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Product description

New HV590 series is a general current vector control inverter integrated with the performance and features in a high degree.

HV590 with industry-leading drive performance and functionality control, using unique current vector control algorithm can efficiently drive induction motor to achieve high accuracy, high torque and high-performance control.

Customer success, Market Service! HV590 in terms of performance and control are worthy of trust!

At a glance

- Advanced motor control technology support both Open loop vector control(SVC), Closed loop vector control(FVC) and V/F control
- Different input voltage(220V single phase/220V 3 phase/380V 3 phase/460V 3 phase)
- High starting torque characteristics and precise speed control
- Rich and flexible I/O accesses and field bus options

Customer benefits

- Suitable for all regions which have different grid and voltage
- Upgrade I/O(NPN/PNP compatible) can meet more application requirement without controller(PLC) like elevator, textile etc.
- Programmable DI/DO/AI/AO as well as RS485 Modbus RTU make easy communication with other devices

www.hncelectric.com/HV590

For more information, please enter the link or scan the code via mobile devices and get direct access to technical date,manual,application examples and much more.



Specification

Items	Description	
Basic function	Control system	High performance of current vector control technology to realize asynchronous motor and synchronous motor control
	Drive performance	High efficiency driving for induction motor and synchronous motor
	Maximum frequency	Vector control: 0~300HzV/Fcontrol: 0~3200Hz
	Carrier frequency	0.5k~16kHz; the carrier frequency will be automatically adjusted according to the load characteristics
	Input frequency resolution	Digital setting: 0.01Hz Analog setting: maximum frequency ×0.025%
	Control mode	Open loop vector control(SVC) Closed loop vector control(FVC) V/F control
	Startuptorque	Type G: 0.5Hz/150%(SVC); 0Hz/180%(FVC)
	Speed range	1: 100(SVC) Speed range
	Speed stabilizing precision	±0.5%(SVC) Speed stabilizing precision
	Torque control precision	±5%(FVC)
	Over load capability	G type: rated current 150% -1 minute, rated current 180% -3 seconds;
	Torque boost	Auto torque boost function; Manual torque boost 0.1%~30.0%
	V/F curve	Linear V/F, Multi-point V/F and Square V/F curve (power of 1.2, 1.4, 1.6, 1.8, 2)
	V/F separation	In 2 ways: separation ,semi seperation
	Acc. /deccurve	Straight line or S curve acceleration and deceleration mode. Four kinds of acceleration and deceleration time. Acceleration and deceleration time range between 0.0s to 6500.0s
	DC brake	DC brake frequency: 0.00Hz to maximum frequency,brake time: 0.0s to 36.0s, and brake current value: 0.0% to 100.0%.
	Jog control	Jog frequency range: 0.00Hz~50.00Hz. Jog acceleration/deceleration time 0.0s~6500.0s.
	Simple PLC and MS speed running	It can realize at maximum of 16 segments speed running via the built-in PLC or control terminal.
	Built-in PID	It is easy to realize process-controlled close loop control system
	Auto voltage regulation (AVR)	It can keep constant output voltage automatically in case of change of network voltage.
Over-voltage/current stall control	It can limit the running voltage/current automatically and prevent frequent over-voltage/current tripping duringthe running process	
Quick current limit	Minimize the over-current fault,protect normal operation of the inverter	

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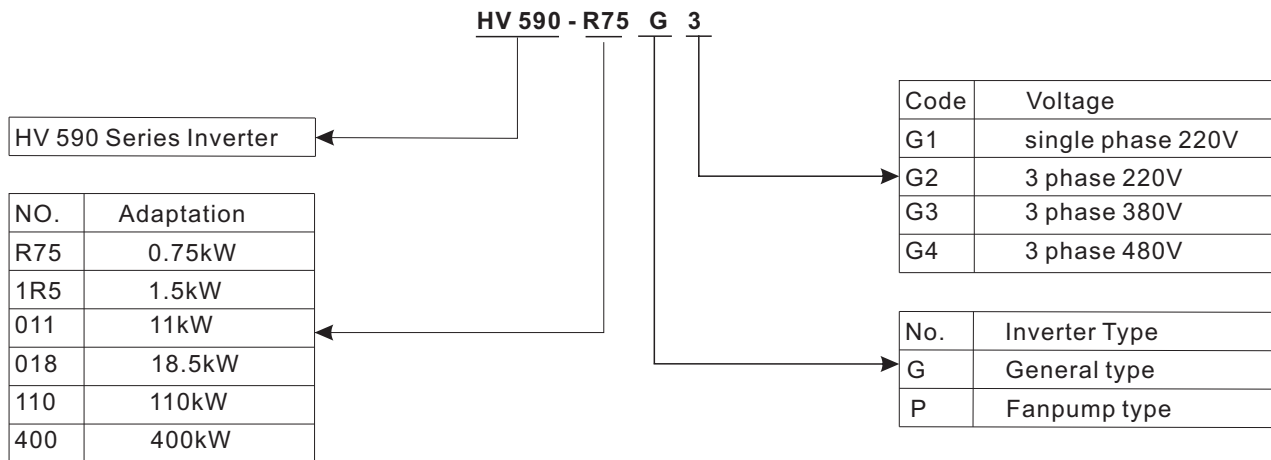
Items	Description	
Personalized	Torque limit & control	"Excavators" characteristics, automatically limit torque during operation, prevent frequent over-current trip; Closed loop vector mode can realize the torque control.
	Instantaneous stop non-stop	When instantaneous power off, voltage reduction is compensated through load feedback energy, which could make inverter keep running in a short period of time.
	Rapid current limit	To avoid inverter frequent over-current fault.
	Virtual I/O	5 groups of virtual DI, DO to realize simple logic control
	Timing control	Timing control function: settimerange 0 Min~6500.0Min
	Multiple motor switch	4 groups of motor parameter, which can realize 4-motor switch control
	Multi-threaded bus support	Support 3 kinds of field bus: RS485, Profibus-DP, CANopen
	Motor overheat protection	TZ5PC1 analog input AI3x can accept the motor temperature sensor input(PT100、PT1000)
	Multi-encoder support	Support difference, open collector, UVW, rotary transformer, sine cosine encoder etc.
	Programmable PLC	Select optional user programmable card, which can realize secondary development, programming mode compatible with Drino PLC.
Excellent backend software	Support inverter parameter operation and virtual oscilloscope function. Inverter internal state graphic monitor can be realized through virtual oscilloscope.	
Running	Running command channel	Three types of channels: operationpanel reference, control terminal reference and serial communication portreference. These channels can be switched in various modes.
	Frequency source	There are totally eleven types of frequency sources, such as digital reference, analog voltage reference, analog current reference, pulse reference, MS speed, PLC, PID and serial port reference.
	Auxiliary frequency source	11 kinds of auxiliary frequency source which can flexible achieve auxiliary frequency tuning, frequency synthesis
	Input terminal	Standard: There are 6 digital input terminals, DI5 can be used as 100kHz high-speed pulse input. 2 analog input terminals which can be used as 0-10V voltage input or 0~20mA current input. Extended function: 4 digital input terminals, 1 analog input terminals support -10~10V voltage input & PT100\PT100

Items	Description	
	Output terminal	Standard: 1 digital output terminals, Y1 is high-speed pulse output terminal (can be chosen as open circuit collector type), support 0~10kHz square wave signal; 2 relay output terminal; 2 analog output terminals, support 0~20mA output current or 0~10V output voltage; Extended function: 2 digital output terminal;; 1 analog output terminal, support 0~20mA output current or 0~10V output voltage.
Keyboard operation	LED display	Realize parameter setting,status monitoring function
	Keyboard potentiometer	Equipped with keyboard potentiometer or coding potentiometer
	Key lock&function selection	Realize button locking,define operation range for part of buttons to prevent operation fault.
	Protection function	It can implement power-on motor short-circuit detection,input/output phase loss protection, over current protection,over voltage protection,under voltage protection,overheating protection and overload protection.
	Optional parts	LCD operation panel, brake component, multi-function extended card (1.IO extended card 2.user programmable card), RS485 communication card, Profibus-DP communication card, CANopen communication card, differential input PG card, UVW differential input PG card, rotating inverter PG card, OC input PG card.
Environment	Using place	Indoor,and befree from direct sunlight,dust, corrosive gas, combustible gas,oilsmoke, vapor,driporsalt.
	Altitude	Below 1000m
	Ambient temperature	-10 ℃ to +40 ℃ (Derating use when under ambient temperature of 40 ℃ to 50 ℃)
	Humidity	Less than 95%RH, without condensing
	Vibration	Less than 5.9 m/s ² (0.6g)
	Storage temperature	-20℃~+60℃

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Model Definition



Frequency Inverter Model	Motor adapter		Rated Input (A)	Rated Output (A)
	(kW)	HP		
1PH single phase input :AC 220V,50/60HZ				
HV590-R40G1	0.4	0.5	5.9	2.5
HV590-R75G1	0.75	1	8.3	4
HV590-1R5G1	1.5	2	14.1	7
HV590-2R2G1	2.2	3	24.2	10
3PH 3- phase input :AC 220V,50/60HZ				
HV590-R40G2	0.4	0.5	4.1	2.5
HV590-R75G2	0.75	1	5.3	4
HV590-1R5G2	1.5	2	8.0	7
HV590-2R2G2	2.2	3	11.8	10
HV590-004G2	4.0	5.5	18.1	16
HV590-5R5G2	5.5	7.5	28.0	25
HV590-7R5G2	7.5	10	37.1	32
HV590-011G2	11	15	49.8	45
HV590-015G2	15	20	65.4	60
HV590-018G2	18.5	25	81.6	75
HV590-022G2	22	30	97.7	90
HV590-030G2	30	40	122.1	110
HV590-037G2	37	50	157.4	152
HV590-045G2	45	60	185.3	176
HV590-055G2	55	70	215.8	210
3PH 3- phase input :AC 380V,50/60HZ				
HV590-R75G3	0.75	1	4.3	2.5
HV590-1R5G3	1.5	2	5.2	3.7
HV590-2R2G3	2.2	3	6.0	5
HV590-004G3	4.0	5	10.5	8.5

Frequency Inverter Model	Motor adaper		Rated Input (A)	Rated Output (A)
	(kW)	HP		
HV590-5R5G3	5.5	7.5	15.5	13
HV590-7R5G3	7.5	10	20.5	16
HV590-011G3	11.0	15	27.5	25
HV590-015G3	15.0	20	37.1	32
HV590-018G3	18.5	25	41.9	38
HV590-022G3	22	30	49.3	45
HV590-030G3	30	40	65.7	60
HV590-037G3	37	50	80.6	75
HV590-045G3	45	60	96.4	90
HV590-055G3	55	70	117.6	110
HV590-075G3	75	100	166.4	150
HV590-093G3	90	125	184.3	170
HV590-110G3	110	150	226.8	210
HV590-132G3	132	175	268.1	250
HV590-160G3	160	210	321.1	300
HV590-187G3	185	245	368	340
HV590-200G3	200	260	406.6	380
HV590-220G3	220	300	442.7	415
HV590-250G3	250	350	503	470
HV590-280G3	280	370	555.9	520
HV590-315G3	315	500	650.7	600
HV590-355G3	355	420	734.5	650
HV590-400G3	400	530	787.6	725
HV590-450G3	450	595	846.0	820
HV590-500G3	500	670	885.0	860
HV590-560G3	560	750	990.0	950
HV590-630G3	630	840	1150	1100
3PH 3- phase input :AC 460V,50/60HZ				
HV590-R75G4	0.75	1	4.1	2.5
HV590-1R5G4	1.5	2	4.9	3.7
HV590-2R2G4	2.2	3	5.7	5
HV590-004G4	4.0	5	9.4	8
HV590-5R5G4	5.5	7.5	12.5	11
HV590-7R5G4	7.5	10	18.3	15
HV590-011G4	11.0	15	23.1	22
HV590-015G4	15.0	20	29.8	27
HV590-018G4	18.5	25	35.7	34
HV590-022G4	22	30	41.7	40
HV590-030G4	30	40	57.4	55
HV590-037G4	37	50	66.5	65

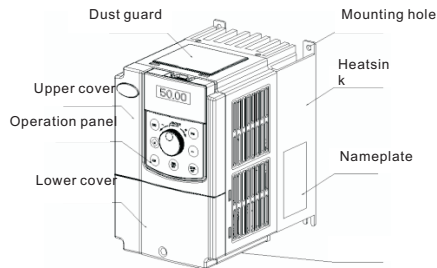


Frequency Inverter Model	Motor adaper		Rated Input (A)	Rated Output (A)
	(kW)	HP		
HV590-045G4	45	60	81.7	80
HV590-055G4	55	70	101.9	100
HV590-075G4	75	100	137.4	130
HV590-093G4	90	125	151.8	147
HV590-110G4	110	150	216.0	180
HV590-132G4	132	175	220.7	216
HV590-160G4	160	210	264.2	259
HV590-187G4	185	245	309.4	300
HV590-200G4	200	260	334.4	328
HV590-220G4	220	300	363.9	358
HV590-250G4	250	350	407.9	400
HV590-280G4	280	370	457.4	449
HV590-315G4	315	500	533.2	516
HV590-355G4	355	420	623.3	570
HV590-400G4	400	530	706.9	650
HV590-450G4	450	595	760.0	700
HV590-500G4	500	670	865.0	800
HV590-560G4	560	750	970.0	900
HV590-630G4	630	840	1100	1000

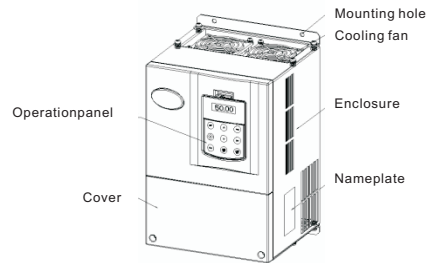
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Dimensional Drawing

1 Product Component Name

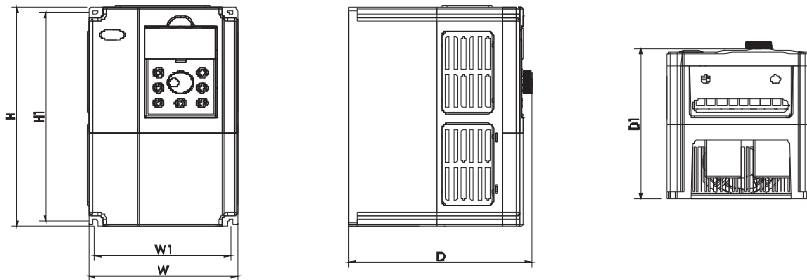


HV590-R40G1/G2~HV590-2R2G1/G2
HV590-7R5G3 and below power class

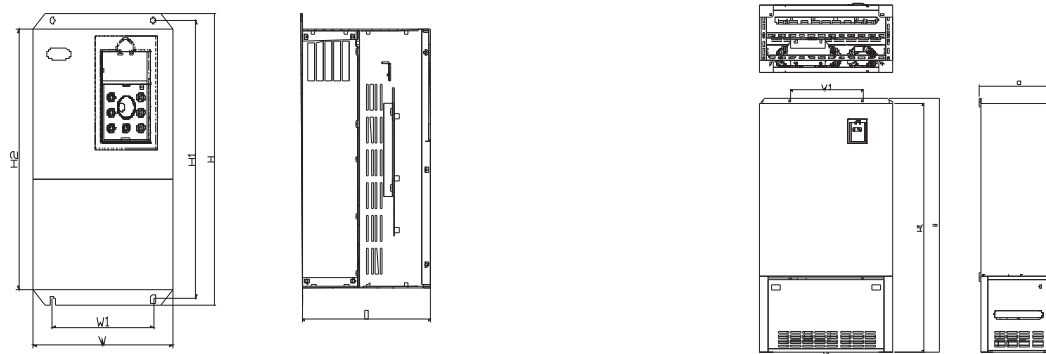


HV590-011G3 and above power class

2 Product Outline, Mounting Dimension, and Weight

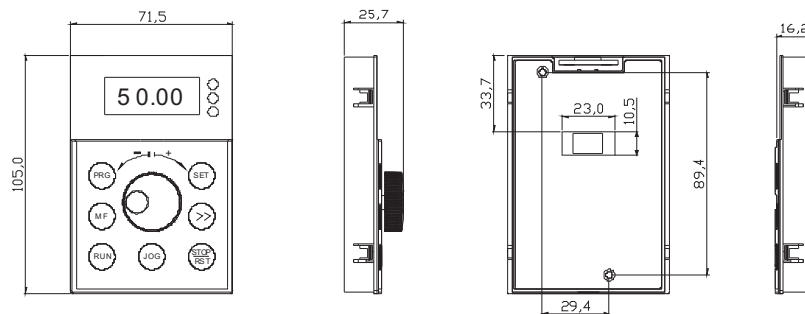


HV590-0R4G2~HV590-2R2G2, HV590-R75G3~HV590-7R5G3 and below power class



HV590-011G3~HV590-220G3 power class
Product outline and mounting dimension

HV590-185G3~HV590-400G3



Operation panel outline and mounting dimension

Shape DIM	Shape Dimension And Installation Dimension(mm)								weight (kg)
	W	H	D	W1	H1	D1	H2	Assembly aperture	
HV590-R40G1	118.5	185	159	106.5	174.5	150		5.5	2.2
HV590-R75G1									
HV590-1R5G1									
HV590-2R2G1									
HV590-R40G2	118.5	185	159	106.5	174.5	150		5.5	2.2
HV590-R75G2									
HV590-1R5G2									
HV590-2R2G2									
HV590-004G2	150	258	183.8	136.8	245	175.3		5.5	4.0
HV590-5R5G2	210	337	191	150	322.5		298	7	8.7
HV590-7R5G2	210	337	191	150	322.5		298	7	8.7
HV590-011G2	221	380	229.6	163	363.6		341	7	10
HV590-015G2	221	380	229.6	163	363.6		341	7	10
HV590-018G2	285	501	230.2	200	482		460	7	19
HV590-022G2	352	585	274.2	220	559		538	10	35
HV590-030G2	352	585	274.2	220	559		538	10	35
HV590-037G2	352	585	274.2	220	559		538	10	35
HV590-045G2	384	650	310	300	628		600	10	48
HV590-055G2	485	760	316	325	739		713	12	66
HV590-R75G3	118.5	185	159	106.5	174.5	150		5.5	2.2
HV590-1R5G3									
HV590-2R2G3									
HV590-004G3	118.5	195	169	106.5	184.5	160		5.5	2.6
HV590-5R5G3	150	258	183.8	136.8	245	175.3		5.5	4.0
HV590-7R5G3									
HV590-011G3	210	337	191	150	322.5		298	7	8.7
HV590-015G3									
HV590-018G3	221	380	229.6	163	363.6		341	7	10
HV590-022G3									
HV590-030G3	285	501	230.2	200	482		460	7	19
HV590-037G3									
HV590-045G3	352	585	274.2	220	559		538	10	25
HV590-055G3									
HV590-075G3									
HV590-090G3	384	650	310	300	628		600	10	48
HV590-110G3	485	760	316	325	739		713	12	66
Wall mounting	533	830	405	325	809		780	12	94
HV590-132G3									
HV590-160G3									
HV590-185G3									

Shape DIM	Shape Dimension And Installation Dimension(mm)								weight (kg)
	W	H	D	W1	H1	D1	H2	Assemblyaperture	
Cabinet installation	533	1212	405	325	1191	75		12	150
HV590-132G3									
HV590-160G3									
HV590-185G3	638	1402	374	350	1372			14	175
Cabinet installation									
HV590-200G3									
HV590-220G3	700	1627	460	520	1592			14	253
Cabinet installation									
HV590-250G3									
HV590-280G3									
HV590-315G3	800	1772	460	520	1737			14	300
HV590-355G3									
HV590-400G3									
HV590-450G3	1200	2000	568					14	400
HV590-500G3									
HV590-560G3									
HV590-630G3									
HV590-R75G4	118.5	185	159	106.5	174.5	150		5.5	2.2
HV590-1R5G4									
HV590-2R2G4									
HV590-004G4	118.5	195	169	106.5	184.5	160		5.5	2.6
HV590-5R5G4	150	258	183.8	136.8	245	175.3		5.5	4.0
HV590-7R5G4									
HV590-011G4	210	337	191	150	322.5		298	7	8.7
HV590-015G4									
HV590-018G4	221	380	229.6	163	363.6		341	7	10
HV590-022G4									
HV590-030G4	285	501	230.2	200	482		460	7	19
HV590-037G4									
HV590-045G4	352	585	274.2	220	559		538	10	25
HV590-055G4									
HV590-075G4									
HV590-093G4	384	650	310	300	628		600	10	48
HV590-110G4	485	760	316	325	739		713	12	66
Wall mounting	533	830	405	325	809		780	12	94
HV590-132G4									
HV590-160G4									
HV590-185G4									

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Shape DIM	Shape Dimension And Installation Dimension(mm)								weight (kg)
	W	H	D	W1	H1	D1	H2	Assemblyaperture	
Cabinet installation	533	1212	405	325	1191	75		12	150
HV590-132G4									
HV590-160G4									
HV590-185G4	638	1402	374	350	1372			14	175
Cabinet installation									
HV590-200G4									
HV590-220G4	700	1627	460	520	1592			14	253
Cabinet installation									
HV590-250G4									
HV590-280G4	800	1772	460	520	1737			14	300
HV590-315G4									
HV590-355G4									
HV590-400G4	1200	2000	568					14	400
HV590-450G4									
HV590-500G4									
HV590-560G4									
HV590-630G4									

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Connection Diagram

