



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 unit

Compact space saving design for side by side installation. Plus optional Din rail mounting kit(Frame1/2)

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(Built-in multi-pump function model without BACnet 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(Frame1/2)**

NEW **Motor over-temperature protective function to protect motor (fulfilled by PTC)**

NEW **Add multi-pump function, four pumps parallel connection**

*** 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**

100V Class : Single phase

Model : L510-□□□-SH1-N/P(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(P) (L510-□□□-SH1F-P)(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)	Single Phase : 200~240V(+10%-15%),50/60HZ				
Output voltage range(V)	Three phase 0~240V				
Input current (A)*	4.9	7.2	11	15.5	21
weight(kG)	0.9	0.9	0.9	1.4	1.4
weight with filter(kG)	1.0	1.0	1.0	1.5	1.5
Allowable momentary power loss time (S)	1.0	1.0	1.0	2.0	2.0
Enclosure	IP20				

200V Class : Three phase

Model : L510-□□□-SH3-N/P(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(P)	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)	2.2	6.3	6.3
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(P) (L510-□□□-SH3F-P)(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(P) (L510-□□□-SH3F)(P)	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)	2.2	2.2	6.3	6.3
weight with filter(kG)	2.4	2.4	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

02 : 2HP

03 : 3HP

05 : 5HP

08 : 7.5HP

10 : 10HP

15 : 15HP

20 : 20HP

25 : 25HP

30 : 30HP

35 : 35HP

40 : 40HP

45 : 45HP

50 : 50HP

55 : 55HP

60 : 60HP

65 : 65HP

70 : 70HP

75 : 75HP

80 : 80HP

85 : 85HP

90 : 90HP

95 : 95HP

100 : 100HP

105 : 105HP

110 : 110HP

115 : 115HP

120 : 120HP

125 : 125HP

130 : 130HP

135 : 135HP

140 : 140HP

145 : 145HP

150 : 150HP

155 : 155HP

160 : 160HP

165 : 165HP

170 : 170HP

175 : 175HP

180 : 180HP

185 : 185HP

190 : 190HP

195 : 195HP

200 : 200HP

205 : 205HP

210 : 210HP

215 : 215HP

220 : 220HP

225 : 225HP

230 : 230HP

235 : 235HP

240 : 240HP

245 : 245HP

250 : 250HP

255 : 255HP

260 : 260HP

265 : 265HP

270 : 270HP

275 : 275HP

280 : 280HP

285 : 285HP

290 : 290HP

295 : 295HP

300 : 300HP

305 : 305HP

310 : 310HP

315 : 315HP

320 : 320HP

325 : 325HP

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340 : 340HP

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370 : 370HP

375 : 375HP

380 : 380HP

385 : 385HP

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400 : 400HP

405 : 405HP

410 : 410HP

415 : 415HP

420 : 420HP

425 : 425HP

430 : 430HP

435 : 435HP

440 : 440HP

445 : 445HP

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465 : 465HP

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625 : 625HP

630 : 630HP

635 : 635HP

640 : 640HP

645 : 645HP

650 : 650HP

655 : 655HP

660 : 660HP

665 : 665HP

670 : 670HP

675 : 675HP

680 : 680HP

685 : 685HP

690 : 690HP

695 : 695HP

700 : 700HP

705 : 705HP

710 : 710HP

715 : 715HP

720 : 720HP

725 : 725HP

730 : 730HP

735 : 735HP

740 : 740HP

745 : 745HP

750 : 750HP

755 : 755HP

760 : 760HP

765 : 765HP

770 : 770HP

775 : 775HP

780 : 780HP

785 : 785HP

790 : 790HP

795 : 795HP

800 : 800HP

805 : 805HP

810 : 810HP

815 : 815HP

820 : 820HP

825 : 825HP

830 : 830HP

835 : 835HP

840 : 840HP

845 : 845HP

850 : 850HP

855 : 855HP

860 : 860HP

865 : 865HP

870 : 870HP

875 : 875HP

880 : 880HP

885 : 885HP

890 : 890HP

895 : 895HP

900 : 900HP

905 : 905HP

910 : 910HP

915 : 915HP

920 : 920HP

925 : 925HP

930 : 930HP

935 : 935HP

940 : 940HP

945 : 945HP

950 : 950HP

955 : 955HP

960 : 960HP

965 : 965HP

970 : 970HP

975 : 975HP

980 : 980HP

985 : 985HP

990 : 990HP

995 : 995HP

1000 : 1000HP

1005 : 1005HP

1010 : 1010HP

1015 : 1015HP

1020 : 1020HP

1025 : 1025HP

1030 : 1030HP

1035 : 1035HP

1040 : 1040HP

1045 : 1045HP

1050 : 1050HP

1055 : 1055HP

1060 : 1060HP

1065 : 1065HP

1070 : 1070HP

1075 : 1075HP

1080 : 1080HP

1085 : 1085HP

1090 : 1090HP

1095 : 1095HP

1100 : 1100HP

1105 : 1105HP

1110 : 1110HP

1115 : 1115HP

1120 : 1120HP

1125 : 1125HP

1130 : 1130HP

1135 : 1135HP

1140 : 1140HP

1145 : 1145HP

1150 : 1150HP

1155 : 1155HP

1160 : 1160HP

1165 : 1165HP

1170 : 1170HP

1175 : 1175HP

1180 : 1180HP

1185 : 1185HP

1190 : 1190HP

1195 : 1195HP

1200 : 1200HP

1205 : 1205HP

1210 : 1210HP

1215 : 1215HP

1220 : 1220HP

1225 : 1225HP

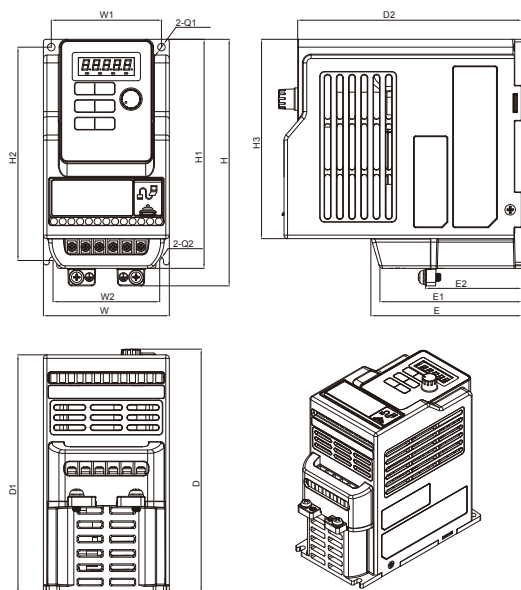
1230 : 1230HP

1235 : 1235HP

1240 : 1240HP

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 curves 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, Frame 1/2 : NPN&PNP by separate models, Frame 3/4 : NPN&PNP switchable(Please refer wiring diagram)
	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, Multi-Pump.function(pump model only)
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 Capacity and maximum current	150% of rated current under 60 seconds (150%/1min)
	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
	Additional protective functions	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.
International Certification		CE/UL/cUL/RCM
Communication		RS485 (Modbus) built in, with one to one or one to many control. Built-in BACnet communication for building automation control.(Pump function model without this function) Profibus, DeviceNet, CANopen, TCP/IP by gateway.
Environment	Operating temperature	-10~50°C(with fan), -10~40°C(without fan)
	Storage temperature	-20~60°C
	Humidity	Under 95%RH (no condensation)
	Vibration	Amplitude(0.3mm): 10Hz ≤ f ≤ 57Hz Acceleration(2G): 57Hz ≤ f ≤ 150Hz (According to IEC60068-2-6 standard)
	EMC Compliance	EN61800-3, First Environment(Use of the optional grounding kit is recommend to achieve compliance)
	LVD Compliance	EN50178
	Electrical Safety	UL508C
	Protection level	IP20

| Frame1 |

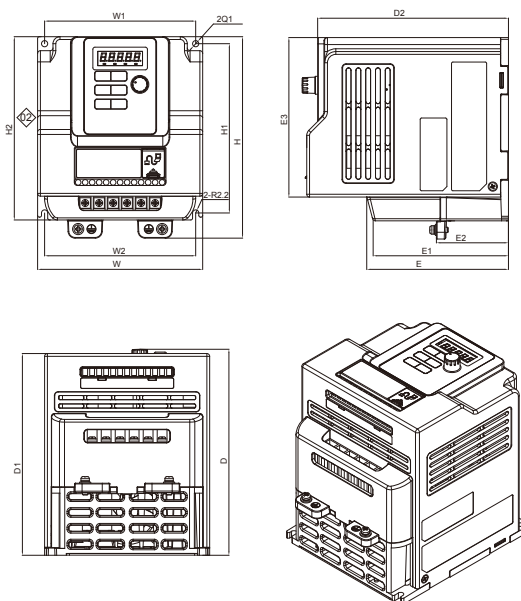


Unit: mm

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	122	131	114	141	136	128.2	86.3	81.1	55	4.4	2.2
L510-2P5-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 |

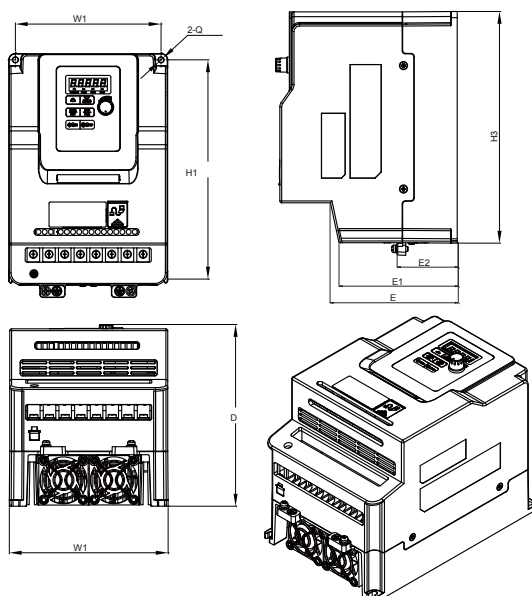


Unit: mm

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															
L510-203-SH3-N/P	118	108	108	144	122	131	114	150	144.2	136.4	101.32	96.73	51.5	4.3	2.2
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

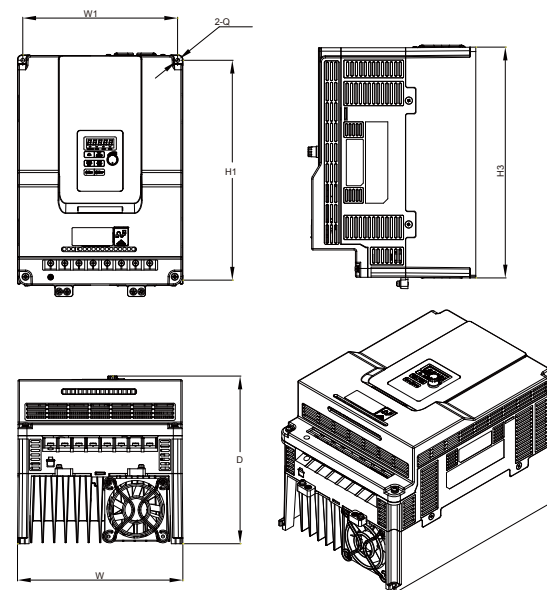
| Frame3 |



Unit: mm

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

| Frame4 |



Unit: mm

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
- ◆ Small plastic crusher
- ◆ Food & beverage application



Package Machines



Conveyers



Automatic Door Control



PCB Automation

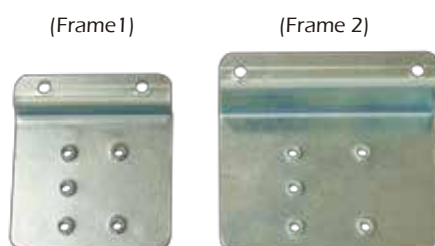
Accessories

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-TCPIP	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	
	JN5-CM-EIP	For connection of EtherNet/IP communication protocol	
RJ45 to USB connection cable	JN5-CM-USB	Using the TECO exclusive PC-software line	1.8m
EMC Grounding kit	JN5-GK-L01	To enhance the EMC ability by enlarging the grounding area	For frame 1
	JN5-GK-L02		For frame 2
Din rail kit	JN5-DIN-L01	Used for mounting on the din rail	For frame 1
	JN5-DIN-L02		For frame 2
Remote keypad	JN5-OP-L01	For customer to use outside the inverter	



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.



Distributor

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



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