



SERIES

L510s

Compact V/F & SLV control Drive



TECO

distributed by



MOTOVARIO®

HEART OF MOTION

a TECO Group company



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

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. **Built-in BACnet.**

NEW Frame1 with Fanless design can effectively objects entry to extends product life. **Frame3/4 with fan design to enhance the cooling ability.**

NEW Built-in EMI filter. For interference suppression in compliance with (IEC) EN61800-3 and (IEC)EN 61800-5-1 standard. **L510s with grounding kit (option) can reach C1 EMC level.**

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
L510 & L510s	100V 1/3 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)	0.68	1.00	1.65
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)	0.85	0.85	1.35
weight with filter(kG)	0.95	0.95	1.45
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)	0.68	1.00	1.30	1.65	2.90	4.00
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)	0.85	0.85	0.85	0.85	1.35	1.35
weight with filter(kG)	0.95	0.95	0.95	0.95	1.45	1.45
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)	0.68	1.00	1.65	2.90	4.00
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)	0.85	0.85	0.85	1.35	1.35
weight with filter(kG)	0.95	0.95	0.95	1.45	1.45
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)	6.67	9.91	13.34
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)	1.35	1.35	1.35
weight with filter(kG)	1.45	1.45	1.45
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)	7.01	9.91	13.34	18.29
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	2	2	2
Enclosure	IP20			

*The input current is calculated value at full rated output current.

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
10 : 10HP
15 : 15HP

P : PNP
N : NPN

Filter

F : Built-in
Blank : None

Power supply

1 : Single phase
3 : Three phase

Specification

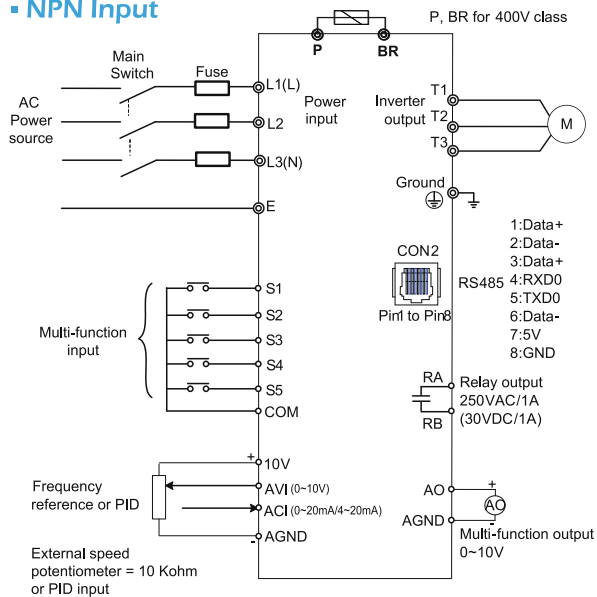
H : Standard Type

Series Name

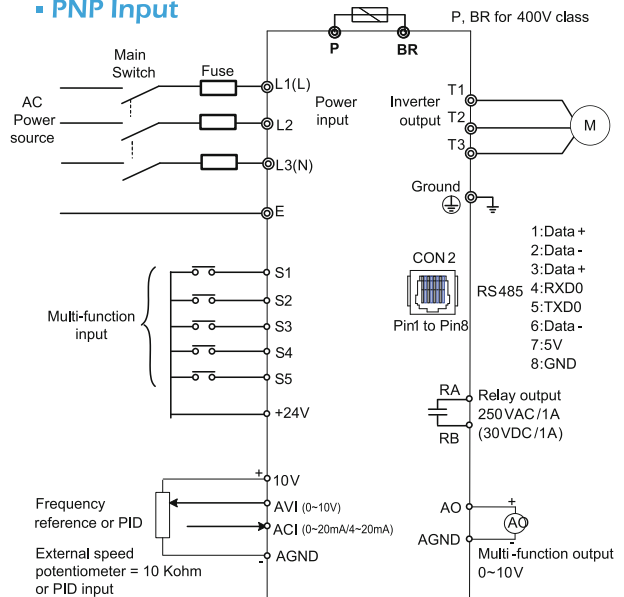
S : 510s series

WIRING DIAGRAM

■ NPN Input



■ PNP Input

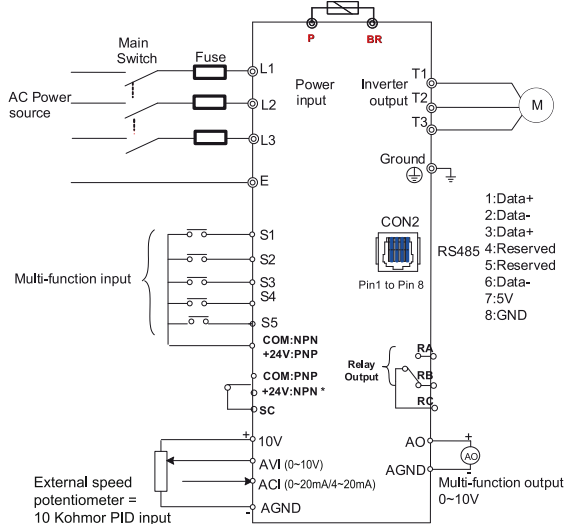


■ Frame 3 & Frame 4 series

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

*Note1:
NPN: 24V connected to SC.
PNP: COM connected to SC.

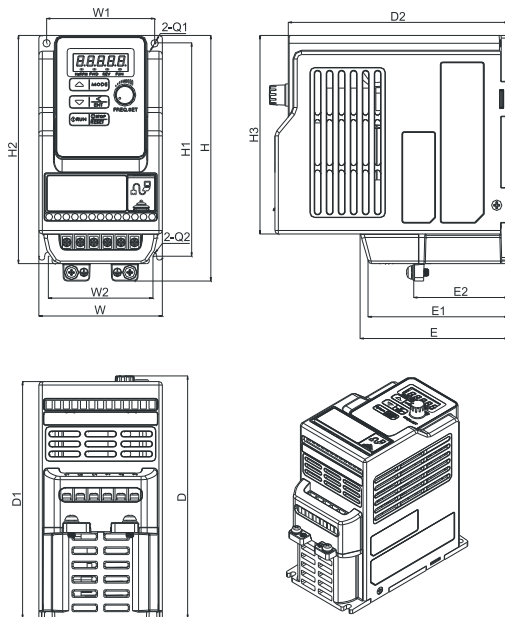
*Note2:
If SC is not connected, inverter parameter group 03-XX can't be enabled.



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
	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
		Multifunction input up/down function(Group3) Setting frequency by communication method.
	Frequency limit	Lower and upper frequency limits 3 -skip frequency settings.
Run	Frequency limit	Keypad run, stop button
		External terminals:
		Multi- operation-mode 2 / 3 wire selection Jog operation
		Run signal by communication method.
Main Controls	V / F curve setting	6 fixed curve and one customized curve
	Carrier frequency	1~16kHz(default 5kHz)
	Acceleration and deceleration control	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
	Multifunction output	16 functions (refer to description on group3)
	Multifunction analog output	5 functions (refer to description on group4) 1 point (0~10V)
	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.
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.
	LED Status Indicator	For run/stop/forward and reverse.
Protective Functions	Overload Protection	Integrated motor and Inverter overload protection.
	Over voltage	100V/200V : Over 410V, 400V : Over 820V
	Under voltage	100V/200V : Under 190V, 400V : Under 380V
	Momentary Power Loss Restart	Inverter auto-restart after a momentary power loss.
	Stall Prevention	Stall prevention for Acceleration/ Deceleration/ and continuous Run.
	Short-circuit output terminal	Electronic Circuit Protection
	Grounding Fault	Electronic Circuit Protection
International Certification		CE/UL/cUL/RCM
Communication		RS485 (Modbus) built in, with one to one or one to many control. Built-in BACnet communication. Profibus, DeviceNet, CANopen, TCP/IP by gateways.
Environment	Operating temperature	-10~50°C(with fan), -10~40°C(without fan)
	Storage temperature	-20~60°C
	Humidity	Under 95%RH (no condensation)
	Shock	Under 20Hz, 1G[9.8m/s ²]; 20~50Hz 0.6G[5.88m/s ²]
	EMC Compliance	EN61800-3, First Environment
	LVD Compliance	EN50178
	Electrical Safety	UL508C
	Protection level	IP20

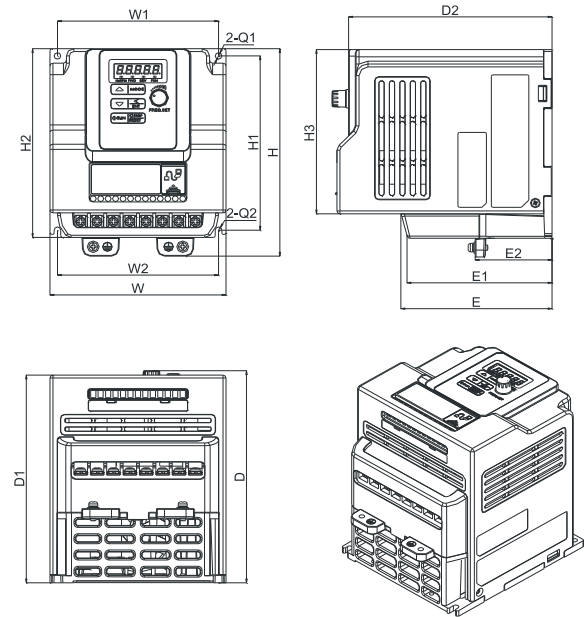
Frame1



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

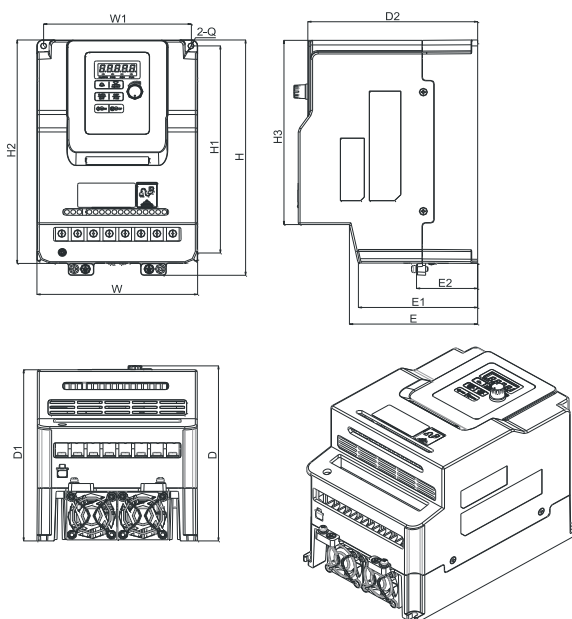
Frame2



Model	dimension														
	W	W1	W2	H	H1	H2	H3	D	D1	D2	E	E1	E2	Q1	Q2
L510-401-SH3-N/P															
L510-402-SH3-N/P															
L510-403-SH3-N/P															
L510-401-SH3F-P	118	108	108	144	131	121	114	150	144.2	136.4	101.3	96.7	51.5	4.3	2.2
L510-402-SH3F-P															
L510-403-SH3F-P															

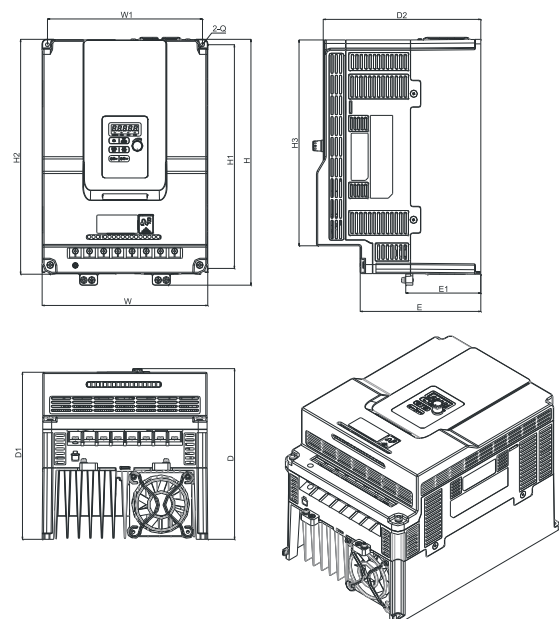
F : Built-in EMC filter

Frame3



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													

Frame4



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



Package Machines



Conveyers



Automatic door control



PCB Automation

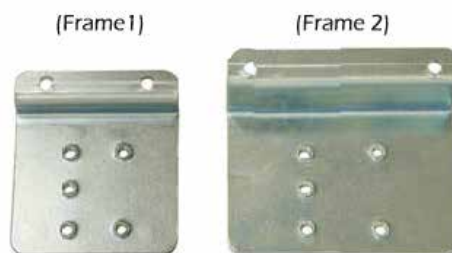
ACCESSORIES

Accessories	Model	Function	Notes
Keypad Extension cable	JN5-CB-01M	Keypad Extension cable for 510 series	1m
	JN5-CB-02M		2m
	JN5-CB-03M		3m
	JN5-CB-05M		5m
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
	JN5-CM-USB-3		3m
EMC Grounding kit(Frame 1)	JN5-GK-L01	to enhance the EMC ability by enlarge the ground	For frame 1
EMC Grounding kit(Frame 2)	JN5-GK-L02		For frame 2
Din rail (Frame1)	JN5-DIN-L01	mounting rails to support the drive	For frame 1
Din rail (Frame2)	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
 (JN5-GK-L01) (JN5-GK-L02)



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

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