Ne90 Series
High-Performance AC Drive

PRODUCT POWER

Single-phase/three-phase input, three-phase output

220V (+-20%) 0.75KW~3.7KW

380V (+-20%) 0.75KW~800KW

Ne90 series is a new generation of products that organically integrates the general needs of customers with the individual needs of customers and the industry needs. Using a new control technology without velocity vector sensor, it has better low-speed stability, stronger low-frequency load capacity, and higher control accuracy of open-loop vector torque control. In addition to support V/F, open loop vector control, closed loop vector control technology, it also has V/F separation technology. It has the anti-trip performance beyond similar products and the ability to adapt to the harsh power grid, temperature, humidity and dust, greatly improving the reliability of the product.

Product characteristics

- Excellent performance, support asynchronous motor, synchronous motor, support vector and torque control mode;
- Complete functions, standard MODBUS485 communication, built-in constant pressure water supply special mode, main and auxiliary frequency source, PID, 16 speed, swing frequency and other powerful functions;
- Support background software upload and download and monitor drive parameters;
- New refined appearance design, compact structure, product volume reduced by 30%, cumulative installation volume reduced by 25%;
- More efficient cooling system design, the cooling effect is increased by 35%, effectively reduce the temperature rise of the inverter, and ensure the reliable and stable operation of the inverter.

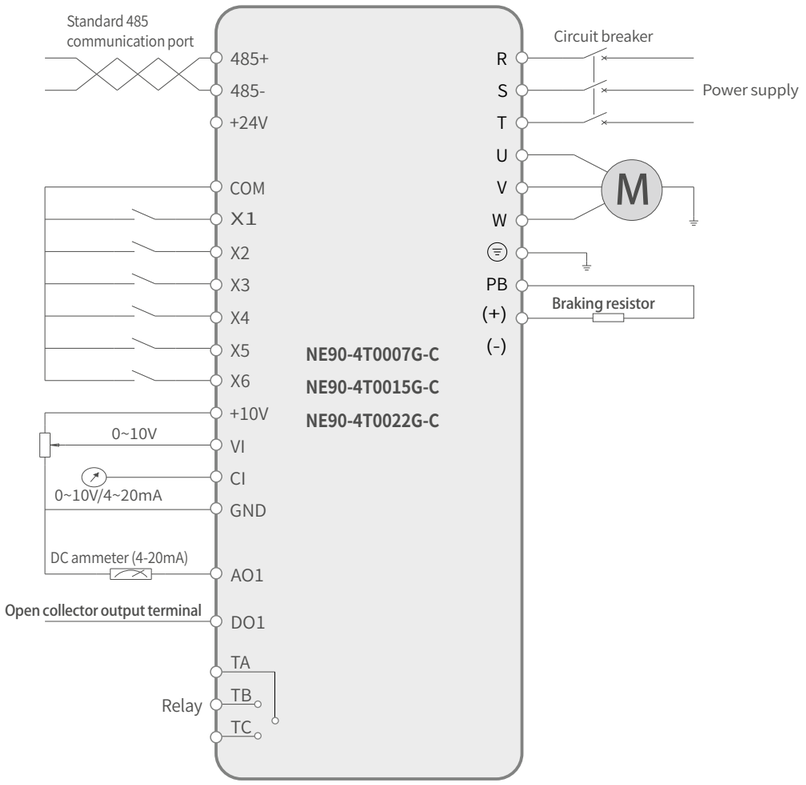
Technical specification

Project		Standard specification
Input	Rated voltage/frequency	Single-phase 200V, 220V, three-phase 200V, 220V, 380V, 415V, 440V; 50Hz/60Hz
	Allowable value of variable capacity	Voltage: -20% ~ +20%　　Voltage unbalance rate: <3%　　Frequency: ±5%
Output	Rated voltage	**0~200V/220V/380V/415V/440V**
	Frequency range	**0Hz~5000Hz**
	Frequency Resolution	**0.01Hz**
	Overload capacity	150% rated current for 1 minute, 180% rated current for 3 seconds
Main control functions	Torque control accuracy	±5%（FVC）
	Control mode	V/F, Speed sensorless vector control (SVC), Speed Sensorless Vector control (FVC)
	Frequency accuracy	Digital setting: highest frequency × ± 0.01%;　　Analog setting: highest frequency × ± 0.2%
	Frequency resolution	Digital setting: 0.01Hz;　　Analog setting: highest frequency × 0.1%
	Starting frequency	**0.40Hz~20.00Hz**
	Torque boost	Automatic torque increase, manual torque increase by 0.1%~30.0%
	V/F curve	Five methods: constant torque V/F curve, one user-defined multi segment V/F curve method, and three torque reduction characteristic curve methods (2.0 power, 1.7 power, and 1.2 power)
	Acceleration and deceleration curve	Two methods: linear acceleration and deceleration, S-curve acceleration and deceleration; Seven types of acceleration and deceleration times, with optional time units (minutes/second), up to 6000 minutes
	Dc braking	DC braking frequency: 000Hz~maximum frequency； Braking time: 0.0s~36.0s；　　Braking action current value: 0.0%~100.0%
	Energy consumption braking	Built in energy consumption braking unit (≤ 37KW), can be externally connected with braking resistor
	Inching	Jog frequency range: 0.00Hz~50.00Hz；　　Jog acceleration and deceleration time: 0.0s~6500.0s
	Built-in dual PID	Can easily form a closed-loop control system
	Instant stop	During an instantaneous power outage, the reduction in voltage is compensated through load feedback energy to maintain the operation of the variable frequency drive for a short period of time
	Multi-speed operation	Up to 16 segments of speed operation can be achieved through built-in PLC or control terminals
	Textile swing	Can achieve preset frequency and adjustable center frequency swing function
	Automatic Voltage Regulation (AVR)	When the grid voltage changes, maintain a constant output voltage
	Automatic energy-saving operation	Automatically optimize the V/F curve based on load conditions to achieve energy-saving operation
	Automatic current limiting	Automatically limit the current during operation to prevent frequent overcurrent faults from tripping
	Multi-pump constant pressure water supply control function	Connected to the water supply control board, it can achieve multi pump constant pressure water supply control function
	Communication function	Standard Modbus frequency converter
Operation function	Run command channel	The operation panel is given; Control terminal setting; Serial port given; There are three ways to switch
	Frequency setting channel	Keyboard simulation potentiometer setting; Keyboard ▲ and ▼ keys are given; Function code number given; Serial port given; Terminal UP/DOWN given; Analog voltage setting; Simulated current setting; Pulse setting; Combination given; Multiple given methods can be switched at any time
	Switch input channel	Forward and reverse instructions; 8-channel programmable switch input, capable of setting 52 functions separately
	Analog input channel	2 analog signal inputs, selectable from 4-20mA and 0-10V
	Analog output channel	Analog signal output, selectable from 4-20mA or 0-10V, capable of outputting physical quantities such as set frequency and output frequency
	Switch, pulse output channel	2 programmable open collector outputs; Two relay output signals; 1 channel of 0-20KHz pulse output signal, achieving various physical quantity outputs
Operation panel	LED digital display	Can display parameters such as set frequency, output voltage, output current, etc
	External instrument display	Display of physical quantities such as output frequency, output current, and output voltage
	Key lock	Implement full lock of buttons
Protection function		Overcurrent protection, overvoltage protection, undervoltage protection, overheating protection, overload protection, phase loss protection, etc
Option		Brake components; Remote operation panel; Remote cable; Keyboard mounting base, etc
Environment	Place of use	Indoor, free from direct sunlight, dust, corrosive gases, oil mist, water vapor, etc
	Altitude	Below 1000 meters (derated for use above 1000 meters)
	Ambient temperature	－10℃～＋40℃
	Humidity	Less than 95% RH, no condensation
	Vibrate	Less than 5.9m/s^2 (0.6M)
	Storage temperature	－20℃～＋60℃
structure	Protection grade	IP20 (when selecting a status display unit or keyboard)
	Cooling method	Forced air cooling
Installation method		Wall mounted, cabinet mounted

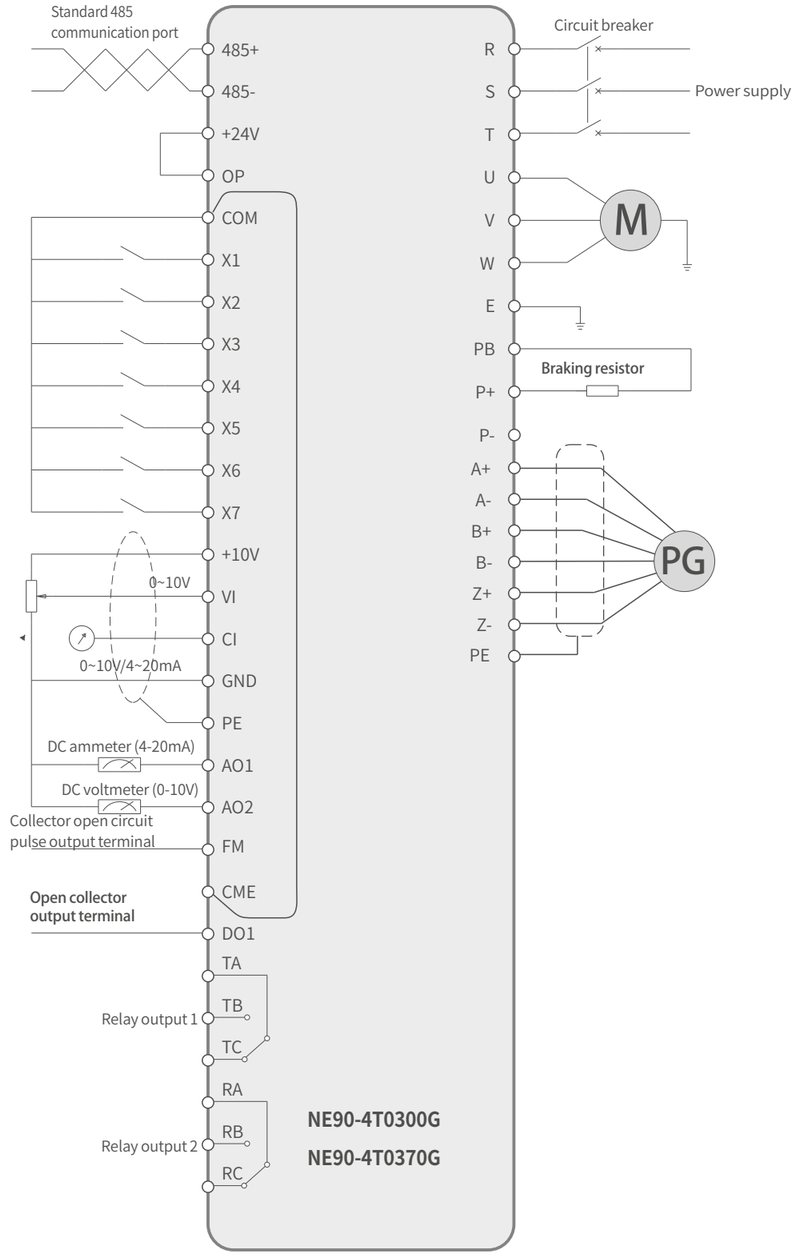
Basic parameters

Model	Rated capacity (KVA)	Rated output current (A)	Adaptive motor power (KW)
Single phase power supply: 220V, 50/60Hz			
NE90-2S0004G	1	3	0.4
NE90-2S0007G	1.5	4	0.75
NE90-2S0015G	3	7	1.5
NE90-2S0022G	4	9.6	2.2
Three phase power supply: 220V, 50/60Hz			
NE90-2T0004G	1.5	2.1	0.4
NE90-2T0007G	3	3.8	0.75
NE90-2T0015G	4	5.1	1.5
NE90-2T0022G	5.9	9	2.2
NE90-2T0037G	8.9	13	3.7
NE90-2T0055G	17	25	5.5
NE90-2T0075G	21	32	7.5
NE90-2T0110G	30	45	11
NE90-2T0150G	40	60	15
NE90-2T0185G	57	75	18.5
NE90-2T0220G	69	90	22
NE90-2T0300G	85	110	30
NE90-2T0370G	114	152	37
NE90-2T0450G	134	176	45
NE90-2T0550G	160	210	55
NE90-2T0750G	231	304	75
Three phase power supply: 380V, 50/60Hz			
NE90-4T0007G	1.5	2.1	0.7
NE90-4T0015G	3	3.8	1.5
NE90-4T0022G	4	5.1	2.2
NE90-4T0037G	5.9	9	3.7
NE90-4T0055G	8.9	13	5.5
NE90-4T0075G	11	17	7.5
NE90-4T0110G	17	25	11
NE90-4T0150G	21	32	15
NE90-4T0185G	24	37	18.5
NE90-4T0220G	30	45	22
NE90-4T0300G	40	60	30
NE90-4T0370G	57	75	37
NE90-4T0450G	69	90	45
NE90-4T0550G	85	110	55
NE90-4T0750G	114	152	75
NE90-4T0900G	134	176	90
NE90-4T1100G	160	210	110
NE90-4T1320G	192	253	132
NE90-4T1600G	216	304	160
NE90-4T1850G	234	355	185
NE90-4T2000G	250	380	200
NE90-4T2200G	280	426	220
NE90-4T2500G	355	465	250
NE90-4T2800G	396	520	280
NE90-4T3150G	445	585	315
NE90-4T3500G	500	650	350
NE90-4T4000G	565	725	400
NE90-4T4500G	630	820	450
NE90-4T5000G	700	860	500
NE90-4T5600G	784	990	560
NE90-4T6300G	882	1100	630
NE90-4T7100G	994	1280	710
NE90-4T8000G	1120	1400	800

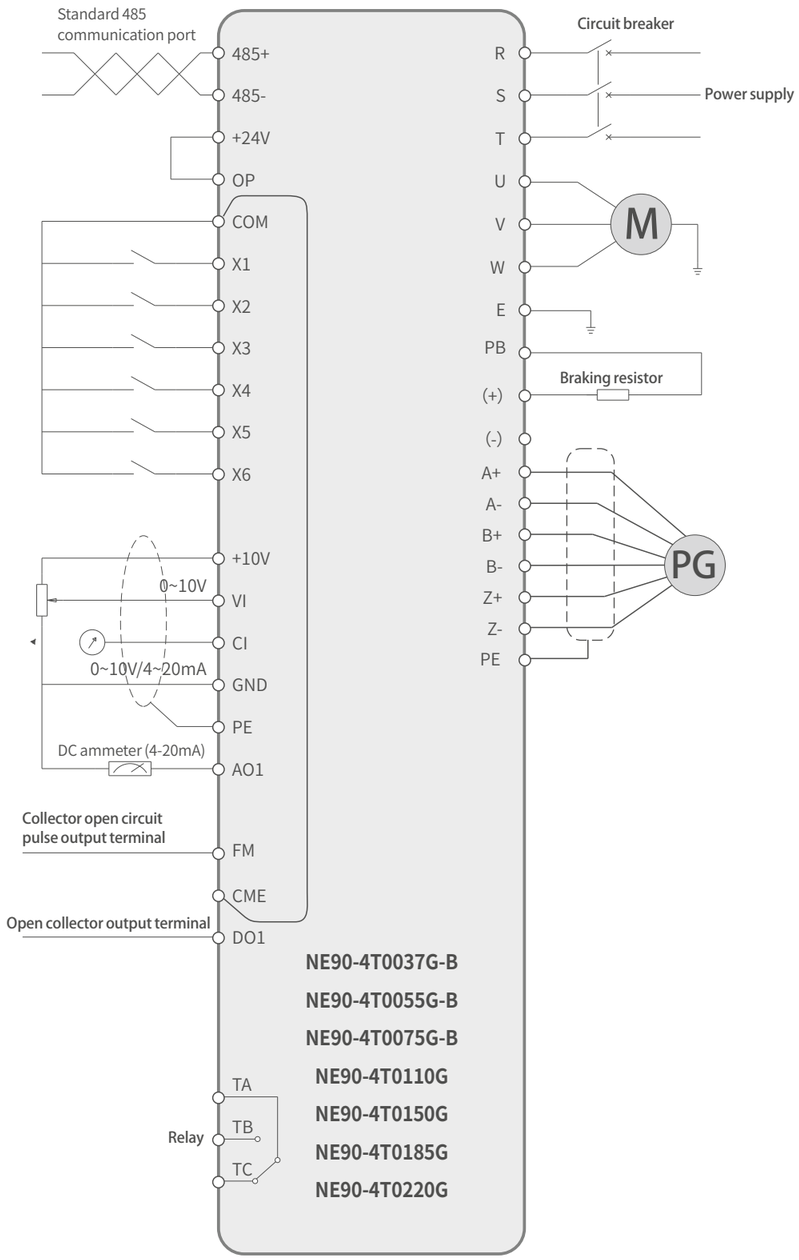
Basic wiring diagram



Basic wiring diagram

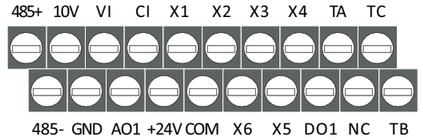


Basic wiring diagram

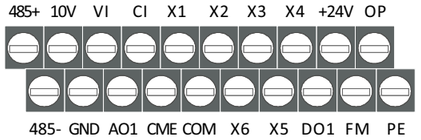


Control board terminals

0.75G-C~2.2G-C series

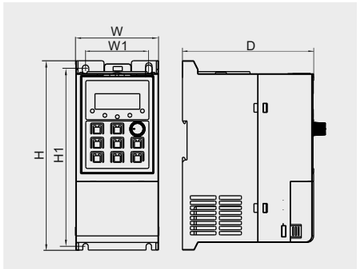


0.75G~800G series

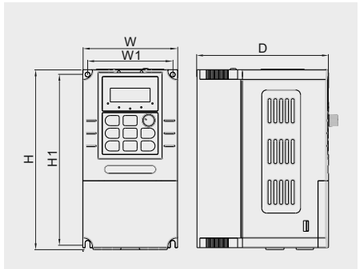


Category	Terminal identification	Name	Terminal Function Description	Specifications
Communicate	485+	Rs485 communication interface	Rs485 differential signal positive terminal	Standard RS485 communication interface, please use twisted pair or shielded wire
	485-		Rs485 differential signal negative terminal	
Digital Output	DO1-CME	Open collector output terminal 1	Optical isolation, bipolar open collector output; Note: The digital output ground CME is internally isolated from the digital input ground COM, but it is shorted to the COM through the JP1 jumper CME on the control board at the factory (at this time, DO1 defaults to+24V drive). When DO1 wants to be driven by an external power source, the JP1 jumper must be unplugged.	Optocoupler isolation output Output voltage range: 0V~24V Output current range: 0mA~50mA Please refer to P4.02 parameter description for usage methods
Pulse output terminal	FM-COM	Collector open circuit pulse output terminal	Programmable defined as a pulse output terminal with multiple functions, constrained by function code P4.06 (FM terminal input mode selection), when used as a collector open circuit switch output, it has the same specifications as DO1. (Common end: COM)	Output frequency range: determined by function code P4.09, maximum 100KHz
Analog input	VI	Analog input VI	Accept analog voltage input (Reference: GND)	Input voltage range: 0-10V (input impedance: 10K Ω); Resolution: 1/1000
	CI	Analog input CI	Accepts analog voltage/current input, with voltage and current selected by jumper CI and factory default voltage (Reference: GND)	Input voltage range: 0-10V (input impedance: 10K Ω) Input current range: 0-20mA (input impedance: 500 Ω) Resolution: 1/1000
Analog output	AO1	Analog output AO1	Provide analog voltage/current output, which can represent 7 quantities. The output voltage/current is selected by jumper AO1, and the factory default output voltage is provided. (Reference: GND)	Current output range: 4-20mA Voltage output range: 0-10V
	AO2	Analog output AO2	Provide analog voltage/current output, which can represent 7 quantities. The output voltage/current is selected by jumper AO2, and the factory default output voltage is provided. (Reference: GND)	Voltage output range: 0-10V
Multifunctional input terminals	X1	Multifunctional input terminal 1	Programmable input terminals are defined as multifunctional switch inputs, as detailed in Section 6.5 of Chapter 6, Introduction to Terminal Function Parameters (P3 Group) Input Terminal Functions. (Common end: COM)	Optocoupler isolation Compatible with bipolar inputs Input impedance: R=2K Ω Maximum input frequency: 200Hz Input voltage range 9-30V
	X2	Multifunctional input terminal 2		
	X3	Multifunctional input terminal 3		
	X4	Multifunctional input terminal 4	In addition to the feature of X input terminal function, X5 can also serve as a high-speed pulse input channel.	Optocoupler isolation Compatible with bipolar inputs Input impedance: R=2K Ω Maximum input frequency: 200Hz Input voltage range 9-30V
	X5	Multifunctional input terminal 5		
	X6	Multifunctional input terminal 6		
Power supply	P24	+24V power supply	Provide+24V power supply externally. (Negative extreme: COM)	
	OP	External power input	Factory default and+24V external connection When using external signals to drive X1 to X6, the OP needs to be connected to an external power source and the short connector between OP and+24V needs to be unplugged	
	10V	+10V power supply	Provide external+10V power supply (Negative extreme: GND)	Maximum output current: 50mA
	GND	+10V power supply common terminal	Analog signal and reference ground for+10V power supply	Internal isolation between COM and GND
	COM	+24V power supply common terminal	Digital signal input, output common terminal	

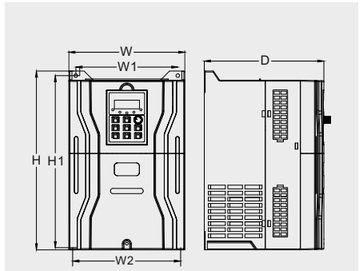
Structural outline drawing



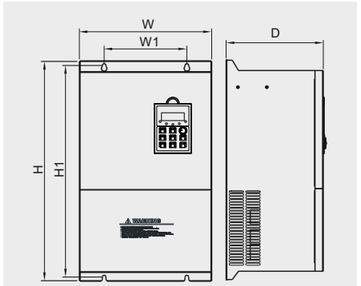
External structure A



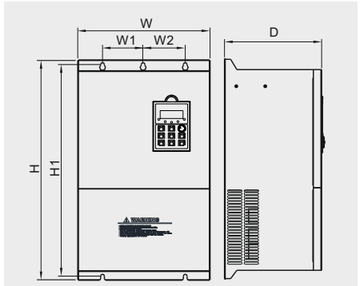
External structure B



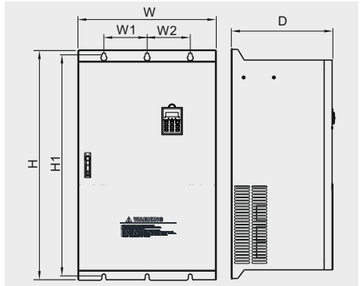
External structure C



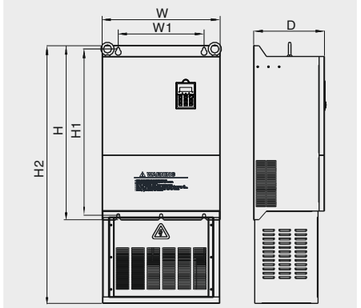
Iron case without base



Iron case without base

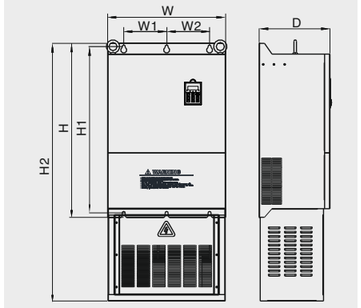


Iron case without base



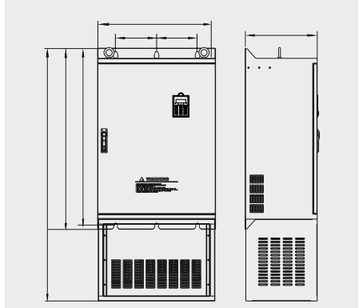
Iron shell and base

External structure D



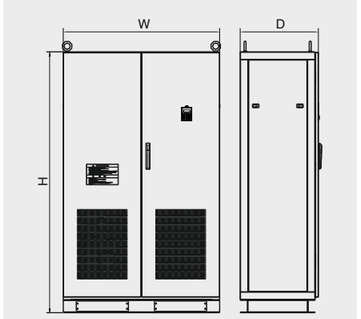
Iron shell and base

External structure E

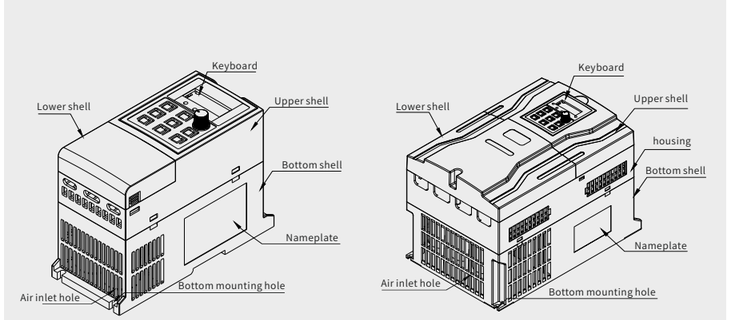


Iron shell and base

External structure F



External structure G



Structural dimension

Model	Overall dimensions (mm)				Installation size (mm)			Installation aperture	Outline structure
	H	W	D	H2	H1	W1	W2		
Single phase power supply: 220V, 50/60Hz									
NE90-2S0007G	174	76	120	—	162.5	58	—	Φ4	A
NE90-2S0015G									
NE90-2S0022G-B	184	98	136	—	174	88	—	Φ5	
NE90-2S0037G-B	230	118	153	—	220	108	—	Φ5	
Three phase power supply: 380V, 50/60Hz									
NE90-4T0007G	174	76	120	—	162.5	58	—	Φ4	A
NE90-4T0015G									
NE90-4T0022G									
NE90-4T0007G-B	184	98	136	—	174	88	—	Φ5	B
NE90-4T0015G-B									
NE90-4T0022G-B									
NE90-4T0037G-B	184	98	156	—	174	88	—	Φ5	B
NE90-4T0055G-B	230	118	153	—	220	108	—	Φ5	B
NE90-4T0075G-B									
NE90-4T0037G	220	110	169.5	—	209	87	99	Φ5	C
NE90-4T0055G									
NE90-4T0075G									
NE90-4T0110G	261	130	190	—	250	107	119	Φ5	C
NE90-4T0150G									
NE90-4T0185G	293	190	196	—	282	167	177	Φ5	C
NE90-4T0220G									
NE90-4T0300G	330	200	200	—	316	188	—	Φ7	C
NE90-4T0370G									
NE90-4T0370G	445	260	230	—	426	200	—	Φ9	D
NE90-4T0450G	485	260	225	—	466	200	—	Φ9	D
NE90-4T0550G									
NE90-4T0750G	555	310	260	—	530	250	—	Φ12	D
NE90-4T0900G	630	290	310	—	604	180	—	Φ12	D
NE90-4T1100G									
NE90-4T1320G	760	390	320	—	730	280	—	Φ14	D
NE90-4T1600G									
NE90-4T1850G	790	450	300	—	755	280	—	Φ14	D
NE90-4T2000G									
NE90NE90-4T2200G	810	510	328	1090	775	200	200	Φ14	E
NE90-4T2500G									
NE90-4T2800G	1102	600	400	1392	1050	220	220	Φ22	F
NE90-4T3150G									
NE90-4T3500G	1270	820	400	1760	1220	300	300	Φ25	F
NE90-4T4000G									
NE90-4T4500G									
NE90-4T5000G	1900	950	475	—	—	—	—	Φ20	G
NE90-4T5600G	2000	1200	600	—	—	—	—	Φ20	G
NE90-4T6300G									
NE90-4T7100G	2000	1500	600	—	—	—	—	Φ20	G
NE90-4T8000G									