

GD350A High-performance General-purpose VFD



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Optimized performance, G/P integration

The Goodrive350A series high-performance general-purpose VFD adopts INVT's latest Euler software platform, greatly enhancing motor control performance, parameter adaptability, and ease of use. With integrated G/P types, the product delivers improved heat dissipation, reliability, and environmental adaptability, making it suitable for a wider range of applications.

Featuring rich functions and flexible application configuration, GD350A is widely used in various automated production equipment such as metal processing, textiles, cranes, papermaking, petroleum, chemicals, plastics, printing and packaging, and compressors.

- ◆ Upgraded control algorithms significantly improve motor control performance and support various motor types, including asynchronous motors, permanent magnet synchronous motors, and synchronous reluctance motors.
- ◆ Strong expandability, supporting various expansion cards to easily meet customer customization needs
- ◆ Supports the expansion of multiple high-speed bus communications
- ◆ Supports combined G/P for more flexible selection
- ◆ Supports remote and local firmware upgrades
- ◆ Comes standard with STO function (compliant with SIL3 level), ensuring safer and more reliable operation
- ◆ Features a new energy-saving algorithm for improved energy efficiency
- ◆ CE and STO certified



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.

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



/ Full-drive capability

Performance enhancement

Compared to the previous generation, there is a notable performance improvement.

Motor
autotuning

Low
electromagnetic
noise

Speed
tracking

Ultra-low-
speed
control
technology

Control
performance

Motor Auto-tuning

- One-click parameter auto-tuning for asynchronous and synchronous motors.
- Auto-tuning of encoder PPR and direction, with commissioning completed in only two steps.

Low electromagnetic noise

- Supports random PWM modulation to effectively reduce electromagnetic noise.

Speed tracking

- Under any control mode, speed tracking results in less current shock and significantly improved stability.

Ultra-low-speed control technology

- Speed control ratio of permanent magnet synchronous motors exceeds 1:200.
- Supports 100% torque ride-through in both motoring and generating modes.

Control performance

- Speed and torque control performance: closed-loop vector dynamic speed drop <0.25%, speed overshoot <5%, torque response <5ms.

Integrates drive capabilities for permanent magnet synchronous motors (PMSMs), synchronous reluctance motors, and asynchronous motors into one system

Capable of driving various motors, including direct-drive motors, PMSMs, motor spindles, asynchronous servo motors, standard asynchronous motors, synchronous reluctance motors, and servo motors.



Flexible selection

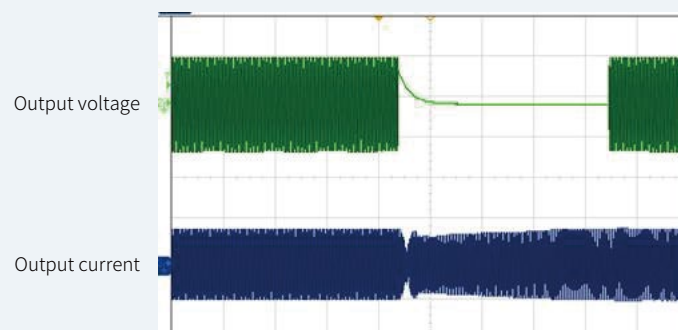
GD350A supports G/P integration, making inventory management more convenient and enhancing competitiveness in light-load applications.

More firmware upgrade options

Remote upgrade: Supports upgrades via RS485, local serial port, or 4G expansion card.
Local upgrade: Supports software upgrade via USB flash drive.

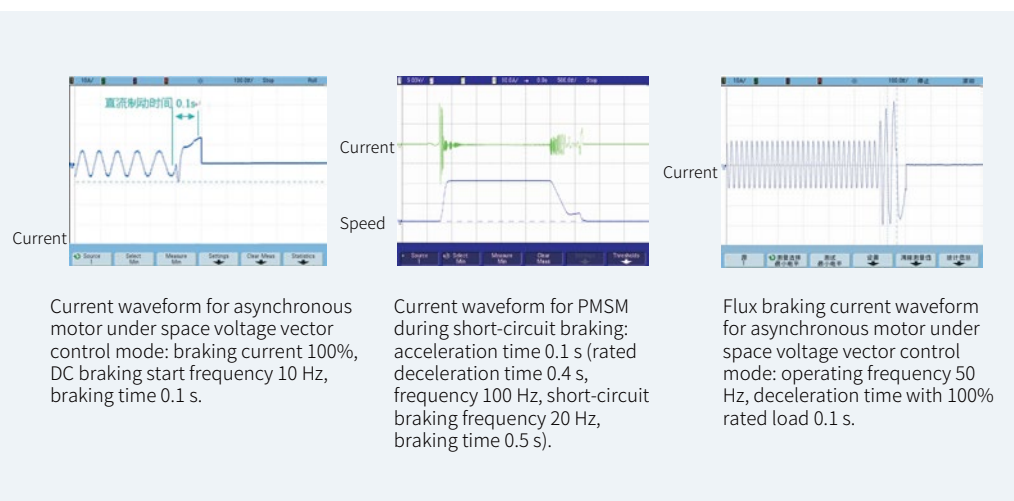
Transient power loss ride-through function

In the event of a sudden drop in the power grid, the VFD can operate on its regenerated energy within an effective time window without stopping, making it particularly suitable for applications where high continuity of operation is required, such as chemical fiber and textile production lines.



Multiple braking modes for quick stops

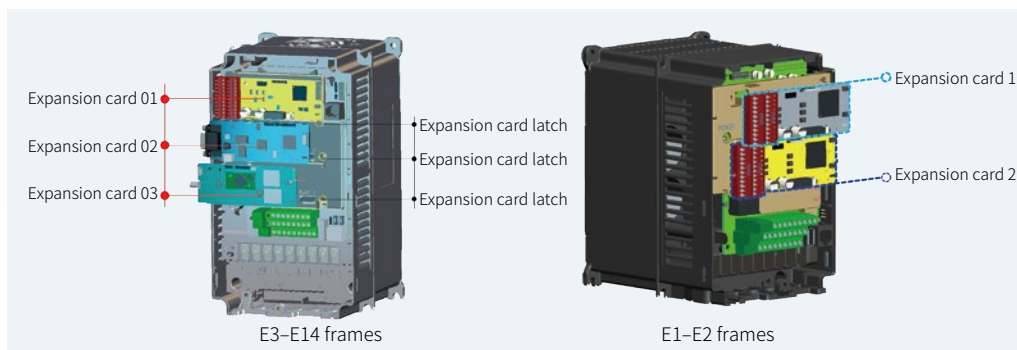
Dynamic braking	DC braking	Magnetic flux braking	Short-circuit braking
Large braking torque and fast braking speed.	No need to configure braking units and resistors.	No need to configure braking units and resistors.	No need to configure braking units and resistors.
Suitable for frequent braking of large inertia loads.	Suitable for scenarios where the motor is braked before restarting for free operation; applicable when maintaining torque output is required after braking to zero speed.	Suitable for quick stops of large inertia loads with infrequent braking.	Only suitable for rapid stops of permanent magnet synchronous motors (PMSMs) or for PMSMs that are braked before restarting in free operation. Only suitable for rapid stops of permanent magnet synchronous motors (PMSMs) or for PMSMs that are braked before restarting in free operation.
Must be equipped with braking units and resistors.	Not suitable for frequent or rapid braking of large inertia loads; not suitable for braking during high-speed operation of the motor.	Not suitable for frequent braking of large inertia loads. (The energy is consumed on the stator, resulting in better motor cooling compared to DC braking.)	Not suitable for frequent braking of large inertia loads.



Strong expansion capability

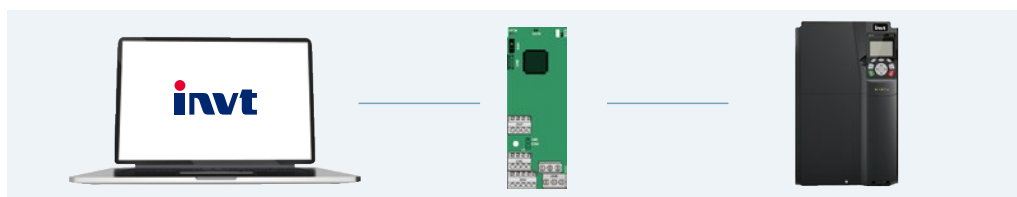
Enhanced expansion capabilities to meet various application needs

- (1) Optional PLC cards, I/O cards, communication cards, PG cards, and power supply cards are available, supporting the simultaneous use of various types of expansion cards.
- (2) Expansion cards have a consistent size, allowing for easy installation in any card slot.
- (3) Expansion cards feature spring-type terminal connections for easy wiring.



Supports customer secondary development

Optional built-in PLC card, utilizing mainstream international PLC development environments. It supports various programming languages such as Instruction List (IL), Ladder Logic (LD), and Sequential Function Chart (SFC), and features a 16K-step program memory, enabling secondary development for customized needs and lowering system cost.

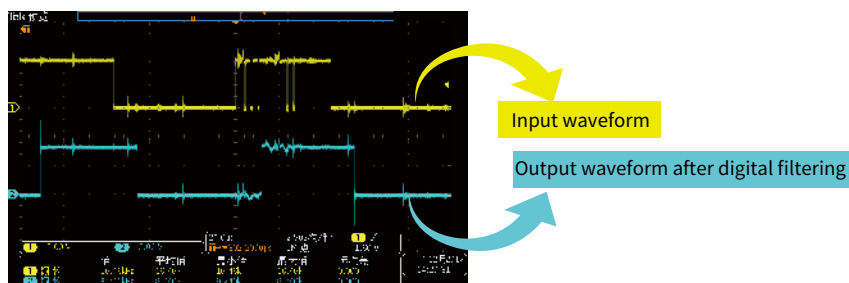


Supports multiple mainstream communication protocols



Supports multiple types of encoders. The PG card utilizes digital filtering technology to enhance electromagnetic compatibility and achieve stable long-distance reception of encoder signals.

- (1) Supports optional configuration of sine/cosine PG cards, incremental PG cards, resolver PG cards, and absolute PG cards.
- (2) Supports pulse input and frequency division output.
- (3) Features fast detection of encoder disconnection to prevent system fault escalation.



Encoder signal input waveform during near-field coupling of a 100m motor cable

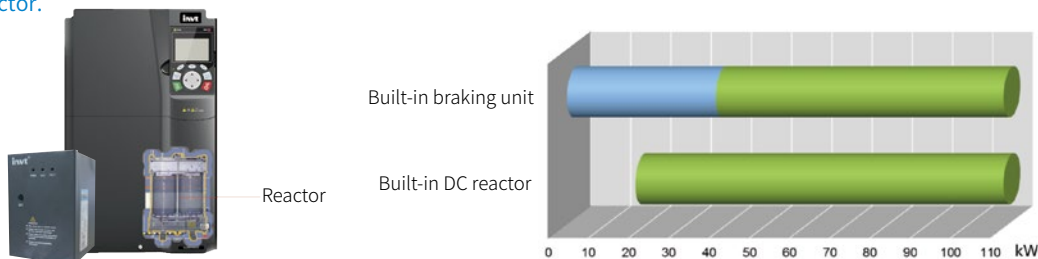
Supports simple closed-loop operation

Standard configuration includes two HDI channels, which can be used for speed setting and support quadrature encoder input, forming a simple closed-loop application, providing customers with a cost-effective closed-loop application solution.



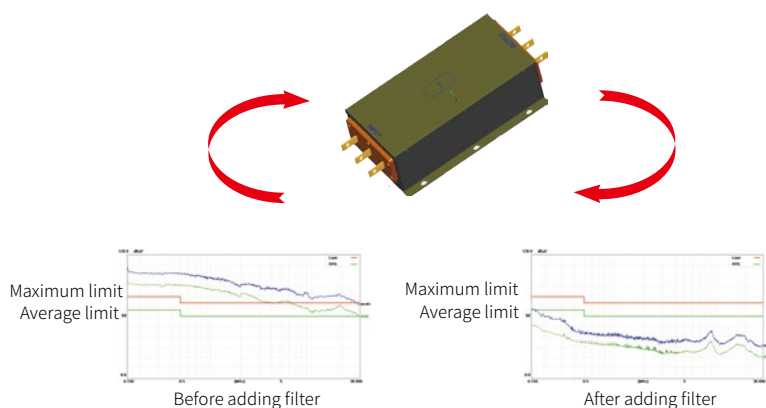
Rich configuration

- For 220V and 380V products, E1-E7 frames are equipped with a built-in braking unit as standard; E9 and E11 frames support the use of an optional built-in or external braking unit; E12-E14 frames require external braking units. For 525V and 660V products, E4 and E7 frames are equipped with a built-in braking unit, while other frames require external braking units.
- For 220V and 380V products, E5-E11 frames are equipped with built-in DC reactors to improve the power factor.



Standard configuration includes a built-in C3 input filter, with an optional C2 filter

To meet the diverse application requirements of various locations, the 380V standard configuration comes with a built-in input filter that is assembled before leaving the factory, saving external installation space and avoiding electromagnetic interference caused by improper selection or installation of external C3 filters.



Power terminal conducted disturbance test

Improved energy-saving effects

- Both VF and vector control support new energy-saving algorithms, reducing light load current by 30%.
- Supports DPWM modulation, reducing switching losses by 30%.

/ Ease of use

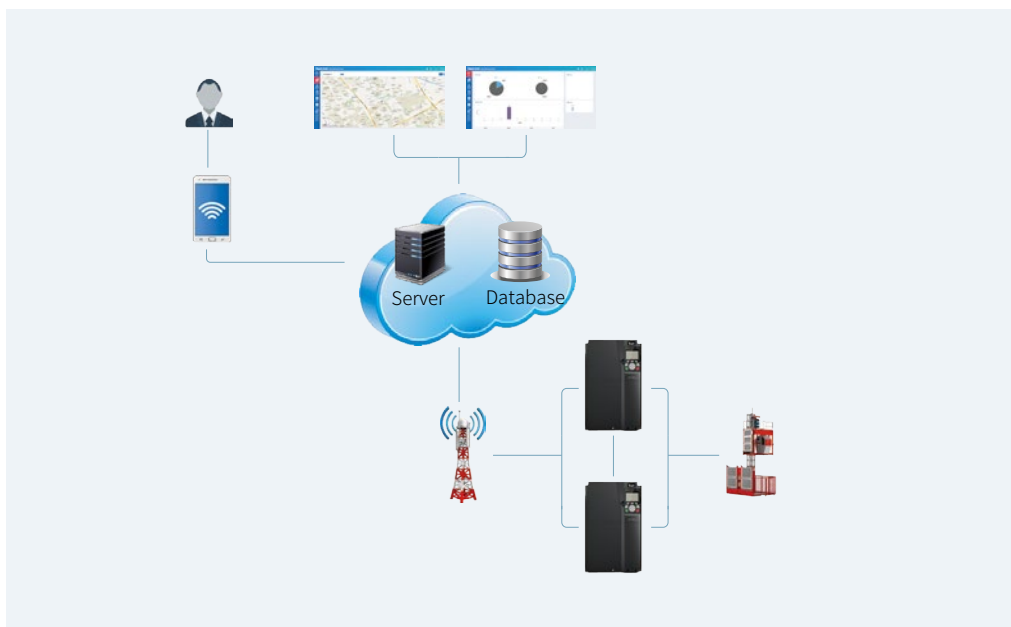
Wireless debugging

The optional Bluetooth/Wi-Fi expansion card enables parameter settings and status monitoring via a mobile app, allowing control without opening the electrical cabinet for a more convenient application.



IoT connectivity and remote monitoring

Wireless access with optional expansion cards for easy IoT integration, allowing operation of inverters via mobile or computer, and real-time monitoring of operational status.



Standard configuration includes a multi-functional LCD operation panel with a user-friendly design that emphasizes user experience

The aesthetically pleasing and simple visual interface allows customers to switch between different display styles based on their preferences.

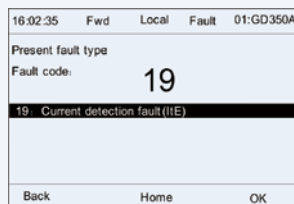


Simple and flexible interaction is achieved with silicone buttons, making the debugging process easier.



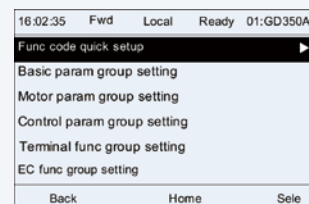
The powerful real-time monitoring and alarm functions allow for customizable monitoring and debugging parameters.

The real-time clock feature records faults as they occur, with the ability to query up to 6 historical faults for easy maintenance.

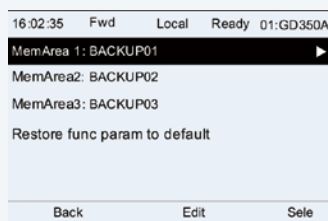


Present fault display interface

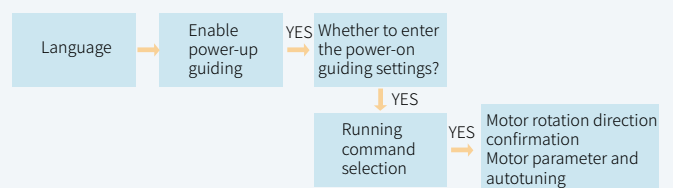
The quick editing and debugging feature allows for rapid parameter settings and grouped channel configurations, catering to the diverse needs of different customers.



It supports uploading and downloading parameters for 3 sets of VFDs, with the ability to rename the operation storage area for easy parameter backup by users.



The user-friendly guided editing feature includes language switching between Chinese and English, catering to the needs of a broad user base.



Safe and reliable

Comprehensive reliability testing system ensures that the product meets the demands of various complex application environments

Test category	Test name	Detailed categories
Mechanical reliability testing	Packaging test	Packaging compression test
		Packaging resonance scanning and dwell test
		Packaging random vibration test
		Packaging drop test
		Packaging rolling test
		Packaging tilt drop test
		Packaging inclined impact test
	Shock test	Half-sine wave shock test (product operating/non-operating state) Trapezoidal wave shock test (product non-operating state)
	Vibration test	Sine vibration test (product operating state) Random vibration test (product operating/non-operating state)
Climate-related environmental reliability testing	Vibration test	Low temperature storage test
		High temperature storage test
		Low temperature operating test
		High temperature operating test
		Temperature gradient test
		Temperature shock test
	Damp heat test	Constant damp heat test Cyclic damp heat test
	Salt spray test	Continuous salt spray test Cyclic salt spray test
	Low pressure test	Low temperature and low pressure combined test
		High temperature and low pressure combined test

Note: INVT has been certified as an ACT (Acceptance of Client's Testing) manufacturer by TÜV SÜD. This certification signifies that TÜV SÜD officially recognizes the technical proficiency of INVT's laboratory, accepts the test data produced by this laboratory, and acknowledges the validity of the test reports issued by it.



Electric vibration system



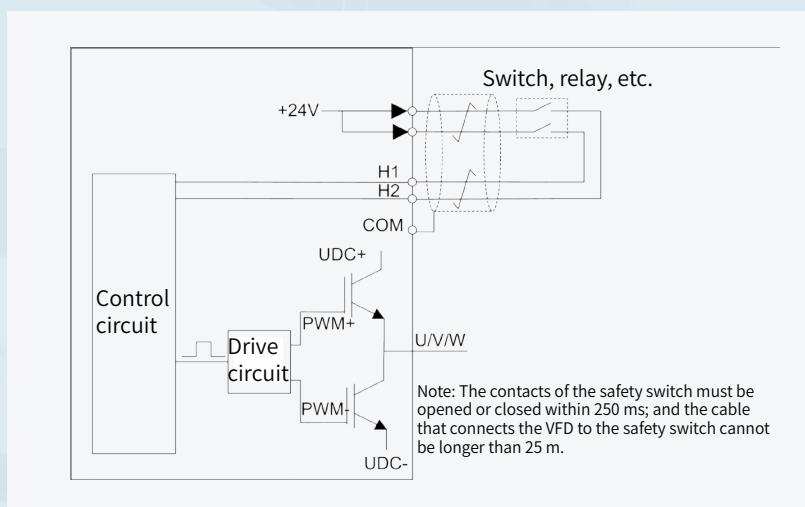
Low-pressure test chamber (left),
constant temperature and humidity
test chamber (right)



Natural convection test chamber (left),
thermal shock test chamber (right)

Built-in Safe Torque Off (STO) function aligns with international standards, making applications safer and more reliable

- (1) SIL3 level
- (2) Capable of establishing an economical safety system



Supports motor temperature detection function for effective motor protection

AI/AO interfaces support direct connection to PT100, PT1000, KTY84, and PTC sensors for monitoring motor temperature and implementing protection measures.

There is no need to select a separate transmitter, making the application simple and convenient.

Supports long-distance output

Supports 150–200m long-distance output depending on the power rating, without optional accessories such as reactors.

/ Product application

HVAC



Centrifugal machine



Chemicals



Extrusion molding



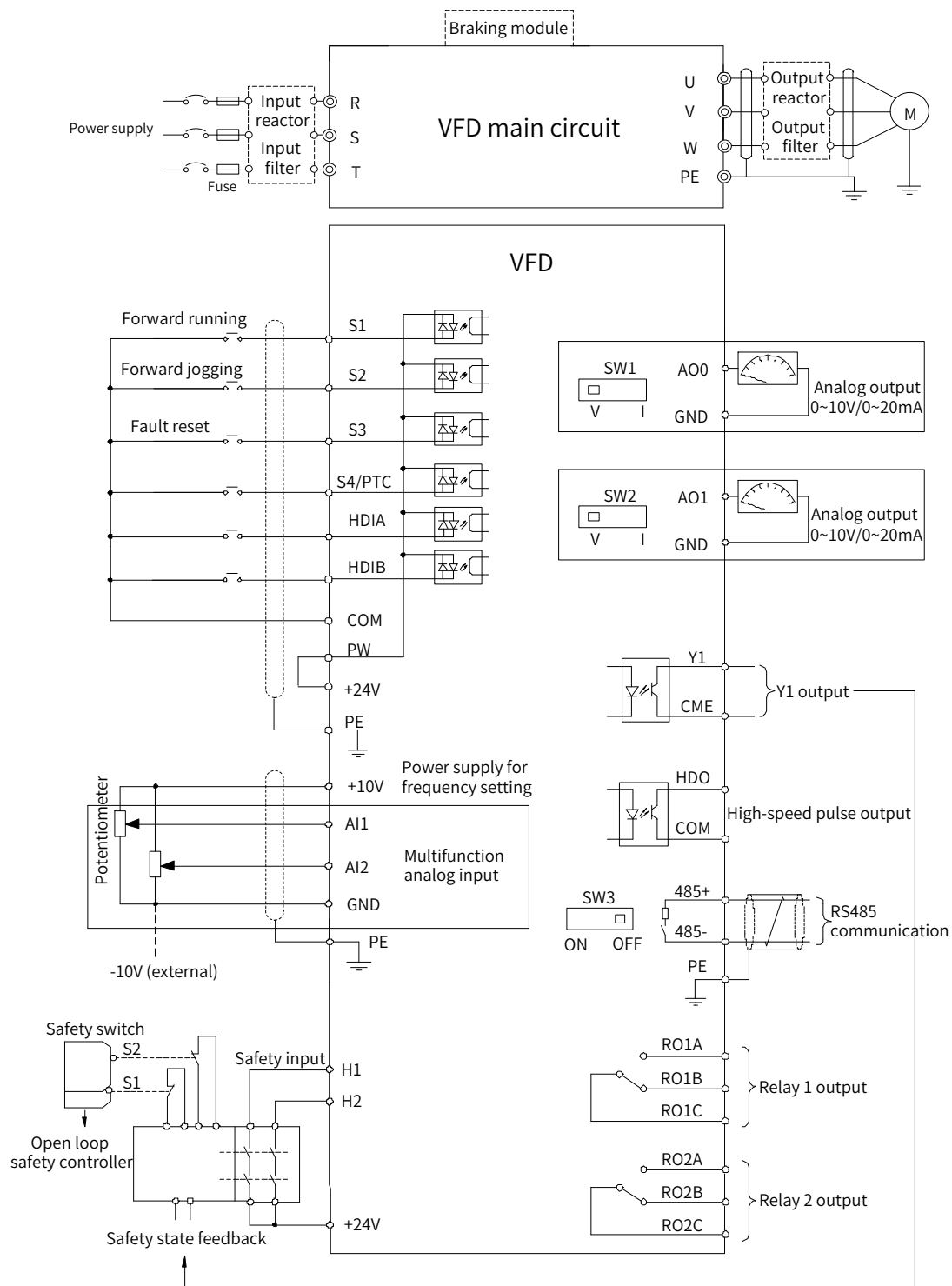
Compressors



Printing and packaging



Wiring diagram



Note: : Shield layer / : Twisted pair

Detailed technical parameters

Item		Specification
Input	Input voltage (V)	S2: AC 1PH 200V–240V; rated voltage: 220V 2: AC 3PH 200V–240V, rated voltage: 220V 4: AC 3PH 380V–480V, rated voltage: 380V 5: AC 3PH 500V–575V, rated voltage: 525V 6: AC 3PH 520V–690V, rated voltage: 660V Note: The fluctuation of (-15%) to (+10%) is an instantaneous value.
	Input current (A)	See the product model selection for details
	Input frequency (Hz)	50Hz or 60Hz; Allowed range: 47–63Hz, with a maximum change rate of 20%/s
	Short-circuit capacity	According to IEC 61439-1, the rated short-time withstand current at the incoming terminals of the switchgear assembly is up to 100 kA. The VFD is suitable for applications where the prospective short-circuit current does not exceed the breaking capacity (for example, 100 kA) of its protective devices, and its rated operational current is significantly lower than this value—typically ≤ 1 kA.
Output	Output voltage (V)	0–Input voltage
	Output current (A)	See the product model selection for details
	Output power (kW)	See the product model selection for details
	Output frequency (Hz)	0–599Hz
Control performance	Control mode	V/F control mode (space voltage vector control), sensorless vector control (SVC), and feedback vector control (FVC) mode
	Motor	Motor type: Asynchronous motors, permanent magnet synchronous motors, and synchronous reluctance motors Voltage: 0–U1 (motor rated voltage), 3PH symmetrical, Umax (VFD rated voltage) at the field-weakening point Short-circuit protection: The motor output short-circuit protection meets the requirements of IEC 61800-5-1. Frequency: 0–599Hz, frequency resolution: 0.01Hz Carrier frequency: 1kHz–15kHz. Please refer to the function code P00.14 for the default carrier frequency. For the maximum motor cable length, see section A.5 EMC compatibility motor cable length.
	Speed ratio	For asynchronous motors: 1:200 (SVC) For permanent magnet synchronous motors: 1:200 (SVC); 1:1000 (FVC) For synchronous reluctance motors: 1:100 (SVC)
	Speed control accuracy	$\pm 0.2\%$ (SVC); $\pm 0.02\%$ (FVC)
	Speed fluctuation	$\pm 0.3\%$ (SVC)
	Torque response	≤ 5 ms
	Torque control accuracy	$\leq 5\%$
	Starting torque	0.25Hz/150% (SVC); 0Hz/200% (FVC)
	Overload capacity	For the G type: 150% of rated current for 60s, and 180% of rated current for 10s For the P type: 120% of the rated current for 60s
Peripheral interface	Terminal analog input resolution	No more than 20mV
	Terminal digital input resolution	No more than 2ms
	Analog input	Two inputs; AI1: 0–10V/0–20mA; AI2: -10–+10V
	Analog output	Two outputs. AO0, AO1: 0–10V/0–20mA

Peripheral interface	Digital input	Four regular inputs. Max. frequency: 1kHz; internal impedance: 3.3kΩ Two high-speed inputs. Max. frequency: 50kHz; supporting 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 RO2A: NO; RO2B: NC; RO2C: common Contact capacity: 3A/AC250V, 1A/DC30V
	Expansion interface	E1–E2 frames: Two expansion interfaces (SLOT1, SLOT2) E3–E14 frames: Three expansion slots (SLOT1, SLOT2, SLOT3) Note: These slots can accommodate expansion cards, including PG cards, programmable cards, communication cards, and I/O cards. However, only one card of the same type can be inserted at a time.
Environment requirements and standards	Mounting method	Three methods: Wall mounting, floor mounting, and flange mounting.
	Temperature of running environment	-10–50°C Note: Derating is required when the ambient temperature exceeds 40° C.
	IP rating	IP20
	Pollution degree	Degree 2
	Cooling method	Forced air cooling
	Certification standard	CE

Model description

Naming rule

GD 350 A – 004 G / 5 R 5 P – 4 – (B/E)

① ② ③ ④

Field	Symbol	Description	Details
Product category	①	Product category	GD350A: Goodrive350A series high-performance general-purpose VFD
Rated power	②	Power range + load type	004: 4kW 5R5: 5.5kW G: Constant torque load P: Variable torque load
Voltage class	③	Voltage class	S2: AC 1PH 200V–240V; rated voltage: 220V 2: AC 3PH 200V–240V; rated voltage: 220V 4: AC 3PH 380V–480V; rated voltage: 380V 5: AC 3PH 500V–575V; rated voltage: 525V 6: AC 3PH 520V–690V; rated voltage: 660V
Optional accessories	④	Optional accessories	B: Optional braking unit E: Optional LED keypad

Product model selection

Ratings of single VFD

Frame	VFD model	Output power (kW)	Input current (A)	Output current (A)
1PH 220V				
E2	GD350A-0R7G-S2	0.75	9.3	5.0
	GD350A-1R5G-S2	1.5	15.7	9.5
E3	GD350A-2R2G-S2	2.2	24	14
E4	GD350A-004G-S2	4	38	18.5
E7	GD350A-5R5G-S2	5.5	55	25
	GD350A-7R5G-S2	7.5	65	32
3PH 220V				
E1	GD350A-0R7G-2	0.75	5.8	5.0
E2	GD350A-1R5G-2	1.5	13.5	9.5
	GD350A-2R2G-2	2.2	19.5	14
E3	GD350A-004G-2	4	25	18.5
E4	GD350A-5R5G-2	5.5	32	25
	GD350A-7R5G-2	7.5	40	32
E5	GD350A-011G-2	11	51	45
E7	GD350A-015G-2	15	70	60
	GD350A-018G-2	18.5	80	75
E9	GD350A-022G-2	22	98	92
	GD350A-030G-2	30	128	115
	GD350A-037G-2	37	139	150
E11	GD350A-045G-2	45	168	180
	GD350A-055G-2	55	201	215
E12	GD350A-075G-2	75	265	260
	GD350A-090G-2	90	345	340
	GD350A-110G-2	110	385	380
E13	GD350A-132G-2	132	460	480
	GD350A-160G-2	160	500	530
E14	GD350A-185G-2	185	625	650
	GD350A-200G-2	200	715	720
	GD350A-220G-2	220	840	820
	GD350A-250G-2	250	890	860

Frame	VFD model	Constant torque			Variable torque		
		Output power (kW)	Input current (A)	Output current (A)	Output power (kW)	Input current (A)	Output current (A)
3PH 380V							
E1	GD350A-0R4G/0R7P-4	0.4	1.9	1.6	0.75	3.2	2.5
	GD350A-0R7G/1R5P-4	0.75	3.2	2.5	1.5	5.0	3.7
	GD350A-1R5G/2R2P-4	1.5	5.0	3.7	2.2	5.8	5
	GD350A-2R2G/003P-4	2.2	5.8	5	3	11	7

Frame	VFD model	Constant torque			Variable torque		
		Output power (kW)	Input current (A)	Output current (A)	Output power (kW)	Input current (A)	Output current (A)
3PH 380V							
E2	GD350A-004G/5R5P-4	4	13.5	9.5	5.5	19.5	12.5
	GD350A-5R5G/7R5P-4	5.5	19.5	14	7.5	23	17
E3	GD350A-7R5G/011P-4	7.5	25	18.5	11	30	23
E4	GD350A-011G/015P-4	11	32	25	15	40	32
	GD350A-015G/018P-4	15	40	32	18.5	45	38
E5	GD350A-018G/022P-4	18.5	45	38	22	51	45
	GD350A-022G/030P-4	22	51	45	30	64	60
E7	GD350A-030G/037P-4	30	64	60	37	80	75
	GD350A-037G/045P-4	37	80	75	45	98	92
E9	GD350A-045G/055P-4	45	98	92	55	128	115
	GD350A-055G/075P-4	55	128	115	75	139	150
	GD350A-075G/090P-4	75	139	150	90	168	170
E11	GD350A-090G/110P-4	90	168	180	110	201	215
	GD350A-110G/132P-4	110	201	215	132	265	260
E12	GD350A-132G/160P-4	132	265	260	160	310	305
	GD350A-160G/185P-4	160	310	305	185	345	340
	GD350A-185G/200P-4	185	345	340	200	385	380
	GD350A-200G/220P-4	200	385	380	220	430	425
E13	GD350A-220G/250P-4	220	430	425	250	460	480
	GD350A-250G/280P-4	250	460	480	280	500	530
	GD350A-280G/315P-4	280	500	530	315	580	600
	GD350A-315G/355P-4	315	580	600	355	625	650
E14	GD350A-355G/400P-4	355	625	650	400	715	720
	GD350A-400G/450P-4	400	715	720	450	840	820
	GD350A-450G/500P-4	450	840	820	500	890	860
	GD350A-500G/560P-4	500	890	860	560	1090	1060

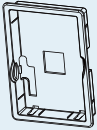
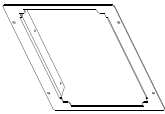
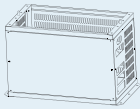
Frame	VFD model	Output power (kW)	Input current (A)	Output current (A)
3PH 525V				
E4	GD350A-2R2G-5	2.2	10	6.5
	GD350A-004G-5	4	13	9
	GD350A-5R5G-5	5.5	16.5	12
E6	GD350A-7R5G-5	7.5	19	16
	GD350A-011G-5	11	29	27
E8	GD350A-015G-5	15	33	30
	GD350A-018G-5	18.5	40	35
	GD350A-022G-5	22	47	45
	GD350A-030G-5	30	52	52
E10	GD350A-037G-5	37	65	62
	GD350A-045G-5	45	85	86
	GD350A-055G-5	55	95	98
	GD350A-075G-5	75	118	120
	GD350A-090G-5	90	145	150

Frame	VFD model	Output power (kW)	Input current (A)	Output current (A)
3PH 525V				
E12	GD350A-110G-5	110	165	175
	GD350A-132G-5	132	190	200
	GD350A-160G-5	160	230	240
E13	GD350A-185G-5	185	255	270
	GD350A-200G-5	200	286	300
	GD350A-250G-5	250	334	350
	GD350A-280G-5	280	360	380
E14	GD350A-315G-5	315	445	465
	GD350A-355G-5	355	518	540
	GD350A-400G-5	400	578	600
	GD350A-500G-5	500	655	680
3PH 660V				
E4	GD350A-004G-6	4	10	6.5
	GD350A-5R5G-6	5.5	13	9
	GD350A-7R5G-6	7.5	16.5	12
E6	GD350A-011G-6	11	19	16
	GD350A-015G-6	15	24	21
	GD350A-018G-6	18.5	29	27
E8	GD350A-022G-6	22	33	30
	GD350A-030G-6	30	40	35
	GD350A-037G-6	37	47	45
	GD350A-045G-6	45	52	52
E10	GD350A-055G-6	55	65	62
	GD350A-075G-6	75	85	86
	GD350A-090G-6	90	95	98
	GD350A-110G-6	110	118	120
	GD350A-132G-6	132	145	150
E12	GD350A-160G-6	160	165	175
	GD350A-185G-6	185	190	200
	GD350A-200G-6	200	210	220
	GD350A-220G-6	220	230	240
	GD350A-250G-6	250	255	270
E13	GD350A-280G-6	280	286	300
	GD350A-315G-6	315	334	350
	GD350A-355G-6	355	360	380
	GD350A-400G-6	400	411	430
	GD350A-450G-6	450	445	465
E14	GD350A-500G-6	500	518	540
	GD350A-560G-6	560	578	600
	GD350A-630G-6	630	655	680

Ratings of parallel product

VFD model	Output power (kW)	Input current (A)	Output current (A)
AC 3PH 380V			
GD350A-560G-4	560	1090	1060
GD350A-630G-4	630	1220	1200
GD350A-710G-4	710	1250	1300
GD350A-800G-4	800	1430	1440
GD350A-1000G-4	1000	1780	1720
GD350A-1200G-4	1200	2145	2160
GD350A-1500G-4	1500	2670	2580
GD350A-2000G-4	2000	3560	3440
GD350A-2500G-4	2500	4450	4300
GD350A-3000G-4	3000	5340	5160
AC 3PH 525V			
GD350A-560G-5	560	720	760
GD350A-630G-5	630	822	860
GD350A-800G-5	800	1036	1080
GD350A-1000G-5	1000	1310	1360
GD350A-1200G-5	1200	1554	1620
GD350A-1500G-5	1500	2072	2160
GD350A-2000G-5	2000	2620	2720
GD350A-2500G-5	2500	3275	3400
GD350A-3000G-5	3000	3930	4080
AC 3PH 660V			
GD350A-710G-6	710	720	760
GD350A-800G-6	800	822	860
GD350A-1000G-6	1000	1036	1080
GD350A-1200G-6	1200	1310	1360
GD350A-1500G-6	1500	1554	1620
GD350A-2000G-6	2000	2072	2160
GD350A-2500G-6	2500	2620	2720
GD350A-3000G-6	3000	3275	3400
GD350A-3600G-6	3600	3930	4080

Accessory selection

Accessory name	Illustration	Applicable models
Heat dissipation hole cover		E1–E5, E7, E9 frames
Keypad mounting bracket		All series
Flange mounting bracket		Required for flange mounting: For E1–E5, E7, E9, and E11 frames, select according to the power rating.
Installation base		The base can hold one input AC reactor (or DC reactor) and one output AC reactor. When the floor mounting method is used, the (optional part) installation base is required for VFDs in E13 frame. Note: The base can optionally hold one input AC reactor (or DC reactor) and one output AC reactor.

Applicable model	Ordering code of flange mounting bracket	Ordering code of heat dissipation hole cover	Ordering code of keypad mounting bracket	Ordering code of installation base
E1	19005-00005	61006-01870	19005-00149	/
E2	19005-00005	64003-00170		/
E3	19005-00013	61006-01870		/
E4	19005-00006	61006-01870		/
E5	19005-00094	61006-01870		/
E6	19005-00006	61006-01870		/
E7	19005-00093	61006-01870		/
E8	/	/		/
E9	19005-00092	/		/
E10	/	/		/
E11	19005-00091	/		/
E12	/	/		/
E13	/	/		62001-01929
E14	/	/		/

Reactor model selection

VFD power		Output reactor	
1PH 220V			
0.75kW		GDL-OCL0006-4CU	
1.5kW		GDL-OCL0014-4CU	
2.2kW		GDL-OCL0014-4CU	
4kW		GDL-OCL0020-4CU	
5.5kW		GDL-OCL0025-4CU	
7.5kW		GDL-OCL0035-4AL	
VFD power	Input reactor	Output reactor	DC reactor
3PH 220V			
0.75kW	GDL-ACL0006-4CU	GDL-OCL0005-4CU	-
1.5kW	GDL-ACL0014-4CU	GDL-OCL0010-4CU	-
2.2kW	GDL-ACL0020-4CU	GDL-OCL0014-4CU	-
4kW	GDL-ACL0025-4CU	GDL-OCL0020-4CU	-
5.5kW	GDL-ACL0035-4AL	GDL-OCL0025-4CU	-
7.5kW	GDL-ACL0040-4AL	GDL-OCL0035-4AL	-
11kW	GDL-ACL0051-4AL	GDL-OCL0050-4AL	Standard
15kW	GDL-ACL0070-4AL	GDL-OCL0060-4AL	Standard
18kW	GDL-ACL0090-4AL	GDL-OCL0075-4AL	Standard
22kW	GDL-ACL0110-4AL	GDL-OCL0092-4AL	Standard
30kW	GDL-ACL0150-4AL	GDL-OCL0115-4AL	Standard
37kW	GDL-ACL0150-4AL	GDL-OCL0150-4AL	Standard
45kW	GDL-ACL0220-4AL	GDL-OCL0220-4AL	Standard
55kW	GDL-ACL0220-4AL	GDL-OCL0220-4AL	Standard
75kW	GDL-ACL0265-4AL	GDL-OCL0265-4AL	GDL-DCL0300-4AL
90kW	GDL-ACL0390-4AL	GDL-OCL0400-4AL	GDL-DCL0455-4AL
110kW	GDL-ACL0390-4AL	GDL-OCL0400-4AL	GDL-DCL0455-4AL
132kW	GDL-ACL0500-4AL	GDL-OCL0500-4AL	GDL-DCL0550-4AL
160kW	GDL-ACL0500-4AL	GDL-OCL0560-4AL	GDL-DCL0675-4AL
185kW	Standard	GDL-OCL0660-4AL	GDL-DCL0810-4AL
200kW	Standard	GDL-OCL0720-4AL	GDL-DCL0810-4AL
220kW	Standard	GDL-OCL0820-4AL	GDL-DCL1000-4AL
250kW	Standard	GDL-OCL1000-4AL	GDL-DCL1000-4AL

VFD power	Input reactor	Output reactor	DC reactor
3PH 380V			
0.4kW	-	-	-
0.75kW	GDL-ACL0005-4CU	GDL-OCL0005-4CU	-
1.5kW	GDL-ACL0005-4CU	GDL-OCL0005-4CU	-
2.2kW	GDL-ACL0006-4CU	GDL-OCL0006-4CU	-
4kW	GDL-ACL0014-4CU	GDL-OCL0010-4CU	-
5.5kW	GDL-ACL0020-4CU	GDL-OCL0014-4CU	-
7.5kW	GDL-ACL0025-4CU	GDL-OCL0020-4CU	-
11kW	GDL-ACL0035-4AL	GDL-OCL0025-4CU	-
15kW	GDL-ACL0040-4AL	GDL-OCL0035-4AL	-
18kW	GDL-ACL0051-4AL	GDL-OCL0040-4AL	G type: DC reactor provided as standard configuration P type: DC reactor cannot be installed
22kW	GDL-ACL0051-4AL	GDL-OCL0050-4AL	Standard
30kW	GDL-ACL0070-4AL	GDL-OCL0060-4AL	Standard
37kW	GDL-ACL0090-4AL	GDL-OCL0075-4AL	Standard
45kW	GDL-ACL0110-4AL	GDL-OCL0092-4AL	Standard
55kW	GDL-ACL0150-4AL	GDL-OCL0115-4AL	Standard
75kW	GDL-ACL0150-4AL	GDL-OCL0150-4AL	Standard
90kW	GDL-ACL0220-4AL	GDL-OCL0220-4AL	Standard
110kW	GDL-ACL0220-4AL	GDL-OCL0220-4AL	Standard
132kW	GDL-ACL0265-4AL	GDL-OCL0265-4AL	G type: GDL-DCL0300-4AL P type: DC reactor provided as standard configuration
160kW	GDL-ACL0330-4AL	GDL-OCL0330-4AL	GDL-DCL0365-4AL
185kW	GDL-ACL0390-4AL	GDL-OCL0400-4AL	GDL-DCL0455-4AL
200kW	GDL-ACL0390-4AL	GDL-OCL0400-4AL	GDL-DCL0455-4AL
220kW	GDL-ACL0450-4AL	GDL-OCL0450-4AL	GDL-DCL0505-4AL
250kW	GDL-ACL0500-4AL	GDL-OCL0500-4AL	GDL-DCL0550-4AL
280kW	GDL-ACL0500-4AL	GDL-OCL0560-4AL	GDL-DCL0675-4AL
315kW	GDL-ACL0580-4AL	GDL-OCL0660-4AL	GDL-DCL0675-4AL
355kW	G type: Input reactor provided as standard configuration P type: GDL-ACL0660-4AL	GDL-OCL0660-4AL	GDL-DCL0810-4AL
400kW	Standard	GDL-OCL0720-4AL	GDL-DCL0810-4AL
450kW	Standard	GDL-OCL0820-4AL	GDL-DCL1000-4AL
500kW	Standard	GDL-OCL1000-4AL	GDL-DCL1000-4AL
560kW (P type)	Standard	GDL-OCL1200-4AL	GDL-DCL1200-4AL
3PH 380V parallel VFDs			
560kW	Standard	Standard	GDL-DCL0675-4AL*2
630kW	Standard	Standard	GDL-DCL0675-4AL*2
710kW	Standard	Standard	GDL-DCL0810-4AL*2
800kW	Standard	Standard	GDL-DCL0810-4AL*2
1000kW	Standard	Standard	GDL-DCL1000-4AL*2
1200kW	Standard	Standard	GDL-DCL0810-4AL*3
1500kW	Standard	Standard	GDL-DCL1000-4AL*3
2000kW	Standard	Standard	GDL-DCL1000-4AL*4
2500kW	Standard	Standard	GDL-DCL1000-4AL*5
3000kW	Standard	Standard	GDL-DCL1000-4AL*6



VFD power	Input reactor	Output reactor	DC reactor
3PH 525V			
2.2kW	GDL-ACL0010-6CU	GDL-OCL0006-6CU	—
4kW	GDL-ACL0015-6CU	GDL-OCL0011-6CU	—
5.5kW	GDL-ACL0020-6CU	GDL-OCL0020-6CU	—
7.5kW	GDL-ACL0020-6CU	GDL-OCL0020-6CU	—
11kW	GDL-ACL0030-6CU	GDL-OCL0030-6CU	—
15kW	GDL-ACL0045-6CU	GDL-OCL0030-6CU	GDL-DCL0045-6CU
18kW	GDL-ACL0045-6CU	GDL-OCL0045-6CU	GDL-DCL0050-6CU
22kW	GDL-ACL0050-6CU	GDL-OCL0045-6CU	GDL-DCL0080-6CU
30kW	GDL-ACL0060-6CU	GDL-OCL0060-6CU	GDL-DCL0080-6CU
37kW	GDL-ACL0090-6CU	GDL-OCL0090-6CU	GDL-DCL0080-6CU
45kW	GDL-ACL0090-6CU	GDL-OCL0090-6CU	GDL-DCL0165-6CU
55kW	GDL-ACL0110-6CU	GDL-OCL0110-6CU	GDL-DCL0165-6CU
75kW	GDL-ACL0150-6CU	GDL-OCL0150-6CU	GDL-DCL0165-6CU
90kW	GDL-ACL0150-6CU	GDL-OCL0150-6CU	GDL-DCL0265-6CU
110kW	GDL-ACL0200-6CU	GDL-OCL0200-6CU	GDL-DCL0265-6CU
132kW	GDL-ACL0200-6CU	GDL-OCL0200-6CU	GDL-DCL0265-6CU
160kW	GDL-ACL0250-6CU	GDL-OCL0250-6CU	GDL-DCL0330-6CU
185kW	GDL-ACL0300-6CU	GDL-OCL0300-6CU	GDL-DCL0330-6CU
200kW	GDL-ACL0300-6CU	GDL-OCL0300-6CU	GDL-DCL0330-6CU
250kW	GDL-ACL0400-6CU	GDL-OCL0400-6CU	GDL-DCL0475-6CU
280kW	GDL-ACL0400-6CU	GDL-OCL0400-6CU	GDL-DCL0475-6CU
315kW	GDL-ACL0480-6CU	GDL-OCL0480-6CU	GDL-DCL0600-6CU
355kW	Standard	GDL-OCL0600-6CU	GDL-DCL0750-6CU
400kW	Standard	GDL-OCL0600-6CU	GDL-DCL0750-6CU
500kW	Standard	GDL-OCL0800-6CU	GDL-DCL0805-6CU
3PH 525V parallel VFDs			
560kW	Standard	Standard	GDL-DCL0475-6CU*2
630kW	Standard	Standard	GDL-DCL0600-6CU*2
800kW	Standard	Standard	GDL-DCL0750-6CU*2
1000kW	Standard	Standard	GDL-DCL0805-6CU*2
1200kW	Standard	Standard	GDL-DCL0750-6CU*3
1500kW	Standard	Standard	GDL-DCL0805-6CU*3
2000kW	Standard	Standard	GDL-DCL0805-6CU*4
2500kW	Standard	Standard	GDL-DCL0805-6CU*5
3000kW	Standard	Standard	GDL-DCL0805-6CU*6

VFD power	Input reactor	Output reactor	DC reactor
3PH 660V			
4kW	GDL-ACL0010-6CU	GDL-OCL0006-6CU	—
5.5kW	GDL-ACL0015-6CU	GDL-OCL0011-6CU	—
7.5kW	GDL-ACL0020-6CU	GDL-OCL0020-6CU	—
11kW	GDL-ACL0020-6CU	GDL-OCL0020-6CU	—
15kW	GDL-ACL0030-6CU	GDL-OCL0030-6CU	—
18.5kW	GDL-ACL0030-6CU	GDL-OCL0030-6CU	—
22kW	GDL-ACL0045-6CU	GDL-OCL0030-6CU	GDL-DCL0045-6CU
30kW	GDL-ACL0045-6CU	GDL-OCL0045-6CU	GDL-DCL0050-6CU
37kW	GDL-ACL0050-6CU	GDL-OCL0045-6CU	GDL-DCL0080-6CU
45kW	GDL-ACL0060-6CU	GDL-OCL0060-6CU	GDL-DCL0080-6CU
55kW	GDL-ACL0090-6CU	GDL-OCL0090-6CU	GDL-DCL0080-6CU
75kW	GDL-ACL0090-6CU	GDL-OCL0090-6CU	GDL-DCL0165-6CU
90kW	GDL-ACL0110-6CU	GDL-OCL0110-6CU	GDL-DCL0165-6CU
110kW	GDL-ACL0150-6CU	GDL-OCL0150-6CU	GDL-DCL0165-6CU
132kW	GDL-ACL0150-6CU	GDL-OCL0150-6CU	GDL-DCL0265-6CU
160kW	GDL-ACL0200-6CU	GDL-OCL0200-6CU	GDL-DCL0265-6CU
185kW	GDL-ACL0200-6CU	GDL-OCL0200-6CU	GDL-DCL0265-6CU
200kW	GDL-ACL0250-6CU	GDL-OCL0250-6CU	GDL-DCL0330-6CU
220kW	GDL-ACL0250-6CU	GDL-OCL0250-6CU	GDL-DCL0330-6CU
250kW	GDL-ACL0300-6CU	GDL-OCL0300-6CU	GDL-DCL0330-6CU
280kW	GDL-ACL0300-6CU	GDL-OCL0300-6CU	GDL-DCL0475-6CU
315kW	GDL-ACL0400-6CU	GDL-OCL0400-6CU	GDL-DCL0475-6CU
355kW	GDL-ACL0400-6CU	GDL-OCL0400-6CU	GDL-DCL0475-6CU
400kW	Standard	GDL-OCL0480-6CU	GDL-DCL0600-6CU
450kW	Standard	GDL-OCL0480-6CU	GDL-DCL0600-6CU
500kW	Standard	GDL-OCL0600-6CU	GDL-DCL0750-6CU
560kW	Standard	GDL-OCL0600-6CU	GDL-DCL0750-6CU
630kW	Standard	GDL-OCL0800-6CU	GDL-DCL0805-6CU
3PH 660V parallel VFDs			
710kW	Standard	Standard	GDL-DCL0475-6CU*2
800kW	Standard	Standard	GDL-DCL0600-6CU*2
1000kW	Standard	Standard	GDL-DCL0750-6CU*2
1200kW	Standard	Standard	GDL-DCL0805-6CU*2
1500kW	Standard	Standard	GDL-DCL0750-6CU*3
2000kW	Standard	Standard	GDL-DCL0750-6CU*4
2500kW	Standard	Standard	GDL-DCL0805-6CU*4
3000kW	Standard	Standard	GDL-DCL0805-6CU*5
3600kW	Standard	Standard	GDL-DCL0805-6CU*6

Note:

1. The rated input voltage drop of input reactor is designed to $\geq 1.5\%$.
2. The rated output voltage drop of output reactor is designed to 1%.

Braking unit model selection

VFD model	Braking unit model	Resistance applicable for 100% braking torque (Ω)	Braking resistor dissipation power (kW)			Min. allowed braking resistance (Ω)
			10% braking usage	50% braking usage	80% braking usage	
1PH 220V						
GD350A-0R7G-S2	Built-in braking unit	192	0.11	0.56	0.9	93
GD350A-1R5G-S2		96	0.23	1.1	1.8	44
GD350A-2R2G-S2		65	0.33	1.7	2.64	44
GD350A-004G-S2		36	0.6	3	4.8	33
GD350A-5R5G-S2		26	0.75	4.13	6.6	25
GD350A-7R5G-S2		19	1.13	5.63	9	13
3PH 220V						
GD350A-0R7G-2	Built-in braking unit	192	0.11	0.56	0.9	93
GD350A-1R5G-2		96	0.23	1.1	1.8	44
GD350A-2R2G-2		65	0.33	1.7	2.64	44
GD350A-004G-2		36	0.6	3	4.8	33
GD350A-5R5G-2		26	0.75	4.13	6.6	25
GD350A-7R5G-2		19	1.13	5.63	9	13
GD350A-011G-2		13	1.6	8	12.8	8.8
GD350A-015G-2		9.6	2	11	18	6.4
GD350A-018G-2		8	3	14	22	6.4
GD350A-022G-2	DBU100H-110-2	6.5	3	17	26	6.4
GD350A-030G-2		4.8	5	23	36	3.5
GD350A-037G-2		3.9	6	28	44	3.5
GD350A-045G-2	DBU100H-160-2	3.2	7	34	54	2.4
GD350A-055G-2		2.6	8	41	66	2.4
GD350A-075G-2	DBU100H-220-2	1.9	11	56	90	1.8
GD350A-090G-2	Quantity: Two DBU100H-160-2	1.6	7*2	34*2	54*2	2.4*2
GD350A-110G-2		1.3	9*2	43*2	66*2	2.4*2
GD350A-132G-2	Quantity: Two DBU100H-220-2	1.1	10*2	48*2	76.5*2	1.8*2
GD350A-160G-2		0.9	12*2	58*2	93*2	1.8*2
GD350A-185G-2	Quantity: Three DBU100H-220-2	0.8	9*3	44.6*3	72*3	1.8*3
GD350A-200G-2		0.7	10*3	49*3	78*3	1.8*3
GD350A-220G-2		0.7	11*3	54*3	85*3	1.8*3
GD350A-250G-2		0.6	12*3	61*3	97*3	1.8*3
3PH 380V						
GD350A-0R4G/0R7P-4	Built-in braking unit	1225	0.056	0.28	0.448	170
GD350A-0R7G/1R5P-4		653	0.105	0.525	0.84	170
GD350A-1R5G/2R2P-4		326	0.23	1.1	1.8	170
GD350A-2R2G/003P-4		222	0.33	1.7	2.6	130
GD350A-004G/5R5P-4		122	0.6	3	4.8	80
GD350A-5R5G/7R5P-4		89	0.75	4.1	6.6	60

VFD model	Braking unit model	Resistance applicable for 100% braking torque (Ω)	Braking resistor dissipation power (kW)			最小允许制动电阻 (Ω)
			10% braking usage	50% braking usage	80% braking usage	
3PH 380V						
GD350A-7R5G/011P-4	3PH 380V	65	1.1	5.6	9	47
GD350A-011G/015P-4		44	1.7	8.3	13.2	31
GD350A-015G/018P-4		32	2	11	18	23
GD350A-018G/022P-4		27	3	14	22	19
GD350A-022G/030P-4		22	3	17	26	17
GD350A-030G/037P-4		17	5	23	36	17
GD350A-037G/045P-4		13	6	28	44	11.7
GD350A-045G/055P-4	Optional built-in or external DBU100H-110-4	10	7	34	54	6.4
GD350A-055G/075P-4		8	8	41	66	
GD350A-075G/090P-4		6.5	11	56	90	
GD350A-090G/110P-4	Optional built-in or external DBU100H-160-4	5.4	14	68	108	4.4
GD350A-110G/132P-4		4.5	17	83	132	
GD350A-132G/160P-4	DBU100H-220-4	3.7	20	99	158	3.2
GD350A-160G/185P-4	DBU100H-320-4	3.1	24	120	192	2.2
GD350A-185G/200P-4		2.8	28	139	222	
GD350A-200G/220P-4		2.5	30	150	240	
GD350A-220G/250P-4	DBU100H-400-4	2.2	33	165	264	1.8
GD350A-250G/280P-4		2.0	38	188	300	
GD350A-280G/315P-4	Quantity: Two DBU100H-320-4	3.6*2	21*2	105*2	168*2	2.2*2
GD350A-315G/355P-4		3.2*2	24*2	118*2	189*2	
GD350A-355G/400P-4		2.8*2	27*2	132*2	210*2	
GD350A-400G/450P-4		2.4*2	30*2	150*2	240*2	
GD350A-450G/500P-4	Quantity: Two DBU100H-400-4	2.2*2	34*2	168*2	270*2	1.8*2
GD350A-500G/560P-4		2.0*2	38*2	186*2	300*2	
3PH 525V						
GD350A-2R2G-5	Built-in braking unit	234	0.3	1.5	2.5	17
GD350A-004G-5		129	0.5	2.8	4.5	
GD350A-5R5G-5		94	0.8	3.9	6.2	
GD350A-7R5G-5		69	1	5.3	8.4	
GD350A-011G-5		47	1.5	7.7	12.3	
GD350A-015G-5	DBU100H-110-6	72	2	11	17	9.5
GD350A-018G-5		60	3	13	20	
GD350A-022G-5		49	3	15	25	
GD350A-030G-5		36	4	21	34	
GD350A-037G-5		29	5	26	41	
GD350A-045G-5		24	6	32	50	
GD350A-055G-5		20	8	39	62	
GD350A-075G-5		14	11	53	84	
GD350A-090G-5		12	13	63	101	

VFD model	Braking unit model	Resistance applicable for 100% braking torque (Ω)	Braking resistor dissipation power (kW)			最小允许制动电阻 (Ω)
			10% braking usage	50% braking usage	80% braking usage	
3PH 525V						
GD350A-110G-5	DBU100H-160-6	9.5	15	77	123	6.5
GD350A-132G-5		8.2	18	92	148	
GD350A-160G-5		6.8	22	112	179	
GD350A-185G-5	DBU100H-220-6	5.8	26	130	207	4.7
GD350A-200G-5		5.4	28	140	224	
GD350A-250G-5	DBU100H-320-6	4.3	35	175	280	3.3
GD350A-280G-5		3.9	39	196	314	
GD350A-315G-5		3.4	44	221	353	
GD350A-355G-5	DBU100H-400-6	3.0	50	249	398	2.6
GD350A-400G-5		2.7	56	280	448	
GD350A-500G-5	Quantity: Two DBU100H-320-6	2.2	70	350	560	3.3*2
3PH 660V						
GD350A-004G-6	Built-in braking unit	216	0.6	2.9	4.5	22
GD350A-5R5G-6		157	0.8	3.8	6.2	
GD350A-7R5G-6		115	1	5.2	8.4	
GD350A-011G-6		78	1.5	7.7	12.3	
GD350A-015G-6		57	2.1	10.5	16.8	
GD350A-018G-6		46	2.6	13	20.7	
GD350A-022G-6	DBU100H-110-6	55	4	17	27	10.0
GD350A-030G-6		40.3	5	23	36	
GD350A-037G-6		32.7	6	28	44	
GD350A-045G-6		26.9	7	34	54	
GD350A-055G-6		22.0	8	41	66	
GD350A-075G-6		16.1	11	56	90	
GD350A-090G-6		13.4	14	68	108	
GD350A-110G-6		11.0	17	83	132	
GD350A-132G-6	DBU100H-160-6	9.2	20	99	158	6.9
GD350A-160G-6		7.6	24	120	192	
GD350A-185G-6	DBU100H-220-6	6.5	28	139	222	5.0
GD350A-200G-6		6.1	30	150	240	
GD350A-220G-6		5.5	33	165	264	
GD350A-250G-6	DBU100H-320-6	4.8	38	188	300	3.4
GD350A-280G-6		4.3	42	210	336	
GD350A-315G-6		3.8	47	236	378	
GD350A-355G-6		3.5	53	263	420	
GD350A-400G-6	DBU100H-400-6	3.0	60	300	480	2.8
GD350A-450G-6	Quantity: Two DBU100H-320-6	5.5*2	34*2	168*2	270*2	3.4*2
GD350A-500G-6		4.8*2	38*2	188*2	300*2	
GD350A-560G-6		4.3*2	42*2	210*2	226*2	
GD350A-630G-6		3.8*2	47*2	236*2	378*2	

Expansion card model selection

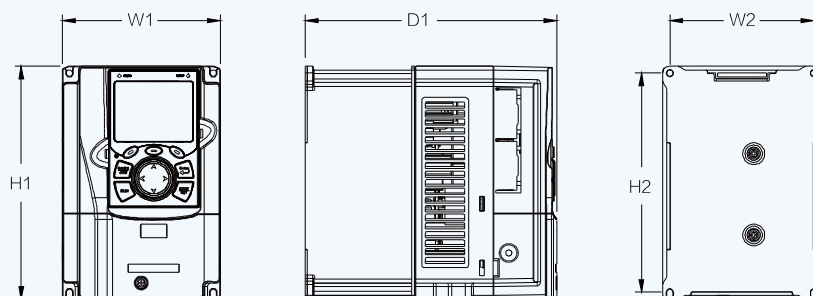
Item	Model	Specification	Ordering information
IO expansion card			
IO expansion card 1	EC-IO501-00	· 4 digital inputs · 1 digital output · 1 analog input · 1 analog output · 2 relay outputs: one double-contact output, and one single-contact output.	11023-00083
IO expansion card 2	EC-IO502-00	· 4 digital inputs · 1 PT100 · 1 PT1000 · 2 relay outputs: single-contact NO output	11023-00119
IO expansion card 3	EC-IO503-00	· Two digital inputs · Six relay outputs	11023-00136
IO expansion card 4	EC-IO504-00	· 3 analog inputs · 3 analog outputs · 3 relay outputs · Implements three-channel temperature sampling; supports PT100/PT1000/KTY84/PTC with a detection accuracy of $\pm 5^{\circ}\text{C}$	11023-00180
Communication card			
Bluetooth communication card	EC-TX501-1	· Supports Bluetooth 4.0 · With INVT's mobile APP, you can set the parameters and monitor the VFD status through Bluetooth communication. · Maximum communication distance in open environments: 30m	11023-00088
	EC-TX501-2	· EC-TX501-1 is equipped with a built-in antenna and applicable to molded case machines · EC-TX501-2 with an external sucker antenna, applicable to sheet metal machines	11023-00089
Wi-Fi communication card	EC-TX502-1	· Meets requirements of IEEE802.11b/g/n · Enables local or remote monitoring through Wi-Fi communication with the mobile APP INVT Workshop · Maximum communication distance in open environments: 30m	11023-00101
	EC-TX502-2	· EC-TX502-1 is equipped with a built-in antenna and applicable to molded case machines · EC-TX502-2 with an external sucker antenna, applicable to sheet metal machines	11023-00102
PROFIBUS-DP communication card	EC-TX503D	Supports the PROFIBUS-DP protocol	11023-00151
CAN multi-protocol communication card	EC-TX505D	· Based on the CAN2.0A and CAN2.0B physical layer · Supports the CANopen protocol · Adopts INVT master-slave control proprietary protocol	11023-00164
BACnet MSTP communication card	EC-TX507B	· Supports the BACnet protocol and BACnet MSTP devices. · Provides one BACnet MSTP port and supports half-duplex operations of 115.2kbps. · Adopts the shielded twisted-pair cable and supports the daisy chain connection network topologies, with the number of slave nodes up to 31. · Supports timeout detection.	11023-00163
EtherCAT communication card	EC-TX508B	· Supports EtherCAT COE 402 protocol · Automatic network address configuration	11023-00150
All-in-one communication expansion card	EC-TX509-U8	· Supports protocol selection through function codes. · Supports up to eight protocols, including PROFINET, EtherCAT, EtherNet IP, Modbus TCP, EtherNet UDP, and PowerLink, with future support for BACnet/IP and CC-Link IE communication protocols. · Certain protocols support the simultaneous operation of monitoring functions, thereby fulfilling the on-site oscilloscope monitoring requirements. · Equipped with 2 RJ45 ports · With a communication rate up to 100Mbit/s, and short communication cycle · Supports both linear and star network topologies, with certain protocols also accommodating ring network topology. · It is recommended to use double-twisted shielded Category 5e Ethernet cables, with crystal heads equipped with iron shells to meet the grounding shield protection.	11023-00213
EtherNet IP communication card	EC-TX510B	Set the switch to EtherNet IP: · Supports the EtherNet IP protocol and EtherNet IP slave nodes. · Equipped with 2 EtherNet IP ports, supporting 10/100M half/full duplex operating · Equipped with 2 standard RJ45 interfaces, which do not distinguish the direction and can be swappable · Supports star and line IP network topologies Set the switch to Modbus TCP: · Supports the Modbus TCP protocol and Modbus TCP slave nodes · Equipped with 2 Modbus TCP ports, supporting 10/100M half/full duplex operating · Supports star and line TCP network topologies Set the switch to Ethernet: · Supports the Ethernet protocol · Supports the connection to INVT's host controller monitoring software INVT Workshop for monitoring and oscillography, allowing multi-card networking monitoring	11023-00197

Item	Model	Specification	Ordering information
Programmable card			
Programmable card	EC-PC502-00	- Adopts the global mainstream programmable card development environment, supporting multiple programming languages such as the instruction language, ladder diagram, and sequential function chart. - Supports resumable commissioning and task period execution mode selection - Provides a user program storage space of 16K steps and data storage space of 8K words 6 digital inputs 2 relay outputs 2 analog input and one analog output 2 RS485 communication channel, master/slave switchover by host controller - Supports saving data of 1K words at power off	11023-00146
PG expansion card			
Sin/Cos PG card	EC-PG502	- Applicable to Sin/Cos encoders with or without CD signals - Supports the frequency-divided output of A, B, and Z - Supports input of pulse train reference	11023-00109
Incremental PG card with UVW	EC-PG503-05	- Applicable to differential encoders of 5V - Supporting the orthogonal input of A, B, and Z - Supporting the pulse input of phase U, V, and W - Supporting the frequency-divided output of A, B, and Z - Supporting input of pulse train reference	11023-00085
Resolver PG card	EC-PG504-00	- Applicable to resolver encoders - Supports frequency-divided output of resolver-simulated A, B, Z - Supports input of pulse train reference	11023-00086
Multi-function incremental PG card	EC-PG505-12	- Applicable to OC encoders of 5V or 12V - Applicable to push-pull encoders of 5V or 12V - Applicable to differential encoders of 5V - Supports the orthogonal input of A, B, and Z - Supports the frequency-divided output of A, B, and Z - Supports input of pulse train reference	11023-00087
24V incremental PG card	EC-PG505-24B	- Applicable to OC encoders of 24V - Applicable to push-pull encoders of 24V - Applicable to differential encoders of 24V - Supports the orthogonal input of A, B, and Z - Supports the frequency-divided output of A, B, and Z - Supports input of pulse train reference	11023-00139
Simplified incremental PG card	EC-PG507-12	- Applicable to OC encoders of 5V or 12V - Applicable to push-pull encoders of 5V or 12V - Applicable to differential encoders of 5V	11023-00115
24V simplified incremental PG card	EC-PG507-24	- Applicable to OC encoders of 24V - Applicable to push-pull encoders of 24V - Applicable to differential encoders of 24V	11023-0012
IoT expansion card			
GPRS expansion card	EC-IC501-2	- Supports IoT monitoring - Supports remote VFD upgrade	11023-00130
4G expansion card	EC-IC502-2 EC-IC502-2-EU EC-IC502-2-LA	- Supports standard RS485 interface - Supports 4G communication	11095-00009 11095-00017 11095-00018
Power supply expansion card			
24V power supply expansion card	EC-PS501-24	- Input voltage range: DC18~30V(Rated 24VDC)/2A - Three channels of output voltage: +5V/1A ($\pm 5\%$), +15V/0.2A ($\pm 10\%$), -15V/0.2A ($\pm 10\%$)	11023-00135
Fault record card			
Fault record card	EC-FM501	- Fault code recording: Records the parameters and fault codes at the time of the fault occurrence, and saves them to an SD card. - Operation recording: Records user operations and saves them to an SD card. - Waveform recording (fault oscilloscope): Records the operating waveforms before a fault occurs, and saves them to an SD card. - Alarm code recording: Records alarm codes, and saves them to an SD card.	11023-00209

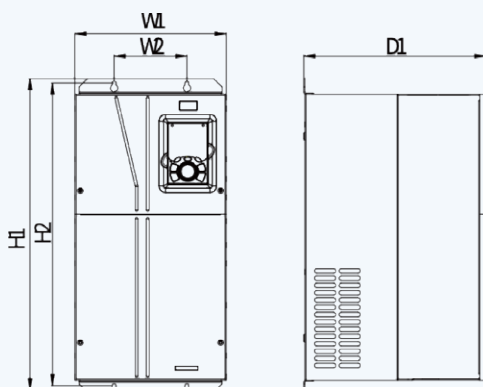
Note: Contact us for details about the EtherCAT communication card, relay card, 24V power supply card, GPRS expansion card with anti-vibration and high-precision GPS positioning functions.

Mounting method

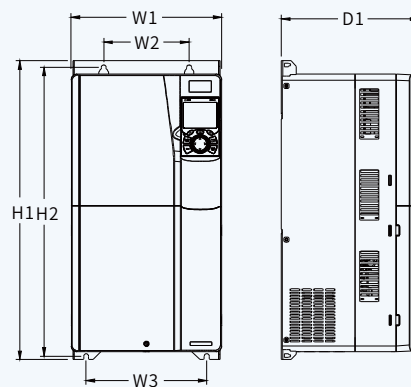
Wall mounting dimensions



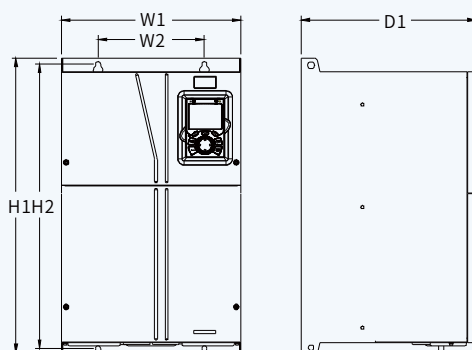
Outline and mounting dimensions for E1-E7 frames



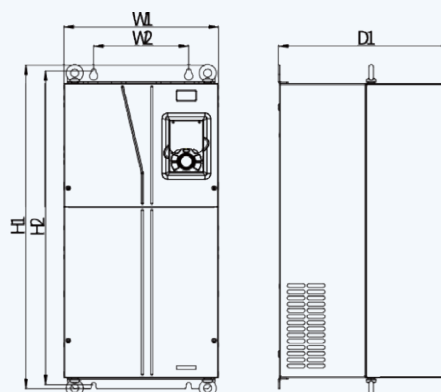
Outline and mounting dimensions for E8 frame



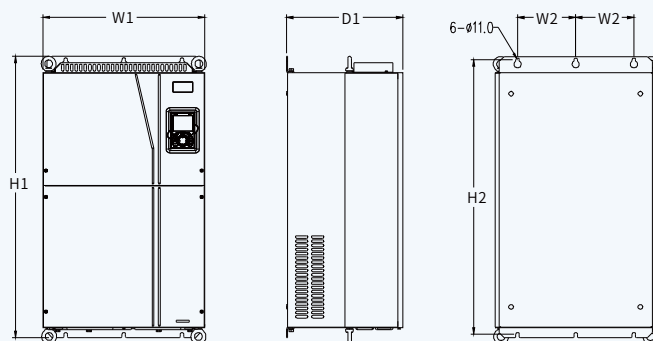
Outline and mounting dimensions for E9 frame



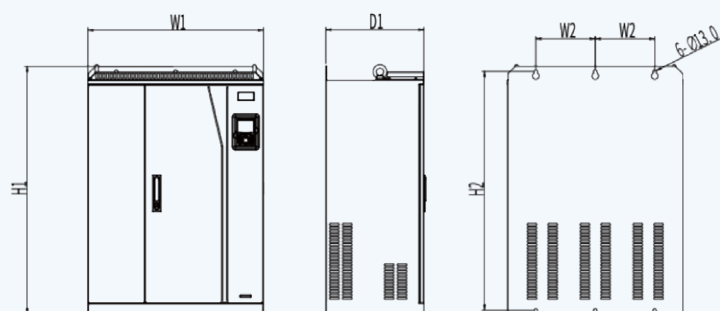
Outline and mounting dimensions for E11 frame



Outline and mounting dimensions for E10 frame



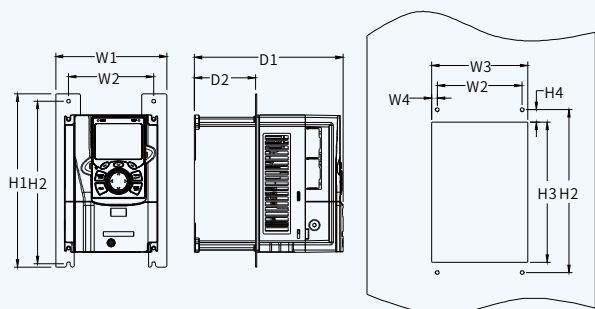
Outline and mounting dimensions for E12 frame



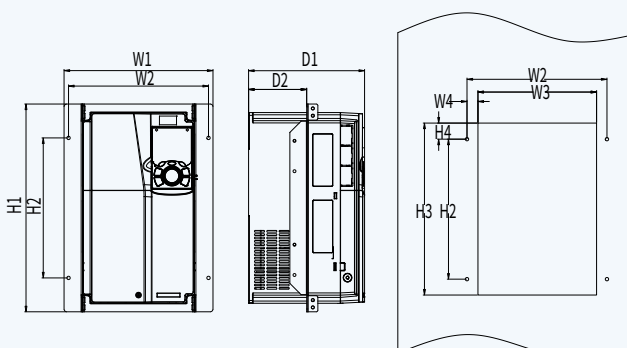
Outline and mounting dimensions for E13 frame

Frame	Outline dimensions (mm)			Mounting hole spacing (mm)			Mounting hole diameter (mm)
	W1	H1	D1	W2	W3	H2	
E1	126	186	185	115	-	175	Ø5
E2	126	186	201	115	-	175	Ø5
E3	146	256	192	131	-	243.5	Ø6
E4	170	320	220	151	-	303.5	Ø6
E5	200	340.6	208	185	-	328.6	Ø6
E6	230	330	216	210	-	311	Ø6
E7	250	400	223	230	-	380	Ø6
E8	270	557	325	130	-	540	Ø7
E9	282	560	258	160	226	542	Ø9
E10	325	682	365	200	-	661	Ø9.5
E11	338	554	330	200	-	535	Ø10
E12	500	872	360	180	-	850	Ø11
E13	680	960	380	230		926	Ø13

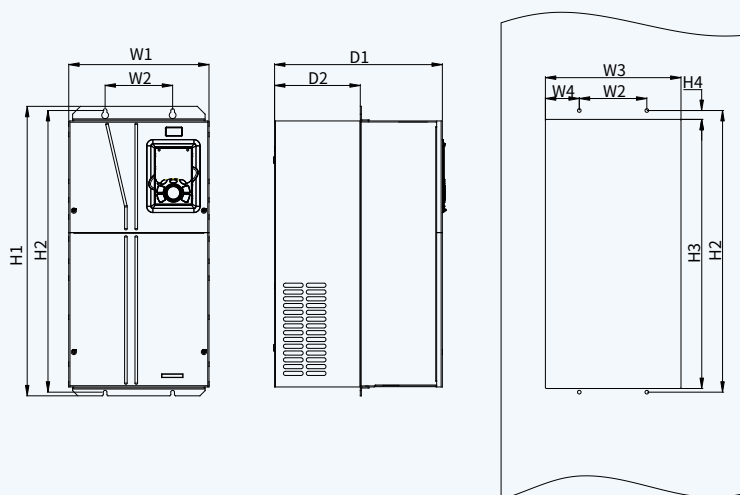
Flange mounting dimensions



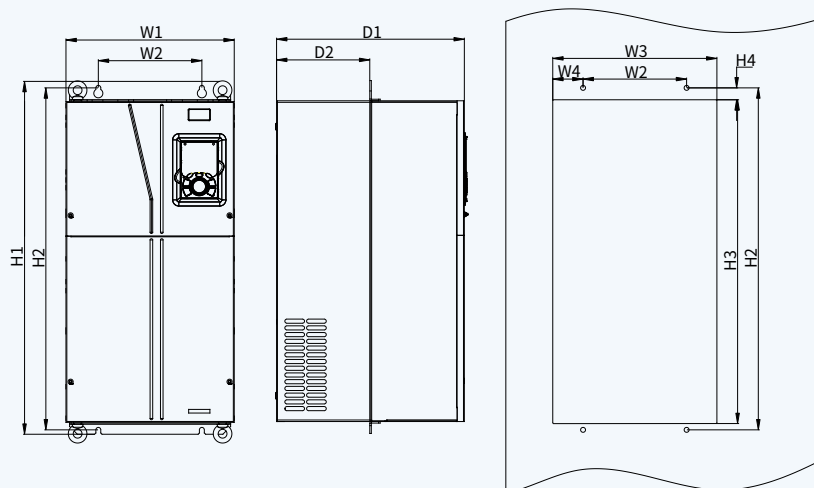
Flange mounting dimensions and hole spacings for E1-E4 and E6 frames



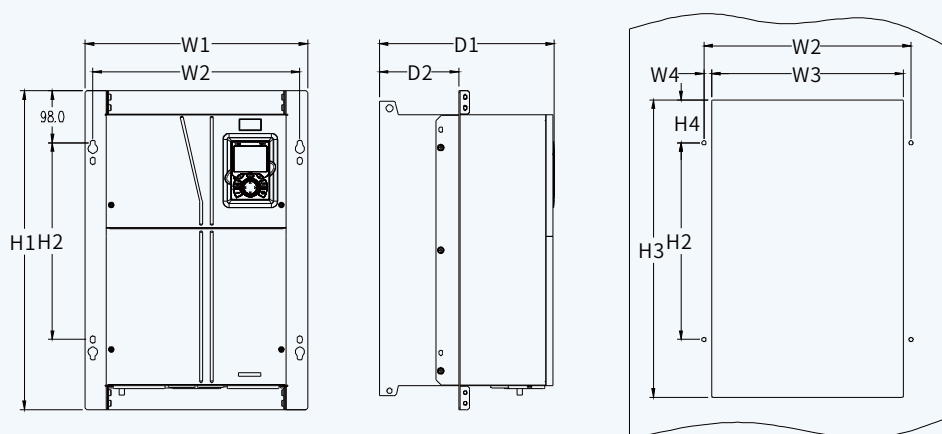
Flange mounting dimensions and hole spacings for E5, E7 and E9 frames



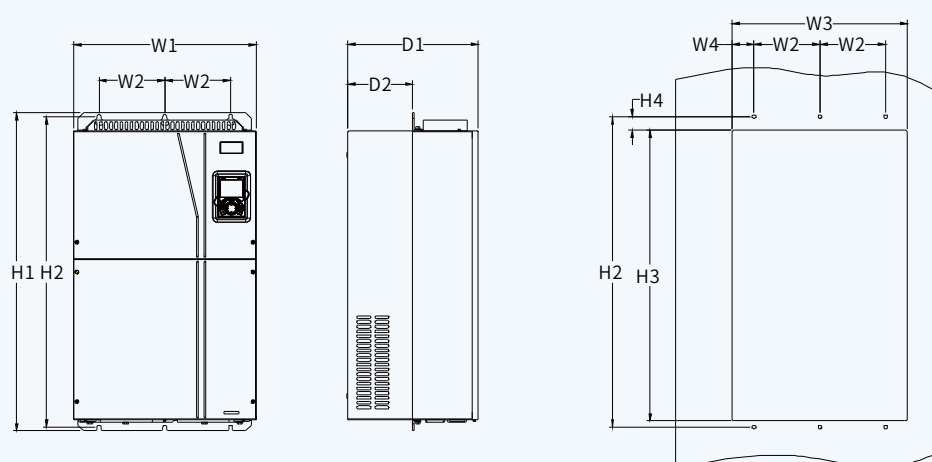
Flange mounting dimensions and hole spacings for E8 frame



Flange mounting dimensions and hole spacings for E10 frame



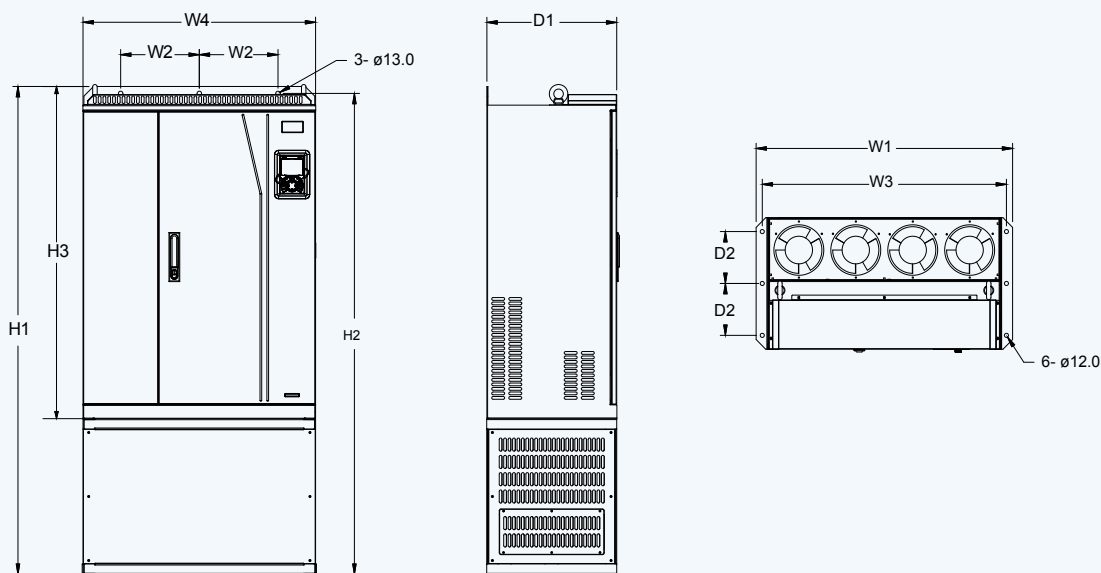
Flange mounting dimensions and hole spacings for E11 frame



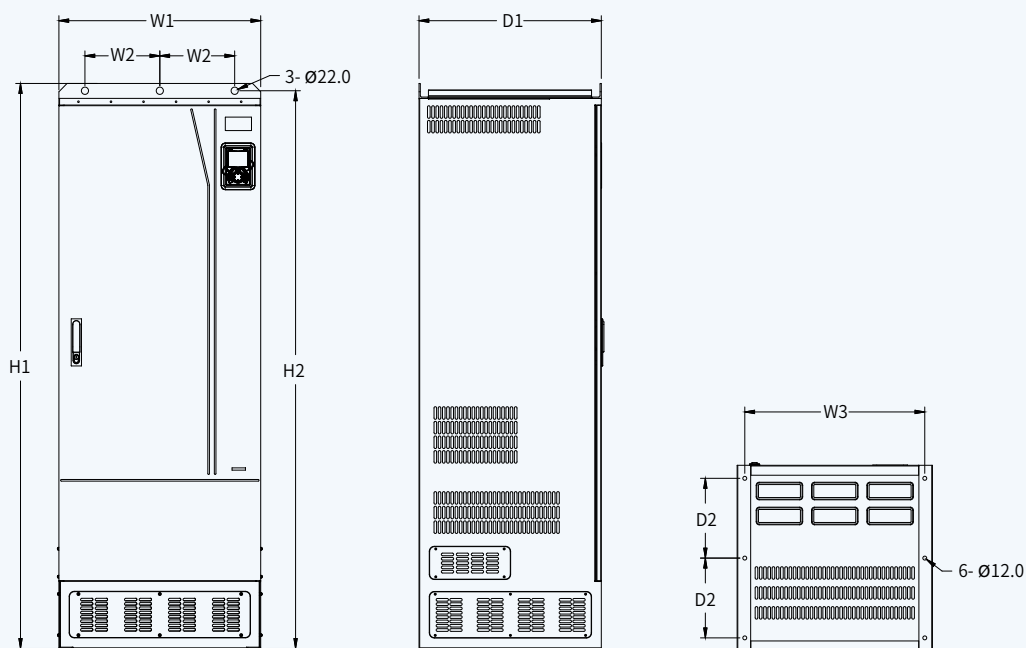
Flange mounting dimensions and hole spacings for E12 frame

Frame	W1	W2	W3	W4	H1	H2	H3	H4	D1	D2	Mounting hole diameter (mm)
E1	150.2	115	130	7.5	234	220	190	13.5	185	65.5	Ø5
E2	150.2	115	130	7.5	234	220	190	13.5	201	83	Ø5
E3	170.2	131	150	9.5	292	276	260	6	192	84.5	Ø6
E4	191.2	151	174	11.5	370	351	324	12	220	113	Ø6
E5	266	250	224	13	371	250	350.6	20.3	208	104	Ø6
E6	250	210	230	10	375	356	340	8	216	105	Ø6
E7	352	332	306	12	580	400	570	80	258	133.8	Ø9
E8	270	130	261	65.5	557	540	516	17.5	325	167	Ø7
E9	352	332	306	12	580	400	570	80	258	133.8	Ø9
E10	325	200	317	58.5	682	661	626	23.5	365	184	Ø9.5
E11	418.5	389.5	361	14.2	600	370	559	108.5	330	149.5	Ø10
E12	500	180	480	60	872	850	796	37	360	178.5	Ø11

Floor mounting dimensions



Outline and mounting dimensions for E13 frame (optional base)



Outline and mounting dimensions for E14 frame

Frame	Outline dimensions (mm)					Mounting hole spacing (mm)				Mounting hole diameter (mm)
	W1	W4	H1	H3	D1	W2	W3	H2	D2	
E13	750	680	1410	960	380	230	714	1390	150	Ø 13/12
E14	620	-	1700	-	560	230	572	1678	240	Ø 22/12

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