



Distributor

TECO
TECO ELECTRIC & MACHINERY CO., LTD.

10F, No. 3-1, Park St., Nan-Kang, Taipei 115, Taiwan
TEL : 886-2-6615-9111Ext.1725 FAX : 886-2-6615-1033
<http://globalsa.teco.com.tw>

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



GJ-82-01 2016-03-15



L510s

Compact V/F & SLV control Drive



L510s Series

Compact V/F & SLV control Drive



MAIN FEATURES

- Output frequency up to 599Hz
- Built-in Modbus RS485 communication for one to one and one to many control
- Built-in digital display and keypad including speed adjustment potentiometer
- RJ45 interface for PC and copy module
- Compact space saving design for side by side installation. Plus optional Din rail mounting kit
- Built-in PID feedback control
- Rapid stop function built-in complying with global standard
- Earthing terminals built-in into heat sink to effectively provide grounding protection
- Flip form communication interface for easy link and dust-proof feature, with operational and protective functions
- Auto Carrier frequency change to limit inverter over temperature
- Frame1 with fanless design can effectively objects entry to extends product life
- NEW** Higher reliability and environment immunity with coated PCB
- NEW** 32 bit **100M** Hz CPU design provides high performance, faster A/D conversion and torque compensation
- NEW** Control mode include V/F and **SLV**
- NEW** Communication interface modules for Profibus/ DeviceNet/ Ethernet(TCP/IP)/ CANopen
- NEW** **New Built-in BACnet communication function**
- NEW** Built-in EMI filter. For interference suppression in compliance with (IEC) EN61800-3 and (IEC)EN 61800-5-1 standard.
- NEW** **L510s connects grounding kit (option) to enhance the EMC effect**
- NEW** **Motor over-temperature protective function to protect motor (fulfilled by PTC)**

* Red words represent new function for L510s

Power Rating	0.2kW 0.25HP	0.4kW 0.5HP	0.75kW 1HP	1.5kW 2HP	2.2kW 3HP	3.7kW 5HP	5.5kW 8HP	7.5kW 10HP	11kW 15HP
L510s	100V 1 phase								
	200V 1 phase								
	200V 3 phase								
			400V 3 phase						

* Red color represent new range in power rating for L510s

BASIC SPECIFICATIONS

100V Class : Single phase

Model : L510-□□□-SH1-N/P	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)	0.7	1.0	1.7
Input voltage range(V)	Single Phase : 100~120V(+10%-15%),50/60HZ		
Output voltage range(V)	Three phase 0~240V		
Input current (A)*	9.5	13	19
weight(kG)	0.9	0.9	1.4
Allowable momentary power loss time (S)	1.0	1.0	1.0
Enclosure	IP20		

200V Class : Single phase. F : Standards for built-in filter

Model : L510-□□□-SH1-N/P (L510-□□□-SH1F-P)	2P2	2P5	2P7	201	202	203
Horse power (HP)	0.25	0.5	0.75	1	2	3
Suitable motor capacity (kW)	0.2	0.4	0.55	0.75	1.5	2.2
Rated output current (A)	1.8	2.6	3.4	4.3	7.5	10.5
Rated capacity (kVA)	0.7	1.0	1.3	1.7	3.0	4.0
Input voltage range(V)	Single Phase : 200~240V(+10%-15%),50/60HZ					
Output voltage range(V)	Three phase 0~240V					
Input current (A)*	4.9	7.2	9	11	15.5	21
weight(kG)	0.9	0.9	0.9	0.9	1.4	1.4
weight with filter(kG)	1.0	1.0	1.0	1.0	1.5	1.5
Allowable momentary power loss time (S)	1.0	1.0	1.0	1.0	2.0	2.0
Enclosure	IP20					

200V Class : Three phase

Model : L510-□□□-SH3-N/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)	0.7	1.0	1.7	3.0	4.0
Input voltage range(V)	Three phase : 200~240V(+10%-15%),50/60HZ				
Output voltage range(V)	Three phase 0~240V				
Input current (A)*	3.0	4.0	6.4	9.4	12.2
weight(kG)	0.9	0.9	0.9	1.4	1.4
Allowable momentary power loss time (S)	1.0	1.0	1.0	2.0	2.0
Enclosure	IP20				

Model : L510-□□□-SH3	205	208	210
Horse power (HP)	5	7.5	10
Suitable motor capacity (kW)	3.7	5.5	7.5
Rated output current (A)	17.5	26	35
Rated capacity (kVA)	6.7	9.9	13.3
Input voltage range(V)	Three phase : 200~240V (+10%-15%),50/60HZ		
Output voltage range(V)	Three phase 0~240V		
Input current (A)*	19.3	28.6	38.5
weight(kG)	2.5	6	6
Allowable momentary power loss time (S)	2.0	2.0	2.0
Enclosure		IP20	

400V Class : Three phase. F : Standards for built-in filter

Model : L510-□□□-SH3-N/P (L510-□□□-SH3F-P)	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 (+10%-15%),50/60HZ		
Output voltage range(V)	Three phase 0~480V		
Input current (A)*	4.2	5.6	7.3
weight(kG)	1.4	1.4	1.4
weight with filter(kG)	1.5	1.5	1.5
Allowable momentary power loss time (S)	2.0	2.0	2.0
Enclosure	IP20		

Model : L510-□□□-SH3 (L510-□□□-SH3F)	405	408	410	415
Horse power (HP)	5	7.5	10	15
Suitable motor capacity (kW)	3.7	5.5	7.5	11
Rated output current (A)	9.2	13.0	17.5	24
Rated capacity (kVA)	7.0	9.9	13.3	18.3
Input voltage range(V)	Three Phase :380~480V (+10%-15%),50/60HZ			
Output voltage range(V)	Three Phase 0~480V			
Input current (A)*	10.1	14.3	19.3	26.4
weight(kG)	2.5	2.5	6	6
weight with filter(kG)	2.7	2.7	6.3	6.3
Allowable momentary power loss time (S)	2.0	2.0	2.0	2.0
Enclosure	IP20			

MODEL IDENTIFICATION

L510 - 1 P2 - S H 1 □ - N

Supply voltage
1 : 100V Class
2 : 200V Class
4 : 400V Class

Horsepower
100V Class
P2 : 0.25HP
P5 : 0.5HP
01 : 1HP
200V Class
P2 : 0.25HP
P5 : 0.5HP
P7 : 0.75HP
01 : 1HP
02 : 2HP
03 : 3HP
05 : 5HP
08 : 7.5HP
10 : 10HP
400V Class
01 : 1HP
02 : 2HP
03 : 3HP
05 : 5HP
08 : 7.5HP
15 : 15HP

P : PNP
N : NPN

Filter
F : Built-in
Blank : None

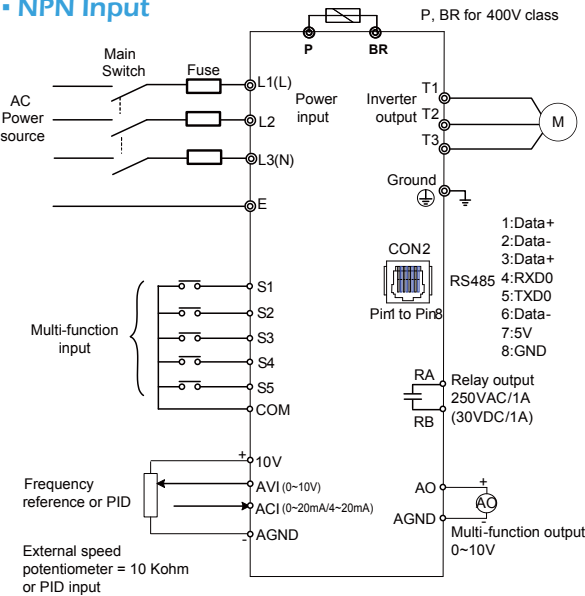
Power supply
1 : Single phase
3 : Three phase

Specification
H : Standard Type

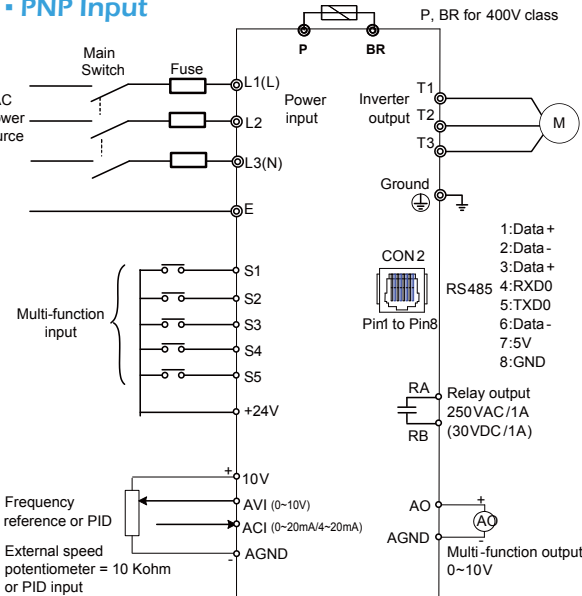
Series Name
S : 510s series

WIRING DIAGRAM

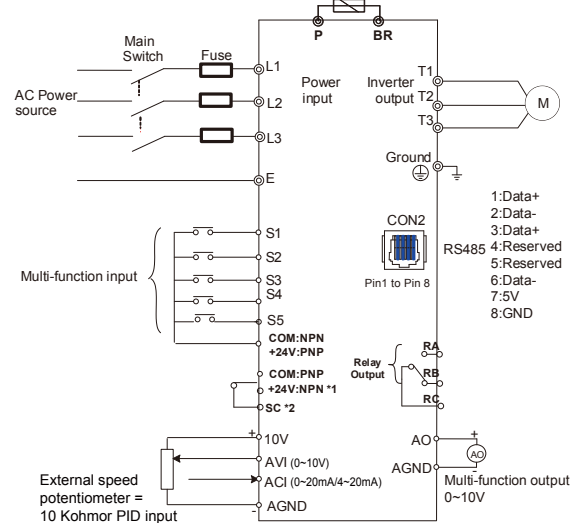
• NPN Input



• PNP Input



• Frame 3 & Frame 4 series



*1:
NPN: 24V connected to SC.
PNP: COM connected to SC.

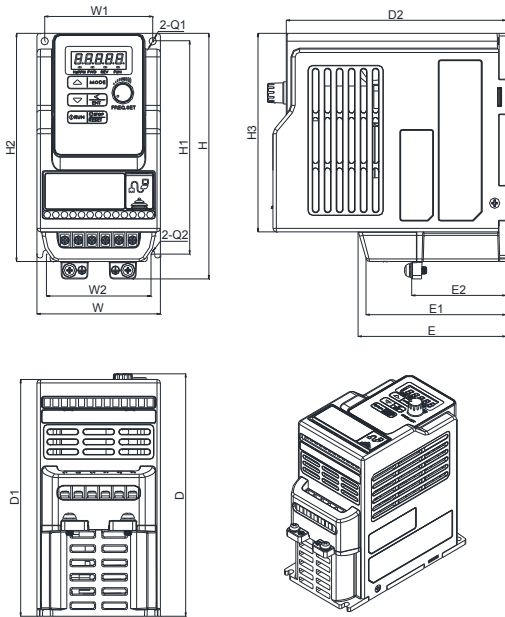
*2:
If SC is not connected, inverter parameter group 03-XX can't be enabled.

GENERAL SPECIFICATIONS

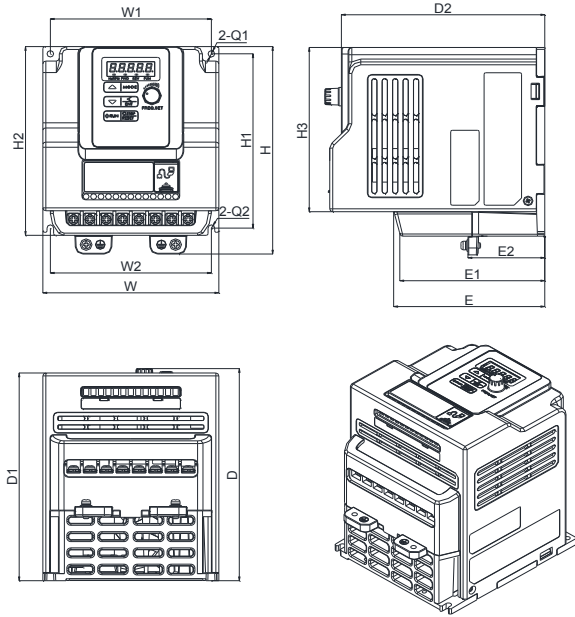
Item	L510s
Control Mode	V/F Control + SLV control
Frequency	Range
	0.01~599.00Hz
	Setting resolution
	Digital input : 0.01Hz
	Analog input : 0.015Hz/60Hz or 0.012Hz/50Hz
Frequency	Setting
	Keypad : Set directly with ▲▼ keys or the VR (Potentiometer) on the keypad
	External Input Terminals: AVI(0/2~10V), ACI(0/4~20mA)input
Run	Frequency limit
	Lower and upper frequency limits
	3-skip frequency settings.
Main Controls	Frequency limit
	Keypad run, stop button
	External terminals:
	Multi-operation-mode 2 / 3 wire selection
	Jog operation
Display	V / F curve setting
	6 fixed curves and one customized curve
	Carrier frequency
	1~16kHz(default 5kHz)
	Acceleration and deceleration control
Protective Functions	2 off Acc / dec time parameters.
	4 off S curve parameters.
	Multifunction input
	19 functions (refer to description on group3)
	5 points, Frame1/2 : NPN&PNP by separate models, Frame 3/4 : NPN&PNP switchable
International Certification	Multifunction output
	16 functions (refer to description on group3)
	Multifunction analog output
	5 functions (refer to description on group4)
	1 point (0~10V)
Communication	Main features
	Overload Detection, 8 preset speeds, Auto-run, Acc/Dec Switch (2 Stages), Main/Alt run Command select, Main/Alt Frequency Command select, PID control, torque boost, V/F start Frequency, Fault reset.
	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.
	LED Status Indicator
Environment	For run/stop/forward and reverse.
	Overload Capacity and maximum current
	150% of rated current under 60 seconds (150%/1min)
	Over voltage
	100V/200V : Over 410V, 400V : Over 820V
Protection level	Under voltage
	100V/200V : Under 190V, 400V : Under 380V
	Momentary Power Loss Restart
	Inverter auto-restart after a momentary power loss.
	Stall Prevention
Additional protective functions	Stall prevention for Acceleration/ Deceleration/ and continuous Run.
	Short-circuit output terminal
	Electronic Circuit Protection
	Grounding Fault
	Electronic Circuit Protection
Operating temperature	heatsink over temperature protection, Auto carrier frequency reduction with temperature rise, fault output, reverse prohibit, Number of auto restart attempts, Parameter lock, motor PTC over-temperature protection, over voltage suppression function.
	CE/UL/cUL/RCM
	RS485 (Modbus) built in, with one to one or one to many control.
	Built-in BACnet communication.
	Profibus, DeviceNet, CANopen, TCP/IP by gateway.
Storage temperature	Operating temperature
	-10~50°C(with fan), -10~40°C(without fan)
	Storage temperature
	-20~60°C
	Humidity
Vibration	Under 95%RH (no condensation)
	Vibration
	2G(19.6m/s²)for 57~150Hz and below. 0.3mm for 10~57Hz (According to IEC60068-2-6 standard)
	EMC Compliance
	EN61800-3, First Environment
LVD Compliance	LVD Compliance
	EN50178
	Electrical Safety
	UL508C
	Protection level
	IP20

DIMENSIONS

Frame1



Frame2



Unit: mm (inch)

Model	dimension														
	W	W1	W2	H	H1	H2	H3	D	D1	D2	E	E1	E2	Q1	Q2
L510-1P2-SH1-N/P															
L510-1P5-SH1-N/P															
L510-2P2-SH1-N/P															
L510-2P5-SH1-N/P															
L510-201-SH1-N/P															
L510-2P2-SH1F-P	72	63	61	141	131	122	114	141	136	128.2	86.3	81.1	55	4.4	2.2
L510-2P5-SH1F-P															
L510-2P7-SH1F-P															
L510-201-SH1F-P															
L510-2P2-SH3-N/P															
L510-2P5-SH3-N/P															
L510-201-SH3-N/P															

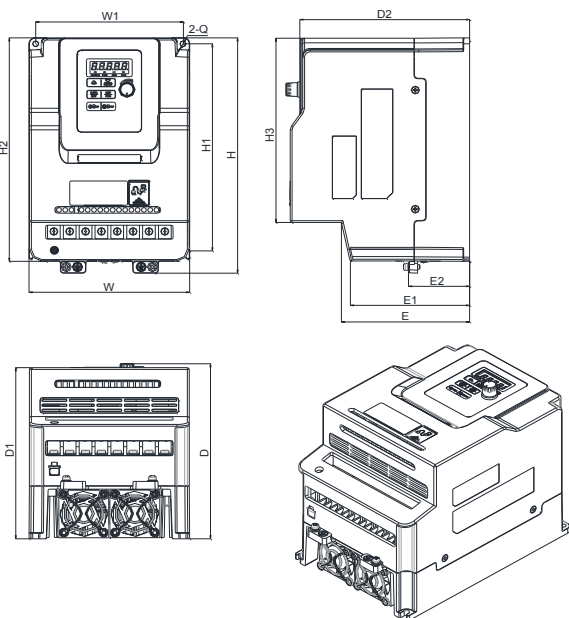
F : Built-in EMC filter

Unit: mm (inch)

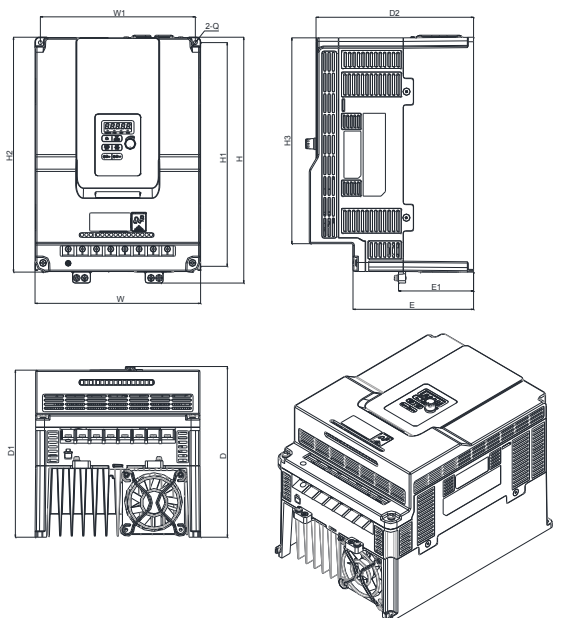
Model	dimension														
	W	W1	W2	H	H1	H2	H3	D	D1	D2	E	E1	E2	Q1	Q2
L510-101-SH1-N/P															
L510-202-SH1-N/P															
L510-203-SH1-N/P															
L510-202-SH1F-P															
L510-203-SH1F-P															
L510-202-SH3-N/P	118	108	108	144	131	121	114	150	144.2	136.4	101.32	96.73	51.5	4.3	2.2
L510-203-SH3-N/P															
L510-401-SH3-N/P															
L510-402-SH3-N/P															
L510-403-SH3-N/P															
L510-401-SH3F-P															
L510-402-SH3F-P															
L510-403-SH3F-P															

F : Built-in EMC filter

Frame3



Frame4



Unit: mm (inch)

Model	dimension														
	W	W1	H	H1	H2	H3	D	D1	D2	E	E1	E2	Q		
L510-205-SH3															
L510-405-SH3															
L510-408-SH3	129	118	197.5	177.6	188	154.7	148	143.7	136	102.6	96	48.2	4.5		
L510-405-SH3F															
L510-408-SH3F															

Unit: mm (inch)

Model	dimension														
	W	W1	H	H1	H2	H3	D	D1	D2	E	E1	Q			
L510-208-SH3															
L510-210-SH3															
L510-410-SH3	187	176	273	249.8	261	228.6	190	185.6	177.9	136	84.7	4.5			
L510-415-SH3															
L510-410-SH3F															
L510-415-SH3F															

TYPICAL APPLICATIONS

- ◆ Fans & Pumps
- ◆ Package Machines
- ◆ Automatic Door Control
- ◆ Winding Machines
- ◆ Conveyers
- ◆ Textile Machines
- ◆ Feeder Machines
- ◆ PCB Automation
- ◆ Small plastic crusher
- ◆ Food & beverage application



Package Machines



Conveyers



Automatic Door Control



PCB Automation

ACCESSORIES

Accessories	Model	Function	Notes
Copy module	JN5-CU	① Duplicating parameters setting in one inverter to another inverter	
		② As a remote keypad to be used	
		③ Using RJ45 line to connect inverter	
Communication modules	JN5-CM-PDP	For connection of Profibus-DP communication protocol	For 510 series
	JN5-CM-TCP/IP	For connection of TCP-IP communication protocol	
	JN5-CM-DNET	For connection of DeviceNet communication protocol	
	JN5-CM-CAN	For connection of CANopen communication protocol	
RJ45 to USB connection cable	JN5-CM-USB	Using the TECO exclusive PC-software line	1.8m
EMC Grounding kit(Frame 1)	JN5-GK-L01	To enhance the EMC ability by enlarging the grounding area	For frame 1
EMC Grounding kit(Frame 2)	JN5-GK-L02		For frame 2
Din rail kit (Frame 1)	JN5-DIN-L01	Used for mounting on the din rail	For frame 1
Din rail kit (Frame 2)	JN5-DIN-L02		For frame 2



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.



EMC Grounding Kit
(for frame 1 & frame 2)



RJ45 to USB (JN5-CM-USB)
※ Using the TECO exclusive PC-software line.