SLANVERT

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SLANVERT

Hope530-H

Series For Crane Industry

About Us

Founded in 1998, SLANVERT is a leading enterprise in the fields of energy conservation, environmental protection, new energy, transmission control, and intelligent equipment in China. The company has been honored with recognitions such as China Top Brand, China Well-known Trademark, Ministry of Industry and Information Technology's Key "Little Giant" Enterprise, and China's number one brand of domestic frequency converter. SLANVERT integrates R&D, manufacturing, system integration, and customer service. Its products include high and low voltage frequency conversion control systems, automatic production lines, robot drive control, EPS power supplies, port shore power supplies, multi/single crystal silicon power supplies, and other industrial power systems. It provides system solutions for industries such as electricity, building materials, papermaking, municipal services, non-ferrous metallurgy, petroleum and petrochemicals, equipment manufacturing and intelligent manufacturing, ports and airports, rail transit, new energy, and charging clusters.

The Company has fully implemented ERP information management, owns a system of independent intellectual property rights composed of over a hundred patents and proprietary technologies, and is certified by ISO 9001:2015 international quality system, ISO 14001:2015 environmental management system, ISO 45001:2018 occupational health and safety management system, and GB/T 29490 intellectual property management system. Its products have obtained certifications such as CE certification in the EU, UL certification in the United States, EAC certification in Russia, and CCS certification in China.

Adhering to the business philosophy of "excellence without borders, hope infinite", SLANVERT has achieved excellence in quality through over 20 years of focus and dedication. Its products are distributed across 30 countries and regions, including China, India, South Africa, Brazil, Italy, Denmark, Singapore, Indonesia, Malaysia, Vietnam, Turkey, among others.

1995 — Chengdu ope Electronics Research Institute was established, and Power Drive System PDS and related products R&D were started

1998 — The first SLANVERT frequency converter came into the market

2003 — SLANVERT launched the first generation of high-voltage frequency converter

2007 — SLANVERT was awarded the title of "China Top Brand"

2013 — The new SLANVERT Electronic Industrial Park officially commenced operations and was recognized as a "China Well-Known Trademark" by the State Administration for Industry and Commerce

2018 — SLANVERT developed China's first multi-unit parallel high-voltage frequency converter shore power supply

2021 — SLANVERT was listed among the Ministry of Industry and Information Technology's Specialized, Refined, Differential, and Innovative "Little Giant" enterprises

2024 — The in in Intelligent Manufacturing Industrial Park was officially put into operation

Qualification Certificates

- National Key "Little Giant" Enterprise
- China Well-known Trademark
- Annual Enterprise in China's Automation Field
- China Electrical Appliance Industry Trusted Quality Brand
- Benchmark Enterprise for Customer Satisfaction in China's Electrical Appliance Industry
- Most Influential Enterprise in China's Electrical Appliance Industry
- Member Unit of the National Variable-frequency Regulating Speed Committee (2017-2022)
- Top 10 Annual Most Influential Engineering Project
- ISO9001 International Quality System Certification
- ISO 14001 Environmental Management System certification,
- ISO45001 Occupational Health and Safety Management System Certification
- National Torch Program Project
- National High-Tech Enterprise
- Top 10 Annual Most Trusted Products by Users
- National Excellent Torch Program Project
- Vice Chairman Unit of frequency converter Branch of China Electrical Equipment Industrial Association
- Postdoctoral Research Workstation
- China Classification Society (CCS) Certification

Industry Solutions

Hope530G-H Series

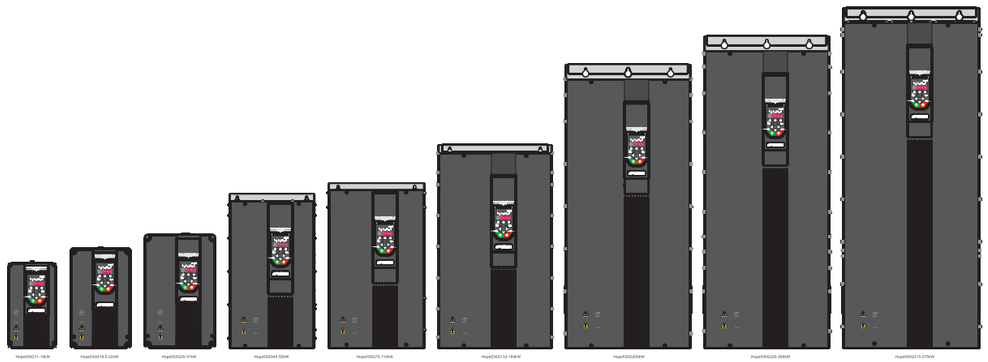
- It enables logical control and protection functions for cranes, ensuring safe and stable operation.
- Built-in anti-sway function, intelligent, efficient, and more precise.

Zero-speed hovering
Built-in zero-speed hovering, strong low-frequency load capacity, stable slow-positioning operation

Anti-swing function
Advanced anti-sway algorithm ensures smooth and stable load operation with safety and efficiency

High overload capability
High overload capacity, high torque output, stable operation under heavy-duty conditions

High compatibility
Built-in braking unit with 0.75kW~160kW power range and high compatibility



Rapid response
Pre-excitation function during shutdown enables rapid startup and enhances operational efficiency

Braking sequence
Professional crane braking logic, tailor-made for lifting conditions

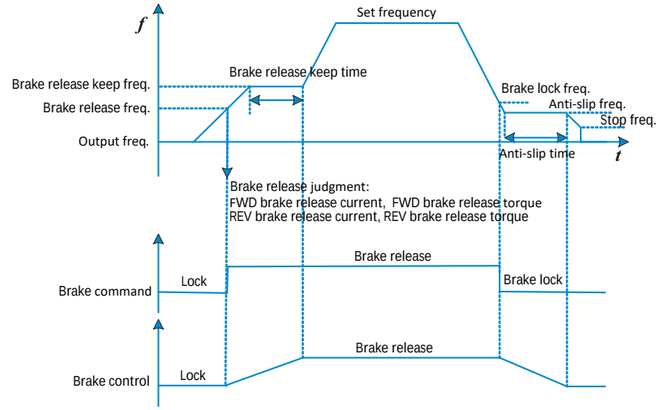
Simple and easy to use
Crane-specific function macros for rapid debugging

High safety
Specialized protection settings for crane applications ensure safety

Product Feature - High Reliability

Dedicated Braking Sequence

Through the perfect coordination between the crane frequency converter and the braking mechanism, it ensures no slipping during startup and shutdown, no sliding during operation, and guarantees safe equipment operation.



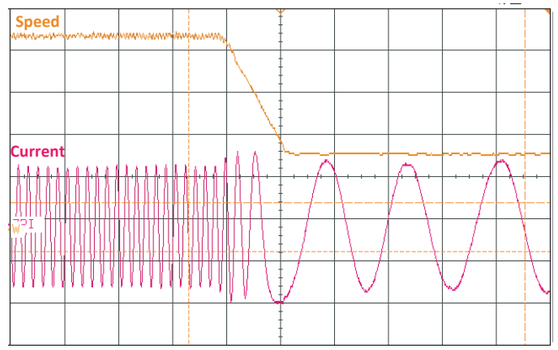
Braking Sequence Diagram

- Customized for Crane
- Smooth and orderly lifting process
- Improved start and stop efficiency
- Powerful anti-slip hook function
- Production safety guaranteed

Zero-speed hovering

It supports zero-speed hovering with strong low-frequency load capacity, ensuring stable operation under heavy loads or complex working conditions.

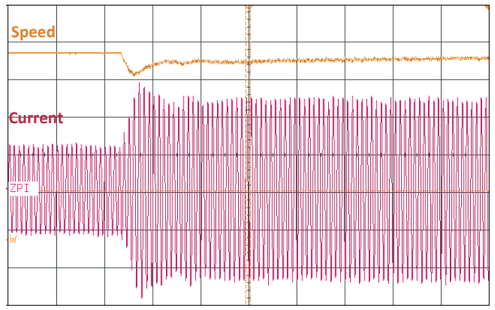
- High-performance vector control
- Slow-positioning safe operation
- Improved equipment stability
- Reduction of economic losses
- Production safety guaranteed



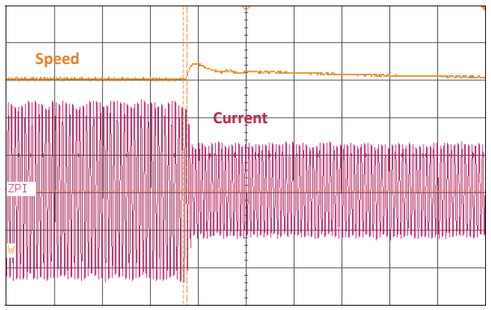
Zero-speed Hovering Waveform Diagram

Strong anti-interference capability

- During steady-state operation at 100% sudden load, the frequency converter rapidly recovers stability, ensuring robust load-carrying capability during startup and powerful unloading capacity during shutdown.



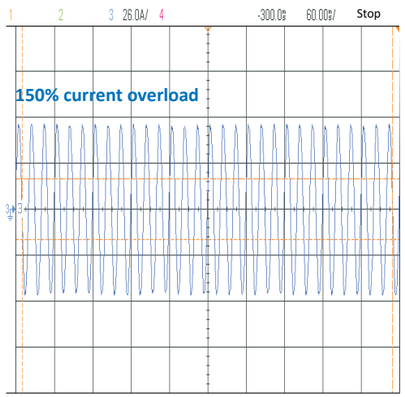
Sudden Load Waveform Diagram



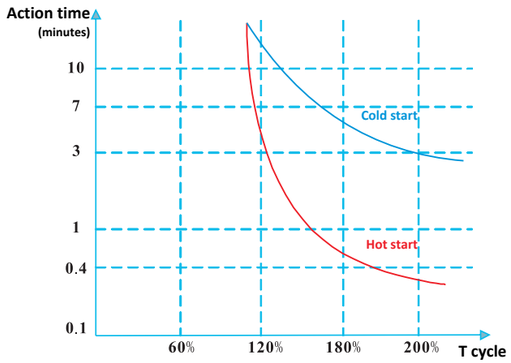
Sudden Load Reduction Waveform Diagram

High overload capability

- It is capable of continuous operation at 120% load and supports 150% overload for 1 minute.



Overload Current Waveform Diagram

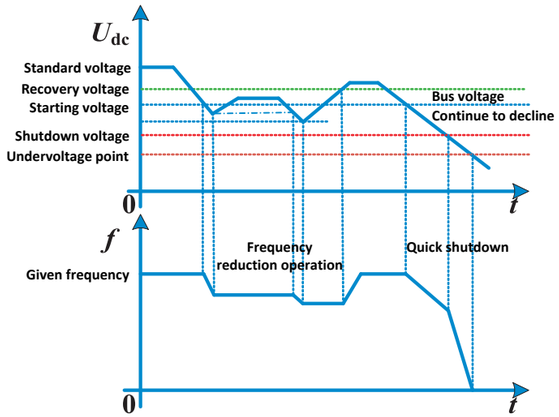


Inverse Time Curve

Product Feature - High Adaptability

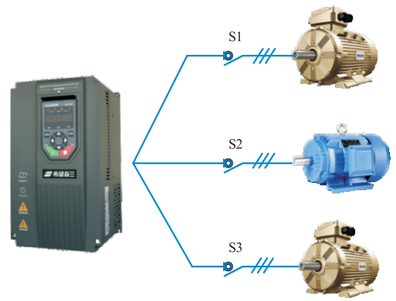
Speed reduction with pressure drop

- Reduce the given frequency to maintain operation and ensure sufficient torque output when the power supply voltage drops.



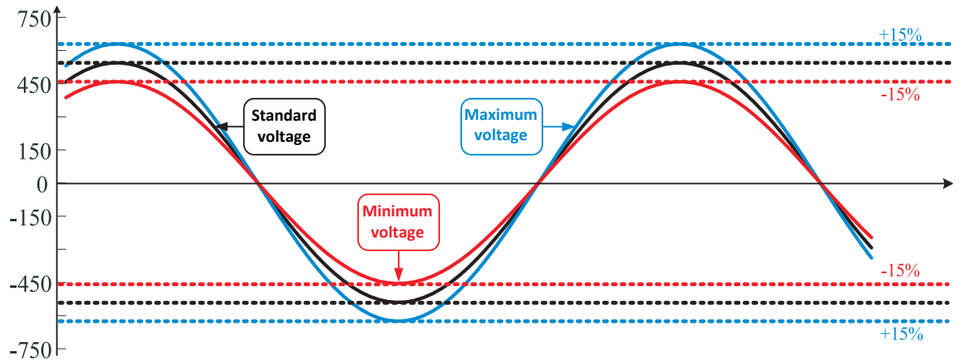
Multi-motor switching drive

- Supports three-motor switching control, with relay-controlled terminals for direct motor switching.



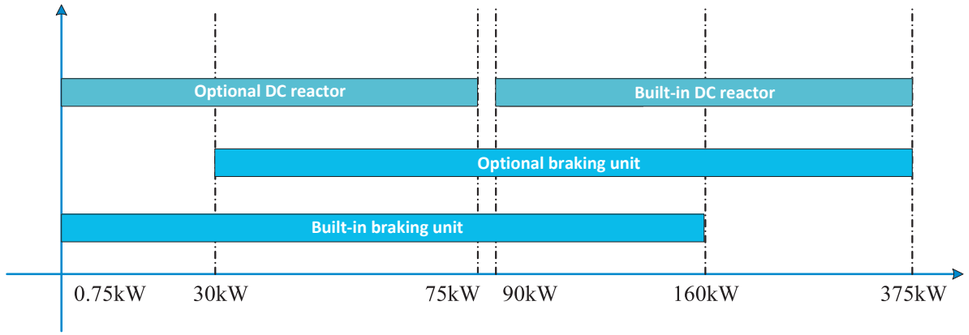
Wide voltage input

- The allowable input voltage fluctuation range is ±15% of the standard rated voltage, providing extensive immunity to grid fluctuations and ensuring the output torque meets lifting requirements.



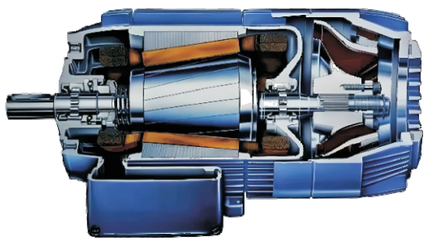
Braking unit and reactor configuration

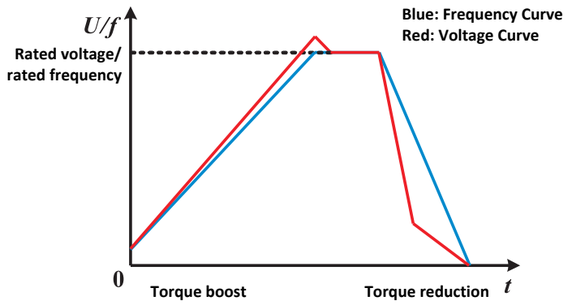
- Built-in braking unit for 0.75kW~160kW, built-in DC reactor for 90kW~375kW.



Compatibility of conical motor

- Establish an appropriate motor control voltage curve based on the mechanical-physical characteristics and mathematical model of the tapered motor to ensure its normal operation.

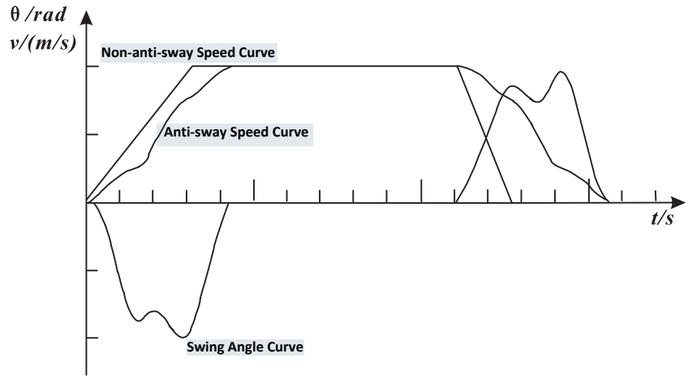




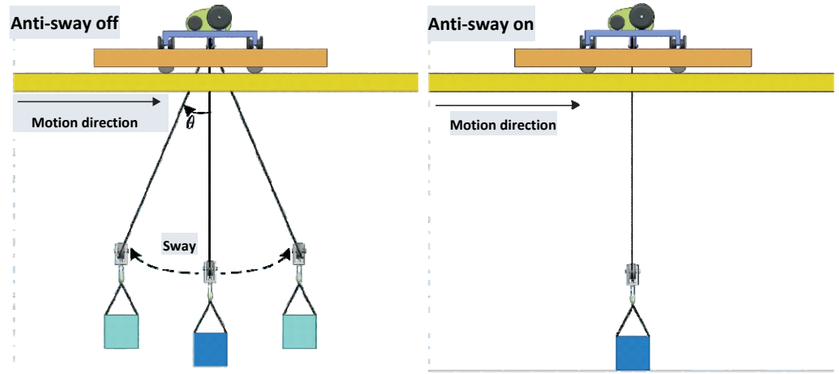
Intelligent anti-sway

- Intelligent anti-sway: Built-in translation and luffing anti-sway control utilizes advanced algorithms to calculate the swing angle of the load, thereby adjusting the output speed curve of the frequency converter to suppress load sway and enhance the continuity and reliability of lifting operations.

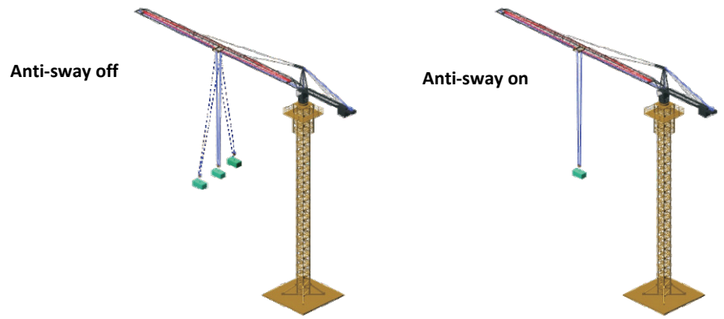
Anti-sway Curve Diagram:



Anti-sway Effect Diagram (Translation):



Anti-sway Effect Diagram (Rotation):

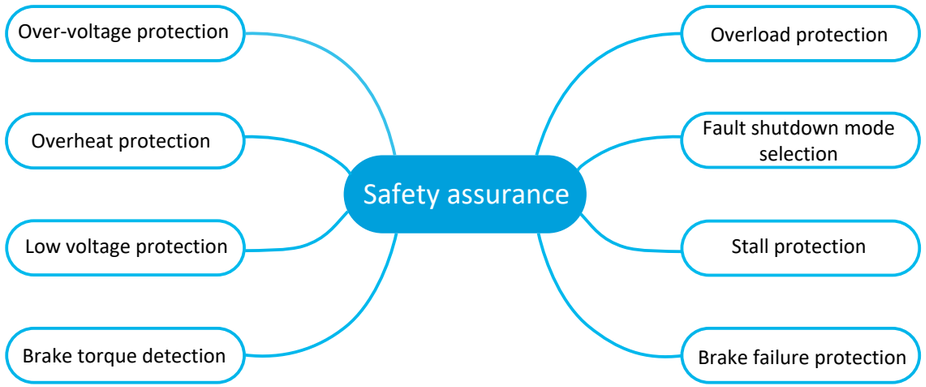


Product Feature - Safety Assurance

Product design, enhanced functionality

Create industry-leading dedicated frequency converters

Safety assurance

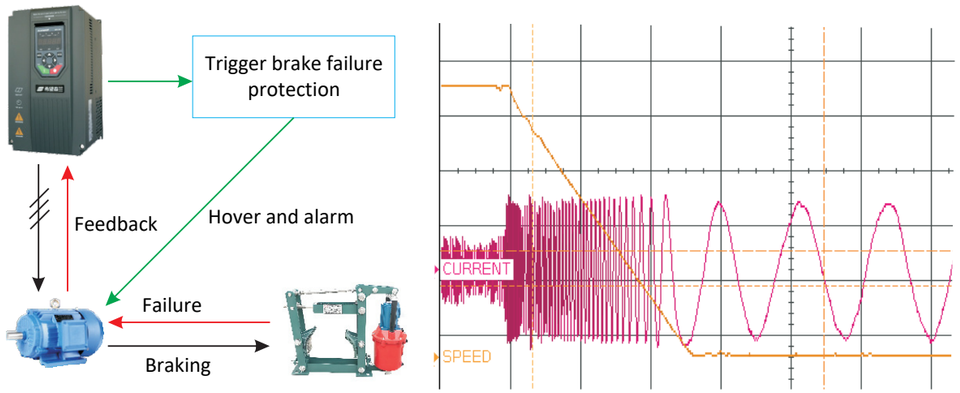


Design description

- Low voltage protection: Reduce the speed when grid voltage is too low to ensure torque output
- Overload protection: Trigger an alarm when the load exceeds capacity, enhancing safety
- Built-in brake failure protection: Automatically hover and trigger an alarm upon activation, reducing accident risks
- Built-in stall protection: Prevent stalling and high current damage to the motor if the brake contactor fails
- Multiple fault shutdown mode options: Prevent load dropping when a fault is reported
- Brake torque detection: Allow manual testing of brake torque to ensure reliable braking performance

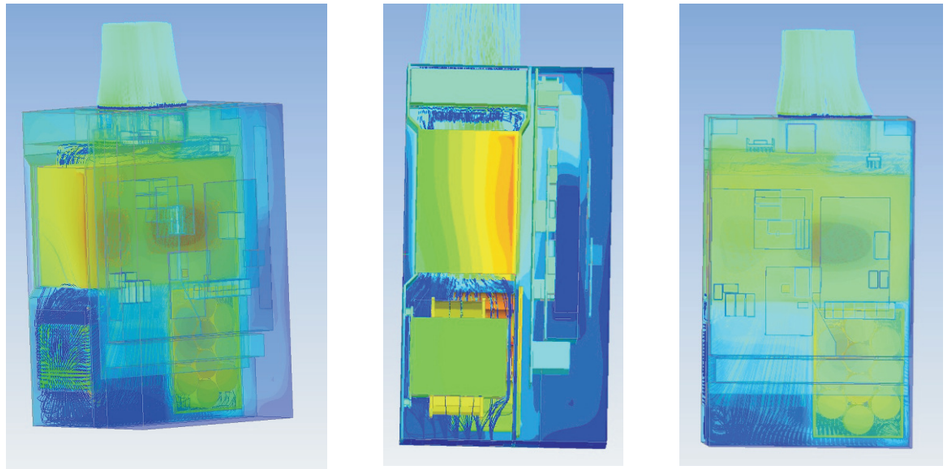
Brake failure protection

Brake failure protection: When the lifting mechanism fails to close or has insufficient closing torque, the frequency converter automatically detects whether the motor is rotating, activates the zero-speed hovering function, and issues an alarm signal to notify the operator.



Reliable heat dissipation design

Reasonable component layout and heat dissipation design. Ensure the frequency converter can still operate normally in environments with temperatures around 50°C.



Product reliability

Precisely ensure product reliability in compliance with the national ISO9001 standard

High and low temperature/humidity test

They are primarily adaptability tests for the product under storage, transportation, and usage conditions involving high and low temperatures, humidity, and their cyclic variations. Our company's products undergo rigorous operation testing in harsh environments to ensure reliable performance under various extreme working conditions.

Dust test

Simulate the destructive effects of natural climate on the product by blowing a certain amount of dust at a specific flow over the surface of the frequency converter to observe its ability to prevent dust particle penetration.
After rigorous dust test, our products have demonstrated excellent sealing and stable operational performance. It maintains stable operation even in high-concentration environments.

EMC test

Electric magnetic compatibility test is a comprehensive evaluation of electronic products' anti-interference capability in electromagnetic fields and is one of the most critical indicators of product quality.
Our company complies with national and international EMC standards, and the tests have demonstrated excellent electric magnetic compatibility as well as strong immunity to interference.

Salt spray test

It primarily evaluates the corrosion resistance of the frequency converter in a salt-laden environment by simulating marine atmospheric conditions and observing the corrosion of the sample over a specified period to determine its anti-corrosion performance.
Our products have undergone continuous testing with no severe corrosion observed, demonstrating excellent corrosion resistance, and both the exterior casing and internal components remain intact.

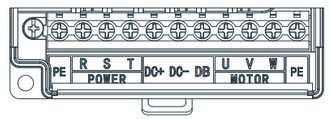
Vibration test

It is a critical test to ensure the product can withstand vibration loads and maintain stability and reliability in both operational environments and during transportation.
Our products are designed to operate reliably throughout their lifecycle, capable of withstanding high-intensity vibration excitation without any abnormal occurrences.

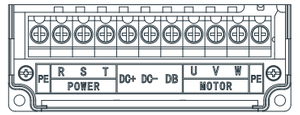
Wiring Diagram and Terminal Description

Main Circuit Port Distribution Diagram

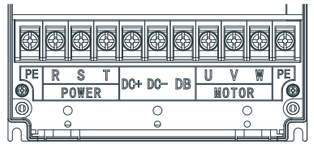
Main Power Wiring Power Distribution Diagram



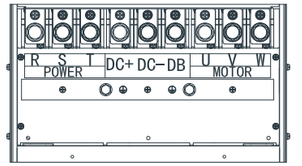
Hope530G0.75T4-H～Hope530G4T4-H
Main Circuit Terminal Distribution Diagram



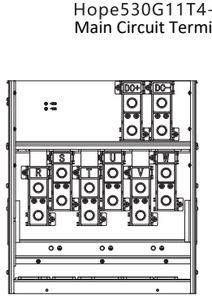
Hope530G5.5T4-H～Hope530G7.5T4-H
Main Circuit Terminal Distribution Diagram



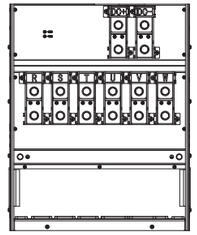
Hope530G11T4-H～Hope530G37T4-H
Main Circuit Terminal Distribution Diagram



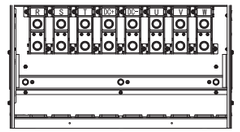
Hope530G45T4-H～Hope530G160T4-H
Main Circuit Terminal Distribution Diagram



Hope530G200T4-H～Hope530G220T4-H
Main Circuit Terminal Distribution Diagram



Hope530G250T4-H～Hope530G280T4-H
Main Circuit Terminal Distribution Diagram

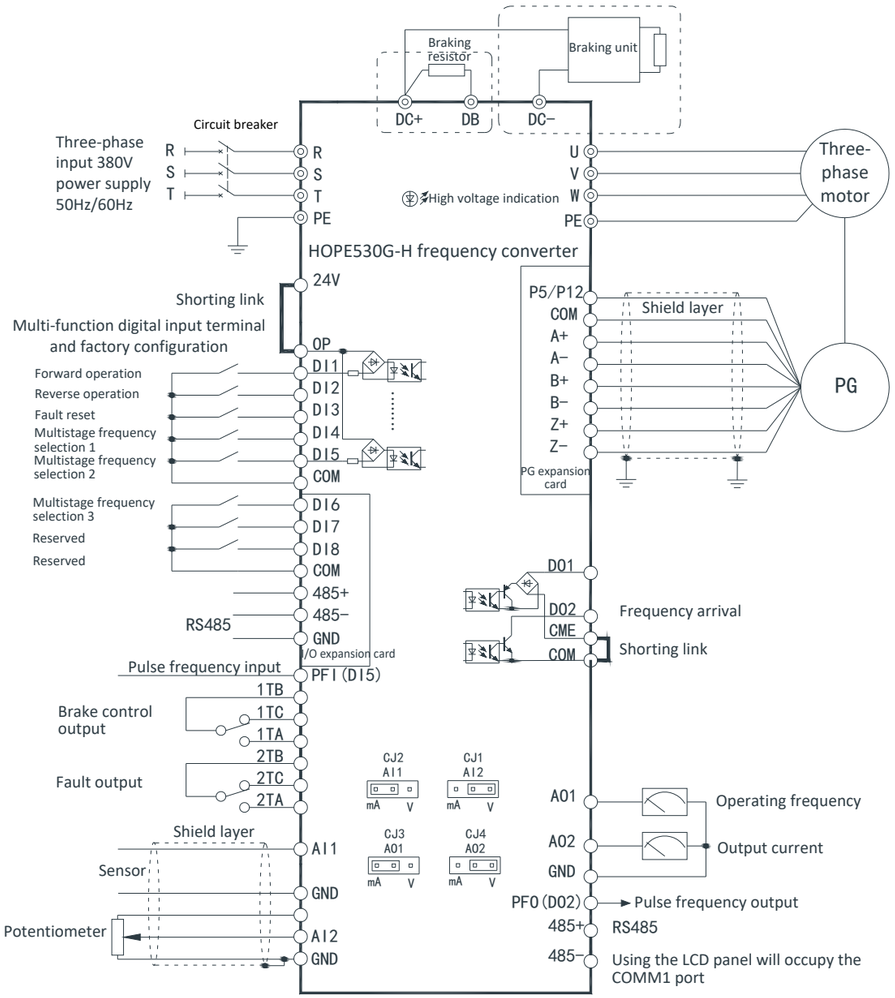


Hope530G315T4-H～Hope530G375T4-H
Main Circuit Terminal Distribution Diagram

Terminal symbol	Terminal name	Function description
R、S、T	Input power terminal	Connect to the three-phase 380V power supply
U、V、W	Frequency converter output terminal	Connect to the three-phase motor
DC+、DC-	DC bus terminal	Connect the braking unit between DC+ and DC-
DB	Brake output terminal	Connect the braking resistor between DC+ and DB
PE	Grounding terminal	Frequency converter case grounding terminal, protective grounding

- Power cable connections, as well as the input and output wiring of the host, must be grounded separately.
- A braking resistor must be connected between DC+ and DB, and the braking resistor shall be selected according to the selection table below.
- Control cables shall be routed separately from the main power cables and secured with cable ties near the interfaces to ensure tight and reliable connections.

Frequency Converter Wiring Diagram



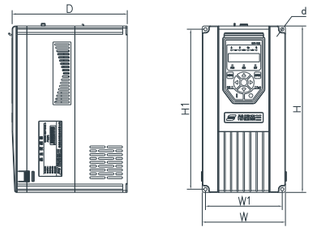
- The product is equipped with 5 DIs and can be expanded to 10 DIs via an I/O expansion card.
- The braking resistor and braking unit shall be selected according to the selection table.
- The braking control signal is provided by the relay T terminal.

Product Installation Size

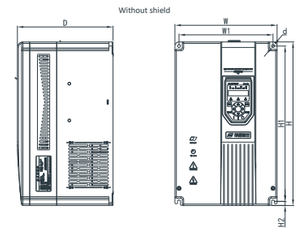
Wall-mounted Installation Dimension

Wall-mounted installation dimension diagram (Hope530G0.75T4B-H ~ Hope530G375T4-H)

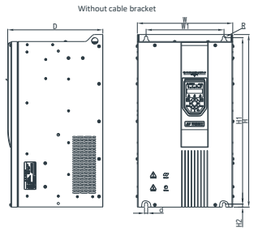
Dimension scheme for 0.75kW-7.5kW



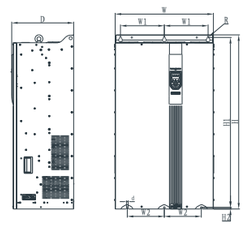
Dimension scheme for 11kW-37kW and above without shield



Dimension scheme for 45kW-160kW without cable bracket



Dimension scheme for 200kW and above without cable bracket



Wall-mounted installation dimension table (Hope530G0.75T4B-H ~ Hope530G375T4-H)

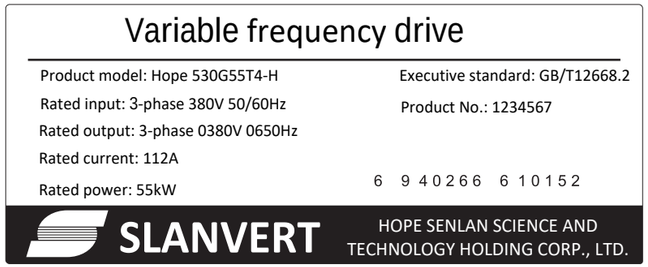
Frequency converter model	Overall dimensions			Installation dimensions						Mass	
	W	H	D	W1	W2	H1	H2	d	R	Weight with reactor (kg)	Weight without reactor (kg)
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		
Hope530G0.75T4B-H	100	200	180	90	90	190	-	5		2.1	1.8
Hope530G1.5T4B-H	100	200	180	90	90	190	-	5		2.1	1.8
Hope530G2.2T4B-H	100	200	180	90	90	190	-	5		2.1	1.8
Hope530G4T4B-H	100	200	180	90	90	190	-	5		2.1	1.8
Hope530G5.5T4B	130	260	180	120	120	250	-	5		3.7	3.4
Hope530G7.5T4B-H	130	260	180	120	120	250	-	5		3.7	3.4
Hope530G11T4B-H	170	300	192	160	160	290	5	5		5.7	5.2
Hope530G15T4B-H	170	300	192	160	160	290	5	5		5.7	5.2
Hope530G18.5T4B-H	208	352	203	195	195	337	5	6		10.5	7.6
Hope530G22T4B-H	208	352	203	195	195	337	5	6		11	7.7
Hope530G30T4B-H	248	400	234	230	230	382	10	7		18.5	12.5
Hope530G37T4B-H	248	400	234	230	230	382	10	7		19.5	12.5
Hope530G45T4B-H	300	545	300	245	245	525	10	10	5	33.5	29.1
Hope530G55T4B-H	300	545	300	245	245	525	10	10	5	34.3	29.1
Hope530G75T4B-H	340	580	326	270	270	562	10	10	5	63.2	50.9
Hope530G90T4BL-H	340	580	326	270	270	562	10	10	5	63.2	—
Hope530G110T4BL-H	340	580	326	270	270	562	10	10	5	63.2	—
Hope530G132T4BL-H	400	915	355	320	320	895	10	10	5	92.5	—
Hope530G160T4BL-H	400	915	355	320	320	895	10	10	5	92.5	—
Hope530G200T4L-H	440	1000	405	185	150	975	10	11	5.5	118	—
Hope530G220T4L-H	440	1000	405	185	150	975	10	11	5.5	118	—
Hope530G250T4L-H	485	1130	410	210	150	1100	12	11	5.5	145	—
Hope530G280T4L-H	485	1130	410	210	150	1100	12	11	5.5	145	—
Hope530G315T4L-H	650	1150	410	290	245	1125	10	11	5.5	190	—
Hope530G375T4L-H	650	1150	410	290	245	1125	10	11	5.5	192.5	—

Product specifications

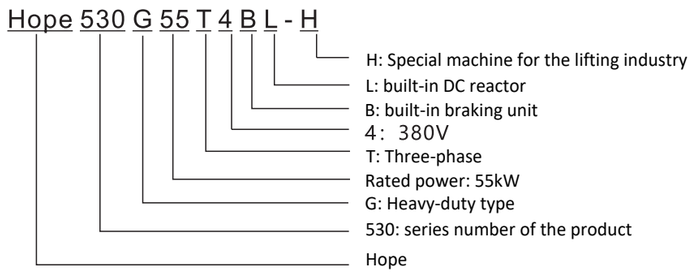
Product model/spec.

Frequency converter model	Rated capacity (kVA)	Rated output current (A)	Adaptive motor (kW)	Frequency converter model	Rated capacity (kVA)	Rated output current (A)	Adaptive motor (kW)
Hope530G0.75T4B-H	1.6	2.5	0.75	Hope530G55T4B-H	74	112	55
Hope530G1.5T4B-H	2.4	3.7	1.5	Hope530G75T4B-H	99	150	75
Hope530G2.2T4B-H	3.6	5.5	2.2	Hope530G90T4BL-H	116	176	90
Hope530G4T4B-H	6.4	9.7	4	Hope530G110T4BL-H	138	210	110
Hope530G5.5T4B-H	8.5	13	5.5	Hope530G132T4BL-H	167	253	132
Hope530G7.5T4B-H	12	18	7.5	Hope530G160T4BL-H	200	304	160
Hope530G11T4B-H	16	24	11	Hope530G200T4L-H	248	377	200
Hope530G15T4B-H	20	30	15	Hope530G220T4L-H	273	415	220
Hope530G18.5T4B-H	25	38	18.5	Hope530G250T4L-H	310	475	250
Hope530G22T4B-H	30	45	22	Hope530G280T4L-H	342	520	280
Hope530G30T4B-H	40	60	30	Hope530G315T4L-H	389	590	315
Hope530G37T4B-H	49	75	37	Hope530G375T4L-H	460	705	375
Hope530G45T4B-H	60	91	45	—	—	—	—

Model description



Nameplate description



Technical Specifications

Item		Item description
Input	Rated voltage and frequency	Three-phase: 380V, 50Hz/60Hz
	Allowable range	Voltage fluctuating range: ±15%; voltage unbalance: ＜3%; frequency: 47Hz~63Hz
Output	Output voltage	Three-phase, 0V~input voltage, error<5%
	Output frequency range	V/F control: 0.00Hz~650.00Hz; vector control: 0.00Hz~200.00Hz
Basic specifications	Motor control mode	Without PGV/F control, with PGV/F control, without PG vector control, with PG vector control, V/F separation control
	Steady-state speed precision	Without PG vector control: ±0.5%; with PG vector control: ±0.05%
	Starting torque	0.25Hz/150% (without PG vector control), 0Hz/180% (with PG vector control)
	Overload capacity	150% rated current for 1min, 180% rated current for 15s, 200% rated current for 2s
	Run command channel	Operation panel setting, control terminal setting, communication setting, switchable via terminal
	Torque boost	Automatic torque boost; manual torque boost
	V/F Curve	Users can define V/F curve, linear V/F curve and 5 reduction torque characteristic curves
	Acceleration/deceleration method	Linear acceleration & deceleration, S curve acceleration & deceleration
	Jog	Jog frequency range: 0.10Hz~50.00Hz; jog acceleration & deceleration time: 0.1s~60.0s
	Automatic energy-saving operation	Automatically optimize V/F curve according to load condition for automatic energy-saving operation
	Automatic voltage regulation (AVR)	When grid voltage changes within a certain range, automatically maintain a constant output voltage
	Instantaneous shutdown processing	When powering down instantaneously, the equipment can continue operating via busbar voltage control
	Communication	Built-in RS485 communication interface, supporting Modbus protocol (RTU, TCP), USS instruction, PROFIbus-DP protocol, PROFINET protocol, etc.
Features	Zero-speed hovering	Support zero-speed hovering
	Speed reduction with pressure drop	Maintain the normal output of the frequency converter by reducing the given frequency when the bus voltage remains continuously low
	Multi-stage speed method	Encoding selection, direct selection, overlap selection and number selection method
	Brake timing control	Built-in professional hoist-specific brake timing control
	Motor parameter static identification	Support static identification of all motor parameters
	Torque control function	Control torque/speed via switching terminals, torque setting methods
	Downlink frequency and uplink torque	Provide upward torque during descent to enhance stability under load
	Torque memory	Output reasonable torque during startup to enhance load-carrying capability
	Pre-excitation maintenance during shutdown	Maintaining excitation during shutdown enables quick restart after shutdown
	Brake failure protection	Enable detection of brake effectiveness and implement protective measures
	Stall protection	Detect motor stall conditions and implement protective measures
	Anti-sway function	Achieve anti-sway function during translation and luffing motions
	Compatible with tapered motor	Enable compatibility with both variable-frequency motors and tapered motors
	Wide voltage input	Compatible with grid voltage fluctuations within ±15V of the rated voltage
	Timing watt hour meter function	Facilitate adjusting to the best energy conservation scheme
Protection function		Over-current, over-voltage, under-voltage, input/output phase loss, output short circuit, overheat, motor overload, external failure, lost connection of analog input, stall prevention, etc.
Optional accessories		Digital I/O expansion board, encoder interface board, analog input expansion board, I/O reactor, electric magnetic interference filter, Profibus-DP module, PROFINET module, Chinese/English LCD panel, operation panel mounting box, operation panel extension cable, RS485 communication module, etc.
Environment	Usage location	With elevation below 1,000m, indoor, without direction sunshine, dust, corrosive gas, combustible gas, oil mist, water vapor, water drop, and salt mist, etc.
	Operating environment temperature/humidity	-10℃~＋40℃/20%~90%RH, without condensation water drop
	Storage temperature	- 20℃ ~ + 60℃
	Vibration	<5.9m/s² (0.6g)
Structure	IP grade	IP20 (up to IP40 for 11kW~37kW models with shield)
	Cooling method	Forced cooling, with control fan

Accessory selection

Optional accessories

Expansion board type	Expansion board model		Expansion function	Remarks
	Compatible with models of 11kW and above	Compatible with models of 7.5kW and above		
I/O expansion card	SL510-DIO1	SL530-DIO1	3DI + 4T + RS485	3 digital inputs, 4 relay outputs, RS485 communication, with SL510-DIO2 and SL530-DIO2 additionally supporting RTC function
	SL510-DIO2	SL530-DIO2	3DI + 4T + RS485 + RTC	
	SL510-DIO3	—	5DI + 2T	5 digital inputs, 2 relay outputs
PG expansion card	SL510-PG0	SL530-PG0	A closed-loop vector control is adopted to enhance control performance, but an encoder is required, with its signal fed back to the frequency converter via a PG card	Support both collector signals and differential signals
	SL530-PG1	—		Support resolver signals
PG_I/O expansion card	—	SL530-PG_DI	3DI + RS485 + PG expansion card	Adopt an integrated form combining the PG card and I/O card
Profibus-DP module	SL510-DP	—	The communication module enables the frequency converter to interface with other systems	For models of 7.5kW and below requiring DP communication, please specify during order placement
PROFINET module	SL510-PN	SL530-PN		

Selection of braking resistor for braking unit

Frequency converter spec./ model Braking unit model	Braking unit model	Minimum resistance value of braking resistor (Ω)	Recommended resistance value of braking resistor (Ω)	Minimum power of lifting resistor (kW)	
				Lifting mechanism	Translation mechanism
Hope530G0.75T4B-H	Built-in	165	650	0.35	0.15
Hope530G1.5T4B-H	Built-in	111	300	0.75	0.3
Hope530G2.2T4B-H	Built-in	75	200	1.1	0.44
Hope530G4T4B-H	Built-in	43	100	2	0.8
Hope530G5.5T4B	Built-in	32	90	2.7	1.1
Hope530G7.5T4B-H	Built-in	23	60	3.7	1.5
Hope530G11T4B-H	Built-in	17	40	5.5	2.2
Hope530G15T4B-H	Built-in	14	30	7.5	3
Hope530G18.5T4B-H	Built-in	11	25	9	3.7
Hope530G22T4B-H	Built-in	9	25	11	4.4
Hope530G30T4B-H	Built-in	7	20	15	6
Hope530G37T4B-H	Built-in	6	15	18	7.5
Hope530G45T4B-H	Built-in	5	13	22	9
Hope530G55T4B-H	Built-in	4	10	27	11
Hope530G75T4B-H	Built-in	3	7	37	15
Hope530G90T4BL-H	Built-in	3	6	43	18
Hope530G110T4BL-H	Built-in	3	5	55	22
Hope530G132T4BL-H	Built-in	3	4	62	26.4
Hope530G160T4BL-H	Built-in	3	4	88	32
Hope530G200T4L-H	SZ20G-380	3*2	3.4*2	50*2	20*2
Hope530G220T4L-H	SZ20G-380	3*2	3.4*2	55*2	22*2
Hope530G250T4L-H	SZ20G-380	3*2	3.4*2	63*2	25*2
Hope530G280T4L-H	Customized by manufacturer	3*2	3.4*2	70*2	28*2
Hope530G315T4L-H	Customized by manufacturer	3*2	3.4*2	80*2	31*2
Hope530G375T4L-H	Customized by manufacturer	3*3	3.4*3	60*3	24*3

Service & Support

With a strong marketing and service network covering 31 provinces, municipalities, autonomous regions in mainland China, as well as Asia, Europe, and America, SLANVERT has established branch offices in Indonesia (Jakarta), Malaysia, Vietnam, Singapore, and Hongong. We provide our customers with unique "SLANVERT Steward Type Services", encompassing pre-sale technical consultation and solution design, in-sale installation and commissioning, and after-sale training, maintenance, and repair services. The SLANVERT professional sales and service team are always ready to serve you!

SLANVERT promises to continue providing you with the highest quality service for our products, regardless of whether they are within the warranty period!