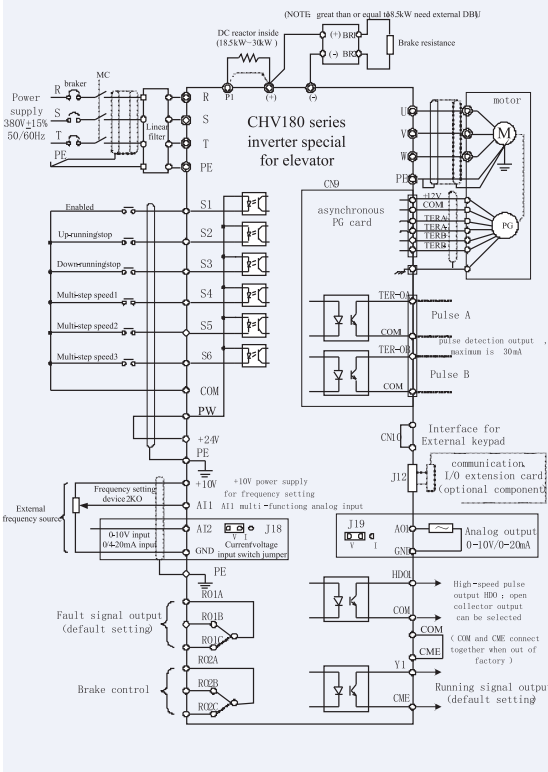


Standard Specifications

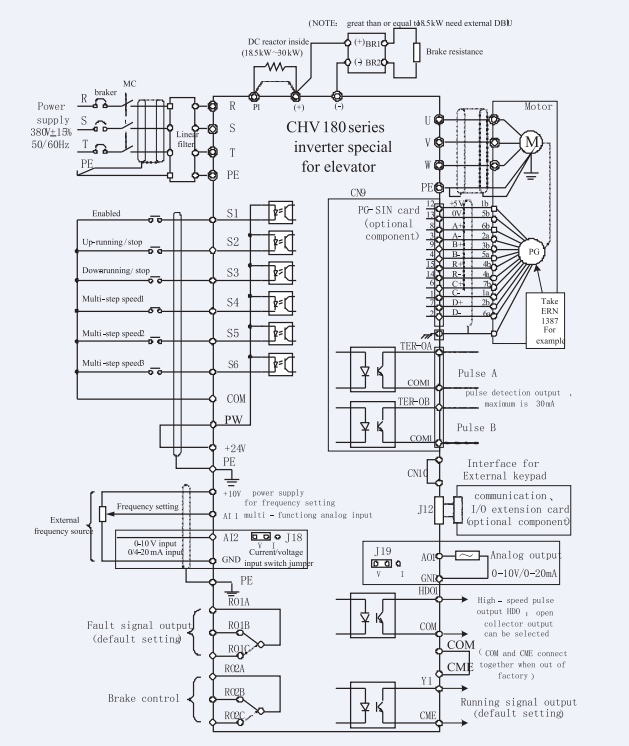
380V Grade power supply	Input voltage range	3AC380V ±15%
	Input frequency range	47 ~ 63Hz
	DBU	4 ~ 15KW with DBU inside, 18.5~30KW optional
Control function	Start torque compensation without weight sensor (only sin/cos encoders are viable)	
	Start torque compensation with weight sensor (weight sensor is necessary)	
	Auto-tuning (rotation, synchronous motors identify the initial magnetic pole angle in static state [sin/cos encoders])	
	function of Contacting brake control and output contactor control	
	Logic of elevator enable, can make the elevator running safer.	
	Force slowdown running, overhaul running, emergency running	
	Energy saving running (RBU is necessary)	
	DC braking while starting and stopping	
	Multi-Step Speed Control (8 steps speed can be set)	
	digital, analog, communication, multi-step speed and speed tracking and start FDT output for frequency reaches the setting value	
Control	Control Mode	Sensorless Vector Control (SVC)、Vector Control (VC)、V/F Control
	Frequency Range	0.01~400Hz
	Overload Capacity	150% rated current 60S 180% rated current 10S
	Start Torque	0.5Hz/150% (SVC) ; 0 Hz/200% (VC)
	Speed Adjusting Range	1 : 100 (SVC) ; 1 : 1000 (VC)
	Speed Accuracy	±0.5% maximum speed (SVC) ; ±0.1% maximum speed (VC)
	Resolution of Frequency setting	Digital setting : 0.01Hz ; Analog setting : maximum frequency×0.1%
	Signal for Frequency setting	Voltage Range : 0~10V ; Current Range : 0~20mA
Terminals	Input terminals	6 programmable digital inputs, another 4 can be extended by I/O extension card ; 2 programmable analog inputs, one is 0~10V, another one is 0~10V or 0/4~20mA
	Output terminals	Output of high-speed pulse (0~50KHz Rectangular wave) : provide 1 output terminal; Open collector output : provide 1 (another 1 can be extended) ; Relay output : provide 2 (another 1 can be extended) ; Analog output : provide 1 (another 1 can be extended) , 0/4~20mA or 0~10V can be selected.
Protect Function	Protection of speed deviation is too large	It can prevent permanent magnet synchronous motor from over speeding.
	Over voltage protection	380V grade : stop when the voltage of DC bus is more than 800V
	Under voltage protection	380V grade : stop when the voltage of DC bus is less than 350V
	Protection of Instantaneous over current	The output current more than 200%
	Motor protection	Electron thermal protection
	Overheat protection	Protect by Thermistor
Environment requirements	Temperature	Suitable for Indian working condition.
	humidity	Relative humidity of atmosphere ≤90% , without condensation.
	height above sea level	Under 1000m
	Libration	The maximum libration should less than 5.8m/S ² (0.6g)
	Installation sites	Indoor (place without oil, water, metal powder, dust etc.)

Standard Wiring Diagram






Wiring diagram of CHV180 series asynchronous inverter (asynchronous PG card is standard)



Wiring diagram of CHV180 series synchronous inverter synchronous PG card is optional component its type are sin/cos PG card and UVW PG card)



Extension cards and function description for them

Module Name	Function Description
 Serial Interface Card	Both RS232 and RS485 communication interface, it can be switched by the jumper easily. R232 adopt standard DB9 female connector, customer can connect it easily. The standard MODBUS communication protocol inside.
 Asynchronous PG Card	Receive the high speed pulse feedback signal from encoder, to make up a close-loop system with high precision vector control; Compatible with signal input of push-pull signal, open collector signal, difference signal ; The standard MODBUS communication protocol inside.
 SIN/COS Synchronous PG Card	Receive the high speed pulse feedback signal from encoder, to make up a close-loop system with high precision vector control ; SIN/COS synchronous PG card compatible with SIN/COS synchronous encoder (the main model is ERN1387 or the encoder witch compatible with its signal) ; frequency division range : 1~256, frequency division coefficient can be chosen freely by the dial switch. The standard MODBUS communication protocol inside.
 UVW Synchronous PG Card	Receive the high speed pulse feedback signal from encoder, to make up a close-loop system with high precision vector control ; UVW synchronous PG card compatible with UVW synchronous encoder, it needs the motor and the encoder with the same number of poles; frequency division range : 1~256, frequency division coefficient can be chosen freely by the dial switch.
 CHV180 I/O Extension Card	Offer 4 analog inputs, 1 relay output, 1 analog output, 1 open collector output, it enhances the input and output capacity. With RS485 communication interface, customer can detect and modify the parameters easily.

CHV180 Series Special Inverter for Elevator

Innovation, Value, Teamwork

invt

SHENZHEN INVT ELECTRIC CO., LTD.
Address: No.4 Building, Gaofa Industrial Park, Longjing, Nanshan District, Shenzhen, Guangdong, China.
TEL: +86 755 86312834 FAX: +86 755 86312832
Email: overseasales@inv.com.cn Website: www.inv.com

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Model selection and outline dimension

Model	Rated output power (kW)	Rated input current (A)	Rated output current (A)	Dimension (mm)		
				H	W	D
CHV180-004G-4	4	10.0	9.0	250	160	175
CHV180-5R5G-4	5.5	15.0	13.0			
CHV180-7R5G-4	7.5	20.0	17.0			
CHV180-011G-4	11	26.0	25.0	320	220	180
CHV180-015G-4	15	35.0	32.0			
CHV180-018G-4	18.5	38.0	37.0			
CHV180-022G-4	22	46.0	45.0	467	290	215
CHV180-030G-4	30	62.0	60.0			
CHV180-037G-4	37	76	75			
CHV180-045G-4	45	90	90	577	375	270
CHV180-055G-4	55	105	110			
CHV180-075G-4	75	140	180			
CHV180-090G-4	90	160	176	755	460	330
CHV180-110G-4	110	210	210			
CHV180-132G-4	132	240	250			
CHV180-160G-4	160	290	300	1275(without base)	490	391
CHV180-185G-4	185	330	340			
CHV180-200G-4	200	370	380			
CHV180-220G-4	220	410	415	1490(with base)	490	391
CHV180-250G-4	250	460	470			
CHV180-280G-4	280	500	520			
CHV180-315G-4	315	580	600	1670 (with base)	750	402

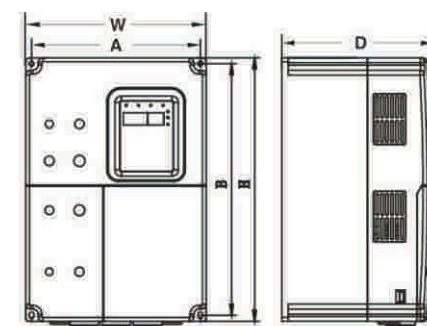


Figure 1: Dimension of inverters which power is less than or equal to 15KW

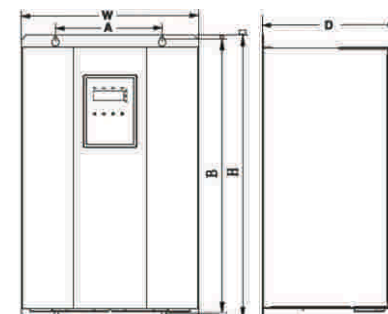


Figure 2: Dimension of inverters which power is in the range of 15~110KW

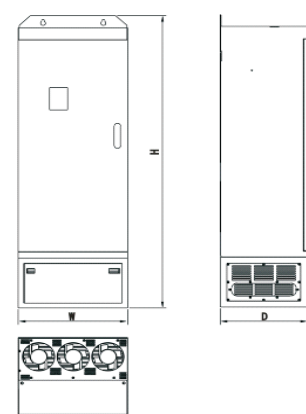


Figure 3: Dimension of inverters which power is in the range of 185~315KW

CHV180 Series Special Inverter for Elevator

CHV180 is a professional driver for elevator just designed for elevator industry. It not only can control the tractor which driven by gear, but also can control the tractor which driven without gear. It preeminent function and performance can easily matches with elevator control, so it ensures the safety and comfortable level of elevator.

Main function and characteristic

Compatible with synchronous and asynchronous motor

Apply to asynchronous induction motor and permanent magnet synchronous motor which running speed is less than 4m/s.

Start torque compensation without weight sensor

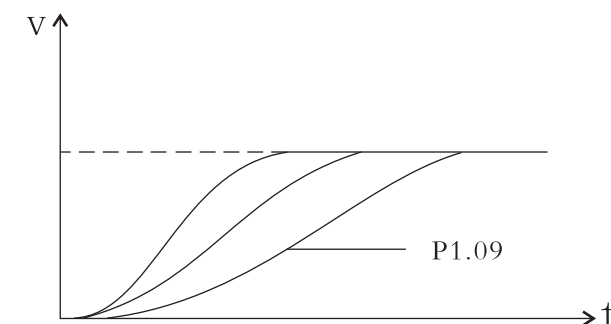
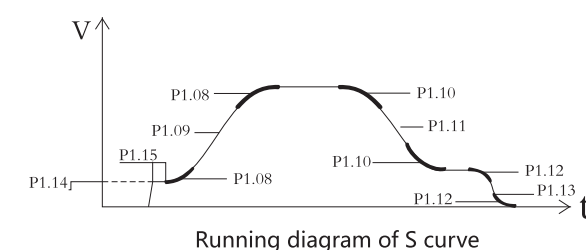
- Start torque compensation without weight sensor(only sin/cos encoders are viable), to get accurate control for no gear synchronous motor ,and start smoothly.
- Start pre-torque compensation with weighting compensation (weight sensor is necessary), to prevent the elevator from slipping down it just need setting few of parameters.

Synchronous motors identify the initial magnetic pole angle in static state

- For permanent magnet synchronous motor, it can perform autotuning when the motor in the static state (work with sin/cos encoder), the most suitable situation is when motor connects with load, can not perform rotation autotuning.
- Both induction motors and synchronous motors can perform rotation autotuning. The most suitable situation is need to improve the control precision and increase the start torque.

Optimized Speed Curve

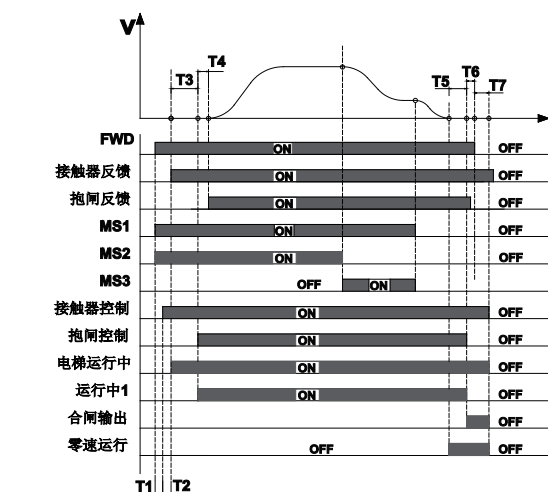
optimized S curve control, the parameters can be set separately in the process of starting and stopping . It decrease the libration, increase the comfortable level when acceleration, deceleration and stopping.



Increase the value ← → Decrease the value
Adjust diagram of S curve' s accelerate segment

reliable brake sticking and contactor control function

Control the contactor and brake sticking according to the running logic of elevator, improve the safety



Optimized Speed Adjusting Loop

Speed adjusting loop adapt variable proportion gain and integral gain control. It improved the dynamic response for starting and stopping, it also improved the comfortable level while constant running.

With high performance current vector control and integrated many encoder interface

- with high current vector control, the torque during starting is very high and the torque pulsation is very small
- asynchronous PG card, SIN/COS synchronous PG card and UVW synchronous PG card can be extended.

Force Speed Down Precessing Function

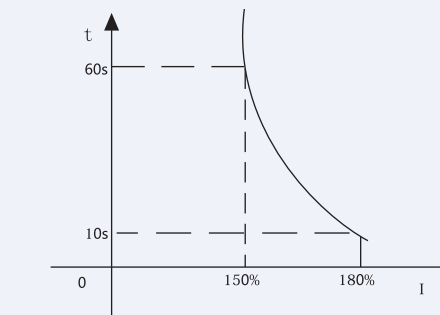
prevent the elevator from top-hitting or bottom-clashing in the process of up or down running

High order harmonic suppression of power

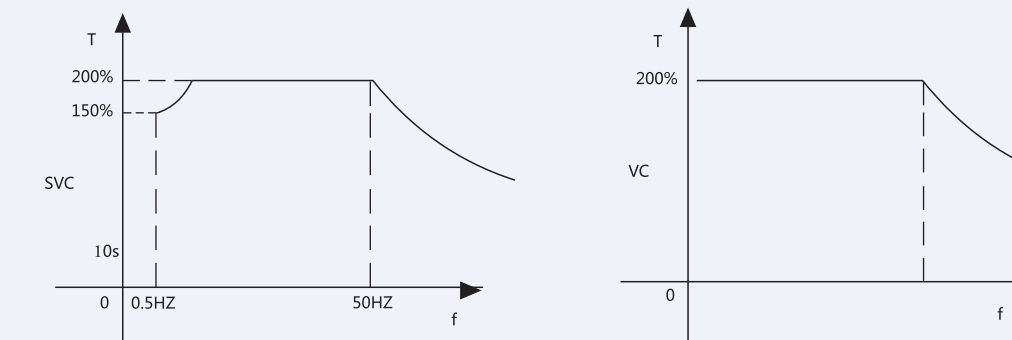
The inverter which the power is bigger than 18.5KW with DC reactor building-in (the DC reactor is optional component if the power of inverter is below 15KW)

Features

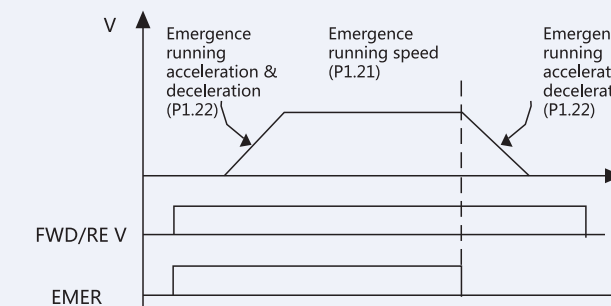
- Single drive can operate asynchronous motor by SVC /VC and synchronous motor;
- Overload Capacity: 60s with 150% of rated current, 10s with 180% of rated current.



- Starting Torque: 150% of rated torque at 0.5Hz (SVC); 200% of rated torque at 0Hz(VC).



- Special elevator software incorporate CHV180 to make it simple and used friendly, like frequency in m/s, its s-curve, Sheave diameter and rope ratio can be set by parameter.
- Braking unit is built-in up to 18.5KW;
- Comply with IEC61800-3 and IEC61800-5-1 ;
- Emergency running software is available in CHV180. In case of power fail, the elevator can be brought to the nearest Floor by using this special function.



- CHV180 supplies elevator speed up to 4 m/s

Vibration analysis on PMT EVA-625A, elevator going up

