



# S510

Ease of Integration



## Product Features

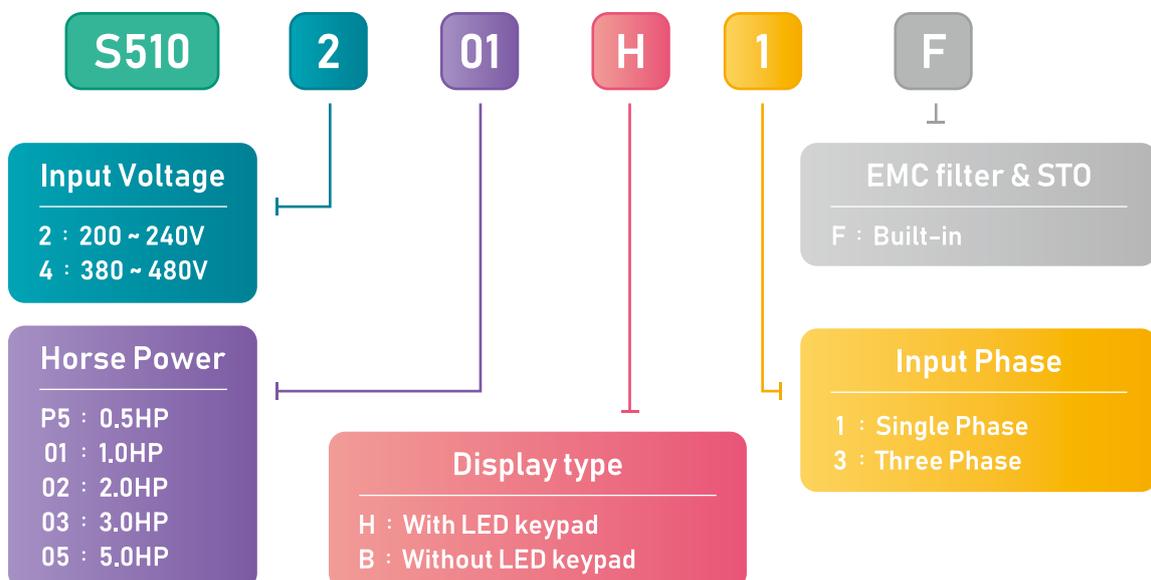
- Output frequency up to 599Hz.
- Built-in Modbus RS485 communication.
- Removable keypad & display with digital speed adjustment.
- RJ45 interface for PC and copy unit connection.
- **Book type saving design for Side by side installation with 50mm spacing, plus optional din-rail mounting kit.**
- Built-in PID feedback control modes.
- Rapid stop function by use of programmable digital inputs.
- Earth terminals on the heat sink provide better grounding connection.
- Auto carrier frequency change to limit inverter over temperature.
- **Effective cooling by fan less design. Frame 1 only.**
- 32 bit 100M Hz CPU design provides high performance, Fast A / D conversion and torque compensation.
- Communication interface modules for Profibus DP / DeviceNet / Ethernet (TCP/IP) / CANopen / Ethernet IP.
- Built-in EMC filter, for interface suppression in compliance with (IEC) EN61800-3 and (IEC) 61800-5-1 standard.
- Motor over-temperature protective function (fulfilled by PTC).
- **Compliance with new UL standard (IEC 61800-5-1).**
- Digital (NPN / PNP input) and analog input (V / I) selectable.
- **Built-in STO function meet EN61508 SIL2.**
- Simple function parameter group (Group F).



Power Rating	0.4kW 0.5HP	0.75kW 1HP	1.5kW 2HP	2.2kW 3HP	3.7kW 5HP
<b>S510</b>	200V 1 phase				
			400V 3 phase		



## Catalog No. Identification



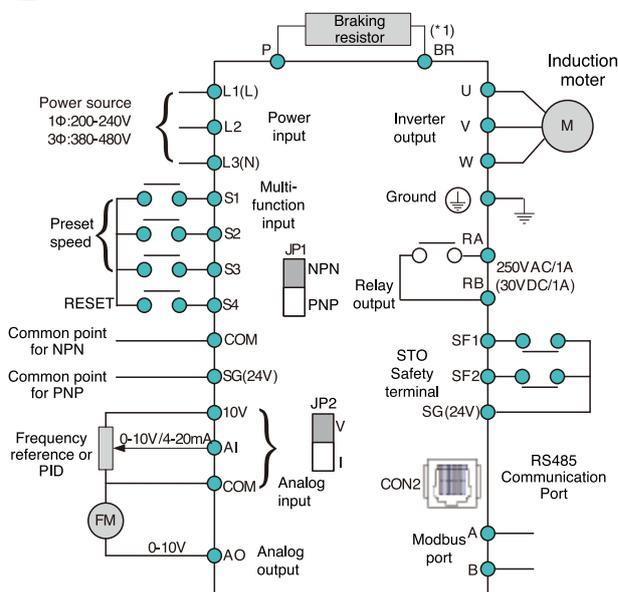
## Basic Specifications > 200V Class : Single phase

Model : S510-□□□-B1F / H1F	2P5	201	202	203
Horse power (HP)	0.5	1	2	3
Suitable motor capacity (kW)	0.4	0.75	1.5	2.2
Rated output current (A)	2.6	4.3	7.5	10.5
Rated capacity (kVA)	1.00	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)	4.8	7.6	13.7	16.4
Weight (kg)	1.1	1.1	1.4	1.4
Allowable momentary power loss time (s)	1.0	1.0	2.0	2.0
Enclosure	IP20			

## Basic Specifications > 400V Class : Three phase

Model : S510-□□□-B3F/H3F	401	402	403	405
Horse power (HP)	1	2	3	5
Suitable motor capacity (kW)	0.75	1.5	2.2	3.7
Rated output current (A)	2.3	3.8	5.2	8.8
Rated capacity (kVA)	1.7	2.9	4.0	7.0
Input voltage range (V)	Three Phase : 380 ~ 480V (+10% - 15%), 50 / 60HZ			
Output voltage range (V)	Three phase 0 ~ 480V			
Input current (A)	3.3	4.5	7.3	12.5
Weight (kg)	1.2	1.2	1.6	1.6
Allowable momentary power loss time (s)	2.0	2.0	1.5	1.5
Enclosure	IP20			

## Wiring Diagram >



\* 1 : Braking resistor for F2 only

200V : 1.5 - 2.2kW

400V : 2.2 - 3.7kW

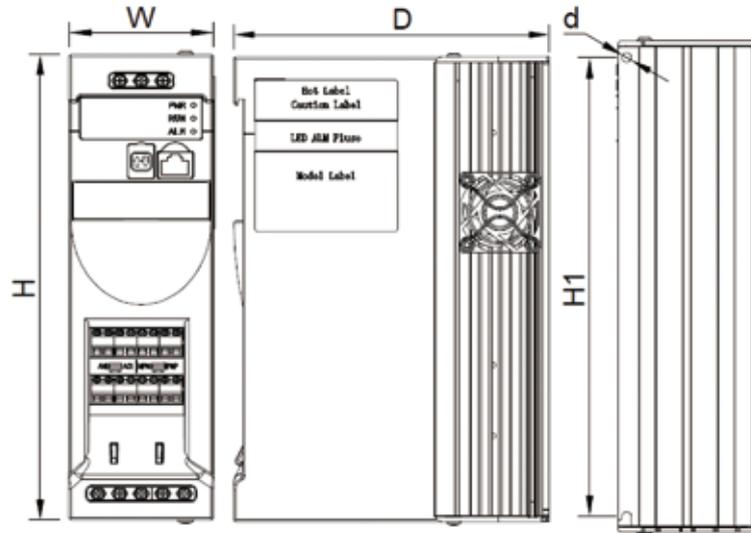
For PC software,  
remote keypad and copy unit.

Only one function can be used at a time.

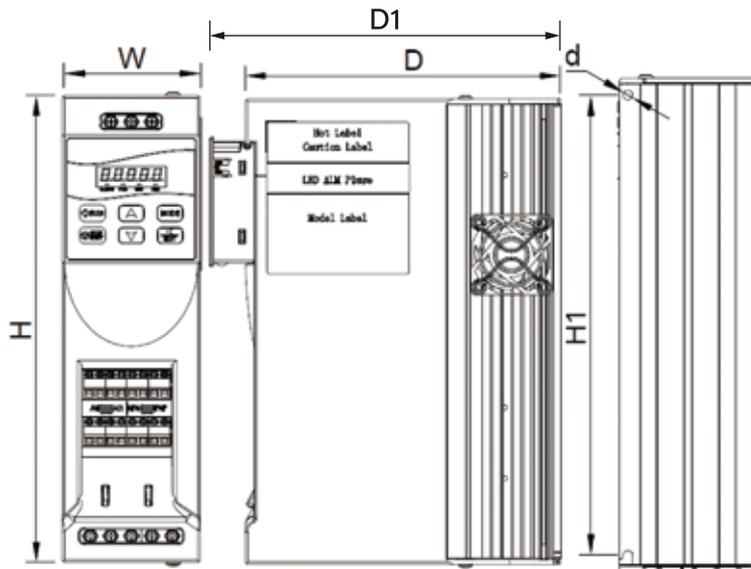
## General Specifications

Item		S510	
<b>Control Mode</b>		V / F Control	
<b>Frequency</b>	Range	0.01 ~ 599.00Hz	
	Speed accuracy (100% torque)	3%	
	Starting Torque	V / F : 3Hz / 100%	
	Setting resolution	Digital input : 0.01Hz                      Analog input : 0.015Hz / 60Hz	
	Frequency setting	Keypad : Set directly with ▲ ▼ keys External Input Terminals : AVI (0/2 ~ 10V), ACI(0/4 ~ 20mA) analog input Multifunction input up / down function (Group3) Setting frequency by Communication method	
	Frequency limit	Remote control : Set directly with ▲ ▼ keys of remote keypad Lower and upper frequency limits, 3-skip frequency settings	
<b>Run</b>	Operation set	Keypad run, stop button External Terminals : Multi - operation-mode 2 / 3 wire selection Jog operation Run signal by communication method Remote control : Set directly with run, stop button of remote keypad	
<b>Main Controls</b>	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) 4 points	
	Multifunction output	23 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, Main / Alt run Command select, Main / Alt Frequency Command select, PID control, torque boost, V / F start Frequency, Fault reset	
<b>Display</b>	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	
<b>Protective Functions</b>	Overload Protection	Integrated motor and Inverter overload protection (150% rated current for 60sec, every 10 minutes)	
	Over voltage	200V : Over 410V, 400V : Over 820V	
	Under voltage	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, over voltage protection (OVP), motor PTC over-temperature protection	
<b>International Certification</b>		CE / UKCA / UL / cUL / RCM	
<b>Communication</b>		RS485 (Modbus) built in, with one to one or one to many control Profibus, DeviceNet, CANopen, TCP / IP by gateways	
<b>Environment</b>	Operating temperature	-10 ~ 50°C (with fan), -10 ~ 40°C (without fan)	
	Storage temperature	-20 ~ 60°C	
	Humidity	Under 95%RH (no condensation)	
	Vibration	Frequency	10Hz ~ 150Hz - 10Hz
		Amplitude(0.3mm)	10Hz ≤ f ≤ 57Hz
		Acceleration(2G)	57Hz ≤ f ≤ 150Hz (According to IEC60068-2-6 standard)
	EMC Compliance	EN61800-3, First Environment Category C2.	
	LVD Compliance	EN 61800-5-1	
Electrical Safety	UL61800-5-1		
Protection level	IP20		

Dimension



Model	Dimension (mm)					Weight (Kg)
	W	H	D	H1	d	
S510-2P5-B1F	64	190	140	175	M4	1.1
S510-201-B1F						1.4
S510-401-B3F						1.2
S510-402-B3F	64	230	155	215		1.6
S510-202-B1F						
S510-203-B1F						
S510-403-B3F						
S510-405-B3F						



Model	Dimension (mm)						Weight (Kg)
	W	H	D	D1	H1	d	
S510-2P5-H1F	64	190	140	158	175	M4	1.1
S510-201-H1F							1.4
S510-401-H3F							1.2
S510-402-H3F	64	230	155	173	215		1.6
S510-202-H1F							
S510-203-H1F							
S510-403-H3F							
S510-405-H3F							

# Typical Application

- ✓ Fan & Pumps
- ✓ Packaging machines
- ✓ Automatic door control
- ✓ Conveyors
- ✓ Food & beverage
- ✓ Feeder machines
- ✓ Small plastic crusher
- ✓ Textile machines
- ✓ Winding machine
- ✓ PCB automation



Packaging machines



Conveyors



Auto door control



PCB automation

# Accessories

Accessories	Description	Catalog No.	Note
Cables	IP20 Digital operator extension cable	JN5-CB-01M	1 meter
		JN5-CB-02M	2 meter
		JN5-CB-03M	3 meter
		JN5-CB-05M	5 meter
	RJ45 to USB connecting cable	JN5-CM-USB	1.8 meter
Communication Gateways	Profibus DP module	JN5-CM-PDP	
	DeviceNet module	JN5-CM-DNET	
	CANopen module	JN5-CM-CAN	
	TCP / IP module	JN5-CM-TCPIP	
	EtherNet / IP module	JN5-CM-EIP	
Din rail	Mounting rails to support the drive	JN5-DIN-S01	
Operator	External LED keypad	JN5-OP-S01	
Others	Copy module for 510 series	JN5-CU	



Copy Module (JN5-CU)

- » Duplicating parameters setting in one inverter to another inverter
- » Use as Remote keypad
- » Connection by RJ45



RJ45 to USB (JN5-CM-USB)

- » Exclusive TECO Programming Cable for use with Drive link PC software



Din rail (JN5-DIN-S01)

- » Din rail mounting adaptor





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

