solutions

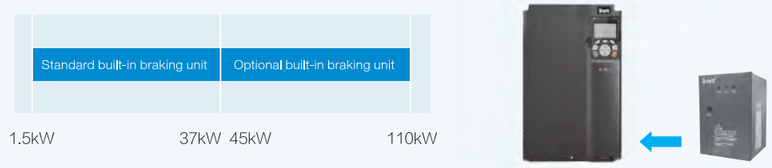


(1) Supporting pulse reference and frequency-divided output;
(2) providing the fast encoder disconnection detection function to prevent the expansion of the system fault impact

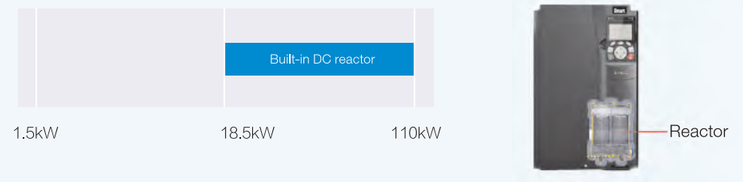
Encoder signal: near-field coupling of 100m motor wire

Standard two HDIs that can serve as speed sources or high-speed AB pulse inputs, which can be used for simple closed-loop application

Supporting built-in brake units at a maximum of 110 kW, reducing customers' costs and installation space

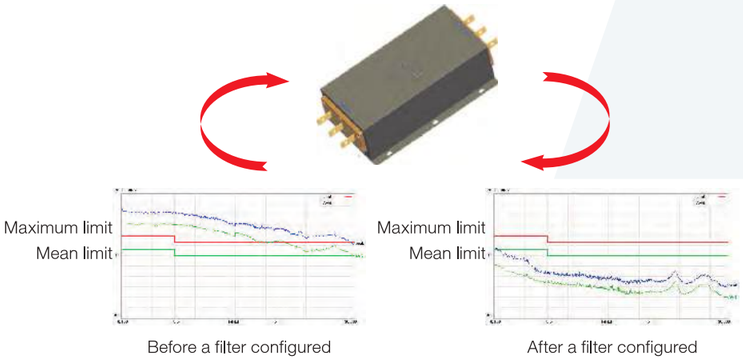


Providing built-in DC reactors for models of 18.5 kW–110 kW



Built-in C3 input filters; optional C2 filters for 380V models

Built-in C3 input filters of 380 V in factory reduce external installation space and prevents electromagnetic interference



Before a filter configured　　After a filter configured

Test for power terminal conduct disturbance

Note:
C2 filters: EMC performance meets civilian environments.
C3 filters: EMC performance meets industrial environments.

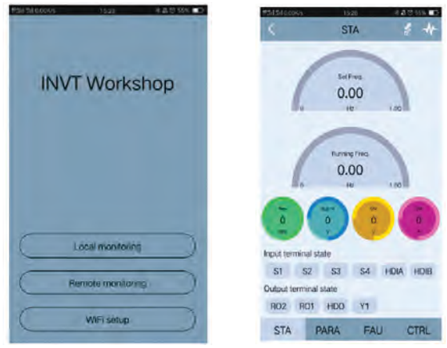
Abundant external interfaces, meeting the requirements of most application sites

Terminal type	Quantity	Feature
Digital input	4	1. Programmable multi-function terminal 2. Max. input frequency: 1 kHz 3. Compatible with both NPN and PNP inputs
High-speed pulse input	2	1. Max. input frequency: 50 kHz 2. Compatible with both NPN and PNP inputs 3. Supporting the input of quadrature encoders, and providing the speed detection function
Analog input	2	0~10V，0~20mA，-10~10V
Digital output	1	Max. output frequency: 1 kHz
High-speed pulse output	1	Max. output frequency：50kHz
Analog output	2	0~10V，0~20mA
Relay output	2	3A/AC250V，1A/DC30V；NO+NC

Ease of use

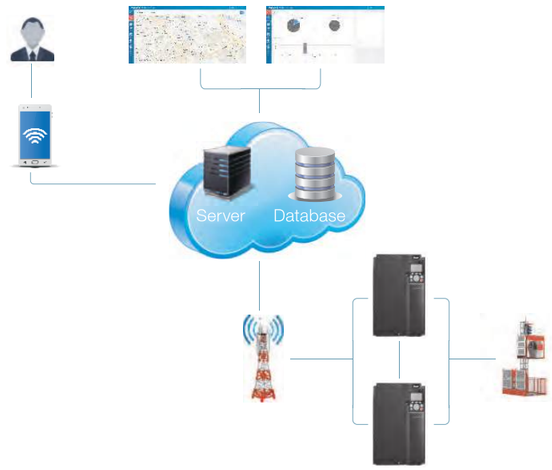
Wireless commissioning

(1) Bluetooth/WIFI connection. You can use the mobile phone application to substitute for the traditional keypad.



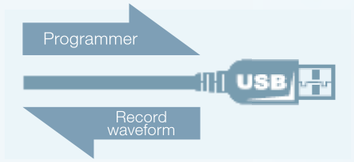
Connecting through the Internet of Things (IoT), remote monitoring

(1) Wireless access. You can easily connect to the IoT, operate the VFD through mobile phone or PC, and obtain the running state of the VFD in real time.

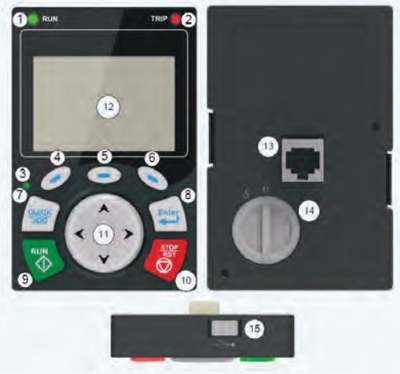


Standard USB interface

USB update
Record the operation curve and failure waveform for easy mainstream and analysis.



Providing the multi-function LCD operating panel, user-friendly design, focusing on user experience



No.	name	No.	name
1	Run	9	Running key
2	Trip	10	Stop/Reset key
3	Quick/Jog	11	Direction key
4	Function key	12	Display screen
5		13	RJ45 interface
6		14	Clock battery cover
7	Short-cut key	15	Mini USB terminal
8	Confirmation key		

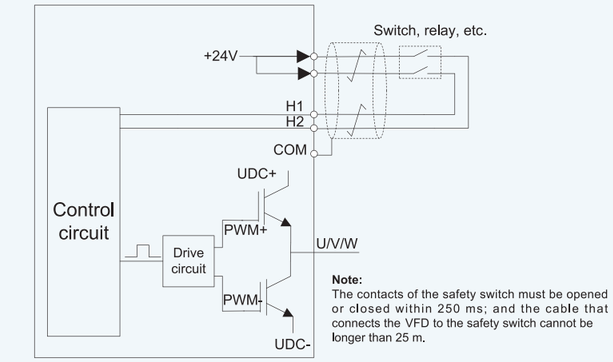
Safe and reliable

Optimal reliability test system, ensuring that the product meets the most complicated application environments

INVT is the first manufacturer in China that has been awarded the Acceptance of Client Testing (ACT) accreditation (data accreditation) issued by TÜV SÜD, which means the technologies, test data, and test reports of INVT's labs are accepted by TÜV SÜD.

Providing the built-in safe torque off (STO) function, reaching the international level, ensuring more safe and reliable application

(1) SIL2 level
(2) Can be used to set up a safety system



Application Scenarios

Technical Specification

Function description		Specification
Power input	Input voltage (V)	AC 3PH 380V (-15%)–440V (+10%) rated voltage: 380V AC 3PH 520V (-15%)–690V (+10%) rated voltage: 660V
	Input current (A)	Refer to *Rated value*
	Input frequency (Hz)	50Hz or 60Hz, allowable range: 47–63Hz
Power output	Output voltage (V)	0–input voltage
	Output current (A)	Refer to Rated value
	Output power (kW)	Refer to Rated value
	Output frequency (Hz)	0–400Hz
Technical Control performance	Control mode	SVPWM control, SVC, VC
	Motor type	Asynchronous motor, permanent-magnet synchronous motor
	Speed regulation ratio	Asynchronous motor 1: 200 (SVC); Synchronous motor 1 20 (SVC) , 1:1000 (VC)
	Speed control precision	±0.2% (SVC), ±0.02% (VC)
	Speed fluctuation	± 0.3% (SVC)
	Torque response	<20ms SVC) , <10ms (VC)
	Torque control precision	10% (SVC) , 5% (VC)
	Starting torque	Asynchronous motor: 0.25Hz/150% (SVC) Synchronous motor: 2.5 Hz/150% (SVC) 0Hz/200% (VC)
	Overload capacity	150% of rated current: 1min; 180% of rated current: 10s; 200% of rated current: 1s;
Running control performance	Frequency setup mode	Digital, analog, pulse frequency, multi-step speed Provide over 30 kinds of fault protection functions: overcurrent, overvoltage, undervoltage, over-temperature, phase loss and overload, etc
	Automatic voltage regulation function	Keep the output voltage constant when grid voltage changes.
	Fault protection function	Fault protection function Provide over 30 kinds of fault protection functions: overcurrent, overvoltage, under-voltage, over-temperature, phase loss and overload, etc.
	Speed tracking restart function	Realize impact-free starting of the motor in rotating Note: This function is available for 4kW and above models
Peripheral Interface	Terminal analog input	No more than 20mV
	Terminal digital input resolution	No more than 2ms
	Analog input	2 inputs, AI1: 0–10V/0–20mA; AI2: -10–10V
	Analog output	1 output, AO1: 0–10V /0–20mA
	Digital input	Four regular inputs; Max. frequency: 1kHz; Internal impedance: 3.3kΩ Two high-speed inputs; Max. frequency: 50kHz; supports quadrature encoder input; Speed measurement function
	Digital output	One high-speed pulse output; max. frequency: 50kHz One Y terminal open collector output
	Relay output	Two programmable relay outputs RO1A NO, RO1B NC, RO1C common port RO2A NO, RO2B NC, RO2C common port Contact capacity: 3A/AC250V, 1A/DC30V
	Extension interface	Three extension interfaces: SLOT1, SLOT2, SLOT3 Expandable PG card, programmable extension card, communication card, I/O card, etc.

Function description		Specification
Others	Installation mode	Support wall-mounting, floor-mounting and flange-mounting
	Temperature of running environment	-10–50°C, derating is required if the ambient temperature exceeds 40°C
	Protection level	IP20
	Pollution level	Level 2
	Cooling mode	Air cooling
	Brake unit	Built-in brake unit for 380V 37kW and below models; Optional built-in brake unit for 380V 45kW–110kW(inclusive) models; Optional external brake unit for 660V models;
	EMC filter	380V models fulfill the requirements of IEC61800-3 C3 Optional external filter should meet the requirements of IEC61800-3 C2

Type Selection

GD350 – 5R5G – 4

① ② ③

Fig 3.6 Type designation key

Field	Sign	Description	Contents
Abbreviation of product series	①	Abbreviation of product series	GD350: Goodrive350 high-performance multi-function VFD
Rated power	②	Power range + load type	5R5-5.5kW G—Constant torque load
Voltage level	③	Voltage level	4: AC 3PH 380V (-15%)–440V (+10%) Rated voltage: 380V 6: AC 3PH 520V (-15%)–690V (+10%) Rated voltage: 660V

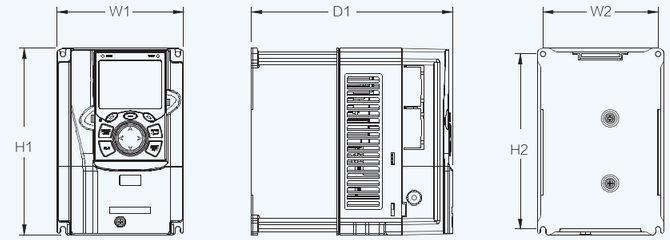
Power ratings and dimension

VFD model	Rated output power (kW)	Input current (A)	Rated output current (A)	Net/Gross weight (kg)	Dimension (mm)
AC 3PH 380V(-15%)~440V(+10%)					
GD350-1R5G-4	1.5	5.0	3.7	2/3	126*186*185
GD350-2R2G-4	2.2	5.8	5		
GD350-004G-4	4	13.5	9.5	2.5/3.5	126*186*201
GD350-5R5G-4	5.5	19.5	14		
GD350-7R5G-4	7.5	25	18.5	3/4	146*256*192
GD350-011G-4	11	32	25	6/7	170*320*220
GD350-015G-4	15	40	32		

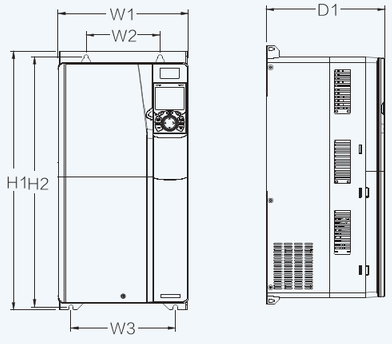
VFD model	Rated output power (kW)	Input current (A)	Rated output current (A)	Net/Gross weight (kg)	Dimension (mm)
AC 3PH 380V(-15%)~440V(+10%)					
GD350-018G-4	18.5	47	38	8.5/10.5	200*340.6*208
GD350-022G-4	22	51	45		
GD350-030G-4	30	70	60	16/17	250*400*223
GD350-037G-4	37	80	75		
GD350-045G-4	45	98	92	25/29	282*560*258
GD350-055G-4	55	128	115		
GD350-075G-4	75	139	150		
GD350-090G-4	90	168	180	41/52	338*554*330
GD350-110G-4	110	201	215		
GD350-132G-4	132	265	260	85/110	500*870*360
GD350-160G-4	160	310	305		
GD350-185G-4	185	345	340		
GD350-200G-4	200	385	380		
GD350-220G-4	220	430	425	135/165	680*960*380
GD350-250G-4	250	460	480		
GD350-280G-4	280	500	530		
GD350-315G-4	315	580	600		
GD350-355G-4	355	625	650	350/407	620*1700*560
GD350-400G-4	400	715	720		
GD350-500G-4	500	890	860		
AC 3PH 520V(-15%)~690V(+10%)					
GD350-022G-6	22	35	27	30/32	270*555*325
GD350-030G-6	30	40	34		
GD350-370G-6	37	47	42		
GD350-045G-6	45	52	54		
GD350-055G-6	55	65	62	47/67	325*680*365
GD350-075G-6	75	85	86		
GD350-090G-6	90	95	95		
GD350-110G-6	110	118	131		
GD350-132G-6	132	145	147		
GD350-160G-6	160	165	163	85/110	500*870*360
GD350-185G-6	185	190	198		
GD350-200G-6	200	210	216		
GD350-220G-6	220	230	240		
GD350-250G-6	250	255	274	135/165	680*960*380
GD350-280G-6	280	286	300		
GD350-315G-6	315	334	328		
GD350-355G-6	355	360	380		
GD350-400G-6	400	411	426	350/407	620*1700*560
GD350-450G-6	450	445	465		
GD350-500G-6	500	518	540		
GD350-560G-6	560	578	600		
GD350-630G-6	630	655	688		

Installation Dimension

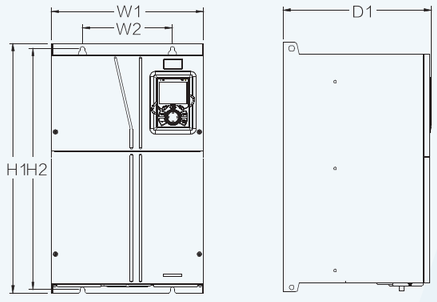
Wall mounting installation diagram



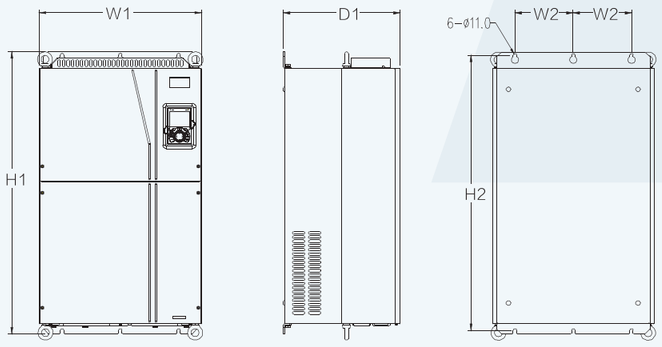
380V, 1.5~37kW



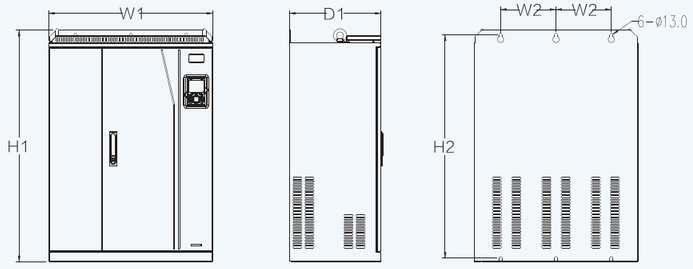
380V, 45~75kW



380V, 90~110kW



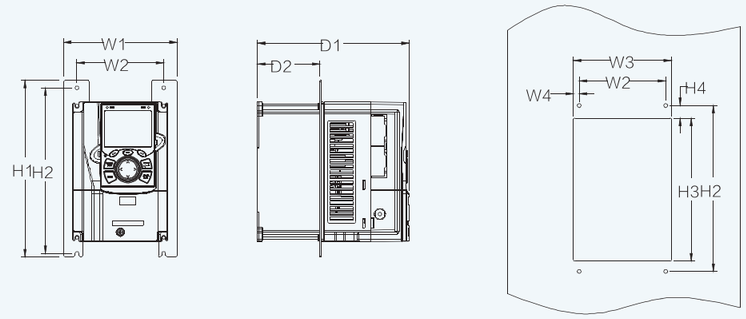
660V, 160~220kW



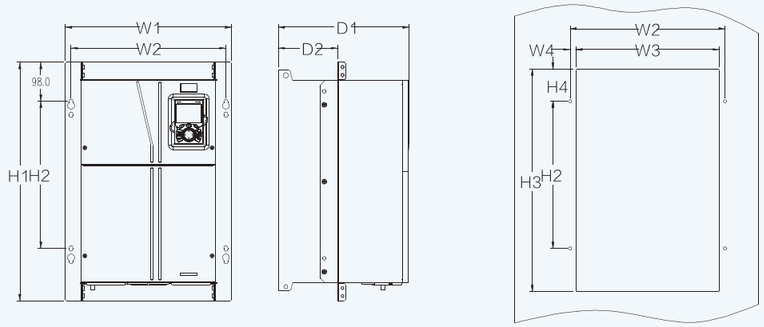
660V, 250~355kW

Model		W1	W2	W3	H1	H2	D1	Installation hole diameter	Fixing screw
380	1.5kW~2.2kW	126	115	-	186	175	185	5	M4
	4kW~5.5kW	126	115	-	186	175	201	5	M4
	7.5kW	146	131	-	256	243.5	192	6	M5
	11kW~15kW	170	151	-	320	303.5	220	6	M5
	18.5kW~22kW	200	185	-	340.6	328.6	208	6	M5
	30kW~37kW	250	230	-	400	380	223	6	M5
	45kW~75kW	282	160	226	560	542	258	9	M8
	90kW~110kW	338	200	-	554	535	330	10	M8
	132kW~200kW	500	180	-	870	850	360	11	M10
	220kW~315kW	680	230	-	960	926	380	13	M12
660V	22kW~45kW	270	130	-	555	540	325	7	M6
	55kW~132kW	325	200	-	680	661	365	9.5	M8
	160kW~220kW	500	180	-	870	850	360	11	M10
	250kW~355kW	680	230	-	960	926	380	13	M12

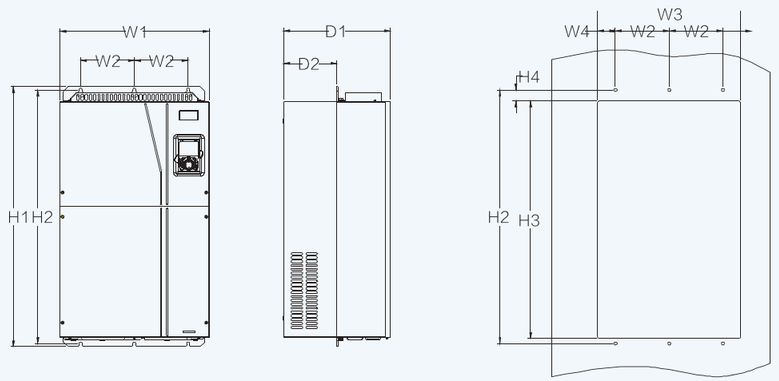
Flange mounting installation diagram



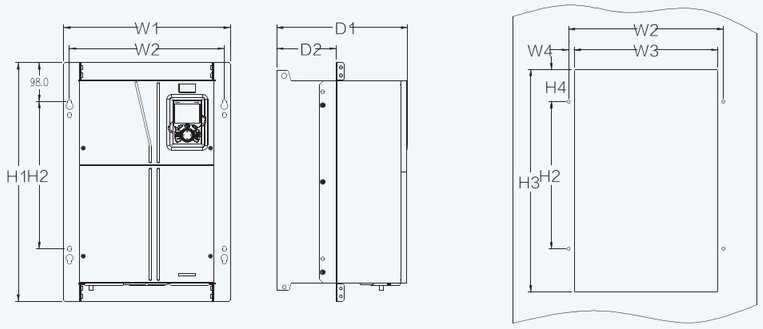
380V, 1.5~75kW



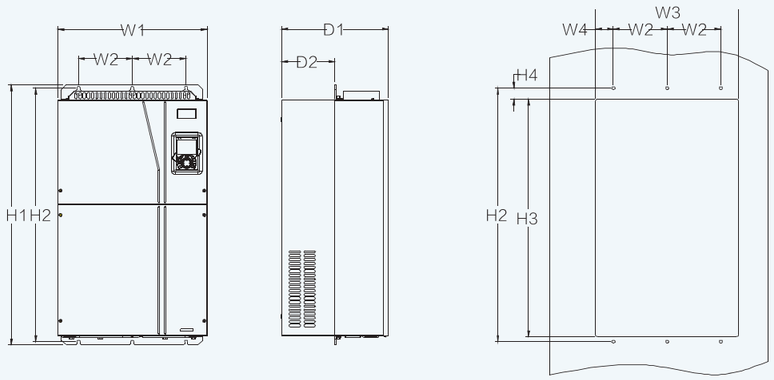
380V, 90~110kW



380V, 132~220kW



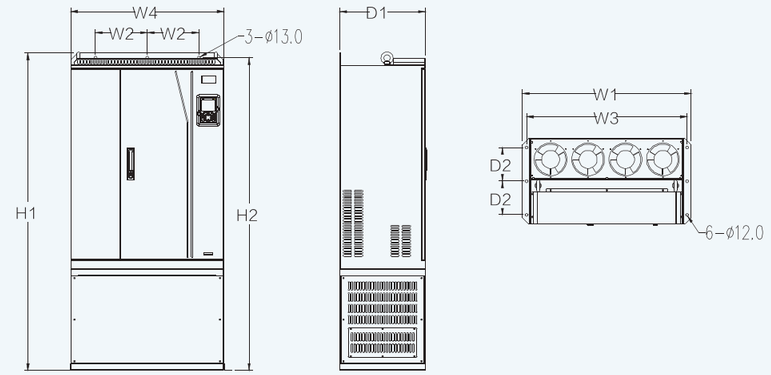
660V, 22~132kW



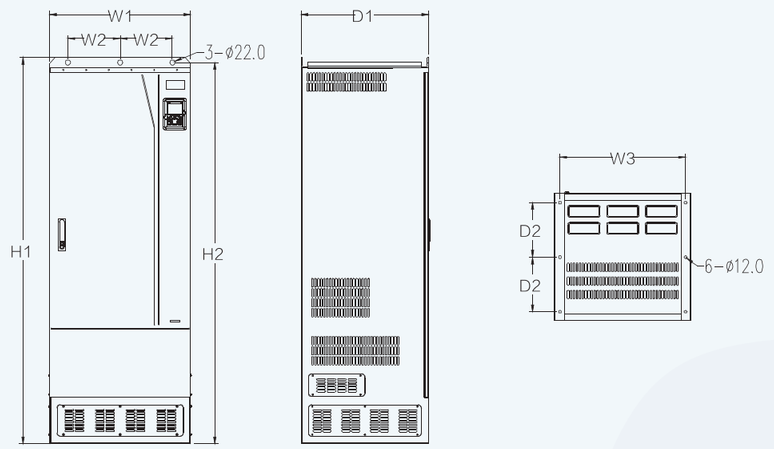
600V, 160~220kW

Model		W1	W2	W3	W4	H1	H2	H3	H4	D1	D2	Installation hole diameter	Fixing screw
380V	1.5kW~2.2kW	150.2	115	130	7.5	234	220	190	13.5	185	65.5	5	M4
	4kW~5.5kW	150.2	115	130	7.5	234	220	190	13.5	201	83	5	M4
	7.5kW	170.2	131	150	9.5	292	276	260	6	192	84.5	6	M5
	11kW~15kW	191.2	151	174	11.5	370	351	324	12	220	113	6	M5
	18.5kW~22kW	266	250	224	13	371	250	350.6	20.3	208	104	6	M5
	30kW~37kW	316	300	274	13	430	300	410	55	223	118.3	6	M5
	45kW~75kW	352	332	306	12	580	400	570	80	258	133.8	9	M8
	90kW~110kW	418.5	389.5	361	14.2	600	370	559	108.5	330	149.5	10	M8
	132kW~200kW	500	180	480	60	870	850	796	37	360	178.5	11	M10
660V	22kW~45kW	270	130	261	65.5	555	540	56	17	325	167	7	M6
	55kW~132kW	325	200	317	58.5	680	661	626	23	363	182	9.5	M8
	160kW~220kW	500	180	480	60	870	850	796	37	358	178.5	11	M10

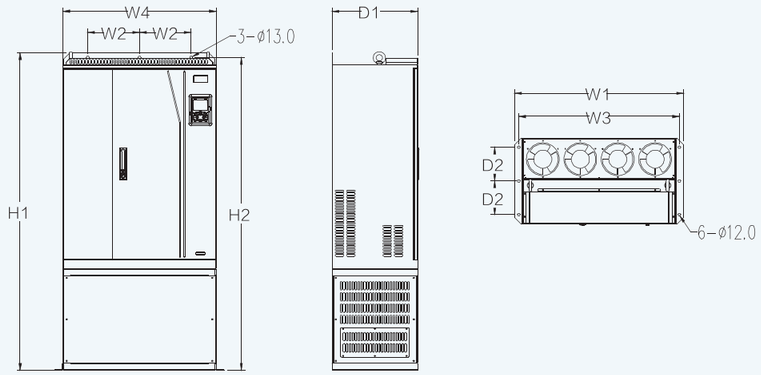
Floor mounting installation diagram



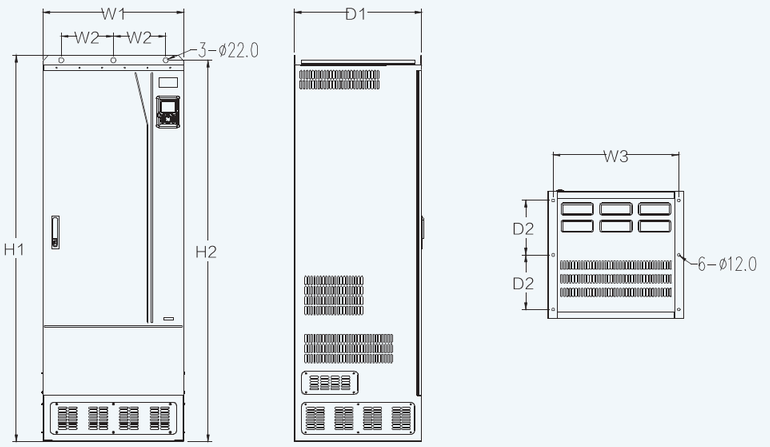
380V, 220~315kW



380V, 355~500kW



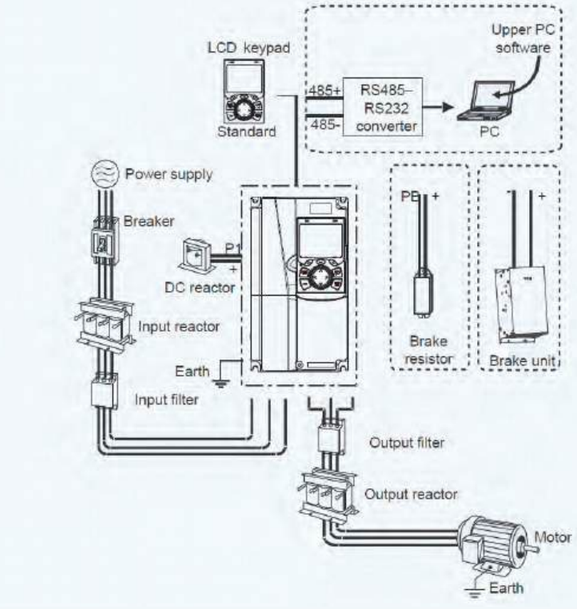
660V, 250~355kW



660V, 400~630kW

Model		W1	W2	W3	W4	H1	H2	D1	D2	Installation hole diameter	Fixing screw
380V	220kW~315kW	750	230	714	680	1410	1390	380	150	13\12	M12/M10
	355kW~500kW	620	230	572	-	1700	1678	560	240	22\12	M20/M10
660V	250kW~355kW	750	230	714	680	1410	1390	380	150	13\12	M12/M10
	400kW~630kW	620	230	572	\	1700	1678	560	240	22\12	M20/M10

Optional Parts



- VFDs of 380V, 37 kW or lower are equipped with built-in brake units, and VFDs of 45 kW to 110 kW can be configured with optional built-in brake units
- VFDs of 380 V, 18.5 kW to 110 kW are equipped with built-in DC reactors
- P1 terminals are equipped only for VFDs of 380 V, 132 kW or higher, which enable the VFDs to be directly connected to external DC reactors
- P1 terminals are equipped for all VFDs of the 660 V series or higher, which enable the VFDs to be directly connected to external DC reactors
- The brake units INVT's DBU series standard brake units. For details, see the DBU operation manual

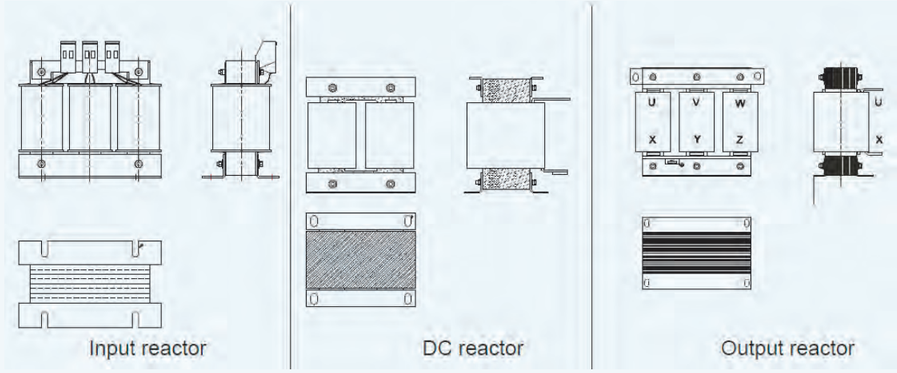
Breakers and electromagnetic contactors

Model		Fuse (A)	Breaker (A)	Rated current of the contactor (A)
380V	GD350-1R5G-4	1	16	10
	GD350-2R2G-4	17.4	16	10
	GD350-004G-4	30	25	16
	GD350-5R5G-4	45	25	16
	GD350-7R5G-4	60	40	25
	GD350-011G-4	78	63	32
	GD350-015G-4	105	63	50
	GD350-018G-4	114	100	63

Model		Fuse (A)	Breaker (A)	Rated current of the contactor (A)
380V	GD350-022G-4	138	100	80
	GD350-030G-4	186	125	95
	GD350-037G-4	228	160	120
	GD350-045G-4	270	200	135
	GD350-055G-4	315	200	170
	GD350-075G-4	420	250	230
	GD350-090G-4	480	315	280
	GD350-110G-4	630	400	315
	GD350-132G-4	720	400	380
	GD350-160G-4	870	630	450
	GD350-185G-4	1110	630	580
	GD350-200G-4	1110	630	580
	GD350-220G-4	1230	800	630
	GD350-250G-4	1380	800	700
	GD350-280G-4	1500	1000	780
	GD350-315G-4	1740	1200	900
	GD350-355G-4	1860	1280	960
	GD350-400G-4	2010	1380	1035
	GD350-450G-4	2445	1630	1222
	GD350-500G-4	2505	1720	1290
660V	GD350-022G-6	105	63	50
	GD350-030G-6	105	63	50
	GD350-370G-6	114	100	63
	GD350-045G-6	138	100	80
	GD350-055G-6	186	125	95
	GD350-075G-6	270	200	135
	GD350-090G-6	270	200	135
	GD350-110G-6	315	200	170
	GD350-132G-6	420	250	230
	GD350-160G-6	480	315	280
	GD350-185G-6	480	315	280
	GD350-200G-6	630	400	315
	GD350-220G-6	720	400	380
	GD350-250G-6	720	400	380
	GD350-280G-6	870	630	450
	GD350-315G-6	1110	630	580
	GD350-355G-6	1110	630	580

Model		Fuse (A)	Breaker (A)	Rated current of the contactor (A)
660V	GD350-400G-6	1230	800	630
	GD350-450G-6	1470	960	735
	GD350-500G-6	1500	100	780
	GD350-560G-6	1740	1200	900
	GD350-630G-6	2010	1380	1035

Reactors



Model		Input reactor	DC reactor	Output reactor
380V	GD350-1R5G-4	ACL2-1R5G-4	/	OCL2-1R5G-4
	GD350-2R2G-4	ACL2-2R2G-4		OCL2-2R2G-4
	GD350-004G-4	ACL2-004G-4		OCL2-004G-4
	GD350-5R5G-4	ACL2-5R5G-4		OCL2-5R5G-4
	GD350-7R5G-4	ACL2-7R5G-4		OCL2-7R5G-4
	GD350-011G-4	ACL2-011G-4		OCL2-011G-4
	GD350-015G-4	ACL2-015G-4		OCL2-015G-4
	GD350-018G-4	ACL2-018G-4	Standard Built-in	OCL2-018G-4
	GD350-022G-4	ACL2-022G-4		OCL2-022G-4
	GD350-030G-4	ACL2-030G-4		OCL2-030G-4
	GD350-037G-4	ACL2-037G-4		OCL2-037G-4
	GD350-045G-4	ACL2-045G-4		OCL2-045G-4
	GD350-055G-4	ACL2-055G-4		OCL2-055G-4
	GD350-075G-4	ACL2-075G-4		OCL2-075G-4
	GD350-090G-4	ACL2-090G-4		OCL2-090G-4
	GD350-110G-4	ACL2-110G-4		OCL2-110G-4
	GD350-132G-4	ACL2-132G-4	DCL2-132-4	OCL2-132G-4

Model		Input reactor	DC reactor	Output reactor
380V	GD350-160G-4	ACL2-160G-4	DCL2-160-4	OCL2-160G-4
	GD350-185G-4	ACL2-185G-4	DCL2-185-4	OCL2-185G-4
	GD350-200G-4	ACL2-200G-4	DCL2-200-4	OCL2-200G-4
	GD350-220G-4	ACL2-220G-4	DCL2-220-4	OCL2-220G-4
	GD350-250G-4	ACL2-250G-4	DCL2-250-4	OCL2-250G-4
	GD350-280G-4	ACL2-280G-4	DCL2-280-4	OCL2-280G-4
	GD350-315G-4	ACL2-315G-4	DCL2-315-4	OCL2-315G-4
	GD350-355G-4	Standard Built-in	DCL2-400-4	OCL2-350G-4
	GD350-400G-4		DCL2-400-4	OCL2-400G-4
	GD350-450G-4		DCL2-500-4	OCL2-500G-4
	GD350-500G-4		DCL2-500-4	OCL2-500G-4
660V	GD350-022G-6	ACL2-022G-6	DCL2-022G-6	OCL2-022G-6
	GD350-030G-6	ACL2-030G-6	DCL2-030G-6	OCL2-030G-6
	GD350-370G-6	ACL2-370G-6	DCL2-037G-6	OCL2-037G-6
	GD350-045G-6	ACL2-045G-6	DCL2-045G-6	OCL2-045G-6
	GD350-055G-6	ACL2-055G-6	DCL2-055G-6	OCL2-055G-6
	GD350-075G-6	ACL2-075G-6	DCL2-075G-6	OCL2-075G-6
	GD350-090G-6	ACL2-090G-6	DCL2-090G-6	OCL2-090G-6
	GD350-110G-6	ACL2-110G-6	DCL2-110G-6	OCL2-110G-6
	GD350-132G-6	ACL2-132G-6	DCL2-132G-6	OCL2-132G-6
	GD350-160G-6	ACL2-160G-6	DCL2-160G-6	OCL2-160G-6
	GD350-185G-6	ACL2-185G-6	DCL2-185G-6	OCL2-185G-6
	GD350-200G-6	ACL2-200G-6	DCL2-200G-6	OCL2-200G-6
	GD350-220G-6	ACL2-220G-6	DCL2-220G-6	OCL2-220G-6
	GD350-250G-6	ACL2-250G-6	DCL2-250G-6	OCL2-250G-6
	GD350-280G-6	ACL2-280G-6	DCL2-280G-6	OCL2-280G-6
	GD350-315G-6	ACL2-315G-6	DCL2-315G-6	OCL2-315G-6
	GD350-355G-6	ACL2-350G-6	DCL2-350G-6	OCL2-350G-6
	GD350-400G-6	Standard Built-in	DCL2-400G-6	OCL2-400G-6
	GD350-450G-6		DCL2-500G-6	OCL2-500G-6
	GD350-500G-6		DCL2-500G-6	OCL2-500G-6
	GD350-560G-6		DCL2-560G-6	OCL2-560G-6
	GD350-630G-6		DCL2-630G-6	OCL2-630G-6

Filters

FLT-P 04 045 L-B

A B C D E F

Filter identifier	Field description
A	FLT: Name of the VFD filter series
B	Filter type P: Power input filter L: Output filter
C	Voltage class 04: AC 3PH 380V (-15%)–440V (+10%) 06: AC 3PH 520V (-15%)–690V (+10%)
D	3-digit code indicating the rated current. For example, 015 indicates 15A.
E	Filter performance L: General H: High-performance
F	Filter application environment A: Environment Category I, C1 (EN 61800-3:2004) B: Environment Category I, C2 (EN 61800-3:2004) C: Environment Category II, C3 (EN 61800-3:2004)

VFD model	Input filter	Output filter
AC 3PH 380V (-15%)–440V (+10%)		
GD350-1R5G-4	FLT-P04006L-B	FLT-P04006L-B
GD350-2R2G-4		
GD350-004G-4	FLT-P04016L-B	FLT-P04016L-B
GD350-5R5G-4		
GD350-7R5G-4	FLT-P04032L-B	FLT-P04032L-B
GD350-011G-4		
GD350-015G-4	FLT-P04045L-B	FLT-P04045L-B
GD350-018G-4		
GD350-022G-4	FLT-P04065L-B	FLT-P04065L-B
GD350-030G-4		
GD350-037G-4	FLT-P04100L-B	FLT-P04100L-B
GD350-045G-4		
GD350-055G-4	FLT-P04150L-B	FLT-P04150L-B
GD350-075G-4		
GD350-090G-4	FLT-P04240L-B	FLT-P04240L-B
GD350-110G-4		
GD350-132G-4		
GD350-160G-4	FLT-P04400L-B	FLT-P04400L-B
GD350-185G-4		
GD350-200G-4		

VFD model	Input filter	Output filter
AC 3PH 380V (-15%)–440V (+10%)		
GD350-220G-4	FLT-P04600L-B	FLT-P04600L-B
GD350-250G-4		
GD350-280G-4		
GD350-315G-4	FLT-P04800L-B	FLT-P04800L-B
GD350-355G-4		
GD350-400G-4		
GD350-450G-4	FLT-P041000L-B	FLT-P041000L-B
GD350-500G-4		
AC 3PH 520V (-15%) - 690V (+10%)		
GD350-022G-6	FLT-P06050H-B	FLT-P06050H-B
GD350-030G-6		
GD350-370G-6		
GD350-045G-6	FLT-P06100H-B	FLT-P06100H-B
GD350-055G-6		
GD350-075G-6		
GD350-090G-6		
GD350-110G-6	FLT-P06200H-B	FLT-P06200H-B
GD350-132G-6		
GD350-160G-6		
GD350-185G-6		
GD350-200G-6	FLT-P06300H-B	FLT-P06300H-B
GD350-220G-6		
GD350-250G-6		
GD350-280G-6		
GD350-315G-6	FLT-P06400H-B	FLT-P06400H-B
GD350-355G-6		
GD350-400G-6	FLT-P061000H-B	FLT-P061000H-B
GD350-450G-6		
GD350-500G-6		
GD350-560G-6		
GD350-630G-6		

Brake system

VFD model	Brake unit model	Resistance applicable for brake torque (Ω)	Dissipated power of brake resistor (kW)			Min. allowable brake resistor (Ω)
			10% brake usage	50% brake usage	80% brake usage	
AC 3PH 380V (-15%)–440V (+10%)						
GD350-1R5G-4	Standard Built-in	326	0.23	1.1	1.8	170
GD350-2R2G-4		222	0.33	1.7	2.6	130
GD350-004G-4		122	0.6	3	4.8	80
GD350-5R5G-4		89	0.75	4.1	6.6	60
GD350-7R5G-4		65	1.1	5.6	9	47
GD350-011G-4		44	1.7	8.3	13.2	31
GD350-015G-4		32	2	11	18	23
GD350-018G-4		27	3	14	22	19
GD350-022G-4		22	3	17	26	17
GD350-030G-4		17	5	23	36	17
GD350-037G-4		13	6	28	44	11.7
GD350-045G-4	DBU100H-110-4	10	7	34	54	6.4
GD350-055G-4		8	8	41	66	
GD350-075G-4		6.5	11	56	90	
GD350-090G-4	DBU100H-160-4	5.4	14	68	108	4.4
GD350-110G-4		4.5	17	83	132	
GD350-132G-4	DBU100H-220-4	3.7	20	99	158	3.2
GD350-160G-4	DBU100H-320-4	3.1	24	120	192	2.2
GD350-185G-4		2.8	28	139	222	
GD350-200G-4		2.5	30	150	240	
GD350-220G-4	DBU100H-400-4	2.2	33	165	264	1.8
GD350-250G-4		2.0	38	188	300	
GD350-280G-4	Two sets DBU100H-320-4	3.6*2	21*1	105*2	168*2	2.2*2
GD350-315G-4		3.2*2	24*2	118*2	189*2	
GD350-355G-4		2.8*2	27*2	132*2	210*2	
GD350-400G-4		2.4*2	30*2	150*2	240*2	
GD350-450G-4	Two sets DBU100H-400-4	2.2*2	34*2	168*2	270*2	1.8*2
GD350-500G-4		2.0*2	38*2	186*2	300*2	

VFD model	Brake unit model	Resistance applicable for brake torque (Ω)	Dissipated power of brake resistor (kW)			Min. allowable brake resistor (Ω)
			10% brake usage	50% brake usage	80% brake usage	
AC 3PH 520V (-15%)–690V (+10%)						
GD350-022G-6	DBU100H-110-6	55	4	17	27	10.0
GD350-030G-6		40.3	5	23	36	
GD350-370G-6		32.7	6	28	44	
GD350-045G-6		26.9	7	34	54	
GD350-055G-6		22.0	8	41	66	
GD350-075G-6		16.1	11	56	90	
GD350-090G-6		13.4	14	68	108	
GD350-110G-6		11.0	17	83	132	
GD350-132G-6	DBU100H-160-6	9.2	20	99	158	6.9
GD350-160G-6		7.6	24	120	192	
GD350-185G-6	DBU100H-220-6	6.5	28	139	222	5.0
GD350-200G-6		6.1	30	150	240	
GD350-220G-6		5.5	33	165	264	
GD350-250G-6	DBU100H-320-6	4.8	38	188	300	3.4
GD350-280G-6		4.3	42	210	336	
GD350-315G-6		3.8	47	236	378	
GD350-355G-6		3.5	53	263	420	
GD350-400G-6	DBU100H-400-6	3.0	60	300	480	2.8
GD350-450G-6	Two sets DBU100H-320-6	5.5*2	34*2	168*2	270*2	3.4*2
GD350-500G-6		4.8*2	38*2	188*2	300*2	
GD350-560G-6		4.3*2	42*2	210*2	336*2	
GD350-630G-6		3.8*2	47*2	236*2	378*2	

Extension cards


IO extension card
EC-IO501-00


Programmable extension card
EC-PC501-00


Bluetooth/WIFI communication card
EC-TX501-1/502


Ethernet communication card
EC-TX504


24V incremental PG card
EC-PG505-24


CANopen communication card
EC-TX505/511


PROFIBUS-DP communication card
EC-TX503


PROFINET communication card
EC-TX509


Multi-function incremental PG card
EC-PG505-12


UVW incremental PG card
EC-PG503-05


Resolver PG card
EC-PG504-00


Sin/Cos PG card
EC-PG502


Incremental PG card
EC-PG507-12

Type	Name	model	Specification
I/O card	IO extension card	EC-IO501-00	4 channels switch input 1 channel switch output 1 channel analog input 1 channel analog output 2 channels relay output.
PLC card	Programmable extension card	EC-PC501-00	6 channels switch input 2 channels switch output 2 channels relay output.
Communication card	Bluetooth communication card	EC-TX501-1 EC-TX501-2	Support Bluetooth 4.0 PCB antenna type or external sucker antenna. Effective communication distance is 30m.
	CANopen communication card	EC-TX505	Based on the CAN2.0A physical layer Support the CANopen protocol.
	PROFIBUS-DP communication card	EC-TX503	Support PZB to control data exchange. Support PZW to access VFD parameters. Baud rate supports up to 12Mbps.
	WIFI communication card	EC-TX502-1 EC-TX502-2	Monitor the VFD locally or remotely through WIFI with INVT's mobile phone APP Effective communication distance is 30m.
	Ethernet communication card	EC-TX504	Support Ethernet communication with INVT's internal protocol INVT Studio
	CAN master/slave control communication card	EC-TX511	Based on the CAN2.0B physical layer Adopt INVT's master-slave control proprietary protocol
	PROFINET communication card	EC-TX509	Support the PROFINET protocol
PG card	Multi-function incremental PG card	EC-PG505-12	Applicable to OC encoders of 5 V or 12 V Applicable to push-pull encoders of 5 V or 12 V Applicable to differential encoders of 5 V Supporting pulse string setting
	UVW incremental PG card	EC-PG503-05	Encoder interface: 5V incremental differential ABZ(UVW) encoder, maximum 400kHz.
	Resolver PG card	EC-PG504-00	Rotary transformer encoder. support / directional differential input of pulse. support 5V differential signal 1-255 frequency division output, up to 200kHz
	24V incremental PG card	EC-PG505-24	Support A, B, Z orthogonal input Support A, B, Z frequency-divided output Support pulse string reference input
	Sin/Cos PG card	EG-PG502	Applicable to Sin/Cos encoders with or without CD signal Support A, B, Z frequency-divided output Support pulse string reference input
	Incremental PG card	EC-PG507-12	Applicable to OC encoders of 5 V or 12 V Applicable to push-pull encoders of 5 V or 12 V Applicable to differential encoders of 5 V

GD350 IP54 Series VFD

Introduction

Goodrive350 IP54 series VFDs provide the same control methods and extended functions as GD350. Some can be configured with optional built-in DC reactors as required by customers. The full-sheet metal structure is adopted. They support wall-mounting and flange installation. LCD keypads are the standard configuration. They are especially applicable in scenarios with harsh dust and water vapor conditions, such as those with HVAC, fans and pumps, stone, and wood.

Features:

- Ingress protection rating of IP54, applicable to working environments with harsh dust and water vapor conditions(Same as NAME 3S).
- Supporting both heavy and light loads, integrated G and P types.
- Reserving interfaces for implementing the real-time clock function.
- Supporting optional built-in DC reactors （18.5kW~110kW）.
- Built-in brake resistors （1.5kW~37kW）.

Level of protection—IP54

Built-in accessories

- Supporting built-in brake units(1.5~37kW), reducing customers' costs and installation space
- Providing built-in DC reactors for models of 18.5 kW–110 kW

Technical Specification

Function description		Specification
Technical control performance	Control mode	SVPWM control, SVC, VC
	Motor type	Asynchronous motor, permanent-magnet synchronous motor
	Speed regulation ratio	Asynchronous motor 1: 200 (SVC); Synchronous motor 1:20 (SVC) , 1:1000 (VC)
	Speed control precision	±0.2% (SVC), ±0.02% (VC)
	Speed fluctuation	± 0.3% (SVC)
	Torque response	<20ms SVC) , <10ms (VC)
	Torque control precision	10% (SVC) , 5% (VC)
	Starting torque	Asynchronous motor: 0.25Hz/150% (SVC) Synchronous motor: 2.5 Hz/150% (SVC) 0Hz/200% (VC)
	Overload capacity	150% of rated current: 1min;180% of rated current: 10s;200% of rated current: 1s;
Running control performance	Frequency setup mode	Digital, analog, pulse frequency, multi-step speed running, simple PLC, PID, MODBUS communication, PROFIBUS communication, etc.; Realize switch-over between the set combination and the set channel
	Automatic voltage Regulation function	Keep the output voltage constant when grid voltage changes
	Fault protection function	Fault protection function Provide over 30 kinds of fault protection functions: overcurrent, overvoltage, undervoltage, over-temperature, phase loss and overload, etc.
	Speed tracking restart function	Realize impact-free starting of the motor in rotating Note: This function is available for 4kW and above models
Peripheral interface	Terminal analog input resolution	No more than 20mV
	Terminal digital input resolution	No more than 2ms
	Analog input	2 inputs, AI1: 0–10V/0–20mA; AI2: -10–10V
	Analog output	1 output, AO1: 0–10V /0–20mA

Function description		Specification
Peripheral interface	Digital input	Four regular inputs; max. frequency: 1kHz; internal impedance: 3.3kΩ Two high-speed inputs; max. frequency: 50kHz; supports quadrature encoder input; with speed measurement function
	Digital output	One high-speed pulse output; max. frequency: 50kHz One Y terminal open collector output
	Relay output	Two programmable relay outputs RO1A NO, RO1B NC, RO1C common port RO2A NO, RO2B NC, RO2C common port Contact capacity: 3A/AC250V, 1A/DC30V
	Extension interface	Three extension interfaces: SLOT1, SLOT2, SLOT3 Expandable PG card, programmable extension card, communication card, I/O card, etc
Others	Installation mode	Support wall-mounting and flange-mounting
	Temperature of running environment	-10–50°C, derating is required if the ambient temperature exceeds 40°C
	Protection level	IP54(3S in NAME)
	Pollution level	Level 3
	Cooling mode	Air cooling
	Brake unit	Built-in brake unit for 380V 1.5kW~37kW
	DC reactor	Bulit-in options in 18.5kW~110kW
	EMC filter	380V models fulfill the requirements of IEC61800-3 C3 Optional external filter should meet the requirements of IEC61800-3 C2

Type Selection

GD350 – 022G/030P – 4 5

① ② ③ ④

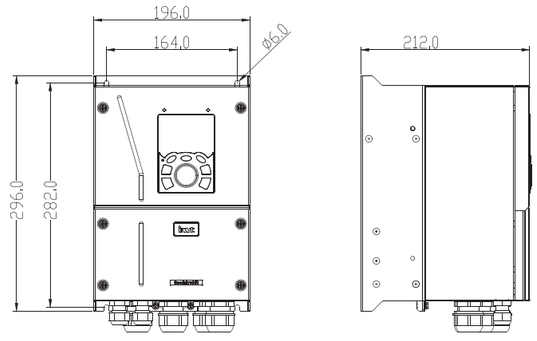
Field	Sign	Description	Contents
Abbreviation of product series	①	Abbreviation of product series	GD350: Goodrive350 high-performance multi-function VFD
Rated power	②	Power range+ Load type	022: 22kW G—Constant torque load P—Special for fans and pumps
Voltage level	③	Voltage level	4: AC 3PH 380V(-15%)—440V(+10%)
IP level	④	IP level	5: IP54

AC 3PH 380V(-15%)-440V(+10%) rated value

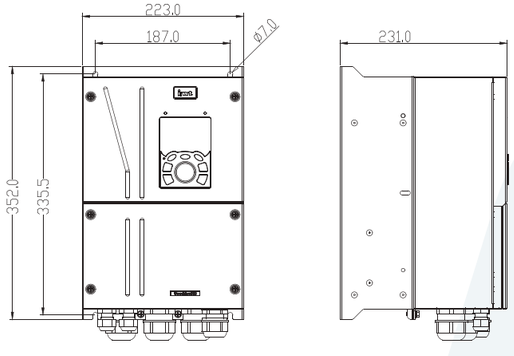
Product model	Output power（kW）	Input current（A）	Output current（A）	Gross weight (kg)	Dimension (mm)
GD350-004G/5R5P-45	4	13.5	9.5	17.7	196*296*212
GD350-5R5G/7R5P-45	5.5	19.5	14		
GD350-7R5G/011P-45	7.5	25	18.5	10.6	256*328*212
GD350-011G/015P-45	11	32	25		
GD350-015G/018P-45	15	40	32		
GD350-018G/022P-45	18.5	47	38	17.7	274*399*231
GD350-022G/030P-45	22	56	45		

Installation Dimensions

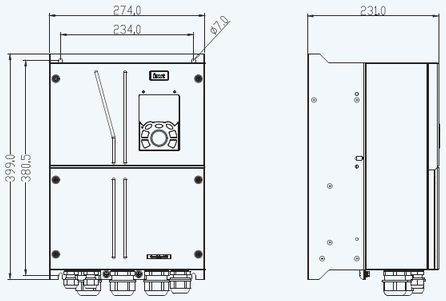
Wall mounting installation diagram



380V, 4~5.5kW

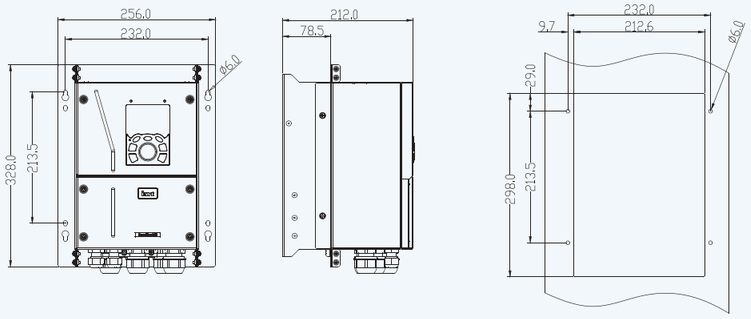


380V, 7.5~15kW

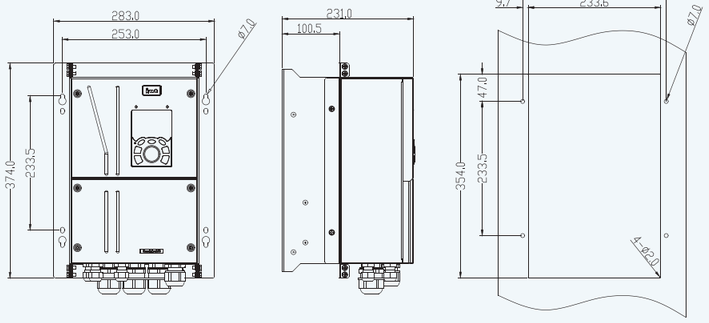


VFD specification	W1	W2	H1	H2	D1	Installation hole diameter	Fixing screw
4~5.5kW	192	164	296	282	212	6	M5
7.5~15kW	223	187	352	335.5	231	7	M6
18.5~22kW	274	234	399	380.5	231	7	M6

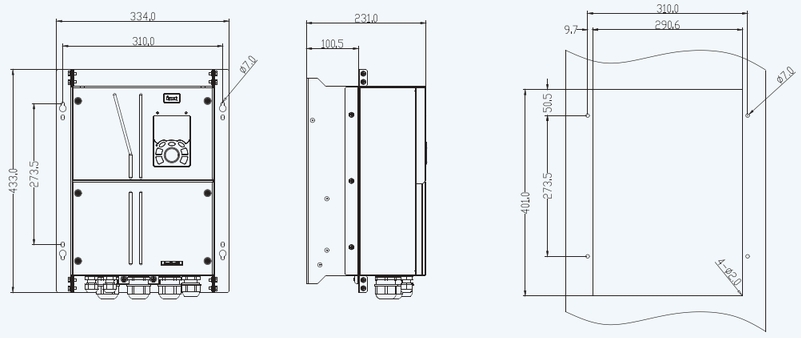
Flange mounting installation diagram



380V, 4~5.5kW



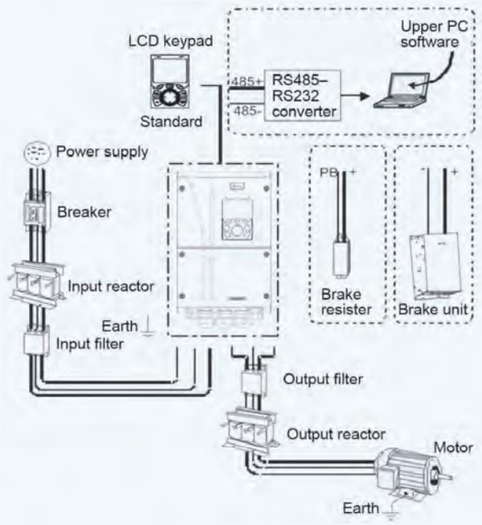
380V, 7.5~15kW



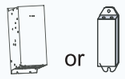
380V, 18.5~22kW

VFD specification	W1	W2	W3	W4	H1	H2	H3	H4	D1	D2	Installation hole diameter	Fixing screw
4~5.5kW	256	232	212.6	9.7	328	213.5	298	29	212	78.5	6	M5
7.5~15kW	283	253	233.6	9.7	374	233.5	354	47	231	100.5	7	M6
18.5~22kW	334	310	290.6	9.7	433	273.5	401	50.5	231	100.5	7	M6

Optional Parts



- VFDs of 380 V, 22 kW or lower are equipped with built-in brake units.
- VFDs of 380 V, 18.5 kW to 22 kW are equipped with built-in DC reactors.
- The brake units INVT's DBU series standard brake units. For details, see the DBU operation manual.

Image	Name	Description
	Cable	Accessory for signal transmission
	Breaker	Device for electric shock prevention and protection against short-to-ground that may cause current leakage and fire. Select residual-current circuit breakers (RCCBs) that are applicable to VFD and can restrict high-order harmonics, and of which the rated sensitive current for one VFD is larger than 30 mA.
	Input reactor	Accessories used to improve the current adjustment coefficient on the input side of the inverter, and thus restrict high-order harmonic currents.
	Input filter	Accessory that restricts the electromagnetic interference generated by the VFD and transmitted to the public grid through the power cable. Try to install the input filter near the input terminal side of the VFD.
	Brake unit or brake resistor	Accessories used to consume the regenerative energy of the motor to reduce the deceleration time. VFDs of 380 V, 22 kW or lower need only to be configured with brake resistors.
	Output filter	Accessory used to restrict interference generated in the wiring area on the output side of the VFD. Try to install the output filter near the output terminal side of the VFD.
	Output reactor	Accessory used to lengthen the valid transmission distance of the VFD, which effectively restrict the transient high voltage generated during the switch-on and switch-off of the IGBT module of the VFD.

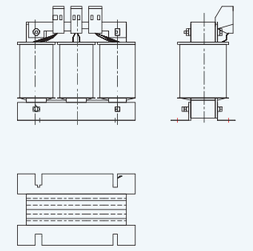
Control cables

VFD model	Recommended cable size (mm^2)		Size of connectable cable (mm^2)				Terminal screw specification	Tightening torque (Nm)
	RST UVW	PE	RST UVW	P1, (+)	PB, (+), (-)	PE		
GD350-004G/5R5P-45	2.5	2.5	2.5~6	2.5~6	2.5~6	2.5~6	M4	1.2~1.5
GD350-5R5G/7R5P-45	2.5	2.5	2.5~6	2.5~6	2.5~6	2.5~6	M4	1.2~1.5
GD350-7R5G/011P-45	4	4	2.5-6	4-6	4-6	2.5-6	M4	1.2-1.5
GD350-011G/015P-45	6	6	4-10	4-10	4-10	4-10	M5	2.3
GD350-015G/018P-45	6	6	4-10	4-10	4-10	4-10	M5	2.3
GD350-018G/022P-45	10	10	10-16	10-16	10-16	10-16	M5	2.3
GD350-022G/030P-45	16	16	10-16	10-16	10-16	10-16	M5	2.3

Breakers and electromagnetic contactor

VFD model	Fuse (A)	Breaker (A)	Rated current of the contactor (A)
GD350-004G/5R5P-45	30	25	16
GD350-5R5G/7R5P-45	45	25	16
GD350-7R5G/011P-45	60	40	25
GD350-011G/015P-45	78	63	32
GD350-015G/018P-45	105	63	50
GD350-018G/022P-45	114	100	63
GD350-022G/030P-45	138	100	80

Reactor

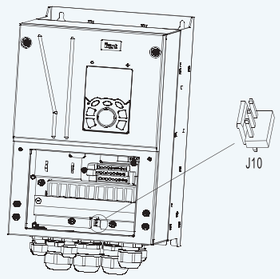


Input reactor

Output reactor

VFD model	Input reactor	Output reactor
GD350-004G/5R5P-45	ACL2-004-4	OCL2-004-4
GD350-5R5G/7R5P-45	ACL2-5R5-4	OCL2-5R5-4
GD350-7R5G/011P-45	ACL2-7R5-4	OCL2-7R5-4
GD350-011G/015P-45	ACL2-011-4	OCL2-011-4
GD350-015G/018P-45	ACL2-015-4	OCL2-015-4
GD350-018G/022P-45	ACL2-018-4	OCL2-018-4
GD350-022G/030P-45	ACL2-022-4	OCL2-022-4

Filters



Note: Do not connect C3 filters in IT power systems.

Filter model description

FLT – P 04 045 L B

A B C D E F

Field identifier	Field description
A	FLT: Name of the VFD filter series
B	Filter type P: Power input filter L: Output filter
C	Voltage class 04: AC 3PH 380V (-15%)–440V (+10%)
D	3-digit code indicating the rated current. For example, 015 indicates 15 A.
E	Filter performance L: General H: High-performance
F	Filter application environment A: Environment Category I, C1 (EN 61800-3:2004) B: Environment Category I, C2 (EN 61800-3:2004) C: Environment Category II, C3 (EN 61800-3:2004)

VFD model	Input filter	Output filter
GD350-004G/5R5P-45	FLT-P04016L-B	FLT-L04016L-B
GD350-5R5G/7R5P-45		
GD350-7R5G/011P-45	FLT-P04032L-B	FLT-P04032L-B
GD350-011G/015P-45		
GD350-015G/018P-45	FLT-P04045L-B	FLT-P04045L-B
GD350-018G/022P-45		
GD350-022G/030P-45	FLT-P04065L-B	FLT-P04065L-B

Brake system

VFD model	Brake unit model	Resistance applicable for 100% brake torque (Ω)	Dissipated power of brake resistor (kW)			Min. allowable brake resistance (Ω)
			10% brake usage	50% brake usage	80% brake usage	
GD350-004G/5R5P-45	Built-in brake unit	122	0.6	3	4.8	80
GD350-5R5G/7R5P-45		89	0.75	4.1	6.6	60
GD350-7R5G/011P-45		65	1.1	5.6	9	47
GD350-011G/015P-45		44	1.7	8.3	13.2	31
GD350-015G/018P-45		32	2	11	18	23
GD350-018G/022P-45		27	3	14	22	19
GD350-022G/030P-45		22	3	17	26	17

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GD350-IP55 Series

High-protection Multi-function VFD

CE RoHS

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Goodrive350 -IP55

GD350-IP55 is INVT's latest high protection multifunction VFD. The IP55 protection rating provides the best protection experience for most harsh outdoor applications. GD350-IP55 also incorporates features such as ease of use, excellent performance, high scalability and wide usage. At the same time, an integrated AC switch also provides convenience and security for machine control and debugging.

Features

- IP55 protection level
- AC switch for safe control
- Drive various motors
- Strong scalability: support to insert 3 extension cards at the same time
- Isolated air duct
- Sectional cover design makes the wiring simple

Application


Aquaculture farm


Water treatment


Fan

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روبروی پالایشگاه نفت پارس، پلاک ۱۲

Type Selection

GD350 – 004G/5R5P - 4 5 – AS

① ② ③ ④ ⑤

Sign	Description	Remark
①	Abbreviation of product series	GD350: Goodrvie350 high-performance multi-function VFD
②	Power range + Load type	004G/5R5P: 4kW G: Constant torque load P:Fan and water pump
③	Voltage level	4: AC 3PH 380(-15%)~440V(+10%)
④	Protection level	5: IP55 level
⑤	Special remark	AS: AC input switch

Note:
Brake units have been built in the 37kW and lower VFD models as standard configuration.
Brake units are not standard configuration for the 45–110kW VFD models. (If you want to use braking units for these models, add suffix "-B" at the end of the model codes in your purchase orders, for example, GD350-045G/055P-45-AS-B.)

Power Ratings

Case	Model	Constant torque				Variable torque			
		Power (kW)	Input current (A)	Output current (A)	Carrier (kHz)	Power (kW)	Input current (A)	Output current (A)	Carrier (kHz)
1	GD350-004G/5R5P-45-AS	4	13.5	9.5	8	5.5	19.5	12.5	4
	GD350-5R5G/7R5P-45-AS	5.5	19.5	14	8	7.5	23	17	4
2	GD350-7R5G/011P-45-AS	7.5	25	18.5	8	11	30	23	4
	GD350-011G/015P-45-AS	11	32	25	8	15	40	32	4
	GD350-015G/018P-45-AS	15	40	32	4	18.5	45	38	2
3	GD350-018G/022P-45-AS	18.5	45	38	4	22	51	45	2
	GD350-022G/030P-45-AS	22	51	45	4	30	64	60	2
4	GD350-030G/037P-45-AS	30	64	60	4	37	80	75	2
	GD350-037G/045P-45-AS	37	80	75	4	45	98	92	2
5	GD350-045G/055P-45-AS	45	98	92	4	55	128	115	2
	GD350-045G/055P-45-AS-B	45	98	92	4	55	128	115	2
	GD350-055G/075P-45-AS	55	128	115	4	75	139	150	2
	GD350-055G/075P-45-AS-B	55	128	115	4	75	139	150	2
6	GD350-075G/090P-45-AS	75	139	150	2	90	168	170	2
	GD350-075G/090P-45-AS-B	75	139	150	2	90	168	170	2
	GD350-090G/110P-45-AS	90	168	180	2	110	201	215	2
	GD350-090G/110P-45-AS-B	90	168	180	2	110	201	215	2
	GD350-110G-45-AS	110	201	215	2	-	-	-	-
	GD350-110G-45-AS-B	110	201	215	2	-	-	-	-

Size & Weight table

Case	Power (kW)	Net weight (kg)	Gross weight (kg)	Product size (mm)	Carton size (mm)
1	4-5.5	7	8.5	196*403*260.5	545*285*370
2	7.5-15	13	15.4	223*475*289.4	605*355*400
3	18.5-22	21	23.6	274*522*279.5	680*390*425
4	30-37	26.5	29.5	318*587*290	770*420*440
5	45-55	48.2	52	338*800*336.7	990*480*515
6	75-110	64	82.8	370*788*380	945*480*600

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روبروی پالایشگاه نفت پارس، پلاک ۱۲

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Product Specification

	Function description	Specification
Power input	Input voltage (V)	-4 model: 3PH 380V(-15%)–440V(+10%)
	Input current (A)	50Hz or 60Hz, allowable range: 47–63Hz
Power output	Output Voltage (V)	0–input voltage
	Output frequency (Hz)	0~400Hz
Technical control performance	Control mode	SVPWM control, SVC, VC
	Motor type Speed regulation ratio	Asynchronous motor, permanent-magnet synchronous motor Asynchronous motor 1: 200 (SVC); Synchronous motor 1: 20 (SVC) , 1:1000 (VC)
	Speed control precision	±0.2%(SVC), ±0.02%(VC)
	Speed fluctuation	± 0.3%(SVC)
	Torque response	<20msSVC) , <10ms(VC)
	Torque control precision	10%(SVC) , 5%(VC)
	Starting torque	Asynchronous motor: 0.25Hz/150% (SVC) Synchronous motor: 2.5 Hz/150% (SVC) 0Hz/200% (VC)
	Overload capacity	G type: 150%: 1min; 180%: 10s; 200%: 1s; P type: 120%: 1min;
Running control performance	Frequency setup mode	Digital, analog, pulse frequency, multi-step speed running, simple PLC, PID, Modbus communication, PROFIBUS communication, etc. Realize switch-over between the set combination and the set channel
	Automatic voltage regulation function	Keep the output voltage constant when grid voltage changes
	Fault protection function	Provide over 30 kinds of fault protection functions: overcurrent, overvoltage, undervoltage, over-temperature, phase loss and overload, etc.
	Speed tracking restart	Realize impact-free starting of the motor in rotating Note: This function is available for 004G/5R5P and above models
Peripheral interface	Analog input	2
	Analog output	1
	Digital input	4 S terminal, 2 HDI
	Digital output	1 Y1, 1HDO
	Relay output	2 programmable relay output, NO/NC contact: RO1A, RO1B, RO1C RO2A, RO2B, RO2C
	Communication interface	1 RS485 (non-isolated), 1 USB
	STO input	2 redundant input
Optional cards	Expansion interface	Maximum 3 expansion interfaces:SLOT1, SLOT2, SLOT3
	Expansion I/O card	4 DI, 1 AI, 1 AO, 1 DO, 2 RO
	Communication card	Optional Profibus-DP, CANopen, Profinet, EtherCAT, Ethernet/IP, Modbus TCP etc.
	PG card	EC-PG503-05: 5V Differential Incremental (H2)
		EC-PG504-00: Resolver type PG card (D1)
		EC-PG505-12: 5V/12V Multifunctional Incremental (H1)
		EC-PG505-24: 24V Incremental PG card
		EC-PG502: SIN/COS PG card
		EC-PG507-12: Multifunctional Incremental PG card
	Programmable card	PLC card, 1 AI, 6 DI, 1 AO, 2 Relay, 1 RS485
	Wireless communication	Bluetooth, WiFi, realize wireless communication
Others	Installation mode	Wall mounting, flange mounting
	Temperature	-10~50 C (Derating is required if the ambient temperature exceeds40°C)
	Protection level	IP55
	Cooling mode	Forced air cooling
	Braking unit	37kW or below: standard built-in 45kW or above: optional built-in
	STO level	SIL2
	EMC filter	380V models fulfill the requirements of IEC61800-3 C3, up to 30m cable length shielded.

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GD350-19 Series VFD for Hoisting

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روبـروی پالایشگاه نفت پـارس، پلاک ۱۲

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CONTENTS

Product Introduction

Goodrive350-19 series VFDs are the new generation of VFDs, that INVT develops for hoisting machinery by using advanced control technologies based on more than ten-year accumulative hoisting-industry experience. The VFDs achieve excellent torque performance by integrating various special functions, including brake control, zero servo, quick stop, master/slave control, switchover between 3 sets of motor parameters, pre-magnetizing, light-load speed acceleration, rope detection, and travel limit, to ensure the safety, reliability, and high efficiency of the machinery. The VFDs can be widely used to drive the mechanisms such as about lifting, tilting, luffing, crane, horizontal movement motor, rotary, and grabbing in hoisting machinery.

- Support asynchronous induction motor and permanent magnet synchronous motor drive control.
- Integrated rich lifting industry dedicated control functions.
- STO function.
- Compatible with 1M~100M fieldbus.
- Superior dynamic response and control accuracy.

Port machinery


Bridge crane


RTG


Portal crane


Gantry crane

Hoist machinery


Construction lifting equipment


European type crane


Mine hoist


Belt conveyor

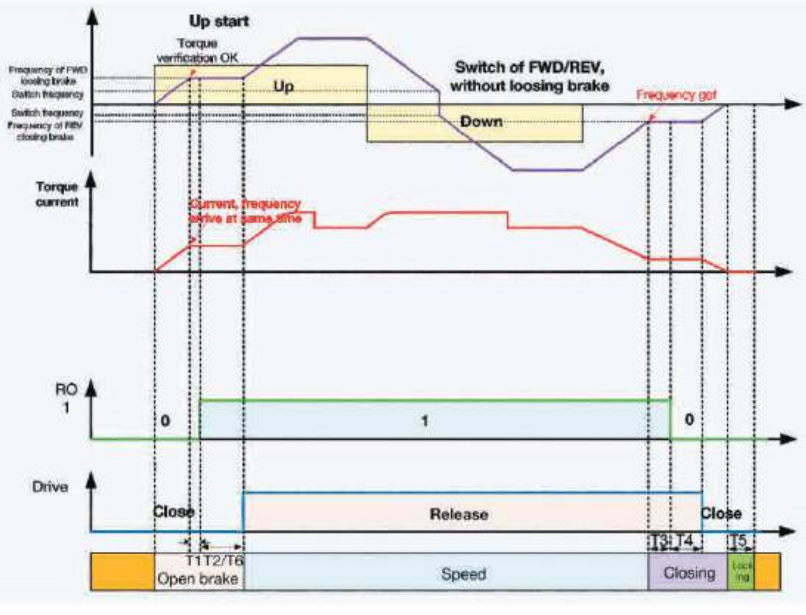
Product Advantage

Safe and Reliable

• Brake logic control

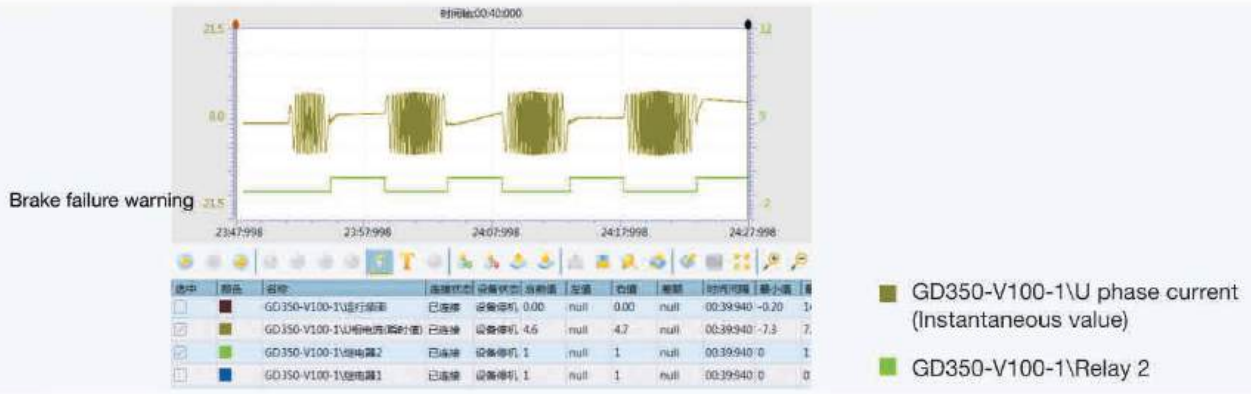
The brake logic control integrates the torque verification function to ensure the torque output of the motor, safe and without slipping.

The brake logic control supports the start direction, forward and reverse switching of the brake selection function, which meets various starting requirements and has good adaptability.



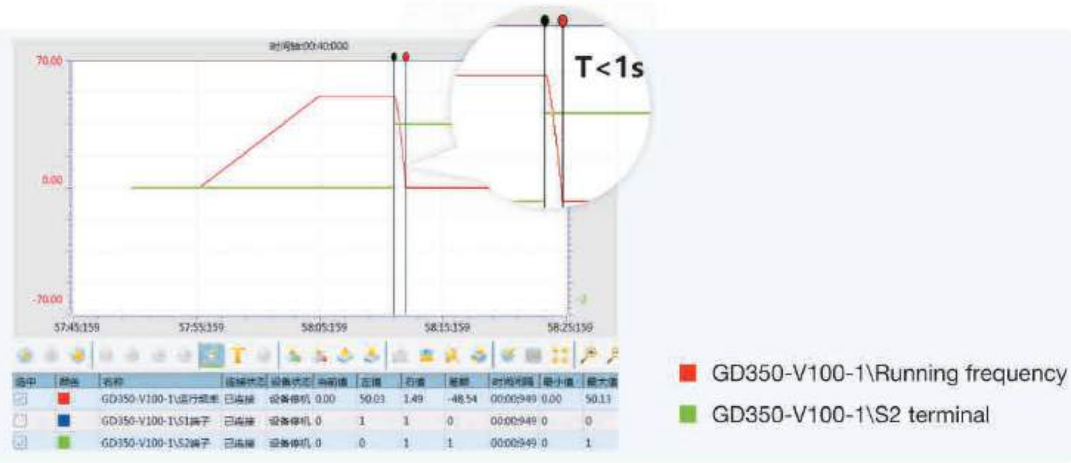
• Zero-servo

When the motor is locked at zero speed, the motor can remain locked at zero speed, even if the external force in the forward and reversed direction is applied. When the brake fails, it can also drive the motor to control full-load hovering or lower speed fall to ensure safe use.



• Fast brake

When the fast electric braking is effective, it can be controlled to stop near the target position during high-speed operation to improve efficiency. It can prevent the spreader from hitting the top and hanging the cabin, ensuring the safety of the crane.



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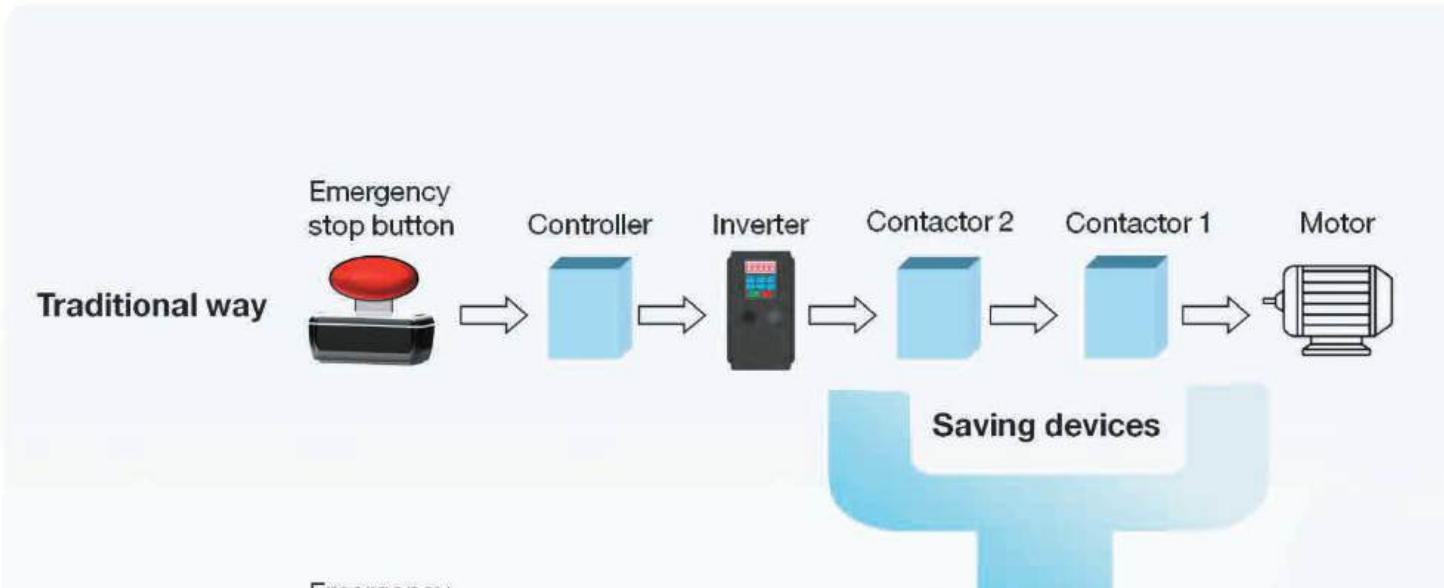
Safe torque off

When the motor stops, cut off the torque output to prevent accidental start of the equipment, reliable and safer; VFD is continuously powered, which can continue to monitor system status and recover quickly.



Note: Stop class corresponding to EN60204-1, CLASS SIL2.

Loose rope detection

Torque detection is carried out before lifting to avoid safety accidents caused by high speed lifting or speed lifting function miss-operation and rope failure under slack state.

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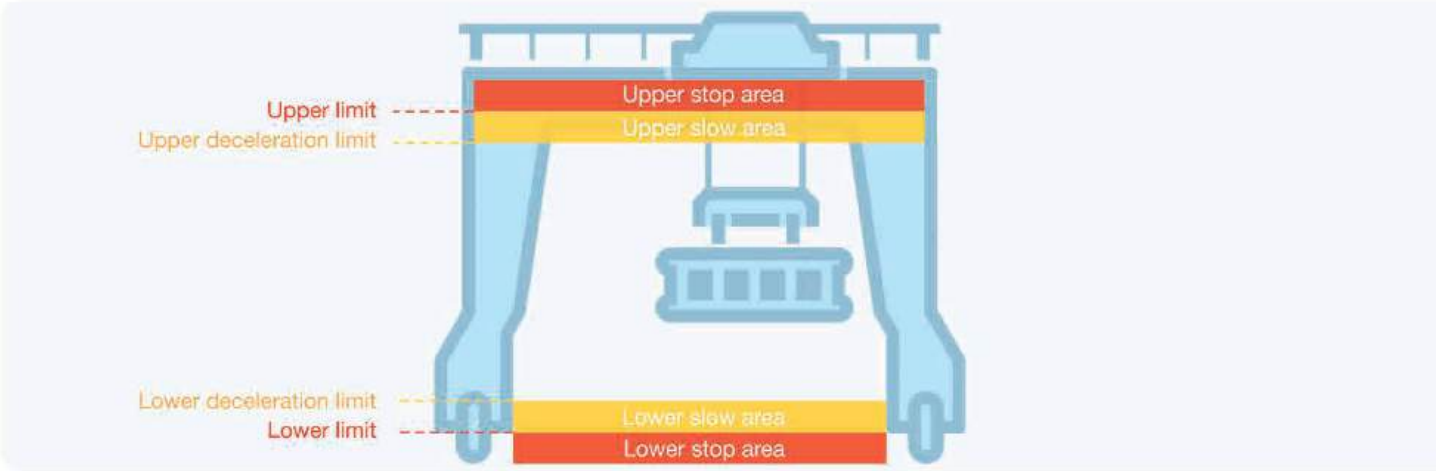
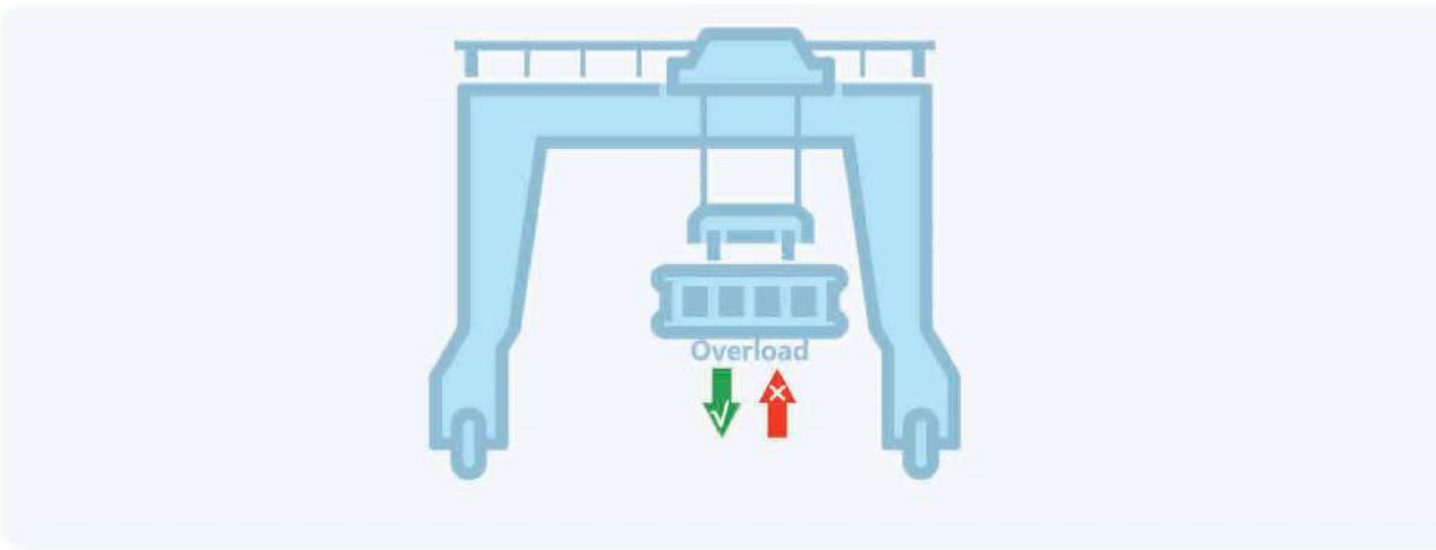
- ## Travel limit

It integrates upper/lower limit and upper/lower deceleration limit functions to limit the operation of the crane within the specified range, ensuring safety while optimizing the shutdown mode and improving equipment efficiency.



- ## Overload protection

When the load weight exceeds the limit value of overload torque, limit the operation of the VFD to prevent the overload operation from causing danger.

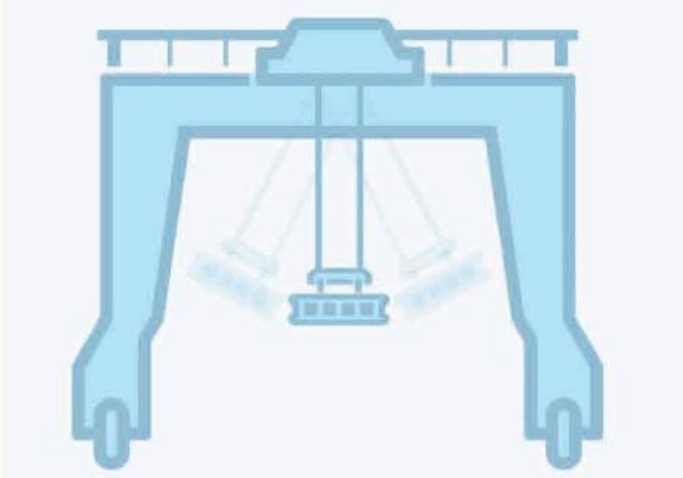


Ease of use

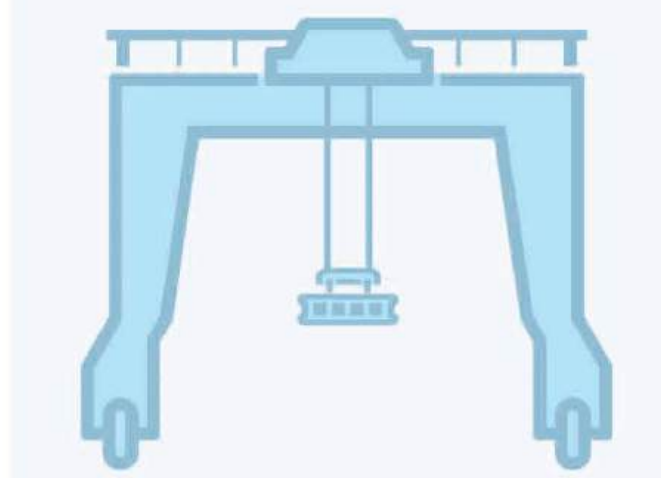
- ## Anti-rocking function

Built-in anti-rocking function can effectively restrain the shaking of goods during translation and improve work efficiency.

Invalid



Valid



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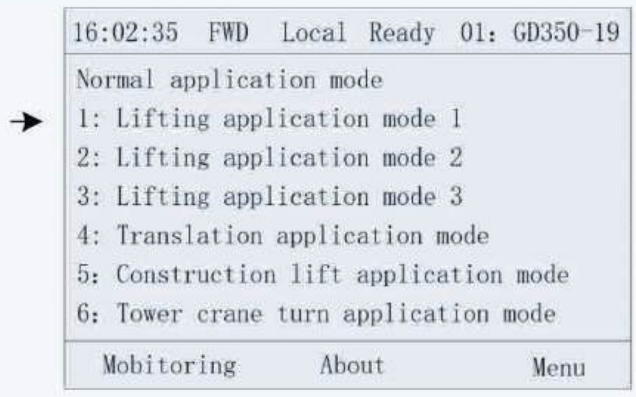
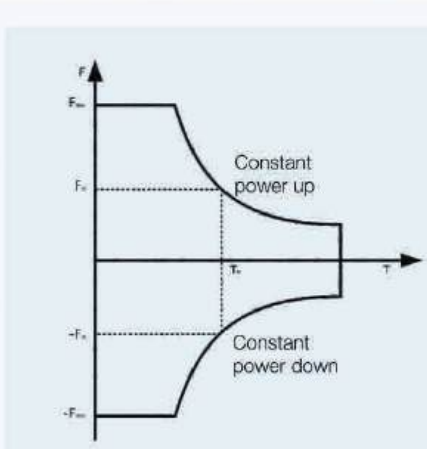
Fast setting

Integration of a variety of lifting macro application modes and support user customized macro, one key can complete the lifting, horizontal movement, construction hoist, tower crane rotating application parameter settings, easy to use.
When the encoder fails, the macro one-key switch to open loop control mode is applied to ensure the normal operation of the equipment

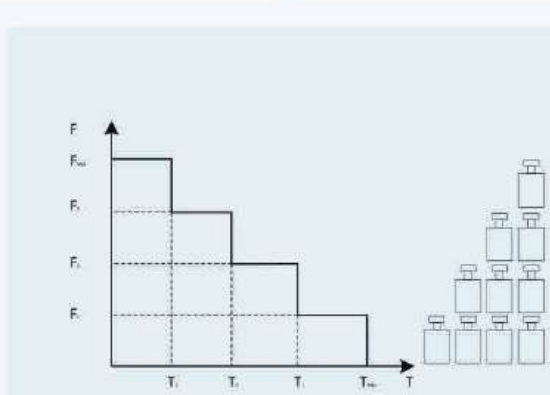


Light load speed up

Support constant power, step speed limit mode, according to the load to achieve the best speed matching, shorten the operation cycle of the crane, improve the operation efficiency.



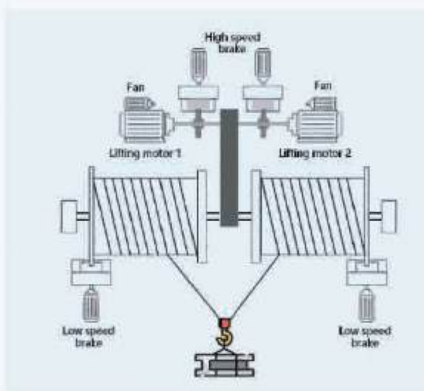
Constant power mode



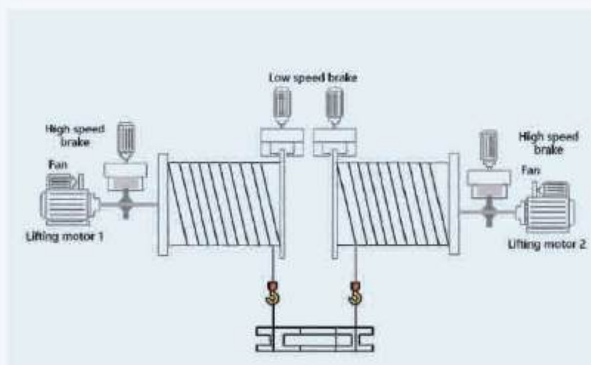
Step speed limit mode

Master/slave control

The power balance mode ensures the uniform output of the motor and meets the application demand of the same load driven by the rigid connection of multiple motors.
Speed synchronization mode, to ensure the synchronous lifting mechanism, to ensure safety;
Support one master and multiple slave, master and slave switch, flexible application.



Power balance mode



Speed synchronization mode

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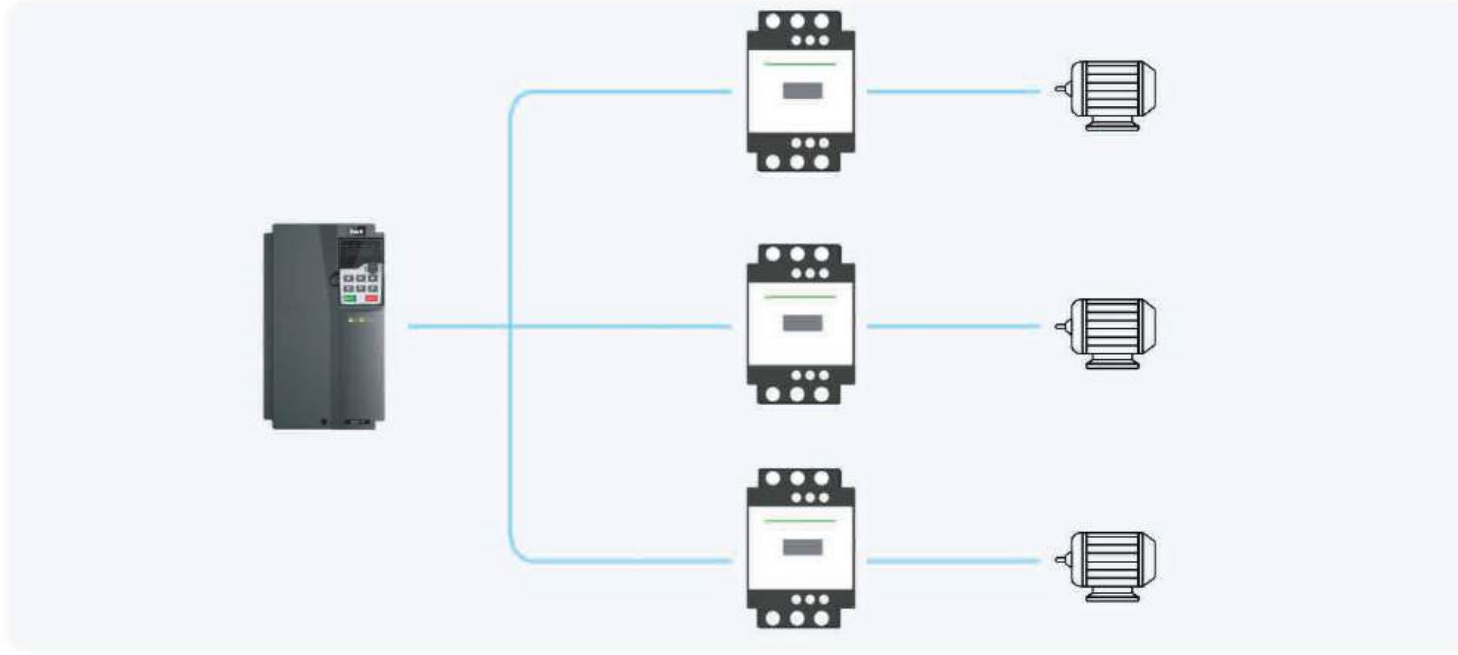
3 sets of motor parameter switch

It supports 3 sets of motor parameter storage, realizes the motor control of lifting, taxi and car by switching instructions, reduces the number of VFDs, and improves the competitiveness of users.



Hardware upgrade

110kW and below: built-in brake unit to improve system reliability and reduce customer cost.
18.5 ~ 110kW: built-in DC reactor to increase power factor.

Cone rotor motor control

Adjust the flux according to the characteristics of the conical rotor motor, realize fast release and lock control, simplify debugging steps and ensure safety.

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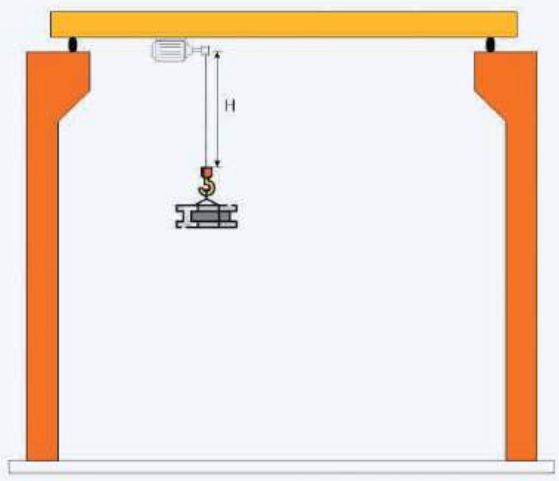
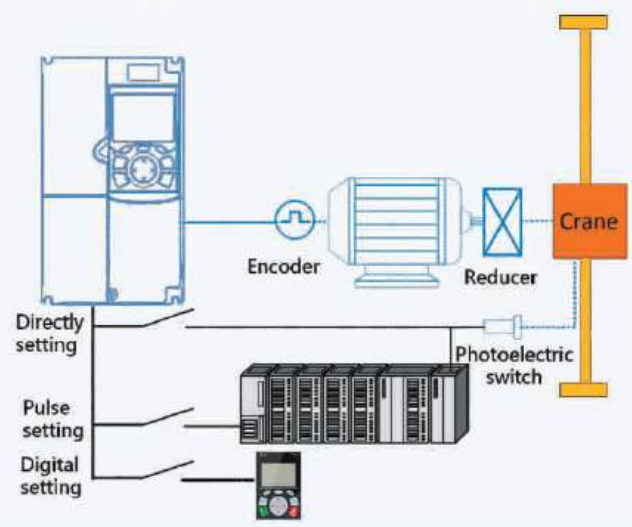
Load height measurement

The integrated coil diameter calculation function can output the hook height information to guide the driver to reduce the running speed and prevent the collision between the hook and the reel.



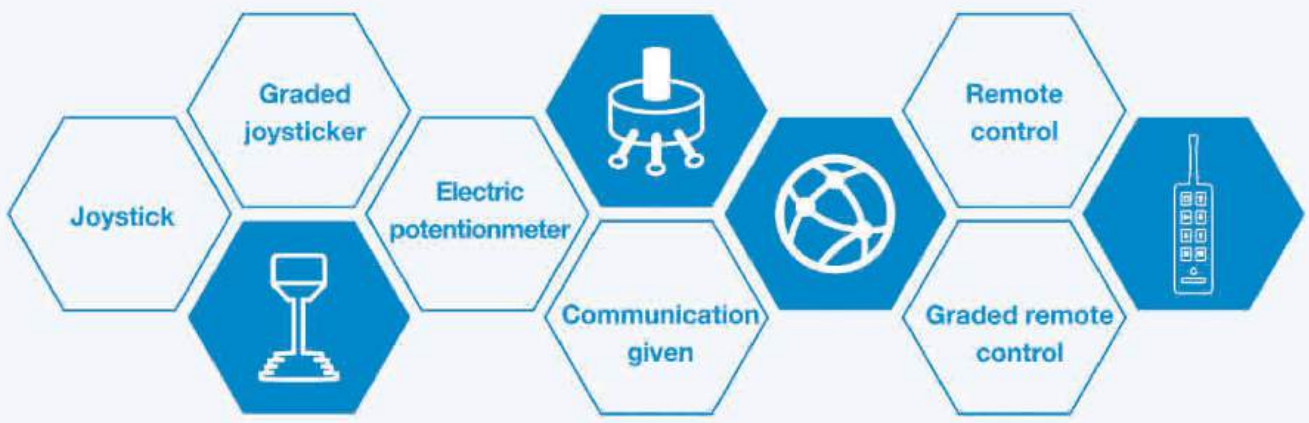
Position stop

Under the closed loop mode, it supports the position stop, which simplifies the driver operation and improves the crane operating efficiency.



Multiply operation mode

Support joystick, remote control, electric potentiometer, graded joystick, graded remote control, communication and other speed settings to meet the needs of various lifting equipment applications.



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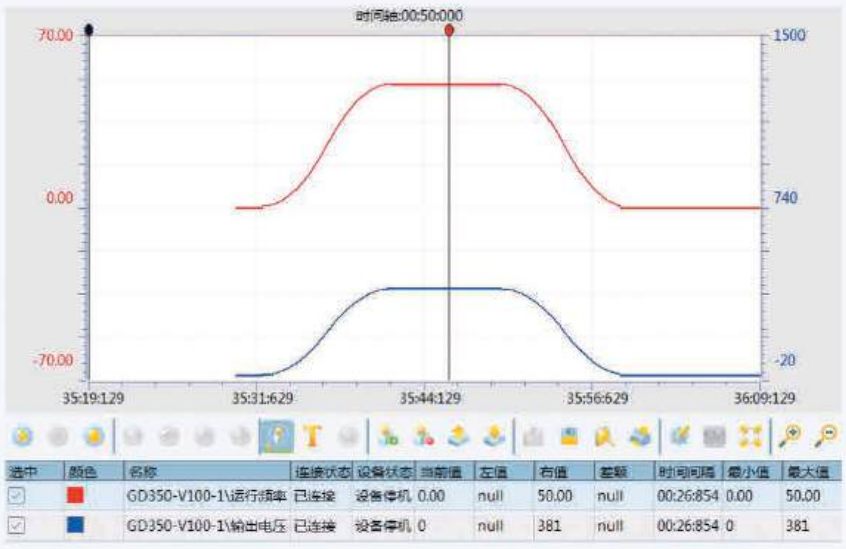
Smooth ACC and DEC

Through segmented acceleration and deceleration control, the problem of speed discontinuity in long swing arm applications is eliminated, and the swing arm is stable and without shaking.



Rotating eddy current control

Support PWM eddy current modulation signal output, compared with the segmented given mode, eddy current voltage change continuity better, more stable control.

Graded remote control

Eddy current controlled signal output

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Product Specification

	Function	Specification
Power output	Output frequency (Hz)	0~400Hz
	Carrier frequency (kHz)	1.0 ~ 15kHz
Technical control performance	Control mode	SVPWM control, SVC, and VC
	Motor type	Asynchronous motor (AM) and permanent magnetic synchronous motor (SM)
	Speed ratio	For AMs 1:200 (SVC) For SMs 1:20 (SVC) For AMs 1:1000 (VC)
	Speed control accuracy	±0.2% (SVC) ; ±0.02% (VC)
	Speed fluctuation	± 0.3% (SVC) ; ± 0.02% (VC)
	Torque response	<20ms (SVC) ; <10ms (VC)
	Torque control accuracy	10% (SVC) ; 5% (VC)
	Starting torque	For AMs: 0.25Hz/150% (SVC) For SMs: 2.5 Hz/150% (SVC) For AMs: 0Hz/200% (VC)
	Overload capacity	150% for 1 minute, 180% for 10 seconds, and 200% for 1second
Running control performancet	Frequency setting method	Settings can be implemented through digital, analog, pulse frequency, multi-step speed running, graded multi-step speed reference, simple PLC, PID, MODBUS communication, PROFIBUS communication and so on. Settings can be combined and the setting channels can be switched.
	Automatic voltage regulation	The output voltage can be kept constant although the grid voltage changes.
	Speed tracking restart	Start the rotating motor without impact and smoothly.
Peripheral interface	Analog input	Two inputs, 0–10V/0–20mA for AI1, -10–10V for AI2 Resolution ratio: no more than 20mV
	Analog output	1 output, AO1: 0~10V /0~20mA
	Digital input	4 regular inputs; max. frequency: 1kHz; internal impedance: 3.3kΩ Two high-speed inputs; max. frequency: 50kHz; Resolution ratio: no more than 2ms
	Digital output	1 high-speed pulse output; max. frequency: 50kHz 1 Y terminal open collector output
	Relay output	Two programmable relay outputs RO1A NO, RO1B NC, RO1C common terminal RO2A NO, RO2B NC, RO2C common terminal Contact capacity: 3A/250VAC, 1A/30VDC
	Communication interface	1 RS485, supporting Modbus protocol. 1 CAN, for synchronous control (Optional)
	Extension interface	3 extension interfaces: SLOT1, SLOT2, SLOT3 Extensible PG card, programmable extension card, communication card, I/O card, and so on
Protection function	Rectifier unit	More than 30 protection functions, such as protection against overcurrent, overvoltage, undervoltage, overtemperature, phase loss, and overload.
Others	Installation method	Wall mounting, floor mounting, or flange mounting
	Temperature of running environment	-10~50℃, derating is required if the ambient temperature exceeds 40°C.
	IP rating	IP20
	Pollution degree	Degree 2
	Cooling method	Force air cooling

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Type Selection

GD350-19 – 037G – 4 – B

① ② ③ ④

No.	Description	Example
①	Abbreviation of product series	GD350-19: Goodrive350-19 series VFD for hoisting
②	Power range + load type	037: 37kW G: Constant torque load
③	Voltage class	4: AC 3PH 380V(-15%)~440V(+10%) 6: AC 3PH 520V(-15%)~690V(+10%)
④	Built-in braking unit	B: Built-in braking unit Empty: Not built-in braking unit

Power Ratings

Model	Rated output current (Kw)	Input current (A)	Output current (A)
GD350-19-1R5G-4-B	1.5	5.0	3.7
GD350-19-2R2G-4-B	2.2	5.8	5
GD350-19-004G-4-B	4	13.5	9.5
GD350-19-5R5G-4-B	5.5	19.5	14
GD350-19-7R5G-4-B	7.5	25	18.5
GD350-19-011G-4-B	11	32	25
GD350-19-015G-4-B	15	40	32
GD350-19-018G-4-B	18.5	47	38
GD350-19-022G-4-B	22	51	45
GD350-19-030G-4-B	30	70	60
GD350-19-037G-4-B	37	80	75
GD350-19-045G-4-B	45	98	92
GD350-19-055G-4-B	55	128	115
GD350-19-075G-4-B	75	139	150
GD350-19-090G-4-B	90	168	180
GD350-19-110G-4-B	110	201	215
GD350-19-132G-4	132	265	260
GD350-19-160G-4	160	310	305
GD350-19-185G-4	185	345	340
GD350-19-200G-4	200	385	380
GD350-19-220G-4	220	430	425
GD350-19-250G-4	250	460	480
GD350-19-280G-4	280	500	530
GD350-19-315G-4	315	580	600
GD350-19-350G-4	350	625	650
GD350-19-400G-4	400	715	720
GD350-19-500G-4	500	890	860

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Model	Rated output current (Kw)	Input current (A)	Output current (A)
GD350-19-022G-6	22	35	27
GD350-19-030G-6	30	40	34
GD350-19-037G-6	37	47	42
GD350-19-045G-6	45	52	54
GD350-19-055G-6	55	65	62
GD350-19-075G-6	75	85	86
GD350-19-090G-6	90	95	95
GD350-19-110G-6	110	118	131
GD350-19-132G-6	132	145	147
GD350-19-160G-6	160	165	163
GD350-19-185G-6	185	190	198
GD350-19-200G-6	200	210	216
GD350-19-220G-6	220	230	240
GD350-19-250G-6	250	255	274
GD350-19-280G-6	280	286	300
GD350-19-315G-6	315	334	328
GD350-19-350G-6	355	360	380
GD350-19-400G-6	400	411	426
GD350-19-500G-6	500	518	540
GD350-19-560G-6	560	578	600
GD350-19-630G-6	630	655	680

Note:

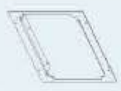
1. The output current of VFD models is measured in cases when the output voltage is 380/660V.
2. The input current of VFD models is measured in cases when the input voltage is 380/660V.
3. Larger power rating can be achieved in parallel.

Extension Cards

Type	Model	Name	Specification
PG card	EC-PG507-12	Simplified incremental PG card	Applicable to 5V or 24V OC encoders Applicable to 5V or 12V push-pull encoders Applicable to 5 V differential encoders
	EC-PG505-12	Multifunction incremental PG card	Applicable to OC encoders of 5 V or 12 V Applicable to push-pull encoders of 5 V or 12 V Applicable to differential encoders of 5 V Supporting the orthogonal input of A, B, and Z Supporting the frequency-divided output of A, B, and Z Supporting pulse string setting
	EC-PG505-24	24V incremental PG card	Applicable to 24V OC encoders Applicable to 24V push-pull encoders Applicable to 24V differential encoders
	EC-PG504-00	Resolver PG card	Applicable to resolver encoders Supporting frequency-divided output of resolver-simulated A, B, Z
	EC-PG503-05	UVW incremental PG card	Applicable to differential encoders of 5 V Supporting the orthogonal input of A, B, and Z Supporting pulse input of phases U, V, and W Supporting frequency-divided output of A, B, and Z Supporting the input of pulse string reference
	EC-PG502	Sin/Cos PG card	Applicable to Sin/Cos encoders with or without CD signals Supporting pulse string reference input Max. 200kHz，supporting 5V differential input

Type	Model	Name	Specification
Communication card	EC-TX503	Profibus-DP card	PROFIBUS protocol, 9.6kbps~12Mbps
	EC-TX509	Profinet card	PROFINET protocol, supporting 100Mbpsfull duplex operation
	EC-TX505	CANopen card	CANopen protocol, 20kbps~1000kbps
	EC-TX511	CAN master/slave control communication card	Based on the CAN2.0B physical layer Adopting INVT proprietary master/slave control protocol
	EC-TX501-1	Bluetooth card	Supporting Bluetooth 4.0 With INVT mobile app, you can set the parameters and monitor the states of the VFD through Bluetooth The maximum communication distance in open environments is 30 m. EC-TX501-1 is equipped with a built-in antenna and applicable to molded case machines. EC-TX501-2 is configured with an external sucker antenna and applicable to sheet metal machines.
	EC-TX501-2		
	EC-TX502-1	WIFI card	Meeting IEEE802.11b/g/n With INVT mobile app, you can monitor the VFD locally or remotely through WIFI communication The maximum communication distance in open environments is 30 m. EC-TX501-1 is equipped with a built-in antenna and applicable to molded case machines. EC-TX502-2 is configured with an external sucker antenna and applicable to sheet metal machines.
	EC-TX502-2		
	EC-TX504	Ethernet card	Supporting Ethernet communication with INVT internal protocol Can be used in combination with INVT upper computer monitoring software INVT Studio Support upper computer software INVT Workshop
I/O extension card	EC-PC501-00	I/O extension card 1	4 digital inputs 1 digital output 1 analog input 1 analog output 2 relay outputs: 1 double-contact output, and 1 single-contact output
	EC-PC502-00	I/O extension card 2	4 digital inputs 1 PT100 1 PT1000 2 relay outputs: single-contact NO output Note: standard for 7.5kW and above

Optional Parts

Name	Picture	Applicaiton
LCD keypad		All
Keypad external bracket		All
Flange installation		380V: 1.5~90kW 660V: 22~132kW
Installation base		An input reactor (or DC reactor) and an output reactor can be built into the base. 380V: 220~315kW 660V:250~350kW

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Reactor & Filter Selection

AC 3PH 380V(-15%)~440V(+10%)

Model	Reactor			Filter	
	Input reactor	DC reactor	Output reactor	Input filter	Output filter
GD350-19-1R5G-4-B	ACL2-1R5-4	-	OCL2-1R5-4	FLT-P04006L-B	FLT-L04006L-B
GD350-19-2R2G-4-B	ACL2-2R2-4	-	OCL2-2R2-4		
GD350-19-004G-4-B	ACL2-004-4	-	OCL2-004-4	FLT-P04016L-B	FLT-L04016L-B
GD350-19-5R5G-4-B	ACL2-5R5-4	-	OCL2-5R5-4		
GD350-19-7R5G-4-B	ACL2-7R5-4	-	OCL2-7R5-4	FLT-P04032L-B	FLT-L04032L-B
GD350-19-011G-4-B	ACL2-011-4	-	OCL2-011-4		
GD350-19-015G-4-B	ACL2-015-4	-	OCL2-015-4	FLT-P04045L-B	FLT-L04045L-B
GD350-19-018G-4-B	ACL2-018-4	Standard	OCL2-018-4		
GD350-19-022G-4-B	ACL2-022-4	Standard	OCL2-022-4	FLT-P04065L-B	FLT-L04065L-B
GD350-19-030G-4-B	ACL2-037-4	Standard	OCL2-037-4		
GD350-19-037G-4-B	ACL2-037-4	Standard	OCL2-037-4	FLT-P04100L-B	FLT-L04100L-B
GD350-19-045G-4-B	ACL2-045-4	Standard	OCL2-045-4		
GD350-19-055G-4-B	ACL2-055-4	Standard	OCL2-055-4	FLT-P04150L-B	FLT-L04150L-B
GD350-19-075G-4-B	ACL2-075-4	Standard	OCL2-075-4		
GD350-19-090G-4-B	ACL2-110-4	Standard	OCL2-110-4	FLT-P04240L-B	FLT-L04240L-B
GD350-19-110G-4-B	ACL2-110-4	Standard	OCL2-110-4		
GD350-19-132G-4	ACL2-160-4	DCL2-132-4	OCL2-200-4		
GD350-19-160G-4	ACL2-160-4	DCL2-160-4	OCL2-200-4	FLT-P04400L-B	FLT-L04400L-B
GD350-19-185G-4	ACL2-200-4	DCL2-200-4	OCL2-200-4		
GD350-19-200G-4	ACL2-200-4	DCL2-220-4	OCL2-200-4		
GD350-19-220G-4	ACL2-280-4	DCL2-280-4	OCL2-280-4	FLT-P04600L-B	FLT-L04600L-B
GD350-19-250G-4	ACL2-280-4	DCL2-280-4	OCL2-280-4		
GD350-19-280G-4	ACL2-280-4	DCL2-280-4	OCL2-280-4		
GD350-19-315G-4	ACL2-350-4	DCL2-315-4	OCL2-350-4	FLT-P04800L-B	FLT-L04800L-B
GD350-19-355G-4	Standard	DCL2-400-4	OCL2-350-4		
GD350-19-400G-4	Standard	DCL2-400-4	OCL2-400-4		
GD350-19-450G-4	Standard	DCL2-500-4	OCL2-500-4	FLT-P041000L-B	FLT-L041000L-B
GD350-19-500G-4	Standard	DCL2-500-4	OCL2-500-4		

AC 3PH 520V(-15%)~690V(+10%)

Model	Reactor			Filter	
	Input reactor	DC reactor	Output reactor	Input filter	Output filter
GD350-19-022G-6	ACL2-030-6	DCL2-030-6	OCL2-030-6	FLT-P06050H-B	FLT-L06050H-B
GD350-19-030G-6	ACL2-030-6	DCL2-030-6	OCL2-030-6		
GD350-19-037G-6	ACL2-055-6	DCL2-055-6	OCL2-055-6		
GD350-19-045G-6	ACL2-055-6	DCL2-055-6	OCL2-055-6	FLT-P06100H-B	FLT-L06100H-B
GD350-19-055G-6	ACL2-055-6	DCL2-055-6	OCL2-055-6		
GD350-19-075G-6	ACL2-110-6	DCL2-110-6	OCL2-110-6		
GD350-19-090G-6	ACL2-110-6	DCL2-110-6	OCL2-110-6		
GD350-19-110G-6	ACL2-110-6	DCL2-110-6	OCL2-110-6	FLT-P06200H-B	FLT-L06200H-B
GD350-19-132G-6	ACL2-185-6	DCL2-185-6	OCL2-185-6		
GD350-19-160G-6	ACL2-185-6	DCL2-185-6	OCL2-185-6		
GD350-19-185G-6	ACL2-185-6	DCL2-185-6	OCL2-185-6		
GD350-19-200G-6	ACL2-250-6	DCL2-250-6	OCL2-250-6	FLT-P06300H-B	FLT-L06300H-B
GD350-19-220G-6	ACL2-250-6	DCL2-250-6	OCL2-250-6		
GD350-19-250G-6	ACL2-250-6	DCL2-250-6	OCL2-250-6		
GD350-19-280G-6	ACL2-350-6	DCL2-350-6	OCL2-350-6		
GD350-19-315G-6	ACL2-350-6	DCL2-350-6	OCL2-350-6	FLT-P06400H-B	FLT-L06400H-B
GD350-19-355G-6	ACL2-350-6	DCL2-350-6	OCL2-350-6		

Model	Reactor			Filter	
	Input reactor	DC reactor	Output reactor	Input filter	Output filter
GD350-19-400G-6	Standard	DCL2-400-6	OCL2-400-6	FLT-P061000H-B	FLT-P061000H-B
GD350-19-450G-6	Standard	DCL2-560-6	OCL2-560-6		
GD350-19-500G-6	Standard	DCL2-560-6	OCL2-560-6		
GD350-19-560G-6	Standard	DCL2-560-6	OCL2-560-6		
GD350-19-630G-6	Standard	DCL2-630-6	OCL2-630-6		

Brake System Selection

AC 3PH 380V(-15%)~440V(+10%)

Model	Braking unit			Braking resistor			
	model	Continuous braking current (A)	Peak braking current (A)	100% braking torque(Ω)	Min. power recommended for lifting (kW)	Min. power recommended for translation (kW)	Min. allowable resistor (Ω)
GD350-19-1R5G-4-B	Built in	4	4.8	326	≥0.75	≥0.4	170
GD350-19-2R2G-4-B	Built in	5.4	6.5	222	≥1.1	≥0.5	130
GD350-19-004G-4-B	Built in	8.8	10.5	122	≥2	≥1	80
GD350-19-5R5G-4-B	Built in	11.6	14	89	≥2.8	≥1.4	60
GD350-19-7R5G-4-B	Built in	14.9	17.8	65	≥3.8	≥1.9	47
GD350-19-011G-4-B	Built in	22.6	27	44	≥5.5	≥2.8	31
GD350-19-015G-4-B	Built in	30.4	36.5	32	≥7.5	≥3.8	23
GD350-19-018G-4-B	Built in	36.8	44.2	27	≥9	≥4.5	19
GD350-19-022G-4-B	Built in	41	49.4	22	≥11	≥5.5	17
GD350-19-030G-4-B	Built in	54	65	17	≥15	≥7.5	13
GD350-19-037G-4-B	Built in	63.6	76.4	13	≥18.5	≥9	11
GD350-19-045G-4-B	Built in	80	96	10	≥22.5	≥11	8.8
GD350-19-055G-4-B	Built in	100	120	8	≥27.5	≥13	7
GD350-19-075G-4-B	Built in	110	132	6.5	≥37	≥18	6.4
GD350-19-090G-4-B	Built in	160	190	5.4	≥45	≥22	4.4
GD350-19-110G-4-B	Built in	220	260	4.5	≥55	≥27	3.2
GD350-19-132G-4	DBU100H-220-4			3.7	≥66	≥33	3.2
GD350-19-160G-4	DBU100H-320-4			3.1	≥80	≥40	2.2
GD350-19-185G-4				2.8	≥92	≥46	
GD350-19-200G-4				2.5	≥100	≥50	
GD350-19-220G-4	DBU100H-400-4			2.2	≥110	≥55	1.8
GD350-19-250G-4				2	≥125	≥62	
GD350-19-280G-4	DBU100H-320-4*2			3.6*2	≥70*2	≥35*2	2.2*2
GD350-19-315G-4				3.2*2	≥80*2	≥40*2	
GD350-19-355G-4				2.8*2	≥90*2	≥45*2	
GD350-19-400G-4				2.4*2	≥100*2	≥50*2	
GD350-19-450G-4	DBU100H-400-4*2			2.2*2	≥115*2	≥57*2	1.8*2
GD350-19-500G-4				2.0*2	≥125*2	≥62*2	

AC 3PH 520V(-15%)~690V(+10%)

Model	Braking unit	Braking resistor			
	model	100% braking torque(Ω)	Min. power recommended for lifting (kW)	Min. power recommended for translation (kW)	Min. allowable resistor (Ω)
GD350-19-022G-6	DBU100H-110-6	55	11	5.5	10
GD350-19-030G-6		40.3	15	7.5	
GD350-19-037G-6		32.7	18.5	9	
GD350-19-045G-6		26.9	23	11.5	
GD350-19-055G-6		22	27.5	13.5	
GD350-19-075G-6		16.1	37.5	19	
GD350-19-090G-6		13.4	45	22	
GD350-19-110G-6		11	55	27.5	
GD350-19-132G-6	DBU100H-160-6	9.2	66	33	6.9
GD350-19-160G-6		7.6	80	40	

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Model	Braking unit	Braking resistor			
	model	100% braking torque(Ω)	Min. power recommended for lifting (kW)	Min. power recommended for translation (kW)	Min. allowable resistor (Ω)
GD350-19-185G-6	DBU100H-220-6	6.5	93	46	5
GD350-19-200G-6		6.1	100	50	
GD350-19-220G-6		5.5	110	55	
GD350-19-250G-6	DBU100H-320-6	4.8	125	62	3.4
GD350-19-280G-6		4.3	140	70	
GD350-19-315G-6		3.8	158	78	
GD350-19-355G-6	DBU100H-400-6	3.5	178	89	2.8
GD350-19-400G-6		3	200	100	
GD350-19-450G-6	DBU100H-320-6*2	5.5*2	112*2	56*2	3.4*2
GD350-19-500G-6		4.8*2	125*2	63*2	
GD350-19-560G-6		4.3*2	140*2	70*2	
GD350-19-630G-6		3.8*2	315*2	158*2	

Regeneration Feedback Unit Selection

The following lists the mapping between the 380V VFD models, buffering unit models, and regenerative feedback unit models.

AC 3PH 380V(-15%)~440V(+10%)

Model	Buffering unit	Regenerative feedback unit
GD350-19-022G-4-B	BUB-110-4	RBU100H-022-4
GD350-19-030G-4-B		RBU100H-030-4
GD350-19-037G-4-B		RBU100H-045-4
GD350-19-045G-4-B		RBU100H-045-4
GD350-19-055G-4-B		RBU100H-055-4
GD350-19-075G-4-B		RBU100H-090-4
GD350-19-090G-4-B		RBU100H-090-4
GD350-19-110G-4-B	BUB-250-4	RBU100H-110-4
GD350-19-132G-4		RBU100H-132-4
GD350-19-160G-4		RBU100H-160-4
GD350-19-185G-4		RBU100H-200-4
GD350-19-200G-4	BUB-250-4*2	RBU100H-200-4
GD350-19-220G-4		RBU100H-250-4
GD350-19-250G-4		RBU100H-250-4
GD350-19-280G-4		RBU100H-160-4*2
GD350-19-315G-4		RBU100H-160-4*2
GD350-19-355G-4		RBU100H-200-4*2
GD350-19-400G-4	BUB-250-4*2	RBU100H-200-4*2
GD350-19-450G-4		RBU100H-250-4*2
GD350-19-500G-4		RBU100H-250-4*2

The following lists the mapping between the 660V VFD models, buffering unit models, andregenerative feedback unit models.

AC 3PH 520V(-15%)~690V(+10%)

Model	Buffering unit	Regenerative feedback unit
GD350-19-022G-6	BUB-160-6	RBU100H-055-6
GD350-19-030G-6		RBU100H-055-6
GD350-19-037G-6		RBU100H-055-6
GD350-19-045G-6		RBU100H-055-6
GD350-19-055G-6		RBU100H-055-6
GD350-19-075G-6		RBU100H-090-6
GD350-19-090G-6		RBU100H-090-6
GD350-19-110G-6		RBU100H-160-6
GD350-19-132G-6		RBU100H-160-6
GD350-19-160G-6		RBU100H-160-6

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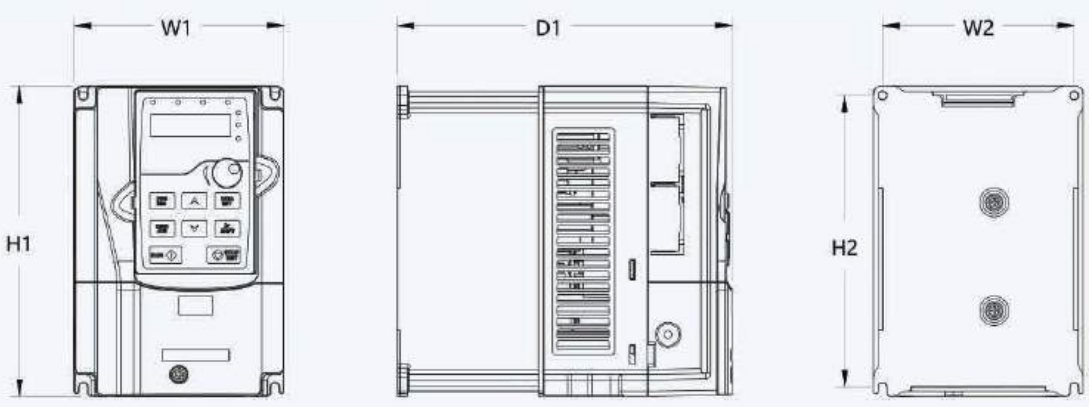
Model	Buffering unit	Regenerative feedback unit
GD350-19-185G-6	BUB-400-6	RBU100H-200-6
GD350-19-200G-6		RBU100H-200-6
GD350-19-220G-6		RBU100H-315-6
GD350-19-250G-6		RBU100H-315-6
GD350-19-280G-6		RBU100H-315-6
GD350-19-315G-6		RBU100H-315-6
GD350-19-355G-6		RBU100H-400-6
GD350-19-400G-6	BUB-400-6*2	RBU100H-400-6
GD350-19-450G-6		RBU100H-315-6*2
GD350-19-500G-6		RBU100H-315-6*2
GD350-19-560G-6		RBU100H-315-6*2
GD350-19-630G-6		RBU100H-315-6*2

Product Dimension

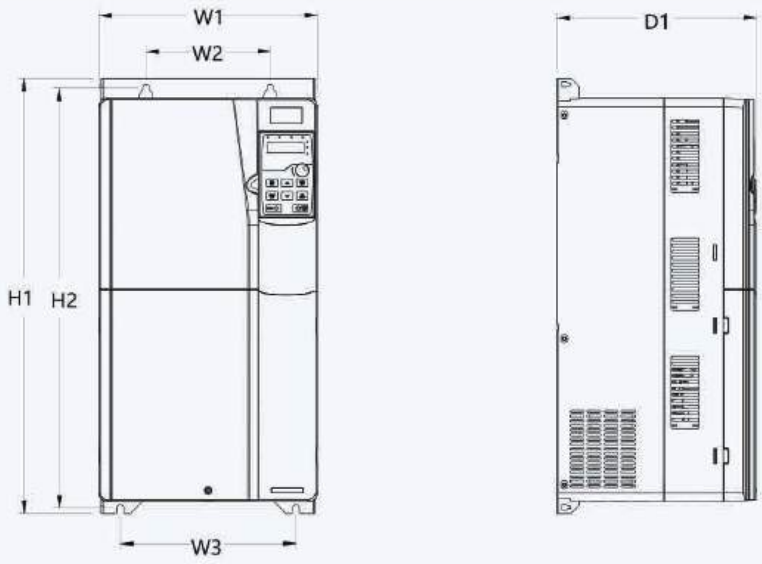
AC 3PH 380V(-15%) - 440V(+10%) VFD dimensions

Wall-mounting dimensions



380V 1.5-37kW VFD wall mounting diagram

Model	Outline dimensions (mm)			Hole distance (mm)		Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2				
1.5kW-2.2kW	126	186	185	115	175	5	M4	2	3
4kW-5.5kW	126	186	201	115	175	5	M4	2.5	3.5
7.5kW	146	256	192	131	243.5	6	M5	3	4
11kW-15kW	170	320	220	151	303.5	6	M5	6	7
18.5kW-22kW	200	340.6	208	185	328.6	6	M5	8.5	10.5
30kW-37kW	250	400	223	230	380	6	M5	16	17



380V 45-75kW VFD wall mounting diagram

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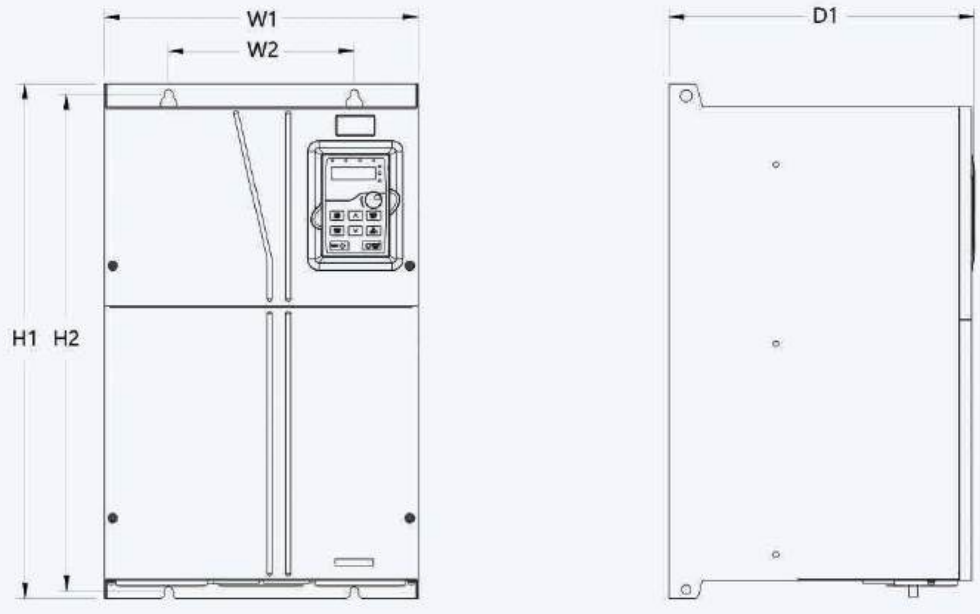
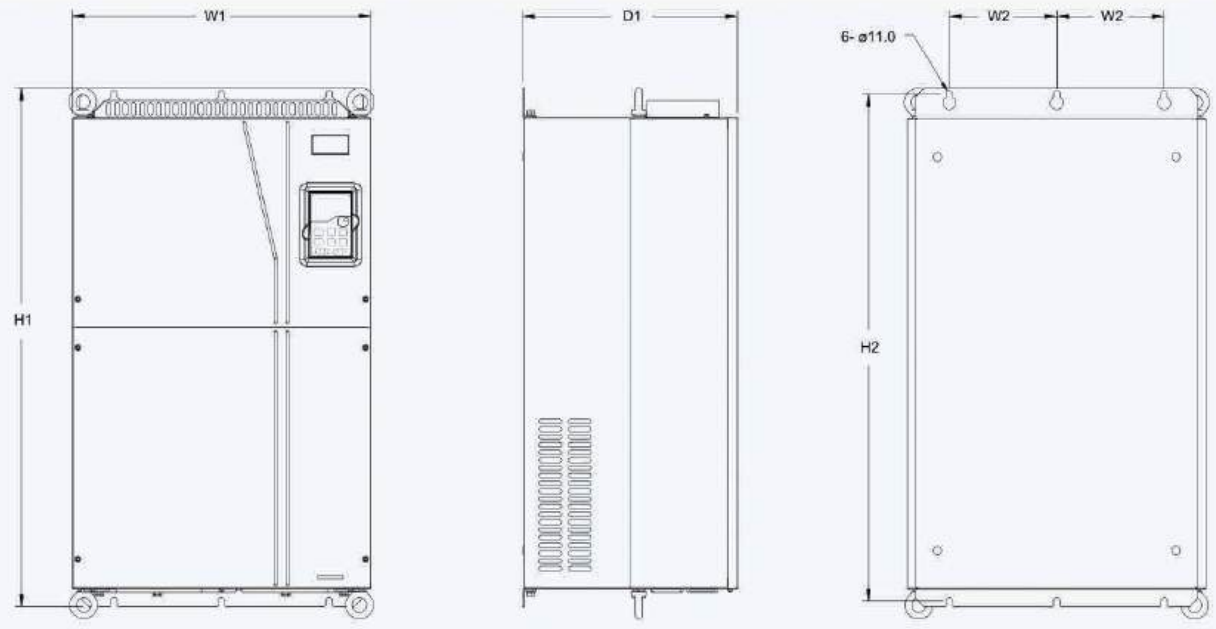
Model	Outline dimensions (mm)			Hole distance (mm)			Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	W3	H2				
45kW-75kW	282	560	258	160	226	542	9	M8	25	29



380V 90-110kW VFD wall mounting diagram

Model	Outline dimensions (mm)			Hole distance (mm)		Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2				
90kW-110kW	338	554	330	200	535	10	M8	41	52



380V 132-200kW VFD wall mounting diagram

Model	Outline dimensions (mm)			Hole distance (mm)		Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2				
132kW-200kW	500	870	360	180	850	11	M10	85	110

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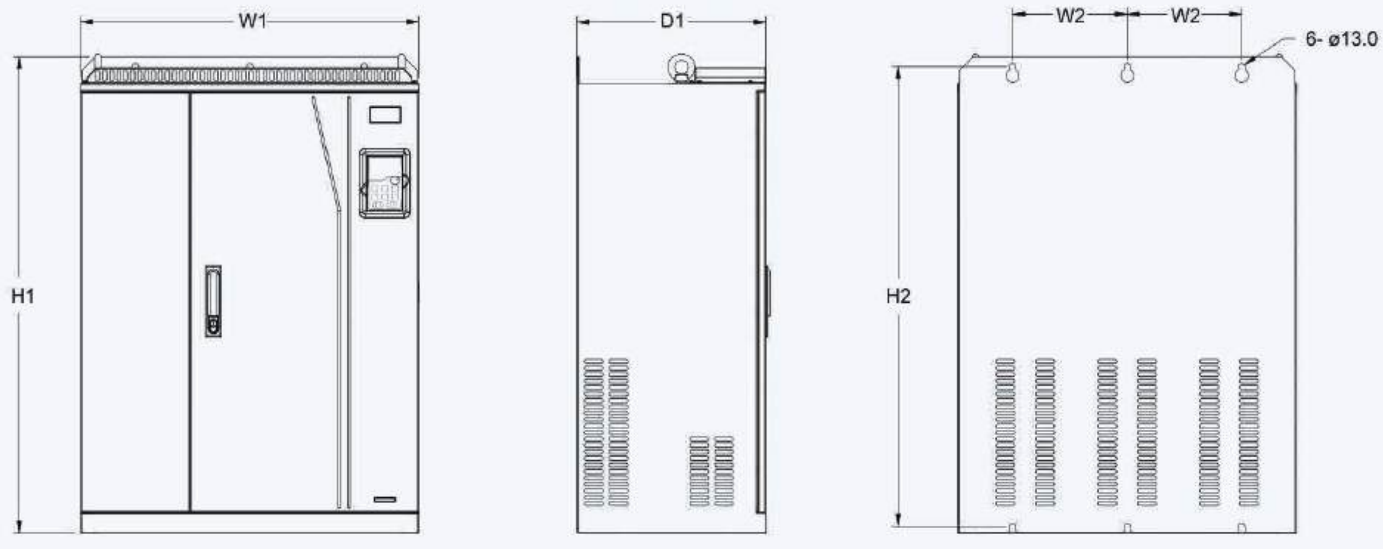
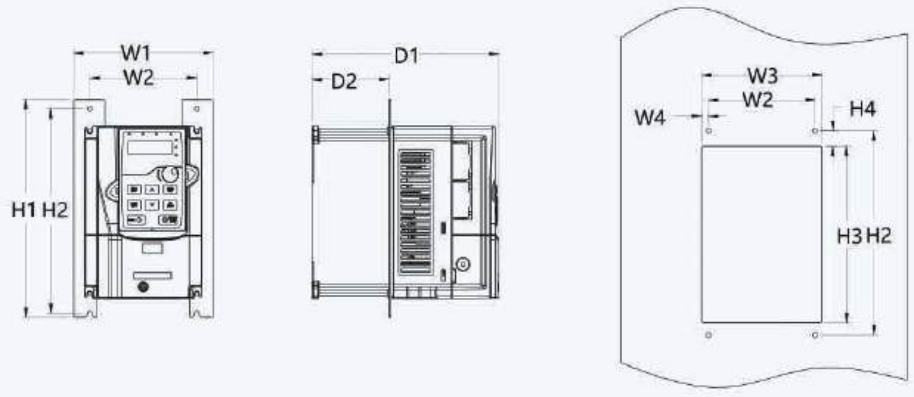


380V 220-315kW VFD wall mounting diagram

Model	Outline dimensions (mm)			Hole distance (mm)		Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2				
220kW-315kW	680	960	380	230	926	13	M12	135	165

Flange installation dimensions



380V 1.5-75kW VFD flange installation diagram

Model	Outline dimensions (mm)			Mount dimensions (mm)			Hole distance (mm)				Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2	D2	W3	H3	W4	H4				
1.5kW-2.2kW	150.2	234	185	115	220	65.5	130	190	7.5	13.5	5	M4	2	3
4kW-5.5kW	150.2	234	201	115	220	83	130	190	7.5	13.5	5	M4	2.5	3.5
7.5kW	170.2	292	192	131	276	84.5	150	260	9.5	6	6	M5	3	4
11kW-15kW	191.2	370	220	151	351	113	174	324	11.5	12	6	M5	6	7
18.5kW-22kW	266	371	208	250	250	104	224	350	13	20.3	6	M5	8.5	10.5
30kW-37kW	316	430	223	300	300	118.3	274	410	13	55	6	M5	16	17
45kW–75kW	352	580	258	332	400	133.8	306	570	12	80	9	M8	25	29

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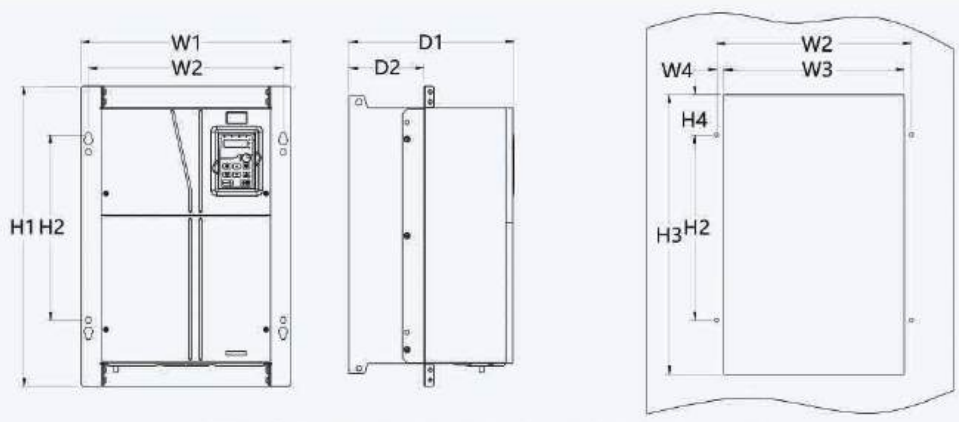
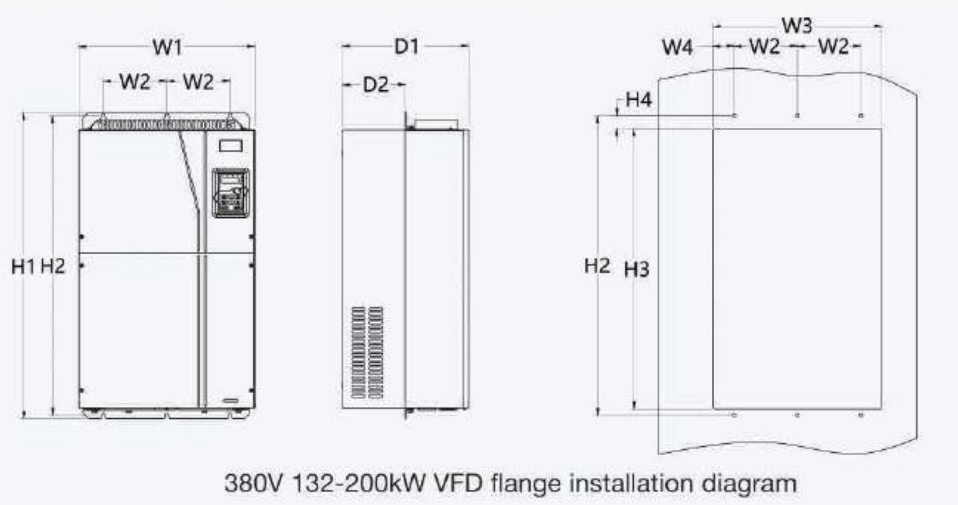


380V 90–110kW VFD flange installation diagram

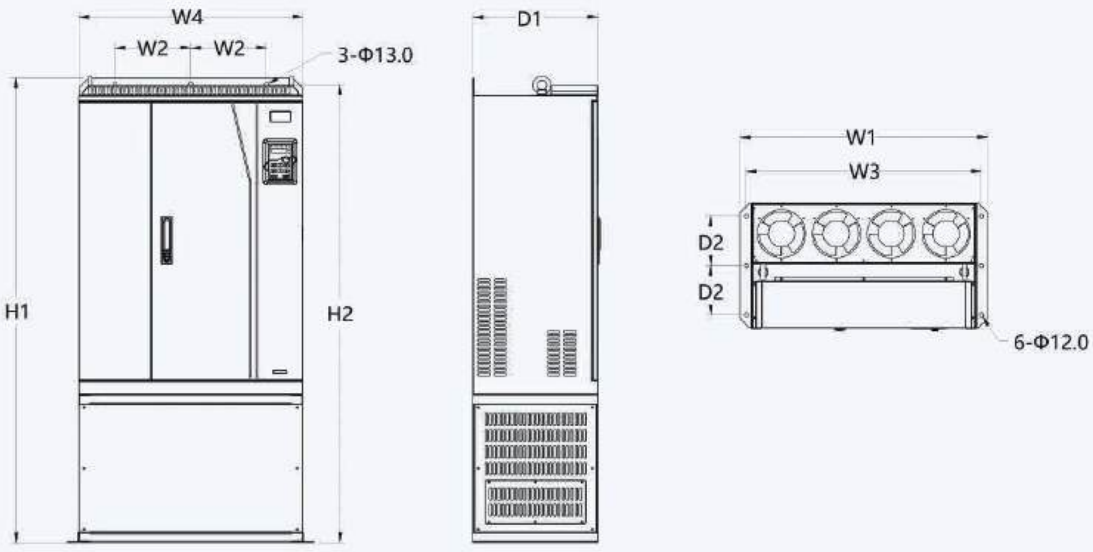
Model	Outline dimensions (mm)			Mount dimensions (mm)			Hole distance (mm)			Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2	D2	H3	W4	H4				
90kW–110kW	418.5	600	330	389.5	370	149.5	559	14.2	108.5	10	M8	41	52



380V 132-200kW VFD flange installation diagram

Model	Outline dimensions (mm)			Mount dimensions (mm)			Hole distance (mm)				Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2	D2	W3	H3	W4	H4				
132kW–200kW	500	870	360	180	850	178.5	480	796	60	37	11	M10	85	110

Floor installation dimensions



380V 220-315kW VFD floor installation diagram

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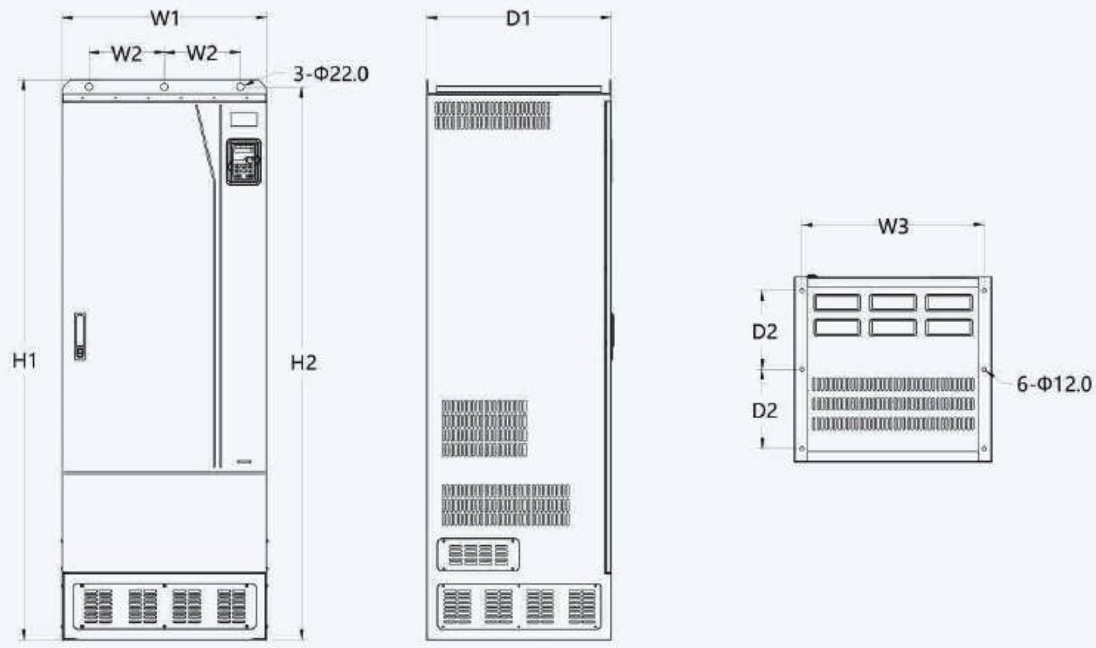
Model	Outline dimensions (mm)				Mount dimensions (mm)				Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W4	W2	W3	H2	D2				
220kW-315kW	750	1410	380	680	230	714	1390	150	13/12	M12/ M10	135	165

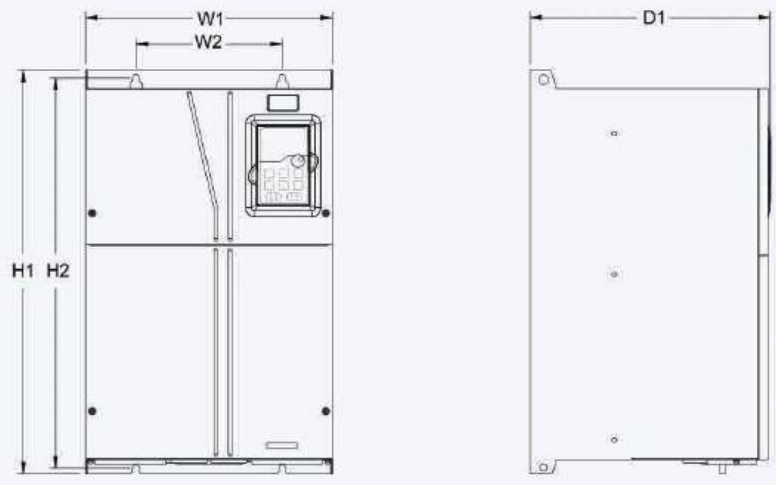


380V 355-500kW VFD floor installation diagram

Model	Outline dimensions (mm)				Mount dimensions (mm)				Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W4	W2	W3	H2	D2				
355kW–500kW	620	1700	560	-	230	572	1678	240	22/12	M12/ M10	350	407

AC 3PH 520V(-15%)–690V(+10%) VFD dimensions

Wall-mounting dimensions



660V 22–132kW VFD wall-mounting diagram

Model	Outline dimensions (mm)			Mount dimensions (mm)		Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2				
22kW–45kW	270	555	325	130	540	7	M6	30	32
55kW–132kW	325	680	365	200	661	9.5	M8	47	67

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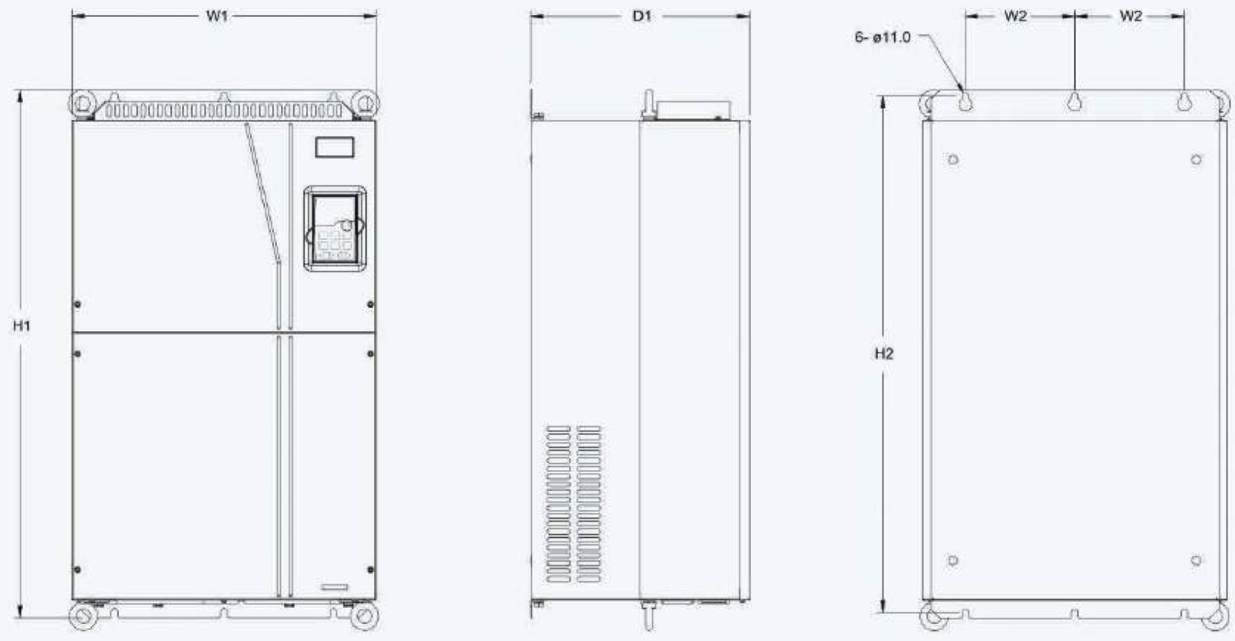
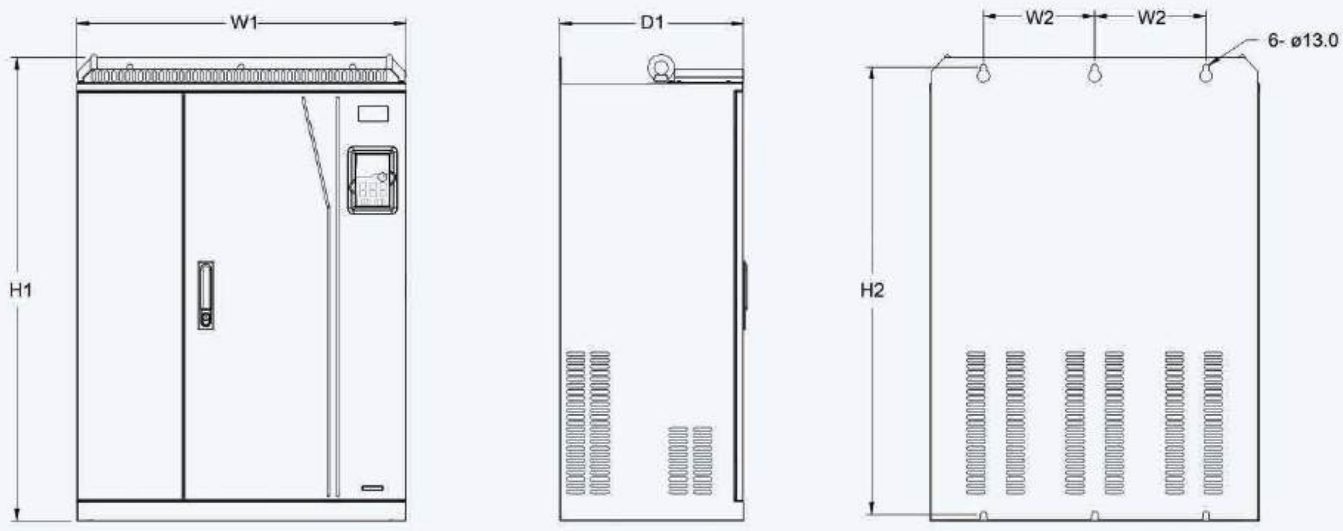


660V 160–220kW VFD wall-mounting diagram

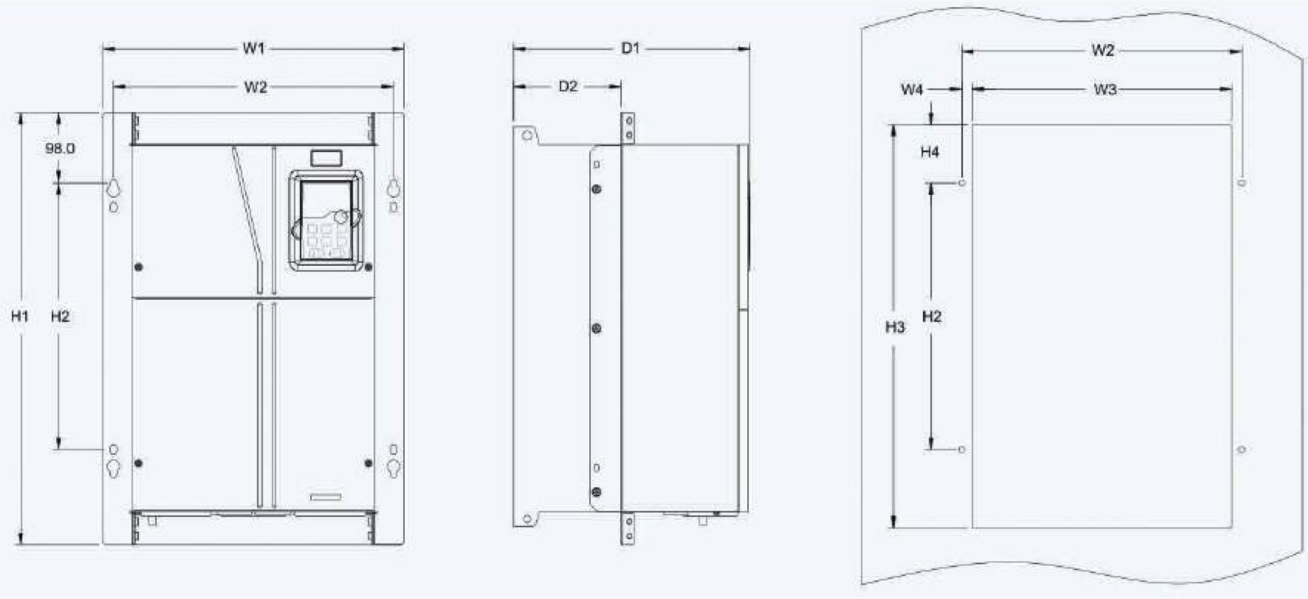
Model	Outline dimensions (mm)			Mount dimensions (mm)		Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2				
160kW–220kW	500	870	360	180	850	11	M10	85	110



660V 250–355kW VFD wall-mounting diagram

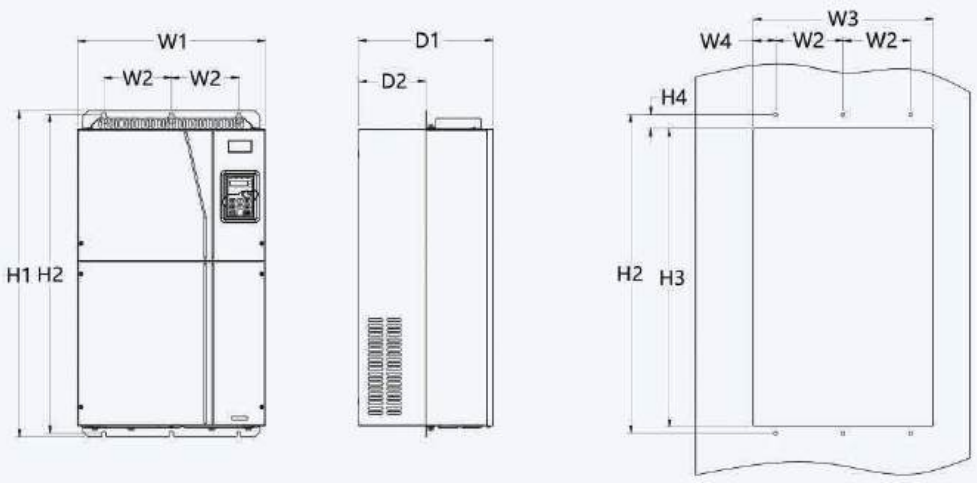
Model	Outline dimensions (mm)			Mount dimensions (mm)		Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2				
250kW–355kW	680	960	380	230	926	13	M12	135	165

Flange installation dimensions



660V 22–132kW VFD flange installation diagram

Model	Outline dimensions (mm)			Mount dimensions (mm)			Hole distance (mm)				Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2	D2	W3	H3	W4	H4				
22kW–45kW	270	555	325	130	540	167	261	516	65.5	17	7	M6	30	32
55kW–132kW	325	680	363	200	661	182	317	626	58.5	23	9.5	M8	47	67



660V 160–220kW VFD flange installation diagram

Model	Outline dimensions (mm)			Mount dimensions (mm)			Hole distance (mm)				Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W2	H2	D2	W3	H3	W4	H4				
160kW–220kW	500	870	358	180	850	178.5	480	796	60	37	11	M10	85	110

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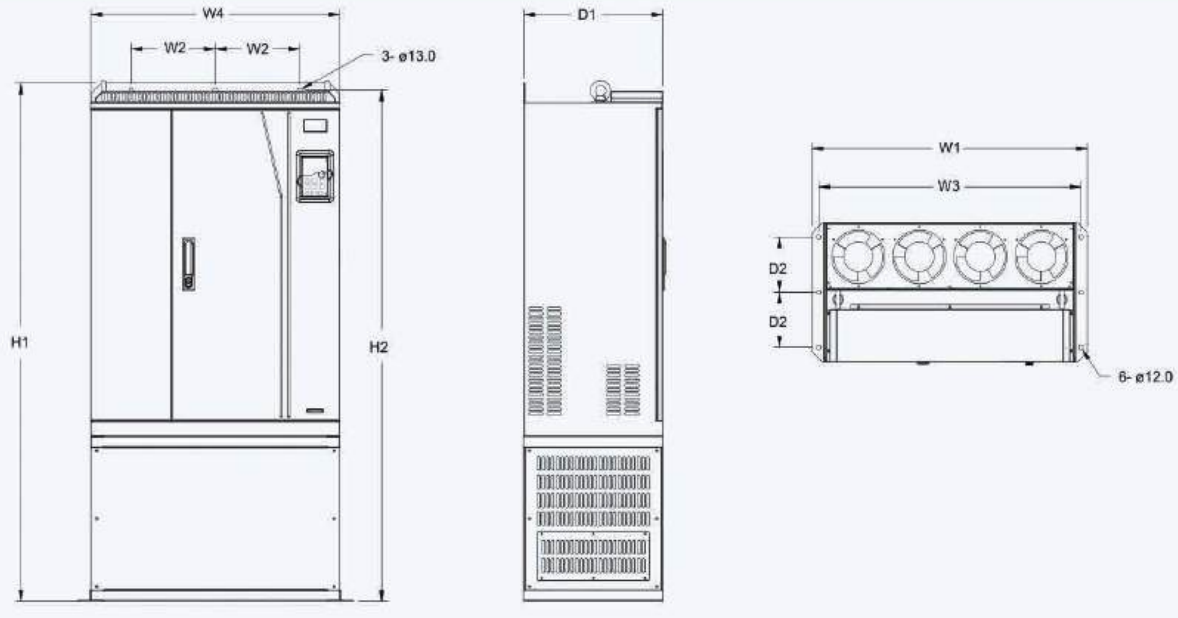
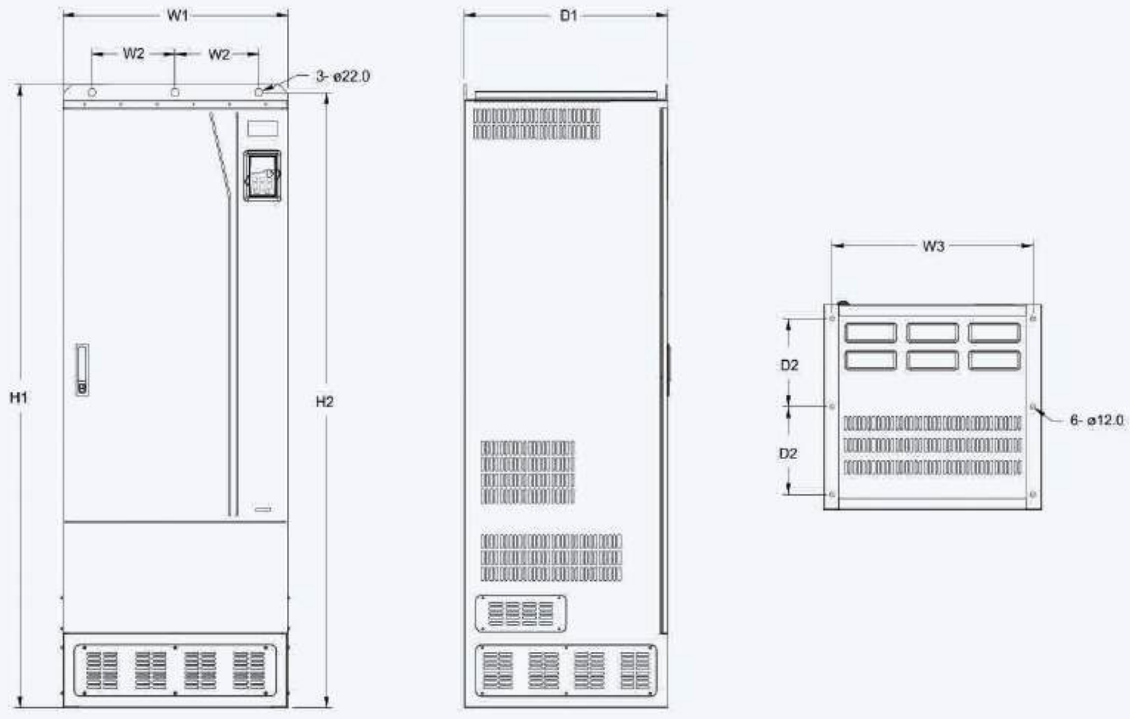
Floor installation dimensions



660V 250–355kW VFD floor installation diagram

Model	Outline dimensions (mm)				Mount dimensions (mm)				Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W4	W2	W3	H2	D2				
250kW–355kW	750	1410	380	680	230	714	1390	150	13/12	M12/ M10	135	165



660V 400–630kW VFD floor installation diagram

Model	Outline dimensions (mm)				Mount dimensions (mm)				Hole diameter (mm)	Screw	Net weight (kg)	Gross weight (kg)
	W1	H1	D1	W4	W2	W3	H2	D2				
400kW–630kW	620	1700	560	-	230	570	1678	240	22/12	M12/ M10	350	407

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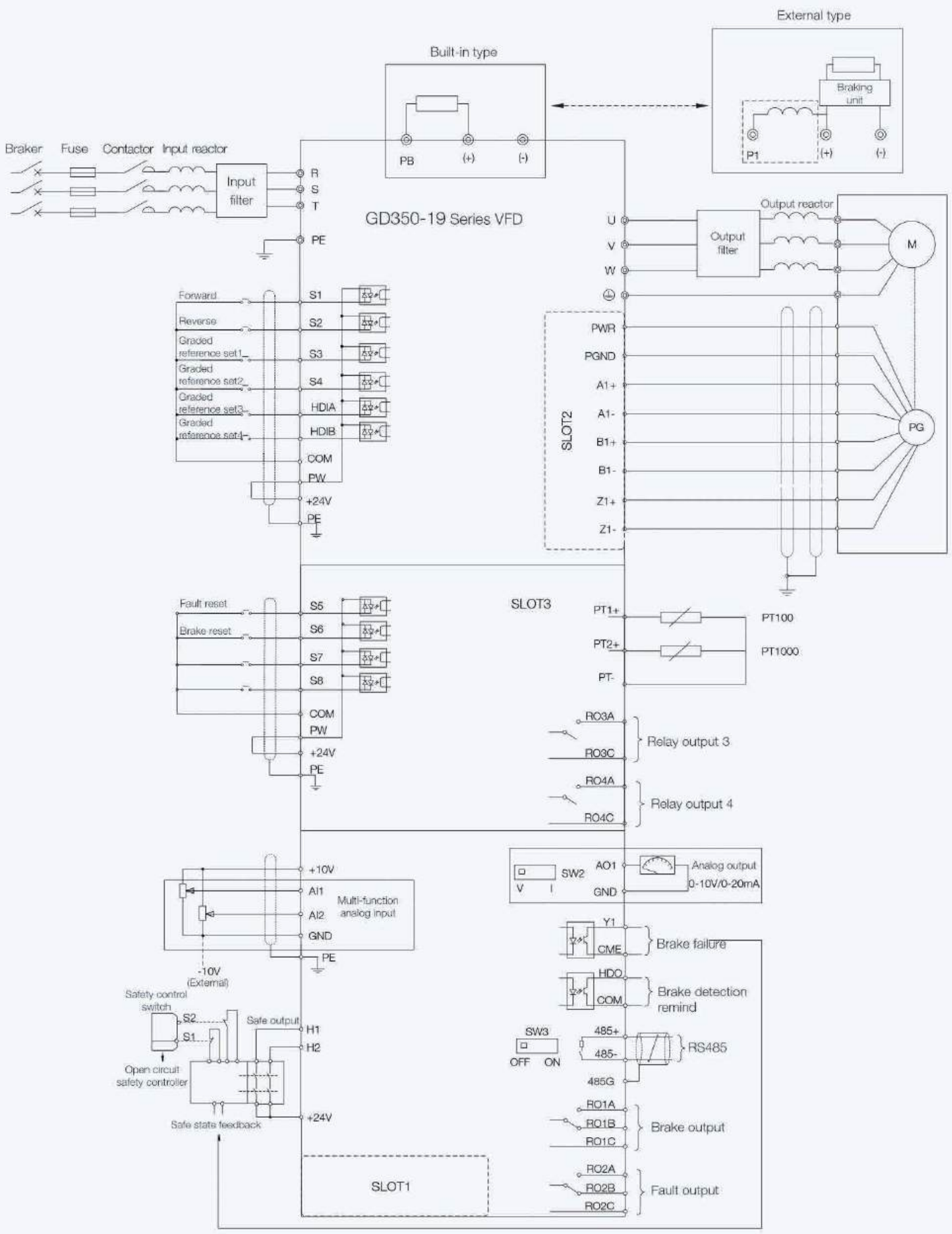
Wiring Diagram



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