TECO



L510

Compact V/F Control Drive

TAIWAN EXCELLENCE 2011

L510 Series
Compact V/F Control Drive

TAIWAN EXCELLENCE 2011

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	

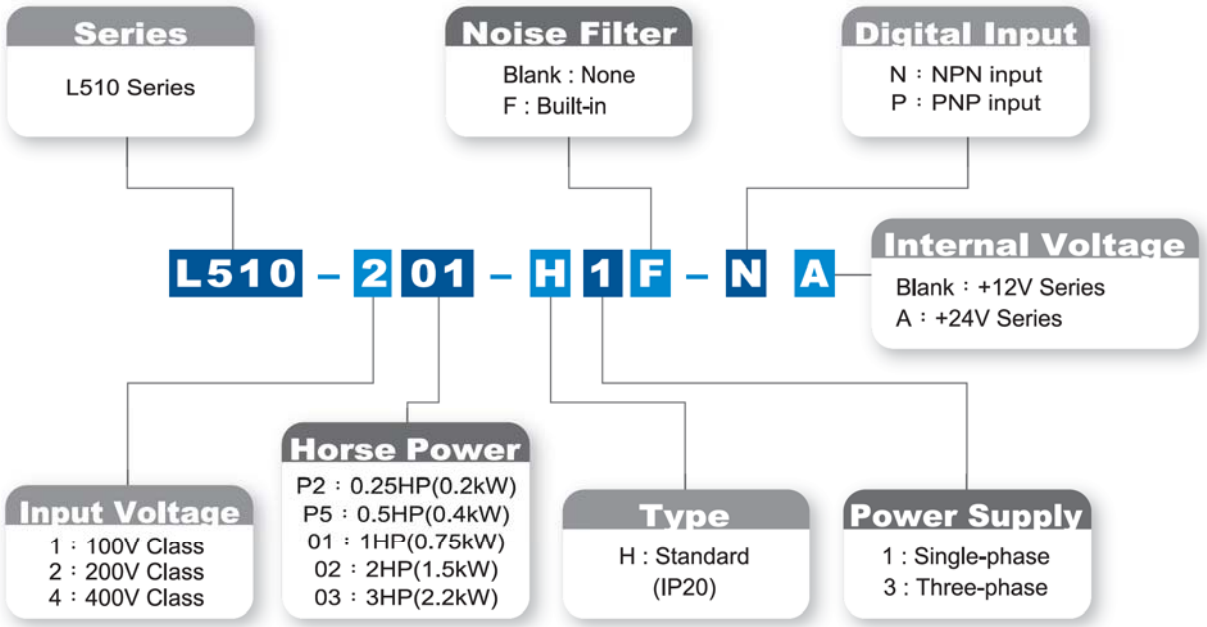
Model	200V Class: Three-phase L510-□□□-H3-N □*				
	2P2	2P5	201	202	203
Horse Power (HP)	0.25	0.5	1	2	3
Suitable Motor Capacity (KW)	0.2	0.4	0.75	1.5	2.2
Rated Output Current (A)	1.8	2.6	4.3	7.5	10.5
Rated Capacity (KVA)	0.68	1.00	1.65	2.90	4.00
Input Voltage Range(V)	Three-phase 200~240V,50/60HZ				
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		

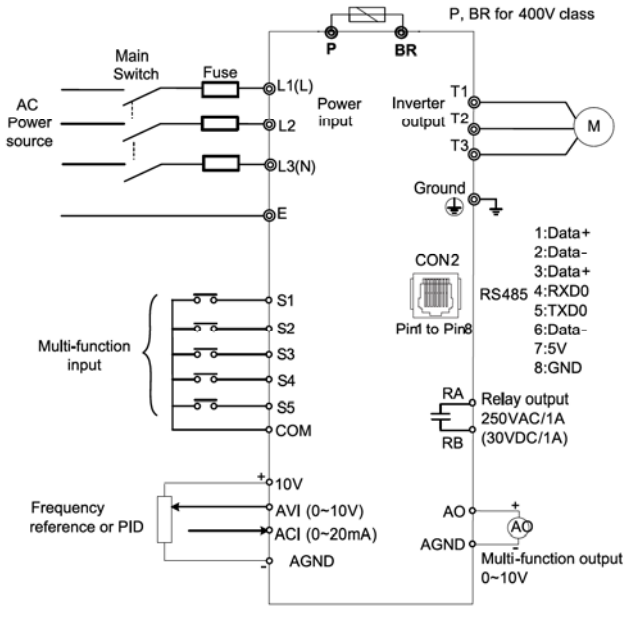
*Models of 400V machines are all marked A, built-in the power supply of 24V.

MODEL IDENTIFICATION

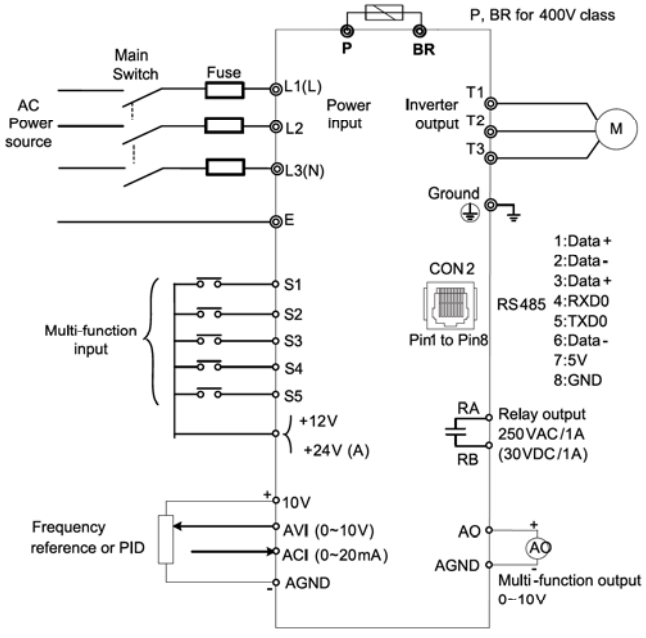


WIRING DIAGRAM

▪ NPN Input



▪ PNP Input



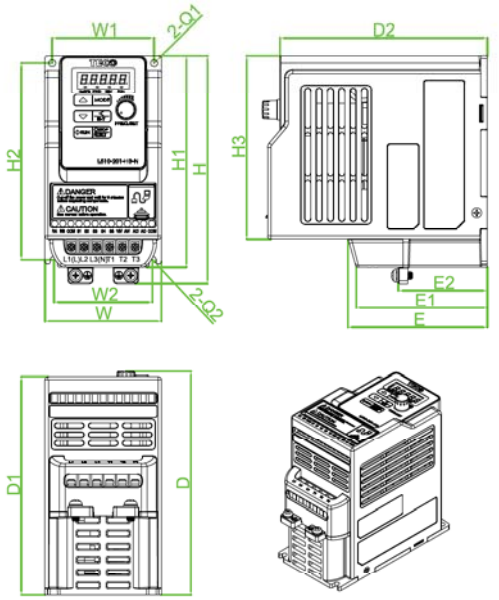
Wiring (AC Input)	Model	Power Input Terminal
NPN	100V / 200V (Single-Phase)	L1 (L) ; L3 (N)
	200V (Three-Phase)	L1(L) ; L2 ; L3 (N)
	400V (Three-Phase)	L1 ; L2 ; L3
PNP	200V (Single-Phase)	L1 (L) ; L3 (N)
	400V (Three-Phase)	L1 ; L2 ; L3

GENERAL SPECIFICATIONS

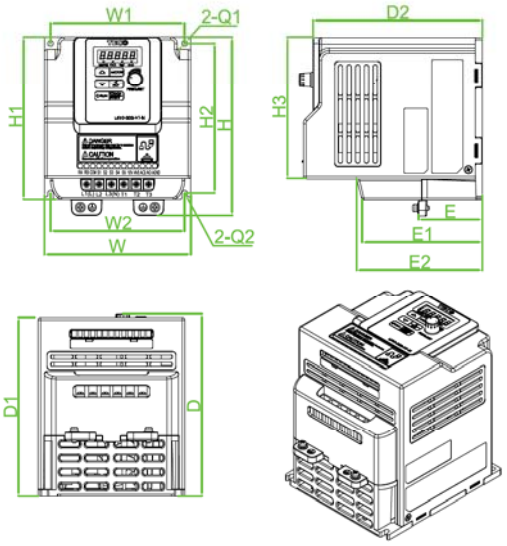
Item		L510
Control Mode		V/F control + Torque compensation function
Frequency	Range	0.01～650.00Hz
	Setting resolution	Digital input : 0.01Hz Analog input : 0.06Hz/60Hz
	Setting	Keypad : Set directly with▲▼ keys or the VR on the keypad External terminal: AVI(0-10V/2-10V),ACI(0-20mA/4-20mA) input Up/down 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	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 □	72 (2.83)	63 (2.48)	61 (2.40)	141 (5.55)	131 (5.16)	122 (4.80)	114 (4.49)	139.2 (5.48)	136 (5.35)	128.2 (5.05)	86.3 (3.40)	81.1 (3.19)	55 (2.17)	4.3 (0.17)	2.2 (0.086)
L510-1P5-H1 □															
L510-2P2-H1(F) □															
L510-2P5-H1(F) □															
L510-201-H1(F) □															
L510-2P2-H3 □															
L510-2P5-H3 □															
L510-201-H3 □															

Frame 2	W	W1	W2	H	H1	H2	H3	D	D1	D2	E	E1	E2	Q1	Q2
L510-101-H1 □	118 (4.65)	108 (4.25)	108 (4.25)	144 (5.67)	131 (5.16)	121 (4.76)	114 (4.49)	147.3 (5.80)	144.2 (5.68)	136.4 (5.37)	101.3 (3.99)	96.7 (3.81)	51.5 (2.03)	4.3 (0.17)	2.2 (0.086)
L510-202-H1(F) □															
L510-203-H1(F) □															
L510-202-H3 □															
L510-203-H3 □															
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.