

HV580L AC Drive for Elevator

Open Loop Inverter
Sensorless Technology

Elevator Application Features

- Smooth ride performance
- Integrated brake control
- Default factory setting user friendly factory, get you started quickly.
- 4-Independent S-Ramps
- Programmable DC –injection braking

Fieldbus option(CANlink, CANopen, Profibus-DP, Modbus)



Built-in Simple PLC, Automatic voltage regulation

Inverter Key Features

- Simplified parameter for easy start up
- Comprehensive trip diagnostics
- High start torque 180%/0Hz at FVC
- Automatic torque boost
- Slip compensation
- Flexible programmable I/O connection
- Output frequency 0~300Hz
- In-built dynamic braking unit

Model Information

Model No.	Motor		Rated Input Current (A)	Rated Output Current (A)	Remarks
	Voltage(V)	Power(kW)			
HV580L-004G3	380	4	10.5	8.5	
HV580L-5R5G3	380	5.5	15.5	13	
HV580L-7R5G3	380	7.5	21	16	
HV580L-011G3	380	11	27.6	25	
HV580L-015G3	380	15	37.1	32	

Recommended Brake Resistor-DBR

Drive Model		HV580L-004G3	HV580L-5R5G3	HV580L-7R5G3	HV580L-011G3	HV580L-015G3
DBR	Recommended Power(W)	750	1200	1500	2500	3000
	Recommended Resistance(Ω)	≥130	≥90	≥65	≥43	≥32

HV580L Elevator Inverter Technical Instruction

Motor Auto-Tune:

1. Ensure the UVW connection between inverter and motor is not cutoff by output contactor, If it is cut off, then manually enable output contactor, keep **P0-02 = 0** to select the Keypad control.
2. Set **P1-37=3**, press **SETUP**, then display on keypad will show **TUNE**.
3. Press the key **TUNE** on the panel, motor starts auto-tuning, auto-tune process will takes about 30 seconds to complete, **TUNE** will disappear when auto-tuning process is completed;
4. Set **P2-02=1** to select the terminal mode function.

Select Control Mode:

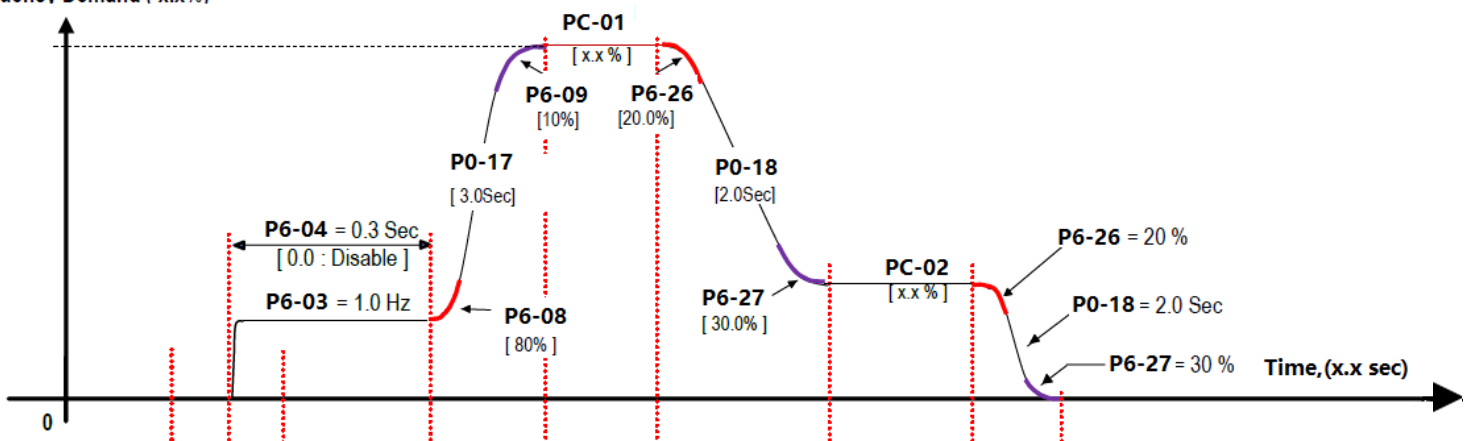
1. Set **P0-01=2** [0:SVC control, 2:VF control]

Default Parameter (Reset):

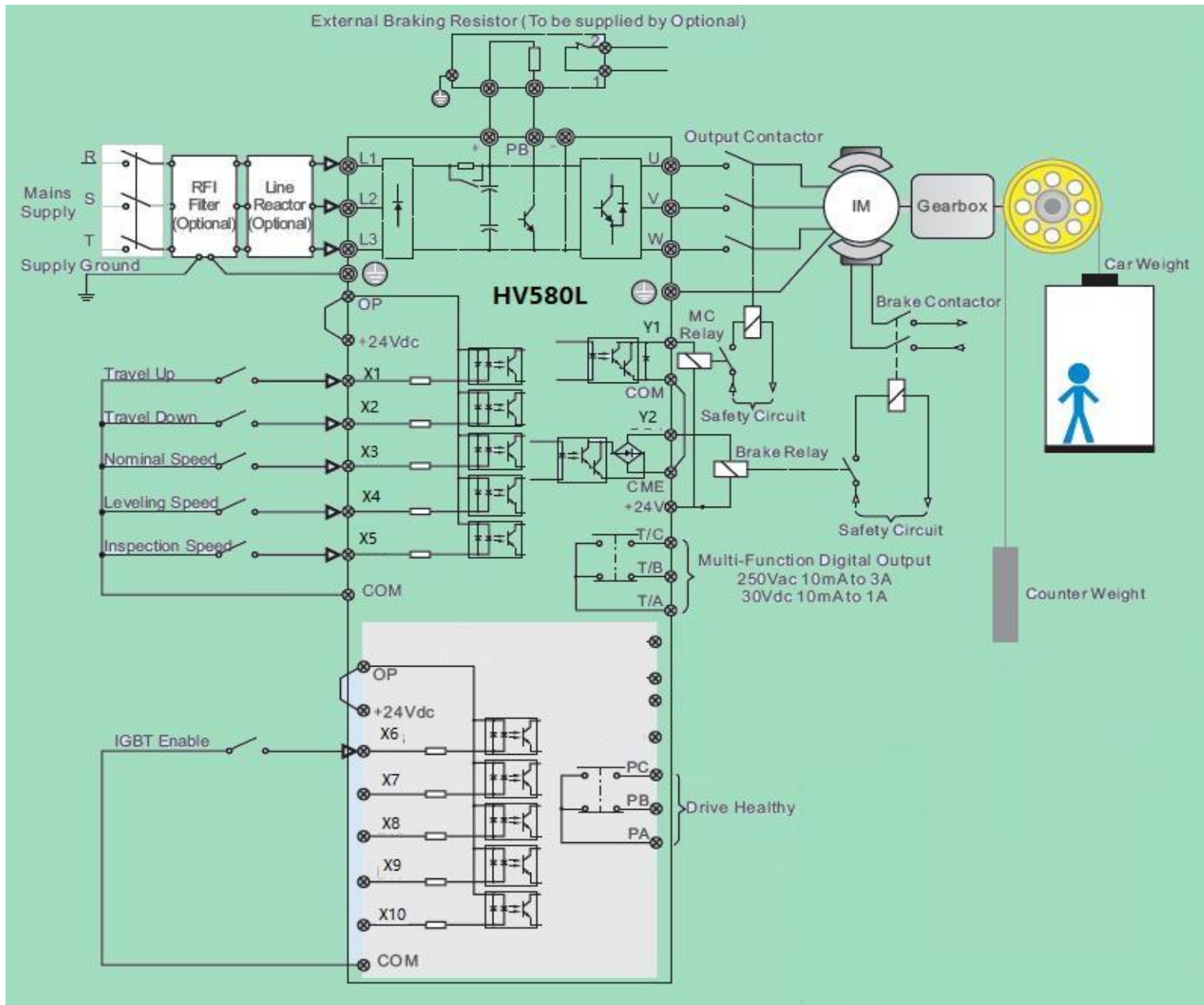
PP-01=1, Press **ENTER**

Timing Table:

Frequency Demand (x.x%)



General Wiring Diagram:



Elevator Performance Tuning:

Stage	Symptom	Diagnostics	Remedies
Setting	Rollback	Brake device releases too early	Increase P8-57 , ranging 0 to 0.5s *Applicable only if Drive Controls M/C Brake
		Start frequency is too low	Increase P6-03 , ranging 0 to 1.5Hz
		Torque output is insufficient	Ensure P3-00=0, P3-01=0
	Jerk	Brake device releases too late	Decrease P8-57 , ranging 0 to 0.5s *Applicable only if Drive Controls M/C Brake
Start frequency is too high		Decrease P6-03 , ranging 0 to 1.5Hz	

Acceleration	Jerk when acceleration starts	accel rate too fast	Increase P6-08,ranging 0 to 80% Or increase P0-17,ranging 0 to 20s
	Jerk when acceleration ends	accel rate too fast	Increase P6-09,ranging 0 to (95-(P6-08))% Or increase P0-17,ranging 0 to 20s
	Overshoot when acceleration ends	Speed loop PI over gain	Decrease P2-03,ranging 0 to 100 Or increase P2-04,ranging 0 to 10
	Vibration	Current loop PI over gain	Make sure P2-05-P2-02>3Hz,usually increase P2-05,ranging from P2-02 to 7Hz
Overcurrent stall prevention occurs		Ensure P3-18=170%	
Nominal	Vibration	Speed loop PI over gain	Decrease P2-00 or P2-03,ranging 0 to 100,or increase P2-04 or P2-04,ranging 0.01 to 10.00
		Current loop PI over gain	Double check the motor parameters and then perform motor auto-tuning once more
Deceleration	Jerk when deceleration starts	Deceleration rate too fast	Increase P6-26,ranging 0 to 80% Or increase P0-18,ranging 0 to 20%
	Vibration	Overcurrent stall prevention occurs	make sure P3-18=170%
	Jerk when deceleration ends	Deceleration rate too fast	Increase P6-27,ranging 0 to 80%, Or increase P0-18,ranging 0 to 20s
Creeping	Vibration	Insufficient torque output	Ensure P3-00=0, P3-01=0
	Elevator at half	Insufficient torque output	Ensure P3-00=0, P3-01=0
	Speed derivation	Insufficient torque output	Ensure P3-00=0, P3-01=0
		Adjust creeping speed	Increase P4-16,ranging 0 to 100% Or decrease relevant multi-reference
Stopping	Jerk	Deceleration rate too fast	Increase P6-27,ranging 0 to 80% Increase P0-18,ranging 0 to 20s Use second deceleration time P8-04;First,set P8-04 bigger than P0-18,ranging P0-18 to 20s;then set P8-26=creeping sepeed
		Braking device applies too early	Make sure P8-58=0.5Hz,then increase P8-59,ranging 0 to 0.5s
		DC injection overgain	Decrease P6-13,ranging 0 to 100%
	Slip	DC injection gain time too short	Increase P6-14,ranging 0 to 1s
		DC injection gain steppoint too low	Increase P6-13,ranging 0 to 100%
		Brake apply delay too long	Ensure P8-58=0.5Hz,then decrease P8-59,ranging 0 to 0.5s
	Inaccurate leveling position	Deceleration rate too long/short	1. If P8-04 is not applied, then decrease P0-18,ranging 0 to 20s 2. If P8-04 is applied, then firstly decrease/increase P8-04; secondly set P8-26=creeping speed 3. If P0-01=2, increase P3-09=Slip compensation gain (0~ 200%) 4. if P0-01=0,increase/decrease P2-06=Vector slip gain(50~ 200%)
Slip occurs		Check mechanical	

Function	Parameter	Remarks
Group P1:Motor Parameter		
Rated Power	P1-01=	KW
Rated Voltage	P1-02=	V
Rated Current	P1-03=	A
Rated Frequency	P1-04=	HZ
Rated Speed	P1-05=	RPM
Group P4:Input Terminal Parameter		
DI1 Input function	P4-00=1	1- Forward(Up)
DI2 Input function	P4-01=2	2-Reverse(Down)
DI3 Input function	P4-02=12	12-Multi Ref Ter 1
DI4 Input function	P4-03=13	13-Multi Ref Ter 2
DI5 Input function	P4-04=13	14-Multi Ref Ter 3
AI 1 Min Input	P4-13=0	0 VDC
AI 1 Max Input	P4-15=5	5 VDC
Group P5:Output Terminal Parameter		
FM terminal o/p state	P5-00=1	
FM output Function	P5-01=43	0: No output
Relay function (T/A-T/B-T/C)	P5-02=43	2: Fault output 42:Brake output
Extension Card Relay (P/A-P/B-P/C)	P5-03=42	43:MCC output
DO1 output Function	P5-04=42	
Group P7:Software Version		
Functional Software	P7-10=	
Performance Software	P7-11=	
DSP Version	P7-16=	
Group P9:Fault&Protection Function		
Fault Auto Reset	P9-09=0	
Fault auto Reset time interval	P9-10=1.0	Sec
Output phase loss	P9-13=2	0:Disable 1:Enable on running 2:Enable on start&run
First Fault Type	P9-14	
Second Fault Type	P9-15	
Third Fault Type	P9-16	

Group PC: Multi Reference Speed Function

Reference 0	PC-00=10%	5Hz
Reference 1	PC-01=100%	50Hz
Reference 2	PC-02=11%	5.5Hz
Reference 3	PC-03=12%	6Hz
Reference 4	PC-04=40%	20Hz
Reference 5	PC-05=13%	6.5Hz
Reference 6	PC-06=14%	7Hz

X3	X4	X5	Multi Refer Speed Selection
OFF	OFF	OFF	Reference 0
ON	OFF	OFF	Reference 1
OFF	ON	OFF	Reference 2
ON	ON	OFF	Reference 3
OFF	OFF	ON	Reference 4
ON	OFF	ON	Reference 5
OFF	ON	ON	Reference 6

Group PP: Function Code Management

User Password	PP-00	0-65535
Parameter Initialization	PP-01	0: No operation 01:Restore factory settings except motor parameters 02: Clear records