

L510

Compact V/F Control Drive



L510 Series Compact V/F Control Drive



Received prestigious Taiwan Excellence Award 2011 for outstanding design and unique features.



MAIN FEATURES

- 32 bit CPU design provides high performance, faster A/D conversion and torque compensation.
- Output frequency up to 650Hz.
- Built-in Modbus RS485 communication for one to one and one to many control.
- Communication interface modules for Profibus/ DeviceNet/ Ethernet(TCP/IP)/ CANopen.
- Built-in digital display and keypad including speed adjustment potentiometer.
- RJ45 interface for PC and copy module.
- Built-in EMI filter. For interference suppression in compliance with (IEC) EN61800-3.
- Compact space saving design for side by side installation. Plus optional Din rail mounting kit.
- Cooling without fan design for frame 1. Effectively lower the probability of unknown objects entering and prolong the product life.
- PID functionality
- Auto run. 7 programmable sequences (single cycle or repeated cycles)
- Auto Carrier frequency change to limit inverter over temperature.
- Full protective functions.

Power Rating	0.2kW 0.25HP	0.4kW 0.5HP	0.75kW 1HP	1.5kW 2HP	2.2kW 3HP
L510	100V 1-phase				
	200V 1-phase				
	200V 3-phase				
				400V 3-phase	

BASIC SPECIFICATIONS



Model	100V Class: Single-phase		
	L510-□□□-H1-N □*		
	1P2	1P5	101
Horse Power (HP)	0.25	0.5	1
Suitable Motor Capacity (KW)	0.2	0.4	0.75
Rated Output Current (A)	1.8	2.6	4.3
Rated Capacity (KVA)	0.68	1.00	1.65
Input Voltage Range(V)	Single-phase 100~120V,50/60HZ		
Allowable Voltage Fluctuation	-15%~+10%		
Output Voltage Range(V)	Three-phase 0~240V		
Input Current (A)	9.5	13	19
Allowable Momentary Power Loss Time (Sec.)	1.0		1.0
Enclosure	IP20		
Frame Size	1		2

Model	200V Class: Single-phase				
	L510-□□□-H1-N □*				
	L510-□□□-H1F-P □*				
	2P2	2P5	201	202	203
Horse Power (HP)	0.25	0.5	1	2	3
Suitable Motor Capacity (KW)	0.2	0.4	0.75	1.5	2.2
Rated Output Current (A)	1.8	2.6	4.3	7.5	10.5
Rated Capacity (KVA)	0.68	1.00	1.65	2.90	4.00
Input Voltage Range(V)	Single-phase 200~240V,50/60HZ				
Allowable Voltage Fluctuation	-15%~+10%				
Output Voltage Range(V)	Three-phase 0~240V				
Input Current (A)	4.9	7.2	11	15.5	21
Allowable Momentary Power Loss Time (Sec.)	1.0			2.0	
Enclosure	IP20				
Frame Size	1			2	

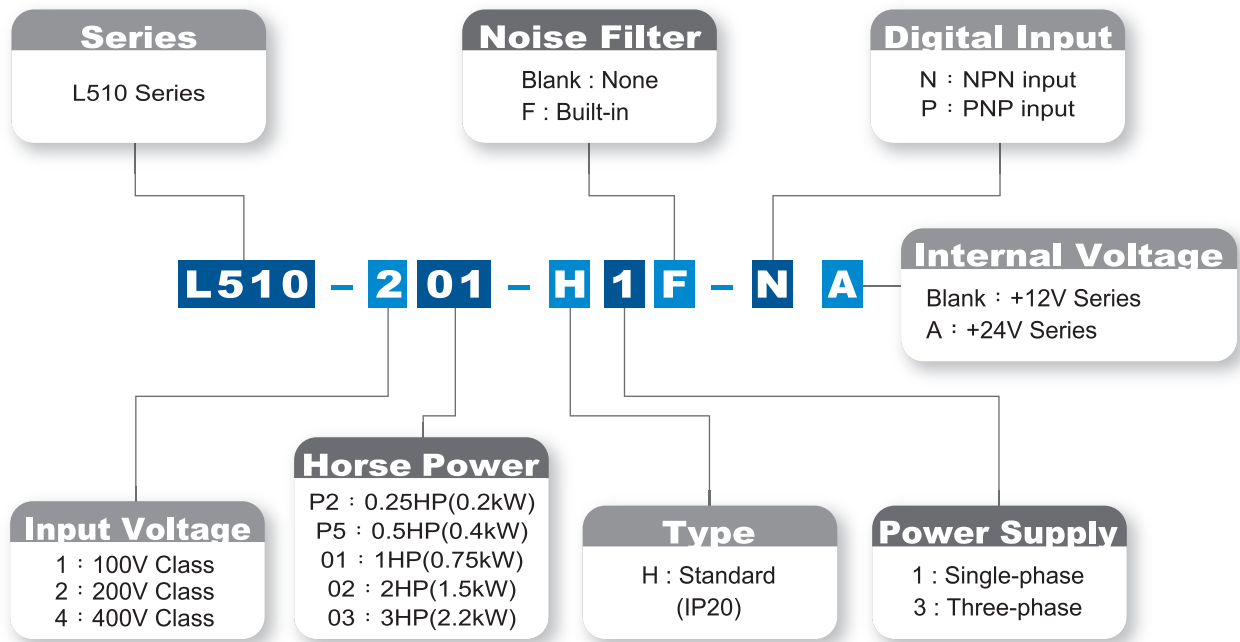
Model	200V Class: Three-phase				
	L510-□□□-H3-N □*				
	2P2	2P5	201	202	203
Horse Power (HP)	0.25	0.5	1	2	3
Suitable Motor Capacity (KW)	0.2	0.4	0.75	1.5	2.2
Rated Output Current (A)	1.8	2.6	4.3	7.5	10.5
Rated Capacity (KVA)	0.68	1.00	1.65	2.90	4.00
Input Voltage Range(V)	Three-phase 200~240V,50/60HZ				
Allowable Voltage Fluctuation	-15%~+10%				
Output Voltage Range(V)	Three-phase 0~240V				
Input Current (A)	3.0	4.0	6.4	9.4	12.2
Allowable Momentary Power Loss Time (Sec.)	1.0			2.0	
Enclosure	IP20				
Frame Size	1			2	

*If the model is marked A, it means that it is built-in the power supply of 24V; if not, then it is built-in the power supply of 12V.

Model	400V Class: Three-phase		
	L510-□□□-H3-N A*		
	L510-□□□-H3F-P A*		
	401	402	403
Horse Power (HP)	1	2	3
Suitable Motor Capacity (KW)	0.75	1.5	2.2
Rated Output Current (A)	2.3	3.8	5.2
Rated Capacity (KVA)	1.7	2.9	4.0
Input Voltage Range(V)	Three-phase 380~480V,50/60HZ		
Allowable Voltage Fluctuation	-15%~+10%		
Output Voltage Range(V)	Three-phase 0~480V		
Input Current (A)	4.2	5.6	7.3
Allowable Momentary Power Loss Time (Sec.)	2.0	2.0	2.0
Enclosure	IP20		
Frame Size	2		

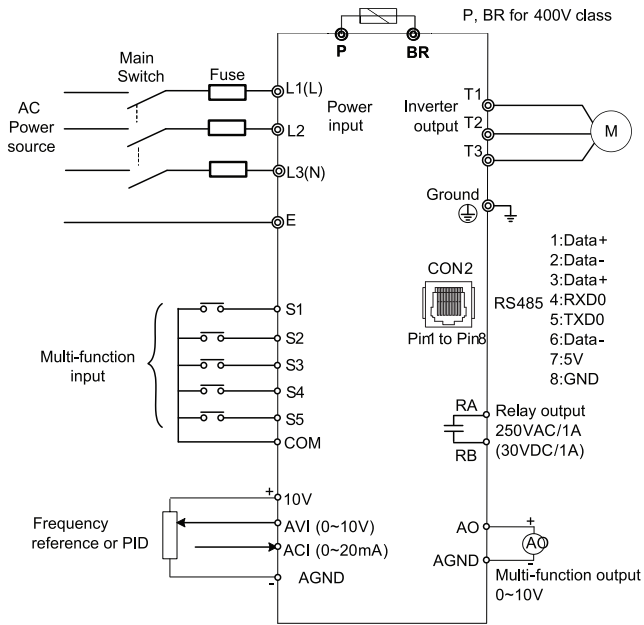
*Models of 400V machines are all marked A, built-in the power supply of 24V.

MODEL IDENTIFICATION

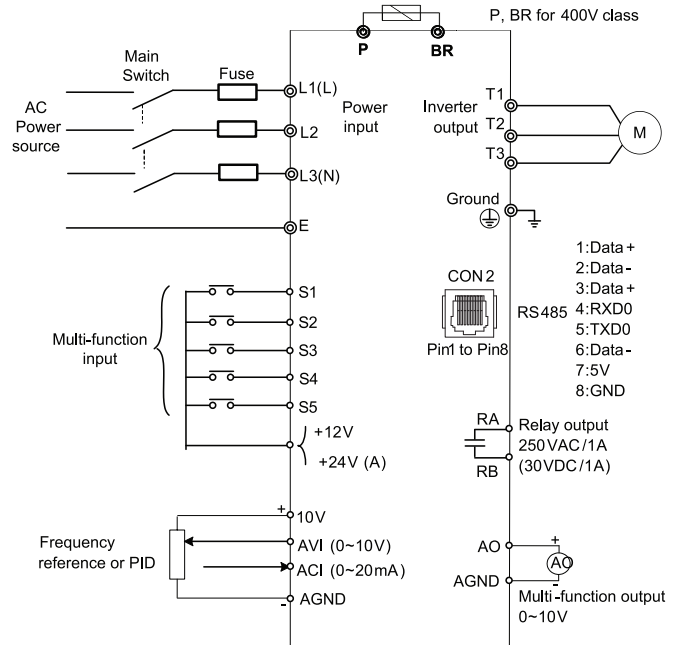


WIRING DIAGRAM

▪ NPN Input



▪ PNP Input



Wiring (AC Input)	Model	Power Input Terminal
NPN	100V / 200V (Single-Phase)	L1 (L) ; L3 (N)
	200V (Three-Phase)	L1(L) ; L2 ; L3 (N)
	400V (Three-Phase)	L1 ; L2 ; L3
PNP	200V (Single-Phase)	L1 (L) ; L3 (N)
	400V (Three-Phase)	L1 ; L2 ; L3

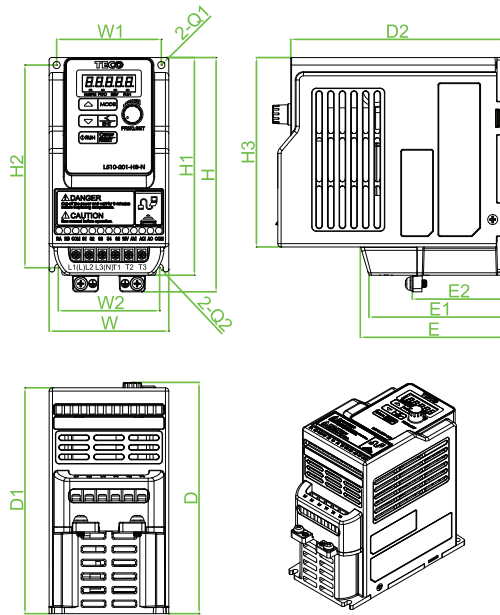
GENERAL SPECIFICATIONS



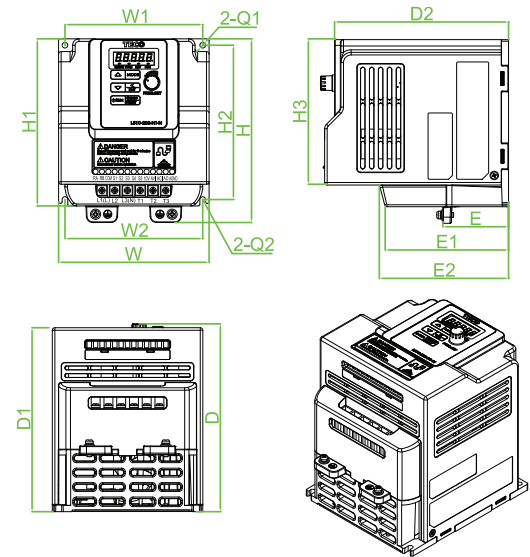
Item		L510													
Control Mode		V/F control + Torque compensation function													
Frequency	Range	0.01~650.00Hz													
	Setting resolution	Digital input : 0.01Hz Analog input : 0.06Hz/60Hz													
	Setting	Keypad : Set directly with ▲ ▼ keys or the VR on the keypad External terminal: AVI(0-10V/2-10V),ACI(0-20mA/4-20mA) input Up/down function by multifunction inputs and also by communication method													
	Frequency limit	Lower & Upper frequency limits and 3 Skip frequencies													
Run	Operation Set	Panel : run, stop button control External terminal : Multi-operation-mode2 / 3 wire selection / Jog operation Communication operation													
	Main Control functions & Features	<table border="1"> <tr> <td>V/F Curve Setting</td> <td>6 fixed curves and one customized curve</td> </tr> <tr> <td>Carrier Frequency</td> <td>1-16KHz(default 5KHz)</td> </tr> <tr> <td>Acceleration and deceleration control</td> <td>2 sections of acceleration/ deceleration time setting (0.1~3600.0 Sec.) 4 sections of S curve setting</td> </tr> <tr> <td>Multifunction Input</td> <td>19 functions</td> </tr> <tr> <td>Multifunction output</td> <td>14 functions</td> </tr> <tr> <td>Multifunction Analog Output</td> <td>5 functions</td> </tr> <tr> <td>Other features</td> <td>Overload detection, 8 preset speeds, auto-run, two Acc/Dec presets, Main/Alt run and frequency selections, PID control, Torque boost, V/F start frequency and fault reset</td> </tr> </table>	V/F Curve Setting	6 fixed curves and one customized curve	Carrier Frequency	1-16KHz(default 5KHz)	Acceleration and deceleration control	2 sections of acceleration/ deceleration time setting (0.1~3600.0 Sec.) 4 sections of S curve setting	Multifunction Input	19 functions	Multifunction output	14 functions	Multifunction Analog Output	5 functions	Other features
V/F Curve Setting	6 fixed curves and one customized curve														
Carrier Frequency	1-16KHz(default 5KHz)														
Acceleration and deceleration control	2 sections of acceleration/ deceleration time setting (0.1~3600.0 Sec.) 4 sections of S curve setting														
Multifunction Input	19 functions														
Multifunction output	14 functions														
Multifunction Analog Output	5 functions														
Other features	Overload detection, 8 preset speeds, auto-run, two Acc/Dec presets, Main/Alt run and frequency selections, PID control, Torque boost, V/F start frequency and fault reset														
Display	LED	Display: parameter, parameter value, frequency, line speed, DC voltage, output voltage, output current, PID feedback, input and output terminal status, Heat sink temperature, Program Version, Fault Log													
	Status Indicator	HZ/RPM, Forward/Reverse & FUN (function display)													
Protective Functions	Overload Protection	Integrated motor overload protection													
	Over Voltage	100/200V class: > 410V, 400V class: > 820V													
	Under Voltage	100/200V class: < 190V, 400V class: < 380V													
	Momentary Power Loss Restart	Restart in a short time once running into momentarily power loss													
	Stall Prevention	Stall prevention for Acceleration/ Deceleration and also during Continuous run													
	Short-circuit output terminal	Electronic Circuit Protection													
	Grounding Fault	Electronic Circuit Protection													
	Other protection features	Heat sink over temperature, Auto carrier frequency reduction due to temperature, Fault output, Reverse disable, Direct start on power up disable, Parameter access lock													
Communication Control		Built-in RS485 Modbus, One to one or One to many control													
Environment	Operating Temperature	-10~40°C(-10~50°C with fan)													
	Storage temperature	-20~60°C													
	Humidity	95% RH or less (no condensation)													
	Shock	1.0G, in compliance with IEC 60068-2-6													
	Enclosure	IP20													

DIMENSIONS

Frame1



Frame2



Unit: mm (inch)

Frame 1	W	W1	W2	H	H1	H2	H3	D	D1	D2	E	E1	E2	Q1	Q2
L510-1P2-H1 <input type="checkbox"/>															
L510-1P5-H1 <input type="checkbox"/>															
L510-2P2-H1(F) <input type="checkbox"/>															
L510-2P5-H1(F) <input type="checkbox"/>	72	63	61	141	131	122	114	139.2	136	128.2	86.3	81.1	55	4.3	2.2
L510-201-H1(F) <input type="checkbox"/>	(2.83)	(2.48)	(2.40)	(5.55)	(5.16)	(4.80)	(4.49)	(5.48)	(5.35)	(5.05)	(3.40)	(3.19)	(2.17)	(0.17)	(0.086)
L510-2P2-H3 <input type="checkbox"/>															
L510-2P5-H3 <input type="checkbox"/>															
L510-201-H3 <input type="checkbox"/>															

Frame 2	W	W1	W2	H	H1	H2	H3	D	D1	D2	E	E1	E2	Q1	Q2
L510-101-H1 <input type="checkbox"/>															
L510-202-H1(F) <input type="checkbox"/>															
L510-203-H1(F) <input type="checkbox"/>															
L510-202-H3 <input type="checkbox"/>	118	108	108	144	131	121	114	147.3	144.2	136.4	101.3	96.7	51.5	4.3	2.2
L510-203-H3 <input type="checkbox"/>	(4.65)	(4.25)	(4.25)	(5.67)	(5.16)	(4.76)	(4.49)	(5.80)	(5.68)	(5.37)	(3.99)	(3.81)	(2.03)	(0.17)	(0.086)
L510-401-H3(F) A															
L510-402-H3(F) A															
L510-403-H3(F) A															

Note:

1. F : Built-in noise filter.
2. The dimension of NPN and PNP types are the same.

TYPICAL APPLICATIONS

- ◆ Fans & Pumps
- ◆ Conveyers
- ◆ Package Machines
- ◆ Textile Machines
- ◆ Automatic Door Control
- ◆ Feeder Machines
- ◆ Winding Machines
- ◆ PCB Automation



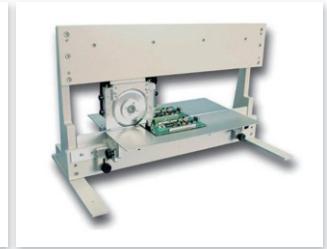
Package Machines



Conveyers



Automatic door control



PCB Automation

ACCESSORIES

Copy Unit (JN5-CU)

- ※ Duplicating parameters setting in one Inverter to another Inverter.
- ※ As a remote keypad to be used.
- ※ Using RJ45 line to connect inverter.



RJ45 to USB (JN5-CM-USB)

- ※ Using the TECO exclusive PC-software line.





Distributor



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Specifications covered in this brochure may be subject to change without notice.

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